






Empirical Research on Customer Communication Challenges in the Companies Adopting Agile Practices

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Abstract: One of the most critical aspects of Software Development Process is the Requirements Engineering process and defining the correct and understandable requirements in Agile methodology. Hence, Requirements Engineering in agile directly effect the overall project success. This paper demonstrates a research study about the usage of Agile methods in the set of industrial companies located in Russia. The survey gives insights about different aspects of the method: communication challenges and issues arising during the Software Requirements Engineering phase in particular the challenges in the communication with the customers. To investigate these issues the paper presents an analysis of the state of the art done with the help of the research survey. The results of the interview sessions are summarized and the set of suggestions to overcome the challenges are proposed. 30 representatives from 20 different companies who are mainly Product owners and Product Managers participated in the survey. As the results indicate, the communication is always a key challenge for the companies. The analysis of particular qualities of the communication field in the context of rapidly changing Software Development environment helped to define the outcomes related to the customer communication.


1 INTRODUCTION


Agile methodologies were formalized a couple of decades ago to address the so-called “Software crisis” (Maurer et al., 1999; Kivi et al., 2000; Succi et al., 2001a; Sillitti et al., 2002; Succi et al., 2002; Pedrycz et al., 2011; Sillitti et al., 2012; Janes and Succi, 2014; Coman et al., 2014). One of their key approaches has been a close and continuous interaction of the customer throughout the Requirements Management phase. The practise introduces customer collaboration and receiving the feedback on each development iteration, as well as adaptiveness and response to change. Despite the fact that both Agile and traditional methodology practises have been adopted during decades, still the Requirements Engineering phase of the Software Development Life Cycle appears the issue of paramount importance (Baruah, 2015). Ac-


ording to the recent studies conducted in the Requirements Engineering of Agile methodologies concerning the customer collaboration, most of the studies are centered around the customer collaboration challenges. Some of the authors emphasize the importance of face-to-face communication over written specifications and described the challenges occurring in customer-related agile requirements engineering activities(Cao and Ramesh, 2008). Mainly the challenges claimed in the paper include customer availability, consensus among customer groups and customer trust to the agile team and many others.


Most of the researches done till this time around the issue of collaboration of the customer with the production can turn to deficient because of the aging of the methodology taken towards the communication between customer and development team. Because the development of the modern communication panels like social networks, messengers and platforms for easier connection does not require taking under consideration the physical availability.


The research survey mainly focuses in the issues related to the customer communication in Agile practising companies during Requirements Engineering

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process. It includes the definition of the challenges in the customer communication, gives suggestions to overcome and minimize the issues.

The paper starts with the discussion of the related works done in section 2, which includes contributions done in the area of Requirements Engineering and collaboration of customer with the development team. Following, section 3 illustrates the methodology underlying this paper, research experiments, interview process and evaluation details. All the results and analysis concerning the conducted interviews, derived challenges in the area and suggested solutions to the stated issues were explained in details in section 4. Finally the section 5 discusses the validity and threats of this study, concludes the results and gives directions for future research in section 6.

2 RELATED WORK

In the science of domain dozens of publications have described the activities to be conducted in the Requirements Engineering process which requires the customer collaboration. According to the research paper Paetsh et al. (2003), agile methodology adopting practise includes conduction of the following main activities during the Requirements Engineering process (Paetsch et al., 2003):

1. Requirements Elicitation - requirements which can be derived in the form of interviews, use cases, user scenarios, observation and social analysis, focus groups, prototyping of the software.
2. Requirements Analysis - the main techniques for analysis can be Joint Application Development (JAD), requirements prioritization and modeling.
3. Documentation - baseline for evaluating the subsequent product and process.
4. Requirements Validation - requirements review, requirements testing and validating the requirements whether they are acceptable for the system to be implemented.
5. Requirements Management - concerns with the change and version control, requirements tracing and requirements status tracking.

Whereas (Abdullah et al., 2011) identifies three major activities of requirements engineering in the context of user stories exploitation: gathering, clarifying, and evolving a story card . Each of these activities involves active collaboration with customers. Bjarnason et al. (2011) also highlighted the core Requirements engineering process activities performed in collaboration with the active customers (or their

representatives) (Bjarnason et al., 2011) in particular (1) One Continuous Scope Flow where the product backlog prioritization and update for both business and development site is performed, (2) Cross-functional Development Teams where customer is included in the requirements definition, implementation and testing phases, (3) Integrated Requirements Engineering, where both requirements definition and documentation is done simultaneously with design and development phase, (4) Gradual and Iterative Detailing of requirements refinement process, (5) documentation of requirements in the form of User stories and Acceptance Criteria.

