

ИНФОРМАТИКА И КОМПЮТЪРНИ НАУКИ INFORMATICS AND COMPUTER SCIENCES

THE IMPORTANCE OF PROJECT MANAGEMENT IN THE DIGITALIZATION OF THE PUBLIC SECTOR

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Abstract: *This publication highlights the importance of project management in the digitalisation of the public sector in Germany. Due to the complexity of the many challenges associated with digitalisation and digital transformation, it is important to select the appropriate project management method. Due to the different frameworks and requirements in the projects, a precise selection of the project management method is required. It must be determined which project management method is suitable for the successful implementation of the projects. Particularly in complex projects with demanding requirements for public sector digitisation, framework conditions, stakeholders and milestones can change at short notice. It is therefore extremely important to be able to adapt to these complex conditions. Especially in public sector digitisation projects, there can be frequent phases of change. As a result, traditional project management methods are being replaced by modern approaches. This study examines the importance of project management in the implementation of digitalisation strategies, using helpful methods.*

Keywords: *Digitization, Digital transformation, Project management, Processes*

INTRODUCTION

The change brought about by megatrends such as digitalization and digital transformation can be felt in various areas of life. Since the coronavirus pandemic at the latest, it has become clear that the level of development in German administration and authorities is diminishing. In addition to a large number of technologies developed in the short term, such as the Corona-Warn-App or CovPass-App, some weaknesses have emerged. This means that structures in the German administrative landscape, such as health authorities, are too rigid. Added to this is the use of outdated information and communication technology such as fax machines.

In principle, administrative procedures and processes are still largely carried out in paper form. As a result, the federal government and its subordinate authorities will have used around 740 million DIN A-4 sheets and 13 million DIN A-3 sheets in 2022 (Deutscher Bundestag 2024). Taking into account the rollout of the electronic file (e-file) in the administrative landscape, the figures do not match the target set by the Online Access Act (OZG). The Online Access Act (OZG) stipulated that around 575 administrative services were to be digitized by the end of 2022. These targets were not achieved for various reasons. In addition to technical challenges such as interoperability or structural challenges within the administration, there are other hurdles to administrative digitization. In the coming years, a large number of projects for administrative digitization and digital transformation can be expected.

Due to the complexity of administrative digitization projects in Germany, project management is a suitable method for implementing complex issues. The aim is to efficiently and successfully implement strategies and complex issues in administrative digitization through the use of project management methods.

RESEARCH METHODOLOGY

This publication is based on a literature review, which was used as a research method. Existing data and sources from specialist books, journals, studies and online articles were used. The result of the investigation is an analysis of the current situation.

RESULTS

There is no concrete definition for the term “digitization”. In the narrow sense of the word, digitization refers to the conversion of analog values and data into digital formats.

This involves converting analog values and data into a discrete system with a minimal proportion of value states. To convert analog data into digital images, it is necessary to use technical systems that can represent digital rather than analog states using cheaper components. As a rule, the process of converting analog data into digital data involves images, documents, or films.

In this context, analog products are displayed or transferred digitally (Streicher 2020, 2). This process can also be applied to workflows that are carried out in paper form in analog form. In this step, formats such as documents are displayed digitally and made available electronically (Streicher 2020, 2). In addition to the conversion from analog to digital formats, digital transformation must also be considered in the course of digitalization. Although there are parallels between digital transformation and digitization, as it involves the consideration of content and digital transformation, among other things, there are other features to consider (Streicher 2020, 2).

Digital transformation looks at the current situation. This affects existing business models, applications, technology, structures, processes, and organizational forms. When looking at the current situation, an analysis is also carried out to determine whether existing structures, processes, or forms of organization meet current requirements or whether they are obsolete and can be replaced by new technologies. The digital transformation of the public sector should lead to the interaction between citizens and the administrative areas being designed in such a way that future procedures can be carried out electronically, consistently, and without media discontinuity (Streicher 2020, 2).

