Apply Agile Method for Improving the Efficiency of Software Development Project at VNG Company

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Abstract. Software engineering process (SEP) is more and more considered the key factor for any software company to create a better quality software with low costs and high productivity. However, there is a gap between theory and practice of applying modern SEP, such as Agile method, for improving the efficiency of software project management, especially for software companies in a developing country like Vietnam. VNG Corporation, a software company in Vietnam with a lot of small and medium web based software projects, currently meets many difficulties in ensuring the success of these projects. The current approach for software development is no longer consistent with the increasing requirements and flexibilities of these projects and VNG is going to find a new method for improving the efficiency of their software projects. In this research, Agile method is applied and tested to check whether it can be a suitable method for VNG to overcome their problems in software development. Besides, a testing project based on Agile method is also conducted at VNG company to evaluate the solution. Results showed that Agile method can help to increase customers' satisfaction and it also helps to improve efficiency of project management by most KPIs.

Keywords: Agile, Software engineering process, Software development model, Project management, VNG Company.

1 Introduction

According to annual report of VNG corporation, about 1/3 of its software projects failed during 2009 to 2011 (these projects cannot be finished on time). There are many reasons for this failure, but according to their managers, the most reason is from frequent changing requests of customers during the software development process (average 5-10 changing requests/ project/ month). This reason also increased the total cost of software development project about 20% compared with original budget and it delayed the time to introduce new products to end-users.

Similar to other software companies in Vietnam, software engineering process at VNG is not clearly applied and there is a lack of standardized method for software

B. Murgante et al. (Eds.): ICCSA 2013, Part II, LNCS 7972, pp. 427–442, 2013.

project management. Therefore, it is necessary for Vietnamese software companies to have a clearly stated and standardized method for software development to overcome above difficulties.

Recently, Agile method, a flexible software development process, is more and more considered a suitable method for developing software in a short time and it is flexible enough to allow frequent changing requests during project time. Agile method attracted many researchers and businessmen in discussing and sharing their experience in applying this method. Currently, Agile community in Vietnam has more than 300 members.

From above reasons, this research tries to apply Agile method for improving efficiency of software development project at VNG company and to evaluate the Agile solution in practice. This research aims at (1) Identify problems of software project management at VNG company, (2) Suggest a plan for applying Agile method in VNG, and (3) Conduct testing project for evaluation.

The research plan is: first, Agile method is reviewed and compared with other software development methods; then, data is collected and analyzed for understanding current problems of software project management and possibility of applying Agile method for solving these problems at VNG company; then, a plan for applying Agile method in VNG for improving efficiency of project management is suggested; and finally, a testing project is conducted based on above suggestion for evaluating the solution. The structure of this paper is organized as follows: (2) Research method; (3) Literature review; (4) Problems of project management at VNG; (5) Approach for solving problems of VNG; (6) Experimentation and results; and (7) Conclusion.

2 Research Method

2.1 Data Collection

- Secondary data: theory reviews, scientific journals, papers, related materials from the internet, internal documents of VNG company…
- Primary data: expert interviews, questionnaires to understand current problems of project management at VNG, discussing possibility for applying Agile method in VNG and feasibility of suggested solution in practice.

2.2 Data Analysis and Result Evaluation

- Qualitative analysis: lesson learnt, projects' document analysis, group discussion with project members (20 projects from 2009-2011, 10-15 projects' members), depth interviews with project managers (3-5 people)
- Experimentation: applying suggested plan for a testing project (2 months, 5 members), calculating KPIs for testing project and comparing with those KPIs of past projects with the same size and duration.

3 Literature Review

3.1 Agile Software Development Method (Agile)

Agile is a group of methodologies for software development based on iterative and incremental rule. In this method, requirements and solutions evolved through cooperation between self-managed and inter-functional groups [8]. Besides, Agile is also considered a philosophy or an approach for software development projects. Typical software development methods based on Agile include Extreme Programming (XP) or Scrum. In this research, latest version of Agile method based on Agile-manifesto is considered to be applied and tested. According to Agile-manifesto [1], main characteristics of Agile method can be summarized as follows:

- Iterative
- Evolutionary
- Adaptive
- Group architecture
- Empirical Process Control
- Direct interaction
- Value-based development

Agile focuses on quick responsibility to requirement changes, interaction of multi-parties, short time-frame, evolutionary and continuous development. Agile suggests a collection of rules, standards and practices, such as: source code management, coding standards, or prototype presentation to customers [10].

According to Agile method, each project (product) will be divided into small functional parts. Each part is executed as a complete product in a short time (2-4 weeks). Each finished part will be transferred to customer to use, test and feedback. As the same time, other parts will be developed and tested. This process continues until all parts are completed ([1]; [3]).

3.2 Comparison of Software Development Methods

Based on theory of software development, previous researches ([13], [15], [17]), and interviews with experts in IT field, advantages and disadvantages of popular software development methods (such as: Waterfall, V-shape, Prototype, Evolution, RUP, CMMI and Agile model) are summarized and showed in following table.

