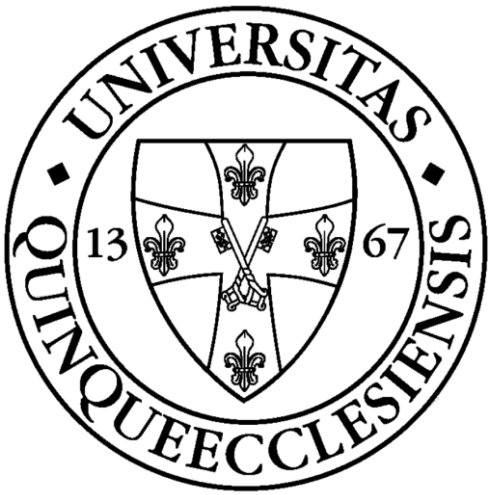
University of Pécs

Doctoral School of Law

Mael Baummar

The Impact of E-Government on Administrative Law Principles in Germany: The Case of North Rhine-Westphalia

Dissertation



Supervisor

Prof. Dr. habil. Fábián Adrián

Pécs - 2026

Acknowledgements

This doctoral dissertation represents the culmination of sustained scholarly inquiry conducted within a structured academic framework. I extend my sincere gratitude to my supervisor, Prof. Dr. Habil. Adrián Fábián, for his academic supervision, methodological guidance, and the incisive feedback provided throughout the research process. His expertise and support were fundamental in ensuring the analytical depth and coherence of this work.

I am also indebted to the Doctoral School of Law and Political Sciences at the University of Pécs, Faculty of Law, for providing a rigorous doctoral programme and a stimulating intellectual environment. The institutional support, access to specialized scientific publications, and the scholarly activities offered by the Faculty were integral to the successful completion of this research.

While this dissertation is the product of an intensive and demanding investigative process, it is presented with the expectation that its findings may contribute to ongoing scholarly discussions within the field of administrative law. It is offered to those who value systematic legal inquiry and who may find in these arguments a constructive basis for further research and reflection.

Abstract

This dissertation examines the profound transformations reshaping administrative law in the context of accelerating digitalisation, taking the German and European frameworks as advanced reference models. It proceeds from the view that digitalisation is not merely a technical upgrade of public administration but a structural shift that affects core principles such as legality, transparency, accountability, and the boundaries of administrative discretion. These developments also alter the relationship between the individual and the state, particularly as automated and data-driven forms of decision-making become embedded in administrative practice. The study therefore explores the extent to which administrative law can accommodate these emerging models of governance and whether traditional legal concepts remain adequate for evaluating decisions generated or supported by automated systems.

The research adopts a comparative and analytical methodology that integrates statutory analysis—covering instruments such as the VwVfG, OZG, EGovG, GDPR, and eIDAS—with judicial reasoning and contemporary theoretical debates on digital administration. It also draws on practical developments in Germany, with particular attention to the experience of North Rhine-Westphalia, to assess whether ongoing reforms enhance administrative efficiency without weakening the guarantees associated with the rule of law.

The findings suggest that digitalisation invites a reconsideration of several foundational administrative concepts, including the administrative act, discretion, publicity, and participatory rights. While the existing legal framework has evolved significantly, it continues to face structural challenges, especially in relation to algorithmic transparency, the reviewability of automated decisions, and the protection of fundamental rights in a digital environment. The dissertation argues that addressing these challenges requires a set of principles capable of guiding the emergence of a “digitally responsible administration” that balances technological innovation with constitutional safeguards.

Table of Content

1. First Chapter: Foundations of the Research 9

1.1. Introduction 9

1.2. Motivation Behind Choosing This Research 10

1.3. Overview of the research structure 11

1.4. Research problem 12

1.4. Research question 13

1.6. Research Hypotheses and Testing Methodology 14

1.7. Significance and Relevance of the Research 16

1.8. Research Methodology 17

1.9. Literature Review 19

Chapter 2: E-Government in the German Federal Administrative System 22

2.1. Introduction 22

2.2. Foundations of Administrative Law in Germany 23

2.2.1. Scope of Administrative Law and Procedural Law 25

2.2.2. Core Principles of Administrative Law 29

2.3. Administrative Reform and Digital Transformation in Germany 43

2.4. The Historical and Institutional Context of Digitalization in German Public Administration 44

2.4.1. From Early Technological Innovations to the Legal Foundations of Digital Public Administration 44

2.4.2. Defining E-Government in Legal and Administrative Contexts 45

2.4.3. Federal Implementation Structures and Their Impact on E-Government Realisation 47

2.4.4. Procedural Safeguards and Rights Protection in Digital Administrative Processes 49

2.4.5. Prominent Milestones in Germany's Digital Government Development 50

2.4.6. European Influences 52

2.5. Federal Administrative Structure and the Challenges of Digital Transformation 55

2.5.1 Federal Distribution of Competences in Administrative Law 55

2.5.2 Administrative Fragmentation and Its Impact on Digitization 57

2.5.3 Institutional Actors and Their Roles 59

2.6. Legislative Instruments Governing E-Government Implementation 63

2.6.1 The E-Government Act (EGovG) 63

2.6.2 The Online Access Act (OZG) 65

2.6.3. Interaction Between EGovG and OZG 67

2.6.4. Institutional and Technical Frameworks for Implementation 69

2.7. Legal Foundations of Digital Administrative Procedures 71

2.7.1. Definition and Scope of Digital Administrative Procedures 71

2.7.2. Compatibility with Fundamental Administrative Law Principles 72

2.7.3. European Legal Sources and Frameworks 73

2.7.4. Jurisprudential and Scholarly Approaches 74

2.7.5. Data Protection and Procedural Safeguards 74

2.8. Strategic and Financial Instruments Supporting E-Government 76

2.8.1. Funding and Innovation Programs 76

2.8.2. National Strategies and Infrastructure 77

2.8.3. National Digital Infrastructure: 78

2.9. Conclusion 79

Chapter 3: The Impact of E-Government on Administrative Law Principles 81

3.1. Introduction 81

3.2. The Conceptual and Normative Framework of Administrative Principles 82

3.2.1. Distinctive Attributes of Legal Principles 84

3.2.2. The Challenges of Digitalisation for Administrative Principles 87

3.3. Revisiting Core Principles: A Transitional Overview 89

3.3.1. Legality and the Boundaries of Discretion 89

3.3.2. Proportionality: Assessing Cumulative Impacts in Data-Driven Administration 91

3.3.3. Legitimate Expectations and Legal Stability 92

3.4. Analysis of Administrative Law Principles in Light of Digital Transformation 94

3.4.1. Principle of Legality, Legal Certainty and Protection of Legitimate Expectations 94

3.4.2. Proportionality and discretion 102

3.4.3. Equality, Procedural Fairness and Public Participation 106

3.4.4. Transparency and Accountability 112

3.4.5. Efficiency and Timeliness 117

3.5. Conclusion 121

Chapter 4: Legal Frameworks for E-Government in North Rhine-Westphalia: An Assessment of Fundamental Administrative Law Principles in the EGovG NRW 126

4.1. Introduction 126

4.2.1. The E-Government Act of North Rhine-Westphalia (EGovG NRW) 128

4.2.2. Interaction with Federal Law 137

4.2.3. Influence of EU Law 139

4.2.4. Strategic Initiatives and Financial Mechanisms 142

4.2.5. Legislative Dynamics: Strategic Amendments and Regulatory Strengthening 145

4.3. Analysis of the EGovG NRW in Light of Core Administrative Law Principles 147

4.3.1. Legal Certainty (Rechtssicherheit) and Legality (Gesetzmäßigkeit) 147

4.3.2. Equality (Gleichheit) and Proportionality (Verhältnismäßigkeit) 153

4.3.3. Transparency and Accountability 160

4.3.4. Procedural Fairness and Good Faith 164

4.3.5. Administrative Efficiency and Legal Coherence (GDPR Interplay) 169

4.4. Challenges and Gaps in Implementation 171

4.4.1. The Digital Divide and Accessibility 172

4.4.2. Data Protection and Privacy Concerns 172

4.4.3. Institutional and Administrative Hurdles 175

4.5. Institutional Implementation, Auditing, and Administrative Accountability 181

4.5.1. Accountability and the Challenges of Digital Program Management 181

4.5.2. Balancing Political Strategy with Legal Mandates 182

4.5.3. Implications for Legal Governance 182

4.5.4. Auditing the Federal-Regional Interdependency 183

4.6. Conclusion: Key Findings from the Case Study 183

4.6.1. The Balance Between Principle and Innovation 183

4.6.2. Key Analytical Findings 184

4.6.3. Setting the Stage for Final Conclusions 186

Chapter 5: Conclusions 189

5.1. Introduction 189

5.2 Synthesis of Findings: The Divergence Between Normative Ambition and Administrative Reality 190

5.3. Strategic Recommendations: Toward an Anticipatory Model of Administrative Law 191

5.4. Recommendations 193

5.5. Restatement of the Research Problem and Objectives 195

5.6. Synthesis of Research Questions and Hypotheses 196

5.7. Key Findings 197

5.8. Contribution to Academic Literature 198

5.9. Practical and Policy Implications 200

5.10. Limitations of the Dissertation 201

5.11. Directions for Future Research 202

5.12. Final Integrative Statement 202

5.13. Final Conclusion 203

Bibliography 206

Abbreviation	Full Term (English / German)	Description
ADM	Automated Decision-Making	Use of automated systems in administrative decisions
AGG	Allgemeines Gleichbehandlungsgesetz	General Equal Treatment Act
AI	Artificial Intelligence	Intelligent computational systems
Art.	Article	Constitutional or treaty article
BDSG	Bundesdatenschutzgesetz	Federal Data Protection Act
BGG NRW	Behindertengleichstellungsgesetz NRW	Disability Equality Act of NRW
BGB	Bürgerliches Gesetzbuch	German Civil Code
BfDI	Bundesbeauftragte/r für den Datenschutz und die Informationsfreiheit	Federal Commissioner for Data Protection and Freedom of Information
BITV	Barrierefreie-Informationstechnik-Verordnung	Accessible Information Technology Ordinance
BMI	Bundesministerium des Innern und für Heimat	Federal Ministry of the Interior and Community
BVerfG	Bundesverfassungsgericht	Federal Constitutional Court
BVerfGE	Entscheidungen des Bundesverfassungsgerichts	Official Reports of the Federal Constitutional Court
CJEU / EuGH	Court of Justice of the European Union	Highest EU court
DSG NRW	Datenschutzgesetz Nordrhein-Westfalen	Data Protection Act of NRW
DSGVO / GDPR	Datenschutz-Grundverordnung	EU General Data Protection Regulation
eID	Electronic Identity	Digital identification credential

eIDAS	Electronic Identification, Authentication and Trust Services	EU Regulation on digital identity and trust services
EGovG	E-Government-Gesetz	Federal E-Government Act
EGovG NRW	E-Government-Gesetz Nordrhein-Westfalen	NRW E-Government Act
EU	European Union	Political and legal union
GG	Grundgesetz	Basic Law (German Constitution)
IFG	Informationsfreiheitsgesetz	Federal Freedom of Information Act
IFG NRW	Informationsfreiheitsgesetz NRW	NRW Freedom of Information Act
IT-Planungsrat	IT Planning Council	Federal-state IT coordination body
KBSt	Koordinierungs- und Beratungsstelle der Bundesregierung für Informationstechnik	Federal IT Coordination Office
LDI NRW	Landesbeauftragte für Datenschutz und Informationsfreiheit NRW	State Commissioner for Data Protection and FOI
NRW	Nordrhein-Westfalen	German federal state
OECD	Organisation for Economic Co-operation and Development	International organisation
OZG	Onlinezugangsgesetz	Online Access Act
OVG	Oberverwaltungsgericht	Higher Administrative Court
UVPG	Umweltverträglichkeitsprüfungs gesetz	Environmental Impact Assessment Act
VG	Verwaltungsgericht	Administrative Court
VVDStRL	Veröffentlichungen der Vereinigung der Deutschen Staatsrechtslehrer	German public law journal

VwGO	Verwaltungsgerichtsordnung	Code of Administrative Court Procedure
VwVfG	Verwaltungsverfahrensgesetz	Administrative Procedure Act

1. First Chapter: Foundations of the Research

1.1. Introduction

Since its inception, the state—particularly in its administrative dimension—has undergone continuous transformation, a process inherent to human institutions, which never achieve perfection but are constantly reshaped[1]. Such transformations have historically entailed not only organizational or technical change, but also corresponding legal and normative adjustments within administrative law. Against this background, the transition to e-government should not be understood merely as a matter of technical modernisation; rather, it calls for a critical examination of how digital transformation affects and reshapes core principles of administrative law within a digital administrative environment.

With the emergence of e-government, the concept of "e-government maturity" has developed alongside it and is commonly assessed by the extent to which digital administrative systems meet the public's increasing expectations in terms of efficiency, accessibility, transparency, and accountability. These dimensions are frequently linked to broader policy objectives, including sustainable development[2]. At the same time, the pursuit of administrative maturity in a digital context gives rise to a set of legal questions that fall squarely within administrative law: How can the statutory basis of digital procedures be secured (legality)? How can the necessity and proportionality of technological measures be evaluated (proportionality)? And how can rights of participation, notice, and redress be safeguarded in increasingly automated administrative processes (due process)?[3].

The German legislator has sought to address these challenges through the Federal E-Government Act of 2013[4], which aimed to modernise federal administration and promote digitisation. At the regional level, the E-Government Act of North Rhine-Westphalia (EGovG NRW), enacted in 2020[5], provides a particularly instructive case. It contains

---

[1] Jan Philipp Schaefer, Die Umgestaltung des Verwaltungsrechts [The Restructuring of Administrative Law] (Tübingen: Mohr Siebeck, 2016), 1.
[2] United Nations, E-Government Survey 2020: Digital Government in the Decade of Action for Sustainable Development, with Addendum on COVID-19 Response (New York: United Nations, 2020), xx.
[3] John Alder, "*General Principles of Constitutional and Administrative Law"*, 4th ed. (Oxford: Oxford University Press, 2002).
[4] Cristina Fraenkel-Haeberle, "*Fully Digitalized Administrative Procedures in the German Legal System*," European Review of Digital Administration & Law 1, no. 1–2 (2020), 109. https://www.erdalreview.eu/free-download/978882553896010.pdf.
[5] North Rhine-Westphalia E-Government Act (EGovG NRW), 2020, https://recht.nrw.de/lmi/owa/br_text_anzeigen?v_id=73520171220150354215.

provisions on electronic files, digital communication, and accessibility, thereby illustrating how legal frameworks interact with technological innovation while remaining anchored in constitutional principles. By studying the implementation of EGovG NRW, this dissertation examines the impact of e-government on the interpretation, application, and practical operation of core administrative law principles, using North Rhine-Westphalia as a case study.

1.2. Motivation Behind Choosing This Research:

The rapid digital transformation of public administration raises complex legal questions that directly affect the operation of administrative law. As public authorities increasingly rely on digital tools to organise procedures and deliver services, it becomes necessary to examine how this transformation interacts with established principles of administrative law. This research does not seek to reinterpret these principles in abstract terms; rather, it analyses how their application is influenced by the transition from traditional administrative practices to digitalised forms of governance.

From a methodological perspective, the choice of North Rhine-Westphalia as a case study is closely linked to the structure of German federalism and the differentiated legislative responses to digitalisation at the Länder level. Following the adoption of the Federal E-Government Act (EGovG) in 2013, the Länder reacted unevenly. While some postponed legislative action or limited themselves to minimal implementation, others developed their own statutory frameworks that either closely followed or went beyond the federal model. Saxony was the first Land to adopt an EGovG in 2014, largely reproducing the federal provisions while adjusting implementation timelines. In the years that followed, almost all Länder enacted similar legislation, including North Rhine-Westphalia in July 2016, whereas Hamburg remained an exception, arguing that technical implementation could proceed without additional statutory regulation.

Against this background, the EGovG NRW provides a particularly suitable analytical framework for examining how federal legislative impulses are translated into regional administrative law. Methodologically, this allows for a doctrinal analysis of how general administrative law principles are operationalised within a concrete legislative and institutional setting shaped by both federal requirements and Länder autonomy. The focus is therefore not on the political or administrative performance of digitalisation, but on the legal coherence of the regulatory framework and its compatibility with established principles of administrative law.

The research is further motivated by the need to identify potential normative gaps and tensions arising from the implementation of e-government legislation. Legislative processes often struggle to keep pace with technological development, which raises questions about the adequacy of existing legal safeguards in a digital administrative environment. Accordingly, this dissertation examines whether the EGovG NRW sufficiently accommodates core administrative law principles and how digitalisation affects their practical application.

In addition, the transition to digital administrative procedures raises fundamental issues concerning citizens' rights, including access to justice, procedural fairness, transparency, and data protection. The methodological approach adopted in this dissertation therefore combines doctrinal legal analysis with a contextual examination of digital administrative practices.

1.3. Overview of the research structure:

This dissertation offers an in-depth legal analysis of the evolving role of e-government within the German legal and administrative framework, with particular attention to the interaction between digital transformation and administrative law principles. The structure of the thesis follows a progressive logic: it begins with conceptual and methodological foundations, proceeds to the federal context, narrows to the regional case study of North Rhine-Westphalia, and culminates in a doctrinal and analytical examination of the impact of digitalisation on administrative law principles.

The first chapter introduces the research problem and situates it within the broader discourse on digitalisation in public administration. It also presents the central research question, defines the objectives of the dissertation, and outlines the methodological approach adopted.

Chapter Two, "E-Government in the German Federal Administrative System," provides the national context for the dissertation. It examines Germany's legally grounded and institutionally cautious approach to digitalisation, shaped by federalism and the constitutional principle of the Rechtsstaat. The chapter traces the development of key legislative instruments, including the Federal E-Government Act (EGovG, 2013)[6] and the

[6] E-Government Act (EGovG) – Act to Promote Electronic Government, 2013.

Online Access Act (OZG, 2017)[7], and analyses how federal structures influence their implementation. This contextual overview establishes the institutional and legal backdrop against which the subsequent doctrinal analysis of administrative law principles is conducted.

Chapter Four presents a detailed case study at the regional level, focusing on the E-Government Act of North Rhine-Westphalia (EGovG NRW, 2020). Building on the analytical framework established in Chapter Three, this chapter examines how fundamental administrative law principles are embedded within the statutory text and operational design.

The analysis considers the balance between efficiency and legal safeguards, highlighting the ways in which digitalisation has influenced the law's structure and practical implementation. By linking the statutory provisions to the broader effects of digital transformation, this case study illustrates how e-government reshapes the application and interpretation of administrative law principles in a concrete legal and administrative context.

Chapter Five, "Conclusions," synthesises the findings of the dissertation and reflects on their broader significance. Through this structure, the dissertation aims to provide a comprehensive and nuanced understanding of the impact of e-government on German public administration, with particular attention to its effects on fundamental administrative law principles. By combining theoretical analysis with a focused case study, it contributes to ongoing scholarly debates on the future of administrative governance and the role of law in shaping digital transformation.

1.4. Research problem

While e-government legislation aims to modernise public administration and reduce bureaucratic obstacles, the integration of digital technologies raises significant legal challenges that require in-depth study. Although these frameworks seek to improve efficiency, quality, and accessibility, a central concern lies in their impact on fundamental administrative law principles. As traditional paper-based procedures increasingly give way to digital processes, questions arise regarding the preservation, reinterpretation, and practical application of these principles in a digital environment.

Existing legal safeguards, developed for conventional administrative processes, may not fully accommodate the specific challenges of digital governance, including automated

[7] Onlinezugangsgesetz (OZG), August 14, 2017, BGBl. I S. 3122, 3138.

decision-making, algorithmic opacity, and potential digital exclusion. This research therefore seeks to identify these legal gaps and examine how Germany's e-government law interacts with core administrative law principles to address them.

By doing so, the dissertation aims to ensure that e-government initiatives not only enhance administrative efficiency but also uphold constitutional standards, protect citizens' rights, and support legally sound digital governance. The findings are intended to contribute to the ongoing refinement of legal frameworks capable of meeting the challenges posed by digital transformation in public administration.

1.5. Research Questions

This dissertation studies the legal implications of e-government within the German administrative law framework, using the E-Government Act of North Rhine-Westphalia (EGovG NRW, 2020) as a case study to illustrate broader doctrinal and practical challenges. The dissertation is guided by one overarching research question and several sub-questions.

1.5.1 Main Research Question

To what extent does the introduction of digital technologies affect the fundamental principles of German administrative law, and what legal gaps arise in ensuring that e-government initiatives both protect citizens' rights and support administrative efficiency?

1.5.2 Sub-questions

1.5.2.1. Doctrinal compliance: To what extent do German e-government frameworks—particularly the EGovG NRW and the Verwaltungsverfahrensgesetz (Administrative Procedure Act)—reflect, reinterpret, or challenge fundamental principles of administrative law, such as legality, proportionality, and procedural guarantees (Verfahrensgrundsätze), in a digital context?

1.5.2.2. Citizens' rights: How are citizens' rights—including access to justice, transparency, and participation—affected by the shift from traditional to digital administrative procedures, and what lessons does the NRW case offer for the broader German context?

1.5.2.3. Data protection and privacy: How do the EGovG NRW and related frameworks address data protection and privacy concerns, particularly in relation to the GDPR[8] and corresponding German legislation, and what challenges arise from automated data processing?

1.5.2.4. Legal gaps and reforms: What legal gaps emerge in the practical application of digital technologies under the EGovG NRW, and what reforms could ensure that e-government law effectively facilitates digital transformation while preserving essential constitutional and administrative safeguards?

1.6. Research Hypotheses and Legal-Analytical Testing Methodology

This dissertation formulates five hypotheses that reflect reasoned expectations regarding the interaction between digitalisation through e-government and the fundamental principles of German administrative law. These hypotheses provide a structured framework for assessing both doctrinal and practical implications through a legal-analytical methodology. The methodological approach combines doctrinal analysis of statutory provisions (including the EGovG NRW and the Verwaltungsverfahrensgesetz), comparative insights drawn from other federal jurisdictions, and a review of relevant academic literature and legal documents.

The five hypotheses range from issues of doctrinal compliance to practical and institutional factors, reflecting the layered nature of e-government implementation. Each hypothesis identifies potential legal tensions or gaps caused by digital transformation and guides the evaluation of how principles of administrative law are maintained, adapted, or challenged.

1.6.1 Hypothesis 1: Compliance with Administrative Law Principles

Hypothesis: German e-government law, illustrated by the case of North Rhine-Westphalia, broadly reflects the core principles of administrative law—legality, proportionality, and procedural guarantees (Verfahrensgrundsätze)—yet its digital implementation may generate procedural challenges requiring clarification or adjustment.

[8] European Parliament and Council, *Regulation (EU) 2016/679 (General Data Protection Regulation)*, OJ L 119, 4 May 2016.

Testing Approach: A doctrinal analysis of statutory provisions and scholarly commentary will identify potential tensions between automated or digital procedures and traditional safeguards.

Expected Result: The dissertation may reveal where digitalisation challenges or reshapes existing safeguards, highlighting areas where procedural adaptation or legal clarification is necessary.

1.6.2 Hypothesis 2: Efficiency and Transparency in Tension

Hypothesis: E-government legislation enhances administrative efficiency and accessibility, but also raises concerns about transparency and accountability.

Testing Approach: Provisions of the EGovG NRW will be examined for their effectiveness in ensuring transparency and public oversight, and this will be complemented by a comparative analysis of similar European frameworks.

Expected Result: Findings are likely to show that efficiency gains can reduce opportunities for citizen participation and oversight, pointing to the need for additional transparency mechanisms.

1.6.3 Hypothesis 3: Legal Gaps in Alignment with Broader Frameworks

Hypothesis: The EGovG NRW does not fully align with overarching legal frameworks such as the GDPR and the Verwaltungsverfahrensgesetz, creating gaps in data protection and procedural safeguards.

Testing Approach: Normative legal analysis will assess the consistency of the EGovG NRW with these frameworks, drawing on academic commentary and policy documents concerning digital rights and administrative procedure.

Expected Result: The dissertation may identify areas of partial compliance or inconsistency, especially regarding data protection and procedural harmonisation, indicating the need for legislative refinement.

1.6.4 Hypothesis 4: Structural and Administrative Preconditions

Hypothesis: Effective implementation of e-government law requires not only statutory provisions but also institutional and structural reforms, including investment in

digital infrastructure, legal training for administrative staff, and measures to mitigate digital exclusion.

Testing Approach: Government reports, policy documents, and legislative materials will be analysed to identify institutional and operational challenges.

Expected Result: Research is expected to show that institutional weaknesses and resource disparities hinder digitalisation, underlining the need for targeted reforms to achieve both efficiency and legal robustness.

1.6.5 Hypothesis 5: Proportionality, Administrative Discretion, and Equality in Digital Implementation

Hypothesis: The increasing digitalisation of administrative procedures affects the scope and exercise of administrative discretion, thereby placing new constraints on the principle of proportionality. At the same time, the uneven implementation of e-government across federal states and municipalities risks producing structural inequalities in access to public services and legal protection.

Testing Approach: The hypothesis will be examined through doctrinal analysis of proportionality and discretion under German administrative law, combined with an assessment of federal and municipal implementation practices under the relevant laws.

Expected Result: The analysis is expected to demonstrate that digitalisation tends to standardise decision-making and narrow discretionary space, while federal fragmentation contributes to unequal administrative treatment, raising concerns under the principle of equality.

1.7. Significance and Relevance of the Research

The digitalisation of public administration necessitates further research into the interaction between e-government initiatives and the principles of administrative law. The significance of this research lies in its assessment of whether technological innovation is compatible with the requirements of the Rechtsstaat and the protection of citizens' rights.

This dissertation offers a contribution on three distinct levels:

1.7.1. Practical relevance:

It provides insights for public authorities implementing e-government, addressing challenges such as digital exclusion, efficiency, and transparency. The identification of these issues is particularly significant, as it enables practitioners to develop administrative processes that are both accessible and reliable in digital environments.

1.7.2. Legal relevance:

It highlights gaps and inconsistencies in existing legislation, especially concerning the alignment of e-government measures with principles of administrative law. This helps inform the development of coherent, legally sound regulatory frameworks capable of guiding digital transformation.

1.7.3. Academic relevance:

It contributes to legal scholarship by analysing how fundamental administrative law principles—legality, proportionality, equality, transparency, accountability, and the protection of legitimate expectations—are being reinterpreted in digital contexts. This analysis enriches comparative debates on digital governance and clarifies how these principles evolve when applied to technologically mediated administrative procedures.

Ultimately, the dissertation provides a comprehensive review of the existing legal frameworks for digital governance, offering both theoretical and practical insights. It examines how modernisation of public administration seeks to enhance efficiency while preserving fundamental rights and public trust.

1.8. Research Methodology

This dissertation employs a legal-doctrinal approach accompanied by a comparative analysis, focusing on the E-Government Act of North Rhine-Westphalia (EGovG NRW) as a case study to examine its implications for administrative principles. The selection of this combined methodology is based on its ability to provide a consistent and methodical evaluation of statutory provisions, their implementation, and their alignment with the fundamental principles of administrative law[9]. By integrating doctrinal analysis with

[9] Chakravanti Kothari, Rajagopalachari. *Research methodology: Methods and techniques*. New Age International, 2004.

comparative perspectives, the research ensures both depth and breadth in its examination of the legal framework governing e-government.

1.8.1. Legal Doctrinal Approach: It entails the identification, interpretation, and critical evaluation of legal rules and principles[10].

1.8.1.1. Analysis of Legal Texts: The dissertation interprets and examines statutory provisions, including the German Basic Law (Grundgesetz)[11], the Administrative Procedure Act (Verwaltungsverfahrensgesetz – VwVfG)[12], the Federal E-Government Act (EGovG)[13], the Online Access Act (OZG)[14], the E-Government Act of North Rhine-Westphalia (EGovG NRW)[15], the General Data Protection Regulation (GDPR)[16], and the eIDAS[17] Regulation, in light of core administrative law principles such as legality, proportionality, transparency, equality, legitimate expectations, and effective legal protection.

1.8.1.2. The dissertation further interprets the provisions of the EGovG NRW within the broader framework of fundamental principles of administrative law. In this respect, the analysis examines how the Act seeks to reconcile the objectives of digital transformation with core legal principles and normative requirements.

1.8.2. Comparative Approach: By situating the NRW framework within the broader German and European context, the dissertation identifies best practices and highlights areas for legal refinement.

1.8.3. Primary sources include legislation, policy documents, and case law; secondary sources include academic literature and comparative studies.

1.8.4. A thematic analysis is applied to assess (1) compliance with administrative principles, (2) practical challenges of digitalisation, and (3) broader implications for governance.

---

[10] Council of Australian Law Deans, "Statement on the Nature of Legal Research" (2005), 1, https://cald.asn.au/wp-content/uploads/2023/11/cald-statement-on-the-nature-of-legal-research-20051.pdf
[11] *Grundgesetz für die Bundesrepublik Deutschland* [GG] [Basic Law], May 23, 1949, BGBl. I.
[12] *Verwaltungsverfahrensgesetz* [VwVfG] [Administrative Procedure Act], May 25, 1976, BGBl. I S. 1253.
[13] *E-Government-Gesetz* [EGovG] [Federal E-Government Act], June 17, 2013, BGBl. I S. 1558.
[14] *nlinezugangsgesetz* [OZG] [Online Access Act], August 14, 2017, BGBl. I S. 3122, 3138.
[15] *E-Government-Gesetz Nordrhein-Westfalen* [EGovG NRW] [North Rhine-Westphalia E-Government Act], July 8, 2016, GV. NRW. S. 541.
[16] Regulation (EU) 2016/679 (General Data Protection Regulation), GDPR, OJ L 119, 4.5.2016, p. 1–88.
[17] Regulation (EU) No 910/2014 (eIDAS Regulation), OJ L 257, 28.8.2014, p. 73–114.

1.8.5. Scope and Limitations of the Dissertation: The focus on NRW limits generalisability; case law remains scarce due to the Act's recent enactment; and the dissertation does not exhaustively cover all sector-specific regulations.

1.8.6. Use of Digital Tools: This dissertation has made limited and carefully monitored use of artificial intelligence tools for language refinement and idea structuring. All outputs have been critically reviewed and edited by the author to ensure compliance with scholarly standards.

1.9. Literature Review

The digital transformation of public administration in Germany has been extensively analysed in both national and comparative scholarship. In their 2024 study[18], Wirtz and Kubin emphasised that several factors have shaped Germany's approach to e-government reforms. Firstly, the federal structure of the country, coupled with its strong commitment to the Rechtsstaat principle, has resulted in a cautious and often fragmented approach to reform. Secondly, substantial variation across federal and state levels has been observed. This phase of reform focused on institutionalising digital infrastructure, particularly through secure electronic identity verification systems, culminating in the introduction of the electronic identity card (eID) in 2010. A pivotal constitutional development occurred in 2009 with the amendment introducing Article 91c of the Basic Law, which provided the legal foundation for cooperative federal action in information technology[19]. This was operationalised through the IT-Staatsvertrag (State Treaty on IT) and the establishment of the IT Planning Council (IT-Planungsrat), the first formal body coordinating digital governance across Germany's multi-level administrative structure.

Federal legislation such as the E-Government Act (E-Government-Gesetz, 2013)[20] and the Online Access Act (Onlinezugangsgesetz, 2017)[21] provided a legal framework for the integration of digital tools into administrative procedures, while state-level initiatives, including the EGovG NRW (2016)[22], illustrated both innovative practices and persistent

---

[18] Bernd W. Wirtz and Pascal R. M. Kubin, "*Governance Reforms in Germany: An Analysis of Digital Reforms,"* in Comparative Governance Reforms: Assessing the Past and Exploring the Future, ed. (Cham: Springer Nature Switzerland, 2024).

[19] Art. 91c GG (Basic Law for the Federal Republic of Germany).

[20] E-Government-Gesetz (EGovG), July 25, 2013, BGBl. I S. 2749, as amended July 5, 2021, https://www.gesetze-im-internet.de/egovg/.

[21] Germany, Onlinezugangsgesetz (OZG), Federal Law Gazette I, no. 49 (2017): 3122.

[22] North Rhine-Westphalia. Gesetz zur Förderung der elektronischen Verwaltung in Nordrhein-Westfalen (E-Government-Gesetz NRW) https://recht.nrw.de/lmi/owa/br_text_anzeigen?v_id=73520171220150354215.

inconsistencies in implementation. Bernhardt (2021) highlights that the scope of EGovG NRW initially allowed municipalities discretion over non-mandatory requirements, but later amendments clarified its application, extending obligations to municipal associations and embedding specialised provisions such as georeferencing in registers and interoperability standards for electronic documentation[23].

According to scholars such as Pünder and Stelkens, the fundamental principles of administrative law—namely, legality, proportionality, and procedural guarantees (Verfahrensgrundsätze)—are being challenged by digitalisation. Pünder observes that recent legislative trends, particularly in the context of digital administration, often prioritise efficiency over deliberation, sometimes diminishing procedural safeguards and public participation[24]. Stelkens raises concerns that the process of digitalisation may result in the transformation of procedural rights into mere simulations of legality, particularly in instances where automated systems replace conventional safeguards[25]. Rights such as the duty to hear (§28 VwVfG)[26], access to files (§29 VwVfG)[27], and the obligation to provide individualised reasoning (§39 VwVfG)[28] may be reduced to schematic input forms or standardised justifications, raising constitutional concerns including equality violations, democratic deficits, and the obligation under Art. 83 Basic Law[29] to ensure effective execution of federal law[30].

Beyond doctrinal concerns, data protection and privacy have also received considerable attention. Fraenkel-Haeberle (2020) argues that while the GDPR[31] is considered a cornerstone of European digital governance; fully digitalised administrative procedures may potentially compromise procedural fairness unless safeguards for participation and redress are explicitly integrated. Furthermore, information systems

---

[23] Wilfried Bernhardt, E-*Government-Gesetzgebung von Bund und Ländern im Vergleich und Best-Practices-Leitlinie,* Berichte des NEGZ Nr. 21 (Berlin: Nationales E-Government Kompetenzzentrum e. V., 2021).

[24] Hermann Pünder, "German Administrative Procedure in a Comparative Perspective: Observations on the Path to a Transnational Ius Commune Proceduralis in Administrative Law," International Journal of Constitutional Law 11, no. 4 (October 2013): 941, https://doi.org/10.1093/icon/mot045

[25] Ulrich Stelkens, "*Legal Certainty and Protection of Legitimate Expectations*," General Principles of Administrative Law, University of Speyer, 2016, lecture notes

[26] VwVfG, §28.

[27] VwVfG, §29.

[28] VwVfG, §39.

[29] Art. 83 GG.

[30] Ulrich Stelkens, "Verfassungsrechtliche Rahmenbedingungen des digitalisierten Verwaltungsverfahrens" (Presentation, Online Winter Conference of the ARGE Verwaltungsrecht NRW, 2024). https://arbeitsgemeinschaft-verwaltungsrecht-nrw.de/wp-content/uploads/2024/07/002-VerfassungsrechtlicheRahmenbedingungen.pdf

[31] Regulation (EU) 2016/679 (General Data Protection Regulation), Art. 22.

developed at federal, state, and municipal levels frequently exhibit a lack of interoperability, thereby impeding efficient data exchange and integrated service delivery[32].

When considered together, the extant literature illustrates a dynamic interplay between e-government innovation and administrative legal principles, shaped by various priorities including efficiency, legality and equity. The EGovG NRW provides a critical case study for examining these tensions, offering insights into the challenges of legislating digital transformation while preserving constitutional safeguards, including legality, proportionality, equality, transparency, accountability, and protection of legitimate expectations. Comparative perspectives demonstrate that other jurisdictions embed rule-of-law safeguards more explicitly into digital administration, suggesting potential avenues for doctrinal adaptation in Germany[33]. This dissertation therefore situates its analysis within these debates, asking whether the EGovG NRW succeeds in reconciling digital innovation with the enduring constitutional principles of German administrative law, and thereby contributes to both national and international discourse.

1.10. This first chapter has laid the foundations of the dissertation by introducing the research topic, outlining its motivation, and defining the central problem. It has presented the main research question together with sub-questions and hypotheses, and explained the methodological framework adopted. The chapter has also clarified the significance and relevance of the dissertation, highlighting its practical, legal, and academic contributions.

By situating the research within the broader context of administrative law and digital transformation, the chapter has established the rationale for using the E-Government Act of North Rhine-Westphalia as a case study. It has also underscored the importance of examining how digitalisation interacts with constitutional principles such as legality, proportionality, and procedural guarantees.

The following chapter builds on this foundation by providing the national context of e-government in Germany. It traces the development of federal legislation and explores how Germany's federal structure and commitment to the Rechtsstaat shape the digital transformation of public administration.

---

[32] Fraenkel-Haeberle, "*Fully Digitalized Administrative Procedures*,".
[33] Bernhardt, "E-*Government-Gesetzgebung"*, 11; Wirtz and Kubin, "*Governance Reforms in Germany*", 79.

Chapter 2: E-Government in the German Federal Administrative System

2.1. Introduction

The transformation of public administration is an ongoing process across European states, yet in Germany, it has evolved in a particularly cautious and legally oriented manner. This trajectory—shaped by the country's federal structure and its strong adherence to the rule-of-law tradition—has been described in the literature as comparatively slow and conservative, as noted by Mergel (2021)[34]. Comparative benchmarks, such as the European Commission's Digital Economy and Society Index (DESI), are often used to suggest that Germany lags behind other EU member states in the availability and usability of online public services[35]. Scholars attribute this underperformance to structural and institutional constraints, including the multi-layered administrative system across federal, Länder, and municipal levels, which—as argued by Bartholomae, Nam, and Steinhoff (2023)[36]—has contributed to fragmented and uneven patterns of digitalisation.

Public perceptions of German administration frequently highlight its bureaucratic complexity. Although citizens often express dissatisfaction with procedural burdens, Klumpp (2002) observes that trust in the reliability and legality of administrative institutions remains high[37]. This trust reflects an understanding of administration as a central guarantor of legality and predictability. At the same time, Germany's methodical approach to digital transformation—while slowing innovation—has helped reinforce confidence in the consistency and legality of administrative action. As Kai (2021) notes, the incentives for pursuing structural or systemic administrative reform remain limited, constrained by federalism, doctrinal conservatism, and dispersed political responsibilities. Consequently, digital reforms tend to proceed incrementally rather than through comprehensive institutional transformation[38].

---

[34] Mergel, Ines, "Digital Transformation of the German State," in Public Administration in Germany, eds. Sabine Kuhlmann, Isabella Proeller, Dieter Schimanke, and Jan Ziekow (Cham: Springer, 2021), 332-333.
[35] European Commission, "The Digital Economy and Society Index (DESI)," last modified August 7, 2024, https://digital-strategy.ec.europa.eu/en/policies/desi.
[36] Florian W. Bartholomae, Chang Woon Nam, and Peter Steinhoff, Does Federalism Affect E-Government in Germany?, CESifo Working Paper No. 10260 (2023),2. available at SSRN: https://ssrn.com/abstract=4357552 or http://dx.doi.org/10.2139/ssrn.4357552.
[37] Dieter Klumpp, "From Websites to E-Government in Germany," in Electronic Government, ed. Roland Traunmüller and Klaus Lenk (Berlin: Springer, 2002), 18.
[38] Kai Wegrich, "Is the Turtle Still Plodding Along? Public Management Reform in Germany," Public Management Review 23, no. 8 (2021), 1107–16.

Against this background, the evolution of e-government in Germany cannot be separated from the constitutional and administrative principles that structure public authority. Legality, proportionality, accountability, and transparency continue to provide the normative framework against which digital procedures are assessed. Digitalisation therefore raises not only questions of implementation, but also questions about how administrative principles are interpreted and operationalised in technologically mediated environments.

Within this context, the chapter examines the development of e-government in Germany with a focus on its legal and institutional dimensions. It traces the progression from early digital initiatives to the enactment of key legislative instruments such as the E-Government Act (EGovG) and the Online Access Act (OZG), while analysing the influence of federalism on implementation across the federation, the Länder, and municipalities. In addition, the chapter considers how technological infrastructures and legal requirements interact in shaping digital governance, particularly in relation to automated and data-driven procedures. This interaction is central to understanding how digital processes can remain aligned with the principles of legality, proportionality, accountability, and transparency, and how administrative law adapts to the growing reliance on digital systems.

Ultimately, the chapter situates Germany's digital transformation within its broader legal and institutional traditions. It provides the analytical foundation for Chapter Three, which examines the normative and practical implications of e-government for administrative law, including how digitalisation reshapes the balance between efficiency, legality, and the protection of individual rights.

2.2. Foundations of Administrative Law in Germany

In contrast to other branches of public law, the systematic codification of administrative law in Germany occurred at a relatively advanced stage in its doctrinal development. For a long period, administrative law evolved through case law and academic doctrine, rather than through an integrated legislative framework, with procedural and organisational aspects remaining largely uncodified well into the twentieth century. When administrative law emerged at the federal and imperial levels as an independent academic discipline, scholarly attention focused predominantly on substantive law rather than on administrative procedure[39]. As Kahl (2003) notes, codified procedural rules were not

[39] Wolfgang Kahl, "Das Verwaltungsverfahrensgesetz zwischen Kodifikationsidee und Sonderrechtsentwicklungen." In Verwaltungsverfahren und Verwaltungsverfahrensgesetz, pp. 68-135. Nomos Verlagsgesellschaft mbH & Co. KG, 2003. 68-69.

introduced until the latter half of the 20th century, culminating in the promulgation of the Federal Administrative Procedure Code (Verwaltungsverfahrensgesetz) in 1976. This legislation established a coherent set of procedural norms binding on administrative authorities, thereby marking an important step in the institutionalisation of administrative practice[40].

At this stage, it is essential to distinguish between substantive administrative law and administrative procedural law. Whereas substantive law defines the legal scope and content of administrative decision-making, procedural law structures the processes through which administrative authorities exercise their powers. Taken together, these two dimensions constitute the normative and institutional framework of German administrative practice[41].

In this context, several fundamental legal principles support the administrative decision-making process. These include the rule of law (Gesetzmäßigkeit der Verwaltung), proportionality (Verhältnismäßigkeit), and the protection of legitimate expectations (Vertrauensschutz). Such principles function as normative benchmarks that promote legal certainty, accountability, and transparency. As Sommerman (1997) emphasises, they should not be considered mere formal requirements, but rather substantive safeguards designed to prevent arbitrary actions by the state and to protect human dignity and individual liberty[42].

To situate these developments within a clearer conceptual framework, it is first necessary to clarify how German legal scholarship conceptualises “administration” and, on that basis, administrative law. From a formal perspective, administration is understood as the activity exercised by administrative authorities in an organisational sense, encompassing both direct state administration and forms of indirect administration, irrespective of whether the activity qualifies as administrative in a material sense[43]. This organisational understanding therefore refers to the entirety of state-based administrative bodies and their internal subdivisions, insofar as they are predominantly entrusted with materially

[40] Ibid, 71-82.
[41] Federal Ministry of the Interior (BMI), Minikommentar zum Gesetz zur Förderung der elektronischen Verwaltung (Berlin: BMI, 2013), 2, accessed January 29, 2026. https://www.bmi.bund.de/SharedDocs/downloads/DE/veroeffentlichungen/themen/moderne-verwaltung/e-government-gesetz-minikommentar.html.
[42] Sommermann, Karl-Peter. "Constitutional state and public administration." In Public Administration in Germany, edited by Sabine Kuhlmann · Isabella Proeller Dieter Schimanke · Jan Ziekow, 17-33. IIAS Series: Governance and Public Management, 2021, 21.
[43] Forsthoff, Verwaltungsrecht, 1; Maurer/Waldhoff AllgVerwR § 1 Rn. 8. Cited in Michael Fehling, ed., Verwaltungsrecht: VwVfG | VwGO | Nebengesetze, 5th ed. (Munich: C.H. Beck, 2021), 46.

administrative tasks[44]. It also includes public-law legal persons as well as private-law entities that are institutionally and exclusively assigned to one or more such public-law bodies[45].

On this conceptual basis, administrative law may be described as the body of public-law norms—both codified and uncodified—that structure the organisation of state administration and govern the exercise of administrative authority[46]. These norms are not confined to the internal sphere of administrative organisation; rather, they primarily shape the legal relationship between administrative authorities and individuals by defining the rights and obligations arising from administrative action[47]. In this sense, administrative law constitutes a normative framework that both enables public authority and protects individual legal positions.

2.2.1. Scope of Administrative Law and Procedural Law

Administrative procedural law constitutes a distinct and indispensable branch of administrative law, primarily concerned with regulating the formalised interactions between public authorities and individuals or legal entities. As Wade and Forsyth (2014) state, its protective function lies in establishing safeguards designed to prevent arbitrary administrative conduct and to promote fairness and transparency[48]. Otto Mayer (1961) similarly emphasises that procedural rules serve to constrain administrative excess and reinforce accountability. These norms are not merely technical instruments; they embody deeper commitments to the rule of law[49].

Bettermann (1959) characterises administrative procedural law as governing *"the formation, form, publication, enforcement, challenge, and modification of decisions issued by administrative authorities, as well as their review."*[50] Arzoz (2017) extends this understanding by framing administrative procedure as the set of rules and doctrines that structure decision-making by administrative bodies. From this perspective, regulation encompasses the procedural stages of initiation, processing, party participation,

---

[44] Maurer/Waldhoff AllgVerwR § 3 Rn. 1. Cited in Fehling, Verwaltungsrecht, 46.
[45] Fehling, Verwaltungsrecht, 46.
[46] Maurer/Waldhoff AllgVerwR § 3 Rn. 1. Cited in Fehling, Verwaltungsrecht, 46.
[47] Fehling, Verwaltungsrecht, 46.
[48] William Wade and Christopher Forsyth, Administrative Law (Oxford: Oxford University Press, 2014), 4.
[49] Otto Mayer, Deutsches Verwaltungsrecht [German Administrative Law], Volume 1 (Nachdruck, 1961 [1923]) Cited in Sabino Cassese, "New Paths for Administrative Law: A Manifesto," International Journal of Constitutional Law 10, no. 3 (2012), 605.
[50] Karl August Bettermann, "Das Verwaltungsverfahren," Veröffentlichungen der Vereinigung der Deutschen Staatsrechtslehrer (VVDStRL) 17 (1959): 119.

evidence-gathering, negotiation, decision-making, reasoning, and communication. These stages are guided by principles such as efficiency, fairness, proportionality, protection of legitimate expectations, and the presumption of validity[51]. Importantly, these principles often intersect with substantive legal norms, illustrating the integrated character of administrative law.

In the German legal context, administrative law encompasses both substantive and procedural dimensions. Substantive law regulates the organisation, powers, and legal obligations of public authorities, underpinned by principles such as legality, proportionality, and transparency. Procedural law governs the processes through which administrative decisions are prepared and adopted, guided by principles of procedural fairness, legal certainty, public participation, and efficiency[52].

The adoption of the Verwaltungsverfahrensgesetz (VwVfG) in 1976 marked a significant step in codifying general administrative procedure, reinforcing the systematic legal formalisation of administrative action within the federal rule-of-law framework[53]. Its scope, however, remains relatively restricted. As defined in Section 9 VwVfG[54], the Act applies primarily to activities producing external legal effects, including procedures for examining legal requirements, issuing administrative acts, and concluding administrative contracts[55].

The federal design of the basic law (Grundgesetz) created a perceived need for harmonisation of procedural rules at both federal and Länder levels, particularly since legislative implementation largely falls within Länder competence. This harmonisation was closely linked to strengthening the principle of legality in public administration[56].

---

[51] Xabier Arzoz, "Administrative Procedures," Max Planck Encyclopedia of Comparative Constitutional Law (2017).
[52] Jan Ziekow. "Das Verwaltungsverfahrensrecht in der Digitalisierung der Verwaltung." *Neue Zeitschrift für Verwaltungsrecht* 16 (2018), 1169.
[53] Wolfgang Hoffmann-Riem, "Verwaltungsverfahren und Verwaltungsverfahrensgesetz—Einleitende Problemskizze," in Verwaltungsverfahren und Verwaltungsverfahrensgesetz, hrsg. von Wolfgang Hoffmann-Riem und Eberhard Schmidt-Aßmann (Baden-Baden: Nomos, 2003), 13.
[54] Section 9 of the VwVfG
[55] Thomas Schmitz, "Implementing the Rule of Law in Public Administration by an Administrative Procedure Act – The Example of Germany," in Teoria şi practica administrării publice: Materiale ale Conferinţei ştiinţifico-practice cu participare internaţională, 20 mai 2016, Chişinău, ed. Oleg Balan et al. (Chişinău, 2016), 17 ff.
[56] Hoffmann-Riem, "Verwaltungsverfahren", 13.

Although the boundary between substantive and procedural domains is not always clearly defined[57], the distinction remains analytically useful for assessing the implications of e-government. Rather than a rigid doctrinal separation, the focus lies on the interplay and integration of these domains. This reflects broader scholarly observations that administrative law, and by extension administrative procedure, lacks a fully settled conceptual consensus regarding its precise boundaries[58].

Rather than maintaining the traditional distinction between substantive and procedural principles of administrative law, this thesis adopts a functional perspective. All principles—whether related to legality, equality, fairness, or legal certainty—are examined through their operational role within digital administrative governance. This approach allows for a comprehensive understanding of how digitisation affects both the exercise of administrative authority and the protection of individual rights, and how these evolving dynamics contribute to the legitimacy and accountability of modern public administration.

This understanding is embedded in the foundational premise that the development of administrative law as a scholarly discipline was driven by the objective of subjecting executive power to legal constraint. Central to this premise is the principle of legality and the gradual "judicialisation" of administrative action, whose archetypal manifestation is the administrative act. As articulated in classical doctrine, the administrative act embodies a legally bound determination of what is permissible in an individual case. The analogy to judicial adjudication does not entail the transposition of judicial procedure into the administrative sphere, but rather underscores the requirement that administrative decisions be reasoned, legally constrained, and capable of giving effect to substantive law.

A precise understanding of the scope of administrative procedure requires engagement with the concept of Verwaltungsverfahren as developed in German legal doctrine. From this doctrinal perspective, administrative procedure does not extend to administrative activity in its entirety, but is confined to a legally defined subset of administrative processes. Classical scholarship conceives administrative procedure as a legal

[57] Smith, E, 'Norway' in Auby, JB, (ed), Codification of Administrative Procedure (Bruylant 2014) 284, as cited in Arzoz, Xabier. "Administrative Procedures." Max Planck, Encyclopedia of Comparative Constitutional Law (2017).

[58] J.-B. Auby, ed., Codification of Administrative Procedure (Bruylant, 2014), as cited in Xabier Arzoz, "Administrative Procedures," Max Planck Encyclopedia of Comparative Constitutional Law (2017).

construct through which rule-of-law requirements are translated into structured administrative decision-making[59].

While rules on competence and organisation permeate the full range of administrative activity—including actions carried out under private law—an administrative procedure in the strict doctrinal sense exists only where a public authority, acting under public law, adopts decisions that externally affect the rights or obligations of identifiable individuals. Within this framework, acts of administrative norm-setting are generally excluded from the concept of administrative procedure, owing to their abstract character and the absence of an individualised procedural relationship[60].

This doctrinal orientation reflects a longstanding understanding within administrative law scholarship that the discipline emerged in response to the imperative of subjecting executive action to the rule of law. Central to this understanding is the principle of legality and the gradual shaping of administrative action into legally structured forms that permit effective legal scrutiny. In this context, the concept commonly referred to as the "judicialisation" of administration does not imply the transplantation of judicial procedures into the executive sphere, but rather the development of administrative decisions that are legally framed and reviewable. The administrative act, as famously conceptualised by Otto Mayer[61], exemplifies this development insofar as it constitutes an authoritative determination of legal consequences in an individual case. Its significance lies not in procedural imitation, but in the requirement that administrative decisions be norm-based, reasoned, and capable of giving effect to substantive law.

Furthermore, the procedural framework also shapes the position of individuals in their interactions with the administration. Under certain conditions, an individual may rely on a claim to the reopening of a concluded procedure or the modification of an unlawful administrative act where a consistent administrative practice has given rise to a form of self-binding. In such cases, a departure from established practice in an individual situation would require objective justification. This illustrates how procedural norms do not merely structure

[59] Kopp, Verfassungsrecht und Verwaltungsverfahrensrecht, 1971; Lorenz , Der Rechtsschutz des Bürgers und die Rechtsweggarantie, 1973, S. 178 ff. Cited in Hans-Uwe Erichsen and Peter Badura, eds., Allgemeines Verwaltungsrecht (Berlin: De Gruyter, 1975; repr., 2019), 243.
[60] Erichsen und Martens, Allgemeines Verwaltungsrecht, 243.
[61] Otto Mayer, Deutsches Verwaltungsrccht, Erster Band, 1895, § 5, Cited in Erichsen and Badura, Allgemeines Verwaltungsrecht, 234-235.

administrative action, but also function as mechanisms for safeguarding equality and protecting legitimate expectations within administrative relationships.

Furthermore, the procedural framework also shapes the rights of individuals in their interactions with the administration. For example, a person has a claim to the reopening of a concluded procedure or the modification of an unlawful administrative act only where a consistent administrative practice has created a form of self-binding, such that deviation in the individual case would lack objective justification[62]. This illustrates how procedural norms not only structure administrative action but also protect equality and legitimate expectations within administrative relationships.

This doctrinal clarification is essential for assessing how digitalisation affects administrative action, as digital procedures tend to blur traditional boundaries between substance and procedure.

2.2.2. Core Principles of Administrative Law:

Within administrative law, certain core principles serve as foundational guides for the exercise of public authority. Grounded in constitutional norms and shaped by evolving legal doctrine, these principles ensure that administrative actions are not only lawful but also procedurally fair, predictable, and attuned to the needs of the public.

It should firstly be noted that, in this dissertation, the classification of administrative law principles as either substantive and procedural is of an analytical nature. Substantive principles guide the content and justification of administrative acts, determining what decisions should be made and how they comply with the law. On the other hand, procedural principles regulate the manner in which decisions are made, thereby ensuring fairness, transparency, and predictability in administrative processes. It is acknowledged that certain principles, such as legal certainty or transparency, may possess both substantive and procedural dimensions. However, for the purpose of analytical clarity, this chapter will address them according to their primary function within the context of administrative decision-making.

The following sections provide a structured overview of these key principles and their role in guiding administrative practice.

[62] Hans-Uwe Erichsen and Peter Badura, eds., Allgemeines Verwaltungsrecht (Berlin: De Gruyter, 1975; repr., 2019), 288.

2.2.2.1. Substantive Principles

In this section, the following principles will be pertinent: legality, proportionality, protection of legitimate expectations, equality, transparency, and legal certainty.

2.2.2.1.1. Principle of legality

The principle of legality is considered to be a foundational norm of German administrative law. It requires that all administrative action be based on statutory authority and exercised in accordance with the competences and procedural rules established by law, as articulated in Article 20(3) of the Basic Law (Grundgesetz)[63]. This requirement assumes particular significance in the context of administrative acts, which are required to satisfy both formal legality—concerning the competence of the issuing authority, procedural compliance, and appropriate form—and material legality, which relates to the substantive content of the act[64]. In this sense, legality must be regarded not merely as a formal constraint on administrative authority, but as a substantive guarantee that administrative power remains normatively anchored and legally accountable.

The principle encompasses two core dimensions: the primacy of law (Gesetzesvorrang), which prohibits administrative acts that contradict statutory provisions, and the requirement of a legal basis (Gesetzesvorbehalt)[65], which demands statutory authorisation for administrative measures, particularly where they entail interference with individual rights.

The Federal Constitutional Court has refined this principle through the Wesentlichkeitstheorie, holding that essential decisions affecting fundamental rights must be taken by the legislature itself[66].

Within the framework of the Verwaltungsverfahrensgesetz (VwVfG), legality is operationalised through procedural safeguards such as the duty to investigate (§24), the right to be heard (§28), and the obligation to provide reasons (§39). These provisions ensure that administrative decisions are lawful, transparent and subject to review[67].

---

[63] Art. 20 (3) GG.

[64] Mitskevich, Ludmilla A. "Administrative acts of Germany." *Журнал Сибирского федерального университета. Серия: Гуманитарные науки* 4, no. 2 (2011): 216-222. 219-221

[65] Steffen Detterbeck, Allgemeines Verwaltungsrecht (18th ed.; Munich: C.H. Beck, 2020), 70.

[66] Scientific Services of the German Bundestag, Criteria of the Wesentlichkeitstheorie of the Federal Constitutional Court, WD 3-152/19 (June 14, 2019), 1–2, https://www.bundestag.de/resource/blob/655254/1764b49aa3c85458a840652cf134e031/WD-3-152-19-pdf-data.pdf

[67] *GG Art. 20(3);* VwVfG, §§ 24, 28, 39.

Closely related is the concept of administrative discretion (Ermessen). Discretion requires that administrative authorities act within the limits conferred upon them by law and in accordance with the purpose of the statutory authorisation[68]. A failure to do so—whether through exceeding those limits or misusing discretion—renders the administrative act unlawful[69].

The principle of legality also resonates with the broader European framework. Under Article 5(2) of the Treaty on European Union (TEU), the principle of conferral requires that public authorities act solely within the powers granted to them by law[70]. This parallel underscores the shared commitment to legality as a safeguard against arbitrary governance.

While the principle has long served as a bulwark against arbitrariness in public administration, the advent of digitalisation and algorithmic decision-making introduces new legal complexities. Automated administrative systems must likewise operate within a clearly defined and accountable legal framework, raising questions as to how statutory authorisation, procedural safeguards, and mechanisms of judicial review can be adapted to preserve legality in an era of algorithmic governance.

2.2.2.1.2. Principle of Proportionality

The principle of proportionality (Verhältnismäßigkeit) is a cornerstone of German administrative law, guiding both the exercise of public authority and the judicial review of administrative discretion. It requires that any administrative measure interfering with individual rights satisfy three cumulative tests: suitability (Geeignetheit), necessity (Erforderlichkeit), and appropriateness (Angemessenheit). This structured framework ensures that governmental action remains rational, balanced, and consistent with the requirements of a democratic society governed by law[71].

