

Strategic Transformation and Agile thinking in Healthcare Projects

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Abstract

In an era marked by rapid transformation and shifting priorities, the need for strategic adaptation has never been more critical. Recent findings emphasize the challenges faced by the German healthcare sector in maintaining public approval. With the healthcare landscape evolving, the industry is increasingly recognizing the importance of user-centered design. This article delves into the pivotal role that prototyping and testing, as integral components of user-centered design, can play in revolutionizing the healthcare domain. It explores how these methods can address the unique considerations of healthcare and highlights their potential benefits and challenges.

Moreover, as digital services reshape the German healthcare industry daily, the landscape is characterized by shorter planning cycles, global competition, and stricter regulatory requirements. In this dynamic environment, traditional project management approaches often struggle to keep pace. This article underscores the transformative power of Agile Project Management, a methodology that has redefined how projects and companies operate. Agile principles, known for their adaptability and value-driven focus, are examined in the context of 21st-century demands, shedding light on how they enhance project outcomes and drive organizational success.

Additionally, the article explores the Agile mindset and its alignment with methodologies like Design Thinking, Scrum, and Objectives and Key Results (OKR). The Agile mindset champions customer collaboration, welcomes change as an opportunity, and emphasizes delivering value promptly. It operates on principles such as customer-centricity, iterative development, continuous feedback, flexibility, adaptability, transparency, and collaboration.

In conclusion, prototyping emerges as a central theme, described as the art of transforming ideas into testable realities. It's defined as the process of creating preliminary versions of products or systems to visualize, evaluate, and refine their design and functionality. The article emphasizes the significance of choosing the right fidelity level for prototypes based on project goals and stages, promoting early exploration and iterative refinement throughout the design process.

Keywords: agile; prototyping; healthcare

Introduction

Transformation is moving further into the focus of strategists and decision-makers in all sectors. According to the PWC Study 2023 and the Healthcare Barometer 2023, the German healthcare sector has lost a great deal of approval in the past two years. The healthcare sector failed to take advantage of the opportunities presented by the crisis during the pandemic. According to the study, satisfaction with health insurance is high at 87%. However, only 51 % rate hospital care as good or very good - 12% less than in the previous year [1].

In the realm of healthcare, clinics, hospitals, and medicine, the significance of user-centred design cannot be overstated. Aligning products and services with the needs of patients and healthcare professionals is paramount to delivering exceptional healthcare experiences. This article explores how prototyping and testing, as essential components of user-centred design, can revolutionize the healthcare industry. By focusing on the unique considerations of healthcare, we uncover the benefits and challenges of prototyping and testing in this critical domain.

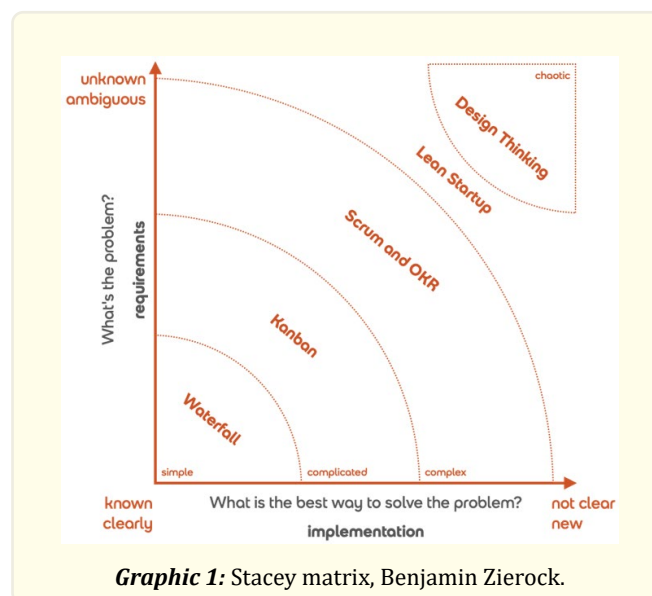
Day by day digital services are transforming the healthcare industry in Germany. This means shorter planning cycles, global competition and stricter regulatory requirements.

Agile project management

In today's fast-paced and ever-changing business landscape, traditional project management approaches often struggle to keep up with the demands of modern projects. This is where Agile Project Management steps in as a transformative methodology that has reshaped how projects and companies operate. Agile principles and practices are not just a buzzword; they are a proven way to enhance project outcomes and drive organizational success. In this article, we will explore how Agile Project Management is transforming projects and companies, providing them with the flexibility and adaptability needed to thrive in the 21st century.

Eric Ries defines a startup as an organization dedicated to creating something new under conditions of extreme uncertainty. This is just as true for one person in a garage or a group of seasoned professionals in a Fortune 500 boardroom. What they have in common is a mission to penetrate that fog of uncertainty to discover a successful path to a sustainable business [2].

The Stacey Matrix was developed by the British professor of management at the Hertfordshire Business School in the UK, Ralph Douglas Stacey. The aim of the matrix is to analyze the individual factors that make up the complexity of a project.



Projects under conditions of extreme uncertainty should therefore be implemented using agile approaches and methods, such as Design Thinking, Scrum or Objectives and Key results (OKR) [3].

