

The concept and competitiveness of agile organization in the fourth industrial revolution's drift

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Abstract

Corporate competitiveness is constantly being shaped by the Fourth Industrial Revolution, the explosive development of technology, the globalization and the hyper-competition. The VUCA status has now become a permanent reality: volatility and complexity cannot be traced to traditional corporate operations. The Industry 4.0 projects a physical, a digital and a biological megatrend such as advanced robotics, artificial intelligence, new materials, personalized healing, self-driving cars. Through usage of the resources and knowledge sharing, the global economy is experiencing mutations such as the sharing economy, the peer to peer economy, the gig economy in the labor market and the Big Data in planning. Meanwhile, the disruptive innovations are transforming industries and gaining exponentially competitive advantage. The special business concepts were born and whom cannot be handled by models of classic macro and micro economics: the largest taxi company in the world does not own any taxicab (Uber), the largest accommodation company does not own any property (Airbnb), the largest telecommunication company has no infrastructure (Skype), the world's most valuable retailer has no inventory (Alibaba), the most popular media doesn't create its own content (Facebook), the world's largest cinema doesn't have its own movie (Netflix). In the meantime, those are treasuring huge profits, business influence and information capital. The competitiveness of their agile way of working can be proved. These call for changes not only in the market, but also in organizational and individual terms. An adaptive corporate structure and leadership, a self-organizing group, an agile working method hold companies in the direction of growing track and changes in the future.

My research about discovering some aspects of agile way of working versus traditional organization work. My hypothesis is that employees are more motivated, effective and committed in an agile team than in a classic hierarchy or matrix. I added own business and project-based worker as their flexible, effective work is a must. My hypotheses are partially fulfilled.

Keywords

agile, Industry 4.0, VUCA, sharing economy, competitiveness

Introduction

The Industrial Revolution represents a comprehensive social, economic and technological change. In addition to the technological boom, the usage of social media platforms, we are living in the area of social networking, sharing and crowdsourcing time. My research interest is in discovering what organization can be competitive,

or, let us say survivor of the momentum we are. This study is one part of my series intended to research into agile organization characteristics. Agile teams seem to be faster, smarter, more effective, and more valuable with wider community compared to traditional hierarchies. Maybe this way of working or structure is the secret of the winner companies.

1. The Fourth Industrial Revolution

Today we are in the Fourth Industrial Revolution. The previous three have also brought significant changes, not only in production, manufacturing, in economy, but also in social functioning. The First Industrial Revolution (1760-1840), the invention of the steam engine, the construction of railways, and the production and use of engines radically transformed the economy and people's lives (Mokyr, 1985). We can say that the human power was replaced by machines at their work environment. The Second Industrial Revolution (late 19th, early 20th century), the spread of usage of the electricity and the assembly line production allowed the mass production (Mokyr, 1998). In terms of manpower, the physical workforce was less affected, but the intellectual capital and knowledge were valorized. The Third Industrial Revolution (since 1960) is known as the computer or digitization revolution. The explosion of semiconductors, industrial and personal computing, and the use of the Internet soon resulted in another qualitative leap in work organization, efficiency and communication (Greenwood & Jovanovic, 1999). Software and network developments may project ahead all the economic and social phenomena we are now experiencing. The reasons for the Fourth Industrial Revolution were that production system's unsustainability, the technological synergies that were created by new hardware and software and the aging society, which could not provide an adequate workforce in developed countries. Wang (2016) argues that Industry 4.0 makes factories even smarter, more adaptable, and even more resource efficient. The transparency and the interconnection of processes allow them to be optimized, to increase its efficiency and flexibility (Müller, 2017).

The Fourth Industrial Revolution seems to be different from the previous ones. The multiple events and developmental leaps took place in the same time period. A significant social transformation has taken place in parallel with technological change. Today we are surrounded with learning algorithms, intelligent factories, self-driving cars and nanotechnology in the workplace. The idea of Science Fiction can now be called the Science Fact. Artificial intelligence, machine learning, automation, the Big-Data, quantum computers, robotics, the 5G, the IIOT (Industrialized Internet of Things), the Cyber Security, the Bitcoin, 3D printing and thousands of applications on smart devices were built to our everyday.

We can experience similar changes in human resources and organizations. Today HR is also digitized; resource planning, selection, onboarding, learning and development, career management, performance appraisal and payroll are all done by means of software. The HR software shows a real-time, instant data, extracted from multiple systems at once which helps decision making, rendering it faster and more realistic. The working methods have changed due to smartphones, constant and fast internet access and cloud technology. The organization of work, learning, information flow, and data usage has been taken to a new level. The smart devices have transformed the boundaries of work and private life, the space and time constraints of work and performance. Multilingualism, multicultural teams, cross-continental projects, new technological solutions and globalization result in challenges in the organization. Parallel it affects the organizational structure and the operation of the company and changes the responsibilities and the tasks of the managers. Schwab, the founding president of the World Economic Forum, said that the Fourth Industrial Revolution will not change the way we work, the way we do our activities, but us. It combines the physical, the biological and digital knowledge systems. In his book (The Fourth Industrial Revolution, 2016), he mentions that there are researchers and practitioners who see the phenomena now taking place around us as part of the Third Industrial Revolution. Debating this, Schwab highlighted three main differences:

- velocity: this development is exponential, non-linear pace. This is the result of living in a deeply interconnected, diverse world, and of the ability of new technology to create newer and better technology again and again
- breadth and depth: it combines the complex technologies based on the digital revolution that have led to a paradigm shift in the economy, the business and the society
- systems impact: it means the transformation of the whole system through and within the countries, the companies, the industries and the societies.