This tripartite analysis has been widely adopted in both German and European jurisprudence. As Stott (1997) explains, the suitability criterion assesses whether the chosen measure is capable of achieving the intended objective. The necessity requirement examines whether a less restrictive but equally effective alternative could have been employed.

[68] Künnecke, Marina, Tradition and Change in Administrative Law: An Anglo-German Comparison, Berlin, Springer, 2007, 37.
[69] Administrative Procedure Act (VwVfG) § 40 (“Discretion”).
[70] Herwig C.H. Hofmann, “General Principles of EU Law and EU Administrative Law,” in European Union Law, ed. Catherine Barnard and Steve Peers, 3rd ed. (Oxford: Oxford University Press, 2020), 223.
[71] Yutaka Arai-Takahashi, “Proportionality – A German Approach,” in The Principle of Proportionality in European Law, ed. Evelyn Ellis (Oxford: Oxford University Press, 1999), 123–145.

Finally, proportionality in the strict sense—the balancing test—evaluates whether the burden imposed on the individual is excessive in relation to the public benefit pursued. Together, these steps discipline administrative discretion and reinforce the legitimacy of state intervention[72].

Despite its widespread acceptance, interpretive challenges remain. Nolte (1994) highlights concerns about the conceptual clarity of "appropriateness," noting that a measure failing to achieve its objective may be mischaracterised as disproportionate, even if its intent was legitimate. Similarly, the necessity criterion risks being misunderstood unless situated within the broader proportionality framework[73]. These critiques underscore the importance of a nuanced and context-sensitive application of the principle.

At the European level, the principle of proportionality was referenced in Article 5(4) of the Treaty on European Union[74], which stipulates that Union action must not exceed what is necessary to achieve the objectives of the Treaties. While echoing the German tripartite structure, this formulation reflects the EU's constitutional order and reinforces proportionality as a safeguard against excessive or arbitrary governance. Both at the national and supranational levels, administrative decisions are therefore expected to demonstrate a rational alignment between the means employed and the ends pursued[75].

In the context of digital transformation, proportionality faces new challenges. As Widlak et al. (2020) observe, the reuse of a single dataset across multiple administrative processes raises concerns about the cumulative effects of decision-making. This development suggests the need for a broader understanding of proportionality—one that extends beyond the assessment of isolated administrative acts to encompass the systemic architecture of data systems and information flows[76].

2.2.2.1.3. Protection of Legitimate Expectations

The principle of the protection of legitimate expectations (Vertrauensschutz) reflects the understanding that individuals should be able to rely on the legality, consistency, and

[72] David Stott, Principles of Administrative Law (London: Routledge-Cavendish, 1997), 277.
[73] Georg Nolte, "General principles of German and European administrative law: a comparison in historical perspective." *The Modern Law Review* 57, no. 2 (1994), 193.
[74] European Commission. *Consolidated Version of the Treaty on European Union*. OJ C 326, 26 October 2012, pp. 13–390
[75] Arian Petoft, "The Concept and Instances of General Principles of Administrative Law: Towards a Global Administrative Law," Cuestiones Constitucionales 42 (2020), 345.
[76] Arjan Widlak, Marlies van Eck, and Rik Peeters, "Towards Principles of Good Digital Administration: Fairness, Accountability and Proportionality in Automated Decision-Making," in The Algorithmic Society, 67–83 (London: Routledge, 2020), 10.

reliability of administrative action. Such reliance extends beyond confidence in the institutional competence of public authorities to include an expectation of stability in the effects of administrative decisions. Accordingly, the principle operates as a limitation on the ability of administrative bodies to retroactively revoke or alter favourable decisions in a manner detrimental to the individual—particularly in the absence of a clear legal basis[77].

In German administrative law, this principle is codified in Section 48(2) of the Administrative Procedure Act (*Verwaltungsverfahrensgesetz – VwVfG*), which stipulates that an unlawful administrative act conferring a pecuniary benefit may not be revoked if the recipient has relied on its validity and such reliance, when weighed against the public interest in revocation, warrants legal protection[78]. The Federal Constitutional Court has further anchored this principle within the broader framework of legal certainty (*Rechtssicherheit*) and the rule of law under Article 20(3) of the Basic Law (*Grundgesetz*)[79], thereby elevating it to a constitutional dimension.

At the European level, the doctrine of legitimate expectations has developed through the jurisprudence of the Court of Justice of the European Union. Accordingly, the principle safeguards individuals from the retroactive annulment of administrative decisions on which they reasonably relied. As Nolte (1994) notes, the principle affords not only procedural safeguards but also substantive legal protection, reinforcing the integrity of public administration and promoting legal certainty across jurisdictions[80].

Ultimately, the protection of legitimate expectations functions as a stabilising force within administrative law. It ensures that public authorities act in a manner that is predictable, accountable, and respectful of individual reliance.

By doing so, it serves to reinforce the foundational values of legal certainty and trust in public institutions – values that acquire renewed importance in the context of digital governance, where the use of algorithms and data-driven processes has the potential to challenge traditional reliance interests.

2.2.2.1.4. Principle of Equality

[77] Terhi Arjola-Sarja, “The Ombudsman as an Advocate for Good Administration,” in Parliamentary Ombudsman of Finland: 90 Years (2010), 101.
[78] VwVfG, § 48(2).
[79] Art. 20(3) GG.
[80] Nolte, "General principles of German and European administrative law”, 195.

The principle of equality stipulates that all individuals must be treated impartially under the law, irrespective of their social or institutional position. As Stott (1997) notes, this principle underpins legal equality by ensuring that individuals benefit from comparable safeguards while bearing equivalent responsibilities. Within a rule-of-law framework, it is presumed that all persons are equally bound by the same legal norms, thereby reinforcing the legitimacy and fairness of administrative governance[81].

In the German constitutional order, equality before the law is firmly embedded in Article 3 of the Grundgesetz. This provision prohibits preferential or adverse treatment based on characteristics such as sex, parentage, race, language, national or social origin, faith, or political belief. It functions both as a normative commitment to equal treatment and as a constitutional benchmark for evaluating administrative conduct[82].

From an administrative law perspective, the principle has undergone significant evolution. As Nolte (1994) observes, its early application primarily constrained authorities from deviating—without sufficient justification—from established patterns of behaviour, even within the bounds of discretion. Over time, Article 3(1) supported the development of the doctrine of Selbstbindung der Verwaltung (administrative self-binding), whereby consistent adherence to internal guidelines, such as circulars or instructions, could generate legitimate expectations. Departures from these informal norms were increasingly scrutinised as potential infringements of the equality principle, particularly when such guidelines effectively standardised discretionary decision-making[83].

The digitalisation of administrative processes has introduced new dimensions to the equality debate. As Coglianese (2021) mentioned, algorithmic bias raises concerns regarding impartiality, since automated systems trained on data reflecting existing social or structural inequalities may reproduce or amplify those biases[84]. This development highlights the need to consider adapting equality principles to ensure that digital governance remains consistent with constitutional guarantees of fairness and non-discrimination.

In addition to its constitutional and procedural importance, the principle of equality has been expanded to include protection against discrimination. This is reflected in the german Equal Treatment Act (Allgemeines Gleichbehandlungsgesetz – AGG)[85], which

[81] Stott, Principles of Administrative Law, 23-24.
[82] Art. 3 GG.
[83] Nolte, "General principles of German and European administrative law", 203
[84] Cary Coglianese, "Administrative Law in the Automated State," Daedalus 150, no. 3 (2021), 112.
[85] The General Equal Treatment Act (*Allgemeines Gleichbehandlungsgesetz – AGG*)

prohibits discrimination based on race, sex, religion, disability, age, or sexual orientation. This legislative framework thus reinforces the commitment to equality as a fundamental principle and ensures that administrative practices comply with broader European human rights standards.

2.2.2.1.5. Principle of Accountability

The principle of accountability is a cornerstone of lawful administration, obligating public officials to justify their decisions and actions according to established legal standards and democratic principles. It limits discretionary power by promoting transparency, ensuring legal compliance, and reinforcing institutional responsibility[86].

Accountability is enshrined in Article 34 of the German Basic Law. This provision states that when a public official violates an official duty and causes harm to a third party, the primary responsibility lies with the state as the employing authority. At the same time, it preserves the possibility of recourse against the individual in cases of intentional misconduct or gross negligence, thereby balancing institutional liability with personal responsibility[87].

Procedural reinforcement of accountability is found in Article 39 of the Verwaltungsverfahrensgesetz (VwVfG)[88], which establishes the Begründungspflicht—the duty to provide reasons. Public authorities must accompany administrative decisions with the legal and factual grounds on which they are based. In cases involving discretion, decisions must be supported by clear and well-substantiated considerations, ensuring that both the rationale and proportionality of administrative action are transparent and subject to review[89].

The principle of accountability is firmly embedded in the traditions of the rule of law and is activated through a variety of administrative safeguards and institutional controls, as well as judicial oversight. By granting individuals the right to challenge decisions that affect their rights, administrative courts play a crucial role in reviewing the legality and proportionality of administrative decisions. In addition to this judicial oversight, audit institutions at the federal, state, and local levels monitor the implementation of

[86] Stott, Principles of Administrative Law, 23-24.
[87] Art. 34 GG.
[88] VwVfG, § 39.
[89] Petoft, "General Principles of Administrative Law", 348; See also Erichsen and Badura, Allgemeines Verwaltungsrecht, 348.

administrative procedures. Although these institutions lack direct enforcement powers, their public reports have a significant impact on administrative practice[90].

In the context of digital transformation and governance based on automated and algorithmic decisions, this dissertation examines the principle of accountability to explore how automated decisions remain transparent, appealable, and subject to institutional audit. This is particularly relevant given that the German administrative system is characterized by close oversight of administrative discretion, as noted by Mehdi (2021), a feature that must be preserved and adapted to meet the challenges posed by automated decision-making[91].

2.2.2.1.6. Principle of transparency

The principle of transparency (Transparenzprinzip) is widely recognised as a foundational value of democratic governance and the rule of law. Although not formally codified as an autonomous principle in the same manner as legality or proportionality, it operates as a procedural guarantee that reinforces core administrative law standards, including accountability, participation, and legality.

In German administrative law, transparency is embedded in a range of procedural safeguards. The Verwaltungsverfahrensgesetz (VwVfG) grants parties the right to access relevant files (§29), obliges authorities to provide reasons for administrative decisions (§39), and requires that affected individuals be adequately informed[92]. These provisions enable citizens to understand the legal basis of administrative actions, evaluate their legality, and exercise their rights effectively. Transparency thereby facilitates judicial review and public oversight, particularly in areas involving discretionary power or complex regulatory frameworks.

Beyond individual proceedings, transparency is institutionalised through obligations on public authorities to provide information to citizens[93]. The German Freedom of Information Act (Informationsfreiheitsgesetz)[94] enshrines the right to obtain official information held by federal authorities[95]. This right is reinforced by corresponding legislation at the state level, such as the Freedom of Information Act for North

[90] Veith Mehde, “Control and Accountability: Administrative Courts and Courts of Audit,” in Public Administration in Germany, Governance and Public Management Series (Cham: Springer, 2021), 185–203.
[91] Ibid.
[92] VwVfG, § 29, § 39.
[93] Jan Ziekow, "Administrative procedures and processes." *In Public Administration in Germany*, pp. 163-183. Cham: Springer International Publishing, 2021, 168.
[94] Freedom of Information Act, BGBl. I S. 2722 (2005).
[95] VwVfG, § 29.

Rhine-Westphalia[96], which explicitly promotes openness and civic participation. These legal provisions signify a deviation from the conventional principle of official secrecy, which is recognised as an openness in contemporary administrative practice.

These developments demonstrate that transparency functions as a comprehensive normative standard whose legal and practical importance is constantly expanding. In the context of digitalisation, transparency acquires renewed importance, ensuring that data-driven and algorithmic administrative processes remain comprehensible, contestable, and subject to oversight. As highlighted in Germany's submission to the OECD Roundtable on Procedural Fairness, transparency is increasingly regarded as a constitutional requirement underpinning fair administrative proceedings and strengthening public trust in public institutions[97].

2.2.2.2. Procedural Principles

Procedural principles define how administrative decisions should be taken, ensuring fairness, transparency, and predictability in interactions with the administration. While substantive principles guide the content and justification of administrative acts, procedural principles focus on the manner of decision-making, protecting individual rights and promoting trust in administrative processes. The following sections elaborate on key procedural principles widely recognised in German administrative law, with particular attention to their application in a digital administrative environment.

2.2.2.2.1. Procedural Fairness (Verfahrensgerechtigkeit)

The principle of procedural fairness is also a fundamental constitutional principle in the German administrative system. This principle confers considerable importance on legal procedures, irrespective of the evaluation of their objective outcomes. Its significance lies in its provision of a framework for assessing the legality of administrative actions. Accordingly, administrative procedures are assessed not only on the basis of their results but also on the fairness and integrity of the process itself[98].

Procedural fairness is realised through a cluster of guarantees, including the right to be heard, the right of defence, the right to an impartial and independent adjudicator, and the

[96] Freedom of Information Act of North Rhine-Westphalia, GV. NRW. S. 694 (2001).
[97] OECD, "Procedural Fairness: Transparency Issues in Civil and Administrative Proceedings – Germany," Working Party No. 3, 16 February 2010, Bundeskartellamt publication.
[98] Robert Summers, 'Evaluating and Improving Legal Process–A Plea for'Process Values'(1974/Vol. 60/No. 1) Cornell Law Review, 1.

right to judicial review[99]. In regulatory contexts, where administrative bodies frequently impose significant restrictions on individual rights and freedoms, these safeguards assume particular importance. It is therefore vital to ensure robust procedural guarantees to maintain legitimacy and protect individuals against arbitrary state action[100].

Within the framework of the German Administrative Procedure Act "Verwaltungsverfahrensgesetz (VwVfG)", procedural fairness is concretised in provisions such as the duty to investigate (§24), the right to be heard (§28), and the obligation to provide reasons (§39). These rules require authorities to engage with affected individuals before rendering decisions, to base determinations on a complete and accurate factual record, and to justify their actions transparently[101]. Collectively, they reinforce the integrity of administrative processes and safeguard individuals from opaque or arbitrary decision-making[102]. From a constitutional perspective, procedural fairness is anchored in Article 20(3) of the Grundgesetz, which binds all executive action to law and justice, thereby elevating procedural guarantees to a constitutional dimension[103].

While these provisions are intended to ensure procedural fairness, there could be adverse implications for efficiency. Extensive procedural guarantees can lengthen proceedings and increase costs, potentially burdening private parties[104]. The traditional procedural ideal (Verfahrensgedanke) has therefore come under pressure in the contemporary administrative landscape. As Pünder (2013) observes, recent legislative trends—particularly in the context of digital administration—have often prioritised efficiency over deliberation. This shift has been achieved by diminishing the weight of procedural safeguards, thereby weakening traditional guarantees of public participation and procedural legitimacy[105].

---

[99] Maciej Bernatt, Sprawiedliwość proceduralna w postępowaniu przed organem ochrony konkurencji [Procedural fairness in the proceedings before the competition authority] (Warszawa: Wydawnictwo Naukowe WZ UW, 2011), 91–98, cited in Maciej Bernatt, "Administrative Sanctions: Between Efficiency and Procedural Fairness," Review of European Administrative Law 9, no. 1 (2016): 8.

[100] Maciej Bernatt, "The Principle of Procedural Fairness and its Implementation in the Administrative Proceedings—Perspective of the Country in the Democratic Transition," SSRN (March 25, 2013): 10, https://ssrn.com/abstract=2239145.

[101] Bernatt, "Administrative Sanctions," 8.

[102] VwVfG, §§ 24, 28,39.

[103] Art. 20(3) GG.

[104] Bernatt, "Administrative Sanctions," 8.

[105] Pünder, "German Administrative Procedure", 941.

2.2.2.2.2. Legal Certainty

The principle of legal certainty (Rechtssicherheit) is widely regarded as "*one of the requirements of the ideal of the Rechtsstaat*."[106] It ensures that individuals can foresee the legal consequences of administrative actions and rely on the stability of legal norms. The principle of certainty is closely associated with the rule of law, as outlined in Article 20(3) of the Basic Law. This stipulation asserts that all executive actions are to be in accordance with the principles of law and justice. Legal certainty serves as a safeguard against arbitrary rule by requiring that laws and administrative measures be clear, accessible, and consistently applied[107].

Legal certainty requires that laws be sufficiently clear and accessible, that administrative decisions be consistent and foreseeable, and that retroactive changes be limited to protect legitimate expectations. Tensions may arise between legal certainty and legality, particularly when correcting unlawful administrative acts risks undermining public trust or producing disproportionate consequences. This underscores the need to carefully balance the corrective role of legality with the stabilising effect of legal certainty in administrative procedures[108].

In administrative procedures, legal certainty is reinforced through mechanisms such as the obligation to provide reasons for decisions (§39 VwVfG), the protection of legitimate expectations (§48 VwVfG), and the requirement that administrative acts be issued by competent authorities following proper procedures[109]. These safeguards ensure that individuals are not subject to unpredictable or retroactive changes in legal status and that administrative discretion is exercised within a stable and transparent framework. In this sense, the rights and obligations of citizens, as formulated in law, must correspond to their practical enforcement.

In the digital era, legal certainty faces new challenges. Automated decision-making systems, dynamic databases, and algorithmic governance can modify traditional expectations of stability and predictability in administrative processes[110]. Such

[106] Lifante-Vidal I (2020) Is legal certainty a formal value? Jurisprudence 11(3), 457.
[107] Art. 20(3) GG.
[108] Stelkens, "Legal Certainty and Protection of Legitimate Expectations".
[109] VwVfG §§ 39, 48.
[110] Stelkens, "Legal Certainty and Protection of Legitimate Expectations".

developments raise important questions about how legal certainty can be preserved when administrative outcomes are increasingly shaped by evolving technological tools.

2.2.2.2.3. Public Participation

The principle of public participation (Bürgerbeteiligung) embodies the democratic requirement that individuals affected by administrative decisions should have the opportunity to engage meaningfully in the decision-making process. It operates both as a procedural safeguard and as a mechanism to enhance the legitimacy, transparency, and responsiveness of administrative action. Additionally, modern administrative law increasingly recognises citizens not merely as passive recipients of administrative measures but as active contributors whose input helps shape the quality and acceptability of administrative outcomes. However, contemporary approaches highlight participation as a means of acknowledging citizens' role in influencing and guiding administrative processes[111].

At the European level, public participation has been recognised as a core principle of administrative law, shaped by the gradual institutional development of the European Communities. Since the 1990s, the concept of participation has been a recurring theme in institutional discourse, reaching a pivotal moment with the publication of the 2001 White Paper on European Governance. This document identified openness, participation, accountability, effectiveness, and coherence as guiding principles for EU institutions, thereby situating public participation within a broader normative framework of governance[112]. The evolution of this principle is indicative of a broader movement to entrench the values of good governance and democratic transparency within the EU's administrative framework.

The principle of public participation is well-established within German administrative law, particularly in areas such as environmental regulation, infrastructure projects, and spatial planning. Under the Administrative Procedure Act (Verwaltungsverfahrensgesetz – VwVfG), procedures like the Plan Approval Procedure (Planfeststellungsverfahren) require authorities to notify affected parties and provide

[111] Petoft, "General Principles of Administrative Law", 351.
[112] Joana Mendes, Participation in EU Rule-Making: A Rights-Based Approach (Oxford: Oxford University Press, 2011).

opportunities for public hearings[113]. These processes guarantee that individuals and interest groups have the right to raise objections (Einwendungen). Complementing these general provisions, sector-specific legislation—most notably the Environmental Impact Assessment Act (Umweltverträglichkeitsprüfungsgesetz – UVPG)—makes public participation a mandatory prerequisite for projects with significant ecological consequences[114].

Scholarly perspectives further highlight the importance of participation. As Gerd (2014) observes, administrative decision-making should not be entrusted exclusively to technical experts but should be embedded within procedures that provide opportunities for citizen involvement. Such participation is particularly vital where decisions affect collective interests or fundamental rights[115]. Active engagement of citizens in this manner enhances the legitimacy of administrative action and strengthens public trust in governance[116].

From a constitutional perspective, public participation is anchored in the principles of democracy and the rule of law under Article 20 of the Grundgesetz. Participation is therefore not merely a procedural formality but a substantive component of lawful administration, ensuring that administrative processes remain transparent, accountable, and responsive to the citizenry.

2.2.2.2.4. Efficiency and Timelines

The principle of efficiency and timeliness (Effizienz und Zeitgerechtigkeit) reflects the expectation that administrative procedures be conducted in a manner that is both resource-conscious and temporally appropriate. Although not always codified as a standalone legal norm, it is widely recognised as a functional requirement of lawful administration, closely connected to the principles of proportionality, transparency, and good governance.

Efficiency constitutes a central normative standard in German administrative law. It guides public authorities in the prudent allocation of resources, the avoidance of unnecessary procedural delays, and the timely achievement of administrative objectives. Legislative

---

[113] VwVfG.

[114] Gesetz über die Umweltverträglichkeitsprüfung (UVPG) [Federal Environmental Impact Assessment Act], Bundesgesetzblatt I 2017, 2808, as amended (current version at: https://www.gesetze-im-internet.de/uvpg/).

[115] Gerd Winter, "Theoretical Foundations of Public Participation in Administrative Decision-Making," Environmental Democracy and Law (2014), https://www.gerd-winter.jura.uni-bremen.de/theoretical_foundations.pdf

[116] Klaus F. Röhl, "Verfahrensgerechtigkeit (Procedural Justice): Einführung in den Themenbereich und Überblick," Zeitschrift für Rechtssoziologie 14, no. 1 (1993), 19.

reforms of the early 1990s[117] illustrate how this principle was translated into concrete measures that continue to influence the organisation and conduct of administrative procedures.

In German law, efficiency and timeliness are operationalised through procedural mechanisms designed to prevent undue delay and promote discipline. The Verwaltungsverfahrensgesetz (VwVfG) includes provisions such as §10, which obliges authorities to conduct proceedings in a simple, expedient, and timely manner, thereby discouraging unnecessary complications[118]. As Pünder (2013) notes, the German approach seeks to reconcile procedural integrity with the practical need for effective and timely decision-making[119].

The principle is also closely linked to the concept of time limits, which reinforce the expectation that administrative procedures be concluded within a reasonable period[120]. This is particularly critical in contexts involving discretionary powers, where prolonged inaction may amount to implicit denial or procedural unfairness. Scholarly debate has focused on administrative silence, where authorities fail to respond within a reasonable timeframe, prompting discussions on legal fictions that treat silence as implicit approval in certain circumstances[121].

While e-government platforms enable accelerated processing, real-time monitoring, and automated feedback, these gains must be carefully balanced against the requirements of procedural accuracy, transparency, and human oversight. Efficiency cannot override fairness or legal safeguards, particularly when algorithms are employed in complex or rights-sensitive determinations.

2.2.2.2. Conclusion

Taken together, the principles of procedural fairness, legal certainty, public participation, and efficiency and timeliness form the procedural backbone of German administrative law. Each principle adds a unique normative aspect to administrative procedures: procedural fairness safeguards impartial treatment and respect for individual

[117] Andreas Voßkuhle, "Allgemeines Verwaltungs- und Verwaltungsprozeßrecht," in Rechtswissenschaft und Rechtsliteratur im 20. Jahrhundert, 935–968 (Munich: C.H. Beck, 2021), 940–943, https://doi.org/10.17104/9783406731181-935

[118] VwVfG, § 10.

[119] Pünder, "German Administrative Procedure", 941.

[120] Petoft, "General Principles of Administrative Law", 346.

[121] Bettina Engewald, "Administrative Silence in Germany," in The Sound of Silence in European Administrative Law, eds. Dacian C. Dragos, Polonca Kovač, and Hanna Tolsma (Cham: Palgrave Macmillan, 2020).

rights; legal certainty ensures predictability and stability; public participation strengthens democratic legitimacy and civic engagement; and efficiency promotes responsive and resource-conscious governance. These principles are not merely isolated norms but are collectively anchored in the constitutional framework of the Grundgesetz. Article 20(3) provides the foundational mandate that all executive action be bound by law and justice, thereby establishing the overarching Rechtsstaat tradition from which these procedural requirements derive their authority.

The implications of e-governance for these foundational principles will be examined in detail in Chapter Three of this dissertation.

2.3. Administrative Reform and Digital Transformation in Germany

Building on both the cautious and legally grounded trajectory outlined in the introduction and the foundational principles of administrative procedure, the following section examines how these dynamics materialise within Germany's federal administrative framework and its ongoing digital transformation.

Within the German federal system, each Land historically enacted its own Administrative Procedure Act, resulting in a degree of procedural diversity. These differences, however, are generally limited, as most Länder either explicitly refer to the Federal Administrative Procedure Act (Verwaltungsverfahrensgesetz, VwVfG) or replicate its core provisions with only minor adaptations[122].

Administrative reform in Germany, particularly in the context of digitalisation, has traditionally been characterised by caution and incrementalism. Recent years, however, indicate a gradual acceleration of reform. Of particular relevance to digital administration, the VwVfG includes provisions on electronic communication, most notably in Sections 3a and 71e, which form part of the legal architecture supporting digital administrative processes[123].

At the supranational level, the eIDAS Regulation has set standards for cross-border digital public services and electronic identification, necessitating adjustments within national legal frameworks[124]. Domestically, the Online Access Act (OZG) marks a key step

[122] Thomas Schmitz, "The administrative procedure in German administrative law." *Administrative Decision and Administrative Procedure under German, French and Vietnamese Law* (2013). 2
[123] VwVfG, § 3a and §71e.
[124] eIDAS

towards modernising administrative structures, signalling political commitment and prompting institutional reorganisation within federal ministries[125].

2.4. The Historical and Institutional Context of Digitalization in German Public Administration

This section examines the historical and institutional context in which these principles are being adapted to the realities of digital transformation in Germany. The study explores the manner in which the nation's distinctive federal system and its developing legislative infrastructure have influenced the evolution of its digital public administration.

2.4.1. From Early Technological Innovations to the Legal Foundations of Digital Public Administration

The roots of digital public administration can be traced to broader technological developments that have long influenced the organisation and objectives of bureaucratic governance. Early milestones in computing illustrate a technocratic rationality oriented toward efficiency and precision[126]. For example, Charles Babbage's 19th-century efforts to construct an "analytical engine"—supported by the British state—coincided with reforms aimed at systematising administrative functions[127]. Similarly, Herman Hollerith's punch card technology, later foundational for IBM, was adopted by the U.S. Census Bureau in 1890 to improve the efficiency of data processing[128].

While these innovations laid the groundwork for modern data management, the transformation of public administration accelerated with the advent of the digital age. Grönlund and Horan (2005) suggest that the rise of digital governance closely followed the trajectory of internet-based innovation[129]. In Germany, the development of digital government reflected these broader technological trends while also responding to domestic

---

[125] Wegrich, "Is the Turtle Still Plodding Along?," 1107–16.

[126] Justin Longo, "From Massive Mainframes to Massive Data, Databanks to #OpenData, 'As We May Think' to Thinking Machines: Computer Supported Policy Analysis and the Future of Practice" (working draft, Dobell Symposium, 2011), 5, accessed May 30, 2025, https://jlphdcand.files.wordpress.com/2011/08/longo-working-draft-from-massive-mainframes-to-massive-data-computer-supported-policy-analysis.pdf.

[127] Ruslan Seitkazin, Civic Engagement in the Digital Age: The Case of Hungary (PhD diss., National University of Public Service, Budapest, 2021), 66, https://antk.uni-nke.hu/document/akk-copy-uni-nke-hu/Dissertation%20-%20Ruslan%20Seitkazin.pdf

[128] Longo, "From Massive Mainframes to Massive Data," 5.

[129] Åke Grönlund and Thomas A. Horan. "Introducing e-gov: history, definitions, and issues." *Communications of the association for information systems* 15, no. 1 (2005), 713–729.

efforts to modernise administrative structures. In its initial phase, e-government primarily involved the creation of static websites by public authorities, designed to disseminate information about administrative services and policies. This early stage provided the foundation for subsequent legal and institutional reforms that sought to embed digitalisation more deeply within the framework of public administration[130].

2.4.2. Defining E-Government in Legal and Administrative Contexts

The concept of e-government has become widely discussed in public administration, though its meaning varies across contexts. According to Hu et al. (2009), no universally accepted definition exists, highlighting the multifaceted nature of digital transformation in the public sector. Scholars, however, generally focus on two key aspects: optimisation of administrative processes and facilitation of citizen engagement[131].

a. Process Optimization and Service Delivery:

A significant strand of scholarship defines e-government as the use of Information and Communication Technologies (ICTs) to improve the quality, efficiency, and accessibility of public services. From this perspective, digital governance is understood as an evolving approach to public administration that seeks to deliver services that are transparent, adaptable, cost-effective, and responsive to citizen expectations[132]. Yildiz (2007), for example, views e-government as the systematic integration of ICT into administrative structures to streamline service delivery and enhance effectiveness[133]. Similarly, Baker et al. (2004) emphasise the simplification of processes and transactions in the provision of government services, including interactions both within government and between authorities, individuals, and businesses[134].

These operational definitions highlight indicators such as cost reduction, service quality, and timeliness, which have increasingly guided public sector reforms.

b. Citizen Engagement and Broader Governance:

---

[130] Klumpp, "From Websites to E-Government", 19.

[131] Guangwei Hu, Wenwen Pan, Mingxin Lu, and Jie Wang, "The Widely Shared Definition of e-Government: An Exploratory Study," The Electronic Library 27, no. 6 (2009), 968–985.

[132] Fraenkel-Haeberle, "Fully Digitalized Administrative Procedures,", 107.

[133] Mete Yildiz, "E-government research: Reviewing the literature, limitations, and ways forward," *Government information quarterly* 24, no.3 (2007).

[134] Jörg Becker, Lars Algermissen, and Bjoern Niehaves, "Organizational Engineering in Public Administrations: A Method for Process-Oriented E-Government Projects," in Proceedings of the 2004 ACM Symposium on Applied Computing (2004), 1385–1389, cited in Lee Anthony Eddowes, "Good Practice in E-Government: Management over Methods?," in International Conference on E-Government (Berlin, Heidelberg: Springer, 2005), 257.

Beyond efficiency, e-government is also associated with democratic participation and governance. Nica (2015) broadens the understanding of e-government by emphasising more active forms of citizen participation in public programmes and policymaking, facilitated through digital services designed to enhance transparency, responsiveness, and inclusiveness[135]. Brown (2005) advances an even more comprehensive conception, viewing e-government as encompassing the full range of governmental activities shaped by digital technologies [136]. Within this analytical framework, Brown distinguishes four interrelated domains: the state's role in economic and social development; e-governance mechanisms such as e-voting and online consultations; e-public administration and the associated demand for new administrative competencies; and the sphere of international relations[137].

Despite the variety of definitions, shared underlying elements can be identified, indicating that digital administration is increasingly relying on automated systems to facilitate interactions among citizens, businesses, and public authorities. The primary objective of these systems is to enhance service delivery while optimising the efficiency of administrative resources. As Bartholomae, Nam, and Steinhoff (2023) observe, the overarching objective is to expand access to public services whilst minimising operational costs and enhancing administrative effectiveness[138].

In Addition, a complementary perspective can be found in German legal-administrative discourse, where official interpretations consistently emphasise the functional understanding of e-government. In this context, e-government is described as the conduct of administrative and governmental processes through information and communication technologies using electronic programms and tools. Crucially, it is not conceived as an end in itself, but as an instrument intended to enhance the effectiveness, efficiency, and citizen-orientation of public administration[139].

This understanding highlights the instrumental logic underlying digital transformation within the administrative state: digital technologies derive their legitimacy not from innovation alone, but from their capacity to improve administrative performance, facilitate access, and support the fulfilment of legally mandated public tasks. In this respect,

---

[135] Elvira Nica, "*Sustainable development and citizen-centric e-government services*." Economics, Management, and Financial Markets 10, no. 3 (2015), 69-74.
[136] David Brown, "Electronic Government and Public Administration," International Review of Administrative Sciences 71, no. 2 (2005), 242.
[137] Brown, "Electronic Government and Public Administration,", 242-244
[138] Bartholomae, Nam, and Steinhoff, Does Federalism Affect E-Government, 3.
[139] BMI, Minikommentar zum EGovG, 9-10.

the German legal approach corresponds with broader scholarly debates by conceptualising e-government as both a mechanism for process optimisation and a means of reinforcing the relationship between public authorities and the citizenry.

2.4.3. Federal Implementation Structures and Their Impact on E-Government Realisation

a. The Federal Administrative Structure and its Impact on E-Government

German public administration is structured across three levels: the federal tier, the Länder, and the municipalities. The Länder bear primary responsibility for executing both federal and state law, which places the practical implementation of e-government measures largely in their hands. As most day-to-day administrative contact with citizens occurs at this level, the Länder play a decisive role in shaping how digital administrative processes function in practice. As Sommermann (2021) notes, the federal level retains supervisory competencies, especially concerning the enforcement of federal laws[140]. However, as Kuhlmann (2021) emphasises, it does not exercise direct administrative authority over the execution of laws at the state level[141]. This model of decentralized administration illustrates the concept of administrative federalism as provided in the Basic Law of Germany.

In the German constitutional framework, Articles 84 and 85 of the Basic Law regulate how federal legislation is carried out by the Länder. Under Article 84, the Länder execute federal laws autonomously, with the federation confined to monitoring legality. Article 85, by contrast, governs situations in which the Länder act on behalf of the federation, allowing the federal level to issue binding administrative instructions[142]. This differentiation has direct implications for digital administrative structures, as it shapes the degree of federal steering in the development and operation of e-government systems at the Länder and municipal levels.

Nonetheless, despite the structural variations across the Länder – stemming from the differences between two-tier and three-tier administrative systems – a notable degree of uniformity persists in administrative cultures. This contributes to a relatively consistent framework for digital service delivery across jurisdictions[143].

---

[140] Sommermann, "Constitutional state and public administration", 24.
[141] Sabine Kuhlmann, Isabella Proeller, Dieter Schimanke, and Jan Ziekow, "German Public Administration: Background and Key Issues," in Public Administration in Germany (London: Palgrave Macmillan, 2021), 5.
[142] Ludger Schrapper, "The Administration of the Länder," in Public Administration in Germany (Cham: Springer, 2021), 106.
[143] Kuhlmann et al., "German Public Administration", 6.

b. The Legal and Institutional Framework of Digital Administration

At the federal level, ministries and agencies largely operate within the Weberian model of bureaucracy, which Weber (1922) described as the "*purest type of legal authority*[144]". This model, characterised by hierarchical structures and a clear allocation of functions, has significant implications for implementing digital policies[145]. Accordingly, key federal agencies, such as the Federal Network Agency (Bundesnetzagentur), play a pivotal role in providing and safeguarding the technological foundations for e-government[146]. In certain fields, such as border protection and intelligence, digital procedures are implemented by federal authorities without the intermediary role of the Länder, reflecting a more centralized scope of federal administrative competence[147].

Within this framework, the E-Government Act (EGovG) serves as a central legislative instrument[148]. It binds federal administrative bodies to its provisions and, in some cases, extends its scope to include states and municipal authorities. However, the EGovG is not a comprehensive codification on its own. Instead, it is part of a broader "*mosaic of complementary legislative measures,*" including the Online Access Act (Onlinezugangsgesetz – OZG)[149], which requires the digitalization and interconnection of public service portals. Additional relevant provisions are found in data protection law, digital identity regulation, and the legal framework for electronic signatures. This integrated structure collectively shapes Germany's process of digital transformation.

In this context, the range of actors involved in digital administration cannot be confined to formally constituted governmental bodies alone. As Stott (1997) observes, the term "governmental" should be understood broadly to encompass any public entity exercising legally binding authority. This broader understanding is particularly relevant in the field of e-government, where entities such as law enforcement agencies increasingly operate through shared digital infrastructures and are therefore subject to administrative law requirements despite their distinct institutional positioning[150].

---

144 Max Weber, Economy and Society: An Outline of Interpretive Sociology (Tübingen: J.C.B. Mohr [Paul Siebeck], 1922), 126 ff.
145 Julia Fleischer, "*Federal Administration*," in *Public Administration in Germany*, eds. Sabine Kuhlmann et al. (Cham: Springer, 2021), 69.
146 Sommermann, "*Constitutional state and public administration*", 25.
147 Ludger. "The administration of the Länder", 106.
148 E-Government Act (EGovG)
149 *Online Access Act (Onlinezugangsgesetz – OZG)*. Section 3. and 9. Federal Law Gazette I 2017.
150 Stott, Principles of Administrative Law, 3.

Accordingly, the implementation of e-government in Germany is carried out through a complex and multi-layered legal framework that constitutes the multi-level administrative structure, the constitutional distribution of powers, and a set of complementary legal instruments. This framework reflects both the decentralised nature of German federalism and the growing need for coordinated legal and institutional responses to digitalisation.

2.4.4. Procedural Safeguards and Rights Protection in Digital Administrative Processes

E-government systems are expected to uphold a set of principles to preserve the integrity of administrative procedures as the interface between the state and the citizen transitions from physical to digital formats[151]. This section examines how core guarantees are being adapted to the realities of digital administration.

a. Participant Rights and their Digital Application

Foundational procedural rights—such as the right to be heard and the right to access administrative files—retain their central importance even when procedures move into digital formats. While interaction increasingly takes place through electronic rather than physical channels, the substantive protections guaranteed by administrative law must remain fully intact. Public authorities are therefore obliged to ensure that participants can obtain relevant information electronically and are provided with effective opportunities to exercise their procedural rights within digital environments. The right to inspect files, for instance, may be operationalised through secure access to electronic records. Likewise, the principle of confidentiality demands that electronic data be protected in accordance with applicable standards[152]. As Siegel (2020) observes, digitisation does not negate the normative essence of these rights but requires their reinterpretation to ensure fairness, transparency, and data protection in an electronic environment[153].

b. The Shift from "Street-Level" to "System-Level" Bureaucracy

[151] Thomas Schmitz, "The Administrative Procedure in German Administrative Law," *in Administrative Decision and Administrative Procedure under German, French and Vietnamese Law* (Hanoi: Hanoi Law University, 2013), 5-8

[152] Thomas Schmitz, "The Administrative Procedure in German Administrative Law," in Administrative Decision and Administrative Procedure under German, French and Vietnamese Law (Hanoi: Hanoi Law University, 2013), 5-8

[153] Thorsten Siegel, "Digitalisierung des Verwaltungsverfahrens – Digitalisierung im Verwaltungsverfahren," Juristische Ausbildung 2020, no. 9 (2020): 920–931, https://doi.org/10.1515/jura-2020-2482

Digital administration also reshapes the relationship between citizens and the state. The absence of binding procedural obligations for users, combined with a focus on accessibility, reflects the intention to maintain inclusiveness in e-government initiatives. This design allows participation to remain voluntary while equipping authorities with sufficient information technology to reach lawful decisions[154]. Bovens and Zouridis (2002) argue that this development marks a shift from traditional "street-level bureaucracies," where discretion was exercised by frontline officials, to "system-level bureaucracies" driven by ICTs that reduce direct human interaction. This transformation reconfigures the citizen-state relationship into a more service-oriented and user-friendly interaction, while simultaneously increasing procedural standardisation and flexibility[155].

c. The Irrelevance of Defects and the Risk to Procedural Rights

Automated administrative decision-making raises particular concerns regarding the principle of the irrelevance of defects in procedure and form, as codified in Sections 44 and 45 of the Verwaltungsverfahrensgesetz (VwVfG). These provisions enable the concerned authorities to remedy procedural flaws at a subsequent stage, for instance by providing a missing justification or conducting a hearing after the issuance of an electronic act. However, while this flexibility may offer pragmatic solutions for minor technical errors, it is not without controversy. If defects affecting core rights—such as the right to be heard—are too readily overlooked, there is a significant risk that citizens' procedural guarantees may be undermined[156].

The challenges and theoretical shifts outlined above have not remained abstract. They have been progressively addressed through legislative and strategic milestones, the most prominent of which are examined in the following section.

2.4.5. Prominent Milestones in Germany's Digital Government Development

The evolution of digital governance in Germany has been driven by gradual legislative adjustments and targeted institutional developments designed to modernise public administration. The following section highlights the principal steps that have shaped this process.

---

[154] Schmitz, "Administrative Procedure in German Administrative Law", 5-8.
[155] Bovens, Mark, and Stavros Zouridis. 2002. From Street-Level to System-Level Bureaucracies: How Information and Communication Technology Is Transforming Administrative Discretion and Constitutional Control. Public Administration Review 62, no. 2 (March–April): 174–84. 175.
[156] Schmitz, "Administrative Procedure in German Administrative Law", 5-8.

a. Early Strategic Initiatives and Foundational Legislation

The federal initiative Bund Online 2005, launched in September 2000[157], represented a significant turning point by aiming to make eighteen key public services available online. It reflected a systematic effort to integrate digital tools into administrative practice[158].

While the programme enhanced online service availability at the federal level, evaluations highlighted limitations in intergovernmental integration and user-centric design. Importantly, the legal basis for secure electronic interactions had already been established with the enactment of the Digital Signature Act (Signaturgesetz) in 1997[159], which laid the groundwork for subsequent strategic initiatives.

b. Institutionalization and Cooperative Frameworks

In response to challenges in intergovernmental coordination, the federal government introduced the "E-Government 2.0" programme in 2006[160]. This phase emphasised institutionalising digital infrastructure, particularly through secure electronic identity verification systems, culminating in the introduction of the electronic identity card (eID) in 2010[161].

A pivotal constitutional development occurred in 2009 with the amendment introducing Article 91c of the Basic Law, which provided the legal foundation for cooperative federal action in information technology[162]. This provision was operationalized through the IT-Staatsvertrag (State Treaty on IT)[163], leading to the establishment of the IT Planning Council (IT-Planungsrat)[164], the first formal body tasked with coordinating digital governance across Germany's multi-level administrative structure[165].

This phase not only broadened the availability and usability of digital public services but also integrated information technology more deeply into core administrative operations. Particular attention was given to secure identity management, cybersecurity measures, and

[157] Federal Ministry of the Interior. BundOnline 2005: Implementation Plan for the Federal Government's E-Government Initiative. Berlin: Federal Ministry of the Interior, 2000.
[158] Klumpp, "From Websites to E-Government", 23.
[159] Gesetz zur digitalen Signatur (Signaturgesetz) [Digital Signature Act], July 22, 1997, BGBl. I S. 1870.
[160] Bundesministerium des Innern (BMI), E-Government 2.0: Innovations for Germany's Public Administration (Berlin: Bundesministerium des Innern, 2006), 12.
[161] Wirtz and Kubin, "Governance Reforms in Germany,", 79.
[162] Art. 91c. GG.
[163] IT Planning Council. State Treaty on the Establishment of a Federal IT Cooperation (IT-Staatsvertrag). Concluded by the Federal Republic of Germany and the Länder, entered into force April 1, 2010.
[164] IT Planning Council (IT-Planungsrat).
[165] Wirtz and Kubin, "Governance Reforms in Germany,", 78.

inclusive access. Policy efforts focused on reducing disparities between different social groups and strengthening public confidence in digital administrative platforms (Bundesministerium des Innern, für Bau und Heimat, 2009; 2010)[166].

c. Landmark Legislative Acts and Modern Initiatives

Subsequent reforms were shaped by significant legislative developments and contemporary strategic initiatives. The E-Government Act (E-Government-Gesetz) of 2013 established a structured legal basis for embedding digital instruments into administrative practice and provided orientation for authorities at the federal, Länder, and municipal levels[167]. The Online Access Act (Onlinezugangsgesetz, OZG), adopted in 2017, represented another major step by requiring that all federal and state services be made digitally accessible by 2022[168]. Its implementation prompted the establishment of new cooperative bodies, most notably the Federal IT Cooperation (FITKO) in 2020, to support coordinated digital transformation[169].

Despite these advances, scholars such as Fleischer (2021) point to continuing shortcomings—especially in the area of open data—which reflect deeper structural and cultural features of the German administrative system[170].

d. Conclusion: Germany has been characterised by incremental reforms and institutional innovations in the development of its digital government. Such reforms have been implemented in a manner that has modernised public administration while respecting federal structures. Significant progress has been achieved in the digitalisation of services and the engagement of citizens. Yet persistent challenges—especially those concerning intergovernmental coordination, infrastructural disparities, and open data accessibility—continue to shape the effectiveness and inclusivity of Germany's digital transformation.

2.4.6. European Influences

The development of e-government in Germany has been strongly shaped by European and international initiatives that have gradually steered the digital transformation

[166] Ibid
[167] Wirtz and Kubin, "Governance Reforms in Germany," 79
[168] Wirtz and Kubin, "Governance Reforms in Germany," 79-80
[169] "FITKO – Federal IT Cooperation," Federal Agency for IT Cooperation (FITKO), accessed Sep. 01, 2025, https://www.fitko.de/.
[170] Fleischer, "Federal Administration", 76.

of public administration. These external frameworks have offered strategic guidance and functioned as reference points for legal and institutional reforms within the German system.

At the European level, the European Union (EU) has been particularly influential in setting out strategic priorities which, although not always legally binding, have nonetheless guided national approaches to digitalisation. Among the earliest initiatives was the eEurope 2002 Action Plan, aimed at expanding internet availability for households, businesses, and public institutions[171], accompanied by concrete implementation targets for Member States. Its successor, eEurope 2005[172], redirected attention toward broadband expansion and the development of more interactive public services[173].

Subsequent EU strategies reinforced the growing significance of digital administration. The i2010 strategy, adopted in the mid-2000s, linked digital transformation to broader socioeconomic goals under the Lisbon Strategy[174]. Building on this foundation, the eGovernment Action Plan 2011–2015, emerging from the Malmö Declaration, emphasised principles such as user-centricity, interoperability, and administrative efficiency[175]. These orientations encouraged Member States to enhance transparency and improve service quality, influencing Germany's reforms in areas such as integrated service portals and harmonised IT systems.

The eGovernment Action Plan 2016–2020 further consolidated these objectives, sharpening the focus on cross-border service delivery, administrative efficiency, and alignment with the Digital Single Market[176]. Germany's response was not merely declarative but took legislative form. The introduction of the Online Access Act (Onlinezugangsgesetz – OZG) exemplifies this alignment, mandating that all levels of government are obliged to furnish accessible digital services through standardised portals. In this sense, EU strategies

[171] European Commission and Council, eEurope: An Information Society for All – Action Plan (Brussels: European Commission, 2000).
[172] European Commission and Council, eEurope: An Information Society for All – Action Plan (Brussels: European Commission, 2005).
[173] Jakob van Kampen, "From Plan to Reality: Applications of the European eGovernment Action Plan 2016–2020 on the National and Institutional Level—a Comparison between Germany, the United Kingdom and Estonia," master's thesis, Hochschulbibliothek der Technischen Hochschule Köln, 2018, 11.
[174] European Commission, i2010 – A European Information Society for Growth and Employment, COM(2005) 229 final (Brussels, June 1, 2005), https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52005DC0229
[175] European Commission, *The European eGovernment Action Plan 2011–2015: Harnessing ICT to Promote Smart, Sustainable & Innovative Government*, COM(2010) 743 final (Brussels, 2010).
[176] European Commission, EU eGovernment Action Plan 2016–2020: Accelerating the Digital Transformation of Government, COM(2016) 288 final (Brussels, April 19, 2016).

functioned less as external mandates and more as frameworks shaping domestic legal instruments and administrative priorities[177].

A significant turning point was the 2017 Tallinn Declaration on eGovernment, in which Germany and other EU Member States renewed their commitment to ensuring that public digital services are accessible, inclusive, secure, and interoperable. The Declaration reaffirmed core principles such as digital-by-default, user-orientation, trust, interoperability, and transparency. Although primarily political, these commitments have nonetheless shaped Germany's administrative agenda[178].

In addition to strategic impulses, EU law has exerted binding authority through the principle of primacy, which requires national law to yield where it conflicts with EU rules. This principle obliges Member States to adjust or reinterpret domestic legislation to meet EU standards. As Schmitz (2013) observes, the supremacy of EU law has prompted substantial modifications to national administrative structures, even in areas where such adjustments initially faced resistance rooted in concerns over autonomy and constitutional identity[179].

While EU law is primarily implemented by Member States, enforcement responsibilities have become increasingly fragmented. In some areas, EU agencies play a direct role, and EU instruments shape not only substantive obligations but also administrative procedures. As Hofmann observes, this development creates indirect effects on domestic processes, even beyond the immediate scope of Union law[180].

International organisations have also contributed to shaping the discourse. OECD[181] recommendations on digital government strategies and the United Nations' E-Government Development Index (EGDI)[182] provide benchmarking tools and policy guidance that inform national reforms.

---

[177] Onlinezugangsgesetz (OZG) – Online Access Act, 2017, https://www.gesetze-im-internet.de/ozg/.
[178] European Union, Tallinn Declaration on eGovernment, signed October 6, 2017, Tallinn, Estonia
[179] Schmitz, "Administrative Procedure in German Administrative Law", 3.
[180] Hans Hofmann, "Europeanisation and German Public Administration," in Public Administration in Germany, eds. Sabine Kuhlmann et al. (Cham: Springer, 2021), 58-59
[181] Organisation for Economic Co-operation and Development (OECD), Recommendation of the Council on Digital Government Strategies, OECD/LEGAL/0406, adopted July 15, 2014, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0406
[182] United Nations Department of Economic and Social Affairs, United Nations E-Government Survey 2022: The Future of Digital Government, (New York: United Nations, 2022), https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2022.

In sum, European and international influences have acted not merely as external drivers but as normative reference points in Germany's approach to e-government. Nevertheless, while national sovereignty remains the basis for administrative lawmaking, Germany's alignment with supranational and global standards reflects the supranational nature of digital issues, which require harmonisation of national legal and administrative frameworks..

2.5. Federal Administrative Structure and the Challenges of Digital Transformation

The federal structure of the German state plays a decisive role in shaping both the institutional landscape and the practical implementation of e-government initiatives. Unlike unitary systems, Germany's federal model distributes administrative responsibilities across three levels—the federal government, the Länder, and municipalities—each fulfilling distinct yet interrelated functions. While this decentralised framework supports regional self-governance and reflects the principle of subsidiarity, it also presents challenges for coordination and uniform implementation, particularly in the context of digital transformation.

2.5.1 Federal Distribution of Competences in Administrative Law

Germany's federal administrative system is characterised by a structured division of competences between the Federal Government (Bund) and the constituent states (Länder), rooted in the Basic Law (Grundgesetz). The federal government retains exclusive legislative powers in areas such as foreign affairs, national defence, and customs (Articles 73, 87a GG), while the implementation of most federal laws is delegated to the Länder under Articles 83 to 85 GG[183].

This decentralised approach has long defined German public administration. As Schmitz (2013) notes, the division of competences ensures that the Länder enjoy considerable autonomy in implementing laws, thereby reinforcing their administrative capacity[184]. The principle of ministerial autonomy (Ressortprinzip), whereby federal ministers independently manage their departments within the policy direction set by the Chancellor and Cabinet, further enhances decentralisation and sectoral specialisation[185].

[183] GG
[184] Schmitz, "Administrative Procedure in German Administrative Law", 2.
[185] Fleischer, "Federal Administration", 77.

Historically, this model was reinforced after World War II with the adoption of a democratic federal constitution. As Behnke (2021) explains, the federal government was intentionally designed not to enforce its own laws directly, thereby safeguarding against overcentralisation of power and ensuring the durability of institutional decentralisation[186].

In contrast to centrist systems, the federal government of Germany does not function as the primary provider of public services. Its responsibilities lie primarily in legislation, regulation, and intergovernmental coordination, while operational delivery falls to the Länder and municipalities. While this arrangement has ensured administrative stability, it has constricted the potential for comprehensive institutional reform at the federal level, as Fleischer (2021) observed[187].

At the local level, municipalities play a crucial role in service delivery, despite not being constitutionally recognised as a separate level of government. Schneider (2021) highlights their responsibilities in civil registration, urban planning, and waste management—sectors increasingly shaped by digital initiatives[188]. Municipalities operate under Länder supervision and must align with overarching policy frameworks. Article 28(2) GG guarantees them autonomy in managing local affairs, but this remains subject to legal constraints, particularly the primacy of federal law over state and local regulations (Article 31 GG)[189]. As Fábián (2005) notes, municipalities may act only within the scope of the law[190], a limitation that is especially significant in digital governance, where federal and state standards on data protection, IT infrastructure, and interoperability prevail.

Financial autonomy further, as noted by Schneider (2006), complicates the position of municipalities. Unlike the Länder, which enjoy constitutionally enshrined borrowing powers, municipalities generally require state approval to incur public debt—including funding for digital projects[191]. Their administrative autonomy thus remains closely tied to both legal and fiscal oversight by the Länder.

---

[186] Nathalie Behnke and Sabine Kropp, "Administrative Federalism," in Public Administration in Germany, ed. Sabine Kuhlmann et al. (Basingstoke: Palgrave Macmillan, 2021), 37.
[187] Fleischer, "Federal Administration", 77.
[188] Hans-Peter Schneider, "The Federal Republic of Germany: Distribution of Powers and Responsibilities," (Montreal & Kingston: McGill-Queen's University Press, 2006), 4.
[189] Art. 28, 31 GG.
[190] Adrián Fábián, Vergleichendes Kommunalrecht (Bayern und Ungarn) [Comparative Municipal Law (Bavaria and Hungary)] (Pécs: Faculty of Law, University of Pécs, 2005), 7.
[191] Schneider, The Federal Republic of Germany, 5.

In this context, the division of responsibilities becomes particularly complex, as telecommunications fall under exclusive federal competence, ensuring uniform infrastructure policy. Nevertheless, municipalities remain essential in operationalising digital governance strategies. While data protection is shared—federal principles are enforced by state authorities, leading to variations across the Länder[192].

Coordination is particularly important in IT security, broadband deployment, and interoperability. The Federal Office for Information Security (BSI)[193] sets cybersecurity standards, while the Länder incorporate them into local systems. Under Article 85 GG[194], the federal government supervises Länder execution of federal laws through regulations, inspections, and compliance oversight, facilitating some standardisation but also revealing the limits of federal reach[195].

The expansion of digital administration has brought underlying tensions within the federal system to the surface. Fragmented responsibilities can impede the responsiveness needed for integrated, data-oriented governance. As Kuhlmann (2021) notes, German administrative culture places strong emphasis on predictability, solidarity, and institutional continuity—qualities that may sit uneasily alongside the flexibility and innovation associated with digital transformation[196]. Federalism has long supported regional autonomy, yet it is increasingly required to adapt to digital policy agendas that cut across traditional jurisdictional boundaries.

This interplay between institutional stability and the need for adaptability forms a central challenge for digital governance within Germany's multilevel administrative order, highlighting the importance of stronger coordination structures and more flexible legal frameworks.

2.5.2 Administrative Fragmentation and Its Impact on Digitization

The allocation of competences among federal, state (Länder), and municipal authorities[197] has contributed to a fragmented digital environment, reflected in diverse legal

[192] Ibid.
[193] Act on the Federal Office for Information Security (BSI Act – BSIG), Federal Law Gazette I 2009, p. 2821, as last amended in 2021.
[194] Art. 85 GG
[195] Schneider, The Federal Republic of Germany, 5.
[196] Kuhlmann et al., "German Public Administration", 4.
[197] Art. 28, 72 GG.

frameworks, uneven administrative capacities, and varying degrees of political commitment to reform[198].

Each Land maintains substantial autonomy in formulating its own digital governance policies. As a result, information technology systems developed at federal, state, and municipal levels often lack interoperability, hindering efficient data exchange and integrated service delivery[199].

Responsibility falls on the Länder to involve municipalities in their digitalisation efforts. Mergel (2021) suggests that municipal interest organisations provide a practical means of consolidating communication and coordination across approximately 11,000 municipalities. Yet uncertainty persists regarding their engagement beyond prototype development. While some Länder have established digital portals and provide services to municipalities free of charge, others have yet to formulate strategies for municipal participation in rollout and long-term use[200].

This fragmented approach has led to inefficiencies, redundant investments, and restricted interoperability, particularly in domains requiring cross-border data exchange. The National Regulatory Control Council (NKR) has repeatedly raised concerns about the sluggish pace of implementation, citing excessive complexity, fragmented organisational structures, and inadequate intergovernmental coordination[201].

Legal harmonisation has also been affected. Despite the binding mandate of the Onlinezugangsgesetz (OZG), which requires the digital availability of administrative services at federal and Länder levels, implementation remains inconsistent. Many municipalities continue to rely on outdated legacy systems, and several Länder have not achieved full integration with federal infrastructure[202].

The OZG's cooperative model—assigning responsibility for specific services to individual Länder or regional groupings—was designed to draw on local expertise. Yet Heuberger and Schwab (2021) caution that such differentiation can jeopardise perceived legitimacy, particularly when it affects the fairness of service provision. They highlight the

198 Bartholomae, Nam, and Steinhoff, Does Federalism Affect E-Government.
199 Fraenkel-Haeberle, "Fully Digitalized Administrative Procedures,", 107.
200 Mergel, "Digital Transformation of the German State", 336.
201 Ibid.
202 Moritz Heuberger, and Christian Schwab. "Challenges of digital service provision for local governments from the citizens' view: Comparing citizens' expectations and their experiences of digital service provision." *The future of local self-government: European trends in autonomy, innovations and central-local relations* (2021), 125.

need for inclusive service design and technical solutions that accommodate diverse demographic groups, such as streamlined access options for older users alongside more advanced functionalities for younger populations[203].

These institutional divisions generate not only practical implementation challenges but also raise normative issues concerning equal access and administrative justice. The extent to which citizens can engage digitally with public authorities increasingly varies by region, potentially conflicting with the constitutional requirement of equal treatment in administrative affairs[204].

In essence, administrative fragmentation mirrors the federal logic embedded in Germany's constitutional structure, yet it simultaneously represents a significant obstacle to achieving coherent and equitable digital governance.

2.5.3 Institutional Actors and Their Roles

In light of the administrative fragmentation previously delineated, effective coordination among institutional actors is imperative to surmount the prevailing structural impediments in Germany's digital governance.

