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Digital Transformation in European Public Services

Complexities, Challenges, and Good Practices

Edited by
Nicolae Urs · David Špaček
Steven Nõmmik

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CHAPTER 1

Introduction

Nicolae Urs, David Špaček, and Steven Nõmmik

Public organizations have always been pushed to work with new technologies. The way in which public institutions manage to ride the current technological wave matters not only for the institutions themselves but for society at large. Governments are called upon not only to issue driver's permits and pay pensions but also to deal with a disinformation deluge, face cybersecurity threats, create the framework for beneficial Artificial

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Intelligence development, or prepare society for a work environment transformed by automation.

Public institutions see technological development as both the originator of the problems besetting society and the solution to these ailments. One of the few things researchers in the field agree upon is that digital transformation is essential if governments are to fulfill their obligations to the communities they serve.

The study of digital transformation of the public sector is not a fringe topic anymore. Like almost every facet of human society, governments all over the world are, willingly or less so, incorporating online public service delivery into their *modus operandi* and leveraging digital technologies to change their inner processes and organization. It is, however, important to learn from the successes and failures of others, especially in a fast-moving society in which time seems to become the most precious commodity. The book you are reading now aims to contribute to this knowledge sharing movement, containing success stories, failures, and, more often than not, projects that have mixed results but that can serve as stepping stones for the next push in bringing governmental institutions into the twenty-first century.

Why Another Book on Digital Transformation?

The concept of digital transformation has become an established one in the study of public sector organizations' adaptation to a world in flux. The idea that society is changing and public organizations have to keep up with that change is definitely not new. In the last couple of decades, a lot of work had been done, for instance, in the e-government/e-governance literature long before the term "digital transformation" started to be used so broadly and frequently. Prior to that, researchers in the field worked with "digital government" or "online government services." Digital transformation can mean different things to different people (scholars, practitioners, politicians, citizens). Similarly to the previous strands of literature dealing with the use of technologies in public administration and the public sector, this research field is also rather fragmented (currently, more than 48,000 results can be found in the *Web of Science* when searching just for "digital transformation").

The public sector faces a dilemma with digital transformation—the need to maintain existing service provision, yet adapt and innovate to meet the expectations from citizens, businesses, or other stakeholders. During the COVID-19 pandemic, public sector and public administration organizations were pressed to switch to new technologies in order to maintain their functionality and meet the expectations of external actors. The journey to digital transformation, which is not an aim itself, but a dynamic instrument, is complicated by challenges ranging from financial to organizational and technical. Regardless of how digital transformation is defined, digital transformation literature clearly requires changes in various areas, and although the study of digitalization and digital transformation of public administrations and public sector organizations is not a new topic, there is no universal recipe that tells institutions how to become more agile, inclusive, responsive, and transparent by using new technologies. The literature also suggests that governments sometimes fail in digital transformation. Similarly to the previous literature on e-government, the consensus is that adoption is more visible than transformation—which was pointed out in OECD studies more than 20 years ago.

Also, regardless of the never ending hype about the use of new technologies in public administration and the public sector, in some countries or fields of their public administration or parts of their public sector, digitalization may be still lagging behind and struggling, as can be seen in available e-government benchmarking studies (e.g., those prepared regularly for the European Commission or for the United Nations). That is why sharing experiences related to the topic is still rather relevant.

This book aims to serve as a guide, offering actionable insights and lessons learned from real-world examples. It concentrates on experiences from various EU countries, focusing especially on Central and Eastern Europe. Experiences included in this book are not only relevant for other CEE countries not covered here but also for transition countries in other regions, where the level of digitalization and digital transformation is usually lower.

Objectives, Scope, and Structure of the Book

This book offers a deep dive exploration in the intricacies of digital transformation within the public sector, focusing on the European context. Our main aim is to identify, with the help of our joint case study template and analytical framework, change management practices that facilitate or hinder implementation of digital transformation plans. From local governments in Eastern Europe to federal institutions in Germany, it provides a nuanced view of both successful and not so successful projects of trying to usher public sector institutions into the digital age. Using meticulously researched case studies, the book deals with very different subjects that are brought together by their influence on the way public institutions deal with and adapt to technological change. The public sector cannot avoid thinking about the perils of disinformation, the opportunities opened by artificial intelligence (AI), the internal transformation brought by automated systems, or the change in education systems. The pace of change is problematic for an administrative system used to gradual change, in a world where some things transform almost overnight.