According to Schwab (2016), the following megatrends can be identified:

1. Physical manifestation: self-driving cars, new devices, 3D printing, advanced robotics, new raw materials

2. Digital manifestation: IoT, collaboration with blockchain, the on-demand economy, the sharing economy
3. Biological manifestation: genetic sequencing, synthetic biology, personalized medical care, 3D print

The study covers cost reductions as well, as the technical progress has led to a significant reduction in the labor force as a share of GDP. A half of this reduction is due to the relative decrease in the investment costs. The other half is that the progressive nature of innovation results in replacing labor with capital. The Industry 4.0 calls for a paradigm shift: it must be followed not only by technological change, but also by business processes and competency of education.

2. The VUCA business environment

IBM gave a presentation on what kind of special business concepts have emerged in recent years (in Molnár, 2018): the world's largest taxi company does not own any taxis (Uber), the largest accommodation agency does not own a single property (Airbnb), the largest telephone company does not have a telecommunications infrastructure (Skype), the world's most valuable retailer has no inventory (Alibaba), the most popular media do not create their own content (Facebook), the fastest growing bank has no real money (SocietyOne), the world's largest cinema does not have its own film (Netflix). These are service companies that do not have their own investment, production capacities or fixed costs, but in return they accumulate a huge profit, a business influence and an information capital. The principles of classical economics are ignored by them. Boston Consulting Group (2018) has compiled a ranking of the Top 50 Innovative Companies. They are like Apple, Google, Microsoft, Amazon, Samsung, Tesla, Facebook, Alibaba, Airbnb, SpaceX, and Netflix. They connect the possibilities explored by technology with the collective needs of generations, ages and lifestyles. This is how they change our lifestyle, our way of working. They no longer think in terms of products, not in countries, but in exploiting the global market potential and the user experience. Now we never have to "need" anywhere to be able to do something.

Schumpeter (1980) distinguished five basic cases of innovation: the creation of a new product, the introduction of a new production process, the entry into a new market, the exploration of new raw materials and the formation of a new industrial

organization. Christensen (1997) introduced the concept of disruptive innovation and defined the following types of innovation strategy:

- sustaining: development does not affect the established market
- evolutionary: the product evolves, providing a new type of solution to a consumer need
- revolutionary: new, unexpected, creates a new market, but does not affect the previous ones
- disruptive: creates new value that transcends and shatters existing markets

In its study of Accenture (2018) points out that 63% of the companies have already been subjected to a disruptive "attack" by an innovative firm. The 68% of the executives feel it will happen again in the next 3 years. As a result of the disruptive companies, many markets have transformed in the last decade: automotive, travel and accommodation services, learning, education, job search, shopping, cinema, TV, entertainment. The adaptation cycles of innovation have also been shortened: the electricity reached 25% of the total population after 45 years, telephone after 35 years, the Internet in 5 years, and the smartphones in just 2 years. Why we are surrounded by disruptive innovation? Because the economic conditions are not stable, are always in motion. The VUCA business environment has become our base environment. The acronym VUCA was first used by the U.S. Army in the early 1990s. In Sullivan's (2012) formulation, this means: volatile - things that change rapidly that are unpredictable and may not be repetitive, uncertain-frequent changes that can be confusing, no predictability, no reliance on the past, no analysis, complex - many effects occur simultaneously, they are difficult to manage on their own, and in their complexity, they can also generate novel turns, ambiguous-untraceable cause, who did what, for what purpose, why, so it is difficult to develop good responses.

3. The labor market and changes in competencies.

New business concepts, disruptive innovations and a VUCA environment are the business environment whereas the companies and the employees need to prevail in and gain a competitive edge. Keynes said in 1931 that there is a time lag between unemployment caused by the spread of technology (surplus labor saved through technology) and how to find a new role for this

workforce. According to PwC's analysis (2018), the development of technology and the artificial intelligence, the usage of robots, will create as many jobs as they trigger. The jobs will shift by sector, maybe will be generated more in the health, the science, the technology, and the education, while shrinking in the factories, the shipping, the warehousing, and the administration. Schwab (2016) highlights two competing effects on technology in terms of employment: one is downsizing caused by disruptive innovations and automation, which replaces human labor, causes unemployment, or requires the re-use of their skills. The second is that the downsizing effect is accompanied by a capitalization effect, the demand for new products and services increases, which results in the creation of new occupations and business lines. The question is whether the timing and extent of the capitalization effect overrides the destructive effect. Workforce replacement in jobs that consist of constantly repetitive tasks and require precise manual labor has already taken place. In the future, it will also happen for intellectual jobs such as lawyers, analysts, doctors, journalists, accountants. The outsourcing has long been used in companies to manage the workforce and the functions in an effective and flexible way. Along with the efficiency expectations, the service centers (SSC - Shared Service Center) have been established, in which companies outsource one function to one country, from where they serve other subsidiaries as well.