The institutional landscape of digital governance in Germany is characterised by a network of interconnected actors, each of which is entrusted with a specific legal mandate and administrative function. At the federal level, the Federal Ministry of the Interior (BMI) plays a central role in setting strategic objectives for digital transformation and overseeing the implementation of relevant legislation, including the E-Government Act and the Online Access Act (OZG). The BMI also supervises national digital infrastructure projects and coordinates cross-ministerial efforts, serving as the primary interface between political leadership and the operational bodies responsible for administrative digitalisation[205].

A significant institutional innovation is the IT Planning Council (IT-Planungsrat), which was established following the 2009 constitutional amendment that introduced Article 91c of the Basic Law. This provision established a legal framework for intergovernmental cooperation in the field of information technology. Formalised through the 2010 State Treaty on IT (IT-Staatsvertrag), the Council comprises representatives from the federal government

[203] Ibid.
[204] Irina Yurievna Bogdanovskaya, "E-Government: Legal Aspects," Legal Issues in the Digital Age 3 (2022), 4- 9.
[205] Federal Ministry of the Interior (BMI). E-Government. Accessed August 30, 2024. https://www.bmi.bund.de/EN/topics/administrative-reform/e-government/e-government-node.html

and the Länder, with the mandate to harmonise IT strategies and ensure interoperability across Germany's multi-level administrative structure. In recent years, its role has expanded beyond strategic coordination to include oversight of OZG implementation. Each federal state has been assigned a thematic area within the designated service fields under the OZG, thereby facilitating cooperative responsibility and distributed development[206].

To support the Council's execution capacity, the Federal IT Cooperation (Föderale IT-Kooperation, FITKO) was created as its executive arm. FITKO is responsible for operational coordination and the development of common digital infrastructures, including standardised platforms and central service components. It also manages the joint digitisation programme (OZG-Umsetzung), which allocates approximately 575 administrative services among the Länder and municipalities for decentralised implementation. While FITKO has streamlined communication and fostered synergies, its effectiveness remains contingent on political commitment and adequate resource allocation at both federal and state levels[207].

Concurrently, data protection authorities – most notably the Federal Commissioner for Data Protection and Freedom of Information (BfDI) – exercise a critical regulatory function in ensuring that digital transformation efforts comply with constitutional and European data protection standards. The BfDI provides guidance on data governance, conducts compliance reviews, and issues opinions on legislative proposals involving automated decision-making, biometric systems, and artificial intelligence[208].

Beyond organisational arrangements, strengthening the digital skills of public officials represents a crucial component of administrative capacity. Although Germany has aligned itself with the European Digital Competence Framework 2.0 (EU Science Hub n.d.), it has yet to establish a fully developed national strategy for systematically advancing these skills. Early efforts include proposals for a cross-government digital academy and an eGovernment MOOC aimed at civil servants. According to Mergel (2021), expert interviews highlight the need for public managers to cultivate a digital mindset, grasp the implications of emerging technologies, and develop the flexibility required to work effectively with a range of digital tools. Middle-level managers, in particular, are expected to gain competence

[206] IT Planning Council (IT-Planungsrat).
[207] FITKO, "Federal IT Cooperation.".
[208] Federal Commissioner for Data Protection and Freedom of Information (BfDI). Home. Accessed Sep 01, 2025. https://www.bfdi.bund.de/DE/Home/home_node.html.

in contemporary project-management approaches to steer transformation processes successfully[209].

In examining the institutional framework responsible for the implementation of digital transformation policies within German public administration, it appears that a combination of overlapping competences and complementary functions characterises the roles of various actors at both the federal and state levels. The following table highlights the principal institutions, their core responsibilities, and the legal or policy foundations guiding their activities, thereby providing a structured reference point for analysis.

Institutional Body	**Core Role**	**Legal / Policy Basis**
Federal Ministry of the Interior (BMI)	- Sets strategic objectives for digital transformation. - Oversees the implementation of legislation (E-Government Act, Online Access Act – OZG). - Manages national digital infrastructure projects and inter-ministerial coordination. - responsible for cybersecurity in the government sector in cooperation with the Federal Office for Information Security (BSI)	Federal legislation, including the E-Government Act and OZG.
IT Planning Council (IT-Planungsrat)	- Coordinates between the federal government and the Länder. - Ensures interoperability and joint strategies.	Article 91c of the Basic Law. IT State Treaty (IT-Staatsvertrag) of 2010.

[209] Mergel, "Digital transformation of the German state", 342.

	- Oversees OZG implementation and the allocation of service areas among the Länder. - Its role extends to making mandatory decisions regarding common IT standards.	
Federal IT Cooperation (FITKO)	- Executive arm of the IT Planning Council. - Operational coordination and development of shared digital infrastructure. - Manages the OZG implementation program and service distribution across Länder and municipalities.	an organization that was created in 2018 as part of the evolving cooperation between the states and the federal government, with operational work beginning in 2019
Federal Commissioner for Data Protection and Freedom of Information (BfDI)	- Supervises compliance with constitutional and EU data protection standards. - Provides advisory opinions on draft legislation related to new technologies.	General Data Protection Regulation (GDPR) and Federal Data Protection Act (BDSG).
Digital Competence-Building Programs	- Enhances digital skills among civil servants. - Promotes digital culture and understanding of modern technologies among administrative leaders. - Includes initiatives such as the Federal Digital Academy and the E-Government MOOC.	European Digital Competence Framework (DigComp 2.0); digital competence programs are based on the German government's Digital Strategy.

2.6. Legislative Instruments Governing E-Government Implementation

Several key legislative instruments define the federal framework for e-government in Germany. These include the E-Government Act (EGovG, 2013)[210], which establishes the legal basis for digital administrative processes; the Online Access Act (OZG, 2017)[211], which obliges all administrative levels to provide services digitally; the Federal Data Protection Act (BDSG)[212], which operationalises GDPR requirements; and the IT State Treaty (2009)[213], which underpins intergovernmental coordination through the IT Planning Council and FITKO[214]. The following subsections examine each of these instruments in turn.

2.6.1 The E-Government Act (EGovG)

The E-Government Act (E-Government-Gesetz, EGovG), adopted in 2013 and amended thereafter, forms a key statutory basis for the federal administration's digital transformation. Its overarching aim is to modernise administrative practice by establishing binding rules for electronic communication, digital record-keeping, and secure data exchange. In this respect, the Act advances broader policy objectives of improving efficiency, transparency, and accessibility through digital means.

The Act applies to administrative activities carried out under public law, subject to several explicit exclusions. Section 1(5) EGovG removes areas such as administrative offence prosecution, taxation and customs, and procedures under Book II of the Social Code from its scope, reflecting the existence of specialised legal regimes[215]. At the same time, the Act covers not only outward-facing administrative action but also internal processes where digital tools help reduce media discontinuities and enhance electronic communication. This

[210] EGovG.
[211] OZG.
[212] Bundesdatenschutzgesetz (BDSG) [Federal Data Protection Act], June 30, 2017, BGBl. I S. 2097, as amended, https://www.gesetze-im-internet.de/bdsg_2018/.
[213] IT-Planungsrat, IT-Staatsvertrag – State Treaty on Information Technology, 2009.
[214] FITKO, "Federal IT Cooperation."
[215] Derya Catakli, „Digitalisierung der Verwaltung: Eine Untersuchung zur Umsetzung des E-Government-Gesetzes in der Bundesverwaltung" [Digitalisation of Administration: A Study on the Implementation of the E-Government Act in the Federal Administration] (Diss., Deutsche Universität für Verwaltungswissenschaften Speyer, 2021), 101.

understanding corresponds to the broad concept of "öffentlich-rechtliche Verwaltungstätigkeit" found in the VwVfG and SGB X[216].

The EGovG also introduces a number of concrete obligations that shape federal digital administration. Authorities must provide electronic communication channels for all administrative matters, including a mandatory De-Mail contact point and electronic identification options based on the national ID card or electronic residence permit. Additional requirements include offering electronic payment methods, documenting and analysing administrative processes, and supplying machine-readable datasets as part of the federal open-data policy. These duties demonstrate that the Act does more than promote digitalisation; it imposes binding procedural obligations[217].

A central motivation behind the Act was the longstanding difficulty of replacing written-form requirements in administrative procedures. Prior to the EGovG, the qualified electronic signature (qeS) was the only legally recognised digital equivalent, yet it failed to gain widespread acceptance among citizens and was used primarily by professional actors in specialised procedures. Given the thousands of Schriftform requirements in public-law norms, the exclusive reliance on the qeS constituted a major barrier to end-to-end digital procedures. The Act, therefore, authorises additional secure technologies capable of fulfilling the functions of Schriftform, thereby aligning legal form requirements with technological realities and removing a structural obstacle to digital transformation[218].

The Act also contains provisions aimed at improving transparency and accessibility. Section 3 obliges authorities to publish essential procedural information—such as responsibilities, required documents, and contact points—via publicly accessible networks. To support this, the federal and Länder governments maintain the Leistungskatalog der öffentlichen Verwaltung (LeiKa), which provides standardised procedural descriptions that can be reused across administrative levels, promoting consistency and reducing administrative effort[219].

Although formally binding only on federal institutions, the EGovG indirectly affects subnational administrations. Under Section 1(2), Länder, municipalities, and other public bodies are bound by the Act when implementing federal law, unless Landesrecht provides

[216] BMI, Minikommentar zum EGovG, 9-10.
[217] Ibid.
[218] BMI, Minikommentar zum EGovG, 9-10.
[219] Ibid.

otherwise. This reflects constitutional limits on federal authority and explains why certain duties—such as publication obligations under Section 3—apply to subnational bodies only when authorised by state legislation. The Act thus operates within a sensitive federal balance: it seeks to harmonise digital standards while respecting Länder autonomy.

Overall, the EGovG is widely regarded as a foundational element of Germany's digital governance architecture. It embeds electronic administration within the legal framework and supports the shift toward digital procedures. At the same time, its limited binding scope highlights the broader challenge of achieving coherence in a decentralised federal system.

2.6.2 The Online Access Act (OZG)

a. The Online Access Act (Onlinezugangsgesetz, OZG):

The Act enacted in 2017, constitutes a central legislative instrument in Germany's efforts to digitalise public administration[220]. The Act imposes a binding requirement on federal, state (Länder), and municipal authorities to make their administrative services digitally accessible by the end of 2022. Yet, according to a 2023 report by the Federal Court of Audit (Bundesrechnungshof), only 19% of digitalisable services had been made available online by that deadline, underscoring a significant gap between legislative ambition and practical implementation[221].

A core innovation of the OZG is the federated service catalogue (OZG-Leistungskatalog), which classifies over 575 administrative services and provides a structured framework for their digital implementation[222]. Closely linked to this is the "Einer für Alle" (EfA, "one for all") model, which allows a single Land to develop a digital solution for a given service, with the resulting application made available for reuse by other jurisdictions[223]. This cooperative mechanism is designed to enhance efficiency, avoid duplication, and promote interoperability across governance levels.

The Act also mandates the integration of individual administrative portals into a single nationwide access point. The centralisation process is intended to enhance the user

[220] Germany, Onlinezugangsgesetz (OZG), Federal Law Gazette I, no. 49 (2017): 3122.
[221] Bundesrechnungshof, *Report on OZG Implementation (2024)*.
[222] Digitale Verwaltung, „OZG-Leistungen", zugegriffen am 28. Juni 2025, https://www.digitale-verwaltung.de/Webs/DV/DE/onlinezugangsgesetz/ozg-grundlagen/info-leistungen/info-leistungen-node.html.
[223] Digitale Verwaltung, „Einer für Alle – Einfach erklärt", zugegriffen am 28. Juni 2025, https://www.digitale-verwaltung.de/Webs/DV/DE/onlinezugangsgesetz/efa/efa-node.html.

experience and establish consistent identification and authentication standards. While the OZG does not establish new substantive rights, it establishes digital access as a procedural right and imposes corresponding obligations on public authorities to adapt their services accordingly[224].

Despite the ambitions underpinning the OZG, its implementation has encountered significant obstacles. Germany's multi-level federal system, heterogeneous IT infrastructures, and uneven administrative capacities—particularly at the municipal level—have slowed progress. Bartholomae, Nam, and Steinhoff (2023) point to political and structural constraints, observing that even with the adoption of the OZG and institutional developments such as the creation of a Minister of State for Digital Affairs, the overall pace of digital transformation remains modest. Persistent systemic issues, including shortcomings in service provision and substantial variation in implementation across jurisdictions, continue to impede more rapid advancement[225].

Taken together, the OZG constitutes an important milestone in embedding digital access within Germany's administrative order. Yet its limited practical realisation underscores the enduring gap between legislative ambition and administrative execution in a decentralised federal context. Overcoming these deficits requires not only technical improvements but also stronger intergovernmental coordination and a more sustained commitment to harmonisation.

b. The Online Access Act Amendment (OZG-Änderungsgesetz, OZG 2.0):

Recent reforms have sought to address these shortcomings through the Online Access Act Amendment (OZG-Änderungsgesetz), which entered into force on 24 July 2024 following Bundesrat approval on 14 June 2024. Commonly referred to as OZG 2.0, the amendment builds on the federal government's Digital Administration Package (Paket für die digitale Verwaltung) adopted in May 2023 and represents a comprehensive attempt to modernise, standardise, and accelerate Germany's digital transformation[226].

The amendment introduces several key innovations. First, it obliges the federal government to establish binding technical standards and uniform interfaces within two years,

[224] OZG.
[225] Bartholomae, Nam, and Steinhoff, Does Federalism Affect E-Government, 9-10.
[226] Federal Ministry of the Interior and for Home Affairs, "OZG Amendment Act: Package for Digital Administration," Digital Administration, accessed November 24, 2025, https://www.digitale-verwaltung.de/Webs/DV/DE/onlinezugangsgesetz/das-gesetz/ozg-aenderungsgesetz/ozg-aenderungsgesetz-node.html.

thereby strengthening interoperability and reducing fragmentation between federal, Länder, and municipal systems. Second, it formalises the BundID user account as the central access point for citizens, to be expanded into a unified DeutschlandID, enabling secure, end-to-end-encrypted communication between users and public authorities. Third, the reform enshrines the "Once-Only" principle into law, ensuring that individuals and companies no longer need to repeatedly submit the same documents—such as birth certificates—when applying for different services, as administrative bodies may retrieve them electronically with the applicant's consent[227].

From a rights-based perspective, OZG 2.0 marks a significant conceptual shift by introducing a statutory entitlement to digital administration. Within four years of promulgation, citizens will be able to invoke a legal right to electronic access to federal administrative services. Similarly, businesses will benefit from a "digital-only" requirement: within five years, all company-related federal administrative procedures must be fully available online through dedicated organisational accounts.

These measures aim to streamline administrative interaction, enhance accessibility, and strengthen individual data sovereignty through an expanded Data Protection Dashboard (Datenschutzcockpit). The reform also aligns the OZG more closely with major federal digitalisation initiatives such as register modernisation and digital identity infrastructure, positioning it as the structural backbone of Germany's long-term e-government strategy. Nevertheless, as experience with the original OZG demonstrates, the success of OZG 2.0 will depend not merely on legal mandates but on effective intergovernmental coordination, technical harmonisation, and sustained political commitment to implementing a truly user-centric digital administration.

2.6.3. Interaction Between EGovG and OZG

The E-Government Act (EGovG) and the Online Access Act (Onlinezugangsgesetz, OZG) form the core statutory framework guiding Germany's shift toward digital public administration. While both instruments aim to advance digital governance, they do so from different yet mutually reinforcing angles.

Enacted in 2013, the EGovG focuses primarily on modernising internal administrative processes within federal institutions. Pursuant to Section 1 EGovG, its objective is to promote electronic administration and digital communication within federal

[227] OZG Amendment Act.

authorities[228]. The Act establishes binding obligations concerning electronic records management, secure digital communication, and the legal recognition of electronic signatures[229].

By contrast, the OZG, which entered into force in 2017, adopts a service-oriented perspective. Its central aim is to ensure that administrative services are accessible online to citizens and businesses across all levels of government—federal, state (Länder), and municipal[230]. This collaborative approach differs from the EGovG's institution-centred emphasis on internal procedural reforms and technical standardisation.

The divergent scopes and binding effects of the two laws have led to uneven implementation. While the EGovG is formally binding only on federal authorities, the OZG extends its obligations across the multi-level governance structure[231]. However, the limited enforceability of the EGovG at the subnational level, combined with heterogeneous IT infrastructures and varying administrative capacities among the Länder and municipalities, has resulted in fragmented progress. The Bundesrechnungshof (Federal Court of Auditors), in its 2024 report, highlighted significant delays and inconsistencies, noting that the target of providing all administrative services online by the end of 2022 was largely unmet[232].

Recognising these shortcomings, the legislature adopted the OZG-Änderungsgesetz (OZG 2.0), which entered into force in July 2024. This reform introduces binding technical standards, formalises the BundID/DeutschlandID as central user accounts, and enshrines the "Once-Only" principle into law. Most significantly, it establishes a statutory entitlement to digital administration, granting citizens and businesses enforceable rights to electronic access to federal services within defined timelines[233].

From an administrative law perspective, the interaction between EGovG and OZG has thus evolved: while the EGovG continues to regulate internal federal processes, the OZG—especially in its amended form—anchors digital access as a procedural right and strengthens cooperative federalism through binding standards. Together, they illustrate both

[228] EGovG, § 1.
[229] EGovG, § 6,7.
[230] OZG, § 1.
[231] EGovG, § 1. and OZG, § 1.
[232] Federal Court of Auditors (Bundesrechnungshof), Report on the Implementation of the Online Access Act, April 2024, https://www.bundesrechnungshof.de/SharedDocs/Downloads/DE/Berichte/2024/umsetzung-onlinezugangsgesetz-volltext.pdf?__blob=publicationFile&v=2.
[233] OZG Amendment Act.

the opportunities and the challenges of embedding digital governance within Germany's constitutional framework.

However, some observers suggest that the lack of clearly defined enforcement mechanisms could make coordinated implementation more challenging[234].

2.6.4. **Institutional** and Technical Frameworks for Implementation

The Bund occupies a central position in setting the technical foundations required for coherent digital governance, including standards, interoperability rules, and security specifications. A key actor in this landscape is the Coordination Body for Information Technology Standards (KoSIT)[235], which develops national IT standards to enable interoperable digital public services. Complementing this work, the Federal Office for Information Management (FIM)[236] provides uniform process models, data structures, and service descriptions, thereby promoting consistency and usability across administrative levels.

In matters of IT security and data protection, the Federal Office for Information Security (BSI)[237] is responsible for formulating and enforcing cybersecurity requirements in line with national and EU norms[238]. Its IT-Grundschutz framework sets out baseline security measures for federal and Länder authorities and plays a central role in protecting sensitive government information from cyber risks.

Germany's e-government infrastructure is further supported by initiatives aimed at improving transparency and user access. The National Open Data Portal (GovData)[239] offers a central entry point for public and commercial reuse of government information, while the BundID[240] system provides a secure digital identity solution for accessing administrative services. ELSTER[241], the electronic tax platform, stands as a prominent example of

[234] Mergel, "Digital Transformation of the German State", 334.
[235] KoSIT. "Coordination Body for Information Technology Standards." Accessed July 29, 2025. https://www.kosit.org/.
[236] Federal Office for Information Management (FIM). "Federal Office for Information Management: IT Standardization." Accessed July 29, 2025. https://www.fim.de/.
[237] Federal Office for Information Security (BSI). "Cybersecurity and Data Protection." Accessed July 29, 2025. https://www.bsi.bund.de/.
[238] Federal Office for Information Security (BSI). "IT-Grundschutz: IT Security and Risk Management." Accessed July 29, 2025. https://www.bsi.bund.de/EN/Topics/IT-Grundschutz/itgrundschutz_node.html.
[239] GovData. "National Open Data Portal." Accessed July 29, 2025. https://www.govdata.de/.
[240] BundID, "Federal Digital Identity System," accessed July 29, 2025, https://www.bundid.de/.
[241] ELSTER. "ELSTER: The Electronic Tax System." Accessed July 29, 2025. https://www.elster.de/.

successful federal implementation, simplifying tax procedures and reducing administrative burdens.

Together, these institutional and technical arrangements form an essential part of Germany's broader digital transformation strategy. Yet, as Guckelberger (2025) observes, Germany's legalistic administrative tradition has led to increasingly detailed regulatory provisions aimed at facilitating the digital transition[242]. This reflects an acknowledgment of existing legal gaps and inadequacies that may hinder the full realisation of e-government initiatives. The reliance on detailed regulation underscores the ongoing challenge of aligning administrative law with rapid technological developments—a theme that will be further explored in Chapter 3, particularly with respect to the impact of digitalisation on administrative procedures.

Institutional Body	Core Role	Legal / Policy Basis
Coordination Body for IT Standards (KoSIT) It is a subordinate body of the IT Planning Council (IT-Planungsrat).	Establishes national IT standards to ensure interoperability across digital public services.	Federal-State agreement on IT standardization; IT-Planungsrat mandate.
Federal Office for Information Management (FIM)	Standardizes processes, data formats, and service descriptions to improve usability across administrations.	Federal implementation guidelines under the OZG framework. It is not a standalone legal body, but rather an initiative or executive program carried out by the Federal Ministry of the Interior in cooperation with other entities.

[242] Annette Guckelberger, "31 The Internet and Digital Technologies as Essential Tools for the Civil Service." *The Civil Service in Europe* (2025), 623.

Federal Office for Information Security (BSI)	Develops and enforces cybersecurity regulations; manages the IT-Grundschutz framework.	BSI Act; alignment with GDPR and EU Cybersecurity frameworks.
National Open Data Portal (GovData)	Facilitates open access to government information for public and business use.	Federal Open Data Strategy; relevant transparency legislation.
Federal Digital Identity System (BundID)	Provides secure digital authentication for citizens and businesses.	OZG provisions; eIDAS Regulation. It is based not only on the European eIDAS Regulation but also on national laws such as the eID Act (eID-Gesetz)
ELSTER e-tax system	Enables electronic tax filing, reducing bureaucracy and increasing efficiency.	Federal Tax Code; E-Government Act.

2.7. Legal Foundations of Digital Administrative Procedures

2.7.1. Definition and Scope of Digital Administrative Procedures

Digital administrative procedures denote the execution of administrative processes through electronic means, including digital communication, automated decision-making, and the online provision of services. They represent a shift away from paper-based practices toward systems built on secure digital identities, electronic signatures, and centralised service portals. In the German context, the growing legal recognition of such procedures reflects broader efforts to modernise public administration, improve accessibility, and increase procedural efficiency[243].

This trajectory is evident in the introduction of § 3a into the Verwaltungsverfahrensgesetz (VwVfG), enacted in 2003 as part of a wider reform aimed at

[243] Federal Ministry of the Interior and Community (BMI), Digitale Verwaltung 2020 and subsequent strategy papers, various years. Accessible via: https://www.bmi.bund.de. These documents outline the evolving national strategy for the digital transformation of public administration.

adapting administrative communication to the requirements of a digital society[244]. The provision authorised electronic communication within administrative procedures and has since been updated to reflect technological developments, including the legal validity of electronic documents and the use of secure transmission channels.

The development of § 3a demonstrates the legislature's increasing sensitivity to the role of digital interaction between authorities and individuals. At the same time, it raises doctrinal questions about how to balance efficiency with procedural guarantees, particularly regarding legal certainty and equal access. These concerns have become more pronounced with subsequent digitalisation initiatives—most notably the Onlinezugangsgesetz (OZG), which broadens the principle of electronic access to a wider array of administrative services. Taken together, these reforms show how German administrative law has gradually incorporated digital procedures into its normative structure while continuing to grapple with the challenge of preserving fundamental principles in a digital environment.

2.7.2. Compatibility with Fundamental Administrative Law Principles

As with traditional procedures, digital administrative procedures are required to adhere to the fundamental principles of administrative law, including legality, proportionality, transparency, accountability, legal certainty, procedural fairness (for example, the right to a hearing "Recht auf Gehör") and equal treatment (Gleichbehandlungsgrundsatz)[245]. Nevertheless, the integration of digital tools poses challenges in ensuring these principles. For instance, the right to a hearing necessitates adaptation to digital formats in order to guarantee individuals' ability to submit statements, evidence, and objections electronically[246].

In response to these challenges, legislative developments began to reshape the German administrative framework. The incorporation of relevant EU directives into national law resulted in the introduction of § 71a ff. of the German Administrative Procedure Act VwVfG[247], which Siegel (2019) interprets as establishing a genuine subjective right to

[244] VwVfG, § 3a.
[245] Siegel, "Digitalisierung des Verwaltungsverfahrens", 920–931.
[246] European Parliament. "*REPORT with recommendations to the Commission on Digitalisation and Administrative Law.*" A9-0309/2023. 26 October 2023. https://www.europarl.europa.eu/doceo/document/A-9-2023-0309_EN.html.
[247] VwVfG, § 71a ff..

access electronic administrative procedures[248]. This development signifies a substantial advancement in the integration of digital participation into the realm of administrative law.

In parallel, the 2017 legislative reform formally recognised the legal validity of fully automated administrative decisions—acts rendered without human involvement. It is important to distinguish these from partially automated procedures, in which certain phases, such as preliminary assessments, remain subject to manual review. German administrative law provides clear terminological differentiation: partially automated decisions are described as mit Hilfe automatischer Einrichtungen (§§ 28(2) no. 4, 37(5), 39(2) no. 3 VwVfG)[249], while fully automated acts are referred to as ausschließlich automationsgestützt (§ 155(4) AO) or vollständig durch automatische Einrichtungen (§ 35a VwVfG; § 31a SGB X)[250].

These normative developments prompt critical reflection on the implications of automation for procedural safeguards. They raise questions about whether the current legal framework adequately ensures transparency, accountability, and the protection of individual rights in algorithmically driven decision-making.

2.7.3. European Legal Sources and Frameworks

At the European level, Regulation (EU) No 910/2014 on electronic identification and trust services for electronic transactions in the internal market—commonly referred to as the eIDAS Regulation—constitutes a foundational legal instrument for the digitalisation of administrative procedures. It establishes a harmonised framework for electronic identification, electronic signatures, electronic seals, time stamps, and other trust services. By requiring mutual recognition of these instruments across Member States, eIDAS enhances the legal validity and cross-border operability of digital administrative acts within the European Union, thereby strengthening legal certainty and facilitating the integration of digital governance into national systems[251].

Beyond the supranational framework, bilateral and regional cooperation also plays a significant role in shaping digital administration. Collaboration between countries, as well as between national governments and local authorities, enables the exchange of best

[248] Thorsten Siegel, "Der Europäische Portalverbund – Frischer Digitalisierungswind durch das einheitliche digitale Zugangstor ('Single Digital Gateway')," Neue Zeitschrift für Verwaltungsrecht 13 (2019): 905.
[249] VwVfG, §§ 28 (2) no. 4, 37 (5), and 39 (2) no. 3.
[250] Abgabenordnung (AO) § 155(4) sentence 1; VwVfG § 35a; and Sozialgesetzbuch X (SGB X) § 31a.
[251] eIDAS

practices and the joint development of digital services. Marques et al. (2025) emphasise that such partnerships are essential for improving the efficiency of local government operations and for creating shared digital platforms that serve both authorities and citizens[252].

Taken together, the eIDAS Regulation and cooperative initiatives illustrate how European legal sources and governance practices complement one another. While eIDAS establishes the overarching legal framework for interoperability and legal certainty, regional and local cooperation ensures that these standards are implemented in ways that are responsive to citizens' needs. This combination of supranational regulation and decentralised execution illustrates the dynamic relationship between EU-level norms and local administrative practice—a relationship that will be explored further in later chapters, particularly in connection with subsidiarity and the constitutional principles shaping administrative law.

2.7.4. Jurisprudential and Scholarly Approaches

German jurisprudence has increasingly adapted to the realities of digital administration by recognising the legal effectiveness of electronic communications and administrative acts, provided they comply with statutory requirements. Courts and legal scholars have affirmed that electronically submitted documents are valid if transmitted through secure official channels and accompanied by a qualified electronic signature (QES), in accordance with § 126a BGB[253] and § 3a VwVfG[254]. This interpretation has been reinforced in doctrinal commentary, which confirms the legal validity of QES in contexts requiring formal written form, including administrative acts and other legally significant communications processed through certified electronic signature platforms[255].

In addition, § 35a of the Verwaltungsverfahrensgesetz (VwVfG) explicitly authorises fully automated administrative acts, provided that such automation is legally

---

[252] Enrico Ferro and Maddalena Sorrentino, "Can Intermunicipal Collaboration Help the Diffusion of E-Government in Peripheral Areas? Evidence from Italy," *Government Information Quarterly* 27, no. 1 (2010): 17–25.

[253] Bürgerliches Gesetzbuch (BGB), § 126a [Electronic Form], as amended January 1, 2023, https://www.gesetze-im-internet.de/bgb/__126a.html.

[254] Bundesministerium der Justiz, "§ 3a VwVfG – Elektronische Kommunikation," Gesetze im Internet, accessed June 6, 2025, https://www.gesetze-im-internet.de/vwvfg/__3a.html.

[255] Alberto Povedano Peramato, "Can the Section of an Employment Contract Agreeing a Fixed-Term Period Be Legally Valid if Using a Qualified Electronic Signature through DocuSign?," GÖRG Insights, May 14, 2024, https://www.goerg.de/en/insights/publications/14-05-2024/can-the-section-of-an-employment-contract-agreeing-a-fixed-term-period-be-legally-valid-if-using-a-qualified-electronic-signature-through-docusign.

permitted and does not involve administrative discretion[256]. This statutory recognition marks a significant development, distinguishing between acts that can be automated without human intervention and those that require evaluative judgment.

2.7.5. Data Protection and Procedural Safeguards

As digital tools become embedded in administrative procedures, the resulting expansion of personal-data processing renders data protection a core requirement for upholding legality, transparency, and public confidence in administrative practice. Within the German legal framework, the constitutional right to informational self-determination, as established by the Federal Constitutional Court, anchors the protection of personal data as essential to safeguarding human dignity and autonomy[257].

At the European level, the General Data Protection Regulation (GDPR) reinforces these protections by imposing strict requirements on public authorities concerning data minimisation, purpose limitation, and accountability. It also guarantees individuals' rights to access, rectification, and objection, which are crucial for maintaining procedural fairness in digital administrative contexts[258].

On this basis, Article 22 GDPR sets out specific limits on automated decision-making, prohibiting decisions based solely on automated processing in the absence of meaningful human review[259]. The rule reflects the broader imperative to ensure that technological efficiency does not come at the expense of procedural fairness and individual rights.

Data protection requirements and procedural safeguards are, therefore, essential to maintaining the foundational principles of administrative law in a digital environment. They help ensure that the digital transformation of public administration remains compatible with fundamental rights and continues to command legitimacy[260]. Nonetheless, practical difficulties persist. As Bartholomae, Nam, and Steinhoff (2023)[261] emphasise, one of the principal shortcomings of the German e-government system is the inadequate provision of

---

[256] Bundesministerium der Justiz, "§ 35a VwVfG – Automatisierter Erlass eines Verwaltungsaktes,".
[257] Federal Constitutional Court, Judgment of 15 December 1983 (Census Act Case), BVerfGE 65, 1. https://www.bundesverfassungsgericht.de/SharedDocs/Entscheidungen/EN/1983/12/rs19831215_1bvr020983en.html
[258] Regulation (EU) 2016/679 (General Data Protection Regulation), Arts. 15–18, 21.
[259] Regulation (EU) 2016/679 (General Data Protection Regulation), Art. 22.
[260] see the Federal Data Protection Act (BDSG), GDPR commentaries, (BfDI), Annual Report 2023, available at: https://www.bfdi.bund.de.
[261] Bartholomae, Nam, and Steinhoff, Does Federalism Affect E-Government, 8.

online services that lack sufficient user-friendliness and user-orientation. From a legal perspective, such deficits raise concerns regarding accessibility and equal treatment—both of which are central to the legitimacy of administrative action.

In sum, the legal frameworks governing data protection and procedural safeguards not only legitimise the digital transformation of public administration but also ensure that innovation does not undermine fundamental rights. They embed digitalisation within constitutional and administrative law principles—particularly legality, transparency, proportionality, and the protection of legitimate expectations—thereby maintaining democratic control and legal accountability in the digital age.

2.8. Strategic and Financial Instruments Supporting E-Government

Germany's efforts to advance e-government are underpinned by a combination of strategic planning and targeted funding instruments. Federal and Länder authorities, working closely with municipalities, provide financial, technical, and regulatory support to modernise administrative structures, strengthen secure digital infrastructures, and foster innovative governance approaches. Programmes such as the DigitalPakt Schule, Digitale Verwaltung 2020+, the Smart Cities model projects, and the Gigabit Strategy demonstrate how funding priorities are aligned with long-term strategic objectives.

2.8.1. Funding and Innovation Programs

Financial support constitutes a central pillar of Germany's digital transformation agenda. At the federal level, the DigitalPakt Schule, led by the Federal Ministry of Education and Research (BMBF), provides multi-billion-euro investments to equip schools with modern IT infrastructure and strengthen digital literacy[262]. Complementing this, the Digitale Verwaltung 2020+ initiative, coordinated by the Federal Ministry of the Interior and Community (BMI), focuses on enhancing administrative efficiency by supporting the introduction of digital tools and infrastructures across federal and Länder administrations[263].

At the municipal level, the Smart Cities Modellprojekte, initiated by the Federal Ministry for Housing, Urban Development and Building (BMWSB), empower cities to design and implement integrated digital strategies. These projects encompass data platforms,

[262] Bundesministerium für Bildung und Forschung (BMBF), "DigitalPakt Schule," last modified July 15, 2025, https://www.digitalpaktschule.de/.
[263] Bundesministerium des Innern, für Bau und Heimat (BMI), "Digitale Verwaltung 2020+" [Digital Administration 2020+].

e-participation mechanisms, and mobility solutions that align with sustainability objectives and citizen-centric service delivery[264].

Looking to the future, the Zukunftsfähige Verwaltung durch Innovation initiative, jointly supported by the BMI and the Federal Ministry for Economic Affairs and Climate Action (BMWK), demonstrates a forward-looking investment strategy. It promotes experimental approaches such as artificial intelligence for decision-making, open data governance, and co-creation platforms that directly engage citizens in shaping public administration[265].

Taken together, these programs illustrate how financial instruments are deployed not only to modernise infrastructure but also to embed innovation within administrative practice. From an administrative law perspective, these developments illustrate how targeted funding has increasingly become a tool of regulatory steering. This dynamic will be examined in later chapters, particularly with regard to the normative implications of financing digital transformation within a federal system.

2.8.2. National Strategies and Infrastructure

Germany's digital transformation is guided by comprehensive strategic frameworks that define policy objectives, set measurable targets, and rely on the expansion of core digital infrastructure.

At the strategic level, key policy documents such as the Digital Strategy 2025[266] and the Federal Government Digital Strategy 2022[267] establish long-term priorities for digital governance, economic competitiveness, and societal inclusion. More recently, the National Strategic Roadmap for the Digital Decade, developed by the Federal Ministry for Digitalisation and Transport, has aligned Germany's objectives with the European Union's

[264] Bundesministerium für Wohnen, Stadtentwicklung und Bauwesen (BMWSB) Smart City Dialog" accessed July 29, 2025, https://www.smart-city-dialog.de/.
[265] Bundesministerium des Innern, für Bau und Heimat (BMI). "Digitale Verwaltung 2020+" [Digital Administration 2020+].
[266] European Commission, "Germany Digital Strategy 2025," Digital Skills & Jobs Platform, accessed June 29, 2025, https://digital-skills-jobs.europa.eu/en/actions/national-initiatives/national-strategies/germany-digital-strategy-2025.
[267] Federal Government of Germany, Digital Strategy: Creating Digital Values Together (Berlin: Federal Ministry for Digital and Transport, 2022), https://www.bmv.de/SharedDocs/EN/Documents/Press/pm-063-en-long-version.pdf.

2030[268] Digital Decade framework. Together, these strategies emphasise digital competencies, secure identities, sustainable networks, and innovative public services as central elements of progress.

These priorities are illustrated by specific initiatives. For example, the Digital Charter School and the National Strategy for Continuing Education aim to strengthen digital literacy across all levels of education[269]. Parallel investments in digital infrastructure seek to establish contemporary, effective, and sustainable networks that facilitate widespread access[270]. Beyond education and infrastructure, the strategies also promote innovation in the economy, business environments, science, and research, thereby reinforcing Germany's global competitiveness. A further objective is the expansion of e-government services, with efforts directed at digitising public services to enhance accessibility, efficiency, and citizen-centric delivery[271].

Viewed collectively, these strategies illustrate how Germany integrates policy planning with infrastructure development to advance digital transformation. From an administrative law perspective, they raise important questions about how strategic objectives translate into enforceable rights, how subsidiarity shapes the distribution of responsibilities across governance levels, and how equality of access can be ensured in the provision of digital public services. These normative implications will be explored further in subsequent chapters.

2.8.3. National Digital Infrastructure:

From an infrastructural perspective, several core elements underpin the delivery of e-government in Germany. The Gigabit Strategy (2022) aims to achieve full fibre-optic and advanced mobile network coverage by 2030[272], thereby ensuring nationwide digital connectivity. Building on this foundation, the BundID[273] system provides secure digital authentication for citizens and businesses. Developed in line with the European Union's

[268] European Commission, "Germany: National Digital Decade Strategic Roadmap," Digital Skills & Jobs Platform, accessed July 1, 2025, https://digital-skills-jobs.europa.eu/en/actions/national-initiatives/national-strategies/germany-national-digital-decade-strategic-roadmap.
[269] Ibid.
[270] Federal Government, Digital Strategy.
[271] Ibid
[272] European Commission, "Digital Connectivity in Germany," accessed July 29, 2025, https://digital-strategy.ec.europa.eu/en/policies/digital-connectivity-germany.
[273] BundID, "Federal Digital Identity System."

eIDAS regulation[274], BundID facilitates cross-border interoperability and strengthens trust in digital administrative interactions.

With regard to security and coherence, the Federal Office for Information Security (BSI)[275] has established the IT-Grundschutz framework, which sets cybersecurity standards for public administrations and safeguards sensitive government data against emerging threats. Complementing this, the Coordination Body for IT Standards (KoSIT)[276] develops national IT standards to ensure interoperability and seamless communication across different levels of government. Together, these measures seek to create a coherent and resilient infrastructure for digital governance.

Despite these comprehensive measures, Germany continues to face challenges in ensuring equitable access, uniform implementation across federal and state levels, and the safeguarding of citizens' rights. These issues remain central to the legal analysis in subsequent chapters, where they will be examined in light of fundamental principles of administrative law.

2.9. Conclusion

This chapter has demonstrated that the trajectory of digital transformation in German public administration unfolds within a complex constitutional and legal framework shaped by federalism, a strong commitment to the rule of law, and a cautious approach to technological innovation. Significant legislative and institutional progress has been achieved through instruments such as the E-Government Act (EGovG) and the Online Access Act (OZG). Yet, these advances coexist with persistent challenges, including administrative fragmentation, overlapping decision-making levels, and the continuing need to modernise technical infrastructure. Together, these factors influence both the pace and the effectiveness of digital transformation.

Recognising these legal and institutional constraints is essential for understanding how digitalisation interacts with core administrative principles and procedures. The analysis underscores that digital transformation not only requires technical adaptation but also raises doctrinal questions about legality, transparency, subsidiarity, and accountability. These

[274] eIDAS.
[275] Bundesamt für Sicherheit in der Informationstechnik (BSI), "IT-Grundschutz – IT Baseline Protection," accessed July 2025, https://www.bsi.bund.de/DE/Themen/Unternehmen-und-Organisationen/Standards-und-Zertifizierung/IT-Grundschutz/it-grundschutz_node.html.
[276] Koordinierungsstelle für IT-Standards (KoSIT). XÖV – Standards for Electronic Administrative Processes in Germany. Accessed July 2025. https://www.xoev.de/.

questions reveal that the digitalisation of administrative processes cannot be reduced to a matter of efficiency alone, but must be examined in light of constitutional guarantees and the enduring normative commitments of administrative law.

The insights gained here, therefore, provide the foundation for Chapter Three, which moves from the structural and institutional context to a closer examination of the normative and procedural implications of e-government. In particular, the next chapter will analyse how the integration of automated administrative procedures under § 35a VwVfG challenges established safeguards of fairness and proportionality, and how administrative law must recalibrate its principles to ensure that technological innovation remains aligned with the constitutional requirement to treat individuals as subjects of rights. By shifting the focus from systemic structures to doctrinal principles, Chapter Three continues the trajectory of this dissertation, exploring how administrative law adapts to the pressures of digitalisation while preserving its foundational legitimacy.

Chapter 3: The Impact of E-Government on Administrative Law Principles

3.1. Introduction

This chapter moves beyond the descriptive account of administrative law presented in the preceding chapters and undertakes an analytical exploration of how its guiding principles are being reshaped by the growing use of information technology in public administration. Building on the legal, institutional, and policy context outlined earlier, the analysis focuses on the concrete implications of digitalization for the fundamental principles of administrative law.

The discussion highlights how digital governance affects both the normative foundations of administrative law and its procedural mechanisms, while also transforming the modes of interaction between public authorities and citizens.

Over the past two decades, the perception of administrative law as a rigid and largely static field has been increasingly challenged. As Cassese (2012) observes, scholarship—particularly in France and Belgium—has suggested that broader socio-political dynamics have contributed to a loss of coherence in administrative law as a unified framework. In contrast, contemporary German legal thought generally interprets these developments not as a decline but as an evolution toward greater flexibility and transparency, with a stronger focus on providing guidance rather than enforcing rigid formalism. This evolving conception reflects a redefinition of the state's role within modern governance. Importantly, the expansion of digital governance has accelerated this transformation, prompting both normative and procedural adjustments[277].

This redefinition of the state's role underscores the continued importance of core legal principles, which by their very nature are general in scope, yet they exist in a hierarchical order where certain foundational principles encompass or guide others. This is why General Principles of Administrative Law are frequently referenced as the most fundamental tenets from which a multitude of other principles are derived[278]. In the context of digital governance, compliance with the rule of law necessitates that administrative processes remain legally sound, transparent, and accessible to safeguard the fundamental rights of citizens[279]. As Waldo (2017)'s analysis suggests, digital reforms must be assessed

[277] Cassese, "New Paths for Administrative Law," 604.
[278] Petoft, "General Principles of Administrative Law", 313.
[279] Maria do Rosario Anjos, Sonia Novais Santos, and Raquel Salgado, "Digital Public Administration and Good Governance," in Economic and Social Development: Book of Proceedings (2024), 199-200.

not only by their procedural efficiency but also by the principles they embody and the governance philosophy they advance[280].

The nature of digital transformation requires that the analysis of administrative law principles be more integrated than a discussion of each principle in isolation. For instance, there is a strong functional interdependence between legality and legal certainty: an automated decision cannot be regarded as lawful unless its outcomes are predictable and capable of justification. Similarly, transparency constitutes a prerequisite for accountability, since responsibility for automated decisions cannot be meaningfully assigned without an adequate understanding of how such decisions are made. This interconnectedness also extends to principles such as fairness and equality, as potential biases in artificial intelligence algorithms may simultaneously infringe upon both. Building on these relationships, this chapter adopts an analytical approach that examines principles in their interrelation, thereby illustrating that the challenges posed by digital transformation often affect multiple principles at once and therefore call for comprehensive legal responses.

For analytical clarity, the principles are not examined in isolation but grouped according to their functional interrelations and normative tensions. This approach, which follows insights from comparative administrative law and recent scholarship on digital governance, allows for a more integrated assessment of how digitalisation simultaneously impacts clusters of principles rather than single guarantees in isolation.

The following sections will therefore analyze key administrative law principles to trace their reinterpretation in light of automated decision-making and digital service delivery.

3.2. The Conceptual and Normative Framework of Administrative Principles

This dissertation now moves from an examination of the legal and institutional contexts of digital transformation in Germany to a critical analysis of the fundamental principles underpinning administrative law. Such a shift is necessary, as any assessment of the impact of digitalisation must be grounded in a precise understanding of the normative character of these principles.

A central challenge posed by digital transformation is the need to distinguish clearly between legal principles and legal rules. Dworkin (1967) emphasised that principles differ

[280] Dwight Waldo, The Administrative State: A Study of the Political Theory of American Public Administration (London: Routledge, 2017), 49.

from rules in that they do not prescribe a fixed legal consequence once particular conditions are satisfied. Instead, principles provide reasons that orient decision-making without determining a single obligatory outcome. This characteristic grants principles a degree of flexibility, enabling them to guide administrative judgment rather than impose rigid results[281].

Another defining feature of principles lies in their relative weight or normative importance. Unlike rules, which generally apply in an all-or-nothing fashion, principles may come into conflict. In such situations, decision-makers must weigh the competing principles and determine their respective significance. As Dworkin (1967) observed, this evaluative element explains how conflicting principles can coexist within a single legal system, in contrast to contradictory rules, which cannot operate simultaneously[282]. Raz (1972) further distinguished between rules and principles by noting that rules prescribe relatively precise forms of conduct, whereas principles articulate broader standards of behaviour[283]. Taken together, these insights underscore the inherently flexible and evaluative character of principles.

These theoretical characteristics form a necessary basis for understanding how they operate within German public law in practice. At the constitutional level, the rule-of-law principle (Rechtsstaatsprinzip), anchored in Article 20(3) of the Basic Law[284], provides the binding legal framework that guides and constrains administrative action. Within this framework, the principle of proportionality (Verhältnismäßigkeit) exemplifies the structured balancing process: judicial review under the narrow sense of proportionality (Angemessenheit) serves as the mechanism by which competing interests and conflicting principles are weighed. This enables courts to determine whether an administrative decision, even within the bounds of discretionary authority (Ermessen), represents a normatively reasonable solution.

By placing administrative principles within this conceptual and normative context, the dissertation establishes the groundwork for assessing how digitalisation affects their practical operation. Developments such as automated decision-making, algorithm-supported

[281] Ronald M. Dworkin, 'The Model of Rules' (1967) 35 University of Chicago Law Review, Cited in John Braithwaite, "Rules and principles: A theory of legal certainty." Australasian Journal of Legal Philosophy 27, no. 2002 (2002), 50.
[282] Ibid.
[283] Joseph Raz, 'Legal Principles and the Limits of Law' (1972) 81 Yale Law Journal 823, Cited in Braithwaite, "Rules and principles: A theory of legal certainty", 51.
[284] Art. 20 (3) GG.

discretion, and data-centred administrative processes heighten the need to recalibrate legality, legal certainty, transparency, and proportionality. The subsequent sections build on this foundation to explore how digital transformation influences the interpretation and concrete application of administrative law principles.

3.2.1. Distinctive Attributes of Legal Principles

Scholars have identified several characteristics that distinguish legal principles from ordinary legal rules, including comprehensiveness, generality, non-positivism, improvement, relativity in application, and permanence (Petovt 2020)[285]. These characteristics, taken together, highlight the distinctive normative role of principles in administrative law.

Scholars have identified several attributes that distinguish legal principles from ordinary legal rules. These include comprehensiveness, generality, non-positivization, optimization, performance relativity, and perpetuity (Petoft 2020). Together, these features highlight the distinctive normative role of principles within administrative law.

3.2.1.1. Comprehensiveness and Generality

Legal principles possess a broad reach, enabling them to address a wide spectrum of legal situations and developments. Their general and open-textured nature allows them to guide interpretation across different contexts, contributing to coherence and adaptability within the legal order. This functional capacity enables principles to bridge normative gaps and reduce interpretative uncertainty, thereby supporting the overall stability of administrative law[286].

3.2.1.2. Non-positivization

It can be posited that principles possess an abstract nature which is not exhausted by their codification into rules. While rules may reflect the formal structure of principles through explicit reference, they do not fully articulate the principle itself. Rules can be understood as finalised written expressions of the substantive directives embedded in

[285] Petoft, "General Principles of Administrative Law", 312.
[286] Raimo Siltala, A Theory of Precedent: from Analytical Positivism to a Postanalytical Philosophy of Law, Oxford, Hart Publishing, 2000, p. 60. Cited in Petoft, "General Principles of Administrative Law", 312.

principles. Principles, however, continue to inform rules and remain embedded within their interpretative context, particularly as recognised in judicial precedent[287].

3.2.1.3. Optimization

Principles are characterised by their capacity for optimisation. They engage both legal and meta-legal considerations, combining normative standards with factual circumstances. This enables principles to adapt within the hierarchy of legal norms and to guide purposive interpretation aimed at ensuring validity[288]. Importantly, if the descriptive proposition underpinning a principle proves invalid, the principle is not extinguished but redefined through a new valid articulation[289]. For example, proportionality requires that governmental measures correspond appropriately to the circumstances in which they are applied, illustrating the optimisation function of principles[290].

3.2.1.4. Performance Relativity

The interaction of normative and factual elements embedded in the discourse of legal principles often leads to a degree of relativity in their functions. In practice, and owing to the nature of the issues at stake, principles are placed in what may be described as an axiological competition, in which their relative weight must be assessed[291]. In this process, the principle that embodies greater legitimacy, logical coherence, and validity is accorded priority over competing principles, without nullifying the latter. Nevertheless, such priority is not absolute, as the balance may shift under different circumstances. Consequently, the operative function of a principle is closely linked to the specific facts and normative considerations integrated into the context of each individual case[292].

---

[287] Claus-Wilhelm Canaris, Systemdenken und Systembegriff in der Jurisprudenz [Systemic Thinking and the Concept of System in Jurisprudence] (Berlin: Duncker & Humblot, 1983), 50, Cited in Arian Petoft, "General Principles of Administrative Law", 314.

[288] Jan Henrik Klement, "Common Law Thinking in German Jurisprudence-On Alexy's Principles Theory", in Klatt, Matthias (ed.), Institutionalized Reason. The Jurisprudence of Robert Alexy, Oxford, Oxford University Press, 2012, p. 173. Cited in Petoft, "General Principles of Administrative Law", 314.

[289] Robert Alexy, "On the Structure of Legal Principles," Ratio Juris 13, no. 3 (2000): 294, Cited in Petoft, "General Principles of Administrative Law", 314.

[290] Alec Sweet, and Jud Mathews, "Proportionality, Judicial Review, and Global Constitutionalism", in Bongiovanni, Giorgio; Sartor, Giovanni and Valentini, Chiara (eds.), Reasonableness and Law, New York, Springer, p. 171. Cited in Petoft, "General Principles of Administrative Law", 312.

[291] Ralf Poscher, "The Principles Theory: How Many Theories and What is their Merit?", in Klatt, Matthias (ed.), op. cit., p. 218; Bernal, Carlos, "Legal Argumentation and the Normativity of Legal Norms", in Dahlman, Christian and Feteris, Eveline (eds.) Legal Argumentation Theory. Cross-Disciplinary Perspectives, London, Springer, 2012, 103. Cited in Petoft, "General Principles of Administrative Law", 314.

[292] Robert Alexy, "Arthur Kaufmanns 'Theorie der Rechtsgewinnung'," in Verantwortetes Recht: Die Rechtsphilosophie Arthur Kaufmanns, ed. Ulfrid Neumann, Winfried Hassemer, and Ulrich Schroth (Stuttgart: Franz Steiner Verlag, 2005), 47, Cited in Petoft, "General Principles of Administrative Law", 315.

3.2.1.5. Perpetuity

Principles are embedded within the value system of the legal-political order, giving them a relatively stable and enduring character. They serve as elevated aims of governance and cannot be disregarded in the normative context. They are consistently inscribed in both human thought and nature[293], regardless of whether they acquire legal recognition and practical effect through judicial precedent[294].

Principles' link to Good Administration Values

Taken together, these inherent attributes of legal principles position them as fundamental normative reference standards. As Torbica and Golić (2022) argue, such principles are often rooted in constitutional provisions or in overarching legal norms and embody the core values that sustain and preserve a governance system committed to the rule of law[295]. Classical principles emphasise formal obligations and procedural safeguards, while modern principles incorporate values of good governance to strengthen the substantive dimension of legality[296].

From this perspective, general administrative principles may be defined as "*the most general, comprehensive, non-codified, and enduring legal standards, recognised in judicial precedent, which operate alongside good governance values to optimise the administrative legal order and secure the rule of law in governmental action*"[297].

The substantive dimension of the rule of law provides an entry point for integrating value-based standards into the legal domain. This reflects the longstanding debate between natural law theorists and legal positivists regarding the relationship between substantive meaning and procedural form[298]. Principles may thus be understood as normative bridges linking the factual realities of governance with the formal structures of law[299]. Their

[293] David M. Adams, Philosophical Problems in the Law, 4th ed. (California: Thomson & Wadsworth, 2005), 53, Cited in Petoft, "General Principles of Administrative Law", 315.
[294] Raymond Wacks, Philosophy of Law, Oxford, Oxford University Press, 2006, p. 44. Cited in Petoft, "General Principles of Administrative Law", 315.
[295] Milica Torbica and Darko Golić, "Incompatibility of the Law on General Administrative Procedure and the Law Governing the Special Administrative Procedure Conducted before the Cadastre," Law on General Administrative Procedure: Contemporary Tendencies and Challenges 39, no. 3 (2022), 293, 295.
[296] Petoft, "General Principles of Administrative Law", 321.
[297] Petoft, "General Principles of Administrative Law", 320.
[298] Matthew Kramer, H., "On the Moral Status of the Rule of Law", Cambridge Law Journal, vol. 63, No. 1, 2004, p. 65. Cited in Petoft, "General Principles of Administrative Law", 325.
[299] Petoft, "General Principles of Administrative Law", 319.

interdependent operation enables them to expand, adapt, and respond to challenges posed by digitalisation.

Owing to their axiological content and functional orientation, they provide a means of addressing conceptual gaps and fostering coherence within administrative legal systems[300].

This conceptual framework demonstrates the complex and interconnected nature of legal principles. Their generality, breadth, and integrative function render them sufficiently flexible to accommodate processes of digital transformation. By absorbing the effects of technological innovation without undermining their normative integrity, administrative principles provide a stable yet adaptable foundation for modern governance. The following sections will adopt a functional approach to examine how each principle is recalibrated in the face of digital transformation.

3.2.2. The Challenges of Digitalisation for Administrative Principles

The interaction between administrative law and digitalisation has evolved into a complex and rapidly developing field. Although digital technologies are frequently linked to gains in efficiency, streamlined procedures, and reduced administrative burdens, administrative law continues to rest on core principles such as legality, transparency, proportionality, and the safeguarding of individual rights. This contrast gives rise to an inherent tension between managerial optimisation and the enduring normative commitments that define public law.

A central concern in this context is the possible erosion of individualised legal assessment. While automation can accelerate administrative procedures, it may also reduce the depth of case-specific analysis required to uphold principles such as proportionality and equality before the law. Bovens and Zouridis (2002) observed a shift in policy implementation from applying rules to individual cases toward the design of autonomous operational systems, thereby integrating administrative processes through information technology[301].

Digital platforms are often presented as tools that enhance accessibility and streamline interactions with public authorities. However, they may unintentionally disadvantage individuals or groups with limited digital skills or insufficient access to

[300] Franz Bydlinski, Juristische Methodenlehre und Rechtsbegriff [Legal Methodology and the Concept of Law], 2nd ed. (Vienna/New York: Springer, 2011), 289.
[301] Bovens and Zouridis, "From Street-Level to System-Level Bureaucracies," 174-184.

technology. This raises important concerns about inclusiveness and equality, particularly for those in vulnerable situations, and underscores the need to ensure that digitalisation does not deepen existing disparities in administrative practice[302].

In response to these challenges, recent scholarship has increasingly urged a renewed examination of the conceptual foundations of administrative law in the digital era. Rather than viewing digitalisation as inherently at odds with legal norms, contemporary literature promotes a context-aware reinterpretation of established concepts. This approach stresses the need to align digital administrative practices with core legal values such as transparency, procedural fairness, and institutional accountability. Engstrom and Ho (2020), for instance, contend that algorithmic decision-making requires adapted oversight mechanisms to preserve procedural integrity and public accountability[303]. Likewise, Cobbe et al. (2021) outline doctrinal models for reviewing automated decisions, enabling individuals to challenge algorithmically produced outcomes within existing legal structures[304]. Collectively, these contributions reflect a growing view that digital transformation calls for recalibrating—rather than discarding—the foundational principles of administrative law.

More broadly, the emerging scholarly debate points to the possibility of integrating rights-oriented principles directly into the design of digital administrative systems. Gottardo (2021) highlights the relevance of developing transnational models of algorithmic accountability that are rooted in human rights and democratic norms. Such approaches offer a pathway for aligning technological innovation with the normative foundations of administrative governance[305].

Furthermore, recent European regulatory developments illustrate how administrative principles can be recalibrated in response to technological innovation. The European Union's Artificial Intelligence Act (EU AI Act) adopts a risk-based approach and introduces specific normative requirements for high-risk systems, particularly regarding accuracy and operational safety. Article 15 stipulates that such systems must demonstrate a high level of accuracy, robustness, and cybersecurity throughout their lifecycle, accompanied by clear

[302] Bogdanovskaya, "E-Government: Legal Aspects," 4-9.
[303] David Freeman Engstrom and Daniel E. Ho, "Algorithmic Accountability in the Administrative State," Yale Journal on Regulation 37 (2020), 800.
[304] Jennifer Cobbe, Michelle Seng Ah Lee, and Jatinder Singh, "Reviewable Automated Decision-Making: A Framework for Accountable Algorithmic Systems," in Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency (2021), 598–609.
[305] Raenette Gottardo, "Building Global Algorithmic Accountability Regimes: A Future-focused Human Rights Agenda Beyond Measurement." *Peace Human Rights Governance* 5, no. Peace Human Rights Governance 5/1 (2021): 65-96.

documentation of performance limitations[306]. These provisions mitigate technical risks while reinforcing transparency and accountability, which remain integral components of administrative procedures grounded in the rule of law. Scholarly analysis has emphasised that the EU AI Act establishes a structured framework for risk management, data governance, and human oversight, thereby ensuring that technological innovation remains aligned with fundamental legal principles[307].

In this respect, regulatory instruments such as the EU AI Act offer an important framework for aligning technological innovation with the normative foundations of administrative governance. At the same time, they reinforce legal certainty (Rechtssicherheit) and the individual right to effective judicial review under Article 19(4) of the Basic Law[308], even as rapid technological developments risk constraining administrative discretion and affecting the integrity of decision-making processes.