The case study that opens the book (Chap. 3, "Trends of Automated Decision-Making in Public Sector," by Tina Sever) presents how different European countries deal with the inherent tension between the slow pace of legislative updates and much faster technological change in the field of automated decision-making in the public sector.

The second case study (Chap. 4, "From Development to Deployment of a Digital Assessment Software in Public Administration: Insights from Slovenia," by Aleksander Aristovnik, Eva Murko, and Dejan Ravšelj) looks at how technology can help with what has been traditionally a complicated and contentious task inside public institutions: evaluation and assessment.

Jens Weiss, in Chap. 5, "Digitizing Bureaucracy: Insights from the Digital Transformation of Germany's Local Government Sector"," looks at the reasons for an apparent paradox: Germany is the largest European economy, and it is usually recognized as an innovative powerhouse. Why is it then lagging behind other less-developed countries when it comes to digitizing their public sector?

Success stories in digital transformation can come from unexpected corners of the European continent. Romania is by no means a country famous for its digital government, but things are sometimes different at the local level. Nicolae Urs, in his case study (Chap. 6), "Digital Transformation Challenges in Romanian Cities: It's Not About

Technology," looks at why Cluj-Napoca, a city in Transylvania, can be an example in the creation of a local innovation ecosystem through collaboration between community stakeholders.

AI is all the rage now, and governments have joined the rush to make use of these cutting-edge tools. Estonia is widely recognized as a champion in digital public service delivery and public sector innovation, so it is to be expected that it also leads the race for using AI tools in administration. By looking at the challenges of such projects, Steven Nommik in Chap. 7 ("Challenges with the Design and Use of AI-Based Tools in Public Sector in Estonia: Moving Beyond the Potential of a Great Idea on Paper") provides lessons and recommendations for designing and implementing AI-based solutions in the public sector.

As communication channels multiply and public institutions make increasing use of platforms and apps that are not under their control (e.g., social networks), they are forced to take into account the drawbacks of such a strategy. One of the most worrying is the rise of disinformation. Ondrej Mital', Silvia Ručinská, and Miroslav Fečko, in Chap. 8 ("Disinformation in Public Policy: The Case of Slovakia") look at how various forms of disinformation impact the implementation of public policies, at both national and local level.

Government institutions are not limited to City Halls or ministries. Especially in CEE countries, the most important universities are usually state financed. The way in which they were able to transform, particularly during the COVID-19 pandemic, is very important, as they play such an important role in the educational system. Adrian Hudrea and Dorin Spoaller studied the largest university in Romania (Chap. 9: "Navigating the Digital Wave: A Case Study of Babeș-Bolyai University's Digital Transformation in the COVID-19 Era") and described the sudden transformation that it underwent under such grave and sudden changes. They also offer lessons for all organizations that have to undergo a sudden transition to online interactions almost overnight.

The topics of the case studies are very diverse, and we consider that diversity a strength of the book, as it gives an estimate of the level of change happening in administrative systems not only in Central and Eastern European countries, in particular, but in Europe and the world, in general. This idea is also evident in a few hypotheses that we advanced when planning the book, hypotheses that are tested in the book chapters:

1. Countries face largely the same obstacles in digitalizing their public sectors, but their solutions vary due to local circumstances.
2. The COVID-19 pandemic forced institutions to innovate.
3. Public agencies are aware of new technological trends (for better or for worse), but face difficulties in taking advantage of them or mitigating their pernicious effects.

Who Can Benefit from Reading This Book?

The intended audience for this book consists of scholars, practitioners, and students alike. We trust that each will find something of value in the case studies presented.

For scholars, the chapters offer a source of empirical studies on digital transformation in the public sector across Central and Eastern Europe, helping them identify common themes and potential subjects for future research. Professors will also find topics for discussion at the end of each case study, which can be used in class as conversation starters for in-depth conversations regarding the way different public institutions addressed digitalization challenges.