The combination of several factors' presence influences labor market supply and demand. The 5 generations working at the same time, who are globally available and can be mobilized. The X and Y generations "got" the digital revolution, they had to learn and to live with it. The generation Z was born, and their approach to knowledge acquisition, work and community existence is different. Jobs are constantly being created and lost, which is difficult for the education to follow, and new competency structure is required at individual and corporate level. The 2018 report by The World Economic Forum analyzes the acceleration of labor transformation between 2018 and 2022. The conclusions were:

- Drivers of change that drive economic growth: four major technological advances such as high-speed mobile internet, artificial intelligence, the spreading of big data analytics, and cloud technology. It supports the national economic growth trajectories, the

strengthening of education and the sustainable, green world economy.

- Accelerating technology adaptation: 85% of managers want to make further improvements
- Robotization: almost 30% of companies are planning this type of investment.
- Changing production, distribution and value chain: 59% of the respondents stated that they would change their processes significantly. When choosing a production location, 74% of the employers prioritize by the competency structure of local talent and the available local workforce.
- Changing forms of workforce employment: 50% of the companies expect that the automation will result in a reduction in the number of full-time employees which means the current job profiles. 38% believe they will expand their workforce with new, efficiency-enhancing positions and 25% will create new positions. In addition, they seek to expand the range of contractors (contract workers, service providers) requested for special tasks
- Changing the boundaries between humans and robots in the existing jobs: 71% of the hours worked in connection with tasks will be done by human force in 2018, and 29% by machines. This rate will change by 2022 so that 58% will be done by humans and as much as 42% by machines. An algorithm or machine will work in 57% of the execution of tasks, clearly as an added value. 62% of organizations' data use, the information retrieval and the transfer will be performed by machines instead of the current 46%. 20-30% of communication, organization, consulting and decision making will be automated.
- Net positive employment prospects: the number of new jobs created compensates for the number of job losses. By 2022, the share of new occupations in the application will increase from 16% to 27%, which means an increase of 11%. In contrast, redundant jobs will be reduced from the current 31% to 21%, which is 10% overall. It is currently estimated that 0.98 million jobs will be lost, while 1.74 million will be created. With the exception of the agricultural sector, 75 million positions can be shared between the

machines and the people, and a further 133 million between people, machines and algorithms. It means that two parallel and interconnected effect will transform the workforce: the first is a large reduction of few jobs that will be automatized or eliminated. The second is the creation of new jobs related to the growing demand of new products and services.

- Emerging new jobs: by 2022, there will be a growing demand for jobs such as data analysts, data researchers, software and application developers, e-commerce and social media specialists. These are created by the usage of new technology. Furthermore, it is expected that tasks requiring strong soft skills will increase, such as customer service, salespeople, marketers, trainers, human and corporate culture developers, and innovation managers. The latest technological advances are creating new positions, such as Big Data analysts and process automation experts.
- Increasing capability instability: new technologies and the disruptive business models, the shift between human and robot workforce are transforming job profiles and the skills set needed to fill them. The global average capability stability - which is the ratio of the core competencies to a job that does not change - will be 58% by 2022. It means that 42% of the required workforce skills will change.
- Reskilling requirements: by 2022, 54% of employees will need reskilling. In addition, general skills such as analytical thinking, innovative approach, active learning and technological skills will be expected. Furthermore, the soft skills such as creativity, originality, initiative, critical thinking, persuasion and negotiation skills remain important. Also, attention to detail, resilience, flexibility, complex problem-solving, emotional intelligence, leadership, community influence, and service skills become more important.

The concept of lifelong learning is fundamentally changing the role of learning in our lives, thanks to compelling technical and IT advances and globalization. To change our professions up to 3-4 times in a lifetime, the

emergence of foreign language and computer skills as basic requirements, the rapidly accelerating development within certain disciplines and the compulsion to keep pace with them all encourage the workforce to learn partly in formal and non-formal education.

The Institute for the Future (2011) identified six drivers of change and then the future capabilities associated with them:

- The increasing life span changes the nature of career and learning. By 2025, the proportion of the population over the age of 60 in US will reach 70%. This means that both companies and individuals need to rethink their careers, family life and education. The lifelong learning and the multiple career type become natural.
- The smart systems and machines take over the boring, repetitive tasks, and later more tasks managed by humans. It is the time for a partnership of machines and people. We will use our competencies for more complex tasks.
- In the computerized world, all machines are connected to each other and all interactions are recorded and transformed into data. It may reveal unprecedented connections and patterns which can increase productivity.
- A new media ecology has emerged. Communication tools require new media literacy. The production of video, digital animations, augmented reality, and gamification resulted in a new form of messaging that will become more and more advanced. We had to develop a new mother tongue, a new communication method.
- The super-structured organizations: the community of technologies created a new form of production and value creation. The organizations known today, whether training or corporate structure, are considered the products of the last century. Due to their foundations, they will disappear by a disruptive way. The new organizational generation and work skills will not come from the traditional management theories, but from areas such as the game theory, the neuroscience research, and the positive psychology founded by Seligman (2004).
- In a globally interconnected world, the multicultural teams, the outsourced

experts that can be deployed at any point of the globe, require a completely different work processes and working methods.