Another research Korkala et al. (2006) describes the importance of the effective communication and feedback in agile development and investigation of customer-developer communication. As the authors conclude, the main challenge is in the selection of communication channel. The less informative communication channels give higher defect rate. As a result, paper suggests agile teams to pay much attention on the means of communication they select in order to understand client needs in a proper way..

There are also several Systematic Literature Reviews investigating the challenges of the Requirements Engineering process in Agile. One of that SLR's was held by Irum Inayat et al. (2015) (Inayat et al., 2015).The paper describes some particular challenges traditional compared to agile methodology practise during Requirements Engineering process. Traditional methodology challenges in the RE process were mentioned as communication gaps, over-scoping, requirements validation, requirements documentation, rare customer involvement. However, agile RE process challenges were also addressed in the paper include - customer availability, customer inability and agreement, contractual limitations and requirements volatility, requirements change and change evaluation, and the associated prediction of quality and productivity (Marino and Succi, 1989; Vallerio et al., 1997; Vernazza et al., 2000; Musílek et al., 2002; Sillitti et al., 2004; Clark et al., 2004; Scotto et al., 2004; Pedrycz and Succi, 2005; Ronchetti et al., 2006; Scotto et al., 2006; Moser et al., 2008a; Moser et al., 2008b; Pedrycz et al., 2012).

Another SLR Schon et al. (2017) (Schn et al., 2017) reviews the papers concentrated on the stakeholder and user involvement. The authors highlight the several activities to involve customers to participate in agile requirements engineering processes where The combination of XP with co-design session(Bellucci et al., 2015),Qualitative/Quantitative Customer-driven Development (QCD) (Olsson and Bosch, 2015), to organize the additional roles in

agile development such as business users, Agile-UCD specialist (AUS) who use usability-pattern-based requirement-analysis method (Dragicevic et al., 2014), and Agile Software Development (ASD) with Participatory Design (Liskin et al., 2014).

(Sillitti et al., 2005) mention problems related to customer's uncertainty in requirements engineering in ASD (Agile Software development) which shows more significant results compare to document driven Software Development. The problems listed in the papers are Cognitive limits of the memory-attention-understanding, Lack of information-knowledge, Problems of the communication-language-communication channels, Emotional and relational limits or difficulties and Lack of clarity in business objectives.

(Pikkarainen et al., 2008) dive more into the communication details and divide it into 2 types: internal and external. Where internal communication includes only team members, while the external communication is the communication between the customers and the development team. As the main activities requiring the communication in agile were mentioned iteration planning meetings, iteration reviews, daily meetings, iteration retrospectives and refused formal tools/media type communications.

Customers are involved in collaboration with development team in the following RE activities: Feasibility study, Requirements Elicitation, Analysis, Validation.

Following customer communication challenges are found in each RE activity:

1. Feasibility study - right choice of the customer or the customer groups. It influences directly on overall customer collaboration process during further requirements engineering activities resulting in not so well-defined requirements elicitation, prioritization and validation.
2. Requirements Elicitation - the important factor is means of communication used.
3. Requirements Analysis - prioritization of requirements.
4. Requirements Validation - presence of the customer and his involvement into QA process (sprint review).
5. Requirements Management - analysis, prioritization, validation of the requirements.

According to most of the research publications, Requirements-Driven customer collaboration is one of the central ideas behind RE activities in agile. Furthermore, there is a big need in further investigation of case studies of the customer communication prob-

lem in agile requirements engineering due to the lack of such researches and not enough qualitative data.

3 METHODOLOGY

This section describes the methodology that was chosen for the research study starting from the questions generated till the results revealing process.

3.1 Rationale

The review of the literature showed what kind of customer communication challenges in agile requirements engineering activities exist and require solutions.

Objective behind conducting this experimental survey can be stated as exploratory and explanatory purposes as described below:

- *Exploratory purpose activities:* to reveal existing communication problems in Requirements Engineering processes within Agile methodology, Scrum, modified Scrum and an exploitation of agile practices with no definite methodology, highlight the existing procedure, find correlation between agile in theory and in practice, explore new hypotheses for further research.
- *Explanatory purpose activities:* to build a framework and a language based pattern on the collected data, issues and root causes of the issues during the process, emphasize the most commonly repeatable activities. To figure out usual algorithm of events.