For practitioners or public servants, the book can serve as a practical guide and source of inspiration. They can see what strategies worked well and which did not deliver the expected results. The case study format can be more easily approached by people who have less and less time and need practical examples that can inform their decisions.

Students can use the book as a cornucopia of examples on the diversity of digital transformation projects that are happening all across Europe, at local, regional, or national levels. By examining various case studies, students gain a more nuanced understanding of what works and what does not, and can expand their vocabulary of ideas about what digital transformation means for public sector organizations.

CHAPTER 2

Perspectives in Studying Digital Transformation and Our Analytical Framework

David Špaček, Steven Nõmmik, and Nicolae Urs

Digital transformation is considered as a part of the fourth industrial revolution (Industry 4.0) (Ubiparipović et al., 2020). It has gained significant recognition as a prominent area of research, coinciding with the widespread adoption of digital technologies in various sectors, industries, and

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organizational management practices (Shi et al., 2022; Appio et al., 2021; Lanzolla et al., 2020; Vial, 2019). The topic has also received extensive attention in the field of public administration and management, where it has been covered both from the preconditions relevant for enacting substantive changes and from potential scenarios for future outcomes (Mergel et al., 2019; Jonathan, 2020; Criado & Gil-Garcia, 2019; Duhamel et al., 2023; Dunleavy & Margetts, 2023). This chapter outlines our understanding of digital transformation and explains the analytical framework that was followed by authors of individual chapters included in this volume.

Perspective in Studying Digital Transformation

Digital transformation has been defined as "changes in ways of working, roles, and business offering caused by the adoption of digital technologies in an organization, or in the operation environment of the organization" (Zoppelletto et al., 2023; Parviainen et al., 2017). It has been viewed as the process through which an organization responds to environmental changes by using digital technologies, such as mobile computing, artificial intelligence, cloud computing, and the Internet of Things, to change its value-creation process and support strategic agility (Vial, 2019; Zhu et al., 2021, 2021).

The concept of digital transformation has been examined at the organizational (or the project) level (e.g., Zoppelletto et al., 2023) or at the regional and national level (indexes that evaluate countries' performance, such as DESI or the UN E-Government Survey). Various perspectives have been applied in studying and researching digital transformation, but it is usually viewed as a holistic and intricate process that goes beyond the simple adoption of technology (Fernandez-Vidal et al., 2022).

Digital Transformation and Organizational Perspective

In the case of the organizational (or 'micro-level') perspective, digital transformation encompasses profound shifts in how organizations function (Vial, 2019), innovate, and create value within a digitally-driven ecosystem (Wessel et al., 2021). This transformative journey involves multiple dimensions, such as organizational change, organizational culture transformation (Hartl, 2019), and leadership capabilities (Peng, 2021; Sainger, 2018). Digital transformation requires appropriate strategic planning and management, change management, and leadership.

Strategic planning and management help with the strategic alignment of digital initiatives with broader organizational objectives (Matt et al., 2015; Appio et al., 2021; Fernandez-Vidal et al., 2022; Vial, 2019; Cillo & Verona, 2022; Rêgo et al., 2022). By providing a top-down mandate and environment for the design and implementation of digital technologies through strategies, public sector organizations are provided the tools for integrating new technical solutions with existing infrastructure as well as business processes (Dunleavy & Margetts, 2023). Implementation of digital transformation may be hindered if a holistic digital strategy is missing (Zoppelletto et al., 2023). Over-reliance on legacy technologies and their respective paradigms at a strategic level can lead to limited use of the surrounding beneficial information environment (e.g. new technologies, improved data quality and quantity). Therefore, in some approaches the role of strategy is seen as crucial. According to some researchers, digital transformation is not about technology, but about strategy (Warner & Wager, 2018; Zhu et al., 2021).

Change management is another integral and required part of the digital transformation journey and it focuses on guiding individuals, teams, and the entire organization through the transition process. It involves managing resistance to change, facilitating effective communication, and providing necessary training and support to enable a smooth and successful transformation (Gfrerer et al., 2020; Giacomini & Muzzi, 2021; Pasmore et al., 2018). By employing change management principles, organizations can minimize disruptions, engage employees, and foster a positive attitude toward digital transformation.

