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Organisation transformation in agile approach, a comparative analysis of IT and other sectors

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**Organisation transformation in agile approach, a comparative
analysis of IT and other sectors**

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Organisation transformation in agile approach, a comparative analysis of IT and other sectors

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Abstract

Research background: Last decades may undoubtedly be deemed as the period of exceptional transformation which has global dimension. One of its elements is the reorganisation of traditional ways of business management. Therefore, agile approach is more and more often one of the key aspects of building comparative advantage of a company. In this paper agile approach is understood as the capability of responding promptly to market's needs.

Purpose of the article: The paper aims at presenting selected research findings concerning the description of agile approach usage in organisations. The main authors' objective is to present the way the transformation of organization is done or may be done with reference to agile approach.

Methodology/methods: The paper comprises three parts. The first includes the results of analysis of literature concerning agile approach, where the authors make an attempt to answer the question: what are scientific studies in that regard? The literature analysis in that regard was conducted during academic internship at Shippensburg University, USA in 2016 and was based on the resources of its library. The second presents the findings of research done between 2005 and 2016 where case studies analyses of almost 50 companies in Poland and not only were conducted. In the last part of the paper, on the basis of the findings in the second part, the authors present a referencing process, which could in some cases increase the agility of organizational activities.

Findings: The empirical studies show the differences in using selected agile activities for organizations from IT and other sectors. On this basis the last part of paper includes the referencing process, which in some cases could increase the agility of organizational activities. The authors are aware of the fact that the before men-

tioned referencing process is subject to quantitative verification which in turn will identify determinant of its usage; however, this is to be conducted in the next phase of research. In this phase the research of comparative-explorative nature as well as qualitative is presented.

Introduction

The last few decades can be unquestionably called a period of great transformation on a global scale. One of its main elements is the reorganisation of the traditional methods of conducting business activity . That is why the main aspect of creating a competitive advantage of an organization is increasingly often its agility.

The article is comprised of three stages:

1. Containing the results of the agile approach literature analysis, where the authors attempt to answer the question of what is the scientific output in the indicated field.
2. Presenting the research results. The goal of presenting empirical research in this article was to identify the basis for creating a model of transforming organizations towards the agile approach.
3. In the last part of the article, the authors produce a model which in some cases could increase the agility of organizational activities.

The aim of this article is to describe the use of the agile approach in organizations of IT and sports sectors. The article shows the methods of realizing linear conduct and agile conduct activities, and how an organization can undergo transformation when applying the agile approach.

Research Methodology

The article presents the results of conducted research of a descriptive-exploratory nature, in accordance with qualitative methodology, and although the article includes correlation coefficients, they do not serve as a solution the research problem, but merely as a supplement. In order to be able to use the presented research results as representative, it is necessary to carry out quantitative research.

The literature analysis of the main field has been conducted during a summer research internship in Shippensburg University in the USA in 2016, and it was based on the library resources of that unit. Research data were collected between the years 2014 and 2016. The scope of research included a total of 10 companies operating in Poland, from the sectors of IT

and sports. Direct interviews with representatives of boards of management of companies and participant observations were conducted in chosen cases.

Transformation of the traditional approach into the agile one - theoretical take

V. Kumar concludes that currently one of the most important strategic results of activity is not the maximization of sales, but the maximization of Customer Lifetime Value (CLV)(Kumar, 2008, pp.8-9). This is in order to as quickly as possible - agilely - tailor the offer of the organization to the environment. Following this line of thinking, is it possible to find an analogy in the claim of Eric Ries that "the core idea is that every new business rests on a series of hypotheses". E. Ries also refers to his approach as: "validated learning" (Euchner, 2013, p.13). Apart from the presented views, modern conceptions have surfaced, where the main premise is to attempt to increase the agility of an organization's activity as Lean startup methodology (Ries, 2011), Customer development (Blank, 2006) and Customer lifetime value (Kumar, 2008).

The agile approach to running a business was mainly defined on the basis of terminology borrowed from the software development sector, where for differentiation purposes the term Stage-Gate is used as the traditional alternative to the agile approach.

Table 1. Characteristics of Stage-Gate vs. Agile

	Stage-Gate	Agile
Type	Macroplanning	Microplanning, project management
Scope	Idea to launch	Development and testing, can be expanded to pre-development
Organization	Cross-functional team (R&D, marketing, sales, operations)	Technical team (software developers, engineers)
Decision model	Investment model -- go/kill decisions involve a senior governance group	Tactical model -- decisions about actions for next sprint made largely by a self-managed team

Source: Cooper, R. G. (2016, pp.21-29).

This was one of the bases for defining the differences between particular approaches, not for the purpose of creating software, but within the context of the entire organization (table 2). In order to distinguish it here, the term Stage-Gate is replaced with the expression "linear approach".

