THE RISE OF THE AGILE APPROACH

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Abstract

Agile has become a buzzword in business. Agile is known for software development, excelled in project management, and today is about the agile transformation of management and personal life. The increase in the number and scope of related scientific articles and case studies about agility leads to a kind of self-confirmation of the approach. Compared to traditional (waterfall) project management, agile projects have a higher creative content, and participants learn more and feel more valued. At the same time, agile has several preconditions and requirements that must be fulfilled. Missing those will undoubtedly lead to failure. The study gives an overview of the agile principles, approach, and the considerations that should be made before an organization changes to it.

Keywords: agile, project management, lean, organization development

1. Introduction

We live in a changing world. The expression 'dynamic' represents the social and business world recently. Organizations face even more unpredictable and quick changes. Developing dynamic capabilities (Teece et al., 1997) is essential to sustain competitive advantages. Of course, the need for a new approach is not directly visible, and it is a result of an evolutionary process derived from consumer society. The main factors can be summarized in three groups (Soltész et al., 2020):

1. Accelerated need for new products:
   - Shorter product lead times: if a company can enter the market with something new faster than its competitors, a better market position is available, and the opportunity to dictate product and technology features is available. That means it is impossible without accelerated product development and rethinking supply chain operations.
   - Understanding and anticipating customer needs: Identify customer requirements through marketing and quality management and incorporate the results into operations.
   - Appreciation of the project approach: according to Cleland (1994), the existence of projects in an organization is evidence of changes. Project management as a coordination tool helps to bypass organizational structure barriers. A serious situation arises when the resource need and attention for projects exceeds those for operations.
2. More revenue, cost savings, and improved organizational competitiveness:
   - Focus on saving resources through new technologies.
   - Enhanced marketing activity: an increase in sales contributes to revenue generation.
   - Empowering people: Committed and skilled staff employees contribute to efficiency, problem-solving, and the exploitation of new opportunities.

- Building supply networks: rethinking external partnerships may be inevitable due to the increased demand for different materials and parts with a decreased delivery time.
3. IT, ICT, IoT...
- Technology adoption: the appreciation of IT can be treated as a fact, but personal approaches and the level of acceptance must be understood.
- Cybersecurity and safety issues: perhaps one of the biggest challenges in the age of computerized information systems is to detect and prevent the ever-increasing misuse of these systems.

It is debatable which of the above are the causes and which are the causes, but from an organization's perspective, this does not change the fact that they have to perform in the environment created. For example, the development of information and communication technologies is at the heart of most methods and applications, enabling tasks to be performed more efficiently, called the knowledge-driven approach by Vecsenyi and Petheő (2017), while at the same time, their development is a response to market needs, called market-driven approach (Vecsenyi & Petheő, 2017).

Incidentally, the dynamics of change are not equal across industries, countries, products, or corporations. We tend to think of the market environment as a company specificity, but it is more a business category, a business strategy (managing product-market relationships). At the same time, frameworks and methodologies belong to the organization of functional levels.

The goal of the study is to give an overview of the agile approach with an emphasis on the hindering and misunderstood conditions of the successful application. The analysis is based on a literature review.