3.2 Research Questions

To proceed with the research study we defined the essential questions need to be answered. The research questions are the followings:

- What communication challenges occur between customers and development team in the context of agile requirements engineering?
- How communication challenges revealed in RQ1 are being solved in the context of investigated companies?

To answer these aspects the questionnaire with the set of questions devised according to the best practises in the field. It was submitted to the 40 senior IT specialists (managers, CTOs, CEOs) of the companies. The companies considered in the research survey are located in Russia, in particular Kazan, Innopolis and Moscow.

As the first degree contact in the interviews it was used a semi-structured interview model according to (Lethbridge et al., 2005). Moreover, in comparison to the structures interview sessions where it is suggested strictly follow the pre-written script, a semi-structured interview session seems more natural. Furthermore, it is more applicable when the interview session is organized by the researcher himself.

This method is considered as one of the most flexible ones because it is impossible to predict interview process and having some freedom during the process allows interviewer to adapt according to the interviewed person and find out more relevant information generating natural environment during the interview session (Myers and Newman, 2007).

The scientific validity of the research depend on the the minimum of the biased results during the data collection process. Therefore, in order to decrease the level of biased data during the interview sessions, we tried not to interrupt the interviews. Based on the first interview session outcomes the final version of the questionnaire was formed.

3.3 Experiment Design and Planning

As the base plan for this research experiment was chosen the plan suggested by (Robson, 2002). This research experiment can be considered as a single-case study with multiple units of analysis. Single case - customer communication challenges within agile RE. Multiple units of analysis - multiple people from multiple companies.

During the research we have studied the Software development teams in the Information Systems and Technologies related companies. Closely worked with the experienced IT experts in the companies such as POs, PMs, team members performing the role of a customer representative, team members directly communicating to a customer. The study is single case with multiple units of study designs according to (K Yin, 2003) investigating different teams in different companies (different units of analysis) in one context.

The collection of the data from the companies under consideration was done with the help of direct methods:

- Interviews, informal personal communication,
- Questionnaires and informal Q&A (question and answer) sessions.

Selection Strategy and Criteria. The selection of the data needed for the research was collected from Russian IT companies located in mostly in Innopolis, a high-tech city in Russia, Kazan and Moscow.

The size of the industrial companies considered can be separated into a few large companies and majority of small companies. The exact distribution of the companies can be separated into:

- Large - at about half of the companies can be considered as large (more than 250 employees)
- Small - quarter of the companies in the survey (10-49)
- Medium - the rest of the companies can be considered as medium (50-249) and micro-sized (< 10).

In the selection criteria for the company representatives we have chosen a requirement that the representative should be wither PO or PM or performing the role of a customer representative or directly communicating with the customer. The team is required to adopting the agile methodology practises or practising Scrum or modified Scrum.

Despite the fact that the respondents had different scopes of the projects (see Figure 1), products, nevertheless all of them relate to the production of software.

(Runeson and Höst, 2009) proposed a checklist for the validation of the case studies. Based on this checklist questionnaire for interviewing and interview planning was made in 2 iterations. It was applied for the analysis of the state of the research before the overall interviewing phase. It helped to reveal existing weak points and modify the interview questions in case of necessity.

3.4 Interview Process

The 30 interviews with the representatives of the companies were conducted during 6 weeks period each taking on average 20 minutes. Interviews were face-to-face offline or online using Skype video call depending on the accessibility of the respondents to the authors. All the interviews were recorded on a voice recorder with the permission of the respondents. In order to establish comfortable atmosphere that could let respondents go beyond the question borders and give unique phenomenon in the area, it was decided not to take notes directly during the interview. The notes were taken after the interview based on the record. The very first interview was conducted as a test interview, checking applicability of the questionnaire to the process and relevance of the questions and the test interview is not included in the results of the survey. As a result of the test interview, a few updates were made on the questionnaire and before its final form.

Interview transcripts were analysed based on the Google voice-to-text extension and pattern coding

Table 1: Scope of the Respondents Work Projects (Products).