3.3. Revisiting Core Principles: A Transitional Overview

To assess how digitalisation is reshaping administrative law, it is necessary to revisit the core principles that have long guided the exercise of public authority. These principles—legality, proportionality, legitimate expectations, equality, accountability, transparency, procedural fairness, legal certainty, public participation, and efficiency—form the normative framework that underpins administrative legitimacy. Their significance endures even as modes of governance evolve, and reconsidering them in light of digital transformation requires careful analytical reflection.

The previous chapter outlined these principles in their traditional doctrinal form, drawing on constitutional foundations, statutory provisions, and jurisprudential development. The shift toward digital governance, however, calls for renewed engagement with these principles—not as fixed legal categories, but as adaptable standards that must respond to emerging technological conditions. This section, therefore, functions as a conceptual link, summarising the principles in their established form while setting the stage

[306] Artificial Intelligence Act, Art. 15, accessed September 30, 2025, https://artificialintelligenceact.eu/article/15/, Fraunhofer IKS, Whitepaper: The EU AI Act – A Framework for Trustworthy AI Systems, accessed September 30, 2025, https://www.iks.fraunhofer.de/content/dam/iks/documents/whitepaper-eu-ai-act-fraunhofer-iks.pdf.
[307] AI Act, Art. 15.; Fraunhofer IKS, Whitepaper: The EU AI Act – A Framework for Trustworthy AI Systems, accessed September 30, 2025, https://www.iks.fraunhofer.de/content/dam/iks/documents/whitepaper-eu-ai-act-fraunhofer-iks.pdf.
[308] Art. 19(4) GG.

for their analytical reassessment in the context of algorithmic decision-making, data-driven administration, and e-government systems.

3.3.1. Legality and the Boundaries of Discretion

The principle of legality remains the central pillar of administrative law, requiring that all state action rest on statutory authorisation and remain within the limits of legally conferred competence. Within the German constitutional order, Article 20(3)[309] of the Basic Law anchors this obligation, which is further articulated through procedural guarantees in the Verwaltungsverfahrensgesetz (VwVfG). These include the duty of investigation (§ 24), the right to be heard (§ 28), and the obligation to state reasons (§ 39), each contributing to the lawfulness, transparency, and reviewability of administrative decisions[310].

Legality encompasses both the primacy of legislation (Vorrang des Gesetzes) and the requirement of a statutory basis (Vorbehalt des Gesetzes)[311], complemented by the Federal Constitutional Court's Wesentlichkeitstheorie, which reserves essential rights-affecting decisions to the legislature[312]. In the digital context, this principle encounters new pressures, particularly in ensuring that automated systems operate within a clearly defined and accountable legal framework. Algorithmic decision-making must not obscure the legal foundation of administrative acts or blur the boundaries of discretion granted to authorities. Preserving legality in automated processes is also a prerequisite for applying other principles, especially proportionality, which evaluates the justification and rationality of legally authorised interventions.

A key aspect of administrative law's adaptation to digitalisation involves ensuring functional equivalence in procedures. Section 3a VwVfG, introduced through a coordinated legislative effort, establishes the legal equivalence of statutory written form and electronic form, provided that the latter is accompanied by a qualified electronic signature. As Schmitz (2003) notes, this provision was conceived as a general clause intended to apply broadly across administrative law[313].

---

309 Art. 20(3) GG.

310 VwVfG §24,28 39.

311 Karl-Peter Sommermann, in Kommentar zum Grundgesetz, eds. Hermann von Mangoldt, Christian Starck, and Friedrich Klein, 7th ed. (Munich: C.H. Beck, 2018), Art. 20, para. 261, Cited in Catakli, Verwaltung im digitalen Zeitalter, 87.

312 Scientific Services of the German Bundestag, Criteria of the Wesentlichkeitstheorie, 1–2.

313 Heribert Schmitz, "Fortentwicklung des Verwaltungsverfahrensgesetzes: Konkrete Gesetzgebungspläne und weitere Perspektiven." In Verwaltungsverfahren und Verwaltungsverfahrensgesetz, pp. 136-155. Nomos Verlagsgesellschaft mbH & Co. KG, 2003, 145.

Nevertheless, significant obstacles to the full implementation of electronic procedures persist. Numerous provisions within the Verwaltungsverfahrensgesetz (VwVfG) continue to impose requirements for oral or written forms that do not permit substitution by signed electronic formats. Regulations still mandate specific paper-based formalities or the necessity of physical presence, such as consultation sessions (§ 73 VI VwVfG) or oral hearings (§ 67 VwVfG)[314]. As a result, the complete digitalisation of formal procedures remains unattainable under the current legal framework, thereby creating a boundary that the principle of legality must continually address.

This tension illustrates how digitalisation challenges the flexibility of the legality principle, requiring continuous doctrinal engagement to align technological developments with constitutional guarantees, particularly the rule of law and the protection of fundamental rights. In this regard, the issue is not solely technical but also normative, as it involves determining whether digital modes of participation—such as secure video communication or authenticated electronic submissions—can provide a functionally equivalent alternative to traditional requirements of physical presence and written form, without weakening procedural safeguards or compromising the substantive integrity of administrative law.

3.3.2. Proportionality: Assessing Cumulative Impacts in Data-Driven Administration

Closely connected to legality is the principle of proportionality, which structures administrative discretion by requiring that any interference with individual rights be suitable, necessary, and appropriately balanced. This three-part assessment—suitability (Geeignetheit), necessity (Erforderlichkeit), and proportionality in the strict sense (Angemessenheit)—ensures that governmental measures remain rational and justified. Anchored in both German and European jurisprudence, proportionality strengthens the legitimacy of state action and provides a systematic framework for judicial oversight[315].

In digital governance, proportionality faces new challenges. Automated systems may enhance efficiency and objectivity, yet the exercise of human discretion remains indispensable to ensure that administrative measures are genuinely suitable, necessary, and proportionate. Discretionary authority arises because public officials frequently confront complex circumstances that cannot be fully codified into standardised procedures. As Lipsky

[314] Gabriele Britz, "Reaktionen des Verwaltungsverfahrensrechts auf die informationstechnischen Vernetzungen der Verwaltung," in Verwaltungsverfahren und Verwaltungsverfahrensgesetz, (Baden-Baden: Nomos, 2003), 225.
[315] Arai-Takahashi, "Proportionality – A German Approach, 123–145.

(1980) observed[316], "*street-level bureaucrats often work in situations too complicated to reduce to programmatic formats…[they] have discretion because the accepted definitions of their tasks call for sensitive observation and judgement, which are not reducible to programmed formats*." Far from being rendered obsolete by technological innovation, this feature of administrative work remains essential. Scholars increasingly emphasise that effective governance requires careful attention to the interaction between human judgment and automated systems, rather than reliance on algorithmic outputs alone[317].

Empirical observations demonstrate the practical significance of this interaction. In various settings, officials intervene to adjust or override algorithmic outputs, thereby counteracting potential biases and ensuring more context-sensitive outcomes[318]. This dynamic shows that although automation can assist administrative decision-making, it cannot substitute the evaluative judgment required to uphold proportionality.

In the digital environment, proportionality must also be reconsidered to address cumulative effects. Practices such as data reuse, algorithmic profiling, and system-wide decision processes can generate aggregate burdens on individuals that exceed the impact of isolated administrative acts. As Widlak et al. (2020) observe, the circulation of datasets across multiple procedures raises concerns about fairness and excessive reach. Proportionality must therefore evolve to assess not only individual measures but also the broader configuration of digital systems and information flows. This expanded perspective is crucial for maintaining fairness, protecting legitimate expectations, and preventing disproportionate outcomes in automated governance[319].

Thus, proportionality continues to secure rationality and justification in administrative action, but in the digital era, it must be complemented by stability and predictability. Only by integrating these dimensions can proportionality retain its function

---

316 Lipsky, M. 1980. Street Level Bureaucracy: Dilemmas of the Individual in Public Services. New York: Russell Sage Found P.15, Cited in Karen Levy, Kyla E. Chasalow, and Sarah Riley. "Algorithms and decision-making in the public sector." Annual Review of Law and Social Science 17, no. 1 (2021), 309-334.

317 Guay JP, Parent G. 2018. Broken legs, clinical overrides, and recidivism risk: an analysis of decisions, and to adjust risk levels with the LS/CMI. Crim. Justice Behav. 45(1):82–100, and Veale M, Brass I. 2019. Administration by algorithm? Public management meets public sector machine learning. In Algorithmic Regulation, ed. K Yeung, M Lodge, pp. 121–49. Oxford, UK: Oxford Univ. Press, and Vogl TM, Seidelin C, Ganesh B, Bright J. 2020. Smart technology and the emergence of algorithmic bureaucracy: artificial intelligence in UK local authorities. Public Adm. Rev. 80:946–61, Cited in Levy, Chasalow, and Riley, "Algorithms and Decision-Making," 309–334.

318 Alex Albright, "If You Give a Judge a Risk Score: Evidence from Kentucky Bail Decisions," Discussion Paper 85 (2019); and M. T. Stevenson and J. L. Doleac, "Algorithmic Risk Assessment in the Hands of Humans," Discussion Paper 12853 (2019), Cited in Levy, Chasalow, and Riley, "Algorithms and Decision-Making," 309–334.

319 Widlak, van Eck, and Peeters, "Good Digital Administration", 10.

as a central element of administrative legitimacy in data-driven governance.

3.3.3. Legitimate Expectations and Legal Stability

The principle of legitimate expectations (Vertrauensschutz) functions as a constitutional counterpart to legality, protecting individuals from abrupt or arbitrary shifts in administrative decisions on which they have reasonably relied. Rooted in Article 20(3) of the Basic Law, it strengthens legal certainty and fosters trust in public administration. A key aspect of this doctrine is its limitation on retroactive effects (Rückwirkung), which arise when newly enacted legal rules are applied to circumstances that occurred[320] or were acted upon before their formal entry into force[321].

Within this framework, Vertrauensschutz delineates constitutional limits to the state's power to enact retrospective laws or administrative measures. Given the high value placed on stability and predictability within the rule of law, the Federal Constitutional Court has developed a rigorous jurisprudence distinguishing between true retroactivity—affecting completed facts—and apparent retroactivity—affecting ongoing legal relationships[322]. This distinction is critical: measures exhibiting true retroactivity are generally regarded as constitutionally problematic, underscoring the imperative to protect citizens' reliance against legislative instability[323].

The application of this doctrine extends directly to the procedural sphere. In the Verwaltungsverfahrensgesetz, § 48(2) governs the withdrawal (Rücknahme) of unlawful administrative acts. While the provision grants the administration authority to correct unlawful decisions, it severely restricts retroactive withdrawal (ex tunc) when the decision was favourable to the citizen. This emphasis on reliance and predictability is affirmed across legal levels, including the European sphere, where the Court of Justice of the European Union has similarly developed the doctrine to protect individuals from arbitrary annulment of administrative decisions[324].

In the digital era, the principle of legitimate expectations assumes renewed

---

[320] Henriette Nilsson Tøssebro, "The Principle of Non-Retroactivity and Its Application to Administrative Decisions," The New Law (2018): 361-378, 361.
[321] Wolfgang Herfurtner, "Rückwirkung – Was bedeutet das?," Kanzlei Herfurtner, last modified August 15, 2023, accessed October 4, 2025, https://kanzlei-herfurtner.de/rueckwirkung/.
[322] Christiane von Bary and Marie-Therese Ziereis, "Rückwirkung in grenzüberschreitenden Sachverhalten: Zwischen Statutenwechsel und ordre public," Rabels Zeitschrift für ausländisches und internationales Privatrecht / The Rabel Journal of Comparative and International Private Law H. 1 (2021), 149.
[323] Herfurtner, "Rückwirkung".
[324] Court of Justice of the European Union, Case C-181/20, Interseroh Dienstleistungs GmbH v. SCAPA Tapes India Ltd, ECLI:EU:C:2021:1045.

significance. As administrative decision-making becomes increasingly mediated by automated systems, preserving individuals' trust in the reliability and fairness of public authority remains a constitutional requirement[325]. The opacity of algorithmic processes must not be allowed to weaken the stability of legal commitments or the predictability of administrative outcomes. Protecting legitimate expectations in digital governance, therefore, demands not only continuity in doctrinal standards but also the development of new mechanisms for transparency and accountability, ensuring that technological innovation does not erode the constitutional foundations of trust in public administration.

3.4. Analysis of Administrative Law Principles in Light of Digital Transformation

The following sections develop a systematic analysis of how digital transformation affects the foundational principles of administrative law. To reflect the different dimensions through which administrative action is evaluated, the discussion is organised into functional clusters. The first concerns principles that secure trust and stability (legality and legal certainty); the second addresses the requirements of procedural justice and fairness (equality, procedural fairness, and public participation); the third examines mechanisms of oversight and control (transparency and accountability); and the final cluster considers the functional drivers of administrative change (efficiency and timeliness).

This structure provides a coherent framework for assessing how core principles—including proportionality and administrative discretion—are challenged and reinterpreted in the context of e-government, algorithmic decision-making, and data-driven administration. By adopting this analytical lens, the dissertation shows that established standards of administrative law are not merely being applied to new technological settings but, in some respects, are undergoing substantive reshaping within the evolving landscape of digital governance. This evolution generates inherent tensions, particularly between the pursuit of administrative efficiency and the preservation of normative legitimacy, which the subsequent sections examine in detail.

3.4.1. Principle of Legality, Legal Certainty and Protection of Legitimate Expectations

This section offers an integrated examination of the principles of legality, legal certainty, and the protection of legitimate expectations, highlighting their close interdependence within digitalised administrative processes. Legality requires that

[325] Nolte, "General principles of German and European administrative law", 195.

administrative action rest on a statutory basis and remain within the limits of conferred competence. Legal certainty complements this by ensuring that the law is stable, foreseeable, and accessible, enabling individuals to orient their conduct in reliance on established norms. The protection of legitimate expectations extends this stability further by safeguarding individuals' trust in the continuity and reliability of administrative conduct.

The opacity of algorithmic processes and the risk of arbitrary or unexplained outcomes threaten not only legality but also the predictability and reliability that underpin legal certainty and legitimate expectations. A deficit in legal certainty, for example, weakens legality and simultaneously erodes the confidence of individuals who depend on consistent and foreseeable administrative practice. Analysing these principles together therefore reflects their functional interconnection.

3.4.1.1. Introduction to the Principle of Legality

The principle of legality (Gesetzmäßigkeit), as outlined in the preceding chapter, remains a central benchmark of German administrative law and a primary standard for evaluating administrative conduct. At both national and supranational levels, legality requires that administrative measures rest on a clear statutory basis and remain subject to judicial scrutiny. In the German tradition, this reflects a deeply embedded legalistic orientation in which conformity with the law takes precedence over considerations of efficiency or managerial expediency[326].

Within the context of digitalisation, the principle of legality assumes renewed relevance. It ensures that technological innovations in administrative practice—such as automated decision-making or data-driven procedures—do not erode constitutional safeguards. By upholding the primacy of law, legality operates as a normative anchor, ensuring that digital transformation in public administration proceeds within constitutionally defined boundaries and thereby sustaining the legitimacy of administrative governance.

3.4.1.2. Legal Foundations and the Challenge of Form Requirements

The Federal eGovernment Act (EGovG) of 2013, together with the Online Access Act (OZG), provides the statutory foundation for electronic communication, digital file management, and online access to administrative services[327]. These instruments promote

[326] Derya Catakli, Verwaltung im digitalen Zeitalter: Die Rolle digitaler Kompetenzen in der Personalakquise des höheren Dienstes [Administration in the Digital Age: The Role of Digital Skills in Personnel Acquisition for Higher Civil Service] (Wiesbaden: Springer Nature, 2022), 86.

[327] EGovG, §; OZG; Deutscher Bundestag, Wissenschaftliche Dienste, Sachstand: E-Government in Deutschland – Aktueller Stand auf Bundes- und Landesebene, WD 3 – 3000 – 134/19 (Berlin: Deutscher Bundestag, 2019),

efficiency and accessibility, yet they operate within the boundaries of established legal norms. In practice, the implementation of legality in digital procedures continues to face constraints arising from the law's traditional reliance on paper-based and oral communication requirements, which have historically impeded comprehensive electronic interaction. Where written form is mandated, the transition to electronic communication remains de lege lata limited unless the digital format can achieve functional equivalence with its analogue counterpart[328].

Procedural law has sought to address this challenge by introducing technological solutions. This development is reflected in § 3a(2) and § 37 of the Verwaltungsverfahrensgesetz (VwVfG), which establish the legal equivalence between written and electronic form, provided the latter is accompanied by a qualified electronic signature (QES)[329]. This requirement is not arbitrary; it is essential to ensure that electronic documents fulfil the key legal functions of paper-based administrative acts[330]. The verifiability offered by the QES must confirm two decisive legal requirements: integrity—that the electronic document remains unaltered—and authenticity—that the signatory is an authorised official of the competent authority[331]. These safeguards are particularly significant for administrative acts with long-term effects, where legal certainty depends on establishing the unambiguous origin and content of the decision[332].

Because legality must be verifiable throughout the lifetime of an administrative act, the issue of long-term sustainability arises. The Signature Act (SigG), in § 10, underscores that documentation supporting the QES must be retained and verifiable over extended periods. This requirement ensures that the authenticity and integrity of administrative acts, especially those granting rights or imposing duties over many years, remain legally sound and subject to judicial review for the entire duration of their effect[333].

Automated administrative decision-making is also recognised in § 35a VwVfG, which permits fully automated administrative acts under narrowly defined conditions. According to this provision, automation is lawful only where expressly authorised by statute

https://www.bundestag.de/resource/blob/651322/2c839a834c803360f0891d4e680a98f4/WD-3-134-19-pdf-data.pdf.

[328] Britz, "Reaktionen des Verwaltungsverfahrensrechts,", 221.

[329] Ibid

[330] Ibid

[331] Heribert. "Fortentwicklung des Verwaltungsverfahrensgesetzes", 146.

[332] Ibid.

[333] Ibid.

and where no discretionary judgment is required[334]. Automated decisions can be conceptualised as processes in which outcomes are generated through source code, requiring the translation of legal norms into code[335]. Accordingly, responsibility for legality remained with the public authority deploying such systems, rather than with the technology itself[336]. The doctrines of Vorrang des Gesetzes (primacy of law) and Vorbehalt des Gesetzes (requirement of a statutory legal basis) continue to apply.

While initial debates reflected concerns about the potential erosion of legal safeguards through automation[337], an examination of the German legislative framework indicates that the principle of legality has been strictly preserved in the digitalisation process.

Automation has undoubtedly been promoted as a means of improving administrative efficiency, but it has not displaced the legal guarantees that ground administrative legitimacy. The requirement of explicit statutory authorisation whenever individual rights or public interests are affected remains decisive, ensuring that technological innovation operates within constitutionally defined limits and does not erode the normative foundations of administrative law.

3.4.1.3. Procedural Flexibility and the Curing of Defects

The principle of legality is operationalised through a range of procedural requirements. A critical mechanism in this regard, particularly in the context of automated administrative decision-making within e-government systems, is the principle of the irrelevance of defects in procedure and form, as codified in § 45 VwVfG. This provision enables authorities to subsequently remedy certain procedural flaws in an administrative act—for example, by supplying a missing justification or conducting a hearing at a later stage—provided that the omission did not demonstrably affect the outcome and can be rectified without infringing procedural fairness. The judiciary has confirmed this interpretation, as illustrated by a 2023 decision of the Administrative Court of Aachen, which held that the failure to conduct a hearing prior to issuing a decision did not invalidate the act if the omission was capable of being remedied[338].

---

[334] VwVfG, § 35a, "Automatisierte Entscheidungen," BGBl. I S. 1253 (2016).
[335] Igor Gontarz, "Judicial Review of Automated Administrative Decision-making: The Role of Administrative Courts in the Evaluation of Unlawful Regimes," ELTE Law Journal 2023, 157. https://ojs.elte.hu/eltelj/article/download/5283/4288/11372
[336] Ibid.
[337] Thorsten Siegel, "Elektronisches Verwaltungshandeln–Zu den Auswirkungen der Digitalisierung auf das Verwaltungsrecht." JURA-Juristische Ausbildung 42, no. 9 (2020), 920-931.
[338] Administrative Court of Aachen (Verwaltungsgericht Aachen), judgment of 16 January 2023, 7 K 327/21.

The capacity to "cure" such defects is particularly relevant in e-government frameworks, where administrative processes often rely on automated systems. Minor technical errors, such as a delayed notification to an applicant, should not automatically render a decision invalid. Yet this legal flexibility is not without controversy. As Schmitz (2013) argues, if procedural defects—such as the omission of a hearing before an automated decision is issued—are too readily overlooked, there is a significant risk that citizens' procedural rights may be weakened or insufficiently respected within digital administrative systems[339].

Accordingly, e-government platforms must integrate these requirements effectively, ensuring that electronic hearings are facilitated, that access to online files is guaranteed, and that digital notifications clearly outline available legal remedies, as required by §§ 79 and 58 VwGO[340]. These observations underscore the necessity for careful legal examination. As Voßkuhle (2010) emphasises, efficiency gains must not come at the expense of procedural safeguards, which remain the backbone of democratic administrative governance[341].

3.4.1.4. Legal Certainty and Procedural Safeguards

Closely connected to legality is the principle of legal certainty (Rechtssicherheit), derived from Article 20(3) of the Basic Law. Legal certainty requires that individuals be able to anticipate the legal consequences of administrative action and rely on the stability, clarity, and accessibility of applicable norms. The expansion of automated procedures complicates this guarantee. Whereas traditional administrative processes allowed officials to exercise interpretive discretion, digital systems operate through fixed, pre-programmed parameters. This rigidity can enhance consistency, yet it may also diminish transparency and make administrative outcomes more difficult to contest[342].

Paulin (2013) observes that traditional analogue procedures afforded public officials a degree of interpretive discretion. By contrast, digital systems necessitate a more rigid and standardised structure. Electronic applications must adhere to specific technical protocols, uniform formats, and designated network pathways. These practical limitations emphasise the necessity of formulating e-government systems which adhere to procedural transparency

339 Schmitz, "Administrative Procedure in German Administrative Law", 5-8.
340 Ibid.
341 Andreas Voßkuhle, "The Rule of Law in Transition: On the Functional Change of Administrative Law in the Age of Digitalisation," Die Verwaltung 43, no. 2 (2010): 140.
342 VwVfG) § 35a; Tuomas Pöysti, "Legislating for Legal Certainty, with a Right to a Human Face, in an Automated Public Administration," in The Rule of Law and Automated Decision-Making, ed. Mariolina Eliantonio et al. (Cham: Springer, 2023), 33–63, https://link.springer.com/chapter/10.1007/978-3-031-30142-1_3

and promote legal certainty[343].

Without a clear and explicit legal basis, algorithmic decisions risk becoming opaque and difficult to contest. Such opacity weakens legality and simultaneously undermines public confidence in administrative institutions. When the legal foundation of a decision is embedded in technical code rather than accessible statutory language, affected individuals may find it harder to understand, challenge, or seek redress. In these circumstances, the procedural safeguards that legality is designed to secure are diminished[344].

This concern becomes even more acute when acknowledging the inevitability of errors in digital systems. Algorithmic outputs, like human decisions, remain susceptible to both factual and legal inaccuracies. To address this vulnerability, Engstrom (2020) proposes a pragmatic mechanism: randomly selecting a subset of algorithmic decisions for human review. This approach would allow administrative authorities—and individuals subject to their decisions—to detect and correct systemic errors before they become entrenched[345].

Nevertheless, it has been argued that only rule-based systems of automated decision-making can be regarded as compatible with the requirements of the rule of law. From this perspective, there is a broader public interest in avoiding a shift towards governance dominated by algorithms, as such a development could undermine legal certainty and democratic accountability[346]. From a different perspective, Markku (2021) proposes incorporating legal safeguards into the design of automated systems. The integration of statutory requirements during the design phase could ensure the generation of legally sound decisions from the outset. This reframes legality not as a reactive mechanism of post-hoc review but as a proactive design principle—one that ensures transparency, accountability, and rights protection are upheld by default[347].

3.4.1.5. The Role of Human Involvement

A central question in the digitalisation of administrative procedures concerns the extent of human oversight required in automated processes. Markku (2021) notes that administrative procedures have historically assumed the involvement of human actors, an

[343] Alois Paulin, "Towards Self-Service Government-A Study on the Computability of Legal Eligibilities." *J. Univers. Comput. Sci.* 19, no. 12 (2013), 1770.
[344] Markku Suksi, ed., The Rule of Law and Automated Decision-making: Exploring Fundamentals of Algorithmic Governance (Cham: Springer Nature, 2023).
[345] Engstrom and Ho, "Algorithmic Accountability,", 800-801.
[346] Markku Suksi, "Administrative Due Process when Using Automated Decision-making," *Artificial Intelligence and Law* 29, no. 1 (2021), 107. https://doi.org/10.1007/s10506-020-09269-x.
[347] Ibid, 95.

assumption directly challenged by the possibility of full automation[348]. Zalnieriute et al. (2021) similarly argue that automation operates along a continuum and that human supervision remains necessary at every stage[349]. Removing discretion can create what some describe as a "legal vacuum," in which the absence of human judgment threatens procedural guarantees such as transparency and intelligibility. From a legal standpoint, this debate underscores that human involvement is not merely a technical safeguard but a constitutional requirement for protecting fundamental rights and ensuring accountability.

The European Parliament (2023) further stresses that a human-centred design philosophy, grounded in robust legal frameworks, is indispensable. Without such foundations, automated systems risk undermining core tenets of administrative law, including legality, transparency, and the protection of individual rights[350].

3.4.1.6. Protection of Legitimate Expectations

The principle of legitimate expectations (Vertrauensschutz) assumes particular importance in digitalised administrative processes, especially in situations where administrative decisions produce long-term consequences for individuals or businesses. It functions as a key safeguard of legal certainty by ensuring that those who rely on established administrative practice can trust in the continuity and reliability of public authority. Rooted in the broader framework of the rule of law, it requires that individuals be able to trust in the continuity, reliability, and integrity of administrative conduct[351]. In German law, legitimate expectations are protected when public authorities create a factual or legal situation—through regulations, procedures, communications, or promises—upon which individuals have reasonably relied in shaping their personal or economic decisions[352].

This protection is not absolute; it is conditioned by the requirements of procedural fairness and proportionality. Administrative decisions that interfere with established expectations must be justified by overriding public interests and accompanied by effective avenues for legal redress. In digital governance, however, the principle becomes more difficult to operationalise. Automated systems may lack the contextual sensitivity needed to

---

[348] Ibid.

[349] Monika Zalnieriute, Lyria Bennett Moses, and George Williams, "Automating Government Decision-Making: Implications for the Rule of Law," in Technology, Innovation and Access to Justice: Dialogues on the Future of Law (Edinburgh: Edinburgh University Press, 2021), 91–111, 93.

[350] European Parliament. Digitalisation and Administrative Law. European Parliament Resolution of 22 November 2023 with Recommendations to the Commission on Digitalisation and Administrative Law (2021/2161(INL)). P9_TA(2023)0426. Strasbourg: European Parliament, 2023.

[351] Heribert. "Fortentwicklung des Verwaltungsverfahrensgesetzes", 146.

[352] Thomas Robert, Legitimate Expectations and Proportionality in Administrative Law, Oxford, Hart Publishing, 2000, p. 41. Cited in Petoft, "General Principles of Administrative Law", 339.

recognise prior communications or informal assurances that traditionally shaped legitimate expectations. For this reason, the design and deployment of algorithmic decision-making must incorporate mechanisms capable of identifying and preserving such expectations, particularly where earlier administrative conduct has created a basis for reliance.

European jurisprudence reinforces this understanding. The Court of Justice of the European Union (CJEU) has repeatedly held that legitimate expectations arise where an EU authority has provided assurances that are precise, unconditional, and consistent, and the individual has relied on them in good faith (Mulder v. Minister van Landbouw en Visserij, Case 120/86, ECLI:EU:C:1988:213)[353]. This standard binds Member States and is not confined to the German context. British administrative law, for example, recognises both procedural and substantive legitimate expectations, requiring authorities to honour promises or established practices unless compelling reasons justify a departure[354].

In Germany, the principle is embedded in the doctrine of Vertrauensschutz and reflected in provisions such as §§ 48 and 49 of the Verwaltungsverfahrensgesetz (VwVfG), which govern the withdrawal and revocation of administrative acts[355]. These rules seek to balance legal certainty with administrative flexibility, ensuring that individuals are not arbitrarily deprived of rights or benefits previously granted.

In digital administration, the challenge lies in preventing automated systems from inadvertently overriding legitimate expectations through rigid programming or insufficient contextual awareness. As Suksi (2021) argues, embedding legal safeguards into the architecture of automated systems is essential for maintaining trust and accountability[356]. This includes designing algorithms capable of recognising prior administrative conduct and flagging decisions that may conflict with established expectations.

3.4.1.7. Intersection and Conclusion

Digitalisation does not, in itself, alter the substantive legal standards governing administrative action; rather, it requires that these standards be applied consistently within procedures increasingly shaped by technological innovation. The criteria for assessing legality remain unchanged. Whether a decision is issued by a human official or generated through an automated system, administrative courts continue to scrutinise the outcome against established legal requirements. The mode of issuance—manual or algorithmic—

[353] Court of Justice of the European Union, Case 120/86, Mulder v. Minister van Landbouw en Visserij, ECLI:EU:C:1988:213.
[354] Paul Craig, Administrative Law, 7th ed. (London: Sweet & Maxwell, 2012)
[355] VwVfG, §§ 48–49.
[356] Suksi, “Administrative Due Process".

does not exempt an administrative act from meeting the constitutional demands of legality (Gesetzmäßigkeit). Digitalisation may transform the form of administrative practice, but it does not redefine the substantive content of legality[357].

The principles of legality, legal certainty, and legitimate expectations therefore operate not as isolated mandates but as an interconnected normative framework derived from the constitutional rule of law (Rechtsstaatsprinzip). Their combined analysis provides a layered defence against the systemic challenges posed by automation, particularly the risks it presents to the stability and predictability of the administrative relationship. This multi-layered approach is necessary because each principle, considered alone, has inherent limitations. Legality addresses the question of competence by requiring a statutory basis for delegation. Legal certainty (Rechtssicherheit) builds on this by demanding transparency and predictability in the applied code, thereby confronting the challenge of opacity.

Furthermore, legitimate expectations (Vertrauensschutz) insist upon the stability and non-retroactivity of administrative outcomes upon which reliance has been established, thereby addressing the challenge of algorithmic dynamism and trust.

3.4.2. Proportionality and discretion

3.4.2.1 Relevance of Proportionality

One of the central challenges introduced by digitalisation is ensuring that automated administrative procedures remain compatible with the principle of proportionality. In administrative law, proportionality requires that any measure adopted by a public authority be suitable for achieving a legitimate aim, necessary in the sense that no less restrictive alternative is available, and balanced so that the burden imposed does not outweigh the anticipated benefit. The principle functions as a safeguard against excessive or unjustified interference with individual rights and is particularly significant in areas where discretion plays a decisive role[358].

Automation, however, tends to rely on uniform standards and pre-defined rules. While this can enhance efficiency and consistency, it also risks overlooking the diversity of individual circumstances. Discretion enables civil servants to assess the specific facts of a case and, where appropriate, depart from rigid norms in order to reach a more proportionate

[357] Gontarz "Judicial Review of Automated Administrative Decision-making".
[358] Lena Enqvist and Markus Naarttijärvi, "Discretion, Automation, and Proportionality," in The Rule of Law and Automated Decision-Making: Exploring Fundamentals of Algorithmic Governance, ed. Markku Suksi (Cham: Springer International Publishing, 2023), 147–178.

outcome. In this way, discretion serves as the mechanism through which proportionality is operationalised, ensuring that administrative decisions remain context-sensitive and aligned with the broader constitutional commitment to fairness and the protection of rights[359].

3.4.2.2 Legal Framework in German Administrative Law

The legal framework governing automation in Germany reflects the tension between efficiency and constitutional safeguards. As Martini and Nink (2017) observe, § 35a of the Verwaltungsverfahrensgesetz (VwVfG) permits fully automated decisions only where no discretionary judgment or evaluative assessment is required (Ermessens- oder Beurteilungsspielraum). This restriction is rooted in the principle of Normvorbehalt, which demands explicit statutory authorisation for full automation. Its purpose is to ensure that automated procedures do not intrude into areas of law that require human judgment, thereby preserving proportionality and preventing arbitrary outcomes[360].

Peeters and Widlak (2018) further note that even seemingly routine updates to vital records—such as changes in marital status or name—can trigger unintended consequences across interconnected administrative systems. These cascading effects complicate proportionality analysis, particularly when the broader implications of an automated decision are not foreseeable at the moment it is issued[361].

The statutory restriction of automation to non-discretionary decisions (§ 35a VwVfG) has, however, been subject to criticism. Swoboda (2025) argues that the exclusion of discretionary decisions overlooks the reality of administrative practice. Frequently, discretion is standardised through regulations, internal guidance and directories of criteria, which are employed to ensure uniformity in collective procedures and to guide the actions of administrative staff. As a result, the scope for individual judgment is significantly narrowed in many fields. In effect, the exercise of discretion often comes close to a binding decision, even if formally conferred. The reality of highly regulated discretion and the reliance on rules is thus largely disregarded, despite the fact that such discretion may be

[359] Marion Oswald, "Algorithm-assisted Decision-Making in the Public Sector: Framing the Issues Using Administrative Law Rules Governing Discretionary Power," Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences 376, no. 2128 (2018), https://doi.org/10.1098/rsta.2017.0359

[360] Mario Martini and David Nink, "Wenn Maschinen entscheiden … – vollautomatisierte Verwaltungsverfahren und der Persönlichkeitsschutz," Neue Zeitschrift für Verwaltungsrecht – Extra 36, no. 10 (2017), 1-14.

[361] Rik Peeters, and Arjan Widlak. "The digital cage: Administrative exclusion through information architecture–The case of the Dutch civil registry's master data management system." *Government Information Quarterly* 35, no. 2 (2018), 175-183.

structured to an extent that it could be translated into algorithmic programming. Indeed, the level of regulation of discretionary powers may at times render algorithmic coding even simpler than in the case of certain binding decisions that rely on indeterminate legal concepts[362].

3.4.2.3 Responsibility and Control in Automated Systems

Even in non-discretionary contexts, proportionality remains a binding legal requirement. As Widlak (2020) observes, public authorities cannot absolve themselves of responsibility merely by invoking compliance with automated systems or relying on generalised legal frameworks. They remain responsible for ensuring that the data used in algorithmic decision-making accurately reflects the facts of each case. It is imperative to recognise the significance of this obligation in order to avert the occurrence of outcomes that are disproportionate in nature, which may arise as a consequence of incomplete or misleading inputs[363].

The frequently cited phrase "the computer says no," discussed by Van Eck (2018), encapsulates the concern that algorithmic systems may foster a perception of inevitability in administrative decisions[364]. Left unchecked, such systems risk undermining the flexibility and contextual sensitivity that proportionality demands. The central challenge, therefore, is how to embed responsibility and control mechanisms into automated processes so that proportionality is not eroded in practice.

3.4.2.4 Proportionality as a Design Principle in Digital Governance

This challenge has prompted scholars to stress that proportionality must be considered not only when administrative decisions are applied, but also at the stage of designing automated systems. Suksi (2023) argues that proportionality should be treated as a constitutional requirement that informs the very architecture of algorithmic governance[365]. Embedding proportionality into the design and deployment of digital systems enables public authorities to ensure that automated decisions remain legally justified, context-sensitive, and responsive to individual circumstances.

Brown (2005) further observes that the shift toward e-government reshapes

[362] Jan Christian Swoboda, "Künstliche Intelligenz in der Verwaltung: Keine Ermessensausübung durch die Maschine?" Legal Tribune Online, May 13, 2025, https://www.lto.de/persistent/a_id/57181
[363] Widlak, van Eck, and Peeters, "Good Digital Administration", 8.
[364] van Eck, Marlies. "Geautomatiseerde ketenbesluiten & rechtsbescherming: Een onderzoek naar de praktijk van geautomatiseerde ketenbesluiten over een financieel belang in relatie tot rechtsbescherming." (2018). Cited in Widlak, van Eck, and Peeters, "Good Digital Administration", 8.
[365] Suksi, The Rule of Law and Automated Decision-making.

traditional accountability structures, moving civil servants away from hierarchical command models toward more citizen-oriented service relationships. While this transformation may enhance responsiveness, it also raises concerns about the dilution of political and administrative accountability—concerns that are closely connected to how proportionality is operationalised within digital governance[366].

3.4.2.5 Normative Implications

In light of these developments, it becomes evident that any legal framework for automated decision-making must reconcile technological efficiency with the foundational guarantees of administrative law. Ensuring that the least restrictive yet suitable means are employed to achieve legitimate objectives remains a core requirement[367]. Proportionality, therefore, cannot be sidelined in the pursuit of digital optimisation; it must be integrated into the design, implementation, and oversight of automated administrative systems as a condition of legality and a safeguard for individual rights.

These considerations illustrate that proportionality, traditionally understood as a constraint on administrative discretion, now assumes a broader function in the digital era. It operates not only as a substantive legal principle but also as a benchmark for assessing the legitimacy of automated decision-making systems themselves.

The growing reliance on automated procedures has also reshaped the traditional distribution of responsibility. As Widlak et al. (2020) observe, human judgment increasingly enters the process only at the stage of objections and appeals, placing the burden on individuals to identify errors or demonstrate exceptional circumstances. This stands in contrast to the conventional expectation that public authorities proactively ensure proportionality throughout the decision-making process. Nonetheless, automation may also serve a constructive role: it can be employed to identify cases requiring human assessment, thereby supporting rather than undermining proportionate outcomes[368].

In the context of e-government, proportionality requires that digital administrative measures—such as automated decision-making, electronic communication, and data processing—be suitable, necessary, and appropriate in relation to their intended public objectives. As digitalisation introduces new forms of administrative efficiency, it simultaneously raises concerns about the potential for excessive or insufficiently transparent interventions. The deployment of algorithmic systems must therefore be carefully assessed

[366] Brown, “Electronic Government and Public Administration” , 251.
[367] Sommermann, "Constitutional state and public administration", 21.
[368] Widlak, van Eck, and Peeters, “Good Digital Administration”, 10.

to ensure that they do not impose disproportionate burdens on individuals or erode procedural guarantees. Scholars emphasise that applying proportionality in digital governance requires renewed attention to transparency, contestability, and the protection of individual rights. In this regard, e-government does not diminish the relevance of proportionality; rather, it intensifies the need for its rigorous application to ensure that technological innovation remains accountable to constitutional standards[369].

In some respects, the shift toward automated administration can be understood as an extension of long-standing concerns within administrative law. A central preoccupation of the field has always been the risks associated with discretion exercised by human officials under delegated authority. Automation can mitigate certain aspects of this risk by constraining discretion and embedding clearer, more predictable rules into the execution of specific governmental tasks[370].

A closer examination of § 35a VwVfG confirms that the principle of proportionality (Verhältnismäßigkeit) has been expressly safeguarded within the German legislative framework. By excluding discretionary decisions from full automation, the legislator ensured that proportionality—requiring suitability, necessity, and a fair balancing of interests—continues to be meaningfully applied. Digitalisation has not altered the substantive requirements of proportionality; rather, it has reinforced the need for human involvement wherever contextual assessment and the weighing of competing interests remain indispensable.

3.4.3. Equality, Procedural Fairness and Public Participation

In administrative law, the principles of equality, procedural fairness, and public participation form the core safeguards that ensure public power is exercised in a just and legitimate manner. Although each principle addresses a distinct dimension of administrative action—from equal treatment, to due-process guarantees, to democratic engagement—they are deeply interrelated. The expansion of digital governance intensifies scrutiny of all three, offering new possibilities for improvement while simultaneously creating risks of erosion. As administrative processes become increasingly mediated by technological systems, it becomes essential to examine how these foundational principles are being reinterpreted,

[369] Yutaka Arai-Takahashi, "Proportionality – A German Approach," *School of Advanced Study*, University of London, 2010, https://sas-space.sas.ac.uk/3907/1/1458-1702-1-SM.pdf; Christoph Möllers, *The Administrative Constitution: Administrative Law in Germany* (Oxford: Oxford University Press, 2013), 89–95

[370] Coglianese, "Administrative Law in the Automated State,", 110.

challenged, and reshaped in the digital era.

3.4.3.1. Procedural Fairness

Procedural fairness encompasses the individual's right to be heard, to submit evidence, and to receive a reasoned decision from an impartial authority. In the context of digital administration, this principle is subject to renewed scrutiny. As public authorities increasingly rely on automated systems to process applications, allocate benefits, or issue decisions, questions arise as to whether such systems can adequately safeguard the procedural rights traditionally guaranteed in analogue settings.

The German legal framework illustrates the centrality of procedural fairness (Verfahrensgerechtigkeit), which is closely tied to the rule of law and the protection of individual rights. Core procedural guarantees—such as the right to be heard, the duty of official investigation, and the obligation to provide reasons—are codified in §§ 24, 28, and 39 of the Verwaltungsverfahrensgesetz (VwVfG). The right to inspect files (Akteneinsichtsrecht) under § 29 VwVfG further strengthens these safeguards by requiring authorities to maintain records that truthfully and comprehensively document the course of the administrative procedure. This obligation ensures the verifiability of administrative action over time, particularly when decisions are certified with a qualified electronic signature pursuant to § 37(4) VwVfG[371]. Jurisprudence and scholarship consistently emphasise that the right to inspection presupposes a corresponding duty to compile complete and accurate documentation[372].

The right to inspect administrative files, as regulated by § 29 VwVfG, also poses challenges for internal administrative practice. While at first glance the provision appears limited to granting parties access to relevant files, it simultaneously functions as a mediating mechanism between the administration's external legal relations and the organisation of its internal workflows. Proper file management is therefore not merely a matter of administrative order but a substantive guarantee of legality, ensuring both effective external legal protection for those affected and the structuring of internal processes in accordance with lawful action[373].

The challenges of ensuring fairness in digitalised procedures are illustrated by a documented case from the Netherlands, where a data-linkage error incorrectly attributed

[371] VwVfG §§ 24, 28, 29, 37, and 39.
[372] Britz, "Reaktionen des Verwaltungsverfahrensrechts,", 250.
[373] Ibid

ownership of a second property to a citizen, resulting in an unjustified tax assessment. Her formal complaint was addressed only after a considerable delay, and the burden of disproving the error rested entirely on her. The administrative process failed to provide timely review, transparency, or meaningful engagement—demonstrating the need to embed procedural fairness directly into digital governance systems[374]. Fraenkel-Haeberle (2020) argues that digitalisation must not erode the inclusive and dialogic character of administrative procedure, and that procedural safeguards must be adapted to ensure transparency and contestability in digital environments[375]. Alpar and Olbrich (2005) likewise emphasise that effective e-government requires a careful examination of administrative processes within their legal context, ensuring that "legal constraints on public processes must be respected"[376].

In addition, the purpose of this obligation is not merely administrative order, but rather the truthful and comprehensive recording of the relevant course of events. In this way, file management contributes to ensuring legality in two interrelated respects: by enabling effective external legal protection for those affected and by structuring internal administrative processes in accordance with the principles of lawful action[377].

For certain administrative acts, where statutory provisions expressly require written form—particularly those producing long-term legal effects—additional requirements regarding the signature may be imposed (§ 37(4) draft VwVfG). In order to establish procedural mechanisms for electronic administrative decisions that are equivalent to the written form, it is necessary that such acts remain verifiable in their entirety over an extended period of time, in much the same way as written administrative acts[378].

3.4.3.2. Equality in algorithmic systems

The principle of equality (Gleichbehandlungsgrundsatz), enshrined in Article 3 of the Basic Law (Grundgesetz), is a foundational component of German administrative law and a key reference point in the development of contemporary e-government frameworks. As administrative authorities increasingly rely on algorithmic systems to support—or in some instances to automate—decision-making processes, new concerns emerge regarding

374 Widlak, van Eck, and Peeters, "Good Digital Administration", 11.
375 VwVfG §§ 24, 28, 39; Fraenkel-Haeberle, "Fully Digitalized Administrative Procedures," 108.
376 Paul Alpar and Sebastian Olbrich, Legal Requirements and Modelling of Processes in e-Government (Marburg: University of Marburg, 2005).
377 Britz, "Reaktionen des Verwaltungsverfahrensrechts,", 250.
378 Heribert, "Fortentwicklung des Verwaltungsverfahrensgesetzes", 146.

the potential for unequal treatment[379].

Particular attention has been drawn to the use of machine learning applications, which depend on large datasets for training purposes. Since such data may reflect existing societal patterns and biases, there is a possibility that algorithms unintentionally reproduce or even intensify these distortions. This, in turn, could lead to forms of discrimination or unequal treatment of individuals, either on the basis of legally protected attributes or through proxy variables that indirectly correlate with such attributes[380]. Conversely, it has been argued that algorithm-based systems also provide governments with new opportunities to reduce undesired biases by introducing mathematical adjustments, sometimes without significant loss of accuracy. The challenge, therefore, lies not only in mitigating bias but also in leveraging the capacity of algorithms to enforce a higher and more consistent standard of equality than human-led processes[381].

In this context, digital equality has emerged as a contemporary expression of the broader constitutional principle of equality[382]. As Bogdanovskaya (2022) notes, one of the most pressing challenges is the digital divide—the disparity between individuals who have effective access to digital technologies and those who do not[383]. This divide often correlates with age, education, income, disability, or geographic location. The European Commission's 2022 report on digital inclusion, for example, indicates that 42% of EU residents aged 65 and older lack basic digital skills[384]. Such disparities pose a significant challenge to equality in public administration, as they risk excluding vulnerable groups from fully participating in digitalised administrative processes. In this sense, e-government is not merely a technical reform but also a vehicle for promoting inclusivity and equal participation in public life, echoing the welfare state's broader commitment to social equity.

German anti-discrimination law—particularly the General Equal Treatment Act (Allgemeines Gleichbehandlungsgesetz, AGG)—provides the statutory framework for addressing risks of unequal treatment. Yet several commentators have argued that the

---

[379] Art. 3 GG; AGG; Indra Spiecker gen. Döhmann and Emanuel V. Towfigh, Coded Bias: The General Equal Treatment Act and Protection against Discrimination by Algorithmic Decision-Making Systems (Berlin: Federal Anti-Discrimination Agency, April 2023), https://www.antidiskriminierungsstelle.de/SharedDocs/downloads/EN/publikationen/ki_study.pdf?__blob=publicationFile&v=2

[380] Ibid.

[381] Coglianese, "Administrative Law in the Automated State,", 112.

[382] Bogdanovskaya, "E-Government: Legal Aspects," 4-9.

[383] Ibid

[384] European Commission, Digital Economy and Society Index (DESI) 2022: Human Capital (Brussels: European Commission, 2022) https://digital-strategy.ec.europa.eu/en/library/digital-economy-and-society-index-desi-2022.

enforcement mechanisms provided under the AGG are not fully adapted to the opacity and technical complexity of algorithmic decision-making. A recent legal opinion commissioned by the Federal Anti-Discrimination Agency similarly stresses the importance of developing clearer accountability structures and introducing stronger safeguards to prevent indirect or intersectional discrimination that may arise in the context of digital administration[385].

3.4.3.3. Public Participation

The principle of citizen participation has increasingly been recognised as a core norm within administrative law, obliging public authorities to involve the public in decision-making on matters of substantial social significance. Public participation (öffentliche Beteiligung) is a well-established procedural principle in German administrative law, particularly in planning and infrastructure-related decisions, where frameworks such as Section 26 of the Municipal Code of North Rhine-Westphalia explicitly provide for citizen involvement[386].

In practice, however, legislators may be tempted to narrowly define what constitutes a matter of high social importance, often as a means of limiting administrative burdens.Developments in digital governance offer a potential way to reconcile this tension. By making use of digital platforms, administrations can facilitate public engagement more efficiently, simplify service delivery, and even support forms of electronic participation, including electronic voting. Consequently, the range of issues on which citizens can participate meaningfully is broadened, illustrating how digital technologies can strengthen the principle of participation while simultaneously supporting administrative efficiency[387].

At the same time, developments in digital governance provide notable opportunities to strengthen and broaden participation. For instance, § 18 of the E-Government-Gesetz NRW explicitly institutionalises the use of electronic channels for participation, requiring transparent procedures and the disclosure of results through portals such as Beteiligung NRW[388]. At the federal level, § 12a EGovG on Open Data reinforces this principle by promoting indirect public scrutiny, enabling citizens and civil society to access and analyse raw administrative data, thereby deepening the epistemic legitimacy of governance.

---

[385] Art. 3 GG; AGG; Spiecker gen. Döhmann and Towfigh, *Coded Bias* (2023).
[386] Mael Baummar, "Modernising Public Administration—Reimagining Public Administration for the Digital Age," Közigazgatási és Infokommunikációs Jogi PhD Tanulmányok 5, no. 1 (2024): 5–15.
[387] Baummar, "Modernising Public Administration,".
[388] Federal Ministry of the Interior and Home Affairs (BMI), "The Federal E-Government Act," Verwaltung Innovativ (accessed October 5, 2025), https://www.verwaltung-innovativ.de/DE/Verwaltungsdigitalisierung/E-Government-Gesetz/e-government-gesetz_node.html

In this context, e-government reform must not only preserve existing participation mechanisms but also adapt them to ensure transparency, traceability, and legal certainty in digital environments[389].

3.4.3.4. Conclusion: The Intersecting Challenges of Digital Governance

It can be concluded that fundamental safeguards, such as equality, procedural fairness and proportionality, cannot be adequately protected solely through traditional procedural mechanisms. Digital governance requires a proactive legal response that embeds these principles directly into the design and implementation of administrative systems[390]. This proactive orientation is driven by practical tensions. For instance, the balance between efficiency and cost emerges in the requirement to maintain both analogue and digital communication channels. Although these parallel structures are principally designed to ensure accessibility, they concomitantly give rise to questions regarding their long-term sustainability. At the same time, the notion of digital equality underscores the individual's right to choose the means by which they engage with public authorities. This creates an obligation for administrations to ensure that services remain accessible to all, irrespective of citizens' level of digital literacy or socio-economic status[391].

Recent reports, including the 2024 assessment by the German Federal Digital Service Coordinator, emphasise that inclusive design and proactive risk mitigation are indispensable. Such measures are essential to ensure that technological innovation does not inadvertently exclude or disadvantage particular social groups, thereby undermining the principle of equality within public administration[392].

Taken together, these challenges indicate that digital transformation not only tests the adaptability of administrative law but also compels it to revisit its normative foundations. Yet the analysis above shows that the principle of equality has retained its centrality throughout this process. The German legislator has remained attentive to its implications and has consistently integrated equality considerations into the statutory frameworks governing administrative automation. In this way, digitalisation has not been conceived as

---

[389] VwVfG, § 35a; Elena Buoso, "Fully Automated Administrative Acts in the German Legal System," *European Review of Digital Administration & Law* 1, no. 1–2 (2020): 113–122 https://www.erdalreview.eu/free-download/978882553896011.pdf

[390] Art. 3GG; AGG; Spiecker gen. Döhmann and Towfigh, *Coded Bias* (2023).

[391] Bogdanovskaya, "E-Government: Legal Aspects," 4-9.

[392] ISD Germany. Identification, Assessment and Mitigation of Systemic Risks in the Context of the Digital Services Act. Report for the German Digital Service Coordinator (Bundesnetzagentur), November 2024. Accessed September 7, 2025. https://www.dsc.bund.de/DSC/DE/Aktuelles/studien/KeyFindings_ISD.pdf

an exception to equality guarantees but as a domain in which those guarantees continue to guide and constrain regulatory design.

By embedding equality into the architecture of digital governance, the legislator underscores that technological innovation must remain accountable to constitutional principles, ensuring that efficiency gains do not come at the expense of fairness and inclusivity.

3.4.4. Transparency and Accountability

Transparency and accountability are foundational pillars of administrative law, and their importance has only increased in the context of digital transformation. The transparency of administrative procedures and decisions forms an essential basis for ensuring both legal and democratic accountability in digital environments.

3.4.4.1. Transparency

Traditionally, transparency has enabled individuals to understand how public authorities operate and make decisions, thereby supporting democratic oversight and legal control. In the digital era, however, the principle extends beyond mere access to information. It now encompasses the traceability of administrative processes, particularly when decision-making is supported or carried out by automated systems.

The increasing technical and organisational interconnection among actors involved in administrative decision-making carries the risk of diminishing both transparency and legitimacy. Digital administrative environments may incorporate staff members without formal competence, or even private actors, into virtual decision-making units, potentially obscuring key stages of the process[393]. Such opacity raises legitimate concerns for democratic legitimacy, especially as traditional forms of hierarchical accountability are being challenged by more complex and fragmented organisational structures. These developments may complicate the attribution of responsibility for individual decisions and thereby weaken accountability mechanisms.

It is therefore essential that a resilient legal framework is established. The German Federal E-Government Act plays a central role in operationalising transparency within the digital administrative landscape. Section 3 requires public authorities to provide essential

[393] Britz, "Reaktionen des Verwaltungsverfahrensrechts,", 253.

information about their roles and procedures in clear and accessible terms through publicly available networks. Section 9 further obliges federal authorities to analyse and optimise administrative procedures before introducing IT systems, ensuring that workflows allow individuals to track their applications electronically[394]. At the European level, the General Data Protection Regulation (GDPR) reinforces transparency in the processing of personal data. Articles 5, 13, and 14 oblige public authorities and other controllers to inform individuals about the purposes of data collection, the handling processes involved, and the entities responsible for ensuring secure and lawful data management[395].

Despite these regulatory efforts, substantial challenges remain. Technology does not inherently promote transparency; complex systems—particularly machine-learning models often characterised as "black boxes"—may obscure the reasoning underlying specific outcomes[396]. While data scientists may articulate an algorithm's general design, identifying the precise rationale behind a particular decision can be difficult[397]. This limitation heightens the responsibility of public administrations to ensure the explainability of automated decisions so that individuals can understand and, where appropriate, challenge them. In addition, transparency can conflict with other legal principles, such as privacy and data secrecy. This tension is exemplified by the "transparency–anonymity dilemma" identified by Weiler (2021) in the context of electronic voting in Germany. In its jurisprudence, the Bundesverfassungsgericht held that transparency must allow an average citizen to comprehend and verify the voting process, yet without compromising the constitutional guarantee of ballot secrecy[398].

Hohmann (2021) also underscores that clear and effective communication between administrations and their clients is essential for ensuring transparency and fostering durable trust. While remote interactions have long been accepted in certain administrative contexts through representation, Hohmann argues that a client's physical presence cannot be fully replaced by written or digital procedures when formal statements must be made before the administration. Electronic methods only partially address this problem. Guaranteeing transparency in administrative procedures should therefore be a fundamental objective in the advancement of technical information tools and digital infrastructure, and a

[394] OZG, §3. and §9.
[395] GDPR.
[396] Coglianese, "Administrative Law in the Automated State,", 108.
[397] Ibid.
[398] Thomas Weiler, "How to Solve the Transparency-Anonymity Dilemma?," E-Vote-ID 2018 (2018), 345.

responsibility of public authorities[399].

From another perspective, Margetts (2006) argues that Information and Communication Technology can enhance transparency by enabling the management of large data volumes, promoting the formalisation of administrative rules, and facilitating easier access to information. She nevertheless identifies obstacles such as limited user competence and the absence of effective digital tools—challenges that have gradually diminished over time. Crucially, Margetts cautions that technological progress alone does not guarantee greater transparency; sophisticated infrastructures have not always translated into more open or comprehensible administrative practice[400].

This concern is reflected in the European Commission's 2020 benchmarking of e-government services, which found that many citizens still struggle to understand how national administrations use their personal data. Limited access to information about data processing and responsible entities, combined with low uptake of national e-ID schemes, continues to impede transparency and ease of interaction[401]. These findings underscore the persistent gap between digital infrastructure and the principle of transparency, particularly in automated systems where algorithmic decision-making may further obscure accountability.

These observations point to a critical conclusion: although the legal framework provides a robust foundation for transparency—especially through instruments such as the GDPR and national freedom-of-information laws—its practical effectiveness is constrained by infrastructural shortcomings and the absence of detailed standards for algorithmic accountability. Bridging this gap requires not only legal refinement but also sustained investment in digital infrastructure and user-centred design, ensuring that transparency is both technically feasible and meaningfully accessible.

Transparency concerns are therefore understandable when considering an administrative system that increasingly relies on machine-learning models. Nevertheless, these concerns do not appear to constitute an inherent obstacle to the adoption of such systems, nor do they necessarily require a fundamental restructuring of administrative law.

---

[399] Balázs Hohmann, "The Impact of the Government's Restrictive Measures on the Transparency of the Administrative Proceeding in the Context of the COVID-19 Pandemic." *In Expanding Edges of Today's Administrative Law*, January 2021. ADJURIS..

[400] Helen Margetts, "Transparency and Digital Government," in Proceedings of the British Academy, vol. 135 (Oxford: Oxford University Press, 2006), 197–210.

[401] European Commission, eGovernment Benchmark 2020: eGovernment That Works for the People – Insight Report (Luxembourg: Publications Office of the European Union, 2020), https://op.europa.eu/en/publication-detail/-/publication/c0bd38e3-f98e-11ea-b44f-01aa75ed71a1.

This is particularly evident in light of the fact that administrative law has never required absolute transparency or fully exhaustive reasoning[402].

Within this framework, administrative bodies employing machine-learning systems may continue to fulfil their established duties to provide reasons by offering general explanations of how these systems are designed to function and demonstrating that they have been validated accordingly. A legally adequate explanation does not require disclosure of every technical detail; rather, it may be sufficient to describe the type of algorithm used, specify the objective it was developed to achieve, and demonstrate that the system processes relevant categories of data in a manner that meets this objective as reliably as, or more reliably than, existing administrative practices[403].

Recent proposals for a Federal Transparency Law (Transparenzgesetz des Bundes) and a statutory right to Open Data reflect a growing recognition that transparency must evolve alongside technological innovation. In this sense, e-Government not only reinforces existing transparency obligations but also reshapes them, requiring new legal and institutional mechanisms to preserve public oversight in a digital administrative environment[404].