This requires a high level of organizational and technical resources from all stakeholders (Streicher 2020, 3). For this reason, it is important to implement comprehensive project management when implementing digitalization strategies in the public sector:

Project management

“Project management is a long-established discipline in organizations across all industries” (Schönert 2022).

The purpose of projects is to achieve specific and concretely defined goals. In order to achieve the project objective, a timetable and a framework of financial and human resources must first be specifically defined (Streicher 2020, 229).

In this context, it is important that these framework conditions are planned early and comprehensively, as otherwise there is a high risk that the specified project objective will not be achieved (Streicher, 2020, 229). According to the Federal Government's guidelines, the term “project management” refers to a one-off project with which the administration responds to special requirements by developing new or better services for citizens, new concepts for more effective task

performance, internal changes to increase efficiency and improve quality (Federal Ministry of the Interior 2013, 7). The Federal Government's practical guide defines the topic of "project management" with specific characteristics. According to this, it is necessary for projects to be carried out as projects if they are one-off and not a permanent or recurring task (Federal Ministry of the Interior 2013, 8).

A further characteristic is the factual and temporal limitation. An assignment, start and end date must be defined. Furthermore, there must be complexity and novelty, so that only partial recourse can be made to existing process patterns (Federal Ministry of the Interior 2013 8).

The fourth characteristic is cross-hierarchical responsibilities, which require intensive cooperation for the project (Federal Ministry of the Interior 2013 8). Project management includes the entirety of management tasks, management organization, management techniques and resources as the basis for the initiation, definition, planning, control and completion of projects. The primary objectives of project management are:

- Ensuring that the project is worthy in terms of definition and implementation;
- Effective organization of cooperation in complex projects;
- Increasing the focus on results and problem-solving skills;
- Increasing personal responsibility and employee identification (Federal Ministry of the Interior 2013, 9).

Examples of such projects at the federal level in Germany include the introduction of company accounts or the introduction of the central learning platform for e-government (eGov Campus) (Krause 2023, 271). In principle, public sector projects differ significantly from those in the private sector.

In the case of public sector projects, for example, budget principles and federal and state budget regulations form the basis for economic efficiency (Krause 2023, 271).

In practice, the framework conditions are created by determining and defining the requirements and objectives, budgets and timetable, personnel requirements and risks. This phase is very extensive, as it involves weeks of planning and communication with stakeholders, there is often no scope for subsequent changes and adjustments (Streicher 2020, 229). This leads to hurdles for projects for administrative digitization and digital transformation (Streicher 2020, 229). In order to plan and successfully implement a project, a suitable project management method is required:

Classic, agile and hybrid project management methods

"The foundation of any successful digital transformation is therefore the choice of a suitable project management method" (Streicher, 2020, 229).

Most organizations and institutions in the public sector have clear guidelines for handling projects. These guidelines can vary from rough descriptions to detailed collections of documents, project management regulations and comprehensive templates (Streicher 2020, 230).

These specifications and guidelines result from the time before technological change and only include classic project management methods (Streicher 2020, 230). Classic or traditional project management is based on a monolithic and holistic approach. The basic idea is that a defined end state is described at the start of a project (Ebel 2024). Traditional project management is based on a standardized process model that provides for a sequence of project phases with a linear progression. The classic project management method is particularly suitable for project plans with high legal and regulatory requirements or a high need for transparency and control (Ebel 2024). The requirements

arising from administrative digitalization and digital transformation are very specific, as they are continuous development processes.

It is also important to develop a certain amount of creativity, as administrative digitalization entails complex requirements. As a result, the requirements can change over the course of the project.

In the course of the digitalization and transformation of the public sector in Germany, it is of great importance to decide on a suitable project management method. Examples of classic project management methods include the waterfall model, V-model and PRINCE2 (Ebel 2024). Study results show that the V-model for the implementation of IT projects has been replaced by PRINCE2 as the classic project management method with a 32% share in use (AIOS, BearingPoint, Cassini, CGI, GBTEC, pwc 2019). The studies also show that agile and hybrid project management methods are becoming increasingly prevalent in digitalization projects in the public sector.