They stated the following of the workforce skills are considered to be decisive in the future:

- transdisciplinary
- social intelligence
- sense-making
- novel and adaptive thinking
- constructive thinking, approach (design mindset)
- virtual collaboration
- cross cultural competency
- cognitive load management
- new media literacy
- computational thinking

Bersin's (2019) published that we need to stop the conversation about soft skills because power skills are much needed today. An important measure of his research is that 34% of company executives consider further training, reskilling and job crafting as top priority. The reason is that one of the three main barriers to corporate growth is an adequate employee skills structure. Companies usually group skills into two directions: hard skills and soft skills. Hard skills usually mean what is needed to complete the task (technical, learnable knowledge), soft skills mean what we are born with (e.g. cooperation and communication). As hard skills are easy to measure, the hiring managers are focusing on it during recruitment, career progress and promotion. According to Bersin, the right approach needs to be the other way around, because today in such a technological environment, hard knowledge is constantly changing and becoming obsolete, and it is easy to access and learn it anytime. In contrast, the soft skills are those that are difficult to acquire, change, retain, and these are critically important to the proper functioning of organizations. That is why he renamed soft skills to power skills. The concept of power skill needs to be explained. As Bersin formulates, the work abilities of the future are not technical but behavioral. Although the technological advances require the knowledge of engineers, developers, designers, but managers know that they can be purchased this competency relatively easily by outsourcing service. However, developing strength skills requires effort as any behavior change is lengthy and cumbersome or unless impossible. The power skills are the following: problem-solving, decision-making,

judgment, communication, self-management, collaboration and value clarification.

4. The competitiveness of agile organizations.

4.1. The concept of agility

The concept of agility was the feature of software developers. In their work, it is not possible to plan the process, expectations and output in advance, as we are used to in the case of an average company. In addition, they need openness, creativity, and making mistakes to be able to achieve new results. One person is not sure, but a team can solve any problems. Development teams are not huge organizations, but rather members of a close, inspiring community. Such a team attracts talented, self-motivated, creative members who can increase their strength further. The agility in the economic sense means that a company is able to predict, perceive and respond to market volatility in a way that creates value. The consultant company Accenture Strategy (2015) describes agility as the sum of adaptability + quick response + great execution. According to Goldman (1995), agility is the ability to react quickly to fragmented world market situations full of constant and unexpected changes. Agility is not a new concept. The major milestones in its formation were the transport of Toyota's Lean, Kanban from 1943, and then NASA's iterative increment, from 1990 to the creation of Scrum until the Agile Manifesto. The Manifesto (2001) essence is the value creation for the client in a result-oriented, simple way, through daily collaboration, by building a team autonomy. The manifesto shifts the emphasis from previously accepted and well-functioning elements: evaluates the individual and personal communication more than methodologies, a working product versus a final documentation, customer engagement versus contractual negotiation, willingness to change versus strict adherence to plans. A significant step for HR and organizations is the HR Agile Manifesto (2015), in which organizational developers stated that collaboration and networking are more important than hierarchical structure, transparency, flexibility in regulations, involvement in management and internal ambition in external rewards. In a study of Gallup (2018) European business leaders were asked what agility means to them: the ability of employees to collect and share information about the environmental change and how quickly and appropriately they respond to it. Here I would turn again to the

concept of BigData, coined by Mashey (1998). The BigData is a technology environment that enables the analysis and processing of diverse, large amounts of rapidly changing data. The relational database, the SQL programming language, the data warehousing, the binary data and the cloud systems are present at big companies. Using digitization and social media tools, companies get an astonishing amount of data from both business and private use. One of the secrets of agile operation is the correct analysis and usage of relevant data. It can find out the pattern of consumer behavior, which can be used to more precisely targeting markets and creating marketing messages. The president of the Association for Direct and Interactive Marketing said in 2016 that we can learn from traditional market research what people are saying about themselves. The Big Data shows what they are actually doing. Amazon, Spotify, Google, Apple examine its data with data analyst teams. This way, they can “see into the future” and can bring high experience factor solutions to market. Sondergaard (2012), a senior advisor at Gartner, put it this way: “Information is the oil of the 21st century and analysis is the explosive engine.” Gallup (2018) created a measure called the Agility Index. Looking at the 4 dominant European economies, the workers rated their employer from this point. It can be seen that half or more of colleagues think their company is not agile at all. Meanwhile, in the VUCA business environment, the start-ups with agile methods are constantly turning up stable markets and posing a potential threat. (See Figure 1).

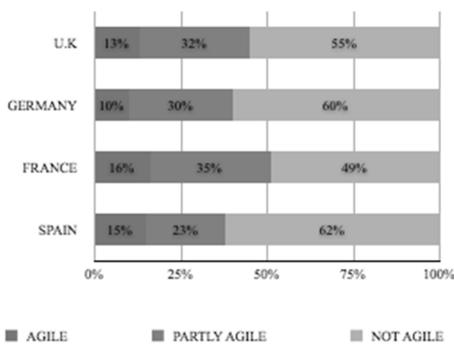


Figure 1 Agile Index
Source: Gallup, 2018

4.2 The agile organizational structure

The agility can manifest itself in corporate structures in the following ways (determined by the company’s size, position, and the leader’s opinion about opportunities): founded to be agile, such as

Spotify or Netflix, transform the entire organization into an agile mode like Amazon or bimodal company (using a hybrid model, on the one hand, it works with its regulated, well-developed systems, on the other, with a separate development team.) There is another concept related to innovative operation, called holacracy. Koestler (1967) described how it operates. The word holacracy is based on holon, which means biological and social unit. Holacracy is the cooperation of holons. A holon is a unit itself, but also part of a larger organization. In the event when one holon group does not function properly, the others will take over its role, thus not compromising the functioning of the whole system. These units are autonomous and cooperative. They are structured, rules-based organizations: a complex system that can use its resources most efficiently, flexible and fast, and can maintain its stability in the event of any disruption. They solve the problem within their own circle, on their own. Regardless, the upper circles give instructions. The roles of the smallest unit, the individual, are clear, well defined. The task of the holon is to keep its hands on it in its own territory, to immediately notice the changes, opportunities, to perceive the problems. There is no hierarchy in the classical sense, no managers, no jobs, the control is in everyone’s own hands. (See Figure 2).