Ultimately, the aim is not to achieve full transparency in an absolute sense—a standard that is conceptually and practically unattainable—but to realise meaningful transparency: a degree of openness that enables individuals to understand, engage with, and, where necessary, challenge administrative processes in a manner consistent with democratic values and legal guarantees.

3.4.4.2. Accountability

The principle of accountability requires that administrative decisions be accompanied by legitimate justification, thereby enabling citizens to demand explanations and challenge actions where necessary[405]. Yet, the challenges posed to transparency—

---

[402] Coglianese, "Administrative Law in the Automated State,", 108.
[403] Ibid
[404] EGovG, §; Heiko Richter, "Federal Transparency Law and 'Right to Open Data': Conceptual Perspectives Beyond the Reinvention of the Wheel," Max Planck Institute for Innovation and Competition Discussion Paper No. 22 (2023), https://doi.org/10.2139/ssrn.4361517 Research – Improving Transparency and the Right to Open Data – Max Planck Institute for Innovation and Competition (https://www.ip.mpg.de/en/research/research-news/improving-transparency-and-the-right-to-open-data.html); Peter Schaar, Freedom of Information and Transparency in Germany (Bonn: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), 2019). https://www.reformgestaltung.de/fileadmin/user_upload/Dokumente/GIZ_Informationsfreiheit_en.pdf
[405] Petoft, "General Principles of Administrative Law", 348.

particularly the opacity of automated decision-making and algorithmic processes—directly affect the attribution of responsibility. Accountability, in this sense, is inseparable from the capacity to identify the actor responsible for potential errors and to guarantee the availability of effective legal remedies[406]. Although digitalisation raises questions about whether automation might alter established administrative principles, an examination of German law suggests that core doctrines of liability and judicial oversight remain fundamentally unaffected.

German administrative law, as articulated in Article 34 of the Grundgesetz, holds the state or the public body liable for wrongful acts, even if committed by an individual official. This model of indirect state liability attributes the wrongful act of the individual to the state itself, thereby safeguarding accountability without undermining the functional independence of the official[407]. Importantly, this principle extends to automated decisions. As Langer (2024) observes, public authorities cannot evade their constitutional obligations by outsourcing responsibilities to private contractors or algorithmic tools: "*the principle of non-delegation prohibits the transfer of legal responsibility to external entities*"[408]. Consequently, governmental decisions must remain subject to continuous accountability and judicial review, compelling administrations to strengthen their capacity to oversee and manage technological processes[409].

Empirical experience further suggests that digitalisation, when effectively integrated into public administration, may reinforce rather than weaken accountability mechanisms. Its potential lies in enhancing transparency, traceability, and responsiveness in administrative decision-making. Evidence from Indonesia illustrates this point: the introduction of digital administrative systems at the district level was associated with measurable improvements in accountability, with districts that had more advanced e-government practices demonstrating stronger institutional responsibility and clearer oversight structures. These findings suggest that, when properly integrated into legal and organisational frameworks, digitalisation can serve as a catalyst for more robust accountability[410].

---

[406] Charlotte Langer, "Decision-making power and responsibility in an automated administration." Discover Artificial Intelligence 4, no. 1 (2024): 59.
[407] Hans-Jürgen Papier and Shervin Shirvani, in Michael Dürig, Roman Herzog, and Rupert Scholz, Grundgesetz: Kommentar, 95th ed. (2021), Art. 34 GG, para. 17 ff.
[408] Langer, "Decision-making power and responsibility in an automated administration", 59.
[409] Ibid.
[410] Tetra Hidayati Irwansyah and Syarifah Hudayah, "The Effect of E-Government on Local Government Performance Accountability in Indonesia," International Journal of eBusiness and eGovernment Studies 14, no. 2 (2022): 217–246, https://doi.org/10.34111/ijebeg.14.2.217

More recent scholarship has also stressed the need to clarify the legal position of those who exercise authority through automated decision-making. As Markku (2024) argues, human actors must ultimately remain responsible for the consequences arising from the use of automated decision-making technologies. This responsibility includes ensuring that all data processing within such systems complies with the applicable legal standards[411].

3.4.4.3. Interrelation and Conclusion

As Shasivari and Hohmann (2021) note, full transparency—understood as complete visibility into administrative processes and decision-making—is ultimately unattainable, even within a system governed strictly by the principle of legality[412]. As Shasivari and Hohmann (2021) note, full transparency—understood as complete visibility into administrative processes and decision-making—is ultimately unattainable, even within a system governed strictly by the principle of legality. When information technology extends into automated decision-making, the implications for public administration become increasingly complex. Automation does not negate the principle of accountability, but it does require its recalibration. The opacity of algorithmic processes challenges traditional mechanisms of responsibility, making it essential to adapt legal frameworks so that liability remains clearly defined[413].

In this respect, accountability must be understood not only as the attribution of responsibility for errors but also as the assurance that review mechanisms remain accessible and effective. The protection of individual rights, therefore, remains central, even when decisions are generated through automated systems.

The interdependence of transparency and accountability reveals a dynamic tension: transparency creates the conditions for oversight, while accountability ensures that responsibility can be enforced. In the digital administrative state, neither principle can be realised in isolation. They must evolve together—transparency enabling citizens to comprehend and contest administrative processes, and accountability ensuring that public authorities remain answerable for their actions.

---

411 Suksi, “Administrative Due Process".

412 Jeton Shasivari and Balázs Hohmann, eds., Expanding Edges of Today’s Administrative Law: Contributions to the 4th International Conference “Contemporary Challenges in Administrative Law from an Interdisciplinary Perspective,” May 21, 2021, Bucharest (Bucharest: ADJURIS–International Academic Publisher, 2021), 50.

413 Smith, M. L., M. E. Noorman, and A. K. Martin. “Automating the Public Sector and Organizing Accountabilities.” Communications of the Association for Information Systems 26, no. 1 (2010): 1–16. Cited in Suksi, “Administrative Due Process,” 98.

Ultimately, the conclusion to be drawn is that digitalisation does not diminish the relevance of these principles but reshapes their application. Legal frameworks must continue to guarantee meaningful transparency and enforceable accountability, ensuring that technological innovation does not erode constitutional safeguards but instead reinforces them within new institutional contexts.

3.4.5. Efficiency and Timeliness

It may be inferred that the notion of efficiency, although not explicitly codified as an autonomous principle, is embedded in the traditional procedural norms of German administrative law. The principle of timeliness, operationalised through Section 42a VwVfG's fictitious approval mechanism, seeks to prevent undue delays in administrative decisions. The principle of informality (§10 VwVfG)[414] grants authorities the flexibility to structure procedures in a manner suited to the circumstances of the case, while the official investigation principle (§ 24 VwVfG) ensures that relevant facts are established ex officio[415]. These provisions are complemented by the principles of simplicity and appropriateness, which require administrative action to remain proportionate, necessary, and efficiently organised. In practice, this entails avoiding unnecessary summons, irrelevant requests for documentation, or excessive paperwork, thereby preventing procedural overreach and undue burdens on citizens. Taken together, these norms demonstrate that efficiency is not merely a policy preference but a value embedded in the very architecture of administrative procedure[416].

Moreover, although the term efficiency (Effizienz) is not explicitly codified as a legal objective within the Federal E-Government Act (EGovG)[417] or the Online Access Act (OZG)[418], it is widely recognised as an implicit goal underpinning both legislative instruments.Official commentaries and government communications consistently present these laws as instruments for streamlining administrative procedures, reducing bureaucratic burdens, and enhancing service delivery through digital transformation. In this sense, efficiency functions less as a formal legal principle than as a policy-driven aspiration aligned with broader efforts at administrative modernisation. The Federal Ministry of the Interior, for example, describes the EGovG as enabling "simpler, more user-friendly, and more

414 Germany, *VwVfG*, § 10.
415 Germany, *VwVfG*, § 24.
416 Schmitz, "Administrative Procedure in German Administrative Law", 4.
417 EGovG.
418 OZG.

efficient" public services, while the OZG is promoted as a means to meet citizens' expectations for "digital and efficient" administrative interactions[419].

Despite these legislative ambitions, empirical studies indicate that the anticipated benefits have not always materialised. Röhl (2023) notes that many e-government initiatives digitise only the front-end interface without integrating the underlying back-office processes, thereby generating additional complexity rather than reducing it. Persistent problems of interoperability and standardisation between federal and state systems further limit efficiency at scale. These findings demonstrate that technological deployment alone is insufficient; genuine efficiency requires coherent legal frameworks, institutional coordination, and sustained investment in infrastructure and administrative capacity[420]. Alpar and Olbrich (2005) similarly stress that the introduction of digital tools must be accompanied by a careful examination of how ICT can improve administrative processes, both internally and in citizen-facing services[421].

A comparable assessment is offered by the Nationaler Normenkontrollrat[422], whose analysis describes the development of e-government in Germany as caught in a "double vicious circle" (doppelter Teufelskreis): unattractive digital services discourage citizen uptake, while low usage rates reduce the incentive for administrations to invest in improving service quality[423]. From the perspective of administrative law, this dynamic illustrates that efficiency is not merely a technical matter but is structurally shaped by institutional fragmentation, unclear responsibilities, and the absence of binding coordination mechanisms across federal levels. The report identifies legal certainty as a prerequisite for overcoming investment risks, emphasising that without coherent interpretative frameworks and enforceable commitments, digital transformation cannot deliver the expected efficiency gains. Particularly noteworthy is the emphasis on municipalities as central actors in service delivery, whose capacity to implement efficient digital processes depends on coordinated support and shared responsibilities between federal and state levels. These findings reinforce the broader argument that efficiency in administrative procedure requires not only

[419] Inner and Heimat Bundesministerium. "E-Government-Gesetz." Accessed September 18, 2025. https://www.bmi.bund.de/DE/themen/moderne-verwaltung/e-government/e-government-gesetz/e-government-gesetz-node.html
[420] Klaus-Heiner Röhl, The Status of the Online Access Act at the Target Date of Early 2023 (Cologne: German Economic Institute, 2023) https://www.iwkoeln.de/en/studies/klaus-heiner-roehl-the-status-at-the-target-date-of-the-online-access-act-at-the-beginning-of-2023.html
[421] Alpar and Olbrich, Legal Requirements and Modelling.
[422] Jens Fromm et al., E-Government in Deutschland: Vom Abstieg zum Aufstieg, ÖFIT-Whitepaper (Berlin: Kompetenzzentrum Öffentliche IT, 2015), 24–25.
[423] Ibid.

technological tools but also stable legal frameworks, institutional alignment, and sustained political commitment[424].

This dual focus on internal workflows and external service delivery reflects the broader understanding of efficiency in administrative law, which encompasses not only cost-effectiveness but also institutional performance and the quality of citizen interactions. Windoffer (2020) reinforces this perspective, arguing that administrative action should be assessed not only on its legal foundations but also in light of its practical and economic consequences[425].

Digitalisation and automation can thus be understood as extensions of the efficiency-oriented approach. They facilitate the parallel processing of administrative files, shorten transaction times, and optimise the allocation of resources across different offices and authorities. These technological developments also enable continuous access to specific administrative procedures by multiple actors simultaneously. As a result, physical transfer of file folders or the production of photocopies for concurrent processing is no longer necessary; instead, documents can be accessed securely and in real time at any authorised location through networked systems[426].

In practical terms, digitisation has also transformed communication within administrative hierarchies. In policy-making and municipal administration, email and other electronic communication channels often facilitate direct contact between case officers and senior management[427]. While this does not dismantle hierarchical structures, it enables a more efficient upward flow of information, thereby allowing administrative leadership to harness creative potential at lower organisational levels. The downward flow of authority, including the capacity to issue binding instructions, remains unaffected, preserving the legitimacy and formal command structure of administrative governance[428].

A particularly significant innovation supporting both efficiency and legal certainty is the electronic signature under Regulation (EU) No 910/2014 (eIDAS Regulation)[429]. By

---

[424] Ibid.
[425] Windoffer, Verwaltungswissenschaft (2020), 12.
[426] Lenk, Außerrechtliche Grundlagen für das Verwaltungsrecht in der Informationsgesellschaft: Zur Bedeutung von Information und Kommunikation in der Verwaltung, in Hoffinann-Riem/Schmidt-Aßmann (Hg.), Verwaltungsrecht in der Informationsgesellschaft, 2000, 93 Cited in Britz, "Reaktionen des Verwaltungsverfahrensrechts,", 244.
[427] Britz, "Reaktionen des Verwaltungsverfahrensrechts,", 255.
[428] Ibid
[429] European Commission, "What Is the Legislation – eSignature," eSignature Digital Building Blocks, accessed September 13, 2025, https://ec.europa.eu/digital-building-blocks/sites/spaces/DIGITAL/pages/467109076/What+is+the+legislation+-+eSignature.

granting qualified electronic signatures (QES) the same legal validity as handwritten signatures, the regulation enables administrative procedures—from applications to notifications and formal decisions—to be carried out entirely in digital form. Integrating eIDAS standards into German administrative practice demonstrates how technological and legal innovations can reinforce efficiency by facilitating secure, end-to-end digital workflows without compromising procedural legitimacy.

Nevertheless, the pursuit of efficiency through digitalisation also raises normative and procedural challenges. As public services increasingly shift to online-only formats—such as digital tax filings, electronic identity systems, or algorithmically determined welfare benefits—digitally marginalised individuals risk de facto exclusion from essential services. This outcome conflicts with constitutional principles of equality and effective access to public administration[430]. Moreover, algorithmic decision-making introduces the risk of bias and indirect discrimination, as exemplified by the Dutch SyRI case, in which social security profiling disproportionately targeted migrants[431]. To address these concerns, German legal scholars and regulatory bodies advocate for inclusive strategies, including maintaining analogue access channels, ensuring interface accessibility, and conducting algorithmic impact assessments to safeguard fundamental rights and accountability[432].

Taken together, these frameworks show that efficiency operates both as a driving principle of digital transformation and as a normative standard embedded within German administrative law. It is not merely a policy objective but a multidimensional concept that shapes the design of administrative procedures, informs the assessment of technological innovations, and interacts with constitutional guarantees of equality and access.

3.5. Conclusion

The integration of automated administrative procedures, as introduced by § 35a of the Federal Administrative Procedure Act[433], represents a profound procedural shift that places considerable pressure on the resilience of established administrative guarantees. This

[430] Sofia Ranchordás, "The Digitization of Government and Digital Exclusion: Setting the Scene," in The Rule of Law in Cyberspace (Cham: Springer, 2022).
[431] District Court of The Hague, Judgment of February 5, 2020, Case No. C/09/550982 / HA ZA 18-388 (NJCM v. Netherlands [SyRI]), ECLI:NL:RBDHA:2020:1878, accessed September 7, 2025, https://www.loc.gov/item/global-legal-monitor/2020-03-13/netherlands-court-prohibits-governments-use-of-ai-software-to-detect-welfare-fraud/.
[432] Margot E. Kaminski, and Gianclaudio Malgieri. "Algorithmic Impact Assessments under the GDPR: Producing Multi-Layered Explanations." International Data Privacy Law 11, no. 2 (2021): 125–144. https://doi.org/10.1093/idpl/ipaa020.
[433] VwVfG, § 35a.

legal innovation, which permits decisions without human intervention, must be reconciled with the principle of procedural fairness and the constitutional requirement that the individual be treated as a subject of rights (Rechtssubjekt) rather than merely as an object of state processing (Objekt staatlicher Verarbeitung). The concern arises from the structural risks inherent in delegating sovereign authority to algorithmic systems. As Martini and Nink (2017) warn, the pursuit of efficiency through automation may erode the human-centred orientation that has traditionally underpinned legitimate administrative action, thereby placing pressure on the normative foundations of the administrative act itself.

The German legislative approach operates within the strict boundaries of Article 22 GDPR, which establishes a near-general prohibition (grundsätzliches Verbot) on decisions based solely on automated processing where such decisions produce significant legal effects. To rely on the exception permitted under Union law, the national framework must incorporate robust minimum guarantees (Mindestgarantien) that protect personality rights (Persönlichkeitsschutz). The architecture of § 35a VwVfG seeks to strike this balance by mandating key procedural safeguards. Most notably, the statutory exclusion of fully automated procedures in cases involving discretionary power (Ermessen) or assessment margins (Beurteilungsspielraum) ensures that complex, individualised constellations requiring fairness in the individual case (Einzelfallgerechtigkeit) remain under human control. In this way, the principle of proportionality continues to function as a safeguard against arbitrary outcomes in administrative action.

The integrity of automated procedures also requires the adaptation of traditional citizen rights. Individuals must be granted an effective, low-threshold right to demand the intervention of a natural person (Eingreifen einer Person) capable of substantively reviewing and, where necessary, altering the automated outcome. This procedural right prevents the human role from degenerating into a purely formal exercise, thereby maintaining accountability for the resulting administrative act. Equally important is the adaptation of the right to be heard (Anhörungsrecht), which must give individuals a genuine opportunity to present complex or unforeseen case-specific circumstances that an algorithm cannot reliably anticipate. For automated systems to comply with procedural fairness, they must go beyond simple tick-box mechanisms, enabling freely formulated submissions to ensure that the unique facts of each case are adequately considered before a final determination is made.

In sum, while § 35a VwVfG accelerates the pursuit of efficiency, its normative legitimacy depends on the meticulous embedding of procedural and personality-protective safeguards. Automation may standardise simple cases, but it must never compromise the

fundamental fairness demanded in all administrative matters[434].

The broader analysis of e-governance suggests that the integration of digital technologies has not required the abandonment of administrative law's foundational principles. Instead, it has triggered a process of re-conceptualisation and technological adaptation. The central tension lies in reconciling the drive for technological efficiency with the enduring normative commitments of the rule of law[435]. The resilience of these principles stems from their inherent attributes: their generality and comprehensiveness allow them to encompass novel algorithmic phenomena unforeseen by earlier legislation, while their continuity ensures that underlying legal and political values retain normative stability amid rapid technological change.

This adaptive resilience becomes visible through the principles' core operational features. The attribute of Optimization provides the crucial legal mechanism for adjusting abstract norms to concrete circumstances, ensuring that automated systems, despite their binary logic and predetermined structures, remain subject to the nuanced requirements of Legality and individualised legal scrutiny. Furthermore, the characteristic of Performance Relativity is indispensable, as it facilitates the axiological competition necessary to manage the fundamental tension between the pursuit of managerial Efficiency and the enduring commitment to Procedural Fairness and Proportionality. This function ensures that the inherent flexibility of administrative procedure is preserved, preventing technological efficiency from overriding fundamental rights-based protections.

The transition from paper-based processes to digital platforms, therefore, requires legislative and judicial responses that secure the functional equivalence of electronic procedures, safeguarding legal certainty and the integrity of official records. At the same time, the reliance on data processing and algorithmic governance heightens the need for robust frameworks governing data protection and the ethically responsible design of algorithmic systems. These developments confirm that the role of administrative law is not to resist digital transformation but to provide the normative structure through which it is channelled.

Yet the need to achieve these normative objectives under conditions of rapid technological change exposes a central challenge: the shift from reactive legal oversight to proactive, design-oriented governance. Traditionally, administrative law has relied on ex

[434] Martini and Nink, "Wenn Maschinen entscheiden", 1.
[435] Sommermann, "Constitutional state and public administration", 21.

post review, enabling courts to scrutinise decisions after they have been made. In the digital age, however, where algorithms generate decisions with speed and scale, this reactive model is often insufficient. The risk is that the drive for technological efficiency undermines the individualised scrutiny, contextual sensitivity, and human-centred nature that have long defined legitimate administrative action[436].

As the analysis of proportionality and accountability has shown, legal principles must be embedded into the very architecture of digital systems. This requires a new approach: one in which legality functions as a design principle, procedural fairness is integrated as a feature of the software, and accountability is ensured through built-in traceability[437].

Looking forward, the future of administrative law must therefore be defined not by a retreat from digitalisation, but by a thoughtful and deliberate recalibration of its normative compass. This reform comprises several key areas:

a. Legal clarity for algorithmic systems: Developing a coherent framework that defines the permissible scope of automation, establishes standards for transparency and explainability, and clearly allocates responsibility for decisions generated through automated processes[438].

b. Human-in-the-loop safeguards: Requiring meaningful human involvement in administrative processes, ensuring that officials retain the ability to override automated outputs based on individual circumstances and contextual judgment[439].

c. A "principles-by-design" approach: Embedding proportionality, transparency, and fairness directly into the design phase of digital systems so that technological innovation aligns with the core values of public law from the outset[440].

Ultimately, while the analysis has shown that the core principles of administrative law remain fully applicable, it has also demonstrated that their practical implementation is often confronted with significant challenges. To move beyond this conceptual framework, the following chapter turns to a focused case study. It examines the legal and regulatory landscape of e-government in North Rhine-Westphalia, assessing the extent to which the principles discussed here have concretely shaped the substance of its legislation.

---

[436] Bovens and Zouridis, "From Street-Level to System-Level Bureaucracies," 174-184.
[437] Suksi, "Administrative Due Process," 95.
[438] Suksi, The Rule of Law and Automated Decision-making.
[439] Engstrom and Ho, "Algorithmic Accountability," 800-801; and Suksi, "Administrative Due Process," 95; and Zalnieriute, Bennett Moses, and Williams, "Automating Government Decision-Making," 93.
[440] Suksi, "Administrative Due Process,", 107; and Suksi, The Rule of Law and Automated Decision-making.

The conclusions of Chapter Three, though primarily conceptual, establish the normative foundation for the subsequent case study. The analysis of § 35a VwVfG demonstrated that algorithmic governance requires not only procedural safeguards but also a recalibration of administrative principles to secure fairness, proportionality, and accountability. These findings underscore the necessity of embedding legality and rights protection into the very architecture of digital systems, ensuring that technological innovation remains aligned with constitutional guarantees. Building on this doctrinal framework, Chapter Four turns to the regional experience of North Rhine-Westphalia. By examining the E-Government Act (EGovG NRW), the next chapter investigates how the principles identified at the federal level are implemented within a state context, and how structural, institutional, and political conditions shape the delicate balance between legality and innovation in practice.

Chapter 4: Legal Frameworks for E-Government in North Rhine-Westphalia: An Assessment of Fundamental Administrative Law Principles in the EGovG NRW

4.1. Introduction

The preceding chapters have established the theoretical and institutional foundations for understanding Germany's approach to e-government. Chapter Two outlined the broader legal and administrative context of digitalisation within the federal system, while Chapter Three examined the conceptual redefinition of fundamental administrative law principles in the digital age. Building on this groundwork, the present chapter shifts from theoretical reflection to a focused case study, analysing how these principles are concretely applied and operationalised within a specific legislative framework.

North Rhine-Westphalia (NRW) provides a particularly compelling case for such an assessment, given its proactive legislative approach to e-government. The enactment of the E-Government Act of North Rhine-Westphalia (EGovG NRW)[441] in 2020 constitutes a significant legal foundation for administrative digital transformation. The Act was introduced with the stated aims of adapting public administration to the demands of a digital society and enhancing the quality of services for citizens and businesses. It thus exemplifies how a German state seeks to balance administrative efficiency with the preservation of core legal safeguards.

The genesis of the EGovG NRW was marked by a procedural commitment to transparency and public engagement. This is evidenced by the State's decision to conduct an online expert consultation on the draft law, the findings of which were documented in the Final Report on the Online Consultation in April 2016 (NRW 2016). This early stage demonstrated an explicit intent to integrate principles of procedural fairness and public participation into the legislative process itself[442]. Accordingly, the analysis must begin by assessing how this initial normative commitment was translated into the substantive provisions of the Act, particularly in light of the persistent tension between the legal demand for individualised scrutiny and the technological drive towards standardised efficiency.

This chapter examines the legal and regulatory framework for e-government in North Rhine-Westphalia. It reviews the key provisions of the EGovG NRW and identifies the legal and administrative challenges that have arisen during its implementation. The chapter also

[441] EGovG NRW, §1.
[442] NRW, Final report on the online consultation on the e-government law NRW (Düsseldorf: The Commissioner of the State Government of North Rhine-Westphalia for Information Technology, 2016): 2.

explores the implications of the requirements, with a particular focus on compliance with the general principles of administrative law.

The legislative commitment underlying the EGovG NRW was preceded by a robust political and administrative dialogue emphasising the necessity of a paradigm shift. The proceedings of the "e-nrw" Congress in 2018 illustrate this dynamic. Political actors stressed that digital transformation must prioritise "concrete benefit for the people" (Pinkwart 2018), while administrative leaders underscored the need for "courageous participation" and enhanced municipal cooperation (Petrauschke 2018). The critical call to overcome bureaucratic inertia—including the self-reflective assertion that jurists have traditionally been "laggards of progress" (Petrauschke 2018)—underscored the depth of cultural change required for digitalisation. This discourse confirms that the ensuing legislation was driven by a strategic intention to break with administrative inertia, making it essential to assess whether the legal text successfully translated this ambition into enforceable principles of administrative law[443].

To achieve these objectives, the chapter is structured into four main sections. It begins with a comprehensive overview of the legal and regulatory framework for e-government in NRW. It then proceeds to a critical analysis of the Act's provisions in light of core administrative law principles. This analysis assesses the extent to which these abstract principles have been translated into binding legislative text. The chapter then examines practical challenges and gaps that have emerged during implementation, such as issues related to the digital divide and data protection. Finally, the conclusion summarises the key findings of the case study and links them back to the broader conceptual debates of the dissertation.

4.2. Overview of the Legal and Regulatory Framework for E-Government in North Rhine-Westphalia

This section prepares the ground for the detailed analysis by identifying and outlining the core legal instruments operating at the state level. Its purpose is to map the structure of the relevant legal framework and to show how its various components—from state legislation to federal and EU norms—interact to form the broader regulatory environment governing administrative digitalisation.

[443] Wilfried Kruse and Benjamin Bauer, eds., Yearbook Germany Digital 2020: E-Government and Modernization at Federal, State and Local Levels (Bonn: Behörden Spiegel, 2020), 8-26.

4.2.1. The E-Government Act of North Rhine-Westphalia (EGovG NRW)

The E-Government Act of North Rhine-Westphalia (EGovG NRW) was adopted with the explicit aim of modernising public services and aligning administrative processes with the requirements of the digital age[444].

Furthermore, the EGovG NRW should be contextualised within the broader legislative framework of German federalism. Following the adoption of the Federal EGovG in 2013, the Länder responded unevenly: some hesitated, others lagged behind, while a few went beyond the federal framework. Saxony was the first to enact its own EGovG in 2014, largely mirroring the federal provisions but adapting deadlines. In subsequent years, nearly all Länder adopted similar legislation—NRW on 8 July 2016—while Hamburg remained the sole exception, arguing that technical implementation sufficed without additional statutory regulation[445].

4.2.1.1. Key Provisions

The core objectives and scope of the EGovG NRW are set out in § 1, which expressly aims to facilitate electronic communication both with and within public authorities, ensuring that administrative processes can be conducted electronically and without media discontinuity[446]. Although the Act promotes a uniform digital approach, its binding reach is structurally defined: municipalities are expressly permitted to implement the Act's non-mandatory requirements on their own responsibility (§ 1 Abs. 1 EGovG NRW)[447]. This flexibility clause is essential, as it respects the constitutional principle of municipal self-government by allowing local authorities discretion over obligations not imposed by higher-ranking law.

The most significant procedural obligations are contained in § 2. This provision establishes the fundamental rights and requirements governing digital interaction. At its centre is the obligation to provide electronic access to the administration, requiring authorities to open an electronic channel for the submission of documents. This is supplemented by rules on electronic communication and electronic administrative procedures, aligning administrative practice with contemporary expectations of accessibility

[444] Land Nordrhein-Westfalen, E-Government-Gesetz Nordrhein-Westfalen (EGovG NRW), §1, enacted July 8, 2016, accessed October 8, 2025, https://recht.nrw.de/lmi/owa/br_text_anzeigen?v_id=73520171220150354215
[445] Bernhardt, E-Government-Gesetzgebung, 11.
[446] Wirtschaft.NRW. "Elektronische Verwaltungsarbeit." Wirtschaft.NRW. Accessed January 26, 2026. https://www.wirtschaft.nrw/elektronische-verwaltungsarbeit?utm_source=chatgpt.com
[447] EGovG NRW §1 Abs. 1

and interaction. Equally important is the requirement to introduce electronic file management as the standard mode of operation. This obligation is reinforced by mandates for structural process optimisation and electronic case processing. Additional provisions regulate electronic payments, electronic invoicing, and inter-agency electronic cooperation[448].

Beyond these procedural requirements, the Act defines the foundational components of elektronische Verwaltungsarbeit, which form the operational infrastructure of digital administration in North Rhine-Westphalia. Central to this framework is the mandatory introduction of the E-Akte (§ 9 Abs. 3 EGovG NRW), which—after a transitional period—became compulsory for most state authorities from 2022 onwards. The E-Akte serves as the primary system for the legally compliant, revision-proof storage of electronic files, documents, and workflows, ensuring that all case-relevant information is consolidated in a single digital environment accessible to authorised staff[449].

Two additional components complement the E-Akte: the E-Laufmappe and ersetzendes Scannen. The E-Laufmappe replaces traditional paper circulation folders by enabling digital routing, annotation, and co-signature processes, while ersetzendes Scannen ensures the legally secure conversion of paper documents into electronic form, permitting the destruction of the original paper files. Together, these three elements eliminate media discontinuities, accelerate administrative workflows, and create the technical conditions necessary for the full implementation of electronic administrative procedures as required by § 12 EGovG NRW. Their coordinated rollout is overseen by the state's "Digitale Verwaltung Nordrhein-Westfalen" programme under the leadership of the CIO NRW, underscoring the Act's emphasis on structural and process-oriented digital transformation[450].

While the original scope of the EGovG NRW allowed municipalities discretion over non-mandatory requirements, subsequent legislative amendments have clarified and expanded this framework. Since 14 July 2020, § 1 Abs. 2 explicitly extends the Act's application to municipalities and municipal associations, thereby ensuring that local authorities are largely integrated into the binding e-government framework[451].

In addition to these procedural obligations, the Act also addresses governance elements that directly engage administrative-law principles. Within § 2, specific duties are

[448] Ibid, Section 2.
[449] Wirtschaft.NRW, "Elektronische Verwaltungsarbeit."
[450] Ibid.
[451] Bernhardt, E-Government-Gesetzgebung, 12.

imposed concerning Open Data and the georeferencing of registers. The Act further regulates electronic participation and the legal validity of official electronic publications—provisions essential for ensuring legality and public access to norms. Section 3 establishes a binding framework for implementing federal IT standards and outlines the structure of the IT Cooperation Council. Finally, Section 4 introduces obligations to review existing legal provisions and, notably, the Experimentation Clause (§ 25a), which authorises time-limited regulatory exceptions to foster innovation[452].

4.2.1.2. The Stated Objectives

The E-Government Act of North Rhine-Westphalia (EGovG NRW) is driven by a comprehensive and multi-layered set of legislative objectives, strategically segmented to address the needs of citizens, businesses, and public administration.

4.2.1.2.1. Citizen and Business-Centric Goals

From the perspective of external users, including citizens and businesses, the Act serves as a key instrument for optimising administrative interaction. A central objective is the fundamental improvement of service quality (Servicequalität) and the enhancement of user-friendliness (Nutzerfreundlichkeit)[453].

Equally important is the elimination of "media discontinuities" (Medienbrüche)—the disruptive need to switch between digital and analogue communication channels, such as repeatedly entering personal data or submitting physically signed documents. For businesses, the Act aims to make cooperation with the administration more efficient and economically viable, notably through the introduction of the E-Rechnungsportal NRW, which requires electronic invoices to be submitted using the "XRechnung" standard—the mandatory, standardised data format for electronic invoicing in Germany[454].

4.2.1.2.2. Internal Administrative Transformation and Efficiency

In parallel with its outward-facing objectives, the EGovG NRW also functions as a central driver of internal digital transformation within the public administration. Its primary internal aim is the optimisation of processes and the improvement of administrative quality, ensuring that governmental action is carried out more efficiently. This is achieved through binding obligations on state authorities, most notably the mandatory introduction of

[452] EGovG NRW §1 Abs. 1.
[453] EGovG NRW.
[454] Ibid.

electronic file management (elektronische Aktenführung) and electronic case processing. These requirements initiate structural change by using digital tools to strengthen the administration's capacity for innovation and to modernise procedural operations.

This internal transformation is coordinated through the state-wide programme Digitale Verwaltung Nordrhein-Westfalen (DVN), which serves as the strategic steering mechanism for all projects arising from the EGovG NRW. Led by the CIO NRW—since 2017, located within the Ministry for Economic Affairs, Innovation, Digitalisation and Energy (MWIDE)—the DVN programme oversees the technical, organisational, and legal prerequisites for digitalisation across the state administration. Its structure reflects the complexity of digital transformation, which extends well beyond traditional administrative modernisation and requires the synchronised development of interdependent components[455].

Within this framework, the three foundational projects—E-Akte, E-Laufmappe, and ersetzendes Scannen—form the essential building blocks of electronic administrative work. Implementation reports repeatedly emphasise their interdependence: delays in one component (such as the E-Laufmappe) directly affect the rollout of others (particularly the E-Akte). Together, these elements enable workflows free of media discontinuities, reduce redundancies, and accelerate administrative processes, thereby creating the operational conditions necessary for the full realisation of digital administrative procedures under § 12 EGovG NRW[456].

To reinforce this internal shift, the Act introduces a Digitalisation Check (E-Government-Check) for all new legislative drafts, ensuring that new laws are conceived with digital implementation and the avoidance of media discontinuities in mind from the outset[457]. This mechanism embeds a "digital-by-design" approach into legislative practice, ensuring that administrative digitalisation is not treated as an operational afterthought but as a structural consideration integrated into the formation of new legal norms.

4.2.1.2.3. Flexibility and Continuous Improvement

This commitment is most clearly reflected in the Experimentation Clause (§ 25a), which authorises Ministries to issue time-limited regulatory exceptions to overcome legal

[455] Landtag Nordrhein-Westfalen. 2019. Einen ersten Bericht zu den Erfahrungen mit dem EGovG NRW. 20. Dezember 2019: 7-9. https://www.landtag.nrw.de/portal/WWW/dokumentenarchiv/Dokument/MMV17-2860.pdf
Wirtschaft.NRW, "Elektronische Verwaltungsarbeit."
[456] Ibid.
[457] Annex 10 to the Joint Rules of Procedure (NRW).

impediments stemming from outdated form or competency regulations. Importantly, municipalities—the principal actors in front-line service delivery—are empowered to apply for such exemptions (§ 25a(2)), thereby leveraging local experience to identify and mitigate barriers to media-discontinuity-free processes[458].

The iterative nature of this mechanism is supported by the State's commitment to the "One for All" (EfA) principle, established by the OZG, whereby results are intended for systemic reuse. Oversight of this scaling process is entrusted to the IT-Cooperation Council (§ 21)[459], mandated to ensure cross-level cooperation. The realisation of the EfA principle, however, requires complex inter-administrative coordination across four critical dimensions: legal, organisational, financial, and technical. These dimensions collectively define the structural challenges of adopting digital solutions across different administrative levels, transforming EfA implementation into a fundamental issue of multi-level administrative law coordination[460].

This dynamic approach is further supported by the establishment of a Digital Reporting Office (Digitale Meldestelle), designed to solicit feedback from citizens and businesses on obstacles encountered in electronic administrative offerings[461].

4.2.1.3. Scope of Application

The scope of application of the E-Government Act of North Rhine-Westphalia (EGovG NRW) extends to all state authorities as well as to municipalities and municipal associations under the state's legal supervision (§ 1(2) EGovG NRW). In substantive terms, the Act's reach remains anchored in the classical principles of territorial sovereignty and administrative competence; the internet merely provides the medium through which the regulated activities are performed. Accordingly, the Act applies to the full range of administrative activity within NRW, covering everything from the initiation of electronic procedures to the final archival stages of administrative processing[462].

Beyond this general territorial scope, the EGovG NRW—like the federal and most Länder e-government statutes—also contains provisions on the georeferencing of registers. Registers relating to domestic properties must be supplemented with coordinate data,

[458] E-Government Law NRW, §25a.
[459] see Chapter 2, 2.6.2 The Online Access Act (OZG)
[460] Service Portal NRW: Overview of the EfA principle, https://service.wirtschaft.nrw/hilfe/efa/nachnutzung/mitnutzung/ueberblick/
[461] E-Government-Gesetz NRW.
[462] Landtag NRW, Report on EGovG NRW, 7-9.

thereby reducing administrative effort and improving the interoperability of geospatial information. While Schleswig-Holstein regulates this matter separately in its Geodateninfrastrukturgesetz, NRW integrates georeferencing directly into the EGovG framework, subject to exceptions where disproportionate economic burdens would arise. This demonstrates that the Act's scope extends into specialised areas of register management, aligning administrative digitalisation with broader objectives of data usability and standardisation[463].

The practical implementation of this broad scope was documented in the 2019 evaluation report submitted to the Landtag. According to the findings, key obligations—particularly those concerning electronic communication—have already been realised across the administration. Authorities now communicate electronically both internally (§ 14 EGovG NRW) and with citizens and businesses (§ 4 EGovG NRW), and all bodies within the Act's scope provide their contact details and service descriptions online (§ 6 EGovG NRW). Secure communication channels have likewise been established through the widespread adoption of De-Mail addresses (§ 3 EGovG NRW)[464].

However, the evaluation also makes clear that the mere availability of digital services does not guarantee their effective use. Some services are only sporadically utilised, indicating persistent usability barriers—most notably in connection with the authentication component "Servicekonto.NRW." Moreover, the introduction of the E-Akte by the statutory deadline of 1 January 2022 was widely regarded as ambitious. Delays were attributed to dependencies on other components (particularly the E-Laufmappe), shortages of qualified personnel, and limited financial resources. These findings underscore that the Act's broad applicability must be interpreted in light of the uneven technical readiness and resource capacities of different administrative bodies, especially at the municipal level, where the operational burden of implementation is most pronounced.

4.2.1.3.1. Jurisdictional Coverage and Administrative Tiers

This broad jurisdictional coverage ensures that digital transformation is implemented uniformly across all territorial and functional administrative tiers within North Rhine-Westphalia. The inclusion of municipalities is particularly significant from an administrative law perspective, as it directly binds the local level—where the majority of citizen-facing services are delivered—to the state's digital standards. Moreover, the Act explicitly extends

[463] Bernhardt, E-Government-Gesetzgebung, 48.
[464] Landtag NRW, Report on EGovG NRW, 7-9.

its application to the entirety of administrative activity, imposing requirements that span from the initial receipt of an electronic application to the final archival process[465].

In addition, all state e-government laws—including the EGovG NRW—apply to court administrations and judicial authorities only insofar as their activities are subject to review by administrative courts or by courts competent in administrative law matters involving lawyers, patent attorneys, and notaries. Judicial functions in the strict sense remain excluded, as do criminal prosecution, the enforcement of administrative offences, international judicial assistance in criminal and civil matters, and measures relating to judicial service law. This delineation reflects the constitutional separation of powers, ensuring that the judiciary's core adjudicative functions are not subsumed under e-government regulation, while administrative tasks within the judicial sphere remain subject to digitalisation requirements[466].

4.2.1.3.2. Substantive Obligations and Procedural Dictates

Substantively, the Act imposes several core obligations that are central to administrative procedure. These include detailed requirements for the digital management of documents and records, the mandatory use and recognition of qualified electronic signatures as a functional equivalent to the written form, and strict compliance with data-security and accessibility standards. In this way, the EGovG NRW functions as the central regulatory mechanism governing not only the technical platforms but also the procedural and organisational dimensions of digitalisation, ensuring that electronic processes maintain the same legal rigour as their paper-based counterparts[467].

4.2.1.3.3. Strategic Transitional Provisions

The Act's broad applicability is moderated by transitional provisions designed to accommodate differing levels of technical preparedness and the constitutional status of various administrative bodies. These provisions, primarily set out in § 26 EGovG NRW, are not mere exceptions but rather a legal mechanism for phased implementation. This differentiated approach reflects a legal recognition of the complex technical and financial

[465] North Rhine-Westphalia. Gesetz zur Förderung der elektronischen Verwaltung in Nordrhein-Westfalen (E-Government-Gesetz NRW), § 1(2), accessed November 24, 2025, https://recht.nrw.de/lmi/owa/br_text_anzeigen?v_id=73520171220150354215.
[466] Bernhardt, E-Government-Gesetzgebung, 14.
[467] North Rhine-Westphalia. Gesetz zur Förderung der elektronischen Verwaltung in Nordrhein-Westfalen (E-Government-Gesetz NRW), § 2, accessed November 24, 2025, https://recht.nrw.de/lmi/owa/br_text_anzeigen?v_id=73520171220150354215.

challenges inherent in local administrative transformation, deliberately balancing the state's imperative for consistent digital service delivery with the principle of municipal self-governance[468].

4.2.1.4. Core Legal Requirements for Public Authorities

The EGovG NRW establishes a set of binding and operational requirements that fundamentally reshape the duties of public authorities throughout North Rhine-Westphalia.

The primary obligation is the commitment to facilitate electronic access to administrative services (elektronischer Zugang)[469]. Public authorities are required to create and maintain digital access points, thereby ensuring that citizens and businesses can communicate with the administration electronically and initiate procedures online. This obligation is complemented by provisions governing electronic communication and the electronic processing of administrative procedures, which collectively establish the legal foundation for accessible and user-friendly digital interaction[470].

Comparable provisions exist across all German e-government laws, which uniformly require public authorities to open electronic access channels for the transmission of electronic documents, including those bearing qualified electronic signatures. In Bavaria, Article 2 BayEGovG even grants an explicit right of access, while Berlin imposes design-specific requirements by mandating the use of the state's corporate design and information system (§ 15). These variations illustrate that, although the EU Services Directive already required such access, the Länder legislation has slightly expanded the obligation and left authorities discretion regarding the technical form of access, without conferring an individual entitlement to a specific channel[471].

Equally significant are the strict technical and procedural requirements for the handling of digital documents. Authorities must accept electronic documents that meet the prescribed legal standards, including those bearing a qualified electronic signature or official electronic seal, thereby granting them full legal equivalence with paper-based documents[472].

The Act also sets out the conditions under which administrative acts may be issued in electronic form. The formal requirements governing notification and delivery must

[468] North Rhine-Westphalia. Gesetz zur Förderung der elektronischen Verwaltung in Nordrhein-Westfalen (E-Government-Gesetz NRW), § 26, accessed November 24, 2025, https://recht.nrw.de/lmi/owa/br_text_anzeigen?v_id=73520171220150354215.
[469] EGovG NRW, § 3.
[470] EGovG NRW, § 4-5.
[471] Bernhardt, E-Government-Gesetzgebung, 17.
[472] EGovG NRW, § 3.

continue to satisfy the principles of procedural fairness and legal certainty. These obligations are governed by the provisions on delivery in state law (§ 5 Landeszustellungsgesetz)[473], read together with the formal requirements for administrative acts under § 37(3) VwVfG NRW[474] and the specific rules for electronic issuance under § 4 EGovG NRW[475]. Consequently, the Act ensures that digital administrative procedures maintain the same procedural legitimacy as their traditional counterparts.

Finally, in line with the constitutional imperative of data protection, the Act imposes explicit duties to implement robust data-security and information-security measures. Public authorities must guarantee the integrity, confidentiality, and availability of digital data and systems, ensuring compliance with both state and federal data protection law, including the GDPR[476].

4.2.1.5 Practical Implementation and Evaluation

A comprehensive assessment of the EGovG NRW's implementation reveals both substantial progress and persistent structural limitations. The 2019 report to the Landtag confirms that the essential foundations for digital administration have been established, including the DVN programme, the rollout of electronic communication channels, and the initial deployment of the E-Akte. The statutory deadlines set for 2019 were largely met, with only minor delays[477].

At the same time, the evaluation identifies several obstacles that continue to impede the full realisation of the Act's objectives. Some digital services—although formally available—are only used sporadically, indicating that usability barriers remain. This is particularly evident in the limited uptake of the authentication component "Servicekonto.NRW," which still requires simplification to achieve broader acceptance[478]. Furthermore, the introduction of the E-Akte by 1 January 2022 was widely regarded as ambitious, with delays attributed to interdependencies between core components (especially the E-Laufmappe), shortages of qualified personnel, and insufficient financial resources.

---

[473] North Rhine-Westphalia. Landeszustellungsgesetz NRW. § 5. Accessed November 24, 2025. https://recht.nrw.de/lmi/owa/br_bes_detail?print=1&anw_nr=2&gld_nr=%200&ugl_nr=0&val=8844&ver=0&aufgehoben=N&keyword=&bes_id=8844&det_id=673466

[474] VwVfG §37(3).

[475] EGovG NRW, § 4.

[476] North Rhine-Westphalia. Gesetz zur Förderung der elektronischen Verwaltung in Nordrhein-Westfalen (E-Government-Gesetz NRW), § 2, accessed November 24, 2025, https://recht.nrw.de/lmi/owa/br_text_anzeigen?v_id=73520171220150354215.

[477] Landtag NRW, Report on EGovG NRW, 7-9.

[478] Ibid.

Additional burdens stemmed from parallel obligations, such as the EU-mandated acceptance of electronic invoices and the implementation of the Online Access Act (OZG)[479].

Despite these challenges, the evaluation demonstrates that significant groundwork has been laid for the effective implementation of the EGovG NRW. Key legal requirements in the areas of electronic communication and information provision have already been fulfilled: authorities now communicate electronically both internally (§ 14 EGovG NRW) and externally with citizens and businesses (§ 4 EGovG NRW), and all bodies within the Act's scope make their contact details and service information available online (§ 6 EGovG NRW). Secure communication channels have likewise been ensured through the universal adoption of De-Mail addresses (§ 3 EGovG NRW)[480].

Nevertheless, the practical impact on administrative performance remains uneven. The availability of digital services does not automatically translate into effective uptake, underscoring the need to prioritise high-impact projects and allocate resources more strategically. The evaluation concludes that, going forward, concentrating efforts on projects with the greatest temporal and substantive relevance will be essential for achieving meaningful progress. A renewed evaluation—scheduled for 31 October 2021 as part of the Act's revision process—was expected to provide a broader and more robust evidence base, reflecting the iterative and long-term nature of digital transformation within the state administration[481].

4.2.2. Interaction with Federal Law

4.2.2.1. Vertical Interaction: State Implementation of Federal Law

The legal framework for e-government in North Rhine-Westphalia is necessarily defined by its position within the German federal system. The EGovG NRW primarily functions as the implementing layer for overarching federal legislation, notably the Online Access Act (OZG)[482] and the Federal E-Government Act (EGovG Bund), operating within the constitutional distribution of powers (cf. Articles 84 and 85 of the Basic Law). While these federal acts often provide broad guidance or reserve areas of administrative discretion,

[479] Ibid.
[480] Ibid.
[481] Ibid.
[482] EGovG, § 1; OZG, § 1.

state legislation leverages its autonomy to impose more specific and, in some cases, heightened requirements[483].

The core duty to provide administrative services electronically—stemming from § 1a Abs. 1 OZG[484]—is a legally compulsory obligation that overrides regional discretion. For example, § 3(1) EGovG NRW[485] mandates the acceptance of electronic documents bearing a qualified electronic signature, thereby transforming broad federal permissibility into explicit regional enforcement. Similarly, § 20 EGovG NRW[486] requires adherence to interoperability and security standards issued by the IT-Planungsrat, directly converting the federal standardisation mandate into a binding state duty.

At the same time, the EGovG NRW introduces an explicit flexibility clause for municipalities. § 1 Abs. 1 S. 3 EGovG NRW stipulates that municipalities may implement non-compulsory requirements on their own responsibility. This provision distinguishes between federally imposed obligations (such as the OZG service mandate) and state-specific digital ambitions (such as Open Data initiatives or internal procedures like elektronische Aktenführung under § 9 EGovG NRW)[487]. In doing so, the Act provides a mechanism that respects the constitutional principle of municipal self-governance, granting local authorities discretion over state-only objectives while binding them to superior federal obligations.

4.2.2.2. Horizontal Interaction: Relationship with State Administrative Procedure Law

Beyond its vertical alignment with federal law, the EGovG NRW engages in a critical horizontal interaction with the state's administrative law, the Verwaltungsverfahrensgesetz NRW (VwVfG NRW)[488]. In this relationship, the EGovG NRW operates as lex specialis, setting out specific procedural rules that take precedence over the general provisions of the VwVfG NRW in matters of digital administrative action. This distinction is essential for ensuring legal clarity. For instance, the general requirements for written form in the VwVfG NRW[489] are superseded or modified by the EGovG NRW provisions governing electronic form replacement (§ 3 EGovG NRW)[490].

[483] See Chapter Two, Section 2.4.3.
[484] EGovG, § 1; OZG, § 1.
[485] EGovG NRW §3(1).
[486] EGovG NRW §20.
[487] EGovG NRW, § 3-9.
[488] Administrative Procedure Act of North Rhine-Westphalia (VwVfG NRW)
[489] VwVfG NRW
[490] EGovG NRW, § 3.

4.2.2.3. The Principle of Inter-State Cooperation and Comparative Experience

The effectiveness of the EGovG NRW, and the national implementation of the OZG more broadly, depends on successful inter-jurisdictional cooperation and the capacity of states to learn from each other's experiences. Regional platforms, such as the Bavaria Future Congress in 2019, highlight shared federal challenges in realising the vision of a "Digital Homeland" for citizens and businesses. The Bavarian experience underscores the tension between central standardisation—exemplified by user accounts such as BayernID and Servicekonto.NRW—and the preservation of municipal self-governance (kommunale Selbstbestimmung), a tension explicitly addressed in § 1 Abs. 1 S. 3 EGovG NRW[491].

This comparative perspective contextualises NRW's actions by illustrating common difficulties, including infrastructure provision in rural areas and the need to shift the legal focus from a "paper-based norm" to one that is "online-ready." Reports further emphasise the systemic challenge posed by the principle of "Once Only," which requires comprehensive register connectivity and overcoming fragmentation caused by ministerial autonomy (Ressorthoheit) at the federal level. This fragmentation directly impedes the objectives of both the OZG and the EGovG NRW[492].

4.2.3. Influence of EU Law

The legal landscape governing e-government in North Rhine-Westphalia is significantly shaped by binding regulations of the European Union, particularly the General Data Protection Regulation (GDPR) and the eIDAS Regulation (Electronic Trust Services).

4.2.3.1. The General Data Protection Regulation (GDPR)

The General Data Protection Regulation (GDPR), as a directly applicable European Regulation (Verordnung), sets the mandatory Union-wide standard for the processing of personal data and privacy. Unlike a Directive (Richtlinie), which requires national transposition, the GDPR applies immediately in all Member States, thereby overriding any conflicting national or state law[493]. In Germany, the federal legislature enacted the Federal Data Protection Act (BDSG), adapting the framework to national contexts[494].

North Rhine-Westphalia (NRW) also enacted its own Data Protection Act (DSG NRW). The relationship between the GDPR, the BDSG, and the DSG NRW is hierarchical:

[491] Kruse and Bauer, E-Government and Modernization, 26-37.
[492] Ibid.
[493] GDPR, Art. 25.
[494] BDSG

the GDPR establishes the core rights and obligations; the BDSG specifies federal options and derogations; and the DSG NRW governs data processing by state and municipal authorities, ensuring consistency with both federal and European requirements. While substantive principles remain identical due to the GDPR's direct effect, the DSG NRW is essential for specifying procedural rules and designating competent supervisory authorities within the state[495].

GDPR principles such as data minimisation, purpose limitation, and privacy by design and by default (cf. Article 25 GDPR) require substantial procedural and technical adjustments within state and municipal authorities. The DSG NRW translates these principles into binding organisational duties, ensuring, for example, that the mandatory use of electronic files (§ 9 EGovG NRW)[496] complies with standards of integrity and confidentiality. The EGovG NRW itself also addresses data protection and information security directly, imposing obligations to adhere to established IT-security standards. § 20 EGovG NRW[497] mandates compliance with binding security specifications issued by the Federal-State IT-Planungsrat, while § 22 Abs. 3 Nr. 5 designates the coordination of information security as a core responsibility of the State's IT Representative[498]. Taken together, these provisions ensure that the pursuit of administrative efficiency through digitalisation is systematically balanced against the fundamental right to data protection, thereby safeguarding transparency and maintaining citizen control in digital interactions with the state.

4.2.3.2. The eIDAS Regulation (Electronic Trust Services)

Regulation (EU) No. 910/2014 on electronic identification and trust services (eIDAS) provides the binding framework for electronic identification and trust services across the Union. The eIDAS ensures legal certainty of digital processes and guarantees cross-border interoperability across the Union[499].

Article 25 eIDAS stipulates that an electronic signature shall not be denied legal effect solely because it is electronic. It further establishes that a Qualified Electronic Signature (QES) has the same legal effect (Rechtswirkung) as a handwritten signature[500].

[495] DSG NRW.
[496] EGovG NRW, §9.
[497] EGovG NRW, §20.
[498] EGovG NRW, § 22 Abs 3 No 5.
[499] eIDAS, Art. 25.
[500] Ibid

This provision is found in the requirements in § 3 EGovG NRW mandating acceptance of electronically signed documents[501].

In addition, Article 6 eIDAS requires Member States to recognise notified electronic identification schemes for cross-border administrative services. This obligation is vital for the functional implementation of the OZG mandate, ensuring that services can be accessed independently of location. By enforcing uniform standards for electronic seals, time stamps, and delivery services, eIDAS creates a trusted environment for trans-European digital administration, thereby imposing on the EGovG NRW a duty to maintain compliance with supranational interoperability standards.

Beyond electronic signatures, eIDAS also frames the use of electronic identification as a substitute for the written form. Pursuant to § 3a Abs. 2 VwVfG, the combination of structured data input into an electronic form with the use of the eID constitutes a legally valid Schriftformersatz. This mechanism has been implemented across federal authorities and most Länder under § 18 PAuswG, with further sector-specific extensions such as the electronic health professional card in Saarland (§ 3(3) EGovG SL). North Rhine-Westphalia introduces a distinctive rule in § 3(4) EGovG NRW, permitting the IT service provider to transmit eID master data to providers of services of general economic interest under Art. 14 TFEU, subject to explicit consent and GDPR compliance. Expert evaluations of the Federal EGovG have recommended replacing the explicit enumeration of identification methods with neutral trust and security requirements aligned with eIDAS, thereby ensuring flexibility for future innovations in authentication[502].

4.2.3.3. Status as Binding Baseline: German and Regional Response

Taken together, the GDPR and eIDAS Regulation function as a binding supra-national baseline for Germany's digital legal framework. They restrict Länder autonomy to enact conflicting provisions, ensuring that technical standards and fundamental rights are uniformly guaranteed.

As Fábián and Kollár (2023) observe, the urgency of digital integration was accelerated by external factors; the COVID-19 pandemic, for instance, forced a global "time leap" in digitisation, sharply increasing demand for seamless online administration[503].

---

[501] EGovG NRW, § 3.

[502] Bernhardt, E-Government-Gesetzgebung, 22.

[503] Adrián Fábián and Gergő Kollár, "Trends in the Digitalisation of Public Administrations – In Light of EU Legislation and Domestic Developments," Central European Public Administration Review 21, no. 2 (2023): 121–125.

4.2.4. Strategic Initiatives and Financial Mechanisms

While the EGovG NRW establishes the normative legal duties for administrative digitalisation, the successful implementation of these mandates—particularly at the municipal level—depends critically on state-level strategic initiatives and financial support. North Rhine-Westphalia's response to this operational challenge has been institutionalised through comprehensive programmes that complement the legislative framework and provide the necessary political and financial enablement. These initiatives bridge the gap between abstract legal obligation and practical administrative reality[504].

4.2.4.1. The Overarching Strategic Framework: Digitalstrategie 2.0:

The principal strategic framework guiding North Rhine-Westphalia's digital transformation is the Digitalstrategie 2.0, adopted in November 2021. This policy document articulates a comprehensive, cross-ministerial vision for digitalisation encompassing public administration, the economy, society, and infrastructure. It represents the State's coordinated effort to align sectoral initiatives under a unified strategic direction[505].

According to the strategy's progress report, the first phase—focused on conceptual planning and foundational implementation—has largely been completed. This stage provided the political and organisational blueprint for resource allocation and mandated administrative reform across multiple levels of government. Initial achievements underscore the State's institutional commitment to digital transformation, including the amendment of the E-Government Act, significant advances in the expansion of Gigabit and LTE networks, and the creation of digital model authorities and regions[506].

Building upon these foundations, the successful realisation of pilot initiatives such as the Virtuelles Krankenhaus (Virtual Hospital), the mobil.nrw App, and the digitale Gewerbeamt (digital business registration office) has paved the way for the next stage of implementation. This second phase, as defined in the Digitalstrategie 2.0, focuses on scaling up and accelerating proven model solutions while transitioning from conceptual frameworks to regular administrative operation (Regelbetrieb)[507].

---

[504] State Government of North Rhine-Westphalia. Cabinet adopts new E-Government Act, press release, March 3, 2020, accessed November 24, 2025, https://www.land.nrw/pressemitteilung/kabinett-verabschiedet-neues-e-government-gesetz.
[505] NRW, *Strategie für das digitale Nordrhein-Westfalen 2.0: Teilhabe ermöglichen – Chancen eröffnen* (Düsseldorf: Ministerium für Wirtschaft, Innovation, Digitalisierung und Energie, 2021) 6–7.
[506] Ibid, 7-8.
[507] Ibid.

4.2.4.2. Internal Compliance and Procedural Mandates (DVN/EVA):

To operationalise the procedural obligations established by the EGovG NRW of 2016, the State has implemented the Digitale Verwaltung Nordrhein (DVN) programme, which functions as the strategic coordinating body for all EGovG NRW initiatives under the oversight of the Chief Information Officer of NRW (CIO NRW). This programme primarily targets internal administrative processes, providing a structured framework for the digital transformation of state authorities[508].