As a result, agile methods are used 26% of the time and hybrid methods 17% of the time (AIOS, BearingPoint, Cassini, CGI, GBTEC, pwc 2019).

This trend results from the fact that agile methods such as Scrum offer far greater flexibility than traditional project management methods (AIOS, BearingPoint, Cassini, CGI, GBTEC, pwc 2019). Agile project management methods are based on the Agile Manifesto of 2001, which serves as the basis for agile values, techniques, principles and methods are based (Ebel 2024).

The purpose of agile project management is to overcome the disadvantages of traditional project management. This is the case when requirements have to be formulated in concrete and comprehensible terms from the outset (Ebel 2024). Agile methods can be used flexibly in the event of short-term changes during the course of the project. Not all tasks and work steps are planned in full, but an iterative approach is taken with the most important stakeholders with the aim of using a version of the results.

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Modern project management methods are fundamentally based on the approach that all key stakeholders are involved (Krause 2023, 231). The central component of the approach is the optimization of customer benefit. This means that the technical and organizational areas of the stakeholders in the public sector must be fully taken into account. This is necessary for the integration of new processes so that they can run accordingly (Krause 2023, 231).

Agile project management reviews existing structures, processes and role allocations and replaces them with modern principles. The difference to the traditional method is that instead of comprehensive planning, an iteration is carried out (Krause 2023, 231). The term “iteration” refers to the subdivision of the stages of a project over time with the aim of defining a result.

This has the advantage that subsequent adjustments are possible, as these were not taken into account at the start of a project. In addition, agile project management methods are particularly suitable in a volatile environment (Ebel 2024). A key advantage of the agile approach is that the integration of stakeholders results in comprehensive networking, regardless of departmental affiliations and hierarchies (Streicher 2020, 232). Other features of the agile approach include the independent completion of work assignments through flexible role allocation (Streicher, 2020, 233). In the agile approach, work orders are completed without a project manager. The prerequisite for this is that project employees have an agile minimum. The successful application of the agile approach requires a comprehensive organizational culture with appropriate thinking, action,

flexibility and openness (Ebel 2024). When using the agile method, it is therefore important to note that the introduction of new techniques and processes also changes the working relationships of employees.

The agile method should therefore increase awareness through regular feedback loops (Streicher 2020, 233). Another feature of the agile approach is transparency about barriers and risks. In this context, it quickly becomes clear which factors can jeopardize the project (Streicher 2020, 233).

The use of an agile method eliminates the need for complex plans and key figures. The project is controlled and managed via regular feedback loops and the comparison of interim results (Streicher 2020, 233). However, this also has disadvantages, as the management level can no longer monitor the project on the basis of key figures, but must obtain the relevant interim results from other sources of information.

In addition to traditional and agile project management methods, there is also a hybrid approach. Hybrid management is a combination of classic and agile project management methods. This has the effect that the advantages of both methods can be combined and disadvantages can be compensated for more easily. In practice, the combination of both methods can be realized in such a way that the overall project framework is planned and managed in the classic way, but the sub-projects are carried out iteratively (Streicher 2020, 234).

Hybrid project management is created by combining the structural and procedural organization of the classic approach with the roles of the agile method. This approach to administrative digitization makes sense when it comes to larger projects and unknown requirements and risks.

The advantage here is that sub-projects and the associated subtasks can be carried out depending on their requirements (Streicher 2020, 235).

The hybrid approach can generally be used for agile conception and specification and classic implementation (Ebel 2024).

Furthermore, the hybrid method can also be combined with classic conception and management and agile implementation. Another option is to use individual agile elements in traditional project management (Ebel 2024). PRINCE2 Agile can be cited as an example of a hybrid project management method.

The choice of a suitable project management method depends on various factors.

Provided there is transparency and predictability regarding requirements, resources and timescales, the project result can be achieved using traditional methods.

