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REASONS, CHALLENGES AND STRATEGIES FOR IMPLEMENTING AGILE IN TODAY'S UNPREDICTABLE ENVIRONMENT

Abstract. *This article explores the efficacy of the Agile method in managing business projects, which enables companies to attain a competitive edge and sustain dynamic capabilities amidst rapidly evolving global circumstances.*

The article focuses on the "Agile" transformation, which is identified as a key priority for companies facing unpredictable changes in both the global context and in Georgia. This transformation is being implemented gradually, in line with contemporary challenges, and involves reshaping the hierarchical structure of organizations and redistributing functions based on employees' abilities, with the goal of creating professional teams. Consequently, the study aims to develop a strategy for efficient project management in Georgian companies and explore effective ways to implement it.

The research findings uncovered the primary obstacles to companies transitioning to the method of rapid management of innovative business projects: challenges pertaining to organizational culture, resistance to change, lack of management support, unmotivated teams, and low skills among team members.

The challenges associated with implementing the Agile methodology in the project management process were identified as follows: gaining competitiveness in the international and regional market, limited practical experience in IT Agile, and introducing innovations that do not align with user needs when using the waterfall method.

The positive aspects of the rapid management of innovative business projects were assessed as follows: flexibility, customer collaboration, enhancement of goods and services through the implementation of short cycle processes, and incremental innovations aimed at meeting customer requirements.

Through research, the alignment of the values of companies utilizing modern project management methods in Georgia with the principles of Agile project management was examined. These principles include teamwork, increased autonomy, high trust, customer feedback, enhanced adaptability to change, improved communication within and between teams, and the implementation of a results-oriented control process.

The effectiveness of the Agile method was found to be contingent upon the development of a long-term motivational strategy. This strategy is based on two key factors: firstly, the creation and maintenance of a competent team, and secondly, ongoing collaboration with customers.

Keywords: *business project, Agile, waterfall, Scrum, Scrumban, Kanban, Lean Startup, XP methodology.*

JEL classification: *M12*

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AGILE დანერგვის მიზეზები, გამოწვევები და სტრატეგიები თანამედროვე რთულად პროგნოზირებად პირობებში

აბსტრაქტი. *სტატიაში შესწავლილია ბიზნეს პროექტების მართვის Agile მეთოდის ეფექტიანობა, რაც გლობალურ სწრაფად ცვალებად პირობებში კომპანიებს ეხმარება კონკურენციული უპირატესობის მოპოვებაში და დინამიური შესაძლებლობების შენარჩუნებაში.*

სტატიაში აქტუალურ საკითხად განიხილება, როგორც მსოფლიოში ასევე საქართველოში რთულად პროგნოზირებადი ცვლილებების პირობებში კომპანიებში მთავარ პრიორიტეტად დასახელებული ,,Agile" ტრანსფორმაცია, რომელიც ხორციელდება თანამედროვე გამოწვევების შესაბამისად ეტაპობრივად და ეფუძნება ორგანიზაციის იერარქიული სტრუქტურის ცვლილებას, თანამშრომლებში შესაძლებლობების შესაბამისად ფუნქციების გადანაწილებას პროფესიონალი გუნდების შექმნის მიზნით. შესაბამისად კვლევის მიზანია ქართულ კომპანიებში ბიზნეს პროექტების სწრაფი მართვის სტრატეგიის შემუშავება და მისი ეფექტიანი განხორციელების გზების ძიება.

კვლევის შედეგებით ჩამოყალიბდა ინოვაციური ბიზნეს პროექტის სწრაფი მართვის მეთოდზე კომპანიების გადასვლის ძირითადი შემაფერხებელი მიზეზები: ორგანიზაციული კულტურის გამოწვევები, ცვლილებებისადმი წინააღმდეგობა, მენეჯმენტის მხარდაჭერის ნაკლებობა, არამოტივირებული გუნდი და გუნდის წევრთა დაბალი უნარები.

პროექტის მართვის პროცესში Agile მეთოდოლოგიის დანერგვის გამოწვევებად დასახელდა: საერთაშორისო და რეგიონალურ ბაზარზე კონკურენტუნარიანობის მოპოვება; IT Agile-ის გამოყენების მრავალწლიანი პრაქტიკული გამოცდილება; waterfal მეთოდით მომხმარებლების მოთხოვნებთან შეუსაბამო ინოვაციების დანერგვა.

ინოვაციური ბიზნეს პროექტების სწრაფი მართვის მეთოდის დადებით მხარეებად შეფასდა: მოქნილობა, მომხმარებლებთან თანამშრომლობა, მოკლე ციკლური პროცესების და ინკლიმენტალური ინოვაციების განხორციელებით საქონლის და მომსახურების გაუმჯობესება მომხმარებელთა მოთხოვნების დაკმაყოფილების მიზნით.

კვლევებით დადგინდა საქართველოში თანამედროვე პროექტის მართვის მეთოდებით მოქმედი კომპანიების ღირებულებების შესაბამისობა Agile პროექტის მართვის პრინციპებთან, რომლებიც ეფუძნება: გუნდურობას, მეტ თავისუფლებას, მაღალ ნდობას; მომხმარებლებთან უკუკავშირს, ცვლილებებისადმი მეტ მოქნილობას, გუნდში და გუნდებს შორის კომუნიკაციის გაუმჯობესებას, შედეგებზე ორიენტირებული კონტროლის პროცესის ამოქმედებას და ა.შ. Agile მეთოდის ეფექტიანობად განისაზღვრა გრძელვადიანი მოტივაციური სტრატეგიის შემუშავება, რომელიც დაეფუძნება ერთი მხრივ კომპეტენტური გუნდის შექმნასა და შენარჩუნებას და მეორეს მხრივ მომხმარებლებთან მუდმივ თანამშრომლობას.

საკვანძო სიტყვები: *ბიზნეს პროექტი, Agile, waterfal, Scrum, Scrumban, Kanban, Lean Startup, XP მეთოდოლოგია.*

JEL კლასიფიკაცია: M 12

Introduction and review of literature

The effectiveness of fast management methods for business projects does not have a universally agreed-upon approach among researchers. Bergmann and Karwowski (2019) argue for the implementation of Agile in organizations to enable teams to swiftly adapt to changes [3]. Schoper et al. (2018) suggest that the success of projects hinges on the effectiveness of the project team [18]. Gates (2020) examines how the Covid pandemic has accelerated changes at various levels, impacting organizations, teams, and customers, necessitating prompt actions [6].