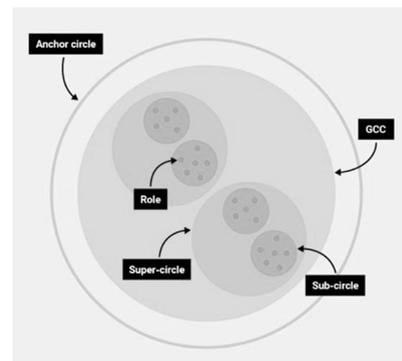


Figure 2 Holacracy circle
Source: Robertson, 2015

Anchor cycle generally means the board of the company. GCC (general company cycle) is the executive leadership team. Sub-circles are dedicated to particular functions. Roles are the elements of the traditional jobs split by tasks. This type of operation supports innovation, open, fresh thinking, the exploitation and self-realization of individual abilities, responsibility. Meanwhile, it reduces the pressure on workers and managers.

4.3 The characteristics of agile structures

The goal of every company is value creation. According to Chican (2007), value creation is the conversion of a company's resources into consumer value. The question is what the value to the consumer is today. In the VUCA world, it is hard enough to articulate. What seems valuable today could be devalued in an instant: see the fate of discs and CDs, cameras and Mp3 players and smartphones came out. My observation is that classic companies, while seeing innovation as essential, still find it more important for them to meet today's goal, this year's annual budget. Understandably, as this gives them stability, that is why managers get their bonus. However, the question rightly arises whether they are able to think innovatively while being programmed to act as a market protector. The concept of value flow is known from the lean methodology (Ries, 2011). It refers to the actions that create value during the production of a product: production, logistics, marketing, sales and customer service. Everything else is necessary but not value-creating. In the hierarchical model, leaders are considered to be the most valuable, they are the ones who decide everything. They base their decisions on the numbers of the past. In contrast, the agile, lean operations require managers to serve their team: do their best to provide the most optimal conditions, and the employee feedback is critically important. In a hierarchical organization, colleagues work in silos, they do not see the whole value chain, there is no good communication flow and synergy. In contrast, the agile team members are informed about everything, they decide together, they think together, they pass on their knowledge. I compared the agile method to the traditional, waterfall model by the majority of companies operate (Casteren, 2017). The most important difference is that in a traditional, waterfall operation, when a project started the result will be achieved through strict, sequential steps. In case of suddenly changed environments, can't step back. In an agile operation, one stage duration is 2-6-week intervals. At the end it is clear whether the direction is good, whether there has been a change. The section of this size can be restarted at any time. The following figure (3) shows a comparison of the value proposition represented by traditional (waterfall) and agile value-creating operations in developments (Ries, 2011).

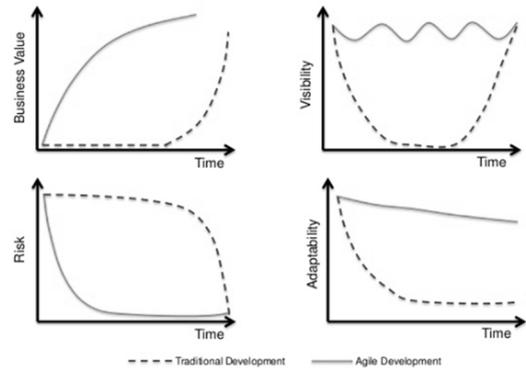


Figure 3 Value creation
Source: Ries, 2011

Visibility-time axis

- In the traditional operation, they deliver a product after a long time while not being able to handle changes.
- In agile operations, the client is part of the project team from day one

Business value-time axis

- In Agile mode, delivery occurs at regular intervals so that both parties sense the amount of value.
- The waterfall model transfers the business value at the end of the project.

Adaptability-time axis

- In traditional development mode, it is impossible to change the business scenario only if the project is restarted.
- In agile mode, adaptation is consistently high.

Risk-time axis

- The risk is highest at the beginning of any project. Those who work in the traditional way have to deal with a lot of unknown factors.
- In the case of agile operation, the risk is significantly reduced, as the team's ability to adapt during short sprints is high.

One of the most important drivers of decisions is the estimation, the mitigation and the exclusion of risks and the uncertainties. Bernstein (1998) said that the boundary line between the modern age and the past is control over risk. There is no absolute certainty as not all information is available. The uncertainty is a constant feature of business and life. The agile operation reduces this risk. In 1921 Keynes had already ruled out the possibility of learning about objective reality, which means we can rely on subjective estimates only. The psychological state of individuals and their relevance to judgment are also decisive to evaluate