Leadership, closely intertwined with management, plays a pivotal role in successfully navigating the complex landscape of digital transformation. Leaders set the direction, establish a compelling vision, and create a sense of urgency that motivates employees to embrace the transformation journey. Leadership in digital transformation goes beyond individual traits; it requires a collective approach, where leaders at all levels of the organization actively contribute to driving the transformation agenda and to cross-functional cooperation toward digital transformation; they negotiate roles, make people enthusiastic about digital transformation, and contribute to reducing the resistance to change (Zoppelletto et al., 2023). Leadership enables the dissemination of knowledge, fosters cross-functional collaboration, and empowers employees to become agents of change, as digital transformation is all about change (Peng, 2021; Tigre et al., 2023). Through their actions and behaviors, leaders shape the organizational

culture and encourage cultural shifts, reinforcing the importance of digital transformation and instilling confidence and resilience in the face of challenges (Zoppelletto et al., 2023).

In the organization-oriented literature, success factors related to strategic, tactical, and operational level are also differentiated. Among the strategic factors, Rueckel et al. (2020), for instance, discuss the role of management capabilities; tactical level factors relate to organizational infrastructure; operational level factors - to workforce capabilities. Some of them, alone or in combination, are also discussed in Ubiparipović et al. (2020), who speaks about dimensions of critical success factors and differentiate factors related to the context and contents of digital transformation; vision and strategy; organizational capacities and capabilities; organizational culture; human resources capabilities and competences; and technology.

Digital Transformation and National (Macro) Perspective

The role of strategy in digital transformation has been emphasized not only with regard to the organizational level, but also to the national level (e.g., by Zhu et al., 2021; Fountain, 2001). For outlining the specificities at the national level, the literature on digital government orchestration and governance and the role of ecosystems may be used (e.g., Mukhopadhyay & Bouwman, 2019), which point out the roles related to coordination (including guidelines), control, allocation of resources, knowledge sharing, and conflict resolution. The literature on coordination further highlights the shifts in interactions in terms of government-to-government (e.g., cross-agency data exchange) as well as the government-to-citizen dimension (e.g., empowering citizens through improved access to information) (Fountain, 2001). The broader administrative structure also indicates the strategies for steering digital transformation—through top-down centralized digital agencies to bottom-up via executive agencies. Different contexts mean that different approaches are needed to find viable pathways to change.

Alongside strategies at a national level, previous public management reform trajectories, and the underlying idea of the state role and structure, influence technology preferences as well (e.g. Kempeneer & Heylen, 2023; Dunleavy & Margetts, 2023). These shape the reactions of public institutions facing the pressure to change. They can take the form of efficiency-oriented transformations (e.g., introduction and use of metrics,

KPI's, scores), NPM-inspired reforms, empowerment and engagement of other community actors (e.g., designing and implementing online platforms), or networked-based approaches of stakeholders (Choi & Chandler, 2020; Ansell & Miura, 2020).

Our Analytical Framework

For the purposes of the analytical framework, we understand digital transformation as a complex process of combining strategies, structure, culture, values, processes, individuals, and technologies from the initial ideation to implementation. These factors interact with each other in enabling and constraining ways and shape the interpretation and deployment of new technologies. This book aims to provide new insight by focusing on examples of digital transformation processes, looked at from different perspectives, especially within the Central and Eastern European context.

A Case Study Approach

For the chapters in this book, we started on the theoretical foundations of what a case study is (Yin, 2014). Such a study can be descriptive, explanatory, or exploratory.

- The data collection methods vary (data analysis, interviews and surveys, observations, experiments, document analysis), and are described in the methodology part of each chapter.
- Some (not all) case studies follow their subject longitudinally (studying the same phenomenon on at least two occasions). Even if this is desirable, sometimes the topic cannot be studied in this manner.
- The case study framework is taking into account the goal of providing practitioners and academics with real-life examples from which lessons can be learned, without impeding on academic rigor.

The case study research strategy provides an in-depth view into the enablers and barriers to digital transformation, further developing the existing theoretical perspectives as well as contributing to a better understanding of the subject through new insights.

The chapters focus on the practical implication of their findings, and particularly on the challenges encountered in the process of digital transformation, and how (or if) they were overcome. Each case study includes