At the heart of DVN lies the Elektronisches Verwaltungshandeln (EVA) initiative, one of the most extensive digitalisation projects in the State. EVA directly translates the Act's internal procedural mandates into practice and is built upon three foundational components, each designed to establish a media-discontinuity-free and legally compliant digital workflow[509]:

E-Akte (Electronic File): Constitutes the backbone of e-government operations, providing audit-proof (revisionssicher) storage of electronic files, documents, and associated processes. It satisfies the legal requirement under § 9 Abs. 3 EGovG NRW mandating exclusive electronic file management for most state administrative bodies from 2022 onwards. By centralising file-relevant information—including documents, emails, and status updates from the E-Laufmappe—it enhances transparency and accessibility for authorised personnel[510].

E-Laufmappe (Electronic Workflow Folder): Replaces traditional paper circulation folders, implementing the electronic case processing obligations under § 12 Abs. 1 EGovG NRW. Its functions include inbox processing (Posteingangsbearbeitung), such as attaching viewing notes to correspondence, and case steering (Vorgangssteuerung) through disposition points (Verfügungspunkte), which support internal endorsements and collaborative editing[511].

Substitutive scanning (Ersetzendes Scannen) ensures the legally compliant transfer (rechtssichere Übertragung) of incoming paper documents into digital form. Strategically significant, it allows for the lawful destruction of original paper documents, thereby

[508] Ministerium für Wirtschaft, Innovation, Digitalisierung und Energie des Landes Nordrhein-Westfalen, "Elektronische Verwaltungsarbeit," accessed October 11, 2025, https://www.wirtschaft.nrw/elektronische-verwaltungsarbeit.
[509] Ibid.
[510] Ibid.
[511] Ibid.

completing the digital transition and fulfilling the objectives of electronic processing and storage mandated by the E-Akte system[512].

The coordinated interaction of these three services creates a coherent digital workflow, reducing redundancies and expediting administrative procedures. EVA thus serves as the principal instrument for enhancing efficiency and quality in administrative action (Verwaltungshandeln) by structurally modernising internal processes and promoting effective cross-level coordination[513].

4.2.4.3. External Service Delivery and Federal Mandates (OZG Implementation):

The DVN programme also extends its strategic focus to the external interface of service delivery, ensuring compliance with the Federal Online Access Act (Onlinezugangsgesetz, OZG). The OZG mandates the provision of 575 defined administrative services online for citizens and businesses, translating into over 5,000 distinct individual services. NRW manages this federal obligation through structured technical and collaborative mechanisms[514].

A central technical component is the Serviceportal.NRW, the primary digital access point for users seeking mandated OZG services. These provisions are supported by the "Einer für Alle" (EfA) principle. Through EfA, NRW digitalises specific services in a manner that allows other federal states to reuse the solutions without redeveloping the process, conserving time, resources, and costs. NRW leads digitisation efforts in the thematic fields of Labour and Retirement (Arbeit und Ruhestand) and Engagement and Hobby (Engagement und Hobby)[515].

The technical execution of this external mandate is anchored by the state's central IT service provider, IT.NRW. This entity develops and operates critical platforms—including the Familienportal (Family Portal), the Sozialplattform (Social Platform), and the Serviceportal.NRW—and supplies the Central Data Exchange Infrastructure (ZDI). The ZDI is essential for the legally compliant and media-discontinuity-free transfer of online applications to the correct processing authorities[516].

---

[512] Ibid.
[513] Ibid.
[514] IT.NRW, "Onlinezugangsgesetz (OZG)," Landesbetrieb Information und Technik Nordrhein-Westfalen, accessed October 11, 2025, https://www.it.nrw/informationstechnik/digitale-gesellschaft/onlinezugangsgesetz-ozg.
[515] Ibid.
[516] Ibid.

Collectively, these instruments—the strategic steering of DVN, the technical operations of IT.NRW, and the legal foundation of the EGovG NRW and OZG—form the institutional infrastructure supporting the regulatory framework. This demonstrates that NRW's administrative digitalisation is not merely normative but involves concrete, resource-backed measures designed to bridge the gap between statutory mandates and the practical realisation of efficiency, user-friendliness, and procedural compliance (cf. EGovG NRW objectives)[517].

4.2.5. Legislative Dynamics: Strategic Amendments and Regulatory Strengthening

The Supplementary Report of the Ministry of Economic Affairs, Innovation, Digitalisation and Energy (MWIDE), published in August 2021, provides authoritative insight into these legislative dynamics and highlights the State's commitment to recalibrating its regulatory framework in response to practical challenges (MWIDE 2021)[518].

4.2.5.1. The Comprehensive Novella and Acceleration Mandate

The last amendment of the e-government law in 2020 had a profound impact on both the scope and the timeline of the Act. First, it significantly extended the Act's coverage to include almost all state authorities and institutions (cf. § 1, § 9 Abs. 3 S. 3, and § 12 Abs. 3 EGovG NRW). Second, it accelerated the full digitalisation mandate from 2031 to 2025 (§ 12 EGovG NRW). While this aggressive timeline aligned with the political objective of expediting the State's digital transformation, it simultaneously heightened institutional pressure and posed significant challenges to maintaining procedural quality and proportionality during the transition[519].

4.2.5.2. Institutionalizing Transparency and Control

The legislative response also sought to embed accountability and transparency more firmly within the governance framework. The Novella introduced a binding Open Data provision (§ 16a EGovG NRW), transforming transparency from a policy aspiration into a legally enforceable obligation to publish data in open formats. Complementing this, the introduction of the E-Government-Check (Digitalisierungsprüfung) for all new legislative drafts in 2021 established a proactive mechanism to uphold legality. By requiring that future

---

[517] Ibid.
[518] Ministerium für Wirtschaft, Innovation, Digitalisierung und Energie des Landes Nordrhein-Westfalen (MWIDE), *Sitzung des Ausschusses für Digitalisierung und Innovation am 24. Juni 2021: Digitalstrategie als Nutzen für die Menschen in NRW* (Düsseldorf: MWIDE, 31. August 2021): 10-20
[519] MWIDE, Digitalstrategie als Nutzen für die Menschen in NRW, 10–20.

laws be conceived with digital implementation and the avoidance of media discontinuities as preconditions, this measure aims to prevent the inadvertent creation of new legal barriers to digital services. In this way, transparency and legality are institutionalised not only as guiding principles but as enforceable procedural safeguards[520].

4.2.5.3. Evolving Procedural Flexibility

Finally, the Act has been adapted to address the rigidities inherent in traditional administrative form requirements. The temporary § 25a EGovG NRW, introduced during the COVID-19 pandemic, demonstrated the necessity of procedural flexibility in times of crisis. Its planned replacement with a permanent Experimentation Clause, as proposed in the draft GSMD Law, signals a shift toward a more adaptable and iterative model of continuous improvement. The clause is designed to permit temporary deviations from form and competence rules for the purpose of testing new digital modes of task fulfilment. By allowing measured, time-limited exceptions to strict formal requirements, the provision directly engages the principle of proportionality, enabling innovation and efficiency while safeguarding fairness[521].

This dynamic legislative development confirms that the EGovG NRW is not a static statute but a continuously evolving legal framework. It actively negotiates the tension between administrative tradition and digital necessity, embedding flexibility, transparency, and legality into the emerging architecture of public administration.

4.3. Analysis of the EGovG NRW in Light of Core Administrative Law Principles

The preceding discussion has outlined the declared objectives of the E-Government Act of North Rhine-Westphalia (EGovG NRW), which primarily seek to enhance administrative efficiency and user orientation. From an academic perspective in administrative law, however, these policy aims and implementation mechanisms require critical scrutiny to assess their practical and legal implications.

This analysis proceeds from the normative framework of the general principles of administrative law, which provides a lens for evaluating the legal and institutional design of the EGovG NRW. The purpose is not to suggest that the Act was explicitly conceived with these principles in mind, but rather to examine whether its provisions and related initiatives align with—or potentially challenge—fundamental doctrines. The discussion, therefore,

[520] Ibid.
[521] Ibid.

moves beyond a descriptive account of legislative measures toward a critical and normative assessment of their broader administrative and constitutional significance.

By systematically evaluating the Act's provisions against the foundational principles of administrative law, the analysis aims to offer a balanced appraisal of its legal and institutional consequences. In doing so, it seeks to identify potential inconsistencies or regulatory gaps and thereby establish a basis for reform-oriented recommendations in the concluding chapter.

4.3.1. Legal Certainty (Rechtssicherheit) and Legality (Gesetzmäßigkeit)

The following analysis examines the extent to which the Act's central provisions succeed in embedding digital administrative practices within a framework that ensures both predictability and legal validity. Particular attention is given to how the Act regulates formal administrative acts essential to lawful operation—namely, the legal equivalence of electronic communication and signature, the legally compliant archiving of records through the E-Akte, and the procedural integrity of document conversion under ersetzendes Scannen.

In addition, this section assesses whether the implementation structure—characterised by a division of responsibilities between the State and its central IT service provider (IT.NRW)—maintains the degree of competence clarity (Zuständigkeit) required by the principle of legality. By analysing these concrete mechanisms, the discussion seeks to determine whether the EGovG NRW provides a sufficiently explicit and coherent legislative framework capable of withstanding the formal and constitutional demands imposed by administrative digitalisation.

4.3.1.1. Legal Equivalence between electronic and analogue forms

Paragraph 3(1) EGovG NRW[522] addresses this requirement by establishing an obligation for all state and municipal authorities to accept electronic documents.This legislative alignment is crucial to enabling the replacement of the constitutionally required written form with a digital alternative while safeguarding procedural integrity and reliability.

[522] EGovG NRW. §3.

4.3.1.1.1. Statutory Mandate and Legal Certainty

At the core of this obligation lies the non-discretionary nature of § 3(1) EGovG NRW. The provision requires that any document bearing a QES or an official electronic seal be accorded the same legal validity (Rechtswirkung) and evidentiary weight as a handwritten paper document, thereby satisfying the constitutional requirement of Schriftform. This clarity reinforces legal certainty by eliminating procedural ambiguity for both citizens and authorities regarding the validity and admissibility of digital submissions (cf. eIDAS Regulation, Art. 25)[523].

Nevertheless, while the law theoretically permits the replacement of paper form with electronically signed documents—and, in some instances, allows the simple electronic form—the framework does not entirely eliminate obstacles associated with Schriftform. The most significant barrier lies in the high security requirements stipulated by § 3a (2) VwVfG. Although the law equates the simple electronic form with written form in certain contexts, numerous Schriftformerfordernisse remain in specialised technical laws (Fachgesetze). According to § 3a II VwVfG in conjunction with § 1 I a.E. VwVfG, a statutory requirement for written form does not preclude electronic communication; however, the electronic form must invariably be linked to a QES. This necessity, demanding a high security standard even for routine communication, constitutes a practical barrier that limits the potential for a complete and unhindered transition to fully digitalised administrative relationships[524].

This doctrinal alignment reflects what Stelkens (2024) describes as the constitutional framework of digitalised administrative procedures, emphasising that digitalisation must remain embedded within the principles of legality, democratic legitimacy, and effective legal protection. As Stelkens further notes, the constitutional requirement of legislative determinacy ensures that legislatures remain aware of the scope of regulation and the responsibility for potential interferences with fundamental rights; that administrations know precisely what they may, must, and must not do; and that citizens can foresee the obligations placed upon them[525]. Legislative determinacy also enables meaningful judicial review by providing clear standards against which administrative action can be assessed[526].

[523] eIDAS.
[524] Britz, "Reaktionen des Verwaltungsverfahrensrechts,", 223-224.
[525] Stelkens, "Verfassungsrechtliche Rahmenbedingungen."
[526] Ibid.

4.3.1.1.2. Shifting Implementation Framework and Available Options

Although the legal mandate of § 3 EGovG NRW remains unchanged, the operational framework for high-trust authentication has evolved. The Servicekonto.NRW regulation, which had previously governed the technical implementation of the state identity service, was repealed on 31 May 2024. Its functions were transferred to the federal BundID platform. This reform enhances legal certainty by promoting nationwide interoperability (Interoperabilität) and providing a unified identification infrastructure for administrative services across Germany[527].

4.3.1.1.3. Maintaining Legality: The Transfer of Procedural Safeguards

The procedural safeguards contained in § 7 Servicekonto.NRW-Verordnung illustrate the close relationship between legal certainty and data protection. Under § 7(1)–(4), authorities were required to specify the intended purpose, ensure data minimisation, and obtain user consent[528].

Although these provisions were repealed, their normative essence—that identity data must be processed lawfully and remain purpose-bound—continues to apply under the GDPR[529] and the broader principles of legality and procedural fairness. The BundID system integrates these safeguards through explicit user consent requirements for data pre-filling and by linking authentication to defined confidence levels. Hence, while the regulatory instrument has changed, the underlying guarantees of data protection and purpose limitation remain preserved within the new federal infrastructure.

By relying on a sovereignly issued digital identity instrument, the legal framework ensures both legal certainty and equality of access in digital administration. This approach is an example of a balanced model that combines procedural legality, technological interoperability and social inclusion.

In summary, § 3 EGovG NRW represents a cornerstone of legal certainty within North Rhine-Westphalia's digital administrative landscape. Its successful implementation—through instruments such as the QES, the eID, and the BundID platform—demonstrates a coherent synthesis of normative precision, technical reliability, and procedural fairness. The

[527] NRW Serviceportal, "Das Servicekonto.NRW wurde durch die BundID abgelöst," accessed October 13, 2025, https://meineverwaltung.nrw/inhalt/a483a79a-aea2-43d1-8fd6-7814eb640eb3
[528] NRW Gesetz- und Verordnungsblatt für das Land Nordrhein-Westfalen (GV. NRW), "Besoldungsrechtliche Ergänzungen 2021: Bescheid Nr. 36427," accessed October 11, 2025, https://recht.nrw.de/lmi/owa/br_bes_detail?sg=0&menu=0&bes_id=36427&anw_nr=2&aufgehoben=N&det_id=592241
[529] GDPR

integration of eIDAS-compliant mechanisms into federal and state practice demonstrates that legal equivalence between electronic and paper-based procedures is not merely declarative but operationally embedded in the evolving structure of German administrative law.

4.3.1.2. Formal Requirements for Electronic Administrative Acts (Verwaltungsakte)

While the acceptance of electronic submissions and the legal parity of the Qualified Electronic Signature (QES) establish the validity of input documents (as discussed above), the implementation of digital governance requires an equally careful examination of how the formal requirements for administrative acts are fulfilled when such acts are issued electronically. The legal validity of an electronic administrative act depends fundamentally on compliance with the conditions set out in § 37 VwVfG—mirrored in state administrative law—concerning both substantive content and authenticated origin[530].

Beyond QES and eID, § 3a Abs. 2 Satz 3 Nr. 4 VwVfG recognises 'other secure procedures' defined by federal regulation with Bundesrat approval as valid substitutes for the written form. These procedures must authenticate the sender, ensure data integrity, and guarantee accessibility, with the IT-Planning Council issuing recommendations. Länder have adopted differentiated approaches: Saxony introduced a delayed obligation to allow self-governing bodies sufficient time, while Saxony-Anhalt and Lower Saxony permit such procedures as alternatives to De-Mail. North Rhine-Westphalia has gone further with § 25a EGovG NRW, empowering authorities to authorise additional forms of electronic communication to replace statutory written form, subject to discretion and without conferring an individual entitlement[531]. This innovation underscores the dynamic interplay between federal baselines and Länder experimentation in safeguarding legality in digital administration.

4.3.1.2.1. The Role of the Qualified Electronic Seal in Legality

The introduction of the Qualified Electronic Seal under the eIDAS Regulation corrected a structural imbalance in German law. Under the former Signaturgesetz[532], only natural persons could generate a QES, forcing administrative staff to sign official acts with their personal signature keys, even though they were acting on behalf of the authority. This

[530] Administrative Procedure Act (VwVfG) §37.
[531] Bernhardt, E-Government-Gesetzgebung, 23.
[532] Signaturgesetz [SigG] (1997).

organisational workaround suggested a personal declaration of will where none existed. By contrast, the QESeal does not express individual intent but authenticates the legal entity itself, thereby serving as the digital counterpart of the official stamp. As Vogt (2016) emphasises, this distinction opens up comprehensive potential for administrative practice, ensuring that electronic acts verifiably originate from the competent authority and satisfy the principle of legality[533].

Beyond technical authentication, electronic administrative acts must satisfy all traditional content requirements stipulated by administrative law[534].

4.3.1.2.2. Technical and Organisational Safeguards

To prevent procedural deficiencies that could render an administrative act voidable or null, electronic decision-making must be conducted within systems that technically ensure permanence and integrity. Subordinate regulations and ministerial directives play a crucial role in operationalising the statutory framework. For instance, the Verwaltungsvorschrift zur elektronischen Aktenführung (VV E-Akte NRW) establishes detailed technical and organisational requirements for secure, traceable, and compliant electronic record-keeping within state administration[535].

These instruments collectively underpin the formal validity and procedural reliability of electronic administrative acts, translating abstract legal mandates into enforceable administrative practice. In doing so, they ensure that the transition from paper-based to digital procedures does not erode the constitutional guarantees of legality and legal certainty, but rather embeds them within the evolving architecture of digital administration.

4.3.1.3. Clarity of Procedural Law in Digital Archiving and Access

The formal requirements governing electronic administrative acts do not end with their lawful creation and transmission; rather, the principles of legality and legal certainty extend across the entire lifecycle of the document. This continuity necessitates comprehensive frameworks for digital archiving and access. Preserving the legal certainty of a digital decision requires procedural clarity that guarantees the integrity of the electronic

---

[533] Theresa Vogt, "Die neue eIDAS-Verordnung – Chance und Herausforderung für die öffentliche Verwaltung in Deutschland," Information – DEGRUYTER, Wissenschaft & Praxis 67, no. 1 (2016): 64, https://doi.org/10.1515/iwp-2016-0011.

[534] Administrative Procedure Act (VwVfG) §39.

[535] North Rhine-Westphalia, Law and Ordinance Gazette for the State of North Rhine-Westphalia, "Law Regulating Electronic Legal Transactions with Authorities in North Rhine-Westphalia (ERV Law NRW)," https://recht.nrw.de/lmi/owa/br_bes_text?anw_nr=1&gld_nr=2&ugl_nr=2006&bes_id=53709&val=53709&ver=7&sg=2&aufgehoben=N&menu=0

record—an expectation rooted in the constitutional principle of the Rule of Law. Within this context, the E-Government Act of North Rhine-Westphalia (EGovG NRW) provides the legal and technical foundation for such protection.

Specifically, § 9 EGovG NRW[536] establishes the legality of purely electronic file management, subject to strict adherence to the "principles of proper file management". This provision serves as the legal basis for enforcing immutability and traceability through detailed technical requirements defined in implementing regulations, such as the Verwaltungsvorschrift zur elektronischen Aktenführung (VV E-Akte NRW)[537]. Moreover, § 11 EGovG NRW addresses the technical dimension of procedural law by requiring that electronic records be converted into suitable formats to ensure long-term readability. Compliance with such standards forms an integral element of procedural legality, since any failure to preserve durability directly undermines evidentiary reliability. To fulfil its documentation function permanently, the electronic file must be preserved until final archiving in accordance with federal and state archive laws and remain accessible throughout[538].

The effective realisation of these Grundsätze ordnungsgemäßer Aktenführung points to the necessity of further legislative codification to explicitly define technical and procedural requirements for electronic files.For example, the criterion of completeness requires clear rules on the inclusion of emails, the permissibility of deleting documents, and the documentation of processing workflows to ensure that individual work steps can be attributed to the responsible processor. Similarly, to satisfy comprehensibility, legislation could mandate user-friendly interface design, systematic file designation, and the maintenance of a comprehensive index of records. With respect to permanence, any full transition to electronic file management should be permitted only under the strict precondition that technical measures are explicitly legislated to guarantee immutability and readability, notwithstanding the volatility of hardware and software[539].

Furthermore, procedural law must provide explicit guarantees for the citizen's right of access to administrative files (Akteneinsicht), which is fundamentally established under § 29 VwVfG[540]. The transition to electronic record-keeping must not diminish the principle of procedural fairness; rather, it should reinforce transparency within the legal framework.

---

536 EGovG NRW §9.
537 ERV Law NRW.
538 Britz, "Reaktionen des Verwaltungsverfahrensrechts,", 260.
539 Ibid, 261.
540 German Administrative Procedure Act (VwVfG), §29

Accordingly, § 13 EGovG NRW[541] stipulates that when files are maintained electronically, inspection rights may be exercised digitally, including through the transmission of electronic documents or the granting of secure online access.

4.3.1.4. The Supranational Dimension: European Influence on Administrative Legality

Building upon national efforts to ensure legislative clarity in digital administrative law, it is necessary to consider the growing influence of European Union law on domestic administrative frameworks. Member States are increasingly required to examine critically how Union law permeates their legal systems, and Germany has a particular interest in shaping and guiding these developments to contribute meaningfully to the evolution of administrative legislation[542].

As Hoffmann-Riem (2002) observes, European integration has significantly reshaped administrative law, introducing new procedural concepts and legal figures into the German system. This Europeanisation necessitates the incorporation of European procedural principles into national practice, especially given the complex interplay between EU law and domestic administrative structures[543].

4.3.2. Equality (Gleichheit) and Proportionality (Verhältnismäßigkeit)

Equality and proportionality are discussed jointly in this section, as one of the core challenges of e-governance lies in reconciling two complementary yet occasionally conflicting legal objectives. From a normative standpoint, the pursuit of administrative efficiency through digitalisation must be balanced against the need to avoid imposing disproportionate burdens on individuals. At the same time, the shift towards digital procedures must not result in exclusionary effects or unequal treatment.

Crucially, the traditional application of proportionality—which governs the discretion (Ermessen) in substantive administrative decisions—is largely excluded from the automation process under the EGovG NRW, as the legislation limits automated decision-making to matters where there exists administrative discretion or even a margin of discretion[544].

Instead, the proportionality test is recast here as a mechanism for assessing the constitutional legitimacy of procedural and organisational regulations imposed by

[541] EGovG NRW §13.
[542] Hofmann, "Europeanisation and German Public Administration", 58-59.
[543] Hoffmann-Riem, “Verwaltungsverfahren”.
[544] VwVfG, § 35a.

digitalisation. It evaluates the appropriateness, necessity, and adequacy of new digital administrative measures, particularly in relation to the imposition of obligatory channels or the extent of data processing.

Simultaneously, the principle of equality functions as a safeguard ensuring inclusive access and non-discrimination across administrative interfaces. It requires that digitalisation neither reinforce existing inequalities nor generate new forms of procedural disadvantage, such as the digital divide (digitale Spaltung). In this context, equality becomes a constitutional guarantee and a guiding principle for fair algorithmic governance and equitable service provision.

Accordingly, this analysis will address the constitutional implications of digitalisation sequentially and across three critical dimensions that emerge from the legislative framework. This structure, which reflects the central tension between efficiency and constitutional safeguards, is organised as follows: first, an examination of equal access in the provision of digital administrative services; second, an assessment of the proportionality of mandatory digital communication, viewed as a regulatory constraint on citizens' procedural freedom; and third, an investigation into the implications for equality arising from differentiated implementation timelines and municipal experimentation clauses.

4.3.2.1. The Principle of Equal Access in Digital Service Provision

The principle of equality entails that every citizen must enjoy equal access to administrative services. While the digitalisation of administrative procedures aims to enhance efficiency and transparency, it simultaneously raises the risk of a digital divide that disadvantages individuals lacking adequate technical resources or digital literacy[545].

Nonetheless, characterising the digital transformation of public administration as a failure is perhaps too hasty, as the process represents an incremental transformation rather than a sudden revolution, with many innovations currently transitioning from the development to the diffusion phase[546].

[545] See above section 2.2.2.1. Substantive Principles d. Principle of Equality.
[546] Tanja Klenk, Samuel Greef, and Carla Lucks. "Digitalisierung der Daseinsvorsorge als kommunale Herausforderung: Wie unterschiedliche administrative Kapazitäten, digitaler Verwaltungszugang und Ungleichheit zusammenhängen." Zeitschrift für Politikwissenschaft (2025), 1-26. https://doi.org/10.1007/s41358-025-00437-6.

This context underscores the critical need for robust institutional work to consciously reshape the administrative framework to ensure new digital solutions are integrated equitably into daily structures and processes[547].

The traditional framework, exemplified by the German Administrative Procedure Act (VwVfG), guarantees a certain "access standard" through the interplay of provisions that rely on written paper communication and oral interaction. This traditional framework presupposes only mastery of written and spoken language—a requirement emphasised by § 23 VwVfG regarding the German language—and thereby protects those without digital proficiency from exclusion. While even these "de lege lata forms" (the law in force) of interaction are not equally mastered by all, they nonetheless guarantee a significant level of access equality encompassing the overwhelming majority of the population[548].

By contrast, electronic interaction relationships fall short of this standard. A considerable segment of the population still lacks internet access or the skills necessary to effectively utilise electronic interaction with the administration, which in practice amounts to "no access." Thus, with the introduction of electronic interaction, procedural law risks losing part of its function as a guarantor of access[549], access, notwithstanding the potential of digital solutions to support the constitutional (Gleichwertigkeit der Lebensverhältnisse) by bridging structural gaps, particularly in rural areas[550].

In legal terms, the requirement to ensure inclusive access is expressed through the principle of form equivalence. This safeguard finds statutory embodiment in § 3a(1) VwVfG NRW, which stipulates that documents "*may be transmitted electronically*". The deliberate use of permissive language reflects a cautious legislative approach. Electronic communication is made available as an additional channel, rather than being imposed as a mandatory requirement[551].

Consequently, citizens are free to choose between analogue and digital forms of interaction, thereby ensuring that access to administrative services is not dependent on an individual's technological capabilities. This flexibility serves as a procedural mechanism to

[547] Thomas B. Lawrence, und Roy Suddaby. 2006. Institutions and institutional work. In The SAGE handbuch policy of organization studies, 215–254. London: SAGE. Cited in Klenk, Greef, and Lucks, "Digitalisierung der Daseinsvorsorge".
[548] Klenk, Greef, and Lucks, "Digitalisierung der Daseinsvorsorge".
[549] Britz, "Reaktionen des Verwaltungsverfahrensrechts,", 231.
[550] Klenk, Greef, and Lucks, "Digitalisierung der Daseinsvorsorge".
[551] Britz, "Reaktionen des Verwaltungsverfahrensrechts,", 232.

uphold the constitutional Gleichheitssatz by preventing unequal treatment between digitally proficient and digitally excluded individuals[552].

It should be noted, however, that the scope of protection offered by this statutory provision is not absolute. While § 3a(1) VwVfG ensures protection for those lacking access—prohibiting authorities from communicating electronically unless a channel has been opened by the addressee—it cannot fully mitigate unequal access in the informal domain. Those without access remain deprived insofar as they are excluded from informal electronic interaction, particularly general information services offered online. Valuable information available on administrative websites remains inaccessible to these citizens, despite the protective clause of § 3a(1) VwVfG. This is because the provision restricts only the "transmission" of electronic documents (i.e., sender-initiated communication), whereas online information services are typically "collected" by recipients. Consequently, administrations may offer information without ensuring that all potentially interested parties have access to it. Unequal starting conditions in dealing with information technology persist in the informal domain, notwithstanding statutory safeguards[553].

Additionally, the commitment to equality is reinforced through specific implementing measures designed to ensure accessibility in practice. The Verordnung über barrierefreie Informationstechnik (BITV NRW), for example, establishes binding technical standards to guarantee that public digital services remain accessible to persons with disabilities[554].

At the same time, broader analysis reveals that the pursuit of Digital Era Governance (DEG)[555] is frequently advanced through mechanisms rooted in the New Public Management (NPM) paradigm, notably via competitively allocated financial incentives. This has led to fragmented, hybrid governance settings in which competing logics coexist. Although the concept of institutional work provides a theoretical lens for active steering, the empirical reality of implementing the Onlinezugangsgesetz across various counties indicates that transformation often unfolds as cumulative change. Crucially, the uneven distribution of administrative capacity and technical competencies among local authorities—frequently

[552] Ibid.
[553] Ibid
[554] Barrier-Free Information Technology Ordinance (BITV 2.0), Federal Law Gazette 184300011, accessed October 14, 2025, https://www.gesetze-im-internet.de/bitv_2_0/BJNR184300011.html.
[555] Tanja Klenk, Samuel Greef and Carla Lucks refer to Dunleavy et al. (2005) as the first authors to use the term 'Digital Era Governance'. Dunleavy, P., Helen Margetts, Simon Bastow, und Jane Tinkler. 2005. New public management is dead—Long live digital-era governance. Journal of Public Administration Research and Theory 16:467–494. Cited in Klenk, Greef, and Lucks, "Digitalisierung der Daseinsvorsorge".

compounded by path-dependency from prior NPM-driven digitalisation efforts—means that digital transformation is occurring at different speeds. This divergence produces a serious unintended consequence: rather than reducing structural inequalities in the provision of essential public services, the heterogeneous pace of administrative digitalisation risks exacerbating existing social and regional disparities by widening the gap between technologically advanced and resource-constrained municipalities[556].

A growing body of empirical research reinforces this concern. Recent studies on the implementation of the Onlinezugangsgesetz (OZG) demonstrate that the heterogeneous pace of digital transformation across municipalities is not merely a technical or managerial issue but is structurally rooted in unequal administrative capacities, divergent personnel resources, and entrenched institutional path-dependencies. These findings show that financially stronger or organisationally innovative municipalities are able to adopt and diffuse digital services more rapidly, while resource-constrained or structurally disadvantaged municipalities progress more slowly. As a result, digitalisation—rather than functioning as a levelling instrument that promotes equal living conditions—risks amplifying existing regional disparities by creating uneven access to digital administrative services. This dynamic aligns with the broader observation that digital transformation in Germany unfolds as cumulative, hybrid change shaped by competing governance logics, where the coexistence of NPM-inspired competitive funding mechanisms and emerging Digital-Era-Governance structures produces fragmented implementation trajectories. Consequently, the constitutional requirement of equality becomes directly implicated: unequal administrative capacity translates into unequal digital access, thereby challenging the premise that digitalisation can be introduced without generating new forms of procedural disadvantage[557].

4.3.2.2. Proportionality of Obligatory Digital Communication

The principle of proportionality functions as a constitutional safeguard against disproportionate administrative intervention, ensuring that compulsory measures are suitable, necessary, and reasonable in relation to their objectives[558].

It is important to emphasise that the proportionality assessment in this context concerns the legality of the procedural obligation itself, rather than the exercise of discretion

[556] Klenk, Greef, and Lucks, "Digitalisierung der Daseinsvorsorge".
[557] Klenk, Greef, and Lucks, "Digitalisierung der Daseinsvorsorge".
[558] see above section 2.2.2.1. Substantive Principles b. Principle of Proportionality.

within a substantive administrative decision. The central question is whether the legislature may legitimately require the use of digital formats—even in the absence of administrative discretion—when such a requirement potentially restricts procedural autonomy or imposes additional burdens on individuals.

Importantly, the measure must be appropriate, requiring a constitutional balancing of the public interest in efficiency against the burden imposed on the individual. This burden includes not only the risk of digital exclusion but also the costs associated with acquiring secure identity tools, such as a commercially sourced Qualified Electronic Signature (QES). The proportionality assessment must therefore evaluate whether the tangible benefits of reduced administrative costs justify the intrusion on procedural freedom and the financial or technical burdens placed upon citizens[559].

4.3.2.3. Differentiated Implementation and Communal Experimentation

The implementation of e-governance legislation in North Rhine-Westphalia introduces a degree of variability within the state's administrative framework. This variability arises primarily from differentiated implementation deadlines and communal experimentation clauses, designed to accommodate the diverse capacities of local administrations. Although politically and logistically pragmatic, these mechanisms raise complex constitutional considerations, particularly in relation to the principle of equality enshrined in Article 3 of the Basic Law[560].

Differentiated implementation deadlines—often granting municipalities longer periods to meet mandatory digitalisation requirements than those afforded to state authorities—may result in citizens across different regions experiencing unequal levels of digital service delivery. Such temporal disparities can, in effect, lead to unequal access to administrative efficiency and procedural fairness[561]. From a constitutional perspective[562], these variations require careful justification under the Gleichheitssatz, as they amount to unequal treatment of citizens based solely on geographical location. To withstand constitutional scrutiny, the state must demonstrate that the objective grounds for such differentiation—particularly the varying financial capacities, infrastructural readiness, and

[559] Ibid.
[560] Art. 3 GG.
[561] Klenk, Greef, and Lucks, "Digitalisierung der Daseinsvorsorge".
[562] Art. 3 GG.

human-resource constraints of municipalities—are sufficiently compelling to justify temporary divergence[563].

From a doctrinal standpoint, these clauses necessitate a delicate balancing exercise between two competing constitutional values: the principle of local self-government and the right of citizens to equal access to an effective and modern administration. In general, transitional inequalities can be justified only if they remain clearly temporary and are accompanied by a demonstrable commitment to eventual harmonisation.

4.3.2.4. Conclusion to Proportionality and Equality

In conclusion, the examination of proportionality and equality within the framework of North Rhine-Westphalian administrative law demonstrates that digital transformation remains firmly bound by these constitutional safeguards. The VwVfG NRW, complemented by implementing regulations, upholds the principle of equal access by maintaining analogue alternatives, ensuring that digital participation functions as an option rather than a mechanism of exclusion. At the same time, proportionality continues to operate as a central instrument of judicial and administrative control, requiring detailed justification for any move toward obligatory digital communication. While differentiated implementation deadlines and local experimentation clauses may temporarily produce disparities in digital service levels across municipalities, such variation remains constitutionally permissible only where objectively justified and accompanied by a clear path toward harmonisation. This ensures that individual procedural autonomy is not subordinated to administrative efficiency alone, but remains protected within the evolving architecture of digital administration.

4.3.3. Transparency and Accountability

Within the framework of the EGovG NRW, transparency encompasses the provision of citizen access to information and electronic file management, whereas accountability emphasises the clear attribution of responsibility, particularly when administrative decisions are mediated by complex automated systems. Accordingly, the following analysis will proceed by sequentially addressing the constitutional implications of digitalisation across three key applications that emerge from the legislative framework. This structure is organised as follows: first, regulatory provisions on transparency in electronic file

[563] Wissenschaftlicher Dienst des Deutschen Bundestages, Verfassungsrechtliche Rechtfertigung von gesetzlichen Ungleichbehandlungen aufgrund persönlicher Merkmale [Research Service of the German Bundestag, Constitutional justification of statutory unequal treatment based on personal characteristics], Aktenzeichen: WD 3 - 3000 - 220/14 (Berlin: Deutscher Bundestag, 29. September 2014).

management; second, the challenges of ensuring public accountability in automated decision-making; and third, the structural mechanism intended to strengthen legislative transparency, namely the Digitalisation Check.

4.3.3.1. Transparency in Electronic File Management (*Elektronische Aktenführung*)

The principle of transparency finds a critical application in the context of electronic file management. In the analogue world, transparency was partially assured by the physical accessibility and traceability of paper files. The shift to digital administration requires that the legal framework—particularly the EGovG NRW—not only preserve but also enhance this level of transparency[564].

This is achieved by ensuring that the E-Akte adheres to the principles of proper file management, which legally demands that every procedural step, document inclusion, or modification be logged and irreversible, thereby preventing arbitrary administrative action and reinforcing Legal Certainty[565].

The most direct manifestation of transparency is the citizen's right of access to the file. As established by § 13 EGovG NRW[566], the administration is explicitly mandated to facilitate access to electronic files through secure and efficient digital means, ensuring that the transition to electronic storage does not obstruct this right. Furthermore, implementing regulations such as the VV E-Akte NRW[567] contribute to transparency by requiring strict technical documentation and audit logs (Audit Trails). These measures ensure that the full decision-making history—from initial input to final issuance—is preserved and verifiable, allowing citizens not only to inspect documents but also to confirm the integrity and sequence of the electronic procedure[568].

4.3.3.2. Public Accountability in Automated Decision-Making Processes

The democratic principle of public accountability requires that all administrative actions—whether performed by human officials or automated systems—remain transparent, traceable, and attributable to a responsible public authority.

---

564 EGovG NRW, § 9.
565 Wolfgang Sannwald, Professionelle Aktenführung in der Kommunalverwaltung: E-Akten und Papierakten nach dem Kommunalen Aktenplan 21 [Professional Record Keeping in Local Government: Electronic and Paper Files according to the Municipal Records Management Plan 21] (Stuttgart: Richard Boorberg Verlag, 2024), 32.
566 EGovG NRW, §13.
567 ERV Law NRW.
568 Wolfgang. Professionelle Aktenführung in der Kommunalverwaltung, 24.

This challenge is amplified by the complexity of modern generative AI (GAI) systems, exemplified by the state's pilot phase of the AI administrative assistant "NRW.Genius" (launched in October 2024). While this system is currently limited to supportive tasks—such as summarising documents and generating drafts—its direct interaction with administrative texts necessitates rigorous legal oversight[569].

The central challenge lies in preventing algorithmic procedures from turning administrative decision-making into an opaque "black box"[570].To preserve accountability and counter this opacity, the legal framework compels NRW authorities to adhere to several safeguards. First, the administration must maintain explainability to ensure that the decision logic remains traceable. Accordingly, legal scrutiny must extend beyond the code itself to encompass potential sources of bias, including unconscious preferences of system developers and discriminatory patterns embedded in training data, which risk perpetuating existing social inequalities[571].

Furthermore, accountability is reinforced by international principles requiring the auditability of models and rigorous validation to assess whether systems generate discriminatory harm. Accordingly, the implementation of ADM systems under the EGovG NRW must be thoroughly documented and continuously monitored to demonstrate alignment with procedural safeguards. This ensures that accountability is seamlessly transferred from human officials to digital systems without eroding citizen rights[572].

However, it must be clear that North Rhine-Westphalian legislation does not contain any explicit requirement of algorithmic transparency or explainability. Instead, the legal framework relies on traditional procedural duties—most notably the obligation to provide reasons (§ 39 VwVfG NRW)[573], the duty of comprehensive fact-finding (§ 24 VwVfG NRW)[574], and the right to inspect files (§ 29 VwVfG NRW)[575].

From a critical perspective, this reliance is problematic. These provisions were developed for analogue procedures and presuppose that the authority is itself capable of

---

[569] Ministry of Local and Community Affairs, Building and Digitalization of North Rhine-Westphalia (MHKBD NRW), Press Release No. 28.10.2024, available at: [https://www.mhkbd.nrw/themenportal/ki-made-in-nordrhein-westfalen-testphase-fuer-ki-assistenten-in-der-oeffentlichen-verwaltung-in-nordrhein-westfalen-startet].

[570] Niklas Kossow, Svea Windwehr, and Matthew Jenkins, *Algorithmic Transparency and Accountability* (Berlin: Transparency International, February 5, 2021), https://knowledgehub.transparency.org/assets/uploads/kproducts/Algorithmic-Transparency_2021.pdf

[571] Ibid.

[572] Ibid.

[573] VwVfG NRW, § 39

[574] VwVfG NRW, § 24

[575] VwVfG NRW, § 29

understanding, reconstructing, and documenting the decision-making process. In the context of machine-learning systems, however, this assumption becomes increasingly difficult to sustain[576]. The statutory duties may formally require decisions to remain intelligible and reviewable, but they do not provide concrete tools to ensure that complex algorithmic models can, in practice, be explained, audited, or challenged[577].

Moreover, although judicial review in principle extends to all relevant factors—including biased training data or assumptions embedded in system design—the absence of explicit statutory standards leaves authorities with wide discretion and may result in significant accountability gaps. The current framework, therefore, risks creating the illusion of transparency while failing to ensure substantive oversight[578].

Stelkens (2024) has emphasised that digitalisation laws are subject to the inherent problem of legislative indeterminacy. Technical requirements must often be formulated at an extreme level of abstraction, resembling a 'Pflichtenheft', and relate to virtual objects that need to be demonstrated to users before they can understand what is required. As software mediates between law and execution, but cannot itself be 'read' in legal terms, the risk arises that digitalisation statutes may become unintelligible and thereby misdirect administrative practice. This underscores the challenge of ensuring that legal certainty is not undermined by technical opacity[579].

In this sense, NRW law indirectly expects algorithmic transparency through general procedural safeguards, yet it does not establish a dedicated regulatory regime capable of addressing the structural opacity of modern algorithmic systems.

4.3.3.3. The Role of the Digitalisation Check (*E-Government-Check*) in Legislative Transparency

The principle of transparency extends beyond administrative acts to encompass the legislative process underpinning digital transformation. In North Rhine-Westphalia, the Digitalisation Check (E-Government-Check)[580] operates as an integral part of the legally

[576] Rebecca Williams, "Rethinking Administrative Law for Algorithmic Decision Making." Oxford Journal of Legal Studies 42, no. 2 (2022), 468–494. doi:10.1093/ojls/gqab032. OP-OJLS210034 468..494 https://academic.oup.com/ojls/article/42/2/468/6414566?login=false

[577] Lucie Cluzel-Métayer, "The Judicial Review of the Automated Administrative Act," European Review of Digital Administration & Law 1, no. 1–2 (2020): 101–103, https://doi.org/10.4399/97888255389609.

[578] Ibid

[579] Stelkens, "Verfassungsrechtliche Rahmenbedingungen".

[580] Annex 10 to the Joint Rules of Procedure of the Ministries of North Rhine-Westphalia, accessed October 14, 2025, https://recht.nrw.de/lmi/owa/br_text_anzeigen?v_id=12345.

mandated legislative impact assessment, explicitly anchored in § 38 Abs. 2 Satz 4 of the Rules of Procedure for the State Government.

This mechanism improves legislative transparency by assessing the impact of proposed regulations on digitisation. It enforces the creation of digitally friendly law through a mandatory checklist examining compatibility with existing digital laws (EGovG NRW), achievement of media-free communication, and compliance with accessibility and data protection requirements. The mandatory nature of this assessment ensures that digital concerns are uniformly considered, with results documented in the Gesetzesvorblatt (explanatory memorandum) accompanying the bill[581].

Administered primarily by the Ministry for Regional Identity, Communities and Local Government, Building and Digitalisation (MHKBD), the Digitalisation Check renders the digital implications of legislative proposals visible prior to enactment. Drafting ministries must document whether proposed laws are technically implementable and compatible with existing e-government infrastructure, including platforms such as the state service portal and electronic file management systems (E-Akte). At the same time, the assessment evaluates whether legislation facilitates or complicates digital interactions for citizens and businesses, with particular attention to avoiding media discontinuities. Financial implications and potential efficiencies are also considered[582].

By integrating this evaluation formally into the legislative procedure and requiring its inclusion in explanatory memoranda, the Digitalisation Check transforms the traditionally opaque process of digital law-making into a documented, transparent procedure. This approach provides the Landtag of NRW with a concrete evaluative tool and enables public scrutiny of the executive's approach to digital governance. Through the binding force of ministerial decrees, the Digitalisation Check ensures that legislative transparency in digital policy is not voluntary but a mandatory prerequisite for new laws, thereby embedding accountability at the normative level of the state's legal framework[583].

4.3.3.4. Conclusion to Transparency and Accountability

In conclusion, the analysis of transparency and accountability within the North Rhine-Westphalian framework demonstrates that these democratic principles are not merely aspirational but embedded as binding procedural requirements. The provisions of the

[581] Annex 10 to the Joint Rules of Procedure (NRW).
[582] Annex 10 to the Joint Rules of Procedure (NRW).
[583] Annex 10 to the Joint Rules of Procedure (NRW).

EGovG NRW, complemented by supplementary regulations, reinforce administrative openness—most notably through the management of the E-Akte—and aim to counter opacity in automated decision-making. While § 35a VwVfG establishes institutional liability for automated administrative acts, this accountability continues to derive primarily from existing procedural norms rather than from explicit rules on algorithmic transparency. Moreover, mechanisms such as the Digitalisation Check may promote legislative transparency, yet their legal status and practical effectiveness remain contingent upon their design and implementation. Ultimately, by mandating procedural explainability and clear attribution of responsibility throughout the life cycle of digital administrative processes, North Rhine-Westphalia seeks to safeguard legitimacy and public trust. Nevertheless, sustained oversight and, where appropriate, further statutory refinement will likely be required to address the full complexity posed by advanced algorithmic systems.

4.3.4. Procedural Fairness and Good Faith

The principles of procedural fairness—often encompassing the right to be heard—and good faith constitute the final set of fundamental administrative law principles examined under the EGovG NRW framework. These principles are vital because they focus on the quality of the direct, bilateral interaction between citizens and administrative authorities. In the context of e-governance, the shift to digital procedures risks depersonalising administrative processes and thereby potentially undermining the constitutional guarantee of fair treatment. Procedural fairness requires that digital tools preserve the citizen's ability to participate meaningfully and influence administrative outcomes, particularly concerning the statutory right to be heard. Good faith, in turn, imposes a duty on the administration to ensure that technology does not disadvantage citizens through technical faults or rigid adherence to formal digital requirements. The following sections analyse how the legal framework of North Rhine-Westphalia addresses these challenges: by safeguarding the right to be heard in fully digital procedures; by maintaining procedural guarantees through a distinction between electronic and automated acts; and by establishing legal safeguards for secure and reliable notification.

4.3.4.1. Ensuring the Right to Be Heard in Fully Digital Procedures

The principle of procedural fairness, reinforced by the constitutional right to be heard, requires that before an administrative act adversely affecting a citizen is issued, the affected party must be allowed to present their case. For the North Rhine-Westphalian

administration, this obligation follows directly from § 28 VwVfG NRW, which imposes an affirmative duty on authorities to enable the effective exercise of this right[584].

For this right to be genuinely effective in the digital environment, electronic submission channels—authorised by § 3a VwVfG NRW—must be demonstrably reliable and functionally equivalent to analogue submission. The administration bears responsibility for any procedural deficiencies arising from technical failures that prevent timely submission of a citizen's statement, thereby rendering the electronic channel unavailable for exercising the right. Ministerial decrees concerning service portals reinforce this obligation by mandating technical quality and user-friendliness in digital input forms. Furthermore, the principles of rechtliches Gehör require that a citizen's electronic input be immediately and immutably integrated into the electronic file (E-Akte), as governed by the VV E-Akte NRW. This guarantees procedural certainty that the citizen's contribution will be considered before a final decision is issued[585].

In Addition to the general duty to enable electronic participation, some Länder have gone further by granting citizens and businesses enforceable procedural claims to a fully electronic administrative procedure, including the electronic return channel. Bavaria, North Rhine-Westphalia (§ 4 EGovG NRW), and Saxony-Anhalt (§ 11 EGovG LSA) provide such rights, which extend beyond the scope of the EU Services Directive. This innovation is significant because the OZG does not confer subjective rights to its instruments, whereas enforceable claims indirectly sanction delayed implementation by allowing judicial enforcement. In NRW, § 4 EGovG NRW obliges authorities to use the electronic communication channel chosen by the sender, unless legal or technical obstacles prevent it, and mandates the use of open, standardised file formats. The NRW evaluation report rightly stresses that the realisation of this claim depends on progress in Schriftformersatz mechanisms, electronic signatures, eID/Servicekonto NRW, e-payment, electronic proofs, and process optimisation[586].

4.3.4.2. Maintaining Procedural Requirements: Distinction Between Electronic and Automated Administrative Acts

Despite efforts to preserve the right to be heard in the digital realm, a crucial distinction must be drawn between purely electronic administrative acts and those issued

[584] § 28 VwVfG NRW
[585] ERV Law NRW.
[586] Bernhardt, E-Government-Gesetzgebung, 26

entirely by automated means. This differentiation is essential for safeguarding the integrity of fundamental principles of administrative procedural law. If exceptional provisions designed to relax requirements for automated decisions were applied universally to all electronic acts, core instruments of procedural legitimacy—such as the duty to hear the party (§ 28 VwVfG), the requirement to state reasons (§ 39 VwVfG), and the mandate for signature and name reproduction in written acts (§ 37(3) VwVfG)—could be significantly eroded. Such an outcome would necessitate a critical re-evaluation of the legislative justification underlying these exception clauses[587].

It is therefore vital to recognise that the procedural exceptions detailed in § 28(2) No. 4, § 37(5), and § 39(2) No. 3 VwVfG are generally not applicable to standard electronic administrative acts (§ 37(4) VwVfG). Their application is typically restricted to instances in which an act is issued with the complete and defining assistance of automated facilities. This legal delineation ensures that primary procedural safeguards remain fully applicable to the vast majority of electronic administrative acts, thereby preserving the required level of procedural certainty and constitutional legality[588].

However, as Stelkens (2024) has cautioned, the increasing reliance on digitalisation risks transforming procedural rights into mere simulations of legality, particularly when automated facilities replace traditional safeguards. Rights such as the duty to hear (§ 28 VwVfG), access to files (§ 29 VwVfG), or the obligation to provide individualised reasoning (§ 39 VwVfG) may be reduced to schematic input forms, FAQs, or typified justifications. This Verwaltungssimulation underscores the importance of maintaining the distinction between electronic acts, which remain subject to full procedural guarantees, and automated acts, where exceptional clauses apply. Otherwise, constitutional concerns arise, including equality violations, deficits in democratic legitimacy, and the obligation under Art. 83 GG to ensure the effective execution of federal law[589].

4.3.4.3. Legal Safeguards for Secure and Reliable Notification (*Zustellung*)

Procedural fairness is intrinsically linked to the reliability of notification of administrative acts. In German administrative law, a decision becomes legally effective and binding only upon proper notification, which commences appeal deadlines and establishes legal certainty. The shift to electronic notification poses a significant challenge, requiring

[587] Britz, "Reaktionen des Verwaltungsverfahrensrechts,", 230.
[588] Ibid
[589] Stelkens, "Verfassungsrechtliche Rahmenbedingungen".

the legal framework to guarantee that digital processes achieve the same level of security, integrity, and proof of receipt as traditional physical delivery mechanisms.

Within North Rhine-Westphalia, the legal basis for secure electronic notification is primarily governed by § 5 of the Administrative Notification Act (Verwaltungszustellungsgesetz, VwZG)[590] and supplementary provisions of state administrative procedure law. Electronic notification is valid only if the authority can provide unambiguous proof of receipt by the intended party. NRW authorities employ two principal methods to achieve this:

De-Mail: A legally regulated, secure German system providing cryptographic evidence of sending, receipt, and content integrity, thereby substituting the traditional registered mail receipt.

Secure Service Accounts: E-government platforms requiring prior registration and legally recognised identity procedures (such as the Online-Ausweisfunktion or eID), where deposit of the document in the secure account is deemed legally effective upon notification of its availability.

These NRW provisions must be understood within the broader federal and state framework regulating secure electronic communication. The obligation to provide De-Mail access is not unique to North Rhine-Westphalia. Federal and most state e-government laws require authorities to open a De-Mail channel pursuant to the De-Mail Act, although the scope of this obligation varies. For example, Brandenburg imposes no direct duty, while Rheinland-Pfalz, Saxony-Anhalt, and Lower Saxony permit alternative electronic channels. In NRW (§ 3(2)) and Thuringia (§ 5(3)), the duty to accept De-Mail does not apply to specialised procedures or where an electronic court and administrative mailbox is operated. Berlin, by contrast, mandates De-Mail whenever statutory provisions require it, whereas Mecklenburg-Vorpommern formulates only a 'should' obligation. Despite these legal requirements, the actual uptake of De-Mail has remained limited, with Saxony reporting very low usage. This reflects broader criticism of De-Mail as lacking technological openness and European compatibility. Expert evaluations of the Federal EGovG have therefore recommended replacing the statutory fixation on De-Mail with neutral security standards for communication channels, leaving detailed technical specifications to BSI guidelines. Such an approach would better align legal safeguards with evolving technological realities[591].

[590] German Administrative Notification Act *(Verwaltungszustellungsgesetz – VwZG)*, § 5.
[591] Bernhardt, E-Government-Gesetzgebung, 20.

4.3.4.4. The Duty of Good Faith in Digital Interaction and Error Correction

The principle of good faith, a general tenet of German law, is not merely an ethical recommendation but a fundamental legal doctrine[592]. Within administrative law, the principle can be interpreted as offering a basis for arguing that the administration should take reasonable measures to ensure that the use of technology does not disadvantage citizens or expose them to constraints resulting from technical rigidity[593]. In the context of digital interaction within the North Rhine-Westphalian administration, this duty requires the state to mitigate the adverse consequences of genuine errors made by citizens when navigating complex electronic procedures, thereby ensuring that substantive justice prevails over overly formalistic digital requirements.

In a similar vein, the duty of good faith may be understood as being operationalised through the doctrines of error correction and procedural rectification, which may be regarded as important safeguards for maintaining fairness in digital proceedings.

In conclusion, the principles of procedural fairness and good faith are indispensable for ensuring the legitimacy and quality of administrative action within North Rhine-Westphalia's digital framework. These safeguards reflect a clear commitment to preserving the dialogical nature of administrative processes and ensure that the pursuit of digital efficiency remains subordinate to fundamental procedural rights and the overarching mandate of the rule of law[594].

4.3.5. Administrative Efficiency and Legal Coherence (GDPR Interplay)

The final set of principles governing the North Rhine-Westphalia E-Government Act (EGovG NRW) highlights the critical tension between the pursuit of administrative efficiency and the imperative of legal coherence. While a central objective of e-governance is to expedite procedures and reduce public sector costs, this goal is constitutionally constrained by the mandate of data protection, primarily enshrined in the General Data Protection Regulation (GDPR) and complemented by the Data Protection Act of North Rhine-Westphalia (DSG NRW). The challenge for the state's legal framework is to ensure

[592] Andreas Wittern and Maximilian Baßlsperger, Verwaltungs- und Verwaltungsprozessrecht: Grundriss für Ausbildung und Praxis [Administrative and Administrative Procedure Law: Outline for Education and Practice] (Stuttgart: Kohlhammer Verlag, 2016), 58.
[593] Hans-Josef Vogel, "Rechtsetzung und Rechtsumsetzung besser machen [Improving legislation and its implementation]," in Politik und Verwaltung. Verstehen und Verändern, 171–204 (Nomos Verlagsgesellschaft mbH & Co. KG, 2025), 188–193.
[594] Alliance 90/The Greens Parliamentary Group, Law to Facilitate Access to Official Information in North Rhine-Westphalia, North Rhine-Westphalia State Parliament, Printed Paper 17/8722 (25 February 2020).

that any efficiency gains do not compromise the legality or integrity of data. This section critically assesses the equilibrium achieved between these competing demands, focusing on the evaluation of efficiency gains versus compliance costs and the necessity of coherence with data protection law.

4.3.5.1. Evaluation of Efficiency Gains vs. Compliance Costs

A central rationale for the enactment of digital legislation in North Rhine-Westphalia, as articulated in the E-Government Act (EGovG NRW), lies in the pursuit of enhanced administrative efficiency. The envisaged transition to digital procedures—most notably electronic file management (E-Akte) and the automation of services—is expected to generate measurable improvements in procedural speed, reductions in operational costs, and an overall increase in the quality of services delivered to citizens and businesses. Yet, this orientation towards efficiency does not unfold in a normative vacuum. Rather, it is conditioned by the binding requirements of compliance, particularly in the domains of data protection and information security, which derive from the constitutional principle of the Rule of Law.

This tension is reflected in the legislative process itself. While efficiency gains are consistently emphasised, the amendments to the Act underscore the necessity of accelerating digitisation in order to realise the projected alleviation of administrative and financial burdens. As noted in the explanatory memorandum to the amendment bill, "the acceleration of digital transformation is indispensable to ensure that the anticipated benefits in terms of efficiency and cost reduction can be effectively achieved". This formulation illustrates the dual imperative: on the one hand, the promise of efficiency as a driver of reform, and on the other, the constitutional obligation to embed such reforms within a framework that safeguards legality, transparency, and accountability[595].

Compliance costs primarily arise from implementing the technical and organisational measures required by the GDPR[596] and the DSG NRW[597]. The duty to manage these costs effectively is formalised through specific procedural requirements. First, Data

[595] Landtag Nordrhein-Westfalen. Gesetzentwurf: Gesetz zur Änderung des E-Government-Gesetzes Nordrhein-Westfalen und zur Änderung weiterer Vorschriften. Drucksache 17/8795, 17. Wahlperiode. Düsseldorf: Landtag Nordrhein-Westfalen, 4 March 2020.
[596] European Parliament and Council, Regulation (EU) 2016/679 (General Data Protection Regulation), Art. 25, 35.
[597] Cybersicherheit NRW, „Datenschutzanforderungen in Unternehmen und öffentlichen Einrichtungen", zugegriffen am 3. Dezember 2025, https://www.cybersicherheit.nrw/datenschutzanforderungen-unternehmen-und-oeffentlichen-einrichtungen-0.

Protection Impact Assessment (DPIA), Article 35 GDPR mandates a DPIA before implementing high-risk digital projects[598]. This mechanism compels authorities to quantify and document risks to fundamental rights, with mitigation measures defining the minimum acceptable compliance cost. Second, privacy by Design and Privacy by Default. This requires that compliance costs be addressed proactively during the design phase of IT systems mandated by the EGovG NRW.

From a legal standpoint, the proportionality of the EGovG NRW is indirectly tested through this economic balance. If efficiency gains remain negligible while compliance costs stay high, the overall benefit of the measure becomes questionable. Crucially, the state's duty is to ensure that efficiency is achieved through compliance, not at its expense. Digital initiatives must therefore be structured to achieve "cost-effective legality," integrating privacy-enhancing technologies at the design stage to minimise recurring costs of audits and scrutiny, thereby safeguarding the constitutional integrity of digital transformation.

4.3.5.2. Coherence with Data Protection Law (GDPR and DSG NRW)

The operational success and legal legitimacy of the EGovG NRW depend on its strict coherence with data protection law. Since the processing of personal data is inherent in almost all digital administrative actions—ranging from electronic file management to service portals and automated decisions—the legal foundation must align with the constitutional right to informational self-determination[599], enforced by the GDPR and supplemented by the DSG NRW[600].

The EGovG NRW authorises digitalisation but must adhere to the GDPR's requirements. Key areas of mandatory coherence include:

a. Legality: Legal Basis for Processing (Article 6 GDPR)[601]:

Legal basis for processing (Article 6 GDPR): Any digital service or data exchange mandated by the EGovG NRW must rest on a clear legal basis, typically Article 6(1)(e) GDPR (public task) combined with statutory authorisation in state law. Directives from the

[598] Landesbeauftragte für Datenschutz und Informationsfreiheit Nordrhein-Westfalen (LDI NRW), "Liste von Verarbeitungsvorgängen nach Art. 35 Abs. 4 DS-GVO für den öffentlichen Bereich" [List of Processing Operations pursuant to Art. 35 (4) GDPR for the Public Sector], accessed February 8, 2026, https://www.ldi.nrw.de/liste-von-verarbeitungsvorgaengen-nach-art-35-abs-4-ds-gvo-fuer-den-oeffentlichen-bereich.