Agile methods are more suitable for project plans with frequent changes to the requirements for the project result, a high degree of innovation and a complex project object (Ebel 2024).

The hybrid method is particularly suitable for larger projects with complex framework conditions, such as the digital transformation of the public sector in Germany (Streicher 2020, 235). This is also confirmed by figures from an evaluation of 10,000 projects, which were rated 20% higher in terms of success rate than traditional projects (Crapa 2024).

The success rate is particularly noticeable the larger the project is. The reasons for this success rate are that agile methods focus on user requirements, shorten the time to market and minimize risk through continuous feedback loops (Crapa 2024).

CONCLUSION

The public sector in Germany is being strongly influenced by change and the rapid increase in technological innovations. This trend is increasingly being driven by technological innovations such as artificial intelligence, chatbots, big data and the Internet of Things.

In the course of change, public authorities in Germany have come under the spotlight due to the digital transformation. In addition to formative influencing factors due to the coronavirus pandemic or legal regulations such as the Online Access Act, public authorities in Germany are under pressure

to digitize their services. Administrative services should be more efficient, flexible and accessible to citizens regardless of time and place. Administrative services must adapt to the needs of citizens.

In many areas of public authorities in Germany, services are still outdated and no longer up to date. Instead of making services available to citizens at any time and from any location, they are only available during certain opening hours. In addition, services can only be claimed if citizens appear in person at the authority. Another reason for administrative modernization is that there are still too many paper processes.

The introduction of electronic files (e-files) was an important step towards reducing bureaucracy. Nevertheless, the processes and administrative procedures in public administration institutions in Germany are largely outdated. In order to change this situation and improve the level of digitization. To achieve this level of digitization, a consistent digitization strategy is required.

In order to develop these digitalization strategies and implement the resulting projects in a results-oriented manner, many public authorities in Germany commission external consulting firms.

The reason for this is that external consulting companies have a high level of technical expertise in the development of strategies and implementation of corresponding digitalization projects. In practice, digitalization strategies are implemented via projects.

Due to the different challenges and framework conditions in the individual projects, it is very important that the right choice of project management method is made. Due to the variety of project management methods, it is important to analyze the framework conditions of the projects.

This is particularly necessary for projects involving digital transformation in the public sector. If a project is influenced by permanent and short-term changes and complex communication with all stakeholders is necessary, agile and hybrid methods are particularly suitable.

The advantage of these two methods is that they can be adapted quickly and flexibly to difficult and changing conditions. This view is also evident in many projects in the implementation of digitalization projects in the public sector in Germany. The trend is increasingly moving towards agile and hybrid project management methods, as these are much easier and more flexible to adapt to complex projects. In the future, traditional methods will be replaced by agile and hybrid methods.

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ЗНАЧИМОСТТА НА УПРАВЛЕНИЕТО НА ПРОЕКТИ В ЦИФРОВИЗАЦИЯТА В ПУБЛИЧНИЯ СЕКТОР

Резюме: В тази публикация се подчертава значението на управлението на проекти за цифровизацията на публичния сектор в Германия. Поради сложността на многобройните предизвикателства, свързани с цифровизацията и цифровата трансформация, е важно да се избере подходящ метод за управление на проекти. Поради различните рамки и изисквания в проектите е необходим прецизен избор на метод за управление на проекти. Трябва да се определи кой метод за управление на проекти е подходящ за успешното изпълнение на проектите. Особено при сложните проекти с високи изисквания за цифровизация на публичния сектор рамковите условия, заинтересованите страни и етапите могат да се променят в кратки срокове. Ето защо е изключително важна адаптацията към тези сложни условия. Особено в проектите за цифровизация на публичния сектор може да има чести фази на промяна. В резултат на това традиционните методи за управление на проекти се заменят със съвременни подходи. В настоящото изследване се разглежда значението на управлението на проекти при изпълнението на стратегии за цифровизация, като се използват полезни методи.

Ключови думи: цифровизация, цифрова трансформация, управление на проекти, процеси

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