Research for Usefulness of Agile Methods in Creative Business

Kiril Anguelov
French education faculty in electrical engineering
Sofia, Bulgaria
ang@tu-sofia.bg

Abstract—**The paper considers the possibilities to use the Agile methodology usually implemented in ICT companies as a flexible approach to achieve good level of clients satisfactions in the specific sphere of creative business. The author claims after a comprehensive analysis that basic principles of Agile methodology could be also successfully applicable in some sectors of cultural and creative business. The paper presents the concept of Agile methodology, its resent development in the specific view of researchers and scientists and the methodology for approbation in the companies from creative industries.**

Keywords— Agile methodology, SCRUM, creative business, cultural and creative industries.

I. INTRODUCTION

Cultural and creative industries have become in the recent years the attractive field of economy competition between all stakeholders – different national economies, international economy organizations, and global players. Divers reasons have been pointed out both by the economists and scientists presenting the powerful potential of Cultural and creative industries (CCIs). This interest is explicable by the impact that CCIs could have on the others sectors of economy. The current paper presents an analysis of the essence of Agile methodology and in particular SCRUM approach and consider the possibility to implement Agile in the companies of CCIs. In order to meet the major objective of the paper the author analyzes I depth the concept of Agile and SCRUM (as its most widely used approach in the practice).

II. LITERATURE OVERVIEW

Since the proclamation of Agile Manifesto in 2017, which act could be considered as a revolutionary for that moment, the agile methods attract attention of practitioners but also they become a subject of continuous interest of the scientists. Agile methodologies are explored depending on the specific interest of the researchers, some of which try to apply the basic principles of Agile methods for software developing in the different other sectors of economy. Resent researches also are absolutely divers. Özcan-Top and Demirors for instance elaborate Software Agility Assessment Reference Model in order to prevent from the effect, achieved by many organizations that perceive selectively the concept of Agile methodologies. In [5] they claim "Misinterpretation of agile principles and values, and adoption of partial solutions with few agile practices instead of holistic approaches prevent organizations to obtain full benefits of agile methods."

In general, we could divide the scientific materials dedicated to Agile methodologies into two basic groups. Some of researches are devoted to the different aspects for developing and improvement of Agile methodologies while the other explore the divers sphere of approbation of Agile principle expanding the scope not only to the software development and ICT but also adding new sectors of economy.

Looking closely to the first major group, we could fine different scientific approach based on the specific interest of the researcher. For instance Rasnacis and Berzisa develop a method for adaptation and implementation of Agile Project Management Methodology. In [8] they claim that within Agile general concept there are approximately 20 different methodologies and in order to have effectiveness of all efforts the chosen methodology has to be adopted for the specific company's needs. According to their opinion "With the proposed method is possible to analyze the team structure and motivation and adapt agile roles, artefacts, processes and practices that are more suitable for the project team with target to improve team self-organization, motivation and effectives. [8]" Kolychev and Bezmenskii develop an "algorithm that provides the high accuracy to estimation of large project with a relatively considerable number of tasks" [3]. They claim that with the elaborated algorithm will allow "to apply Agile methodologies to large projects without violating the rules and requirements of methodologies" [ibid]. Chan and Thong explore in depth one of the biggest challenges in the process of applying one of the agile methods – they elaborate a framework which allows agile principles to be easily accepted by the developers. In [1] the researchers admit "Agile methodologies, the latest batch of systems development methodologies that are most suitable in dealing with volatile business requirements, are likely to face the same challenge as they require developers to drastically change their work habits and acquire new skills." Patanakul and Rufo-McCarron investigate the transformation from the classic software development models (such as waterfall is) to Agile concept and in particular – SCRUM as most applicable Agile methodology. They provide a comprehensive analysis on the process of transformation and change from waterfall model to agile methods and in [7] describe challenges that face organisations and that have to be overcome in order to take full advantages from the new approaches. Galvan, Mora, O'Connor, Acosta and Alvarez presents in [2] an interesting compliance analysis between agile methodologies and ISO/IEC 29110 Project Management Process. They compare the standard with the three most used agile methodologies, namely SCRUM, XP and UPEDU. After defining the different indicators for compliance, the authors conclude that "The main findings indicate that the UPEDU and SCRUM methodologies present and high compliance level with the ISO/IEC 29110 Project Management process, while XP has a moderate level. Thus, software developer teams interested in achieving compliance with the ISO/IEC 29110 Project Management process can count with two ASDMs." [2]