[599] Bundesministerium des Innern (BMI), "Datenschutz" [Data Protection], accessed December 3, 2025, https://www.bmi.bund.de/DE/themen/verfassung/datenschutz/datenschutz-node.html.

[600] Datenschutzgesetz Nordrhein-Westfalen (DSG NRW), May 17, 2018, GV. NRW. S. 244, zuletzt geändert durch Artikel 1 des Gesetzes vom 5. Juli 2024 (GV. NRW. S. 440), https://www.recht.nrw.de/lmi/owa/br_text_anzeigen?v_id=3520071121100436275.

[601] GDPR, Art. 6.

Ministry for Digitalisation (MHKBD) ensure that new services explicitly cite this foundation.

b. Principle of Data Minimisation (Article 5 GDPR)[602]:

Provisions relating to data collection and exchange are governed by the requirement that data be adequate, relevant, and limited to necessity. This is enforced through retention schedules and Privacy by Design, which require systems such as the E-Akte to minimise access and data usage by default.

c. Data Protection Impact Assessments (DPIAs - Article 35 GDPR)[603]:

For large-scale systems such as service portals or AI applications, the mandatory DPIA—regulated by the DSG NRW—ensures risks to fundamental rights are identified and mitigated prior to implementation, preventing ex post legal challenges.

Thus, the legal validity of any action under the EGovG NRW depends on demonstrable compliance with GDPR safeguards, operationalised through the DSG NRW.

4.4. Challenges and Gaps in Implementation

While the E-Government Act of North Rhine-Westphalia (EGovG NRW) formally reflects core principles of administrative law, its effectiveness ultimately depends on implementation. This section, therefore, examines points of friction where statutory ideals confront practical realities, focusing on three areas: the digital divide and accessibility, tensions in data protection and privacy, and institutional hurdles within public administration.

4.4.1. The Digital Divide and Accessibility:

The reliance on digital services mandated by the EGovG NRW creates constitutional tension by widening the digital divide (digitale Spaltung). This divide risks infringing the principle of equal access (Gleichheit des Zugangs), as certain groups—such as older citizens, individuals with limited socio-economic resources, or residents in areas with inadequate infrastructure—face systemic barriers. For these groups, administrative services risk shifting from a guaranteed entitlement to a conditional privilege, dependent on digital literacy and technological access.

602 GDPR, Art. 5.
603 GDPR, Art. 35.

4.4.1.1. Legal Remedies and Their Practical Efficacy in NRW

To safeguard inclusivity, the legal framework provides two remedies.

a. Form Equivalence (§ 3a VwVfG NRW)[604]: The permissive wording ("may be transmitted electronically") preserves analogue channels, ensuring that the constitutional right to access administrative services is not made contingent on digital capacity.

b. Barrier-Free IT (BITV NRW[605], BGG NRW[606]): These provisions enforce accessibility standards (WCAG 2.1), translating equality into auditable technical duties monitored by supervisory authorities.

4.4.1.2. The Socio-Economic Bias in E-Participation

Municipal e-participation tools reveal further inequality. Studies show that such instruments disproportionately engage well-educated, politically active groups, thereby undermining equality of representation. The challenge thus extends beyond access to ensuring balanced participation in administrative processes[607].

4.4.2. Data Protection and Privacy Concerns:

Research on proactive administrative services in Germany highlights that digital transformation, while normatively aligned with data protection law, often generates recurring frictions with the GDPR and state-level data protection acts (DSG). These tensions challenge the sustainability of e-government, particularly regarding the principles of data minimisation and the security of sensitive information[608].

4.4.2.1. Data Minimisation (Datensparsamkeit)

Proactive and interoperable service models reduce duplication but risk purpose-creep and the creation of centralised pools of sensitive data. As Kuhn et al. (2020) note, the reliance on cross-agency data sources raises questions of legality and proportionality. Effective compliance requires strict segmentation and oversight—often through Data Protection Impact Assessments to ensure that efficiency does not override necessity[609].

---

[604] VwVfG NRW, § 3a.

[605] Barrierefreie-Informationstechnik-Verordnung Nordrhein-Westfalen (BITV NRW), accessed October 14, 2025, https://recht.nrw.de/lmi/owa/br_text_anzeigen?v_id=10000000000000000502

[606] Behindertengleichstellungsgesetz Nordrhein-Westfalen (BGG NRW), May 9, 2014, GV. NRW. S. 2014.

[607] Lars Holtkamp, "E-Democracy in deutschen Kommunen: Eine kritische Bestandsaufnahme," E-Democracy in German Municipalities: A Critical Assessment," *e-merkur* 4, no. 1/2 (2002), 49–58.

[608] Peter Kuhn, Dian Balta, and Helmut Krcmar, "Was sind Herausforderungen proaktiver Verwaltungsleistungen in Deutschland?," in Wirtschaftsinformatik (Zentrale Tracks) (2020), 554–559.

[609] Ibid.

4.4.2.2. Security of Sensitive Information

The processing of sensitive data in digital channels demands the highest technical and organisational safeguards. Yet, as identified in empirical studies, implementation is complicated by uneven municipal infrastructures, reliance on external providers, and persistent risks of human error[610]. These factors illustrate that while legal texts provide a coherent foundation, operational realities continue to constrain the effective protection of fundamental rights.

4.4.2.3. Institutional Comparison: The State Data Protection Commissioner of North Rhine-Westphalia and the Chief Information Officer of North Rhine-Westphalia (LDI NRW and CIO NRW)

The coexistence of the Landesbeauftragte für Datenschutz und Informationsfreiheit NRW (LDI NRW) and the Chief Information Officer of NRW (CIO NRW) necessitates a closer examination of their respective mandates and institutional roles. A comparative analysis reveals both points of intersection and divergence, situating each office within the broader framework of digital administration in North Rhine-Westphalia.

The LDI NRW, established under the Datenschutzgesetz NRW (DSG NRW §§25–30) and the Informationsfreiheitsgesetz NRW (IFG NRW), functions as an independent supervisory authority. Its mandate encompasses oversight of data-protection compliance across public and private sectors, as well as supervision of freedom-of-information rights. The LDI possesses investigative powers, may issue remedial orders, and handles complaints, thereby exercising binding authority in the enforcement of fundamental rights[611].

By contrast, the CIO NRW is designated under §22 E-Government-Gesetz NRW (EGovG NRW) as a coordinating office within the executive. Its role is programmatic: steering IT development, promoting interoperability, and overseeing IT security. While the CIO sets standards and coordinates projects, its powers remain largely advisory and non-binding, reflecting a model of administrative coordination rather than regulatory oversight[612].

---

610 Ibid.

611 Law on Data Protection and Freedom of Information in North Rhine-Westphalia (DSG NRW), Chapter 5, Sections 25–30 (establishing and empowering the State Commissioner for Data Protection and Freedom of Information NRW).

612 EGovG NRW, §22.

Accordingly, their perspectives differ fundamentally. The LDI's orientation is one of protective oversight, grounded in fundamental rights and legality. Its lens is conformity with the GDPR, transparency, and access, backed by supervisory powers. The CIO's orientation is programmatic coordination, grounded in administrative efficiency and modernisation. Its lens is delivery—standards, interoperability, security, and rollout—though with limited binding authority[613].

These institutional logics may collide in several areas. For instance, cross-agency data integration, essential for seamless services, risks expanding processing purposes and thereby challenges GDPR principles of purpose limitation and minimisation. At the same time, certain domains reveal complementarity rather than conflict. Cybersecurity, for example, constitutes a foundational component of data-protection compliance, reinforcing rather than undermining the LDI's mandate[614].

The functional disparity between these two roles—binding regulatory control (LDI) versus advisory coordination (CIO)—means that the CIO's efficiency-driven mandate is legally constrained by the LDI's protective oversight. Consequently, the legal validity of any major digital project spearheaded by the CIO, such as the mandatory implementation of the E-Akte or the establishment of cross-agency service portals, depends critically on demonstrable compliance with GDPR safeguards, which the LDI is empowered to enforce. This inherent tension establishes the LDI as a procedural gatekeeper within the digital transformation process, compelling the CIO to integrate fundamental rights considerations into the core of IT strategy. In effect, data-protection compliance becomes not merely a parallel requirement but a mandatory precondition for administrative modernisation.

4.4.3. Institutional and Administrative Hurdles:

These administrative hurdles often prove more tenacious than purely legal inconsistencies. Evidence from other jurisdictions, such as the evaluation of the Berlin E-Government Act, suggests that the operational friction points observed in NRW—including difficulties in securing high-performance central IT provision, deficits in strategic

[613] Ibid.

[614] EuroCC National Competence Centres. Best Practices for Cybersecurity, GDPR and Data Interoperability. Version 1.0. By Vladimir Dimitrov, Vicky Konstantinopoulou, and Maria Nisheva. Approved by USTUTT/HLRS Project Management Team. Funded by the European High-Performance Computing Joint Undertaking (Grant Agreement No. 951732), 2020.. Available at: https://hpc-portal.eu/sites/default/files/2025-01/BestPractices_DataManagement_v1.0.pdf.

digital competencies, and the slow pace of cultural adoption—are part of a systemic challenge within German state administration, transcending individual state legislation. The pace of digital transformation therefore lags behind legislative aspirations, constrained by inadequate material and human resources and by persistent coordination difficulties. Consequently, analysis must move beyond technical obstacles to address underlying governance and cultural deficits[615].

This systemic pattern becomes even more evident when examining recent data from North Rhine-Westphalia. Although NRW ranks among the leading Länder in the number of digitally available services—with 1,484 administrative services accessible online as of September 2025—citizens' perceived level of digital maturity remains strikingly low. According to the eGovernment Monitor 2025, only 12 percent of respondents feel that digital administration simplifies their lives, and merely 15 percent believe that their expectations of a modern digital state are being met. This discrepancy highlights a persistent gap between formal service availability and actual usability. Citizens primarily expect services to be easy to find, processed more quickly, and designed to avoid redundant data entry. Yet 59 percent of respondents describe administrative contact as "very exhausting," and only 16 percent consider the administration efficient. These findings underscore that digitalisation efforts which focus predominantly on front-end availability—without corresponding back-office integration, process redesign, and user-centred service architecture—fail to generate meaningful improvements in administrative experience[616].

The Städte- und Gemeindebund NRW emphasises that trust in digital government can only be restored through coherent, interoperable, and widely adopted solutions rather than isolated pilot projects or fragmented local initiatives. From this perspective, the decisive factor is not the sheer number of digital services but their practical effectiveness and the extent to which they relieve citizens and businesses in their everyday interactions with the state. The association therefore calls for a shift from reactive, application-based administration toward proactive service provision, in which eligible individuals receive

[615] Senate Department for the Interior and Sport (SenInnDS), Evaluation of the Berlin E-Government Act: Legal Report and Empirical Study with Recommendations for the Further Development of Digital Administration Law (Berlin: SenInnDS, 21 May 2021),1-7

[616] Kommunen.NRW. "Aktuell Platz 2 Bundesweit: Online-Verfügbarkeit Aller Verwaltungsleistungen in NRW Gestiegen." Kommunen.NRW, September 29, 2025. https://kommunen.nrw/themen/digitale-verwaltung-und-it/aktuell-platz-2-bundesweit-online-verfuegbarkeit-aller-verwaltungsleistungen-in-nrw-gestiegen/?utm_source=chatgpt.com

administrative services without the need for formal applications. Such a model would not only reduce administrative burdens but also strengthen public trust in the state and its capacity to deliver reliable, citizen-oriented digital services.

4.4.3.1. Insufficient Investment and the Burden of Legacy Infrastructure

Underinvestment in IT and reliance on outdated systems restrict interoperability and uniform service quality. Smaller municipalities, lacking both resources and specialised personnel, face disproportionate burdens, thereby undermining equal access to administrative services[617].

This situation generates a significant disparity in digital readiness. Comprehensive digitalisation projects demanded by the state framework place a disproportionate financial and operational strain (Kraftakt) on smaller municipalities, which often lack the budgetary reserves and technical expertise required to manage the transition while simultaneously maintaining traditional service delivery. The uneven distribution of resources and investment capacity across administrative levels thus constitutes a structural impediment to achieving uniform quality in digital public services throughout the state.

4.4.3.2. Deficiencies in Digital and Legal Competencies (The Skills Gap)

Deficits in digital and legal competencies slow decision-making and create uncertainty in applying principles of legality to new technologies. Operational gaps (e.g., use of the E-Akte) and strategic deficits (e.g., AI governance) highlight the need for specialised training to secure lawful and effective digital administration[618].

It can be observed that, beyond financial constraints, deficits in specialised digital and legal competencies constitute a significant barrier. Digital transformation in the public sector requires a sophisticated interplay of technical proficiency and administrative-legal expertise. Within the administrative landscape of North Rhine-Westphalia, this skills gap appears in two distinct forms: operational competence in using tools such as the E-Akte, and—more critically—strategic capacity to align emerging technologies with the principles of administrative legality (Verwaltungsakzessorietät). Such deficiencies can slow decision-making processes and create legal uncertainty regarding the robustness and lawfulness of automated procedures.

---

[617] Klenk, Greef, and Lucks, “Digitalisierung der Daseinsvorsorge”.
[618] Ibid.

4.4.3.3. The Friction of Network Administration and Public-Private Partnerships

The statutory push toward "network administration" complicates resource management by introducing inter-organisational friction where responsibilities are shared across administrative boundaries. A salient example is found in the state's "Geo-E-Government" initiatives, such as those undertaken by the Surveying and Mapping Administration in NRW. Here, the legal requirement to build a robust Spatial Data Infrastructure (GDI) necessitates continuous, high-cost investment in data provision and standardisation by public authorities[619].

While aligned with the political goal of "Private before State", this model introduces significant institutional hurdles. It demands rigorous and continuous legal oversight to ensure private partners adhere to data security standards and to prevent purpose-creep of sovereign data[620].

4.4.3.4. Inter-Administrative Coordination and the Communal Burden

Germany's federal structure, with its multiple layers of authority, adds a considerable degree of complexity to the implementation of digital administration. Although the legal framework aims to establish interconnected portals and harmonised digital services across federal, state, and municipal levels, the reality on the ground diverges sharply from this ambition. Instead of uniformity, practical experience reveals a landscape marked by fragmentation and uneven progress.

The practical difficulty lies in achieving shared commitments and coherent implementation across highly autonomous local administrations. Attempts to introduce centrally defined solutions or uniform technical standards frequently encounter pushback, shaped by divergent political priorities and the heterogeneous IT environments found at the municipal level. This pattern of resistance can be understood through the lens of micropolitics—a concept typically associated with internal organisational behaviour but equally applicable to interactions between institutions that operate without a clear hierarchical structure[621].

A central tension arises from the fact that legislative and strategic decisions are taken at the federal and state levels, while the practical responsibility for delivering the required

---

[619] Stephan Heitmann and Jens Riecken, "E-Government in einer Netzwerkverwaltung am Beispiel des Landesvermessungsamtes NRW," Zeitschrift für Vermessungswesen (zfv) 132, no. 3 (2007): 123–27.
[620] Ibid.
[621] Röhl, Status of the Online Access Act, 4 ff.

digital services rests largely with local administrations. This imbalance, combined with persistent resource constraints, turns coordination into a recurring point of friction. The result is a growing risk of a fragmented administrative landscape in which the quality and accessibility of digital services differ markedly across NRW, ultimately challenging the principle of equal access to public services[622].

Structural constraints within public administration emerge from the interplay of limited investment, ageing technical infrastructures, and a marked deficit in strategic digital-legal competencies. When these internal constraints intersect with the complexities of Germany's multi-level governance—where municipalities with the weakest resources shoulder the heaviest implementation duties—it becomes clear that the administrative architecture itself poses a substantial barrier to fulfilling statutory digital obligations. This assessment aligns with federal-level evaluations of the Online Access Act (OZG), whose implementation was deemed a "complete failure" by the end of 2022, with only 18 percent of the planned 575 services realised [623]. Analysts attributed this outcome largely to the neglect of back-office digitalisation and the absence of binding mechanisms requiring municipalities to adopt "One-for-All" (EfA) solutions. The difficulties observed in North Rhine-Westphalia, therefore, reflect not isolated shortcomings but deeper, systemic weaknesses embedded in the federal administrative model. Overcoming these obstacles will require more than incremental policy adjustments; it calls for structural reforms that ensure the ambitions of the EGovG NRW can be translated into a coherent and equitable digital administrative reality. This, in turn, underscores the need for legislative and executive strategies that explicitly link funding, capacity-building, and specialised training to the attainment of legally compliant digital services.

4.4.3.5. The Structural Friction of Local Autonomy and Duplication

While competition among larger cities—such as the Virtuelles Rathaus in Hagen or the doMap in Dortmund—has generated innovative "best practice" solutions, the decentralised dynamism has proven detrimental to the overall economy and efficiency of the administrative system across the state[624].

The need to compensate for this fragmentation has forced a reactive shift towards compensatory cooperation, exemplified by ambitious public-private partnerships such as the

[622] Ibid.
[623] Ibid.
[624] Herbert Kubicek and Martin Wind, E-Government in Kommunen: Studie für die Enquetekommission „Zukunft der Städte in NRW" des Landtags Nordrhein Westfalen (Bremen: University of Bremen, 2003).

d-NRW project. Yet the primary institutional hurdle remains the persistent difficulty of organising effective knowledge transfer and ensuring the standardised roll-out of successful lighthouse projects to the numerous smaller and medium-sized municipalities[625].

4.4.3.6. The Challenge to the Territorial Principle in the Digital Age

The adoption of sophisticated e-government solutions poses a fundamental conceptual challenge to the traditional macro-structure of German public administration, particularly its reliance on the territorial principle. Historically, this principle ensured equivalence between affected citizens, territory, and political representation, with efficient performance predicated on achieving a minimum "operating size" for each local authority[626].

However, the advent of advanced information and communication technology (ICT) facilitates the emergence of informatised public service networks (IPSN). These networks enable the de-localisation of service provision, effectively decoupling efficiency from the physical size or resident population of the administrative unit. By separating front-office functions (citizen-facing services) from back-office processes (data management and administrative processing), the traditional need for territorial enlargement to secure efficiency is substantially mitigated[627].

Consequently, the debate shifts from enforcing physical consolidation to establishing functional integration and shared service centres. Administrative tasks lacking an explicit local reference can be consolidated and shared across multiple jurisdictions, thereby achieving efficiency without territorial reform. This conceptual shift necessitates a re-evaluation of the legal basis for communal self-government and its organisational autonomy, as administrative performance increasingly depends on cross-jurisdictional process management rather than territorial size[628].

4.4.3.7. Limited Steering Competence of the CIO

A further institutional hurdle lies in the limited steering competence of the state CIO (IT-Beauftragte). While § 22 EGovG NRW designates a CIO responsible for coordinating IT development, implementing IT-Planungsrat decisions, and overseeing IT security, the provision does not confer binding decision-making powers. This coordination-focused

[625] Ibid.
[626] Tino Schuppan, "Gebietsreform im E-Government-Zeitalter," Verwaltung und Management 14, no. 2 (2008), 66–78.
[627] Ibid.
[628] Ibid.

approach stands in marked contrast to the stronger CIO mandates found in Berlin and Saxony, where CIOs are directly involved in legislative processes or exercise budgetary authority. The restricted competence in NRW undermines the ability to enforce uniform standards across heterogeneous administrative landscapes, leaving municipalities considerable autonomy to deviate from central IT strategies[629]. As a result, the CIO's role remains largely advisory, limiting its effectiveness in overcoming the systemic hurdles of digital transformation.

4.4.3.8. Implementation of IT-Planning Council Decisions and Interoperability

Another institutional challenge concerns the practical enforcement of standardisation decisions issued by the IT-Planning Council. Although these intra-federal acts bind only the Bund and the Länder, their effects on municipalities require transposition into state law through so-called Durchleitungsnormen. The EGovG NRW provides such a mechanism, extending interoperability obligations to municipalities and other self-governing bodies. Not all Länder, however, have adopted comparable provisions, instead relying on their CIOs to secure implementation. This uneven regulatory landscape weakens the uniformity of standards and reinforces existing fragmentation. Compounding this problem is the limited output of the IT-Planning Council itself, which has fallen short of expectations and left Länder to develop their own standards—standards that must later be reconciled with Council decisions[630]. The result is a patchwork of obligations that complicates efforts to achieve seamless interoperability across administrative levels.

4.4.3.9. Summary

Institutional hurdles—ranging from resource deficits and skills gaps to persistent coordination challenges—show that statutory compliance cannot be achieved through legal design alone but requires structural reform. Without sustained investment, targeted training, and more robust governance mechanisms, the EGovG NRW risks falling short of its core administrative law commitments. The analysis demonstrates that these institutional weaknesses directly shape the practical realisation of key administrative principles—most notably equality of access, efficiency, and the protection of legitimate expectations—even where formal compliance is met.

[629] Bernhardt, E-Government-Gesetzgebung, 52.
[630] Bernhardt, E-Government-Gesetzgebung, 57.

4.5. Institutional Implementation, Auditing, and Administrative Accountability

Translating the legal mandates of the EGovG NRW into a functioning digital administrative reality requires a closer examination of both the implementation process and the mechanisms through which administrative accountability is ensured. The Supplementary Report on the State of Digitalisation in the North Rhine-Westphalian State Administration, issued by the Ministry of Economic Affairs, Innovation, Digitalisation and Energy (MWIDE) in August 2021, provides critical insight into the political and institutional dynamics shaping this transformation (MWIDE 2021). Presented in response to a critical audit by the State Audit Office (Landesrechnungshof, LRH), the report underscores the non-linear, discovery-based nature of complex administrative reform[631].

4.5.1. Accountability and the Challenges of Digital Program Management

At the core of the institutional challenge lies the audit of the "Digital Administration North Rhine-Westphalia Program" (DVN). The LRH's criticism, dating back to mid-2020, identified three central deficits: a cumbersome organisational structure, limited steering capabilities of the Chief Information Officer (CIO), and deficiencies in program management, particularly in financial controlling. This critique provides a concrete case study for assessing accountability in digital governance. It demonstrates that political and administrative commitment alone is insufficient; effective institutional architecture and governance mechanisms are indispensable to ensuring legitimate and efficient implementation[632].

4.5.2. Balancing Political Strategy with Legal Mandates

The MWIDE's response, while acknowledging initial setbacks during the prior government's tenure, asserted that a "trend reversal" had been achieved, positioning NRW as a leader in comparative federal digitalisation. The report sought to contextualise the LRH's critique within the broader framework of the 2018 E-Government Strategy and the 2020 EGovG Novella, which accelerated the full digitalisation deadline from 2031 to 2025[633].

---

631 Ministry of Economic Affairs, Innovation, Digitization and Energy of the State of North Rhine-Westphalia (MWIDE), Report on the Implementation Status of Digitization in the State Administration of North Rhine-Westphalia (Düsseldorf: MWIDE, 31 August 2021): 2.
632 MWIDE, Report on the Implementation Status of Digitization, 2.
633 Ibid.

This exchange illustrates a deeper structural tension: the political momentum needed to accelerate reform on the one hand, and the constitutional imperatives of fiscal prudence and administrative efficiency—scrutinised by independent audit bodies such as the LRH—on the other. The report also underscored the expansion of the CIO's internal capacity and the reduction of planned outsourcing expenditures, signalling a strategic shift toward greater centralisation and harmonisation. These measures strengthen administrative legality by consolidating in-house expertise and reducing dependence on external service providers[634].

4.5.3. Implications for Legal Governance

The legislative and administrative history presented in the MWIDE report reinforces the finding that e-government implementation is best understood as a process of discovery rather than a linear plan. This insight requires a legal framework that is both adaptive and based on principles. The ongoing struggle to meet targets and the need for continuous strategic re-evaluation—as reflected in the report's four central strategic claims—validate the argument that general principles of administrative law must serve as the normative anchor for digital projects. These principles guide decision-making where rigid rules fail to capture the complexity of technological and institutional change[635].

4.5.4. Auditing the Federal-Regional Interdependency: The OZG Implementation Failure

The challenges identified in NRW's internal program management (DVN) are magnified by deficiencies in cooperative federal governance. The independent critique by the Federal Court of Auditors concerning the implementation of the Onlinezugangsgesetz (OZG) confirms that NRW's friction points are part of a broader systemic failure. The audit found that the overarching legal mandate to digitise services by the end of 2022 was far from being met, with only 19% of services available online. This outcome reinforces concerns about the feasibility of highly ambitious statutory deadlines[636].

The audit revealed significant deficiencies in central coordination, noting that the Federal Ministry of the Interior (BMI) failed to provide timely planning certainty or unified standards. As a result, a substantial portion of the legally prescribed timeframe was consumed merely by clarification processes (Bundesrechnungshof 2023, 0.3). This absence of decisive federal steering undermined efficiency at the national level and contributed to an

634 Ibid.
635 Ibid.
636 Coordination, report according to Section 88 Paragraph 2 of the Federal Budget Code to the Budget Committee of the German Bundestag, Ref. VII 5 - 001755 (March 29, 2023).

uncontrolled proliferation of redundant, non-reusable IT solutions across the federation[637]. For NRW, this meant that financial and personnel burdens on local authorities were amplified, as they could not rely on centrally promised reusable technical components.

4.6. Conclusion: Key Findings from the Case Study

This case study, centred on the E-Government Act of North Rhine-Westphalia (EGovG NRW), set out to examine how a regional administrative law framework can reconcile foundational legal principles with the demands of technological innovation, and thereby contribute to administrative-legal resilience. The analysis presented in this chapter indicates that, although the Act provides an important and ambitious legal foundation for digitisation, its capacity to maintain this balance remains only partially realised and continues to be contested in practice.

4.6.1. The Balance Between Principle and Innovation

The core question addressed by this chapter—whether the EGovG NRW successfully balances legal principles with innovation—yields a nuanced conclusion: the Act demonstrates internal legal coherence, yet its practical implementation encounters persistent friction.

4.6.1.1. Legal Coherence Achieved:

The Act is largely successful in embedding digital administration within the principle of legality. By mandating the use of the electronic file (E-Akte), enabling secure digital communication channels such as De-Mail, and setting clear requirements for information provision, the EGovG NRW establishes a legitimate legal basis for administrative digitalisation. Nothing in its design inherently conflicts with established doctrines of administrative law.

In the e-government context, legal equivalence is primarily secured through the Qualified Electronic Signature (QES). The QES replicates the core functions of a handwritten signature by ensuring non-repudiation, verifying the authenticity of the signatory, and safeguarding the integrity of the document. Crucially, this equivalence is generally limited to natural persons. The challenge of validating official acts issued en masse by administrative bodies has been addressed in comparative legal systems through the introduction of the electronic seal, which validates organisational origin and integrity. This

[637] Ibid

innovation is essential to ensuring Rechtssicherheit in contexts involving large-scale administrative decisions. The conceptual framework underscores that coherence in digital administrative law depends on providing functionally equivalent technical substitutes that rigorously meet the multi-layered purposes of traditional analogue forms[638].

4.6.1.2. Implementation Friction in Practice:

Practical implementation reveals points of tension where the pursuit of efficiency risks sidelining established legal principles, producing uneven administrative justice across the state. As shown in section 4.4.2, efforts to enhance data interoperability place pressure on the principle of data minimisation, necessitating ongoing scrutiny through Data Protection Impact Assessments (DPIAs). Likewise, the institutional barriers identified in section 4.4.3—ranging from deficits in municipal infrastructure to shortages in specialised expertise—hinder consistent and legally robust application. The statutory framework itself is coherent, but the administrative capacity required to realise it remains fragmented.

4.6.2. Key Analytical Findings

The in-depth examination of the EGovG NRW yielded several critical findings regarding the interaction between administrative law and e-governance:

4.6.2.1. The Shift in Legislative Focus:

The Act marks a decisive shift from merely regulating analogue procedures to actively shaping the digital architecture of public authority. This legislative orientation requires administrative law to evolve from a predominantly corrective framework into one that proactively designs and structures governance systems.

4.6.2.2. The Administrative Burden on Local Government:

The dissertation strongly suggests that the primary implementation risk lies at the communal level. The Act places significant functional demands on local authorities without guaranteeing commensurate financial and human resources, raising questions about the fairness and sustainability of this decentralised model. Recent administrative research underscores this challenge, showing that the OZG—and, by extension, regional frameworks

[638] Claudia Seitz, Ralf Michael Straub, and Robert Weyeneth, eds., Rechtsschutz in Theorie und Praxis: Festschrift für Stephan Breitenmoser [Legal Protection in Theory and Practice: Festschrift for Stephan Breitenmoser] (Basel: Helbing Lichtenhahn, 2023), 183–192.

such as the EGovG NRW—did not sufficiently account for the distinct needs and limited capacities of smaller municipalities[639].

This failure manifests structurally as a breakdown in inter-communal cooperation (IKZ). Many small authorities perceive collaborative structures as cumbersome, costly, and poorly suited to their requirements. Consequently, a comprehensive and economically rational digitisation strategy at the local level is blocked by fundamental issues of coordination[640]. This highlights that the successful execution of administrative law principles, such as efficiency and good administration, depends on recalibrating the balance between constitutionally protected communal self-government and the standardisation and centralisation required for digital governance.

Furthermore, the research confirms a critical political deficit: low political interest in the complex, less visible aspects of internal administrative digitisation, leading to insufficient budgetary allocation. This finding reinforces the conclusion that legal compulsion alone cannot substitute for political support and the provision of technical competencies and financial resources, exposing the fragility of legislative mandates in technological transformation[641].

4.6.2.3. The Necessity of Competency and Standards:

The effective safeguarding of legal principles—such as transparency and data protection—in a digital administrative environment depends less on statutory provisions alone and more on the existence of uniform technical standards and the professional competence of administrative personnel.

4.6.2.4. Empirical Validation: The Gap Between Mandate and Reality

The initial government evaluation of the EGovG NRW (MWIDE 2019) substantiates the friction points identified in this chapter. While the report acknowledges the successful establishment of key legal baselines—such as the mandatory use of secure electronic communication channels (§ 4 EGovG NRW)—it also highlights significant structural weaknesses. In particular, the mandated introduction of the E-Akte (§ 9 EGovG NRW) was

[639] Eileen Bong et al., Implementation of the Online Access Act in Small Municipalities – Experiences and Problems, Working Paper 15 (Halberstadt: Harz University of Applied Sciences, 2025), 33, https://nbn-resolving.org/urn:nbn:de:0168-ssoar-102253-9
[640] Ibid
[641] Ibid

described as “ambitious” and subject to delays due to insufficient personnel and financial resources[642].

The evaluation also highlights a deficiency in user acceptance, noting that many digitally available services are used only sporadically. This underscores the need to improve the usability of key components such as Servicekonto.NRW. The finding demonstrates that legal effectiveness in e-governance is contingent upon resolving systemic deficiencies in infrastructure and user-centric design[643].

4.6.3. Setting the Stage for Final Conclusions

The findings of this case study now provide the empirical and analytical foundation for the final part of this dissertation. The friction points identified—most notably the tension between efficiency and data protection, and the persistent gap between legal mandate and administrative capacity—demonstrate that administrative law requires robust, anticipatory principles if it is to govern technological change effectively.

The concluding chapters, therefore, move from the specific analysis of the EGovG NRW to broader theory-building. Drawing on the insights generated by this case, they develop a framework for anticipatory administrative law whose relevance extends beyond the regional context of North Rhine-Westphalia and offers guidance for wider policy development.

One particularly illustrative example of the need for anticipatory reform concerns the scope of access to information. While § 29 VwVfG adequately regulates file access for parties within ongoing administrative procedures, public access to information reaches beyond this procedural setting and engages the broader constitutional right to information. Proposals to expand § 29 VwVfG to establish a right of inspection and information outside formal proceedings—and for individuals who are not parties—have therefore been contemplated. Yet such reform is widely considered systemically inappropriate, given that the VwVfG provisions are designed to apply only within the procedural context, whereas the right of access to information is intended to operate precisely outside such proceedings[644].

---

642 Ministry of Economic Affairs, Innovation, Digitization and Energy of the State of North Rhine-Westphalia, Report on Experiences with the E-Government Act NRW (EGovG NRW), State Parliament of North Rhine-Westphalia, Printed Paper 17/2860 (20 December 2019)

643 Ibid.

644 Vgl. Kloepfor, Gutachten D fiir den 62. Deutschen Juristenlag, 1998, S. D 90. Cited in, Heribert. "Fortentwicklung des Verwaltungsverfahrensgesetzes”, 143.

Moreover, any expansion of § 29 VwVfG, while desirable for legal uniformity with federal law, would require significant coordination and time investment by the Länder—a prospect that has often met resistance. Consequently, the decision was made in favour of adopting specific Freedom of Information Acts (IFG), the application of which is typically limited to the federal administration but may serve as a model for the Länder. Unlike administrative procedural law, absolute legislative uniformity between federal and state freedom of information laws is not a compelling requirement[645].

A further complexity arises from the inherent tension between information access and data protection. Every request for official information necessitates an examination of whether it contains sensitive third-party data, creating a constant legal conflict. While some discussions have proposed integrating data protection and information access into a comprehensive Informationsgesetzbuch, such integration is generally advised against in the short term, as it risks unduly complicating the legislative process[646].

Nonetheless, the long-term goal of an overarching, harmonising federal information code remains a valid conceptual consideration, pointing towards the need for anticipatory legal design that can reconcile competing constitutional values in the digital age[647].

The findings of Chapter Four, though grounded in the specific experience of North Rhine-Westphalia, point to structural and doctrinal challenges that extend well beyond the regional context. They indicate that the digital transformation of public administration cannot be sustained through legislative compulsion alone, but instead requires the development of anticipatory legal principles, the strengthening of institutional capacity, and the cultivation of sustained political commitment. These conclusions provide the analytical bridge to the final chapter, which moves beyond case-specific observations to construct a broader framework of recommendations and conclusions. By synthesising doctrinal analysis, empirical evidence, and comparative perspectives, Chapter Five seeks to demonstrate how administrative law can evolve into a proactive architecture—one that not only guides technological change but also ensures that constitutional values such as legality, proportionality, and equality remain firmly embedded within the digital governance landscape.

645 Ibid.
646 Ibid.
647 Ibid.

Chapter 5: Final Conclusions and Recommendations

5.1. Introduction

The preceding chapters have traced the evolution of German administrative law in the context of digital transformation, examining both its doctrinal foundations and the regulatory frameworks that structure e-government at the federal and regional levels. This analysis culminated in the case study of the E-Government Act of North Rhine-Westphalia (EGovG NRW), which illustrates how digitalisation can be normatively embedded within existing legal structures while simultaneously generating points of friction when translated into administrative practice.

The federal administrative landscape, shaped by federalism, subsidiarity, and a long-standing commitment to the Rechtsstaat, provides the constitutional setting within which digital transformation unfolds. Legislative instruments such as the E-Government Act (EGovG) and the Online Access Act (OZG) have supplied important impulses for modernisation. Yet their implementation has been hindered by structural fragmentation, overlapping competences, and uneven infrastructural development. These constraints demonstrate that digitalisation cannot be understood merely as a technical upgrade; it must be situated within the constitutional allocation of powers and the normative principles that guide administrative action.

The examination of automated administrative procedures under § 35a VwVfG further highlighted the doctrinal challenges posed by algorithmic decision-making. While automation promises gains in efficiency, it also raises concerns regarding fairness, proportionality, and the constitutional requirement that individuals be treated as subjects of rights. The safeguards embedded in § 35a—particularly the exclusion of discretionary decisions from automation and the guarantee of human intervention—illustrate the adaptability of administrative law in the face of technological change. At the same time, they underscore the need to integrate legal principles directly into the design and operation of digital systems to ensure that automated processes remain compatible with constitutional standards.

The case study of the EGovG NRW confirmed that regional legislation can establish a coherent legal framework for digital administration, yet its practical realisation remains uneven. Although the Act anchors digitalisation within the principle of legality through instruments such as the E-Akte and secure communication channels, implementation varies significantly across municipalities. Differences in resources, administrative competencies,

and political commitment have produced a fragmented landscape of digital readiness. This disparity has amplified tensions between efficiency and data protection and exposed a persistent gap between legislative ambition and administrative capacity.

Taken together, these findings suggest that digital transformation in public administration is neither a radical break with tradition nor a purely technical adjustment. Instead, it represents an incremental and often contested process that requires administrative law to recalibrate its normative orientation. The central challenge lies in balancing legality, proportionality, and equality with the demands of efficiency, innovation, and standardisation. This chapter, therefore, reflects on the broader implications of the dissertation, arguing that administrative law must evolve from a predominantly reactive oversight framework into a more anticipatory architecture capable of guiding technological change while safeguarding constitutional integrity.

5.2 Synthesis of Findings: The Divergence Between Normative Ambition and Administrative Reality

The findings presented in Chapter Four reinforce a central conclusion of this dissertation: while digitalisation can be normatively anchored within the principle of legality, its practical implementation remains uneven and shaped by structural constraints. The EGovG NRW illustrates that instruments such as the E-Akte, qualified electronic signatures, and secure communication channels can be integrated into the legal order without compromising constitutional guarantees. These mechanisms demonstrate that administrative law is capable of adjusting its formal requirements to digital environments while maintaining doctrinal coherence.

Yet the existence of a coherent statutory framework does not, in itself, ensure coherent administrative practice. The translation of digital mandates into everyday administrative operations depends on institutional capacity, technical infrastructure, and sustained political commitment. Although the principle of legality is preserved at the normative level, its practical application varies considerably across municipalities.

This divergence between legislative ambition and administrative capacity emerged as one of the most significant friction points. Many municipalities—particularly smaller ones—face disproportionate burdens due to limited financial resources, outdated infrastructure, and insufficient digital competencies. The federal government's inability to meet the OZG targets further illustrates that legislative requirements cannot compensate for gaps in institutional capability. Even within North Rhine-Westphalia, where the EGovG

NRW establishes ambitious obligations such as mandatory electronic file management and open data provisions, implementation remains inconsistent. The resulting disparities in digital readiness undermine equality of access to public services and challenge the constitutional expectation of uniform administrative justice.

Despite these operational shortcomings, the analysis confirms the continued relevance and adaptability of core administrative principles. Legality, proportionality, equality, transparency, and fairness remain fully applicable in the digital state, though their application requires renewed interpretation. Legality must extend to algorithmic systems; proportionality must consider the cumulative effects of data reuse and interoperability; equality must address the digital divide; transparency must confront the opacity of automated processes; and fairness must be embedded into digital procedures to prevent citizens from being disadvantaged by technical rigidity or system errors.

These findings collectively indicate that effective digitalisation requires more than statutory provisions. It depends on institutional reform, investment in infrastructure, professional training, and coordinated governance. Without these foundational conditions, legal mandates risk remaining aspirational rather than operational.

The recommendations that follow—ranging from algorithmic transparency and human-in-the-loop safeguards to institutional strengthening and inclusive procedural design—reflect the need for an anticipatory model of administrative law. Such a model does not merely respond to technological change but actively shapes the conditions under which digital governance can function lawfully and effectively.

In sum, the consolidated findings of Chapter Four show that the digital transformation of public administration is neither a radical departure nor a purely technical adjustment. It is an incremental and contested process that requires administrative law to evolve from a reactive framework of oversight into a proactive architecture capable of guiding technological development while safeguarding constitutional integrity.

5.3. Strategic Recommendations: Toward an Anticipatory Model of Administrative Law

5.3.1. Legal Coherence and Doctrinal Anchoring

The analysis of the EGovG NRW shows that digitalisation can be meaningfully anchored within the principle of legality. Instruments such as the E-Akte, qualified electronic signatures, and secure communication channels provide a legally sound

foundation for digital transformation and demonstrate that administrative law is capable of adapting its formal requirements to new technological environments without compromising constitutional guarantees. At the same time, the existence of a coherent statutory framework does not automatically ensure coherence in administrative practice. While the law establishes the necessary structure, its practical realisation depends on institutional capacity, technical infrastructure, and sustained political commitment. As a result, the principle of legality remains intact at the normative level, yet its application across municipalities is uneven.

5.3.2. Implementation Friction and Structural Weaknesses

Despite the legal coherence of the EGovG NRW, implementation continues to be fragmented. Many municipal authorities face disproportionate burdens due to limited financial resources, outdated infrastructure, and insufficient digital competencies. The federal government's inability to meet the OZG targets further illustrates that legislative requirements alone cannot compensate for institutional shortcomings. Even in North Rhine-Westphalia, where the EGovG NRW introduces ambitious obligations—including mandatory electronic file management and open data provisions—many municipalities struggle to comply. This unevenness produces a patchwork of digital readiness that undermines equality of access to public services and challenges the constitutional expectation of uniform administrative justice.

5.3.3. Normative Resilience of Administrative Principles

The findings also confirm the continued relevance and adaptability of core administrative principles in the digital age. Legality, proportionality, equality, transparency, and fairness remain central to administrative action, yet their application requires reinterpretation in light of technological change.

a. **Legality** must extend to algorithmic systems to ensure that automated decisions remain subject to statutory control.
b. **Proportionality** must account for the cumulative effects of data reuse, interoperability, and profiling.
c. **Equality** requires attention to the digital divide and the need to secure inclusive access for vulnerable groups.

d. **Transparency and accountability** must confront the opacity of algorithmic processes, making explainability and auditability essential.
e. **Fairness and good faith** must be embedded into digital procedures to prevent individuals from being disadvantaged by technical errors or rigid formalities.

These developments show that administrative principles retain their normative force, but their operationalisation must evolve to address the specific challenges of digital governance.

5.3.4. Institutional Preconditions

The analysis underscores that effective digitalisation depends not only on statutory provisions but also on institutional reform. Investment in digital infrastructure, the training of administrative staff, and stronger coordination mechanisms are indispensable. Without these foundational conditions, legal mandates risk remaining aspirational rather than operational. The gap between legislative ambition and administrative capacity therefore emerges as a central structural challenge.

5.4. Recommendations

The findings support a series of reforms aimed at strengthening the legal and institutional foundations of digital administration:

5.4.1. Legal Reforms

a. **Algorithmic transparency:** Introduce explicit statutory requirements for explainability and auditability of automated decision-making systems, including documentation of decision logic, disclosure of training data sources, and independent audits for potential bias.
b. **Human-in-the-loop safeguards:** Ensure meaningful human oversight in procedures involving discretion or complex case-specific circumstances, preserving the capacity of officials to override automated outcomes.
c. **Principles-by-design:** Integrate legality, proportionality, transparency, and fairness directly into the design of digital systems through collaboration between legal experts, engineers, and administrative practitioners.
d. **Data protection alignment:** Strengthen coherence between the EGovG NRW, the

GDPR, and the DSG NRW by clarifying legal bases for data processing and mandating privacy-by-design standards, including retention schedules and safeguards against purpose-creep.

e. **Notification standards:** Replace reliance on De-Mail with technologically neutral security standards aligned with BSI guidelines to ensure reliable electronic communication.

5.4.2. Institutional Reforms

a. **Strengthening CIO powers:** Expand the mandate of the CIO of NRW to include binding authority over budget allocation and technical standardisation.
b. **Municipal capacity building:** Provide targeted funding and training for smaller municipalities and establish shared service centres to mitigate resource disparities.
c. **Inter-administrative coordination:** Introduce binding mechanisms for cooperation across federal, state, and municipal levels to reduce fragmentation and duplication of IT solutions.
d. **Skills development:** Invest in specialised training that combines technical proficiency with legal expertise, addressing both operational and strategic competencies.

5.4.3. Procedural Reforms

a. **Inclusive access:** Maintain analogue channels alongside digital ones to prevent exclusion of digitally marginalised groups and enforce accessibility standards such as BITV NRW.
b. **Right to be heard:** Ensure that electronic participation channels are reliable, user-friendly, and legally equivalent to analogue submissions.
c. **Error correction and good faith:** Codify duties to mitigate adverse consequences of technical errors, including flexible deadlines and rectification mechanisms.
d. **Archiving standards:** Establish detailed requirements for the immutability, readability, and traceability of electronic files throughout their lifecycle.

5.4.4. Broader Implications

The findings extend beyond the regional context of North Rhine-Westphalia. They show that digital transformation cannot be sustained through legislative compulsion alone.

Instead, it requires the development of anticipatory legal principles, strengthened institutional capacity, and sustained political commitment to administrative reform. Administrative law must therefore evolve from a reactive framework of oversight into a proactive architecture that not only regulates digitalisation but actively shapes it. Such an anticipatory model ensures that constitutional values—legality, proportionality, equality—remain embedded within the digital governance landscape.

5.4.5. Conclusion

The EGovG NRW illustrates both the opportunities and the limitations of digital transformation. While the legal framework demonstrates coherence, implementation remains partial and contested. The resilience of administrative law principles confirms that constitutional safeguards need not be weakened in the digital age, yet their effective application requires reinterpretation, institutional reform, and proactive design. The recommendations outlined above—ranging from algorithmic transparency to inclusive procedural reforms—offer a pathway for ensuring that digitalisation enhances administrative efficiency without eroding fundamental rights. Ultimately, the future of administrative law lies not in resisting technological change but in guiding it, embedding constitutional principles into the architecture of digital governance so that citizens remain subjects of rights within the digital state.

5.5. Restatement of the Research Problem and Objectives

This dissertation has examined the central question of how the digital transformation of public administration—expressed through contemporary e-government legislation—interacts with the fundamental principles of German administrative law. Although such legislation is intended to modernise administrative practice and reduce bureaucratic burdens, its reliance on digital technologies introduces significant legal challenges. Concerns arise particularly in relation to legality, proportionality, and procedural guarantees, as traditional safeguards developed for paper-based procedures do not always translate seamlessly into digital environments. Automated processing, expanded data flows, and the opacity of algorithmic decision-making create new forms of vulnerability that established doctrines only partially address.

Against this backdrop, the dissertation has pursued the objective of critically assessing the extent to which the E-Government Act of North Rhine-Westphalia (EGovG

NRW) aligns with constitutional and administrative standards. This required identifying areas where digitalisation places pressure on existing legal safeguards, as well as examining the normative and practical gaps that emerge when digital procedures are implemented within a complex administrative landscape. The broader aim has been to explore how digital governance can enhance administrative efficiency while ensuring that citizens' rights remain fully protected, and to consider what reforms may be necessary to maintain the integrity of administrative law in an increasingly digital state.

5.6. Synthesis of Research Questions and Hypotheses

The central research question guiding this dissertation has examined the extent to which the introduction of digital technologies affects the fundamental principles of German administrative law, and what legal gaps must be addressed to ensure that e-government initiatives both safeguard citizens' rights and support administrative efficiency. The analysis was structured around four hypotheses, each of which illuminated a different dimension of this overarching inquiry.

The first hypothesis proposed that German e-government law broadly reflects the principles of legality, proportionality, and procedural guarantees, while its digital implementation generates procedural challenges. This hypothesis was only partially supported. The doctrinal analysis confirmed that many statutory provisions remain aligned with established administrative principles, yet ambiguities persist in areas such as automated notifications and the use of electronic files. These uncertainties indicate that further legal clarification is necessary to ensure that digital procedures uphold the same level of procedural protection as their analogue counterparts.

The second hypothesis—that efficiency gains achieved through digitalisation are accompanied by risks to transparency and accountability—was supported. The findings showed that while digital tools enhance accessibility and accelerate administrative processes, they may also reduce opportunities for citizen participation and oversight. This tension underscores the need for additional transparency mechanisms to ensure that efficiency does not come at the expense of democratic safeguards.

The third hypothesis—that the EGovG NRW does not fully align with overarching frameworks such as the GDPR and the Verwaltungsverfahrensgesetz—was likewise supported. The analysis identified inconsistencies in data protection and procedural harmonisation, revealing areas where the statutory framework does not fully reflect the requirements of European and federal law. These gaps highlight the need for legislative

refinement to ensure coherence across legal levels.

The fourth hypothesis—that effective implementation of e-government requires structural and institutional reforms beyond statutory provisions—received strong support. Evidence from policy documents and administrative practice demonstrated that digital infrastructure, staff training, and measures to mitigate digital exclusion are essential for ensuring both efficiency and legal robustness. Without these institutional foundations, even well-designed legislation risks remaining ineffective in practice.

The sub-questions provided the analytical structure through which these hypotheses were examined. The doctrinal sub-question assessed compliance with legality, proportionality, and procedural guarantees; the rights-based sub-question explored implications for transparency, participation, and access to justice; the data protection sub-question enabled a normative comparison with the GDPR and related German legislation; and the reform-oriented sub-question identified structural gaps and potential solutions. Together, these sub-questions were addressed through doctrinal analysis, comparative insights from other European jurisdictions, and engagement with academic discourse. This multi-layered approach ensured that the conclusions rest on a coherent and methodologically rigorous foundation.

5.7. Key Findings

5.7.1. Compliance with Administrative Law Principles (Hypothesis 1).

The analysis indicates that the EGovG NRW generally reflects the core principles of German administrative law, particularly legality and proportionality. Its statutory provisions are designed to ensure that digital procedures remain embedded within constitutional safeguards. Nonetheless, the practical application of these provisions reveals areas of ambiguity. Automated notifications and the increasing reliance on electronic files, although intended to enhance efficiency, raise questions about the sufficiency of procedural guarantees and the preservation of due process. These observations suggest that while the doctrinal framework is largely intact, its digital implementation requires further clarification to prevent the erosion of established protections.

5.7.2. Efficiency versus Transparency (Hypothesis 2).

The findings confirm that e-government legislation contributes to greater administrative efficiency by reducing bureaucratic burdens and accelerating service delivery. However, this improvement is accompanied by a structural tension with transparency and accountability. Digitalisation streamlines administrative processes but may

simultaneously narrow opportunities for citizen participation and oversight. Comparative perspectives from other European jurisdictions reinforce this pattern, indicating that efficiency gains often coincide with reduced procedural openness. The results, therefore, support the hypothesis that efficiency and transparency remain in a delicate and persistent tension within digital governance.

5.7.3. Legal Gaps and Framework Alignment (Hypothesis 3).

The dissertation identifies several inconsistencies between the EGovG NRW and overarching legal frameworks, particularly the GDPR and the Verwaltungsverfahrensgesetz. Although the legislation incorporates elements of data protection, gaps remain in harmonisation and procedural safeguards. Provisions concerning electronic identity and data processing do not always align with GDPR requirements, creating uncertainty regarding compliance and enforcement. Similarly, procedural rules under the VwVfG are not consistently translated into digital contexts, resulting in areas of partial compliance. These findings confirm the hypothesis that legislative refinement is necessary to ensure coherence across legal frameworks.

5.7.4. Structural Preconditions (Hypothesis 4).

The research strongly supports the hypothesis that effective implementation of e-government requires more than statutory provisions. Institutional reforms, investment in digital infrastructure, and targeted training for administrative staff are essential to ensure that digitalisation is both efficient and legally robust. Without these structural foundations, legal mandates risk remaining aspirational rather than operational. The analysis also highlights the importance of addressing digital exclusion to ensure that efficiency gains do not compromise accessibility or equality. These findings underscore that the legal soundness of digital administration depends on the interaction between doctrinal safeguards and institutional capacity.

5.8. Contribution to Academic Literature

This dissertation contributes to the academic literature on administrative law by situating the challenges of e-government within a doctrinal and constitutional framework rather than treating them as merely managerial or technical reforms. The findings confirm several concerns already identified in existing scholarship, particularly the risks of digital exclusion, the reduction of transparency in automated procedures, and the potential weakening of procedural safeguards when protections developed for paper-based processes are transferred into digital environments. These results reinforce the argument that the

adoption of digital technologies in public administration requires careful legal adaptation to preserve fundamental principles such as legality, proportionality, and due process.

At the same time, the dissertation advances the scholarly debate by offering a distinct perspective: it frames e-government as a constitutional and doctrinal issue that directly affects the legitimacy of administrative action. By demonstrating that digitalisation implicates citizens' rights and the structural guarantees of administrative law, the analysis moves beyond efficiency-oriented assessments and highlights the normative dimension of digital transformation. This approach enriches the literature by showing that questions of interoperability, data protection, and transparency are not simply technical challenges but matters of constitutional significance that require doctrinal clarity and legislative refinement.

The dissertation also contributes to the broader academic conversation by integrating doctrinal analysis with comparative insights from European jurisdictions. This dual perspective illustrates both the common challenges faced across legal systems and the distinctive features of the German framework. In doing so, it provides a foundation for further research into how administrative law can evolve to ensure that digital governance remains both efficient and legally robust, thereby supporting the broader project of aligning technological innovation with constitutional safeguards.

The findings additionally resonate with ongoing scholarly debates concerning the relationship between technological innovation and regulatory frameworks in the European context[648]. Recent literature suggests that this relationship is not unidirectional: technological development does not merely challenge legal structures but is itself shaped—and at times constrained—by the rigidity of the European regulatory environment. As Anu Bradford argues in her analysis of the emerging "European digital constitution," the EU's regulatory approach to digital platforms is characterised by a high degree of strictness, which may limit value creation and produce unintended consequences in the digital market[649]. Other scholars, such as Cennamo and Sokol (2021), question whether the EU can regulate digital platforms without stifling innovation, warning that excessive regulatory intervention may weaken the dynamics that drive technological progress[650]. Andrew McAfee similarly contends that the EU's proposed regulatory framework for artificial intelligence may slow

[648] Bradford, "Europe's Digital Constitution,", 44-48.
[649] Andrew McAfee, "EU Proposals to Regulate AI Are Only Going to Hinder Innovation," Financial Times, July 25, 2021, as cited in Bradford, "Europe's Digital Constitution,", 44-48.
[650] Carmelo Cennamo and D. Daniel Sokol, "Can the EU Regulate Platforms Without Stifling Innovation?," Harvard Business Review, March 1, 2021, cited in Anu Bradford, "Europe's Digital Constitution," Virginia Journal of International Law 64 (2023), 44–48.

technological innovation due to the weight of compliance obligations[651]. These perspectives suggest that digital transformation in Europe is shaped not only by technological and administrative challenges but also by a regulatory ecosystem that may, at times, be more rigid than the pace of technological change itself.

At the same time, recent scholarship cautions against assuming a straightforward causal link between regulatory strictness and diminished innovation. As Bradford notes in a later work, it is far from clear that increased regulation necessarily suppresses technological progress. The European Union's difficulty in competing with the United States in digital innovation may stem not only from regulatory intensity but also from structural factors such as the fragmented nature of the single market, which limits the scalability of technology firms, and underdeveloped capital markets, which constrain their ability to finance innovation within the Union. This perspective suggests that the challenges facing European digital governance cannot be attributed solely to regulatory design but must be understood in light of broader economic and institutional constraints that shape the continent's technological ecosystem[652].

5.9. Practical and Policy Implications

The findings of this dissertation carry several important implications for legislators, policymakers, and administrative bodies engaged in the digital transformation of public administration. The analysis first highlights the need for clearer statutory safeguards to ensure that digital procedures continue to uphold the principles of legality, proportionality, and due process, particularly in areas where automated processing and the use of electronic files introduce procedural uncertainty. Strengthening these safeguards is essential to prevent gaps in protection that may arise when traditional procedural guarantees are transferred into digital environments.

The dissertation also underscores the importance of embedding transparency and accountability mechanisms into digital administrative systems. While digitalisation can enhance efficiency and streamline administrative processes, these gains cannot compensate for reduced opportunities for citizen oversight. Ensuring that digital procedures remain open to scrutiny is therefore crucial for maintaining public trust and safeguarding participatory rights.

---

[651] McAfee, "EU Proposals to Regulate AI," as cited in Bradford, (44-48)

[652] Bradford, Anu. "The false choice between digital regulation and innovation." Nw. UL Rev. 119 (2024): 377.

A further implication concerns the need to harmonise e-government legislation with overarching European and national frameworks, especially the GDPR and the Verwaltungsverfahrensgesetz. The analysis shows that inconsistencies in data protection and procedural safeguards can undermine both legal certainty and administrative coherence. Aligning these frameworks more closely would help ensure that digital governance operates within a consistent and reliable legal environment.

Considering these implications together, it is clear that the legitimacy and effectiveness of digital governance depend not only on technological innovation but also on coherent legal design and sustained institutional commitment. Therefore, digital transformation must be accompanied by a parallel effort to strengthen the legal and organisational foundations that support it, ensuring that efficiency gains do not compromise constitutional guarantees or citizens' rights.

5.10. Limitations of the Dissertation

This dissertation is subject to several methodological and substantive limitations that help contextualise its findings. The analysis focuses primarily on Germany and, more specifically, on the legal framework of North Rhine-Westphalia. While this case study provides valuable insight into the interaction between e-government and administrative law, its conclusions cannot be assumed to apply directly to jurisdictions with different constitutional arrangements or administrative traditions. The regional focus therefore offers depth but inevitably limits broader generalisability.

A second limitation concerns the methodological orientation of the research. The study relies predominantly on doctrinal and comparative legal analysis rather than empirical data. This approach enables a detailed examination of statutory provisions, legal principles, and relevant jurisprudence, but it does not capture the lived experiences of citizens or administrative staff who engage with digital procedures in practice. As a result, the dissertation provides a rigorous legal assessment but does not address how digitalisation is perceived or navigated by those directly affected by it.

These limitations do not diminish the validity of the findings. Rather, acknowledging them strengthens the credibility of the research by clarifying the interpretive boundaries within which its conclusions should be understood. The dissertation thus offers a solid doctrinal foundation while recognising the need for complementary empirical work to enrich future analyses of digital administrative governance.

5.11. Directions for Future Research

The findings of this dissertation open several promising avenues for further inquiry into the evolving relationship between digital governance and administrative law. One important direction concerns comparative research across EU member states. Given the diversity of constitutional structures, administrative traditions, and digitalisation strategies within the European Union, such studies would help determine whether the tensions identified in this dissertation—particularly those relating to legality, proportionality, and transparency—are specific to the German context or reflect broader structural challenges in European public administration.