Table 2. Agile approach and linear approach - comparison

Category	Linear approach	Agile approach
Realization process	The first stage involves formulating a plan (specification) with areas of activity defined as accurately as possible. On that basis, in the second stage the realization of the plan commences and is not modified until the task is completed.	Releasing a new product on the market as quickly as possible (Minimum Viable Product)(Ries, 2011, p.28) in order to gauge the interest of the consumers. Basing on the behaviour of the consumers, either further modifications are implemented, or a pivot occurs - the given idea is abandoned and an entirely new solution is designed.
Goal	Reaching the project goals according to the specification.	Designing a product which fulfills the needs of the customers as much as it is possible.
Known	Scope, resources, duration of the project. Works begin after clearly defining these three integral elements.	Financial resources, duration of the project, and its final scope are unknown before works have begun or during them. The only element left to define is the budget with which the creators are meant to run as many iterations (market experiments) as possible.

Source: own elaboration a basis on Cooper R. G. (2016, pp.21-29), Dikert K. et al. (2016, pp. 87-108), Ignatius A. (2016 p. 10), Pope-Ruark R. (2015, pp112-113), Wendler R. (2013, pp.148-169).

It is worth noting that various attempts are being made to define the structure of the best agile approach practices, with reference to the whole organization: Scaled Agile Framework, Agility strategy construct (Sherehiy & Karwowski, 2014, p.247) or adjusted to larger projects, called large-scale agile (Dingsøyr & Moe, 2013, pp.38-39; Paasivaara et al., 2008 pp.527-544; Berger & Beynon-Davies, 2009, pp.549-570).

As the literature analysis shows, it is possible to find a clear trend describing organization transformation where the agile approach is distinguished from the traditional one, called: linear, sequential, cascade, water-

fall, stage-gate. This research allows to illustrate the current state of utilising linear and agile method actions in selected organizations operating in the particular sectors.

Comparative analysis of utilising agile approach in the IT and sports sectors

A total of 10 companies took part in the research, 7 of which were working in the IT sector, the remaining 3 belonging to the sports sector. The research was carried out between the years 2014 and 2016. Each of the examined companies hired from 10 to 50 employees.

In the first stage, a list was created specifying actions characteristic of linear and agile conduct. Altogether 8, they were respectively:
for linear conduct;

- 1.environment analysis with desk-research method,
 - 2.defining long-term goals,
 - 3.designing and developing the marketing-mix program,
 - 4.applying marketing research based on consumer opinions,
- for agile conduct;

- 1.consciously shaping and verifying the unique selling proposition and
- 2.“unfair advantage”(Lean Business Model Canvas),
- 3.customer focus (acquired customer data, and the conscious management of their life cycle)(Kumar 2008),
- 4.conducting market experiments (understood as releasing product prototypes - Minimum Viable Product)(Kumar 2008).

Additionally, categories were defined which could be used to judge a company's ability to:

- 1.communicate with customers¹,
- 2.increase profits²,
- 3.minimalize the risk related to introducing a new product on the market³.

On this basis, the progression level of “actions” and “abilities” was evaluated. These were defined by means of discussions with management board representatives of these organizations, as well as additional participant observations, verifying the veracity of the answers. Each of these categories was assigned with specific numeric values ranging from one to five, where one meant that the activity was not being realized at all, while five meant it is being fully realized. The same method was used to evaluate the

¹ Measured by process of gaining knowledge of clients.

² Considered as potential to maximalizing profits.

³ Considered as particular organizations operations minimalizing risk.

level of the ability to: communicate with the customers, increase profits, and minimizing the risk related to introducing a new product on the market. The acquired data is presented in table 3.

Table 3. Comparison of average values from taken linear and agile approach actions and ability levels

Org.	Offer	Average score of LINEAR actions	Average score of AGILE actions	Evaluation of the ability level of:		
				Communicating with customers	Increasing profits	Minimalizing the risk related to introducing a new product on the market
IT sector						
1	Product b2c	1,5	3,5	4	4	3
2	Product b2c	1,5	3,5	4	4	3
3	Product b2c	3,0	1,3	2	2	1
4	Product b2c	1,0	1,3	1	1	1
5	Product b2b	1,0	1,3	2	2	1
6	Product b2b	1,5	2,3	3	5	4
7	Service b2b	1,3	2,3	2	2	1
Sports sector						
1	Product b2c	2,0	4,5	4	5	4
2	Service b2c	1,3	4,8	5	5	5
3	Service b2c	1,0	2,0	1	3	1

Source: own elaboration based on research.

Categories b2b and b2c are understood as the relation of sale occurring between the offeror - the company, and the individual consumer (business to customer) as well as another business entity (business to business). The average of the achieved scores was calculated separately for actions classified as characteristic of linear and agile approaches, which has been illustrated in the table.

It must be pointed out, that the research sample was not checked for representativeness. Even so, this research allows to formulate initial assumptions for further research procedures. For the given sample, correlation levels were calculated between the average score for taken linear and agile actions in companies and the organizations' ability to communicate with customers, increase profits, and minimize the risk of failure when introducing a new product on the market, which has been presented in table 4.