ID	Product Type	Industry Sector
R1	Inner bank product for the bank employees	Communication System
R2	Internal technological platform for the product teams of the company	Communication System
R3	Virtual analytics	AI, Machine Learning
R4	Music streaming platform	Search engine
R5	Marketplace	Retail
R6	Product for inner use in the group of companies	Communication System
R7	Product for the inner use of the employees to control and manage customer accounts	Management System
R8	Checks scanning application	
R9	Robots for houses/apartments construction	Robotics
R10	Online cashbox	Trading
R11	Inner bank product for the bank employees	Banking
R12	Mobile games	Gaming
R13	Bank software for legal entities, retail paying system for Individuals	Banking
R14	Platform for the work of distributed teams, AI agents	Banking
R15	Saas product to work with geo-data	Geo-information system
R16	Cloud geo-information system	Geo-information system
R17	Platform for the ministry of ecology to reveal violations in the nature	Geo-information system
R18	Inner digital platform for bank	Communication System
R19	Robots	Robotics
R20	Software products delivery	Service
R21	Inner bank product for the bank employees	Communication System
R22	Contact center (operator assistant app)	Management System
R23	Digital solutions for airlines	Management System
R24	Platform for HRs to make office corporate bonuses customizable and motivate employees	Management System
R25	B2B platform for the fish retail	Retail
R26	Portal for the communication with the company partners	Communication System
R27	Dispatching system for autonomous vehicles	Robotics, AI & Machine Learning
R28	Voice recognition, artificial intelligence	AI & Machine Learning
R29	Chatbots	AI
R30	Autonomous computer vision traffic analysis system	AI, Machine Learning

with the help of manual notes of the Interviewee. The challenges encountered in the process of pattern coding as a final step of the qualitative analysis is described in Section 4.1.

3.5 Questionnaire Construction

In the challenging process of creation of an effective survey, the way how the questions are defined, organized and put in the context can influence the results of the survey significantly. To address these limitations we followed the rules suggested in the literature (Basili, 1992; Basili et al., 1994; Bond and Fox, 2013;

Vannette and Krosnick, 2014; Krosnick and Presser, 2010; Lietz, 2008; Thayer-Hart et al., 2010). Besides, the usage of the approach helped us to avoid redundancy and replication and leading questions during the interview sessions. In particular, we put a significant attention in preventing biases in the responses and confirmation, based on the approach described in (Furnham, 1986; Podsakoff et al., 2003).

The first part of the questionnaire contains background questions to know the environment of the case that is studied - to get the information about the respondents and the company. This part of the questionnaire is mainly consists of the single-choice questions because such background research requires direct and unambiguous answers. However, "Product scope" questions require plain text answers. As far as the respondents work on a different and variety numbers of the products that requires more information and particular details.

The second part of the questionnaire consists of several questions about the way they organize the customer collaboration and about the agile RE activities. There are also single-choice questions with the implementation of Likert-Type Scale answer choice.

And, finally, the Third part consists of general free-from questions to find out about the challenges encountered during the work and the way customers handle the problems.

3.6 Research Validity

As in any survey, there are threats in our survey to the external validity. The main question lies on the degree of our representatives responsiveness. To address this thread and increase the external validity of our findings, we followed the best practices suggested in the literature (Szolnoki and Hoffmann, 2013; Khazaal et al., 2014; Maalej et al., 2014).

To provide an overall validation framework for the research, we used the 4 design tests by (Yin, 2009). Results of the application of the design tests are shown in the Table 2.

4 RESULTS

In the scope of the research study, we contacted 40 Product Owners and Product Managers from 30 companies adopting Agile methodology practises. Out of overall 40 contacted representatives only 30 of them responded from 20 different firms.

The distribution of the company representatives roles involved in the research study can be described as following: 17 of the representatives are Product

Owners (PO), 10 - Product Managers (PM), 2 - CTOs and 1 - CEO (see in Fig. 1). 2 CTOs and 1 CEO represent 3 Startups in the starting phase and/or transitioning to another business model. The limitation according to these companies is that the roles of PO/PM are not specifically established for the employee because of the limited number of employees in the team.