uncertainty. All these factors can control and influence during agile teamwork: staying result-oriented help to eliminate the individual's fears. From a sociological point of view, people's perceptions are influenced by family, friends, leaders and colleagues. We can perceive uncertainty and risk differently because of them. According to prospect theory of Kahneman and Tversky (1979), the decision-maker focuses on relative gains and losses. Compared to all agile operations, an individual's or leader's perception of risk is shared because they need to perform not as an individual but as a team. Therefore, it evaluates profit and loss differently, and all this allows them for a calmer, open, innovative thinking. The framing effect is the way how the question is formulated and information is passed on and which has a decisive effect on an individual's decision. Compared to agility, it is not necessary to distort information and opportunities in frequent, daily, weekly reports and discussions. We can say if we give often information about a decision's background the clearer the information the closer we are to reality. Working in a self-organizing team seems to improve efficiency. An agile organization is built from three elements: culture, way of working, and work environment (Sahota, 2012; Miladinović Bogavac, 2017). The characteristics of the agile approach and way of working are: customer focus (his changes and feedback first), common goals (goals broken down into iterations), collective ownership, individual responsibility, no blaming, the teamwork (the goal is the common success, not the individual), knowledge transfer and group learning, positive attitude that turns problems into opportunities, empowered teams (self-organization, cross-functional operation, trust), tolerance of failure. The culture of failure is a particularly important element of agile functioning. Einstein said that the man who has never made a mistake has never tried anything new. Today's turbulent, technology-driven world expects us to be constantly out of our comfort zone, to always tighten our boundaries and to be open to the news. In contrast, large corporations have a hundred-year history and mature processes that need to be followed. In the workplace, we pursue a failure-avoiding, maximalist mode. Economists know that failure is a sign of development and growth. Schumpeter (1942) believed that success promotes the change, not failure. However, without accepting the possibility of failure, success is not possible. Christensen (1997) conducted research that confirmed Schumpeter's theory. According to

him, well-run, competitive companies have the radar where they should invest, in spite of the fact that they lose market dominance. He sees the reason in the fact that these companies are already so effective in their market and they cannot recognize the big shifts. Ries (2011) compared the waterfall structure by agile.

Table 1 The comparisons of agile and waterfall structure

AGILE MODEL	WATERFALL MODEL
Change orientation	Yearly planning
Product focus	Project focus
Minimum administration	Detailed documentation
Work in iterations	Work in silos
Feedback by stage	Rare feedback
No fixed targets	Fixed KPI
Collaboration	Separated team
Result orientation	Cost orientation
Continues renewal	Data from researches
Transparency	No transparency
Effective risk taking	Avoiding risk

Source: Ries, 2011.

In summary, the agile method manages changes well, is result oriented, can change the goals, works in short iterations, has constant feedback and great collaboration, is transparent and there is a trust between the members. This method is an excellent tool for organizational learning. Self-knowledge and self-reflection are very important elements of agile functioning. An agile team will exclude those who cannot handle this well. Frequent feedback and self-reflection help in two-loop learning. Argyris (1977) said the concept of two-loop learning means the organizations explore, analyze, and correct mistakes. Organizational learning is a process; its result is knowledge. This knowledge spreads and builds into organizational memory. Laloux (2014) described that in agile organization power is multiplied, self-management creates extremely strong motivation and tremendous energy, there is a strong incentive for continuous improvement, the roles and the competencies are better aligned, less energy flows in ego fights, decisions are made at the right time and quickly, roles are born spontaneously and persist as long as they create value and the organization is based on mutual trust.

To summarize, the most important personal and company characteristics are flexibility (including mental flexibility), connectivity, change and dealing with uncertainty. It seems agile way of working and behavior resonates to the meaning of

resilience and adaptivity. We generally use resilience as a psychological terminology to describe an individual's ability to adapt in the face of adverse conditions, the coping strategy. In Rutter's (2012) view, resilience cannot be clearly interpreted as a personality trait, as one may be resilient to a particular challenge while not being flexible at all in relation to another difficult situation. Resilience is more worth interpreting as a dynamic process, in which, in addition to internal capabilities, interactions with the environment must also be considered. McCann et al. (2009) determine adaptive capacity by two dimensions: agility and resiliency. They said the adaptive capacity is the amount and variety of resources and skills possessed and available for maintaining viability and growth relative to the requirements posed by the environment. The organization needs to build agility and resilience at the same time. Some examples from their proposals: agility can increase by improving sense making (manage uncertainty), creating and sustaining openness to change, efficiently and quickly acquire, build, share knowledge to critical priorities, developing the ability for quick deployment of the resources and skills. Resilience can be built by improving crisis response capability, by learning to deal with the consequences of a failed plan or being prepared to rethink and redesign yourself. The super-power of the agile organization that the team itself can reach resiliency, no individual needs to deal with changes, they can predict the future or take the responsibility for any failure or have courage. McKinsey (2018) stated that a paradigm should be changed: "from organization as machines to a living organism". According to Poór et al. (2019), the pace of digital transformation is dictated by strategy alongside technology. We can see that the transformation of the organizational needs to be a central issue for all companies.

5. Empirical study

My goal was to examine the judgment of those working in the classical corporate organizational structure (hierarchical, matrix) and in the agile organization about its own company. My hypothesis was that in an agile organization employees do their jobs more efficiently, and they are more motivated and more committed.

5.1 Hypotheses

H1 I assume that employees who work in an **agile** organization are more **efficient** in their work than those who work within a classic corporate structure

(hierarchy/ matrix) or in the small or family business or on a project as contractor.

H2 I hypothesize that employees who work in an **agile** organization are more **motivated** to work than those who work within a classic corporate structure (hierarchy/ matrix) or a the small or family business or on a project as contractor.

H3: I assume that employees who work in an organization with an **agile** mode of operation are more **committed** to their work, those who work within a classic corporate structure (hierarchy/ matrix) or a small or family business or on a project as contractor.