According to Lawrence and Callan (2011) [14], the presence of experienced employees is crucial when implementing the Agile method of project management, as they can effectively adapt to changes. Knowles (2020) asserts that agile project management involves a continuous process of research, testing, learning, refining, and retesting [13].

Barlow et al. (2011) conducted an analysis that highlighted how agile project management prioritizes customer requirements and is implemented in short cycles to easily adapt to changes [5].

Rothman (2007) emphasizes the importance of fast project life cycles and project flexibility. Forsberg et al. (2005) argue for flexible methods, processes, and rapid development practices. Brandon (2006) discusses the use of agile methods, processes, and agile programming [1].

Methodology

To conduct the research process effectively, the article utilizes the observational method of empirical research. This method allows for the determination of the possibilities of effective management of innovative business projects in companies by implementing classical and hybrid methods of modern management. These methods aim to achieve an innovative product through collaboration with customers. The article analyzes the advantages and disadvantages of Agile and assesses its effectiveness in managing innovative business projects.

In the paper, the methodical principles of analysis and synthesis are employed to study the specific characteristics of business project management methods. The analysis focuses on identifying and examining the problems that often lead to the failure of companies in project management.

The statistical method was employed to analyze the trends of growth and decline in the specific share of companies that produce innovative goods and services. This analysis considers two factors: the utilization of new or improved methods in the business process and the collaboration with customers. By applying statistical analysis, the study examines the impact of these factors on the growth or decline of companies in the production of innovative goods and services.

The study determines the ability of companies to predict anticipated changes in the business sector. Additionally, it identifies the necessity for developing an innovative strategy to enhance production efficiency. By assessing the company's capacity to anticipate changes and implementing innovative strategies, the study aims to improve overall production efficiency.

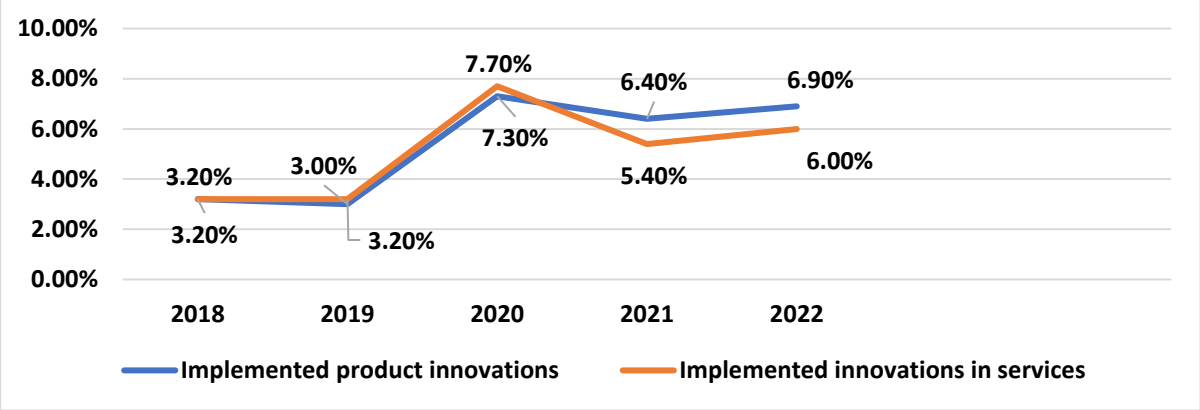
The study evaluates the results of the active innovative policy implemented by the Georgian government, taking into account the methodological principles of induction and deduction.

Results

The "modern project management era" emerged in the latter half of the 20th century and has experienced significant growth in the 21st century. This development can be attributed to companies' efforts to swiftly adapt to global challenges and secure leading positions in the market through the implementation of business projects. Moreover, the execution of innovative business projects is recognized as a crucial driver for national development and economic growth. Georgia stands out among the 130 states assessed by the global innovation index since 2007 due to its active innovation policy

implemented by the government. In 2021 and 2022, 6.4% and 6.9% of companies in Georgia implemented innovations in goods, and 5.4% and 6.0% in services, respectively. These figures indicate a growth trend compared to 2020 when the percentages were 7.3% for goods and 7.7% for services [15]. In 2020, the introduction of innovations resulted in an average annual growth rate of 10% in the products produced within the country. Furthermore, the number of employees increased by 15% and productivity by 7% [7]. Experts project that the years 2021 and 2022 will be characterized as both the COVID pandemic and post-COVID period, as well as a period of productivity growth slowdown-stagnation. To overcome these challenges, a transition to a new digital and deep scientific era is deemed necessary (Chart 1) [12].

Chart 1. The share of companies in the implementation of innovative products (goods/services), (2018-2022)



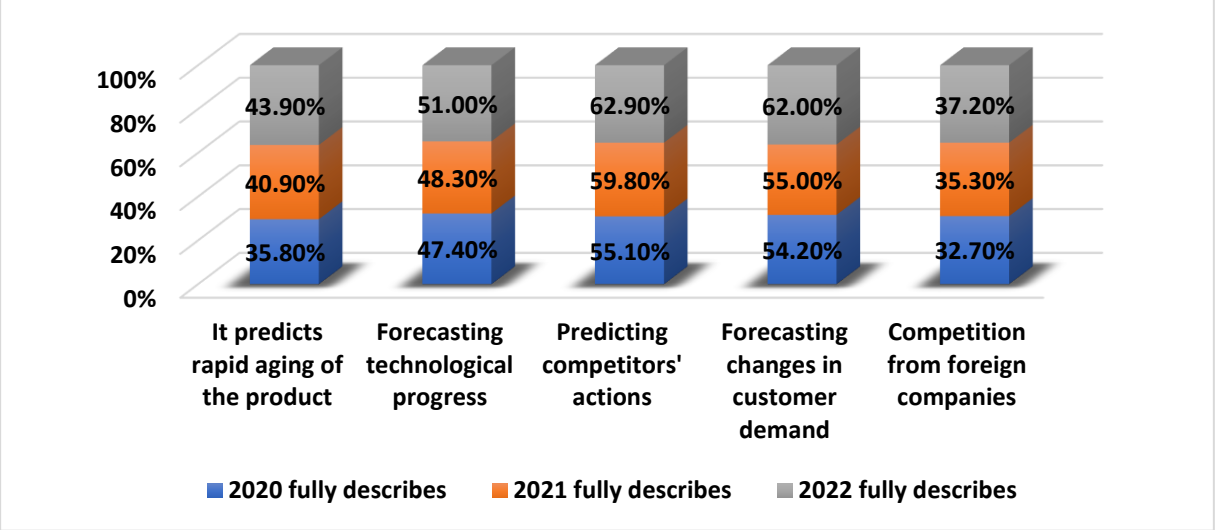
Source: *National Statistics Office of Georgia (2019-2022).*