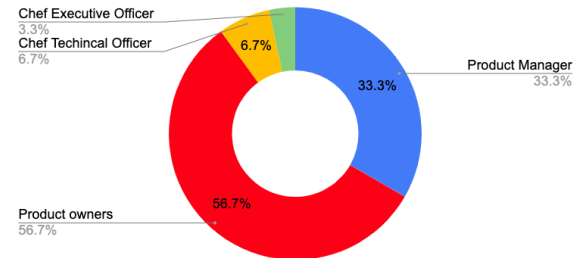


Figure 1: Distribution of the roles.

There were generated a particular situation during the investigation of the case. As far as most of the teams are small-sized that fully seizes agile concept of the team. 24 representatives of the survey participants mentioned their team size from 1-10 people, whereas 3 of them stated their team size 10-20 and only 3 of them has team with size of 20 and more (See Figure 2) One of the most influencing data for the result was the information derived from the company representatives who were in the Chef positions, had more than 20 team members and several teams at the same time. We considered all the subordinates of their branch as a single unified team.

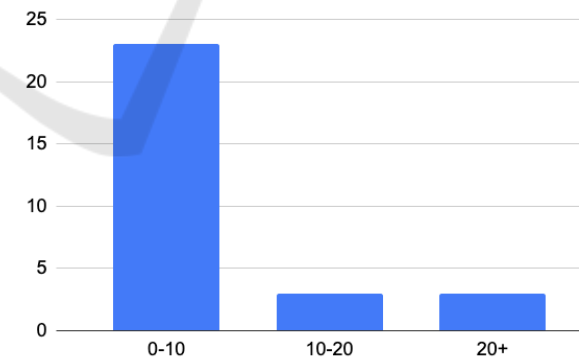


Figure 2: Distribution of the size of the teams.

Project teams are transformed into product teams due to adoption of agile practices (see Figure 3).

As it was defined from the research, Scrum is the methodology adopted by the majority of our respondents. Besides, there are may studies related to the effective Scrum teams such as (Matharu et al., 2015). Despite the fact that the number of our representatives from the companies consisted 30, while their number

Table 2: Case study tactics for 4 design tests.

Tests	Case study tactic	Phase of research in which tactic occurs	Application to the current research
Construct validity	Use multiple sources of evidence	Data collection	Applied
	Establish chain of evidence	Data collection	Applied
	Have key informants review draft case study report	Composition	Applied
Internal validity	Do pattern-matching	Data analysis	Applied
	Do explanation building	Data analysis	Applied
	Do time-series analysis	Data analysis	To be done in future researches
External validity	Use replication logic in multiple case studies	Research design	Not Applied
Reliability	Use case study protocol	Data collection	Applied
	Develop case study database	Data collection	Applied

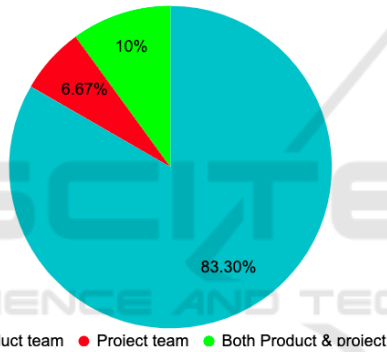


Figure 3: Distribution of the team types.

of methodologies adopted exceeded their number. So we can claim that every company can adopt and implement more than one methodology into their system (see Figure 4). According to their results we can summarize their methodologies used in the Table 3

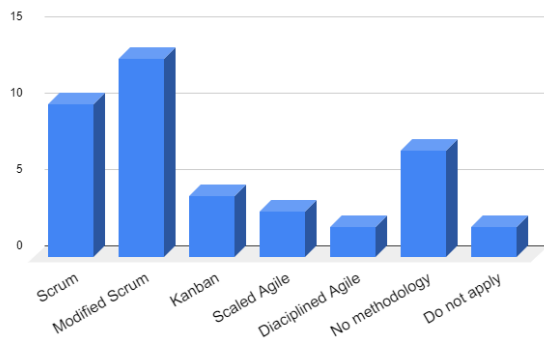


Figure 4: Distribution of the Agile methodologies used in the respondents' team.

According to the practises of the interviewees the

Products Owners and Products Managers are the ones who most of time (96,7%) directly communicate with the customer rather than the other team members in the company (see Figure 5).

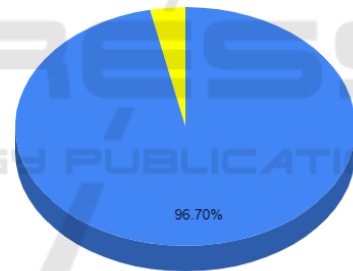


Figure 5: PO/PMs direct communication with the customer.