We start the presentation of the second major group (which aim is to find approbation of Agile methodologies in different than software development sphere) with Ribeiro and Domingues who explore the possibilities of applying some of the basic Agile principles in the Public Administration. They pay special attention to one of the specific characteristic of any organisation in the public sphere, namely the great volume of documentation which accompanies each administrative process. In this regard the researchers try with the SCRUM approach to improve administrative process in concrete public authorities. As a result, based on the feedback from the representatives of this public company, they summarise "Regarding the documents relevance it was verified that the most relevant is the requirements list followed by the project plan. In congruence with these data are the results of the adequacy of the documents. In this case, the list of requirements and the project plan are also considered the most appropriate" [9]. The idea of Papadakis and Tsironis is on the base of the comprehensive review and analysis of the scientific literature of the subject to develop a model for applying agile methodologies in the service sphere. The authors claim in [6] "The benefits of this "hybrid" model will be a faster and more adaptive response to changing customer needs, better integration of voice-of-customer, better team communication, improved development productivity, and faster to market. The future of value delivery is a spectrum of approaches—iterative, incremental, predictive, agile and whatever will follow to change how we work". Masood, Hoda and Blincoe explore the different challenges that face universities in adaptation of agile methodologies in the study courses. They identify in [4] such obstacles as "difficulty in setting up common time for all team members to work together, limited availability of customer due to busy

schedule and the modifications the students introduced to adapt agile practices to suit the university context, such as daily stand-ups with reduced frequency, combining sprint meetings, and rotating scrum master from team. In addition, it summarizes the effectiveness of these modifications based on reflection of the students."

III. CHARACTERISTICS OF AGILE METHODOLOGIES

The philosophy behind the Agile concept is the total change and reversal of the attitude and process to develop and deliver software products. The proclaimed Agile Manifesto in 2001 is based on the opposite values and share totally different principles from the classical methods for software development. Four basic values of Agile Methodologies are as follows:

Individuals and Interactions Over Processes and Tools. This basic value poses the attention on the individuals and their ability for self-organization and motivation. When on the centre of the process are individuals and their communication skills as members of one project team responsible to achieve both - good results and clients satisfaction, the initial understanding for the overall process is changed itself.