In the modern digital era, the business sector faces new challenges and anticipated changes. According to data from 2022, 43.9% of companies predict rapid obsolescence of goods/services, while 56.1% do not fully describe this phenomenon. Additionally, 51% of companies report difficulties in predicting future technological progress, with 49.0% not fully describing this challenge. Moreover, 62.9% of companies find it challenging to predict competitors' actions, whereas 37.1% do not fully describe this difficulty. Similarly, 62% of companies describe the difficulty of predicting changes in customer demand, while 38.0% do not fully describe this challenge. Furthermore, 37.2% of companies perceive competition from foreign companies as a strong threat, while 62.8% do not fully describe this threat (Chart 2) [15]. These statistics highlight the uncertainties and complexities that businesses encounter in the face of technological advancements and changing market dynamics.

In 2022, 75.0% of companies implemented product innovation, while 83.4% implemented service innovation as part of their active innovation strategy. This approach aimed to prepare for anticipated but difficult-to-predict changes and maintain competitiveness in the market. In 2020, 26.2% of companies without children developed product innovation, and 38.0% developed service innovation. However, in 2022, alongside other companies, 39.2% of companies without children developed product innovation, and 41.6% developed service innovation. These figures represent an increase of 13% and 3.6%, respectively, compared to 2020. Moreover, in 2022, 37.4% of companies modified innovations developed by other companies in the realm of product innovation, while 43.3% did so in service innovation. This indicates an increase of 10.9% and 8.5%, respectively, compared to 2020. Additionally, in 2022, 49.8% of companies implemented innovation of goods developed by other companies, while

39.6% implemented innovation of services developed by other companies.

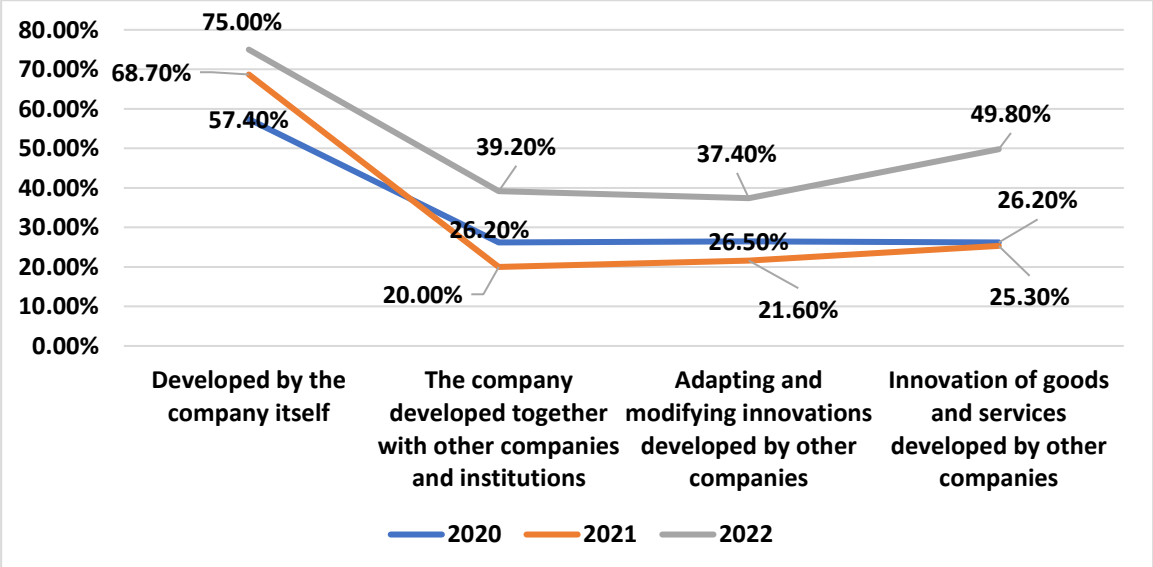
Chart 2. Distribution of companies by categories of assessment of main challenges (2020-2022)



Source: *National Statistics Office of Georgia (2020-2022).*

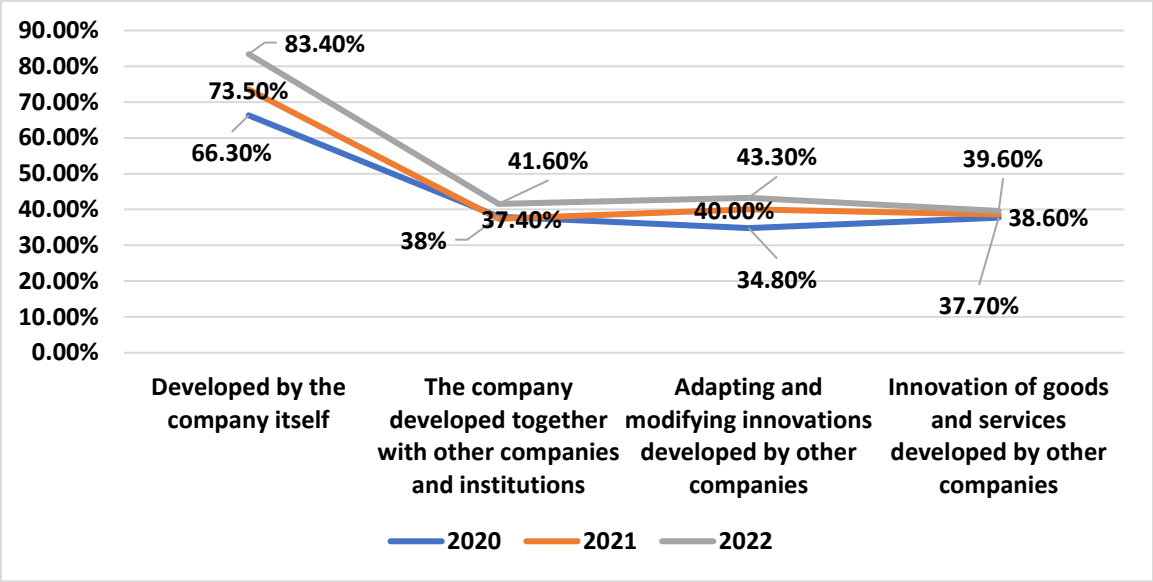
In 2020, these figures were 26.2% and 37.7%, respectively (Chart 3, 4) [15]. These statistics demonstrate the increasing emphasis on innovation and the adoption of innovations developed by other companies as strategies to stay competitive in the market.