5.2. Research methodology

As a research method I used a quantitative method via a self-administered questionnaire survey. The aim of the quantitative survey is to be able to explore hypotheses and causal relationships. From the types of sampling, I used expert sample selection in the cases I invited to the research by direct inquiry. The others were included among the respondents by the snowball method. The questionnaire was accessed by participants in three ways: Facebook, LinkedIn, and direct inquiry. I did not choose or narrow the size of the sample, the participants, the gender, the location, the education level, or the type of the job.

The self-administered questionnaire contained 8 questions:

- demography via single-choice questions: gender, age, education, number of organizations, sector
- qualifying questions via a 4-point Likert scale, in 1- I strongly disagree, 2- disagree, 3-agree, 4- strongly agree
- optional questions: it was possible to indicate more possible answers
- the questionnaire was created by the Google forms
- survey period: March 23 - April 5, 2020
- the analysis done by IBM SPSS software

5.3. The presentation of the sample by descriptive statistics

My research involved 118 people, including 66 women (55.9%) and 52 men (44.1%). 35.6% of the participants are between 18-25 years old, 21.2% are between 26-35 years old, 22% are between 36-45 years old, 1.7% were between 56 and 65 years of age, and 0.8% were over 65 years of age.

Regarding the education of the participants, it can be said that the vast majority (70.3%) have a higher education than the high school diploma. 2

people completed primary school (1.7%), 4 people obtained a vocational qualification (3.4%), 29 people (24.6%) have a high school diploma, 22 people (18.6%) completed a higher education course / OKJ course, 36 (30.5%) have a bachelor's degree BA/BSc, 24 (20.3%) with an MA / MSc, 1 (0.8%) have a doctorate.

The distribution of participants by sector was as follows: 22 people (18.6%) in industry, manufacturing (automotive, chemical, food, pharmaceutical, oil), 3 people (2.5%) in health, 12 people (10, 2%) in the IT, technology sector, 25 people (21.2%) in trade, 6 people (5.1%) in the logistics sector, 6 people (5.1%) in the communications, media sector, 11 people (9.3%) in education, 17 people (14.4%) in the financial sector, 2 people (1.7%) in the SSC sector, 1 person (0.8%) in the telecommunications sector, 13 people (11%) in the public sector, non-profit, non-governmental organization.

27.1% of the participants (32 people) work in a place where an agile mode of operation, team or method is used, 66.9% (79 people) do not show agile work in their workplace, 5.9% (7 people) in their workplace under testing.

The distribution of participants by type of job was as follows: 72 people (61%) work in a classical (hierarchical / matrix) organization, 29 people (24.6%) in a small / family business, 8 people (6.8%) alone or as an external professional and 9 people (7.6%) work for an agile organization.

5.4 Testing the hypothesis

H1: I assume that employees who work in an agile organization are more **efficient** in their work than those who work within a classic corporate structure (hierarchy/ matrix) or in the small or family business or on a project as contractor.

To test the hypothesis, I performed a one-way analysis of variance, where the independent variable was the type of job (agile, classic, small / family business, individual employment), and the dependent variable was the responses to the following items, which ranged from 1 to 4 Likert count (participants could give 1 - Strongly disagree; 4 - Agree): I feel effective in my work / I think my organization is effective / I can use my best capability in my work.

According to the obtained results, I did not find any difference between the employees' own efficiency ($F(3) = 0.77$, $p = 0.51$) and the work corresponding to his abilities ($F(3) = 1.79$, $p = 0.15$) between the 4 groups. However, it can be said that there was a significant difference in the

efficiency of the organization between the 4 groups ($F(3) = 2.89$, $p = 0.04$). See Figure 4 for the values of the 4 groups (mean and standard deviation).

According to the results of the post-hoc test, there was a significant difference between those working in the classical organization and those working in the agile organization ($p = 0.02$). As shown in Figure 1, the highest value was given by the participants working in the agile organization, so it can be said that my hypothesis was partially fulfilled.

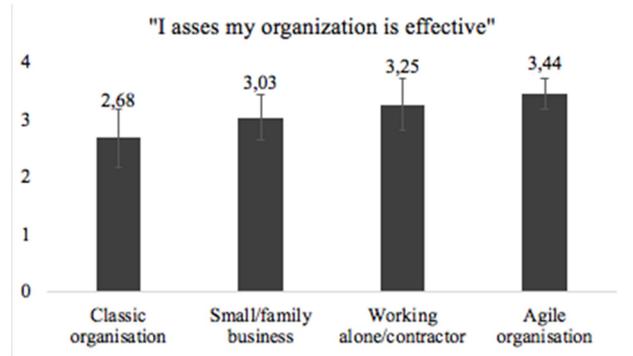


Figure 4 The opinion of the 4 groups about their organization's efficiency in their work (n = 118)

Source: The author

H2: I hypothesize that employees who work in an agile organization are more **motivated** to work than those who work within a classic corporate structure (hierarchy/matrix) or in a small or family business or on a project as contractor.

To test the hypothesis, I performed a one-way analysis of variance, where the independent variable was the type of job (agile, classic, small/family business, individual employment) as the previous one, and the dependent variable was the responses to the following items. Participants used a Likert scale up to (1-Strongly disagree; 4 - Agree): My work inspires me / The organization I work in inspires me. / I am motivated in my work.