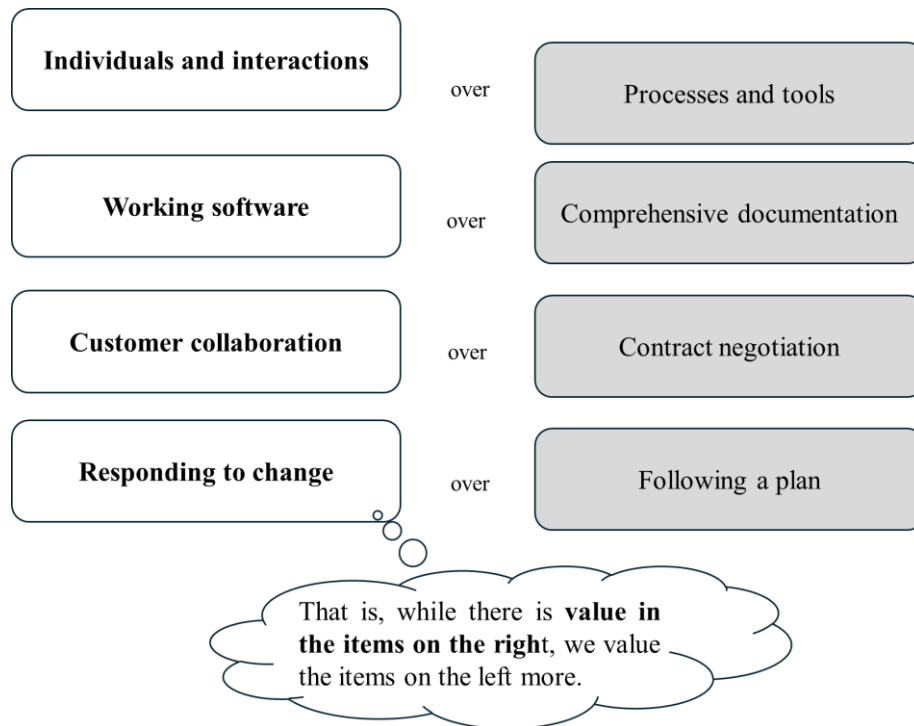## 2. Agile from software development to leadership

However, the concept of agile production has been known for many decades (Havas, 1996; Richards, 1996); a boom in applying the approach can be traced back to 2001 in the field of software development, where 17 experts used the term to describe a new approach to managing contracts and the work.

The purpose of the new approach was to improve communication and collaboration between the customer and the developer, resulting in reduced lead times. Delays can be derived from the changing needs of customers. If the software is delivered systematically, continuously, and in partial deliverables, and it is approved by the customer, most misunderstandings can be avoided. Obviously, such goals as accelerated development processes go beyond software development (Martin, 1991; Soltész et al., 2021).

The Manifesto for Agile Software Development pairs 4-4 success criteria and indicates which of them it considers the most valuable *(Figure 1)*. Of course, each item is important, and they did not want to suggest that traditional criteria could be neglected.

Agility can be understood as an approach to software development, but it was almost immediately associated with methodologies and techniques that support operational implementation (Scrum, Extreme Programming, Crystal, Dynamic Software Development Method, Feature-Driven Development, Kanban, Lean software development, etc.) (PMI, 2017a; Szabó & Ribányi, 2018). Software development is typically managed in the context of projects, and the idea of using the same methods for non-software projects seemed like a beneficial next step. For example, the Project Management Institute's Agile Practical Guide (PMI, 2017a) was available both as a stand-alone guide and as an annex to their project management standard (PMI, 2017b). Based on the experience, the next levels of application have emerged: agility in organizational operations (Vida & Kőkuti, 2023) and agility in leadership (Joiner & Josephs, 2007). Hayward (2016) refers to the agile leader as a connected leader,

essentially able to change his or her own and the organization's actions by recognizing the challenges. If it were so simple and beneficial, why agile is not fully implemented by everyone?

Figure 1. The approach of agile (based on Agile Manifesto, 2001)

3. Agile principles

Agile Alliance (2001) defined 12 principles between the agile methods and techniques and the success criteria. The highlighted keywords of the principles cover the available benefits and simultaneously designate the areas where the performance is critical, i.e., serious efforts should be made to improve the skills and capabilities:

1. Our highest priority is to satisfy the customer through the early and continuous delivery of valuable software.
2. Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.
3. Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.
4. Business people and developers must work together daily throughout the project.
5. Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.
6. The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.
7. Working software is the primary measure of progress.

8. Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.
9. Continuous attention to technical excellence and good design enhances agility.
10. Simplicity – the art of maximizing the amount of work not done – is essential.
11. The best architectures, requirements, and designs emerge from self-organizing teams.
12. At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.

However, the manifesto and the principles are designed for software development projects, which contain the values incorporated in the broadly used methods of quality management or lean management. That allows the consideration of applying the methods for other products and services if the conditions are met.