3.3 Success of Software Project Management

According to James S. and Shane W. [10], traditional way of thinking about success of a software project is based on 3 constraints: on time, within budget and satisfy users' requirements. In fact, many projects satisfied all constraints above, but they cannot be considered successful projects because final system is not suitable with

Table 1. Comparison of software development models

Model	Advantages	Disadvantages	Application
Waterfall model [17]	Clear process, step by step activities, clear documents for input and output of each step.	User requirements must be defined clearly. Testing phase is executed too late to discover problem during developing process. Many risks occurred near the end of project. High cost for changing and low speed for responding.	Should be applied for projects with low risk and low changing rate. Developers understand well user-requirements and methods.
V-shape model [2]	Testing phase is executed in parallel with analysis, design and implementation.	Similar to waterfall model	Similar to waterfall model
Prototype model [5]	User can see & understand key functions and features of new system. Improve communication between developers and end-users.	Prototype may not include all requirements of users. Therefore, this model leads to misunderstanding about new system. Because of short time for developing prototype, there will be a difference between requirement and prototype.	Mostly based on GUI Must be applied in case the customers can not define their requirements clearly at the first time.
Evolution model [5]	Reusing of prototype. A part of system can be implemented during system analysis and design phase.	Lack of a strict and clear process. Longer time for requirement analysis.	Applicable for short-term projects. Developing staff is not familiar with project field.
RUP model [5]	Less risk. Key requirement will be developed and transferred to customer in a short time. Including many versions, that will help improving the quality of final system.	High developing cost. High technological risk.	Applied for big system, in a long time. A part of system can be run sooner than other parts. Developers are familiar with project field.
CMMI model [15]	Reduce risk through process improvement, clear requirement for each step. Developing plan is controlled carefully, so product can be transferred to customer on time and easily with all documents.	High cost for evaluation. High cost for executing. Long time for documenting. Inflexible in project conducting.	Applied for big system, in a long time. Suitable for outsourcing projects. Clear hierarchy of developing staff based on position and profession.
Agile model [13]	High adaptability with changing requirements. Low risk through well managed by Sprint. Low time for interaction. Customer can monitor developing steps by continuously transferring module through sprint.	Developing staff must have skills and experience. Time needed for documents during project process is fairly long.	Suitable for small and medium sized projects (10-12 members) with short time for developing.

organization's purpose and it is not used by end-users in practice. James S. and Shane W. [10] also showed 3 kinds of the success of a software project, which are: individual success, technological success, and organizational success. Through their analysis, Agile method is considered a suitable method for software project and it can help software project managers to get all kinds of success above.

In this research, efficiency of software project management is measured based on ability to get 3 kinds of above success: Individual success, Technological success and Organizational success.

In the next section, problems of software project management at VNG company will be analyzed to understand the current situation of project management at VNG and to explore ability to solve these problems using Agile method. Based on this analysis, a plan for applying Agile method for improving efficiency of software project management will be suggested.

4 Problems of Project Management at VNG

4.1 VNG Company and Web Based Application Department

VNG Corporation (VNG) – former name: Vinagame – is a Vietnamese software company established in 2004 and specialized in developing online games and doing e-commerce business in Vietnam. It is the first company providing licensed games in Vietnam and now becomes a leading company in Vietnam online game market. Beside popular online games, such as: Vo Lam Truyen Ky, Zing Dance, Gunny, Boom online…, products of VNG also include Social networking site (ZingMe), Music site (ZingMp3), and e-Commerce sites (123Mua, ZingDeal). Web-based application department takes responsibility for developing web-based applications for both internal and external customers.

According to internal statistics and interviews with project managers, group leaders of Web based application department (3 people), total number of projects of this department from 2009 to 2011 is more than 20 projects, in which, 7 projects were failed or didn't finish on time. High rate of failed projects leads to low competitiveness and indirectly reduces total revenues of VNG.

Although, currently, Web-based application department has a strong background staff (more than 90% graduated from university with IT major) and good experience in software development (4-5 years working in IT field), these employees are not well managed and their responsibilities are not clear. This causes low quality of final products (40% of products are unsatisfied), and loss the trust of internal customers. Besides, members' role in each project is not clear, this causes unsatisfactoriness of projects' members and leads to difficulties in progress controlling and quality assurance.

Most products developed by Web-based application department are rich-content applications, which are main factor for attracting customers. Each web-based application has a lot of requirement changes during and after implementation or publish phase (avg. 5-6 changes). So, most products have to be changed in design or

content every 3 months. This change is very important for the success of these projects, but Web-based application department cannot serve this demand thoroughly. As a result, changing queue is longer and longer and project management is considered inefficiency.

From end-user viewpoint, 3 main factors for attracting users and getting their loyalty are: rich content editing, attractive user interface, and short response time. For the first factor, VNG realized its importance and established Web-content department to care about this factor. For the two later factors, they are main responsibility of Web-based application department and VNG cannot satisfy their customers mostly because of these 2 factors. Web-based application performance is directly affected by analysis, design and implementation phase. Therefore, without a suitable software development method, Web-based application department cannot provide attractive user interface in a short time as customers' request.