Working Software Over Comprehensive Documentation. This value focus the usability of direct communication between client and project development team/ or project leader and client instead of heavy documentations unusually presented at the end of the software development process where is difficult to make basic changes and only few very limited light variations to the final results are possible to be made. This value of Agile concept does not deny the importance of good elaborated documentation, just put the
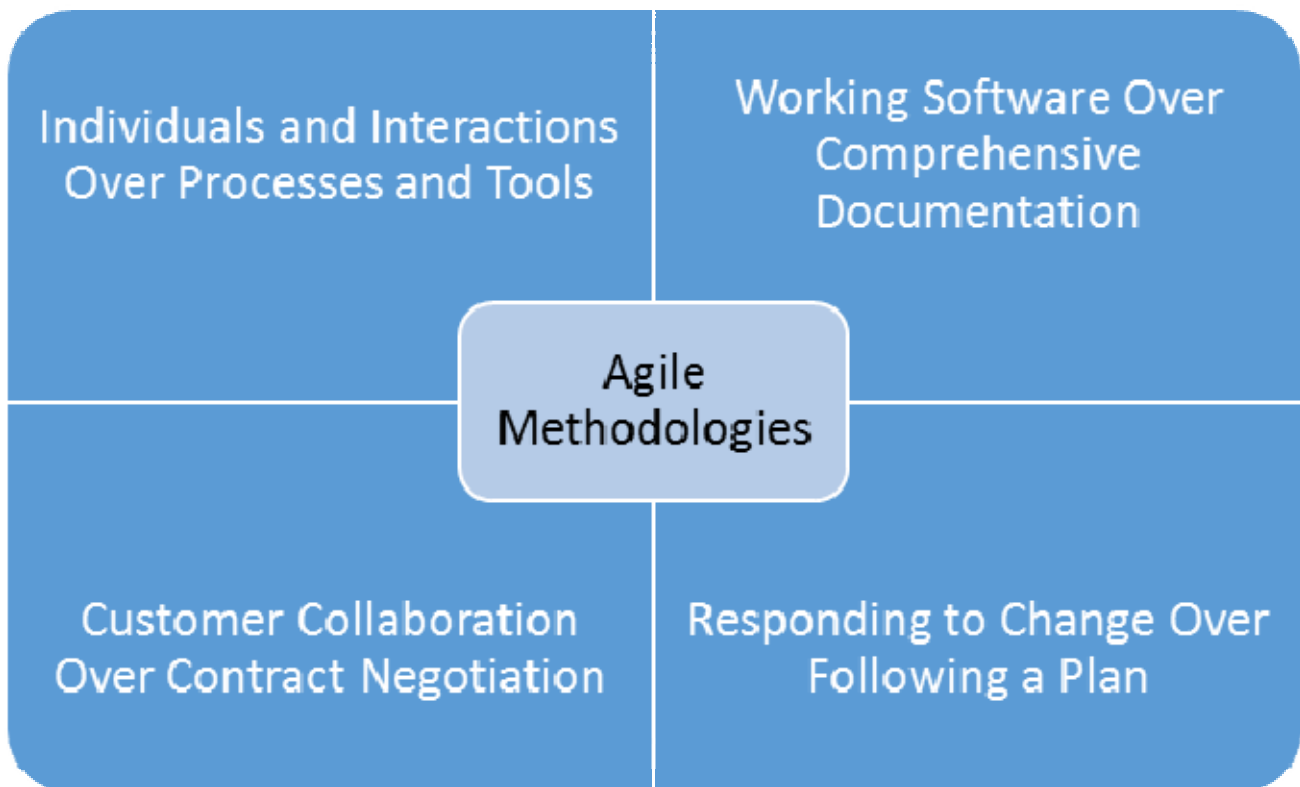
Fig. 1. The matrix of Agile methodologies values Source: Agile Manifesto, 2011

process on the development in different steps where the documentation is the final accent of the achieved result.

Customer Collaboration Over Contract Negotiation. This value is in accordance to the previous one and possesses complementary effect to the process. The essence here is on the understanding that good software specification is not possible to be fully developed at the beginning of the project which enforces closer relations between developers and client. Thus allows to adjust in motion the specification in regards to the concrete client`s requirements, having in mind timing, financial limitation and other important parameters of the project.

Responding to Change Over Following a Plan. Addressing the importance of changes during the overall process of software development is really the leading value which makes the flexibility of Agile concept. This value refers fully to the changing business environmental, including the transformation of client`s requirements for the final product no matter the reasons for that change.

These four essential values of Agile methodologies are visualized graphically on fig. 1.

These values are supplemented by 12 fundamental principles of agile development which will be analysed in depth along with the major characteristics of creative business.

IV.   CHARACTERISTICS OF CULTURAL AND CREATIVE BUSINESS

Cultural and Creative Industries are in the Agenda of the European Union and also in the other market players on the global level since the last 15 years. When it comes to the European policy concerning the Cultural and Creative Industries (CCIs) it could be said that European Commission provides clear policy to develop cultural and creative business since the last two programming periods. The amount of financial resource allocated directly to support CCIs for the present programming period is increased with 9 % according to data of the European Commission [12]. This central place of CCIs is due to the powerful potential that

CCIs could bring to the other sectors of economy. On the other hand – creativity is the field of competitiveness where 'big' and 'small' or 'relatively big' and 'relatively small' national economy possesses equal chance to develop competitive advantages. Therefore the focus of the European Union and European Commission is easily explicable with the specific characteristics of the creative business and creative economy.