- *Design Thinking*: Design Thinking is a human-centered problem-solving approach that prioritizes empathy, creativity, and collaboration. It involves understanding user needs, brainstorming creative solutions, prototyping, and iterating to develop innovative and user-friendly products, services, or solutions.
- *Scrum*: Scrum is an Agile framework for project management and product development. It emphasizes collaboration, adaptability, and iterative progress. Scrum teams work in time-bound cycles called sprints to deliver increments of a product, regularly inspecting and adapting their work to meet evolving requirements.
- *Objectives and Key Results (OKR)*: OKR is a goal-setting framework that helps organizations set and track objectives and their key results. Objectives are ambitious, qualitative goals, while key results are specific, quantitative measures of progress. OKRs provide clarity, alignment, and a way to measure success in achieving desired outcomes.

An Agile mindset is highly beneficial for Design Thinking, Scrum, and Objectives and Key Results (OKR), but it's not a strict requirement. Design Thinking often involves multiple cycles of empathizing, defining, ideating, prototyping, and testing. This special mindset helps teams adapt quickly to user feedback and evolving project requirements, Scrum It involves valuing individuals and interactions, responding to change, and delivering working solutions regularly. Scrum teams need to be adaptable and open to continuous improvement. While OKRs are not inherently Agile, they are compatible with an Agile mindset. OKRs encourage teams to set ambitious goals, measure progress, and adjust their objectives based on changing circumstances. An Agile mindset promotes flexibility and a focus on outcomes, which complements the OKR framework.

The Agile Mindset

At the heart of Agile Project Management is an agile mindset. It's a way of thinking that values customer collaboration, responding to change, and delivering value quickly. This mindset embraces uncertainty and welcomes change as an opportunity rather than a roadblock. Agile teams are cross-functional, self-organizing, and highly collaborative, all working toward a common goal: delivering value to the customer.

Key Agile Principles: Agile Project Management is built upon a set of core principles, including:

1. *Customer-Centricity*: Agile prioritizes the customer's needs and feedback, ensuring that the end product aligns with their expectations.
2. *Iterative Development*: Projects are broken down into small, manageable increments, allowing for frequent reassessment and adaptation.
3. *Continuous Feedback*: Agile teams regularly seek feedback from customers and stakeholders to make informed adjustments throughout the project.
4. *Flexibility and Adaptability*: Agile embraces change, enabling teams to pivot quickly in response to evolving requirements or market conditions.
5. *Transparency and Collaboration*: Open communication and collaboration are encouraged among team members, stakeholders, and customers.

Prototyping as a process

Prototyping is the art of turning ideas into testable realities.

Prototyping is the process of creating a preliminary and simplified version of a product, system, or interface to visualize and test its design, functionality, and usability. Prototypes serve as tangible or digital models that help designers, developers, and stakeholders gain insights, gather feedback, and make informed decisions during the design and development phases. Prototyping allows for the exploration of ideas, validation of concepts, and refinement of designs before investing in full-scale production, ultimately leading to

improved final products or solutions [4].

The choice of fidelity level depends on the project's stage, goals, and available resources. Starting with low-fidelity prototypes for ideation and gradually progressing to mid and high-fidelity as the design matures is a common approach. This allows for early exploration, feedback gathering, and refinement throughout the design process.

Type of Prototype	Purpose	Materials	Characteristics	Use Cases	Prototype scenario
Low-Fidelity Prototypes	Early-stage concept exploration and idea validation	Simple, low-cost materials (e.g., paper, cardboard, sticky notes) or digital tools like wireframing software	- Minimal detail - Quick to create and modify - Rough sketches - Limited interactivity	- Early brainstorming - Concept validation - Usability testing (identifying major usability issues)	moderated prototype testing
Mid-Fidelity Prototypes	Bridging the gap between low and high fidelity	Digital design tools (e.g., prototyping software, graphic design software)	- Enhanced detail - Increased functionality - Moderate level of detail	- Iterative design - Usability testing (evaluating user interactions and interface flow) - Stakeholder presentations (communicating design concepts)	moderated and unmoderated prototype testing
High-Fidelity Prototypes	Comprehensive testing and fine-tuning of user experience	Design software, coding, specialized prototyping tools	- Realistic design - Advanced interactivity - Functionality	- User testing (detailed usability testing and user feedback) - User acceptance testing (validating user expectations) - Investor or client presentations (showcasing nearly final product)	unmoderated prototype testing

Table 1: Types of prototyping.

In the ever-evolving realm of healthcare, where innovation and precision can mean the difference between life and wellness, the significance of an agile mindset cannot be overstated. Embracing an agile approach is not just a matter of methodology but a transformative force that reshapes how healthcare solutions are developed and optimized. In this context, we explore this forward driven mindset, rooted in principles like continuous improvement, flexibility, and user-centricity, can enhance the power of prototyping and testing in healthcare. It's a journey that leads to not only groundbreaking innovations but also improved patient care and outcomes.