Chart 3. Share of companies that introduced product innovations (2020-2022)



Source: *National Statistics Office of Georgia (2020-2022).*

Chart 4. Share of companies that introduced innovations in services (2020-2022)



Source: *National Statistics Office of Georgia (2020-2022).*

To enhance the efficiency of producing innovative goods and services in Georgia, companies have adopted certain strategies. Firstly, since 2016, companies with IT experience have made the implementation of the "Agile" methodology of technological project management a necessary condition. The Agile Manifesto, published by software developers in 2001, serves as a guiding framework for this approach. Additionally, as part of their organizational strategies, companies have recognized Agile transformation as a top priority. This recognition aligns with the perspective of global executive directors, as highlighted by a 2017 Deloitte study, where 79% of CEOs worldwide identified Agile transformation as a key focus for their organizations [2]. By prioritizing Agile transformation, companies aim to adapt to changing market dynamics, increase responsiveness, and foster innovation in their operations. These initiatives reflect the recognition of Agile methodologies as effective approaches to project management and organizational transformation, enabling companies to enhance their ability to produce innovative goods and services in Georgia.

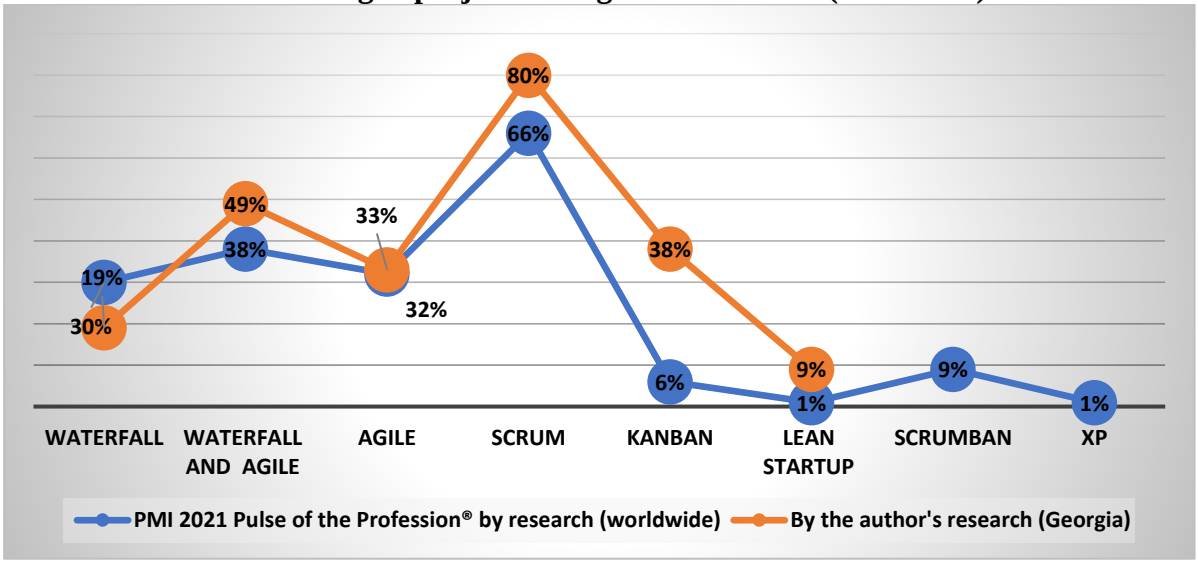
To improve business process efficiency, companies focusing on digital technologies have placed significant importance on methodologies such as Scrum, Kanban, Lean Startup, and a hybrid approach that combines Agile and waterfall elements. These methodologies have transformed the hierarchical organizational system and activated teamwork principles.

Our research focused on analyzing the outcomes of utilizing various project management methods, including waterfall, Agile, Scrum, Kanban, and Lean Startup, within organizational systems. The findings revealed that 19% of the surveyed companies operate based on the waterfall management method, while 49% utilize a hybrid approach that combines elements from both waterfall and Agile methods. Additionally, 33% of companies adopt the Agile methodology. On a global scale, Scrum emerges as the leading Agile method, being utilized by 80% of the surveyed companies. Kanban is employed by 38% of the companies, while Lean Startup is implemented by 9%.

The adoption and utilization of modern project management methods within company organizational systems have shown an increasing trend during the Covid-19 pandemic. This finding is supported by the research conducted by PMI 2021 Pulse of the Profession® globally, specifically focusing on the impact of the pandemic. According to the research, 30% of surveyed companies operated

using the waterfall method, 32% utilized Agile, and 38% implemented a hybrid approach combining waterfall and Agile management methods. Among the surveyed companies, 66% reported the use of Scrum, 9% utilized Scrumban, 6% implemented Kanban, while Lean Startup and XP methods were used by only 1% each (Chart 5) [17].

Chart 5. Agile project management methods (2019-2022)