The results show that there is a significant difference between those who work in different workplaces in how much they are inspired by their work ($F(3) = 3.82$, $p = 0.01$) and how much they are inspired by the organization ($F(3) = 3.75$, $p = 0.01$). I found no significant difference in how motivated they were in their work ($F(3) = 1.35$, $p = 0.26$). The 4 groups "My work inspires me." the values obtained on the statement (mean and standard deviation) are shown in Figure 5.

It can be seen that those who work alone find their work most inspiring, those who work in an agile organization, those who work in small/family businesses, and finally those who work in classic

organizations following. According to the results of the post-hoc test, there was a significant difference between those working in classical companies and those working alone ($p = 0.01$).

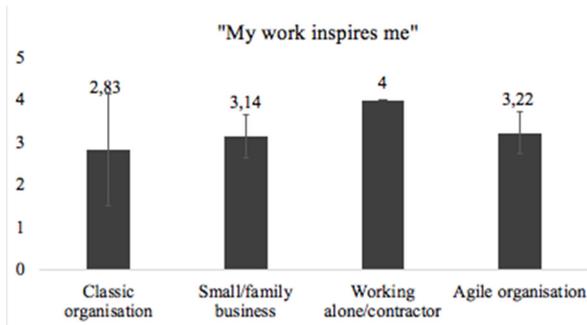


Figure 5 The opinion of the 4 groups about the about „My work inspires me” statement (n = 118)
Source: The author

The 4th group groups "My organization inspires me." The values obtained on the statement (mean and standard deviation) are shown in Figure 6.

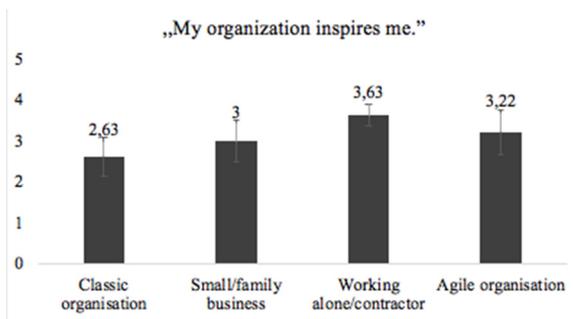


Figure 6 The opinion of the 4 groups about the about „My organization inspires me” statement (n = 118)
Source: The author

As shown in Figure 6, those working alone find the organization they work for most inspiring, and as before, they are followed by those working in an agile organization, then those working in small/family businesses, and finally those working in classic organizations. According to the results of the post-hoc test, there was a significant difference between those working in classical companies and those working alone ($p = 0.04$).

H3: I assume that employees who work for an organization with an agile mode of operation are more **committed** to their work, those who work within a classic corporate structure (hierarchy/matrix) or in a small or family business or on a project as contractor.

To test the hypothesis, I once again performed a one-way analysis of variance, where the independent variable was the type of job (agile,

classic, small/family business, individual employment) as before, and the dependent variable was the responses to the following items, which were 1-4. Participants were allowed to enter on a Likert scale up to (1 - Strongly disagree; 4 - Agree): I am committed to my organization. / I love and am happy with my work.

According to the results obtained, there is no difference in how much people working in different types of organizations like their work ($F(3) = 1.33, p = 0.12$). However, I found a significant difference in commitment to the job ($F(3) = 3.97, p = 0.01$). The commitment values (mean and standard deviation) of the 4 groups are shown in Figure 7.

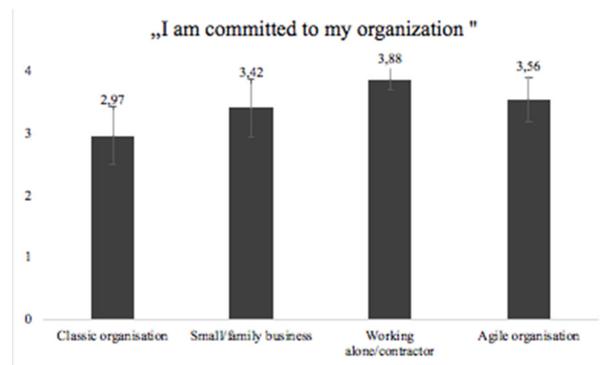


Figure 7 The opinion of the 4 groups about the about „I committed to my organization” statement (n = 118)
Source: The author

As shown in Figure 7, the highest scores were given by those working alone, followed by those working in an agile organization, then those working in small/family businesses, and finally those working in classical organizations. According to the results of the post-hoc test, there was a significant difference between the values of those working for a classic company and those working alone ($p = 0.05$). Based on the obtained results, it can be said that the data partially supported my hypothesis.

Conclusions

Summarizing the study content, it seems that the VUCA environment, with the current pace of innovation and technology development and disruptive attacks, has strong effect on classical corporate hierarchy and competitiveness. The former publications and the experience show that agile method and way of working has adequate answer for the changes. My hypotheses tested in Hungary, a country which does not have much experience in agile structure. Our company's

composition has two main directions: classic hierarchy and small, family business. Compare that the results show that agile way of working makes people efficient, committed and motivated. It was interesting to realize if I include the independent, contractor way of working it has same result as agile structure. My personal experience is that independent, provider form requires similar agile competencies like agile organization such as take responsibility, interdependency, feedback and communication.

My study is an exploratory case to clarify and narrow my research field in the measurement of agile method effectiveness into Hungarian organizations. **SM**

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