4. Conditions and requirements of being agile

A successful management system based on the agile approach has certain conditions, including organizational-internal and external ones, mainly combined:

- The existence of a truly dynamic environment and a production infrastructure, organizational structure, and culture that can respond flexibly.
- Uncertainty, difficult predictability in production, sales, or procurement, and organizational ability to accept the need for fast and non-programable decisions, including the attitude of managers and a flexible information system.
- Availability of modern information and communication technologies and the ability to use them.
- Involvement and empowerment of people are not enough to be vocal about, but they need to be backed up by teamwork in a constructive, supportive atmosphere for change. In times of rapid and frequent change, building and maintaining trust is of paramount importance.
- Systematic use of flexible management tools, including an understanding of the essence of tools and methods. It is important to note that the further development of lean and agile methods can easily overcomplicate the way a company operates.

The list above is created based on the review of literature and experience in the field. PMI's guide (PMI, 2017a) and other sources in this study mention the requirements, prerequisites, and bottlenecks, but the emphasis is given to the benefits. It is important to call the organizations' attention to the need for in-depth analysis before launching the change. Quite simply, agile is not for everyone. Agile is one way for organizations to do things, but not the only way. On the one hand, if the technological novelty and the uncertainty derived from it are not extreme, market predictions are stable and available, forcing agile is redundant. On the other hand, if the maturity of the organization is lacking, forcing agile is impossible and will harm business outcomes and culture. If the requirements are stable, the traditional 'waterfall' approach with detailed plans and milestones may be enough.

There is another characteristic of agile methods which can be translated to requirements. Continuous change is proven destructive. According to Taylor (1911), efficient operations must find the best method, train people for it, and command and control them. Learning and understanding something new consumes time, effort, and money. Shewhart, the quality control professional, developed tools to keep processes under control. Six sigma (Kemény et al., 2021) aims the same, and lean focuses on improving efficiency and eliminating waste (Liker, 2004; Womack & Jones, 2003).

The question arises: are they all wrong? It is foreseeable that no; in fact, agile has a hidden feature that serves a similar function: ceremonies. Agile methods make huge efforts to sustain a system of

ceremonies and a time-related approach. That gives the fixed point in the changing world. People working in agile do not know what the future will be, but they believe that the system will produce the next steps and tasks. From the outside, it all looks over-forced but ultimately necessary. In my opinion, the bottleneck of changing to agile is the organization's capability to move the focus from the known task to the known timeframe.

5. Agile in supply chain

The responsibility of value creation cannot be limited to separate companies. The world-level production system works with supply chains to ensure effectiveness and efficiency. International collaboration has become standard. The performance of an organization in the supply chain depends on the performance of others. In that approach, the supply chain characteristics influence the organizational behaviors and help find the right solutions. Lean principles are common in driving supply chain operations, and a combination of lean and agile may be possible *(Table 1)*.
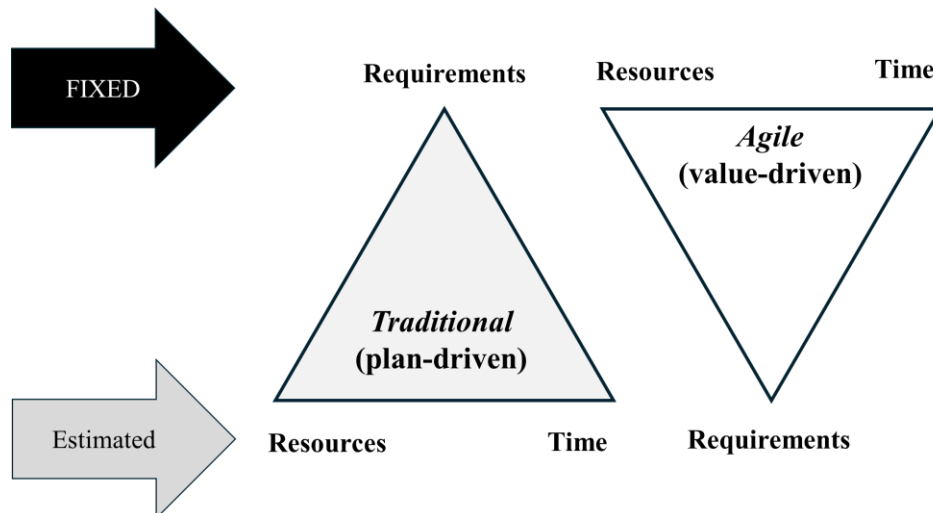
Table 1