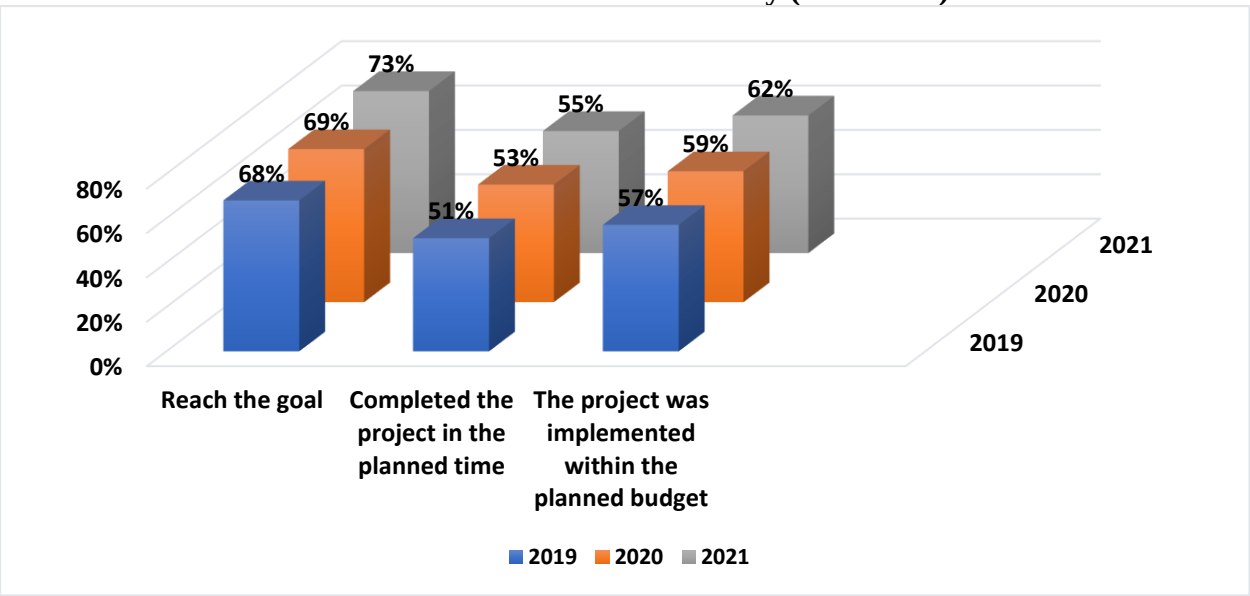


Source: *Based on research conducted by the author (2022) and PMI 2021 Pulse of the Profession® (2019-2021).*

The companies that participated in the PMI 2021 Pulse of the Profession® study demonstrated the ability to quickly adapt to challenges by implementing the aforementioned project management methods. According to the study, in 2021, 73% of the surveyed companies were able to achieve their project goals, 55% successfully completed projects within the planned timeframe, and 62% implemented projects within the planned budget. Comparatively, in 2019, these figures were 68%, 51%, and 57% respectively, while in 2020, they stood at 69%, 53%, and 59%. Notably, the percentage of failed projects decreased in 2021 to 12%, compared to 15% in 2019 and 13% in 2020 (Chart 6) [17].

Georgian companies operating in the banking industry, such as S.S. "TBS Bank" (1992) and S.S. "Bank of Georgia" (1994), along with Visa (1958), a global leader in digital payment technologies operating in Georgia, and the largest Georgian e-commerce platform Mymarket.ge (2004), utilize various IT methods such as "Agile," Scrum, Scrumban, Kanban, Lean Startup, and XP to foster innovation in their business projects. These companies have gained substantial practical experience in implementing Agile methodologies.Georgian startups created thanks to the startup ecosystem: financial-technological "Payze" (2021), "WiFisher" wireless Internet provider company (2015), "Influence Georgia" - automated influence marketing platform (2017), "RedBerry" - digital marketing service provider company (2017), "Stack" The first Georgian smart-browser (2020), "Plug and Pay" - online digital payment terminal for trade (2016) [8]. The Georgian company PulsarAI (2016), the developer of artificial intelligence developed in the world for the automotive industry, and other companies focused on digital technologies, as well as businesses that have moved to the online space accelerated by digital transformation during the Covid-19 period.

Chart 6. Proect Exrcution/Delivery (2019-2021)



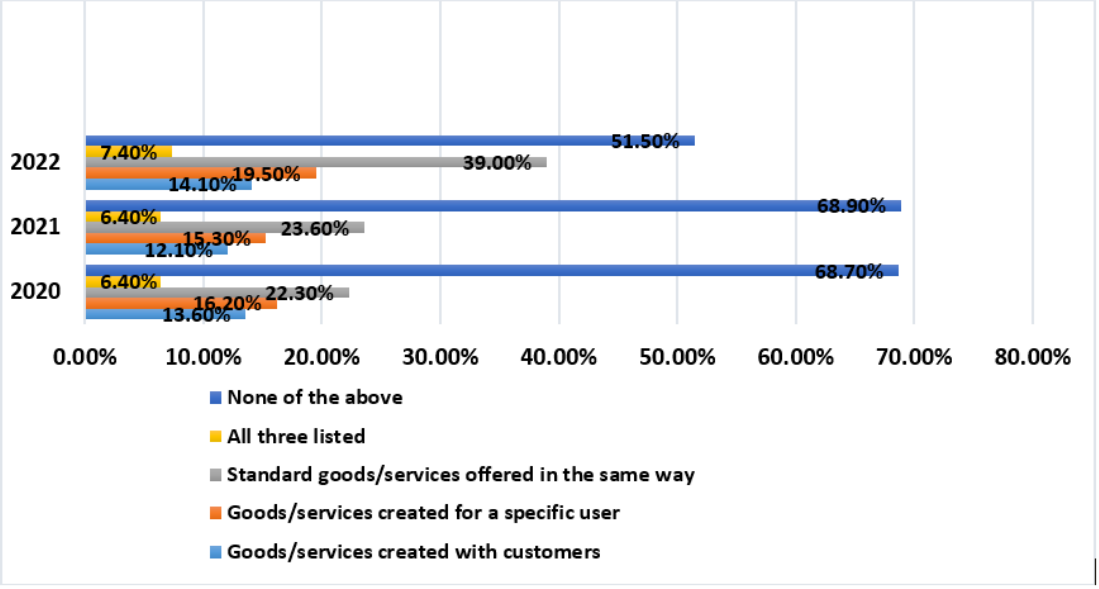
Source: *Based on research conducted by the author (2022) and PMI 2021 Pulse of the Profession® (2019-2021).*

Companies implementing modern project management methods, such as the Kanban approach, often establish an operational team called the Scrum Master. The Scrum Master team provides support to various Scrum teams, including digital teams, product and service teams, and internal systems teams responsible for operational tasks, leveraging their own expertise to enhance team performance.

In companies that follow the Scrum methodology, Scrum teams are formed based on the specific competencies required for their respective activities. The composition of each team depends on the nature of the product or service they are developing and the challenges faced by team members. These teams are structured to achieve their goals, consisting of the Product Owner, Developer, Scrum Master, and Agile Coach roles. Each role has distinct duties and responsibilities aimed at improving or creating innovative products and services through effective customer communication. According to data from 2022, 14.1% of companies actively involved customers in the idea, design, and development of their products/services, while 19.5% of companies developed goods/services tailored to meet specific customer needs. Additionally, 39.0% of companies offered standardized goods/services to a diverse range of customers. In comparison, the figures for 2020 were 13.6%, 16.2%, and 22.3%, respectively (Chart 7) [15].