The Power of prototyping

The Power of prototyping and testing in Healthcare underscores the importance of visualizing, refining, and validating healthcare solutions through iterative processes. However, to fully harness this power, we must infuse an open minded mindset into the process. Agile principles emphasize collaboration, responsiveness to change, and delivering value quickly—values that align perfectly with the goals of healthcare innovation.

In the following sections, we will demonstrate how an agile mindset amplifies the impact of prototyping and testing in healthcare, drives continuous improvement, ensures user-centricity, and ultimately transforms the patient and provider experience.

The Power of Prototyping in Healthcare

Prototyping in healthcare allows designers and stakeholders to visualize and refine medical devices, digital health solutions, and healthcare environments. By creating physical or digital prototypes, designers can solicit feedback from healthcare professionals and patients, enabling them to better understand their needs and preferences. Prototyping facilitates the exploration of ideas, the validation of concepts, and the optimization of workflows. Through an iterative prototyping process, healthcare solutions can be tailored to address the specific challenges and requirements of the industry. The new technological possibilities in healthcare not only change patients' lives, but also the work of doctors, clinics, and companies [5].

Testing for Patient and Provider Validation

Testing plays a vital role in validating healthcare designs by involving patients, clinicians, and other healthcare providers. By conducting usability tests and gathering user feedback, designers can identify areas for improvement and ensure that their solutions meet the needs of all stakeholders. Testing provides insights into user workflows, identifies usability issues, and enables the refinement of healthcare products, services, and environments. User testing in healthcare is crucial to optimizing patient outcomes, enhancing provider efficiency, and improving overall healthcare experiences.

Considerations for Healthcare Prototyping and Testing

In healthcare, prototyping and testing must address unique considerations. Patient safety and privacy are of paramount importance, requiring designers to ensure that prototypes comply with relevant regulatory standards and security protocols. Prototypes should accurately reflect the clinical context, considering the specific needs and constraints of healthcare environments. Additionally, stakeholders, such as healthcare providers and administrators, should be actively involved in the prototyping and testing process to ensure a comprehensive understanding of their requirements.

User Stories in Healthcare

Prototyping and testing have proven instrumental in healthcare innovation. For example, the development of wearable medical devices, such as remote patient monitoring systems and smart insulin pumps, has been driven by user-centric prototyping and testing. By involving patients and healthcare professionals in the design process, these solutions have been tailored to meet the specific needs of individuals managing chronic conditions. Prototyping and testing have also played a significant role in optimizing healthcare workflows, improving electronic health record (EHR) systems, and enhancing the overall patient experience.

Embracing User-Centred Design in Healthcare

User-centred design, coupled with prototyping and testing, offers immense opportunities to enhance healthcare experiences. By incorporating the insights of patients, clinicians, and administrators, healthcare solutions can be refined to meet the complex demands of the industry. Prototyping and testing enable the creation of intuitive medical devices, efficient healthcare processes, and patient-centric environments. By prioritizing user needs and preferences, healthcare organizations can improve patient outcomes, increase patient satisfaction, and drive positive healthcare transformations. The combination between the users and the opportunities offered by the recent innovative technologies allows stakeholders and academia to target and design new solutions [6].

Conclusion

In a world characterized by relentless change, the ability to adapt and innovate is paramount, especially in sectors as critical as healthcare. The insights gleaned from studies like the PWC Study 2023 and the Healthcare Barometer 2023 underscore the urgency for transformation in the German healthcare sector. It's a call to action, a reminder that progress must be driven by patient-centricity and a commitment to exceptional healthcare experiences.

The journey into this new era of healthcare necessitates the adoption of user-centered design principles. Prototyping and testing, as the unsung heroes of innovation, are poised to lead this transformation. These methods offer us a canvas upon which we can sketch, refine, and bring to life healthcare solutions that truly meet the needs of patients and professionals alike. In this endeavor, they offer not just a lifeline but a roadmap to the future of healthcare excellence.

As digital forces continue to reshape healthcare, Agile Project Management emerges as a guiding light for projects and companies. Its principles of adaptability, collaboration, and value delivery align seamlessly with the dynamic demands of the 21st century. It's a reminder that, in the face of uncertainty, we must embrace change as an opportunity, not a hindrance.

The Agile mindset, ever flexible and forward-looking, provides a lens through which we can navigate complexity with confidence. It transcends methodologies like Design Thinking, Scrum, and OKR, fostering a culture of continuous improvement and customer-centricity. In doing so, it empowers us to penetrate the fog of uncertainty and chart a course to sustainable success.

In the heart of this transformative journey lies the essence of prototyping, the art of turning ideas into testable realities. Prototyping is not just a process; it's a mindset that encourages exploration, fosters collaboration, and drives innovation. By selecting the right fidelity level for prototypes, we ensure that our ideas are honed to perfection, step by step.

To conclude, the key to achieving a more promising future for healthcare in Germany and beyond lies in embracing innovation and striving for excellence. Utilizing methods such as Prototyping, Agile Project Management, and adopting an Agile mindset will serve as our guiding principles through the intricate landscape of transforming healthcare systems. As we combine these approaches together, they form a harmonious melody of groundbreaking ideas that showcase human creativity while offering patients improved experiences with personalized care on their horizon.

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