Although the major part of the communication with the customer is conducted by the Product Owners, Project Managers, it is inevitable that the development team also needs direct involvement of customers to understand the customer needs fully. Direct involvement of the customer during the Requirements Engineering phase provides the transparency and improve the understanding of the requirements. However, the direct involvement of the customer in the process is not popular practise among the participants of our survey as it can be seen from the Figure 6.

Although the face-to-face and live communication with the customer during the RE process is the most efficient way, nevertheless there are also possibilities to interact with the customer such as internet and on-line meeting. Almost all of the participants of our survey mentioned the face-to-face communication one of the ways when there is the least distortion of informa-

Table 3: Number of used methodologies per representative.

Scrum	10
Modified Scrum	13
Kanban	4
No particular methodology but the combination of agile practices	4
Scaled Agile	3
Disciplined Agile (DAD)	2
Do not apply any methodology	2

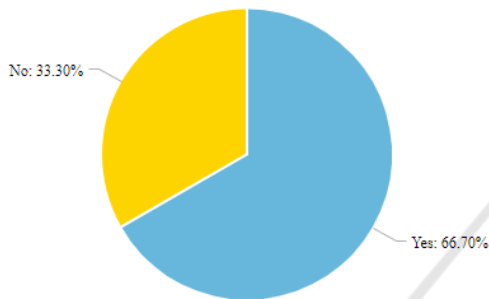


Figure 6: Customer collaboration with the development team during the requirements engineering phase.

tion. The Figure 7 shows the number of participants who uses the communication methods for teams collaboration with the customers during the RE process.

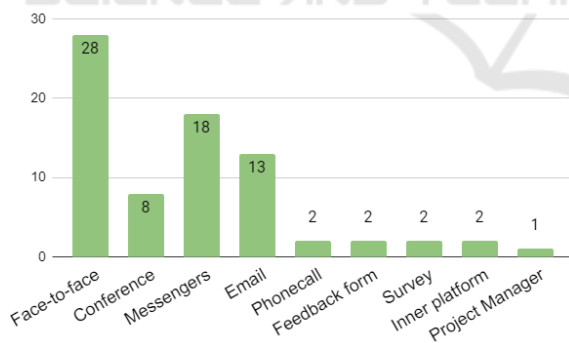


Figure 7: Communication Channels Distribution.

The interview revealed also the controversial points where the communication of the team with the customer can be discouraged in some particular cases such as:

1. Situation 1

- It is better to isolate business customers from internal development processes, especially when customers do not have technical background. Product Owner is the only one person in a team who communicates to the cus-

tommer in this case.

- In this case, the customers needs to communicate closely to the team and participate in all the activities.

2. Situation 2

- POs, PMs should have technical background in order to communicate effectively with the team and be able to form requirements efficiently.
- If POs, PMs do not have technical background, in this case, they need to get an expertise from the developers to form adequate requirements.

4.1 Challenges

In the result of the research survey, there were derived many challenges coming out of the customer collaboration specifically during the Requirements Engineering process in the project. The challenges mentioned by the participants of the interview sessions include much more details. Nonetheless, they were incorporated into the general groups according to their categories of the problem (see Table 4)

4.2 Solutions Suggested

Experience of the challenges in the communication with the customer lead to defining some solutions to these challenges from the participants. This subsection includes the suggested solutions for the challenges encountered by the participants of the survey. Most of the suggested solutions the representatives were trying to implement into the project. The suggested solutions for the PM/PO and managers include the followings:

1. PO/PM can write down the best practices for the developers, so that they will be ready for the customer collaboration with the help of special customer collaboration training so both of them could form proper requirements.

Table 4: Challenges encountered during RE process in collaboration with the customer.