In the business sector, a significant portion of companies (77.5%) surveyed have not prioritized customer focus in their implemented business ideas, as depicted in the diagram. This lack of attention to customer needs and preferences, among other vital activities, can have a detrimental impact on their competitiveness in the market. Analyzing the data presented in Table 1, it is evident that compared to 2020, there has been an increase in the importance placed by companies on certain aspects. The significance of focusing on improving existing goods/services has risen by 5.4% (reaching 73.2%), while the emphasis on introducing new goods/services has increased by 4.8% (reaching 62.2%). Additionally, the importance of companies focusing on low prices and high quality has increased by 5.5% and 5.8% respectively, reaching 71% and 76.9%. However, it is concerning that 26.9%, 37.8%, 28.9%, and 23.1% of companies still do not consider customer focus as important, respectively. These figures were higher in 2020, with 32.2%, 42.5%, 34.4%, and 28.9% of companies not prioritizing customer focus, respectively [15].

Chart 7. The share of companies that offer their customers the corresponding goods and services created by them (2020-2022)



Source: *National Statistics Office of Georgia (2020-2022).*

It is crucial to note that companies neglecting customer cooperation in the production of goods and services may face reduced competitiveness in the market due to a decline in meeting customer requirements.

Table 1. The importance of strategies for the company's economic activity, (2020-2022)

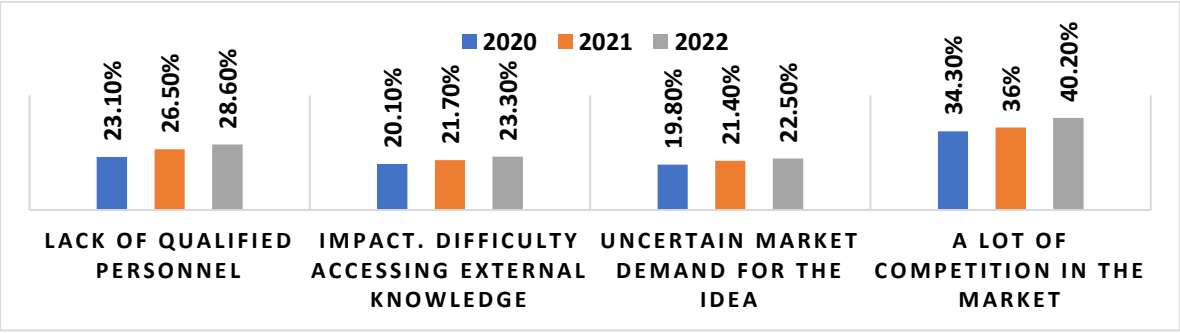
Distribution of companies according to the categories of importance of strategies				
Strategy	2020		2022	
	Was significant (%)	Was not significant (%)	Was significant (%)	Was not significant (%)
Focus on improving existing goods/services	10,4	8,3	10,2	8,0
Focus on introducing new goods/services	10	11,0	9,6	11,3
Focus on low prices	10,6	8,9	10,5	8,6
Focus on high quality	10,6	7,5	10,6	6,9
Focus on a wide range of goods/services	10	10,5	9,9	10,8
Focus on one or a small number of key goods or services	9,4	12,4	9,9	12,9
Focus on satisfying existing customer groups	9,6	9,7	9,8	9,7
Focus on attracting new groups of customers	10,3	9,9	10,1	9,8
Focus on standard goods/services	9,6	10,3	9,8	10,1
Focus on customer-specific solutions	9,5	11,4	9,6	11,9
Total	100	100	100	100

Source: *National Statistics Office of Georgia (2020-2022).*

In the Agile transformation, the formation of Agile teams plays a crucial role. This process involves gradually involving employees through methods such as meetings, interviews, idea exchanges, and team consolidation into directions or leagues. The emphasis is on granting employees the freedom to choose their desired positions, encouraging self-discovery, gaining experience, and pursuing opportunities. A key aspect of this transformation is the development of multi-functional teams consisting of approximately 9-10 individuals. These teams comprise managers, marketers, programmers, business analysts, designers, and other relevant roles. The goal is to create teams that can collaborate effectively, leveraging their diverse skills, knowledge, and experiences. Empowered to make independent decisions, these teams work together to accomplish their assigned tasks. This approach prioritizes the value of teamwork, enabling team members to contribute their individual expertise while collectively achieving project objectives in an autonomous and efficient manner.

The Agile transformation process has faced certain challenges for companies in terms of forming professional teams and expanding their teams. In 2022, 28.6% of companies experienced a lack of qualified personnel, with 3.9% facing high impact, 11% facing medium impact, and 13.8% facing low impact. However, the majority of companies, accounting for 71.4%, were not affected by this factor. Similarly, 23.3% of companies encountered difficulties in accessing external knowledge during the Agile transformation process. Of these, 2.0% experienced high impact, 8.1% faced medium impact, and 13.2% faced low impact. On the other hand, 76.7% of companies did not face any challenges in accessing external knowledge. Comparing the data over the years, it is observed that in 2020, 23,1% of companies were affected by a lack of qualified personnel, with 2.8% experiencing high impact, 8.9% facing medium impact, and 11.4% facing low impact. In 2021, this number increased slightly to 26,5% of companies, with 3.4% facing high impact, 10.0% facing medium impact, and 13.0% facing low impact. Regarding the difficulty of accessing external knowledge, in 2020, 20,1% of companies faced this challenge, with 1.6% experiencing high impact, 7.2% facing medium impact, and 11.3% facing low impact. In 2021, this number increased slightly to 21,7% of companies, with 1.6% facing high impact, 8.1% facing medium impact, and 12.0% facing low impact. These statistics highlight the factors that have impacted companies during the Agile transformation process, specifically in terms of forming professional teams and accessing external knowledge (chart 8) [15].

chart 8. Distribution of companies according to the significance of the impact of hindering factors



Source: *National Statistics Office of Georgia (2020-2022).*

Using agile project management methods helps companies gain competitiveness in regional and international markets. In 2020 and 2021, the specific share of companies under the influence of competition on the market was 11.4% and 12.0%. And in 2022, 11.1% of the 40.2% of companies under

the influence of high competition on the market experienced a high impact, 17.7% experienced an average impact, and 11.4% experienced a low impact. 76.9% of companies focus on low prices (71% of companies), but also implementing different methods to increase the efficiency of innovative business processes. According to Saxstat data, in 2022 compared to 2020, the share of companies implementing innovative business processes: using new or improved goods production, development or service delivery methods increased by 2.1%; The use of new or improved logistics, delivery and distribution methods increased by 1.6%; The use of new or improved information processing or communication methods increased by 2.2%; The use of new or improved advertising, packaging, pricing, product placement or after-sales service marketing methods has increased by 2.3% and will be 8.0%, 5.8%, 7.4%, 7.2% by 2022, respectively [15].