According to EU definition [11], Cultural and Creative Industries include several important economy sectors: architecture, archives and libraries, artistic crafts, audio-visual (including film, television, video games and multimedia), cultural heritage, design (including fashion design), festivals, music, performing and visual arts, publishing and radio.

In [11] European Commission has described some of the important specific characteristics of the CCIs, as follows:

The majority part of the companies within the CCIs are small (usually with no more than 10 employees) but with high level of skills and professionalism

Significant part of the people working in the CCIs in fact are self-employed or working in part-time job or could be considered as "freelancers" due to the usually temporary character of working contract

The specifics of development CCIs are directly connected to the good opportunity of networking, including clusters as well as other types of cooperation. On the other hand, CCIs are concentrated in the big urban area. Some of the researchers consider that this fact could be explained with the high level of internet connection (along with the other obvious characteristics of big cities and their economic life).

According to the EU policy and strategic documents in the field, the major idea for the EU member-states countries is to poses regional focus on the CCIs due to the fact that they could have more potential impact namely on the regional level.

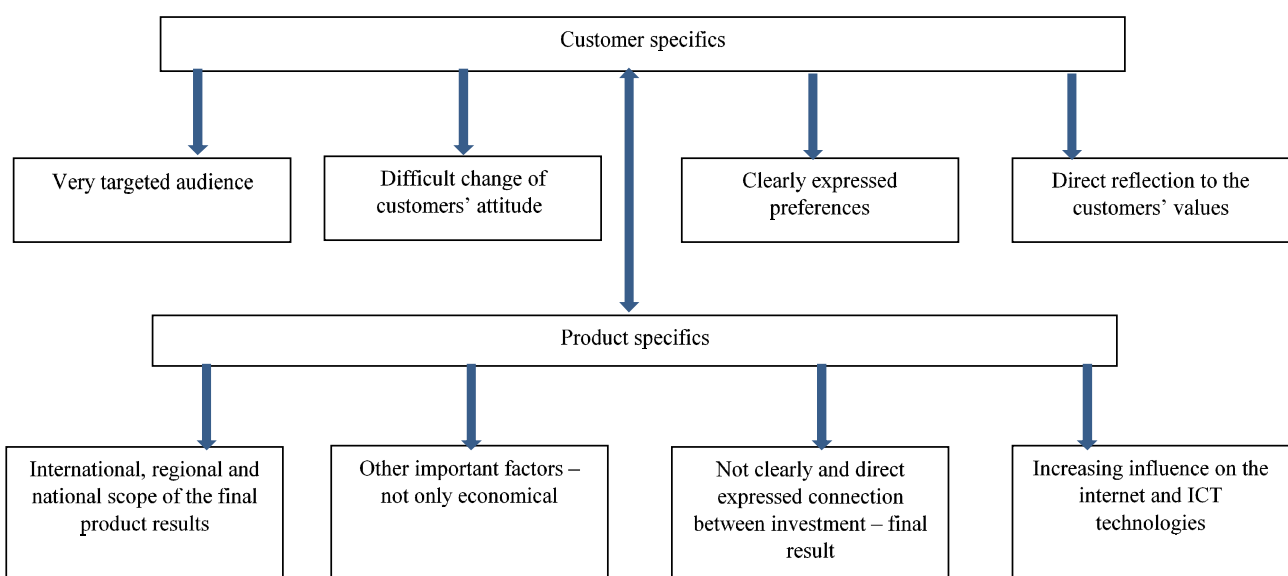On fig. 2 are presented major characteristics of the

Fig. 2.   Major characteristics of the CCIs

companies within the cultural and creative industries.