#	Description of the challenges
1	Excessive expertise of the developers, PO/PM. They need to simplify the language they speak to make customers understand what they explain.
2	Developers are separated from requirements engineering. That is why they are far from understanding of the user needs.
3	Customers do not agree on product vision. Different interpretation of the same things, different design view (UX and scenarios). Customers insist on their literally non-correct view. As an example, customers think that developers are just code writers and do not have product vision. But, in fact, developers are experts in product.
4	Development team do not want to be aware of business part. Customers do not want to collaborate with a team.
5	Big number of users to be analyzed in order to form hypotheses for customers.
6	Customers are pressed by PO/PM's and developers' suggestions and refused from what they wanted. As a result, end-product differs from their expectations.
7	Customers are not flexible and require deadlines. They are often not available, team creates features as it thinks that is correct. Customers do not want to go to demos, meetings, get in touch with a team randomly, when it's convenient for them. Customers do minimum what team asks from them. (E.g., they were asked to perform user testing, they tested only 1 person).
8	Project (product) requirements approval takes a long time, company jurists approve everything very slowly. When customers are big organizations with a lot of departments, solutions are taken on several steps and often time-prolonged.
9	Lack of common information model for requirements related activities. Need in establishing one universal communication/process standard.
10	After customers ex-representative is fired, it takes quite a long for new representative to understand previously elicited requirements.
11	Customer reproaches PO/PM for ex-PO/PM mistakes.
12	Too big number of customers that leads to too diverse and controversial requirements. Customers think everything is easy to implement so they form not adequate requirements. Customers are not relevant even with the non-technical scope of the software under development.
13	Developed requirements differ from product to test. Testability of the requirements is not provided in advance.

2. PO/PM can involve the developers in Requirements Engineering process to get common understanding of what the customer wants (applicable for the case when only PO/PM is responsible for working with the requirements).
3. To try to find consensus with customer in case of different product/feature vision. Suggest alternatives. Use the facts to encourage the customer to come to a compromise.
4. To make more universal feedback form with checkbooks, automated visualization, in case of more than one customer is involved.
5. To isolate customers from technical specification, terms and notation and ask more business related questions to form the requirements.
6. To explain everything in the language of customers involving analysts into the activity.
7. To generate the proper planning for the customer meetings. In case of the long project approval sessions, together with developers to find the extreme cases, possible mistakes and failures. And then with the ready solutions set collaborate with the customer.
8. To have more communication with the end users and get more information about the expectations from the system.
9. To rearrange the Requirements Engineering process, in case current one did not work.
10. To introduce step-by-step Requirements Engineering activities suggested by Agile methodologies. Besides, to work with the customers continuously to introduce and experience Agile practices to the customer.
11. To develop personal patience, building emotional stability during the communication with the customer.

5 CONCLUSIONS

Requirements engineering in agile takes its most efficient form comparing to traditional development. According to communication channels efficiency model suggested by Alistair Cockburn, 2 most efficient and rich channels are considered such as face-to-face communication with and without whiteboard (Cockburn, 2002). That is why all important moments in

the Requirements engineering process should be discussed directly with the customer as it is implied in Agile. The paper reviewed the existing literature and work done in this area, proposed a methodology to organize and conduct an interview session, and discussed the results of the interviews.

According to our survey which was done in the context of identifying the Requirements Engineering process challenges with the customer communication in Agile practises adopting companies any problems were defined. The survey involved participants from the different complexity and different size companies which are located in three cities of Russian Federation - Innopolis, Kazan and Moscow. The participants are PO, PM, CTO, CEOs of the companies under consideration. 30 representatives of the 20 companies work in several teams with different sized teams and methodologies applied in the company. The survey derived many challenges which can be encountered during the Requirements Engineering process and solutions for the PM/PO's to ease and minimize the issues with the customer collaboration during RE process.

The main constraint in the survey was that the company representatives rarely share their internal problem publicly. They share their best practices as well as bad experiences which they managed to turn into success or consider as a good lesson. Very few of the companies can share the current situation and problems. This, as a rule, has a form of insider information. The conducted research allowed us to analyze particular qualities of the communication field in the context of rapidly changing Software Development environment. There is a need in further work on formation of the communication patterns from described challenges and solutions in the field of RE. Moreover, it would be also extremely important and interesting to consider the case of Open Source development processes (Succi et al., 2001b; Kovács et al., 2004; Paulson et al., 2004; Rossi et al., 2010; Petrinja et al., 2010; Fitzgerald et al., 2011; Rossi et al., 2012; Di Bella et al., 2013), which are strictly related to agile methods. Also the mobile market would be very interesting to analyse, given its constant and very fast evolution (Moser et al., 2008a; Corral et al., 2011; Corral et al., 2013; Corral et al., 2014; Corral et al., 2015). Finally, this research has been developed in the context of Russian Software Development companies, and in further research the practitioners from other countries will be also considered.

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