From 2020 to 2022, there has been a notable increase in the implementation of innovation distribution methods in business processes. Specifically, there has been a higher adoption rate of new or improved goods production (18.8%), delivery, logistics, and distribution (13.5%), and information processing and communication (16.7%) methods. This growth can be attributed to the rapid development of delivery and communication channels, which have been accelerated in response to the challenges posed by COVID-19.

In 2022, there has been a significant increase in the utilization of various distribution methods for innovations in business processes compared to 2020. Specifically, there is a notable rise in the use of new or improved administrative operations (17.6%), business procedures (9.5%), and the organization of work responsibilities, decision-making, or human resources management (14.5%). This highlights the substantial impact of implementing agile project management methods in companies on the production of innovative business processes, as observed in the data provided by GeoStat for the years 2020 to 2022 (Table 2) [15].

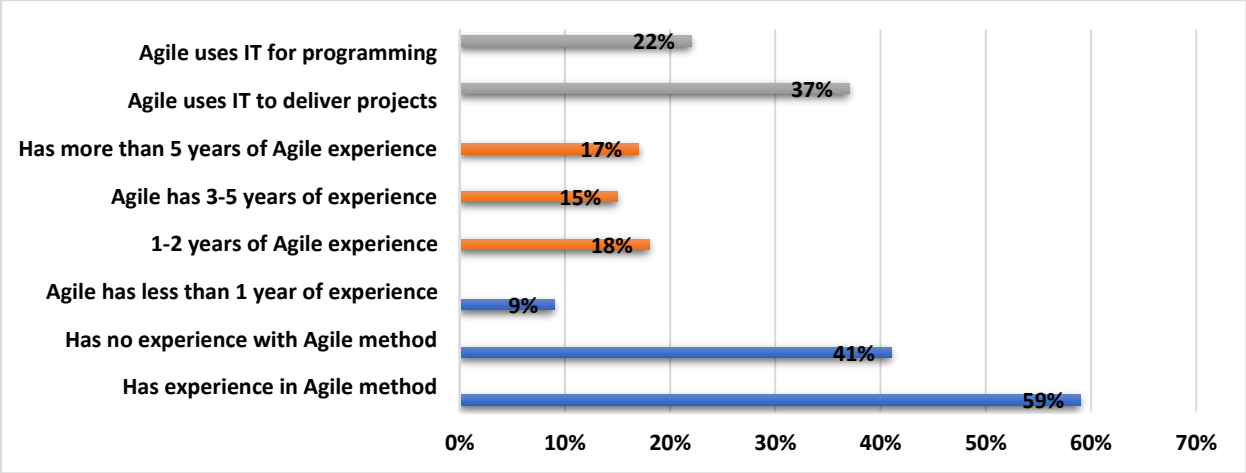
Table 2. Innovations in business processes (%), 2020-2022

Indicators	Distribution of innovations introduced in business processes according to methods			Share of companies that have introduced innovations in business processes according to methods		
Years	2020	2021	2022	2020	2021	2022
New or improved methods of manufacturing, developing goods or providing services	*18,8*	15,6	16,5	5,9	5,5	8,0
New or improved logistics, delivery and distribution methods	13,5	12,5	11,9	4,2	4,4	5,8
New or improved information processing or communication methods	16,7	16,4	15,3	5,2	5,8	7,4
New or improved methods of accounting or other administrative operations	13,9	18,8	17,6	4,3	6,6	8,6
New or improved procedures or business practices for organizing external relations	8,9	7,4	9,5	2,8	2,6	4,6
New or improved methods of organizing job responsibilities, decision making, or human resource management	*12,4*	*15,0*	*14,5*	*3,9*	5,3	7,1
New or improved advertising, packaging, pricing, product placement or after-sales service marketing methods	15,8	14,3	14,8	4,9	5,0	7,2
Total	100	100	100			

Source: *National Statistics Office of Georgia (2020-2022).*

Based on our research findings, it can be concluded that Georgian companies are still in the startup phase compared to companies operating globally, particularly in terms of adopting the Agile method. According to a survey conducted by foreign scientists in 2019, which involved 227 companies worldwide, it was found that 59% of the surveyed companies had experience with the Agile method in project management, while 41% had no experience. Further analysis of the survey results reveals that among the companies with Agile experience, 9% had less than one year of experience, 18% had one to two years of experience, 15% had 3-5 years of experience, and 17% had more than five years of experience. Additionally, the survey also highlighted that 37% of the companies used the Agile method solely for software development or IT-related projects, while 22% applied it to both software development and projects beyond the IT field (Chart 9) [4].

Chart 9. Foreign companies with Agile method experience (2019)



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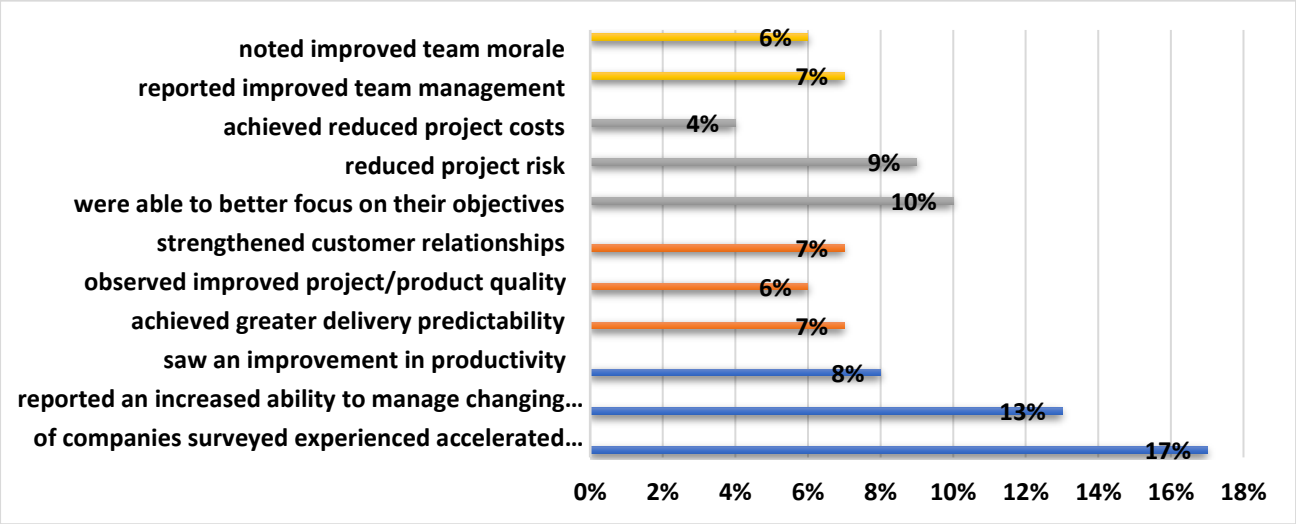
World practice and scientific studies have shown that the effectiveness of the Agile method in project management extends beyond software-focused companies. According to a survey of 353 project managers, companies implementing Agile project management reported various benefits. These include: 17% of companies surveyed experienced accelerated project/product delivery; 13% reported an increased ability to manage changing priorities; 8% saw an improvement in productivity; 7% achieved greater delivery predictability; 6% observed improved project/product quality; 7% strengthened customer relationships; 10% were able to better focus on their objectives; 9% reduced project risk; 4% achieved reduced project costs; 7% reported improved team management; 6% noted improved team morale.