V. APPLICABILITY OF THE AGILE PRINCIPLES IN CULTURAL AND CREATIVE BUSINESS

Agile manifesto defines clearly 12 basic principles which could be considered as revolutionary especially in comparison to the classical methods of software development used at that moment [10]. These principles frame the basic lines of the new flexible concept and new understanding of the overall process of software development. Almost 20 years later, these principles continue to be up to date and in many ways – applicable to the other sectors or enterprises, not only in ICT companies. For the purpose of the current paper we will explore their implementation in the CCIs. Obviously the direct connection and intersection point between software development and CCIs are the video games where all 12 agile principles are absolutely applicable. On the table below we present these principles for the other industries within the CCIs.

TABLE 1. AGILE BASIC PRINCIPLES AND THEIR APPLICABILITY IN THE CCIs

Source: Agile Manifesto 2001 and author`s analysis

N	Agile principle	CCIs Applicability
1	Customer satisfaction through early and continuous software delivery	The key elements of this principle are customer satisfactions from one side and early delivery of the elaborated products from the other. To achieve good level of customers' satisfaction is basic motive for all companies nevertheless of their profile, sector of economy etc. But here the most important is the combination between good level of satisfaction and early delivery of the elaborated product. If we put the accent here, we could understand easily the sectors from CCIs which this principle is absolutely applicable – namely advertising and architecture. Here there is a greatest danger of divergence between client`s ideas and elaborated by the professionals product. Therefore early presentation of draft variant could help better coordination between client`s expectations and product elaboration in reality.
2	Accommodate changing requirements throughout the development process	This principle directly refers to the agile and flexibility of the concept. Here the connection between change and process is permanent. Key understanding is "welcome changes" instead of wasting time and efforts to their overcoming or their elusion. Although change is important for all sectors of CCIs here the changes usually are caused by a different nature. The leading motive of change in the process of elaboration product is the change attitude of the author when it comes from the cultural sectors. Again – the principle is suitable for advertising and architecture and partly for the cultural industries.
3	Frequent delivery of working software	Frequent delivery is a key principle for software development process and Agile methodologies which could be applicable in the CCIs in sectors such as archives and libraries due to the scope and specifics of their work. When the process takes longer time –for instance process of digitalization of archive here this principle is absolutely suitable. Thus will help for the better motivation of the employees responsible for this process and in terms of management and coordination – will reflect to set up interrelated and consecutive goals.
4	Collaboration between the business stakeholders and developers throughout the project	The most important of this principle is basic understanding of working together – experts and clients. Again the most appropriate from the CCIs industries are advertising, design and architecture where there is clear relation between clients and experts responsible for the project development and delivery. This principle could be considered as supplementary to the principle N 2.
5	Support, trust, and motivate the people involved	Motivated team is absolutely obligatory for all sectors within CCIs due to the fact that are based on the creativity, imagination and talent of the people. Here is one of the biggest challenges in front of the CCIs – how to have good, positive and well-motivate creative teams especially in case they are composed by the proven artists.
6	Enable face-to-face interactions	Direct communication rests the best way of coordination between all team members. This principle is applicable everywhere in the CCIs and poses serious question for the role of communication during the working process. Some of researchers really believe that major part of the problems that occurred in the working process are in fact communication problems.
7	Working software is the primary measure of progress	Again due to the fact that this principle require direct relations between client and team, the most applicable from the CCIs are advertising and architecture, where the initial process is based on the client`s request.
8	Agile processes to support a consistent development pace	Flexibility has to be a driven motive for any enterprise. This principle is absolutely applicable where the overall process from initial start to the final results takes longer time. The progress and constant pace are important factors from another point of view – to support better motivation of the people responsible with the process of elaboration.
9	Attention to technical details and design enhances agility	Details including technical details in sector such as architecture but also interior design are really important not only to the impact of the final product but also to its reliability.
10	Simplicity	Simplicity in the software development is maybe the most difficult principle applicable for CCIs. Its origin is connected to the heavy procedures, documentations etc., but it is relatively controversial the way of implementation for CCIs. Due to the specifics of the final results, it could be said that all products of CCIs are not results of the simplicity of the process.
11	Self-organizing teams encourage great architectures, requirements, and designs	Self-organization is absolutely admitted as one of the leading characteristics of all agile methodologies but in terms of CCIs could be considered as relatively controversial. For instance in sectors such as architecture, advertising and design it is appropriate to have self-organizing teams. But on the other hand when we consider the culture sphere – a movie team, an orchestra or theatre team, the leading role of director is really important.
12	Regular reflections on	Reflect and adjust are key elements of