A second direction involves empirical research on citizen experiences with digital administrative procedures. Surveys, interviews, and case-based evaluations could provide valuable insight into how users perceive issues such as digital exclusion, procedural fairness, and trust in automated processes. These empirical perspectives would complement the doctrinal and comparative analysis undertaken in this dissertation by grounding normative concerns in the lived realities of administrative practice.

A third avenue for future research lies in the long-term evaluation of reforms aimed at enhancing transparency, accountability, and data protection in digital administration. As digital governance continues to evolve, longitudinal studies could trace how changes in law, technology, and administrative culture interact over time, and whether legislative and institutional adjustments achieve their intended effects.

Building on the foundations established in this dissertation, these research directions extend the analysis beyond doctrinal assessment to include comparative, empirical and longitudinal perspectives. This approach would provide a more comprehensive understanding of how administrative law can adapt to the demands of digital transformation while preserving its constitutional and procedural integrity.

5.12. Final Integrative Statement

Overall, the findings of this dissertation show that e-government should not be viewed solely as a tool for administrative efficiency, but rather as a constitutional project requiring careful doctrinal safeguarding. Digital transformation only attains democratic legitimacy when it preserves the foundational principles of German administrative law — legality, proportionality and due process — while ensuring the effective protection of citizens' rights in an increasingly automated administrative environment. The analysis of the

EGovG NRW reveals that, while digitalisation offers significant opportunities for modernising public administration, it simultaneously exposes structural and normative vulnerabilities that require ongoing legal and institutional attention.

By situating these challenges within a broader constitutional and European context, the dissertation contributes to an emerging discourse on how administrative law must evolve to guide and constrain digital governance. It underscores that the future of e-government depends not solely on technological innovation, but on a continued commitment to the legal principles that secure both the efficiency and the legitimacy of public administration in the digital age.

5.13. Final Conclusion

This dissertation has examined the complex relationship between digital transformation and the foundational principles of German administrative law, using the E-Government Act of North Rhine-Westphalia as a detailed case study. The analysis has shown that while e-government initiatives offer significant potential for enhancing administrative efficiency, accessibility, and modernisation, they also introduce substantive legal and structural challenges that must not be overlooked. Digitalisation affects not only the technical modalities of administrative action but also its constitutional legitimacy, particularly with regard to legality, proportionality, due process, transparency, and the protection of citizens' rights.

The findings demonstrate that although the EGovG NRW broadly reflects the doctrinal principles of administrative law, its practical implementation reveals procedural ambiguities—especially in relation to automated notifications, electronic files, and the translation of traditional safeguards into digital environments. The research further confirms that efficiency gains often come into tension with transparency and accountability, a pattern mirrored in comparative European experiences. In addition, inconsistencies between the EGovG NRW and overarching frameworks such as the GDPR and the Verwaltungsverfahrensgesetz highlight the need for clearer harmonisation and more robust data-protection safeguards. Finally, the analysis underscores that legal provisions alone are insufficient: effective digital governance requires sustained institutional investment, administrative capacity-building, and measures to prevent digital exclusion.

By situating these findings within broader academic debates, the dissertation contributes to a growing body of scholarship that understands e-government not merely as a managerial reform but as a constitutional and doctrinal project. It argues that digital

transformation must be guided by legal principles that ensure both the efficiency and the legitimacy of administrative action. The study also acknowledges several limitations—most notably its focus on Germany and North Rhine-Westphalia and its reliance on doctrinal and comparative analysis—which open avenues for future empirical and cross-jurisdictional research. Such studies could deepen understanding of how citizens experience digital procedures, how transparency and data-protection reforms evolve over time, and how European administrative systems can collectively respond to the challenges of digital governance.

In conclusion, the dissertation affirms that the future of e-government in Germany and Europe depends on achieving a careful balance: embracing technological innovation while preserving the constitutional and procedural safeguards that underpin democratic administration. Maintaining this balance is essential not only for protecting citizens' rights but also for sustaining public trust in an increasingly digital state. Through its doctrinal analysis and critical reflections, the dissertation aims to support the ongoing development of legal frameworks capable of guiding digital transformation in a manner that is both effective and constitutionally sound.

The dissertation began by identifying a fundamental tension at the heart of digital transformation: while legal norms are characterised by stability, continuity, and long-term applicability, technological development advances at a rapid and often disruptive pace. This asymmetry raises the possibility that fast-moving technological innovation may conflict with the inherent stability of legal frameworks, particularly in the context of e-government legislation. For this reason, it was essential to distinguish between legal rules and legal principles and to examine whether technological developments have the potential to affect the foundational principles of administrative law. On this basis, the central research question was formulated: to what extent does e-government legislation influence the established and deeply rooted principles of German administrative law? Four hypotheses were developed to guide the inquiry: that e-government law broadly reflects administrative principles but generates procedural ambiguities; that efficiency gains may come at the expense of transparency and accountability; that gaps exist between the EGovG NRW and overarching frameworks such as the GDPR and the VwVfG; and that effective implementation requires structural and institutional reforms beyond statutory provisions.

The dissertation proceeded by defining and analysing the core principles of administrative law, situating them within the German federal legal system, and examining the evolution of e-government initiatives in detail. This was followed by a systematic

doctrinal analysis of each principle in light of digital transformation. The case study of North Rhine-Westphalia provided a concrete context in which to test the hypotheses, revealing that while the EGovG NRW aligns with many doctrinal requirements, it also exposes procedural uncertainties, transparency deficits, and inconsistencies with data-protection and procedural frameworks. The findings further demonstrated that structural conditions—such as administrative capacity, digital infrastructure, and measures to prevent digital exclusion—are indispensable for ensuring that e-government develops in a manner that is both efficient and legally robust.

Bibliography

Books and Monographs

Alder, John. General Principles of Constitutional and Administrative Law. Oxford: Oxford University Press, 2002.

Becker, Jörg, Lars Algermissen, and Bjoern Niehaves. Organizational Engineering in Public Administrations: A Method for Process-Oriented E-Government Projects. Berlin: Springer, 2004.

Bydlinski, Franz. Juristische Methodenlehre und Rechtsbegriff [Legal Methodology and the Concept of Law]. 2nd ed. Vienna/New York: Springer, 2011.

Catakli, Derya. „Digitalisierung der Verwaltung: Eine Untersuchung zur Umsetzung des E-Government-Gesetzes in der Bundesverwaltung“ [Digitalisation of Administration: A Study on the Implementation of the E-Government Act in the Federal Administration]. Dissertation, Deutsche Universität für Verwaltungswissenschaften Speyer, 2021.

Craig, Paul. Administrative Law. 7th ed. London: Sweet & Maxwell, 2012.

Detterbeck, Steffen. Allgemeines Verwaltungsrecht [General Administrative Law]. 18th ed. Munich: C.H. Beck, 2020.

Erichsen, Hans-Uwe, and Peter Badura, eds. Allgemeines Verwaltungsrecht. Berlin: De Gruyter, 1975. Reprint, 2019.

Kruse, Wilfried, and Benjamin Bauer, eds. Yearbook Germany Digital 2020: E-Government and Modernization at Federal, State and Local Levels. Bonn: Behörden Spiegel, 2020.

Kopp, Ferdinand. Verfassungsrecht und Verwaltungsverfahrensrecht. Munich: C.H. Beck, 1971.

Künnecke, Marina. Tradition and Change in Administrative Law: An Anglo-German Comparison. Berlin: Springer, 2007.

Maurer, Hartmut, and Christian Waldhoff. Allgemeines Verwaltungsrecht. Munich: C.H. Beck, 2020.

Mitskevich, Ludmilla A. Administrative Acts of Germany. Krasnoyarsk: Siberian Federal University Press, 2011.

Papier, Hans-Jürgen, and Shervin Shirvani. In Michael Dürig, Roman Herzog, and Rupert Scholz, Grundgesetz: Kommentar, 95th ed. (2021), Art. 34 GG, para. 17 ff.

Sannwald, Wolfgang. Professionelle Aktenführung in der Kommunalverwaltung: E-Akten und Papierakten nach dem Kommunalen Aktenplan 21. Stuttgart: Richard Boorberg Verlag, 2024.

Schaefer, Jan Philipp. Die Umgestaltung des Verwaltungsrechts. Tübingen: Mohr Siebeck, 2016.

Schneider, Hans-Peter. The Federal Republic of Germany: Distribution of Powers and Responsibilities. Montreal & Kingston: McGill-Queen’s University Press, 2006.

Seitz, Claudia, Ralf Michael Straub, and Robert Weyeneth, eds. Rechtsschutz in Theorie und Praxis: Festschrift für Stephan Breitenmoser [Legal Protection in Theory and Practice: Festschrift for Stephan Breitenmoser]. Basel: Helbing Lichtenhahn, 2023.

Stott, David. Principles of Administrative Law. London: Routledge-Cavendish, 1997.

Wade, William, and Christopher Forsyth. Administrative Law. Oxford: Oxford University Press, 2014.

Waldo, Dwight. The Administrative State: A Study of the Political Theory of American Public Administration. London: Routledge, 2017.

Weber, Max. Economy and Society: An Outline of Interpretive Sociology. Tübingen: J.C.B. Mohr (Paul Siebeck), 1922.

Windoffer. Verwaltungswissenschaft. 2020.

Wittern, Andreas, and Maximilian Baßlsperger. Verwaltungs- und Verwaltungsprozessrecht: Grundriss für Ausbildung und Praxis [Administrative and Administrative Procedure Law: Outline for Education and Practice]. Stuttgart: Kohlhammer Verlag, 2016.

Articles and Published Papers

Arai-Takahashi, Yutaka. "Proportionality – A German Approach," School of Advanced Study, University of London, 2010, https://sas-space.sas.ac.uk/3907/1/1458-1702-1-SM.pdf.

Alpar, Paul, and Sebastian Olbrich. Legal Requirements and Modelling of Processes in e-Government. Marburg: University of Marburg, 2005.

Arzoz, Xabier. "Administrative Procedures." Max Planck Encyclopedia of Comparative Constitutional Law (2017).

Bartholomae, Florian W., Chang Woon Nam, and Peter Steinhoff. Does Federalism Affect E-Government in Germany? CESifo Working Paper No. 10260, 2023. Available at SSRN: https://ssrn.com/abstract=4357552 or http://dx.doi.org/10.2139/ssrn.4357552.

Baummar, Mael. "Modernising Public Administration—Reimagining Public Administration for the Digital Age." Közigazgatási és Infokommunikációs Jogi PhD Tanulmányok 5, no. 1 (2024), 5–15.

Bernatt, Maciej. "Administrative Sanctions: Between Efficiency and Procedural Fairness." Review of European Administrative Law 9, no. 1 (2016), 5–32.

Bettermann, Karl August. "Das Verwaltungsverfahren." Veröffentlichungen der Vereinigung der Deutschen Staatsrechtslehrer (VVDStRL) 17 (1959), 118–21.

Bovens, Mark, and Stavros Zouridis. "From Street-Level to System-Level Bureaucracies: How Information and Communication Technology is Transforming Administrative Discretion and Constitutional Control." Public Administration Review 62, no. 2 (2002), 174–84.

Bradford, Anu. "Europe's Digital Constitution." Virginia Journal of International Law 64 (2023): 1–72.

Bradford, Anu. "The false choice between digital regulation and innovation." Nw. UL Rev. 119 (2024), 377.

Braithwaite, John. "Rules and principles: A theory of legal certainty." Australasian Journal of Legal Philosophy 27, no. 2002 (2002), 47-82.

Brown, David. "Electronic Government and Public Administration." International Review of Administrative Sciences 71, no. 2 (2005), 241–54.

Buoso, Elena. “Fully Automated Administrative Acts in the German Legal System.” European Review of Digital Administration & Law 1, no. 1–2 (2020): 113–122. https://www.erdalreview.eu/free-download/978882553896011.pdf

Cassese, Sabino. “New Paths for Administrative Law: A Manifesto.” International Journal of Constitutional Law 10, no. 3 (2012), 603–13.

Catakli, Derya. Verwaltung im digitalen Zeitalter: Die Rolle digitaler Kompetenzen in der Personalakquise des höheren Dienstes [Administration in the Digital Age: The Role of Digital Skills in Personnel Acquisition for Higher Civil Service]. Wiesbaden: Springer Nature, 2022.

Cennamo, Carmelo, and Daniel Sokol. “Can the EU Regulate Digital Platforms Without Stifling Innovation?” Journal of Antitrust Enforcement (2021).

Cluzel-Métayer, Lucie. “The Judicial Review of the Automated Administrative Act.” European Review of Digital Administration & Law 1, no. 1–2 (2020): 101–103. https://doi.org/10.4399/97888255389609.

Cobbe, Jennifer, Michelle Seng Ah Lee, and Jatinder Singh. “Reviewable Automated Decision-Making: A Framework for Accountable Algorithmic Systems.” In Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency, 598–609, 2021.

Coglianese, Cary. “Administrative Law in the Automated State.” Daedalus 150, no. 3 (2021): 104–20.

do Rosario Anjos, Maria, Sonia Novais Santos, and Raquel Salgado. “Digital Public Administration and Good Governance.” Economic and Social Development: Book of Proceedings (2024): 199–208.

Eddowes, Lee Anthony. “Good Practice in E-Government: Management over Methods?” In International Conference on E-Government, 255–262. Berlin: Springer, 2005.

Engstrom, David Freeman, and Daniel E. Ho. “Algorithmic Accountability in the Administrative State.” Yale Journal on Regulation 37 (2020): 800–854.

Fábián, Adrián. Vergleichendes Kommunalrecht (Bayern und Ungarn) [Comparative Municipal Law (Bavaria and Hungary)]. Pécs: Faculty of Law, University of Pécs, 2005.

Fábián, Adrián, and Gergő Kollár. “Trends in the Digitalisation of Public Administrations – In Light of EU Legislation and Domestic Developments.” Central European Public Administration Review 21, no. 2 (2023): 121–125.

Ferro, Enrico, and Maddalena Sorrentino. “Can Intermunicipal Collaboration Help the Diffusion of E-Government in Peripheral Areas? Evidence from Italy.” *Government Information Quarterly* 27, no. 1 (2010): 17–25.

Fromm, Jens, Christian Welzel, Lutz Nentwig, and Mike Weber. E-Government in Deutschland: Vom Abstieg zum Aufstieg. ÖFIT-Whitepaper. Berlin: Kompetenzzentrum Öffentliche IT, 2015.

Fraenkel-Haeberle, Cristina. “Fully Digitalized Administrative Procedures in the German Legal System.” European Review of Digital Administration & Law 1, no. 1–2 (2020): 105–11. https://www.erdalreview.eu/free-download/978882553896010.pdf.

Gontarz, Igor “Judicial Review of Automated Administrative Decision-making: *The Role of Administrative Courts in the Evaluation of Unlawful Regimes,”* ELTE Law Journal 2023, 151–162, https://ojs.elte.hu/eltelj/article/download/5283/4288/11372

Gottardo Raenette, "Building Global Algorithmic Accountability Regimes: A Future-focused Human Rights Agenda Beyond Measurement." Peace Human Rights Governance 5, no. Peace Human Rights Governance 5/1 (2021): 65-96.

Grönlund, Åke, and Thomas A. Horan. “Introducing E-Gov: History, Definitions, and Issues.” Communications of the Association for Information Systems 15, no. 1 (2005), 713–729.

Guckelberger, Annette. "31 The Internet and Digital Technologies as Essential Tools for the Civil Service." *The Civil Service in Europe* (2025): 615-634.

Heitmann, Stephan, and Jens Riecken. "E-Government in einer Netzwerkverwaltung am Beispiel des Landesvermessungsamtes NRW." Zeitschrift für Vermessungswesen (zfv) 132, no. 3 (2007): 123–27.

Herfurtner, Wolfgang. “Rückwirkung – Was bedeutet das?.” Kanzlei Herfurtner. Last modified August 15, 2023. Accessed October 4, 2025. https://kanzlei-herfurtner.de/rueckwirkung/.

Heuberger, Moritz, and Christian Schwab. "Challenges of digital service provision for local governments from the citizens’ view: Comparing citizens’ expectations and their experiences of digital service provision." The future of local self-government: European trends in autonomy, innovations and central-local relations (2021), 115-130.

Holtkamp, Lars "E-Democracy in deutschen Kommunen: Eine kritische Bestandsaufnahme," E-Democracy in German Municipalities: A Critical Assessment," *e-merkur* 4, no. 1/2 (2002), 49–58

Hu, Guangwei, Wenwen Pan, Mingxin Lu, and Jie Wang. “The Widely Shared Definition of e-Government: An Exploratory Study.” The Electronic Library 27, no. 6 (2009), 968–985.

Irwansyah, Tetra Hidayati, and Syarifah Hudayah. “The Effect of E-Government on Local Government Performance Accountability in Indonesia.” International Journal of eBusiness and eGovernment Studies 14, no. 2 (2022): 217–246. https://doi.org/10.34111/ijebeg.14.2.217

Kaminski, Margot E., and Gianclaudio Malgieri. “Algorithmic Impact Assessments under the GDPR: Producing Multi-Layered Explanations.” International Data Privacy Law 11, no. 2 (2021): 125–144. https://doi.org/10.1093/idpl/ipaa020..

Klenk, Tanja, Samuel Greef, and Carla Lucks. "Digitalisierung der Daseinsvorsorge als kommunale Herausforderung: Wie unterschiedliche administrative Kapazitäten, digitaler Verwaltungszugang und Ungleichheit zusammenhängen." Zeitschrift für Politikwissenschaft (2025), 1-26.

Klumpp, Dieter. “From Websites to E-Government in Germany.” In Electronic Government, edited by Roland Traunmüller and Klaus Lenk, 18–25. Berlin: Springer, 2002.

Kossow, Niklas, Svea Windwehr, and Matthew Jenkins. Algorithmic Transparency and Accountability. Berlin: Transparency International, February 5, 2021.

https://knowledgehub.transparency.org/assets/uploads/kproducts/Algorithmic-Transparency_2021.pdf.

Kothari, Chakravanti Rajagopalachari. Research methodology: Methods and techniques. New Age International, 2004.

Langer, Charlotte. "Decision-making power and responsibility in an automated administration." Discover Artificial Intelligence 4, no. 1 (2024).

Levy, Karen, Kyla E. Chasalow, and Sarah Riley. "Algorithms and Decision-Making in the Public Sector." Annual Review of Law and Social Science 17, no. 1 (2021), 309–334.

Lifante-Vidal, I. "Is Legal Certainty a Formal Value?" Jurisprudence 11, no. 3 (2020), 456–467.

Longo, Justin, From Massive Mainframes to Massive Data, Databanks to #OpenData, "As We May Think" to Thinking Machines: Computer Supported Policy Analysis and the Future of Practice, Working draft for Dobell Symposium, 2011, 5, accessed May 30, 2025, https://jlphdcand.files.wordpress.com/2011/08/longo-working-draft-from-massive-mainframes-to-massive-data-computer-supported-policy-analysis.pdf.

Martini, Mario, and David Nink. "Wenn Maschinen entscheiden … – vollautomatisierte Verwaltungsverfahren und der Persönlichkeitsschutz." Neue Zeitschrift für Verwaltungsrecht – Extra 36, no. 10 (2017)

Mendes, Joana. Participation in EU Rule-Making: A Rights-Based Approach. Oxford: Oxford University Press, 2011.

Nica, Elvira. "Sustainable Development and Citizen-Centric E-Government Services." Economics, Management, and Financial Markets 10, no. 3 (2015): 69–74.

Nolte, Georg. "General Principles of German and European Administrative Law: A Comparison in Historical Perspective." Modern Law Review 57, no. 2 (1994): 191–212.

Oswald, Marion. "Algorithm-assisted Decision-Making in the Public Sector: Framing the Issues Using Administrative Law Rules Governing Discretionary Power." Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences 376, no. 2128 (2018). https://doi.org/10.1098/rsta.2017.0359

Peeters, Rik, and Arjan Widlak. "The Digital Cage: Administrative Exclusion through Information Architecture – The Case of the Dutch Civil Registry's Master Data Management System." Government Information Quarterly 35, no. 2 (2018): 175–183.

Paulin, Alois. "Towards Self-Service Government-A Study on the Computability of Legal Eligibilities." J. Univers. Comput. Sci. 19, no. 12 (2013): 1761-1791. 1770

Petoft, Arian. "The Concept and Instances of General Principles of Administrative Law: Towards a Global Administrative Law." Cuestiones Constitucionales 42 (2020): 309–355.

Povedano Peramato, Alberto. "Can the Section of an Employment Contract Agreeing a Fixed-Term Period Be Legally Valid if Using a Qualified Electronic Signature through DocuSign?" GÖRG Insights. May 14, 2024. https://www.goerg.de/en/insights/publications/14-05-2024/can-the-section-of-an-employment-contract-agreeing-a-fixed-term-period-be-legally-valid-if-using-a-qualified-electronic-signature-through-docusign.

Pünder, Hermann "German Administrative Procedure in a Comparative Perspective: Observations on the Path to a Transnational Ius Commune Proceduralis in Administrative Law." International Journal of Constitutional Law 11, no. 4 (October 2013), 940–61. https://doi.org/10.1093/icon/mot045

Richter, Heiko. "Federal Transparency Law and 'Right to Open Data': Conceptual Perspectives Beyond the Reinvention of the Wheel." Max Planck Institute for Innovation and Competition Discussion Paper No. 22. 2023. https://doi.org/10.2139/ssrn.4361517. Research – Improving Transparency and the Right to Open Data – Max Planck Institute for Innovation and Competition (https://www.ip.mpg.de/en/research/research-news/improving-transparency-and-the-right-to-open-data.html).

Röhl, Klaus F. "Verwaltungsverfahrensgerechtigkeit (Procedural Justice): Einführung in den Themenbereich und Überblick." Zeitschrift für Rechtssoziologie 14, no. 1 (1993): 1–34.

Seitkazin, Ruslan. Civic Engagement in the Digital Age: The Case of Hungary. PhD diss., National University of Public Service, Budapest, 2021. https://antk.uni-nke.hu/document/akk-copy-uni-nke-hu/Dissertation%20-%20Ruslan%20Seitkazin.pdf

Schaar, Peter. Freedom of Information and Transparency in Germany. Bonn: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), 2019. https://www.reformgestaltung.de/fileadmin/user_upload/Dokumente/GIZ_Informationsfreiheit_en.pdf

Schuppan, Tino. "Gebietsreform im E-Government-Zeitalter." Verwaltung und Management 14, no. 2 (2008): 66–78.

Siegel, Thorsten. "Elektronisches Verwaltungshandeln–Zu den Auswirkungen der Digitalisierung auf das Verwaltungsrecht." JURA-Juristische Ausbildung 42, no. 9 (2020), 920-931.

Siegel, Thorsten. "Der Europäische Portalverbund – Frischer Digitalisierungswind durch das einheitliche digitale Zugangstor ('Single Digital Gateway')." Neue Zeitschrift für Verwaltungsrecht 13 (2019).

Siegel, Thorsten. "Digitalisierung des Verwaltungsverfahrens – Digitalisierung im Verwaltungsverfahren." Juristische Ausbildung 2020, no. 9 (2020), 920–931. https://doi.org/10.1515/jura-2020-2482

Spiecker gen. Döhmann, Indra, and Emanuel V. Towfigh. Coded Bias: The General Equal Treatment Act and Protection against Discrimination by Algorithmic Decision-Making Systems. Berlin: Federal Anti-Discrimination Agency, April 2023.

Suksi, Markku. "Administrative Due Process When Using Automated Decision-Making in Public Administration: Some Notes from a Finnish Perspective." Artificial Intelligence and Law 29, no. 1 (2021), 87–110.

Summers, Robert 'Evaluating and Improving Legal Process–A Plea for'Process Values'(1974/Vol. 60/No. 1) Cornell Law Review 1-52.

Swoboda, Jan Christian. "Künstliche Intelligenz in der Verwaltung: Keine Ermessensausübung durch die Maschine?" Legal Tribune Online, May 13, 2025. https://www.lto.de/persistent/a_id/57181

Torbica, Milica, and Darko Golić. "Incompatibility of the Law on General Administrative Procedure and the Law Governing the Special Administrative Procedure Conducted before the Cadastre." Law on General Administrative Procedure: Contemporary Tendencies and Challenges 39, no. 3 (2022): 293–295.

Tøssebro, Henriette Nilsson. "The Principle of Non-Retroactivity and Its Application to Administrative Decisions." *The New Law* (2018): 361–378.

Vogt, Theresa. "Die neue eIDAS-Verordnung – Chance und Herausforderung für die öffentliche Verwaltung in Deutschland." Information – DEGRUYTER, Wissenschaft & Praxis 67, no. 1 (2016): 61–68. https://doi.org/10.1515/iwp-2016-0011

von Bary, Christiane, and Marie-Therese Ziereis. "Rückwirkung in grenzüberschreitenden Sachverhalten: Zwischen Statutenwechsel und ordre public." Rabels Zeitschrift für ausländisches und internationales Privatrecht / The Rabel Journal of Comparative and International Private Law H. 1 (2021), 146–171.

Wegrich, Kai. "Is the Turtle Still Plodding Along? Public Management Reform in Germany." Public Management Review 23, no. 8 (2021), 1107–16.

Williams, Rebecca. "Rethinking Administrative Law for Algorithmic Decision Making." Oxford Journal of Legal Studies 42, no. 2 (2022), 468–494. https://academic.oup.com/ojls/article/42/2/468/6414566?login=false

Winter, Gerd. "Theoretical Foundations of Public Participation in Administrative Decision-Making." Environmental Democracy and Law, 2014. https://www.gerd-winter.jura.uni-bremen.de/theoretical_foundations.pdf

Wirtz, Bernd W., and Pascal R. M. Kubin. "Governance Reforms in Germany: An Analysis of Digital Reforms." In Comparative Governance Reforms: Assessing the Past and Exploring the Future, 75–92. Cham: Springer Nature Switzerland, 2024.

Yildiz, Mete "E-government research: Reviewing the literature, limitations, and ways forward," Government information quarterly 24, no.3 (2007): 646–665

Ziekow Jan, "Administrative procedures and processes." In Public Administration in Germany, pp. 163-183. Cham: Springer International Publishing, 2021.

Ziekow, Jan. "Das Verwaltungsverfahrensrecht in der Digitalisierung der Verwaltung." Neue Zeitschrift für Verwaltungsrecht 16 (2018).

Book Chapters

Arai-Takahashi, Yutaka. "Proportionality – A German Approach." In The Principle of Proportionality in European Law, edited by Evelyn Ellis, 123–145. Oxford: Oxford University Press, 1999.

Arjola-Sarja, Terhi. "The Ombudsman as an Advocate for Good Administration." In Parliamentary Ombudsman of Finland: 90 Years, 101–120. 2010.

Auby, Jean-Bernard. "Codification of Administrative Procedure." In Codification of Administrative Procedure, edited by Jean-Bernard Auby. Brussels: Bruylant, 2014.

Behnke, Nathalie, and Sabine Kropp. "Administrative Federalism." In Public Administration in Germany, edited by Sabine Kuhlmann, Christian Schwab, Isabella Proeller, and Annette Elisabeth Töller, 35–51. Basingstoke: Palgrave Macmillan, 2021.

Britz, Gabriele. “Reaktionen des Verwaltungsverfahrensrechts auf die informationstechnischen Vernetzungen der Verwaltung.” In Verwaltungsverfahren und Verwaltungsverfahrensgesetz, 214–77. Baden-Baden: Nomos, 2003.

Engewald, Bettina. “Administrative Silence in Germany.” In The Sound of Silence in European Administrative Law, edited by Dacian C. Dragos, Polonca Kovač, and Hanna Tolsma, 81–114. Cham: Palgrave Macmillan, 2020. https://doi.org/10.1007/978-3-030-45227-8_3.

Enqvist, Lena, and Markus Naarttijärvi. “Discretion, Automation, and Proportionality.” In The Rule of Law and Automated Decision-Making: Exploring Fundamentals of Algorithmic Governance, edited by Markku Suksi, 147–178. Cham: Springer International Publishing, 2023.

Fehling, Michael, ed. Verwaltungsrecht: VwVfG | VwGO | Nebengesetze. 5th ed. Munich: C.H. Beck, 2021.

Fleischer, Julia. “Federal Administration.” In Public Administration in Germany, edited by Sabine Kuhlmann, Isabella Proeller, Dieter Schimanke, and Jan Ziekow, 61–79. Cham: Springer, 2021.

Hohmann, Balázs. "The Impact of the Government's Restrictive Measures on the Transparency of the Administrative Proceeding in the Context of the COVID-19 Pandemic." In Expanding Edges of Today's Administrative Law, January 2021. ADJURIS..

Hofmann, Hans. “Europeanisation and German Public Administration.” In Public Administration in Germany, edited by Sabine Kuhlmann, Isabella Proeller, Dieter Schimanke, and Jan Ziekow, 53–60. Cham: Springer International Publishing, 2021.

Hofmann, Herwig C.H. “General Principles of EU Law and EU Administrative Law.” In European Union Law, edited by Catherine Barnard and Steve Peers, 212–235. 3rd ed. Oxford: Oxford University Press, 2020.

Hoffmann-Riem, Wolfgang. “Verwaltungsverfahren und Verwaltungsverfahrensgesetz—Einleitende Problemskizze.” In Verwaltungsverfahren und Verwaltungsverfahrensgesetz, herausgegeben von Wolfgang Hoffmann-Riem und Eberhard Schmidt-Aßmann, 10–67. Baden-Baden: Nomos Verlagsgesellschaft mbH & Co. KG, 2003.

Kahl, Wolfgang. "Das Verwaltungsverfahrensgesetz zwischen Kodifikationsidee und Sonderrechtsentwicklungen." In Verwaltungsverfahren und Verwaltungsverfahrensgesetz, pp. 68-135. Nomos Verlagsgesellschaft mbH & Co. KG, 2003.

Kuhlmann, Sabine, Isabella Proeller, Dieter Schimanke, and Jan Ziekow. “German Public Administration: Background and Key Issues.” In Public Administration in Germany, 1–13. London: Palgrave Macmillan, 2021.

Mehde, Veith. “Control and Accountability: Administrative Courts and Courts of Audit.” In Public Administration in Germany, Governance and Public Management Series, 185–203. Cham: Springer, 2021.

Mergel, Ines. “Digital Transformation of the German State.” In Public Administration in Germany, edited by Sabine Kuhlmann et al., 331–345. Cham: Springer, 2021.

Möllers, Christoph. The Administrative Constitution: Administrative Law in Germany (Oxford: Oxford University Press, 2013).

Pöysti, Tuomas. “Legislating for Legal Certainty, with a Right to a Human Face, in an Automated Public Administration.” In The Rule of Law and Automated Decision-Making, edited by Mariolina Eliantonio et al., 33–63. Cham: Springer, 2023. https://link.springer.com/chapter/10.1007/978-3-031-30142-1_3

Ranchordás, Sofia. “The Digitization of Government and Digital Exclusion: Setting the Scene.” In The Rule of Law in Cyberspace. Cham: Springer, 2022.

Schmitz, Heribert. "Fortentwicklung des Verwaltungsverfahrensgesetzes: Konkrete Gesetzgebungspläne und weitere Perspektiven." In Verwaltungsverfahren und Verwaltungsverfahrensgesetz, pp. 136-155. Nomos Verlagsgesellschaft mbH & Co. KG, 2003.

Schmitz, Thomas. “The Administrative Procedure in German Administrative Law.” In Administrative Decision and Administrative Procedure under German, French and Vietnamese Law. Hanoi: Hanoi Law University, 2013.

Schmitz, Thomas. “Implementing the Rule of Law in Public Administration by an Administrative Procedure Act – The Example of Germany.” In Teoria şi practica administrării publice: Materiale ale Conferinţei ştiinţifico-practice cu participare internaţională, 20 mai 2016, Chişinău, edited by Oleg Balan et al., 17 ff. Chişinău, 2016.

Schrapper, Ludger. “The Administration of the Länder.” In Public Administration in Germany, 105–121. Cham: Springer, 2021.

Sommermann, Karl-Peter. “Constitutional State and Public Administration.” In Public Administration in Germany, edited by Sabine Kuhlmann et al., 17–33. Cham: Springer, 2021.

Shasivari, Jeton, and Balázs Hohmann, eds. Expanding Edges of Today’s Administrative Law: Contributions to the 4th International Conference “Contemporary Challenges in Administrative Law from an Interdisciplinary Perspective,” May 21, 2021, Bucharest. Bucharest: ADJURIS–International Academic Publisher, 2021.

Suksi, Markku, ed. The Rule of Law and Automated Decision-making: Exploring Fundamentals of Algorithmic Governance. Cham: Springer Nature, 2023.

Vogel, Hans-Josef. "Rechtsetzung und Rechtsumsetzung besser machen [Improving legislation and its implementation]." In *Politik und Verwaltung. Verstehen und Verändern*, 171–204. Nomos Verlagsgesellschaft mbH & Co. KG, 2025.

Voßkuhle, Andreas. “Allgemeines Verwaltungs- und Verwaltungsprozeßrecht.” In Rechtswissenschaft und Rechtsliteratur im 20. Jahrhundert, 935–968. Munich: C.H. Beck, 2021. https://doi.org/10.17104/9783406731181-935

Widlak, Arjan, Marlies van Eck, and Rik Peeters. “Towards Principles of Good Digital Administration: Fairness, Accountability and Proportionality in Automated Decision-Making.” In The Algorithmic Society, 67–83. London: Routledge, 2020.

Zalnieriute, Monika, Lyria Bennett Moses, and George Williams. "Automating Government Decision-Making: Implications for the Rule of Law." In Technology, Innovation and Access to Justice: Dialogues on the Future of Law, 91–111. Edinburgh: Edinburgh University Press, 2021.

Legislation

I. German Federal Legislation

Administrative Procedure Act (Verwaltungsverfahrensgesetz – VwVfG). Federal Law Gazette I, 1976, 1253; last amended 2021. https://www.gesetze-im-internet.de/vwvfg/

Administrative Notification Act (Verwaltungszustellungsgesetz – VwZG).

Barrier-Free Information Technology Ordinance (BITV 2.0). Federal Law Gazette 184300011. Accessed October 14, 2025. https://www.gesetze-im-internet.de/bitv_2_0/BJNR184300011.html.

Basic Law for the Federal Republic of Germany (Grundgesetz). Bonn: Federal Republic of Germany, 1949. https://www.gesetze-im-internet.de/englisch_gg/

Bundesdatenschutzgesetz (BDSG) [Federal Data Protection Act]. June 30, 2017. Gesetze im Internet. https://www.gesetze-im-internet.de/bdsg_2018/.

Bürgerliches Gesetzbuch (BGB). § 126a [Electronic Form]. Last modified January 1, 2023. https://www.gesetze-im-internet.de/bgb/__126a.html.

E-Government Act (E-Government-Gesetz – EGovG). Act to Promote Electronic Government. Federal Law Gazette I, 2013; amended 2021. https://www.gesetze-im-internet.de/egovg/

Online Access Act (Onlinezugangsgesetz – OZG). Federal Law Gazette I, no. 49 (2017): 3122. https://www.gesetze-im-internet.de/ozg/

Federal Ministry of the Interior and for Home Affairs. "OZG Amendment Act: Package for Digital Administration." Digital Administration. Accessed November 24, 2025. https://www.digitale-verwaltung.de/Webs/DV/DE/onlinezugangsgesetz/das-gesetz/ozg-aenderungsgesetz/ozg-aenderungsgesetz-node.html.

General Equal Treatment Act (Allgemeines Gleichbehandlungsgesetz – AGG). Federal Law Gazette I, 2006. https://www.gesetze-im-internet.de/agg/

Freedom of Information Act (Informationsfreiheitsgesetz – IFG). Federal Law Gazette I, 2005, 2722. https://www.gesetze-im-internet.de/ifg/

Federal Environmental Impact Assessment Act (Umweltverträglichkeitsprüfungsgesetz – UVPG). Federal Law Gazette I, 2017, 2808. https://www.gesetze-im-internet.de/uvpg/

Gesetz zur digitalen Signatur (Signaturgesetz) [Digital Signature Act]. July 22, 1997. Bundesgesetzblatt Teil I, no. 14 (1997): 1870.

II. North Rhine-Westphalia Legislation

Barrierefreie-Informationstechnik-Verordnung Nordrhein-Westfalen (BITV NRW).

Behindertengleichstellungsgesetz Nordrhein-Westfalen (BGG NRW). May 9, 2014.

Datenschutzgesetz Nordrhein-Westfalen (DSG NRW). Vom 17. Mai 2018. GV. NRW. S. 244. Zuletzt geändert am 5. Juli 2024. https://www.recht.nrw.de/lmi/owa/br_text_anzeigen?v_id=3520071121100436275.

Freedom of Information Act of North Rhine-Westphalia (Informationsfreiheitsgesetz NRW). GV. NRW. S. 694 (2001).

Gesetz zur Förderung der elektronischen Verwaltung in Nordrhein-Westfalen (E-Government-Gesetz Nordrhein-Westfalen – EGovG NRW). July 8, 2016. GV. NRW. S. 551.

Law on Data Protection and Freedom of Information in North Rhine-Westphalia (DSG NRW), Chapter 5, Sections 25–30 (establishing and empowering the State Commissioner for Data Protection and Freedom of Information NRW).

Law and Ordinance Gazette for the State of North Rhine-Westphalia. "Law Regulating Electronic Legal Transactions with Authorities in North Rhine-Westphalia (ERV Law NRW)."
https://recht.nrw.de/lmi/owa/br_bes_text?anw_nr=1&gld_nr=2&ugl_nr=2006&bes_id=53709&val=53709&ver=7&sg=2&aufgehoben=N&menu=0

Landtag Nordrhein-Westfalen. Gesetzentwurf: Gesetz zur Änderung des E-Government-Gesetzes Nordrhein-Westfalen und zur Änderung weiterer Vorschriften. Drucksache 17/8795, 17. Wahlperiode. Düsseldorf: Landtag Nordrhein-Westfalen, 4 March 2020.

Gesetzgebungsblatt für das Land Nordrhein-Westfalen, Gesetz- und Verordnungsblatt (NRW), "Besoldungsrechtliche Ergänzungen 2021: Bescheid Nr. 36427," accessed October 11, 2025, https://recht.nrw.de/lmi/owa/br_bes_detail?sg=0&menu=0&bes_id=36427&anw_nr=2&aufgehoben=N&det_id=592241

III. European Union Legislation

Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation). OJ L 119 (4 May 2016): 1–88. Accessed via EUR-Lex: https://eur-lex.europa.eu/eli/reg/2016/679/oj/eng

European Union. Regulation (EU) No 910/2014 of the European Parliament and of the Council on Electronic Identification and Trust Services for Electronic Transactions in the Internal Market (eIDAS Regulation). Official Journal L 257, 73–114, 23 July 2014.

European Union. Artificial Intelligence Act. https://artificialintelligenceact.eu/article/15/.

IV. Other Legal Sources

IT-Staatsvertrag (State Treaty on Federal IT Cooperation).

Concluded by the Federal Republic of Germany and the Länder, entered into force 1 April 2010. https://www.it-planungsrat.de/

Court Decision

Court of Justice of the European Union. Case C-181/20. Interseroh Dienstleistungs GmbH v. SCAPA Tapes India Ltd. ECLI:EU:C:2021:1045. December 16, 2021.

Court of Justice of the European Union. Case 120/86. Mulder v. Minister van Landbouw en Visserij. ECLI:EU:C:1988:213. April 28, 1988.

Netherlands. District Court of The Hague. Case No. C/09/550982 / HA ZA 18-388. NJCM et al. v. The Netherlands (SyRI). February 5, 2020. ECLI:NL:RBDHA:2020:1878. https://www.loc.gov/item/global-legal-monitor/2020-03-13/netherlands-court-prohibits-governments-use-of-ai-software-to-detect-welfare-fraud/.

Federal Constitutional Court, Judgment of 15 December 1983 (Census Act Case), BVerfGE 65, 1. https://www.bundesverfassungsgericht.de/SharedDocs/Entscheidungen/EN/1983/12/rs19831215_1bvr020983en.html

Official Reports

I. United Nations Reports

United Nations. E-Government Survey 2020: Digital Government in the Decade of Action for Sustainable Development. With Addendum on COVID-19 Response. New York: United Nations, 2020.

United Nations Department of Economic and Social Affairs, United Nations E-Government Survey 2022: The Future of Digital Government, (New York: United Nations, 2022), https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2022.

II. OECD Reports

Organisation for Economic Co-operation and Development (OECD). Procedural Fairness: Transparency Issues in Civil and Administrative Proceedings – Germany. Working Party No. 3, 16 February 2010.

Organisation for Economic Co-operation and Development (OECD), Recommendation of the Council on Digital Government Strategies, OECD/LEGAL/0406, adopted July 15, 2014, https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0406

III. European Regulations and Reports

European Commission. i2010 – A European Information Society for Growth and Employment. COM(2005) 229 final. Brussels, June 1, 2005. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52005DC0229

European Commission. Digital Economy and Society Index (DESI) 2022: Human Capital. Brussels: European Commission, 2022. https://digital-strategy.ec.europa.eu/en/library/digital-economy-and-society-index-desi-2022.

European Commission. "Germany Digital Strategy 2025." Digital Skills & Jobs Platform. Accessed June 29, 2025. https://digital-skills-jobs.europa.eu/en/actions/national-initiatives/national-strategies/germany-digital-strategy-2025.

European Commission, "Digital Connectivity in Germany," accessed July 29, 2025, https://digital-strategy.ec.europa.eu/en/policies/digital-connectivity-germany.

European Commission. eGovernment Benchmark 2020: eGovernment That Works for the People – Insight Report. Luxembourg: Publications Office of the European Union, 2020. https://op.europa.eu/en/publication-detail/-/publication/c0bd38e3-f98e-11ea-b44f-01aa75ed71a1.

European Commission, EU eGovernment Action Plan 2016–2020: Accelerating the Digital Transformation of Government, COM(2016) 288 final (Brussels, April 19, 2016).

European Commission, "Germany: National Digital Decade Strategic Roadmap," Digital Skills & Jobs Platform, accessed July 1, 2025, https://digital-skills-

jobs.europa.eu/en/actions/national-initiatives/national-strategies/germany-national-digital-decade-strategic-roadmap.
European Commission. “The Digital Economy and Society Index (DESI).” Last modified August 7, 2024. https://digital-strategy.ec.europa.eu/en/policies/desi.
European Commission and Council, eEurope: An Information Society for All – Action Plan (Brussels: European Commission, 2000).
European Commission and Council, eEurope: An Information Society for All – Action Plan (Brussels: European Commission, 2005).
European Commission, “What Is the Legislation – eSignature,” eSignature Digital Building Blocks, accessed September 13, 2025, https://ec.europa.eu/digital-building-blocks/sites/spaces/DIGITAL/pages/467109076/What+is+the+legislation+-+eSignature.
European Commission. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: The European eGovernment Action Plan 2011–2015: Harnessing ICT to Promote Smart, Sustainable & Innovative Government. COM(2010) 743 final, 2010.
European Parliament. "REPORT with recommendations to the Commission on Digitalisation and Administrative Law." A9-0309/2023. 26 October 2023. https://www.europarl.europa.eu/doceo/document/A-9-2023-0309_EN.html.
European Parliament. Digitalisation and Administrative Law. European Parliament Resolution of 22 November 2023 with Recommendations to the Commission on Digitalisation and Administrative Law (2021/2161(INL)). P9_TA(2023)0426. Strasbourg: European Parliament, 2023.
Dimitrov, Vladimir, Vicky Konstantinopoulou, and Maria Nisheva. Best Practices for Cybersecurity, GDPR and Data Interoperability. Version 1.0. EuroCC National Competence Centres, 2020. https://hpc-portal.eu/sites/default/files/2025-01/BestPractices_DataManagement_v1.0.pdf.

IV. German Reports

Bernhardt, Wilfried. E-Government-Gesetzgebung von Bund und Ländern im Vergleich und Best-Practices-Leitlinie [E-Government legislation of the federal and state governments in comparison and best-practices guideline]. Berichte des NEGZ Nr. 21. Berlin: Nationales E-Government Kompetenzzentrum e. V., 2021.
Coordination, report according to Section 88 Paragraph 2 of the Federal Budget Code to the Budget Committee of the German Bundestag. Ref. VII 5 - 001755. March 29, 2023.
Deutscher Bundestag. Wissenschaftliche Dienste. Sachstand: E-Government in Deutschland – Aktueller Stand auf Bundes- und Landesebene. WD 3 – 3000 – 134/19. Berlin: Deutscher Bundestag, 2019. https://www.bundestag.de/resource/blob/651322/2c839a834c803360f0891d4e680a98f4/WD-3-134-19-pdf-data.pdf.
Digital Strategy: Creating Digital Values Together. Berlin: Federal Ministry for Digital and Transport, 2022. https://www.bmv.de/SharedDocs/EN/Documents/Press/pm-063-en-long-version.pdf.

ISD Germany. Identification, Assessment and Mitigation of Systemic Risks in the Context of the Digital Services Act. Report for the German Digital Service Coordinator (Bundesnetzagentur), November 2024. Accessed September 7, 2025. https://www.dsc.bund.de/DSC/DE/Aktuelles/studien/KeyFindings_ISD.pdf

Federal Ministry of the Interior (BMI). Minikommentar zum Gesetz zur Förderung der elektronischen Verwaltung sowie zur Änderung weiterer Vorschriften. Berlin: BMI, 2013. https://www.bmi.bund.de/SharedDocs/downloads/DE/veroeffentlichungen/themen/moderne-verwaltung/e-government-gesetz-minikommentar.html

Federal Commissioner for Data Protection and Freedom of Information (BfDI). *Annual Report 2023*. Bonn, 2023. https://www.bfdi.bund.de.

Federal Court of Auditors (Bundesrechnungshof), Report on the Implementation of the Online Access Act, April 2024, https://www.bundesrechnungshof.de/SharedDocs/Downloads/DE/Berichte/2024/umsetzung-onlinezugangsgesetz-volltext.pdf?__blob=publicationFile&v=2.

Federal Ministry of the Interior. BundOnline 2005: Implementation Plan for the Federal Government's E-Government Initiative. Berlin: BMI, 2000.

Federal Ministry of the Interior. E-Government 2.0: Innovations for Germany's Public Administration. Berlin: BMI, 2006.

Scientific Services of the German Bundestag. Criteria of the Wesentlichkeitstheorie of the Federal Constitutional Court. WD 3-152/19. June 14, 2019. https://www.bundestag.de/resource/blob/655254/1764b49aa3c85458a840652cf134e031/WD-3-152-19-pdf-data.pdf

Wissenschaftlicher Dienst des Deutschen Bundestages. Verfassungsrechtliche Rechtfertigung von gesetzlichen Ungleichbehandlungen aufgrund persönlicher Merkmale [Research Service of the German Bundestag, Constitutional justification of statutory unequal treatment based on personal characteristics]. Aktenzeichen: WD 3 - 3000 - 220/14. Berlin: Deutscher Bundestag, 29. September 2014.

V. Other Official Reports

Annex 10 to the Joint Rules of Procedure of the Ministries of North Rhine-Westphalia. Accessed October 14, 2025. https://recht.nrw.de/lmi/owa/br_text_anzeigen?v_id=12345.

Final report on the online consultation on the e-government law NRW (Düsseldorf: The Commissioner of the State Government of North Rhine-Westphalia for Information Technology, 2016).

Landesbeauftragte für Datenschutz und Informationsfreiheit Nordrhein-Westfalen (LDI NRW). "Liste von Verarbeitungsvorgängen nach Art. 35 Abs. 4 DS-GVO für den öffentlichen Bereich." Accessed February 8, 2026. https://www.ldi.nrw.de/liste-von-verarbeitungsvorgaengen-nach-art-35-abs-4-ds-gvo-fuer-den-oeffentlichen-bereich.

Landtag Nordrhein-Westfalen. 2019. Einen ersten Bericht zu den Erfahrungen mit dem EGovG NRW. 20. Dezember 2019. https://www.landtag.nrw.de/portal/WWW/dokumentenarchiv/Dokument/MMV17-2860.pdf

Kubicek, Herbert, and Martin Wind. E-Government in Kommunen: Studie für die Enquetekommission „Zukunft der Städte in NRW“ des Landtags Nordrhein Westfalen. Bremen: University of Bremen, November 2003.

Ministry for Economic Affairs, Innovation, Digitalization and Energy of the State of North Rhine-Westphalia (MWIDE). Meeting of the Committee for Digitalization and Innovation on June 24, 2021: Digital Strategy as a Benefit for the People of North Rhine-Westphalia. Düsseldorf: MWIDE, August 31, 2021.

Ministry of Economic Affairs, Innovation, Digitization and Energy of the State of North Rhine-Westphalia, Report on Experiences with the E-Government Act NRW (EGovG NRW), State Parliament of North Rhine-Westphalia, Printed Paper 17/2860 (20 December 2019)

Ministry of Local and Community Affairs, Building and Digitalization of North Rhine-Westphalia (MHKBD NRW), Press Release No. 28.10.2024, available at: [https://www.mhkbd.nrw/themenportal/ki-made-in-nordrhein-westfalen-testphase-fuer-ki-assistenten-in-der-oeffentlichen-verwaltung-in-nordrhein-westfalen-startet].

Ministry of Economic Affairs, Innovation, Digitization and Energy of the State of North Rhine-Westphalia (MWIDE), Report on the Implementation Status of Digitization in the State Administration of North Rhine-Westphalia (Düsseldorf: MWIDE, 31 August 2021).

Röhl, Klaus-Heiner. The Status of the Online Access Act at the Target Date of Early 2023. Cologne: German Economic Institute, March 30, 2023.

Senate Department for the Interior and Sport (SenInnDS), Evaluation of the Berlin E-Government Act: Legal Report and Empirical Study with Recommendations for the Further Development of Digital Administration Law (Berlin: SenInnDS, 21 May 2021),1-7

Wirtschaft.NRW. “Elektronische Verwaltungsarbeit.” Wirtschaft.NRW. Accessed January 26, 2026. https://www.wirtschaft.nrw/elektronische-verwaltungsarbeit?utm_source=chatgpt.com

EU & International Documents

I. European Treaties

European Union. Consolidated Version of the Treaty on European Union. Official Journal C 326, 26 October 2012.

II. EU Declarations and International Commitments

European Union. Tallinn Declaration on eGovernment. Signed 6 October 2017, Tallinn, Estonia.

Internet Sources and government Websites

BundID. “Federal Digital Identity System.” Accessed July 29, 2025. https://www.bundid.de/.

Bundesamt für Sicherheit in der Informationstechnik (BSI). “IT-Grundschutz – IT Baseline Protection.” Accessed July 2025.

https://www.bsi.bund.de/DE/Themen/Unternehmen-und-Organisationen/Standards-und-Zertifizierung/IT-Grundschutz/it-grundschutz_node.html.
Bundesministerium für Bildung und Forschung (BMBF), “DigitalPakt Schule,” last modified July 15, 2025, https://www.digitalpaktschule.de/.
Bundesministerium des Innern (BMI). “Datenschutz” [Data Protection]. Accessed December 3, 2025. https://www.bmi.bund.de/DE/themen/verfassung/datenschutz/datenschutz-node.html.
Bundesministerium des Innern, für Bau und Heimat (BMI). “Digitale Verwaltung 2020+” [Digital Administration 2020+].
Bundesministerium des Innern, für Bau und Heimat (BMI). “Zukunft der Öffentlichen Verwaltung – Förderprogramme” [Future of Public Administration – Funding Programs].
Bundesministerium für Wohnen, Stadtentwicklung und Bauwesen (BMWSB) Smart City Dialog” accessed July 29, 2025, https://www.smart-city-dialog.de/.
Cybersicherheit NRW. „Datenschutzanforderungen in Unternehmen und öffentlichen Einrichtungen“. Zugegriffen am 3. Dezember 2025. https://www.cybersicherheit.nrw/datenschutzanforderungen-unternehmen-und-oeffentlichen-einrichtungen-0.
Digitale Verwaltung, „OZG-Leistungen“, zugegriffen am 28. Juni 2025, https://www.digitale-verwaltung.de/Webs/DV/DE/onlinezugangsgesetz/ozg-grundlagen/info-leistungen/info-leistungen-node.html.
Digitale Verwaltung, „Einer für Alle – Einfach erklärt“, zugegriffen am 28. Juni 2025, https://www.digitale-verwaltung.de/Webs/DV/DE/onlinezugangsgesetz/efa/efa-node.html.
ELSTER. "ELSTER: The Electronic Tax System." Accessed July 29, 2025. https://www.elster.de/.
IT Planning Council (IT-Planungsrat). Official Website of the IT Planning Council. Accessed Sep. 01, 2025. https://www.it-planungsrat.de/.
IT.NRW. “Onlinezugangsgesetz (OZG).” Landesbetrieb Information und Technik Nordrhein-Westfalen. Accessed October 11, 2025. https://www.it.nrw/informationstechnik/digitale-gesellschaft/onlinezugangsgesetz-ozg.
Inner and Heimat Bundesministerium. “E-Government-Gesetz.” Accessed 18,09,2025. https://www.bmi.bund.de/DE/themen/moderne-verwaltung/e-government/e-government-gesetz/e-government-gesetz-node.html
Federal Commissioner for Data Protection and Freedom of Information (BfDI). Home. Accessed Sep 01, 2025. https://www.bfdi.bund.de/DE/Home/home_node.html.
Federal Ministry of the Interior and Community (BMI). Digitale Verwaltung 2020 and Subsequent Strategy Papers. Berlin: BMI, various years.
Federal Ministry of the Interior and Home Affairs (BMI). “The Federal E-Government Act.” Verwaltung Innovativ. Accessed October 5, 2025. https://www.verwaltung-innovativ.de/DE/Verwaltungsdigitalisierung/E-Government-Gesetz/e-government-gesetz_node.html.
Federal Office for Information Security (BSI). "Cybersecurity and Data Protection." Accessed July 29, 2025. https://www.bsi.bund.de/.

Federal Office for Information Security (BSI). "IT-Grundschutz: IT Security and Risk Management." Accessed July 29, 2025. https://www.bsi.bund.de/EN/Topics/IT-Grundschutz/itgrundschutz_node.html.

Federal Office for Information Management (FIM). "Federal Office for Information Management: IT Standardization." Accessed July 29, 2025. https://www.fim.de/.

Federal Agency for IT Cooperation (FITKO). FITKO – Federal IT Cooperation. Frankfurt: FITKO, 2025. https://www.fitko.de/

GovData. "National Open Data Portal." Accessed July 29, 2025. https://www.govdata.de/.

KoSIT. "Coordination Body for Information Technology Standards." Accessed July 29, 2025. https://www.kosit.org/.

Koordinierungsstelle für IT-Standards (KoSIT). XÖV – Standards for Electronic Administrative Processes in Germany. Accessed July 2025. https://www.xoev.de/.

Kommunen.NRW. "Aktuell Platz 2 Bundesweit: Online-Verfügbarkeit Aller Verwaltungsleistungen in NRW Gestiegen." Kommunen.NRW, September 29, 2025. https://kommunen.nrw/themen/digitale-verwaltung-und-it/aktuell-platz-2-bundesweit-online-verfuegbarkeit-aller-verwaltungsleistungen-in-nrw-gestiegen/?utm_source=chatgpt.com

Land Nordrhein-Westfalen, Strategie für das digitale Nordrhein-Westfalen 2.0: Teilhabe ermöglichen – Chancen eröffnen (Düsseldorf: Ministerium für Wirtschaft, Innovation, Digitalisierung und Energie, 2021) 6–7.

Ministerium für Wirtschaft, Innovation, Digitalisierung und Energie des Landes Nordrhein-Westfalen, "Elektronische Verwaltungsarbeit," accessed October 11, 2025, https://www.wirtschaft.nrw/elektronische-verwaltungsarbeit.

NRW Serviceportal, "Das Servicekonto.NRW wurde durch die BundID abgelöst," accessed October 13, 2025, https://meineverwaltung.nrw/inhalt/a483a79a-aea2-43d1-8fd6-7814eb640eb3

Service Portal NRW: Overview of the EfA principle, https://service.wirtschaft.nrw/hilfe/efa/nachnutzung/mitnutzung/ueberblick/

Lectures, Presentations and Paper work

Bernatt, Maciej. "The Principle of Procedural Fairness and its Implementation in the Administrative Proceedings—Perspective of the Country in the Democratic Transition." SSRN. March 25, 2013. https://ssrn.com/abstract=2239145.

Council of Australian Law Deans. "Statement on the Nature of Legal Research." 2005. Accessed June 10, 2025. https://cald.asn.au/wp-content/uploads/2023/11/cald-statement-on-the-nature-of-legal-research-20051.pdf

Kuhn, Peter, Dian Balta, and Helmut Krcmar. "Was sind Herausforderungen proaktiver Verwaltungsleistungen in Deutschland?" In Wirtschaftsinformatik (Zentrale Tracks), 554–559. 2020.

Margetts, Helen. "Transparency and Digital Government." In Proceedings of the British Academy, vol. 135, 197–210. Oxford: Oxford University Press, 2006.

Stelkens, Ulrich. "Verfassungsrechtliche Rahmenbedingungen des digitalisierten Verwaltungsverfahrens" (Presentation, Online Winter Conference of the ARGE

Verwaltungsrecht NRW, 2024). https://arbeitsgemeinschaft-verwaltungsrecht-nrw.de/wp-content/uploads/2024/07/002-VerfassungsrechtlicheRahmenbedingungen.pdf

Stelkens, Ulrich, “Legal Certainty and Protection of Legitimate Expectations,” General Principles of Administrative Law, University of Speyer, 2016, lecture notes

State Government of North Rhine-Westphalia. Cabinet adopts new E-Government Act, press release, March 3, 2020, accessed November 24, 2025, https://www.land.nrw/pressemitteilung/kabinett-verabschiedet-neues-e-government-gesetz.

van Kampen, Jakob. "From Plan to Reality: Applications of the European eGovernment Action Plan 2016–2020 on the National and Institutional Level—a Comparison between Germany, the United Kingdom and Estonia." Master’s thesis, Hochschulbibliothek der Technischen Hochschule Köln, 2018.

Weiler, Thomas. "How to Solve the Transparency-Anonymity Dilemma?." E-Vote-ID 2018 (2018): 345.