These findings highlight the effectiveness of the Agile method in achieving positive outcomes in project management, regardless of whether the company is software-oriented or not (Chart 10) [4].

According to a survey conducted in 2019, which involved 241 project managers, companies that implemented Agile project management without software reported various benefits. Specifically: 13% experienced accelerated project/product delivery; 8% observed an improvement in project/product quality; 8% strengthened customer relationships; 10% were able to better focus on their customers; 8% achieved a reduction in project risk; 5% achieved reduced project costs; 8% reported improved team management; 7% noted improved team morale; 14% reported an increased ability to manage changing

priorities; 9% observed increased productivity; 5% achieved improved delivery predictability.

Chart 10. Effectiveness of software-oriented Agile companies (2019)



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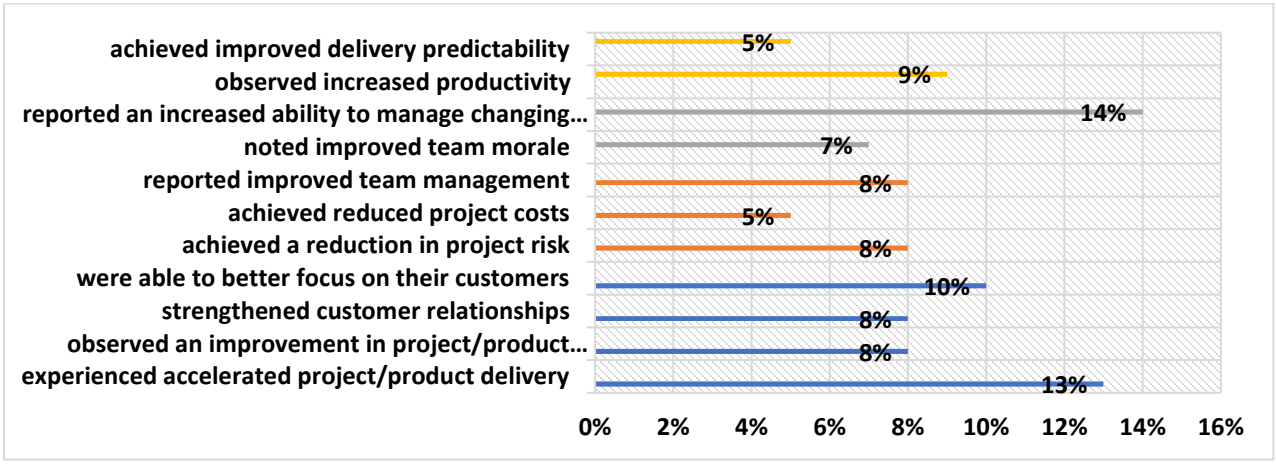
According to a survey conducted in 2019, which involved 241 project managers, companies that implemented Agile project management without software reported various benefits. Specifically: 13% experienced accelerated project/product delivery; 8% observed an improvement in project/product quality; 8% strengthened customer relationships; 10% were able to better focus on their customers; 8% achieved a reduction in project risk; 5% achieved reduced project costs; 8% reported improved team management; 7% noted improved team morale; 14% reported an increased ability to manage changing priorities; 9% observed increased productivity; 5% achieved improved delivery predictability.

These findings highlight the positive impact of Agile project management in companies that do not rely on software. The Agile approach can bring about various benefits in terms of project delivery, quality, customer relationships, team management, and overall project performance (Chart 11) [4].

Chart 11. Effectiveness of non-software-oriented Agile companies



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In 2021, the effectiveness of non-software oriented Agile companies improved compared to previous years. By quickly adapting to problems, 73% achieved their goals, 55% completed projects on time, and 62% implemented projects within the planned budget. In 2019, these figures were 68%, 51%, and 57% respectively, while in 2020, they were 69%, 53%, and 59%. The number of failed projects decreased from 15% in 2019 and 13% in 2020 to 12% in 2021.

Conclusion:

Agile, Scrum, Scrumban, Lean Startup, XP and Kanban the reasons for the transition of companies operating with the waterfall management method to Agile, Scrum, and Kanban are as follows: Incompatibility of the philosophy and culture of Georgian companies with Agile values, unqualified management, low responsibility, lack of manager's support, experience, and skills, organizational culture challenges, resistance to change, disobedience and other factors that prevent the project manager from developing effective project management methods appropriate to the specifics of the field and acting in practice in compliance with relevant methodological principles.

Challenges of companies transitioning to Agile, Scrum, Scrumban, Kanban, Lean Startup and XP methods are:

- Gaining competitive advantages at the regional and global levels;
- In parallel with the growth of organizations, the increase of bureaucracy and, accordingly, the slowing down of the organization's pace, development opportunities, the difficulty of making decisions, the "false" introduction of innovations that do not meet the requirements of users;
- Many years of practical experience in using Agile in the IT direction in companies and compliance of the company's values with the principles of Agile project management.

The strategy determining the effectiveness of the Agile method is:

- Creating and sustaining a competent team involves more than just developing employees and acquiring new skills. It also requires implementing a long-term motivational strategy that goes beyond the traditional approach of relying solely on salary expectations.
- Teams implementing innovative business projects collaborate closely with customers to identify problems through interactive processes. By introducing both radical and gradual innovations, these teams can quickly adapt to the market. Their goal is not only to meet the demands of existing customers but also to cater to potential customers by creating new and improved goods and services. This approach allows them to produce a wide range of products at a low price point without compromising on quality.

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