Comparison of lean, agile, and leagile supply chains (p. 212)

Distinguishing attributes	Lean supply chain	Agile supply chain	Leagile supply chain
Market demand	Predictable	Volatile	Volatile and unpredictable
Product variety	Low	High	Medium
Product life cycle	Long	Short	Short
Customer drivers	Cost	Lead-time and availability	Service level
Profit margin	Low	High	Moderate
Dominant costs	Physical costs	Marketability costs	Both
Stock out penalties	Long term contractual	Immediate and volatile	No place for stock out
Purchasing policy	Buy goods	Assign capacity	Vendor managed inventory
Information enrichment	Highly desirable	Obligatory	Essential
Forecast mechanism	Algorithmic	Consultative	Both/either
Typical products	Commodities	Fashion goods	Product as per customer demand
Lead time compression	Essential	Essential	Desirable
Eliminate muda	Essential	Desirable	Arbitrary
Rapid reconfiguration	Desirable	Essential	Essential
Robustness	Arbitrary	Essential	Desirable
Quality	Market qualifier	Market qualifier	Market qualifier
Cost	Market winner	Market qualifier	Market winner
Lead-time	Market qualifier	Market qualifier	Market qualifier
Service level	Market qualifier	Market winner	Market winner

According to Agarwal et al. (2006), agile coordination is a great option for short product life periods and a great variety of products. Understandably, lower efficiency can be reached compared to lean since resources and approaches are focused on sustaining the robustness of the system.

6. Benefits and risks of agile

Assuming that the decision to change to agile was made with thorough and careful consideration, including the analysis of the internal and external environment and building the commitment and motivation of people, the agile methods and tools offer several benefits. The benefits are not derived directly from the tools and methods; these can be attributed to better adaptation to the environment and requirements, resulting in more effective problem-solving. A basic condition of successful agile applications is understanding the main difference between the traditional and agile approaches: the fixed and estimated success criteria (Figure 2). However, requirements (in some models designated as deliverables or quality) are the estimated element in the agile approach, and it does not mean that prior plans or agreements could be skipped. The focus is on increasing value creation (Blaskovics et al., 2023).

Figure 2. *Traditional and agile success criteria* (based on (PMI, 2017a; Blaskovics et al. 2023)

Of course, cost-saving must be mentioned as a main benefit, achieved by saving and not wasting time or other resources. Bureaucracy is limited to ceremonies, and processes can be accelerated. Balaji and Murugaiyan (2012) emphasized the missing gaps between the team and the customer through continuous face-to-face communication.

Similarly, there are no risks of agile; there are just risks of improper use of the agile approach. Beyond wasting time and resources on ineffective tools, forced teamwork even hides the problems. The abuse of time-box thinking supports individuals' escape from responsibility and postpones the solution of a problem.

7. Summary

Agile is a very helpful and broadly accepted approach among organizations to create value, and sustain success, market share, and profitability, but it is not omnipotent. The benefits of agile tools are available through serious efforts.

The main conclusion of the study is that agile is not a choice of management; rather, it is a possible response to a rapidly changing and unpredictable environment. Following other organizations surely will fail. Moreover, understanding the external environment is essential but not enough. Developing the abilities and capabilities both on individual and organizational levels is assumed. That is difficult since it usually requires a change in culture, which is a slow and risky process.

Advisory companies and agile experts may be able to suggest a sound toolset for the organization, but the responsibility of operating them cannot be delegated.

Due to some similar features of agile and lean, a consequence can be derived that lean can be developed into agile. However, they can work together, but the scope and focus are different. Mixing them without a proper scope definition is misleading. It still seems to be the opposite of lean practices, but an in-depth analysis and a detailed action plan must be accepted before trying to change. The ceremonies and the methodologies will give the backbone of the new management system, but acceptance and applicability are important. Just adding the ceremonies may lead to wasting organizational resources. A step-by-step implementation strategy is worthwhile, as well as testing some key methods and an initial phase. Working in an extensive international supply chain, the selection of the tools and methods may be supported by more experienced partners.

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