Table 4. Correlation coefficients between the average values of taking particular actions in the linear and agile categories and the organizations' abilities

Ability:	Communicating with customers	Increasing profits	Minimalizing the risk of failure when introducing a new product on the market
IT sector organizations			
Linear	0,04	0,00	-0,12
Agile	0,95	0,76	0,76
Sports sector organizations			
Linear	0,50	0,69	0,50
Agile	0,99	1,00	0,99

Source: own elaboration based on research.

Presented results can lead to certain speculations, specifically that: activities classified as agile in the chosen organizations are much more correlated to the values of particular abilities. Moreover, one can deduce that in the IT sector linear conduct yields worse results than in the sports sector.

The gathered results indicate that it can be supposed that taking agile approach actions has a positive effect on the organization's ability to: com-

municate with customers, increase profits, and minimize the risk of failure when introducing a new product on the market.

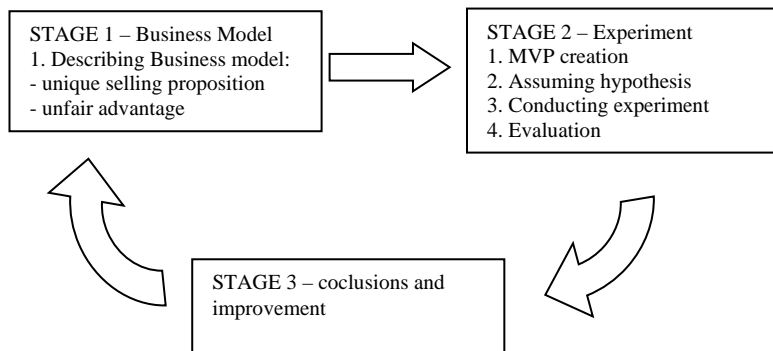
The model of transforming organizations towards the agile approach and its implementation

On the basis of conducted research presented in the previous section of this paper, the first version of a model of conduct was proposed. The crucial stages of the model should include the realization of the following: identifying the unique value proposition and unfair advantage, and conducting experiments. For this purpose, two main stages of the model were defined:

- the first, involving the description of the business model - on the basis of lean business model canvas,
- the second stage, involving the preparation of MVP (minimum viable product) and the realization of an experiment process preceded by forming a hypothesis and concluded with an evaluation.

This has been illustrated on figure 1.

Figure 1. Model of transforming organizations towards the agile approach



Source: own elaboration.

The application of the model of transforming conduct has been carried out in an organization from the IT sector. The organization was operating in a structure of isolated sections, each of them delivering a different category of solutions. The implementation of the presented model was performed via meetings with the managers responsible for particular offer categories, such as: software development services, on-line sales of IT products, and sales of

solutions tailored to the dedicated needs of a given company. The implementation was concerning b2b relations.

The organization transformation by means of implementing the agile model was conducted according to the stages:

1. Explaining the nature of the model during meetings, while also recommending relevant literature.
2. Carrying out a pilot application in one of the sections. At this stage, an attempt was made to answer the following questions:
 - a. What does the sales funnel look like for customers of the organization (the theoretical route a potential customer takes up until the moment of purchase)?
 - b. How to monitor the behaviour of customers?
 - c. How to check if applying the model has influenced the organization's ability to: communicate with customers, increase profits, minimize the risk related to introducing a new product on the market?
 - d. How long before it can be judged if introducing the agile approach model has yielded the desired results, and what are they?
3. On this basis the structure of conduct is implemented in accordance with the model.

After a half a year period of transformation, in-depth interviews were conducted with section managers about the results of the transformation. A relation was noticed between the application of the model and:

1. level of communication with the customers,
 - By ceasing consumer surveys and beginning to conduct experiments, it was possible to acquire data of the actual purchase decisions instead of intentions. This led to a better understanding of the customer needs - the main reason for communicating with them.
2. increasing profits,
 - Despite the fact that conducting particular experiments in most cases led to falsifying the hypothesis. The possibility of scaling particular solutions compensated particular failures and expenses.
3. minimalization of the risk related to introducing a new product on the market,
 - Owing to the fact that most incorrect decisions related to creating a new product or its particular modifications were validated during the MVP stage, it was possible to significantly minimize the risk with presenting the offer of the whole solution to the entire market.

In the next stages of research an attempt should be made to optimize the model, especially by formulating recommendations concerning the detailing with capabilities in areas of: monitoring the behaviour of customers and a structure of even quicker response to their purchase decisions.

Conclusions

In this paper, the authors have presented the results of research concerning the description of utilizing agile and linear approaches in randomly chosen organizations operating in the IT and sport sectors. Despite resorting to qualitative methodology of research, the authors have attempted to quantify their observations. The result of that is a correlation matrix, which presents the average values of actions from the two selected categories and the ability of organizations to: communicate with the customers, increase profits, and minimize the risk related to introducing a new product on the market. This served as a base for describing the case of transforming a company in the IT sector to better utilize agile activities. The results have justified the implementation of the prepared model of action. In future research related to this topic, a broader quantitative verification could be undertaken of the research concerning the relation between agile approach activities and an organization's ability to: communicate with customers, increase profits, and minimize the risk related to introducing a new product on the market.

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