how to become more effective	the agile methodologies during the overall process of elaboration software products in order to achieve good level of client`s satisfaction. On the other hand, for some of the CCIs sectors this principle is applicable (design, advertising), for other – it could be considered as controversial (architecture for instance where there are a lot of requirements that have to be respected, including based on the legislation) and for the rest – totally irrelevant –for instance for the culture sector, where there are different values – not only economic.

VI. CONCLUSION

The analysis of Agile values and basic principles show their applicability in almost all sphere of CCIs. Their easily approbation could be explored in regards to the closer characteristics of the companies – majority part are small enterprise with good and well skilled professionals. Our analysis shows that the Agile basic principles are totally applicable for the sectors of CCIs such as advertising and design, partly applicable for the architecture, media and cultural sectors. However the rapid change of environment requires different flexible approach and the achievement of Agile methodologies could be further developed for the needs of other sectors of economy, including CCIs.

REFERENCES

[1] Chan, F., K.Y., Thong, J., Y., L., Acceptance of agile methodologies: A critical review and conceptual framework, Decision Support Systems, Volume 46, Issue 4, March 2009, Pages 803-814.

[2] Galvan, S., Mora, M., O'Connor, R.V., Acosta, F., Alvarez, A., A Compliance Analysis of Agile Methodologies with the ISO/IEC 29110 Project Management Process, Conference on ENTERprise Information Systems / International Conference on Project MANagement / Conference on Health and Social Care Information Systems and Technologies, CENTERIS / ProjMAN / HCist 2015 October 7-9, 2015, Procedia Computer Science 64 (2015) 188 – 195.

[3] Kolychev, V., Bezmenskii, N., Estimation of the task complexity for large-scale high-tech projects using Agile methodologies, Postproceedings of the 9th Annual International Conference on Biologically Inspired Cognitive Architectures, BICA 2018 (Ninth Annual Meeting of the BICA Society), Procedia Computer Science 145 (2018) 266–274.

[4] Masood, Z., Hoda, R., Blincoe, K., Adapting agile practices in university contexts, Journal of Systems and Software Volume 144, October 2018, Pages 501-510.

[5] Özcan-Top, Ö., Demirors, O., Application of a software agility assessment model – AgilityMod in the field, Computer Standards & Interfaces, Volume 62, February 2019, Pages 1-16.

[6] Papadakis, E., Tsironis, L., Hybrid methods and practices associated with the agile methods, method tailoring and delivery of projects in a non-software context. CENTERIS - International Conference on ENTERprise Information Systems / ProjMAN - International Conference on Project MANagement / HCist - International Conference on Health and Social Care Information Systems and Technologies, CENTERIS/ProjMAN/HCist 2018.

[7] Patanakul, P., Rufo-McCarron, R., Transitioning to agile software development: Lessons learned from a government-contracted program, The Journal of High Technology Management Research, Volume 29, Issue 2, November 2018, Pages 181-192.

[8] Rasnacis, A., Berzisa, S., Method for Adaptation and Implementation of Agile Project Management Methodology, ICTE 2016, December 2016, Riga, Latvia, Procedia Computer Science 104 (2017) 43 – 50.

[9] Ribeiro, A., Domingues, L., Acceptance of an agile methodology in the public sector, CENTERIS - International Conference on ENTERprise Information Systems / ProjMAN - International Conference on Project MANagement / HCist - International Conference on Health and Social Care Information Systems and Technologies, CENTERIS/ProjMAN/HCist 2018, Procedia Computer Science 138 (2018) 621–629.

[10] Agile Manifesto, 2001 - https://agilemanifesto.org/

[11] INTERREG IVC analysis report Creative Industries, 2014.

[12] Programme Creative Europe of the European Commission - https://ec.europa.eu/programmes/creative-europe/about_en