4.2 Problems of Software Development Process at VNG

Based on internal demand for applications to satisfy VNG own requirements, Web-based application department was established with a few experienced employees. At the first time, because the number of projects is not much, there is no need for a standard process of software development. By the time, because of developing demand, the number of employees and projects increased very fast. So, it is necessary for Web-based application department to have an effective software development process to reduce errors, reuse project works, and shorten software developing time.

From 2009, waterfall model was applied and used by developers for improving the efficiency of project management in this department. At the earlier time, waterfall process brings many benefits to Web-based application department and it helps managing projects better. After a while (about 2011), all projects' member are familiar with waterfall process and all changing requests must be analyzed and approved before executing. This habit causes many difficulties for project management because current projects require higher quality, short time for development and more changing requests from customers. This problem requires a new software engineering process that can help shortening software developing time and making it easy for integrating new requests to final products.

According to year-end report of 2011, number of severe bugs (causes system halt more than 1 hour) of 2011 increased 20% higher than of 2010. This high rate of severe bugs affected directly to website performance and displayed a bad image about VNG's product. There are many reasons for this high rate, such as: server management, internet connection, inexperience of employees in solving problems and uncontrollable changing requests from customers. The last reason is considered the most important one (average 5-6 changing request/ product/ month). These problems increased project cost (avg. 20% higher than original budget) and affected to general target of VNG company in introducing new products to customers.

In order to know root causes of difficulties at Web-based application department, an interview with 15 projects' members was conducted. Through this interview, seven

key reasons for their difficulties in software engineering process are summarized as follows:

- Current process is not suitable for short time development with frequent changing request
- High cost for maintenance of previous products
- Time span for each phase of software development process is not appropriate
- Improper setting of priority and value of changing requests
- Can not apply lesson learnt from previous projects to latter projects
- High leading time in communication between support department and projects' members.
- Complex project architecture and ineffective information flow

In general, at the current time (2012), Web-based application department meets a lot of difficulties in managing software development projects using waterfall model. This requires VNG company to find a new suitable model for software development to overcome above problems and to improve the efficiency of software project management at Web-based application department.

5 Approach for Solving Problems of VNG

From above analysis, main reason for inefficiency of software project management at Web-based application department stays in current waterfall model, improper software engineering process for VNG products at this time. Based on Table 1, two good candidate models for VNG to improve its current process are: CMMI model and Agile model.

According to Dr. Nguyen Long, General Secretary of Vietnam Informatics Association, in an interview with Saigon Businessman magazine [7], CMMI model is suitable for:

- Outsourcing oriented company because CMMI is required by foreigner customers.
- Big company because of high cost for certification.
- Big projects because it requires many members for documenting.
- Clear users' requirements at the first time because changing requests must be re-negotiated.

According to Barry B. and Richard T. [4], five criteria for evaluating suitability of Agile model with software development project include:

- Low criticality or low risk level.
- Experienced projects' members.
- Frequent changing requests.

- Small sized projects located in the same location.
- Open culture for changing and innovation.

In order to select suitable software developing model, an interview with 3 project managers at Web-based application department was conducted to identify key characteristics of VNG projects, budget allowed, developers' skill, changing request from customer and company culture.

Through this interview, CMMI model is realized not suitable and Agile model is proven to be a suitable model with VNG projects because:

- Most projects of Web-based application department are conducted to satisfy demands of internal customers and to support developing strategy of VNG.
- These projects do not have clear requirements at the first time and need a lot of changes during developing time.
- Most projects are small projects and located at the same place.
- Time allowed for software development must be short (less than 3 months)
- Developers at Web-based application department have a strong IT background and many experiences in software development.
- Web-based application department has a fairly young staff (average age is 30) and an open culture that facilitates free ideas and innovation.

From above analysis, the approach for solving problems of Web-based application department of this research will be applying Agile method for software engineering process. In order to know how to apply Agile method and to check whether Agile method can improve the efficiency of software project management of VNG or not, a pilot project will be conducted for evaluation.

6 Experimentation and Results

6.1 Experimentation Design

- Time for experimentation: from January 2012 to March 2012
- Pilot project for testing Agile method is SGN project (Social Gaming Network – phase 2): this software provides some additional features to a previous product, such as: manage users' profile, search for product information, friend connection between applications, activity notification, manage community page…
- Project members: 5 members (4 software engineer + 1 project manager), in which 3 members have 5-6 years experience and 2 other members have 1 year experience.
- This project is considered suitable with Agile method because it has:
  - Low criticality: this project belongs to phase 2 of a current product of VNG to add more features and to increase value for current product, so it has a low risk level.

- Experienced project' members: all members have a bachelor degree in IT major and have enough experience for conducting this project.
- Frequent changing requests: because of social networking characteristics, this project allows many changing requests during project time to satisfy the customer more.
- Small size: 5 members working at the same location.
- Free culture: this is the long-term strategy of VNG for supporting creativity of employees.

- Plan for apply Agile method in VNG through pilot project
  - Training: combination of training course and self learning based on documents/ regulations from project managers to provide project' members key concepts of Agile method.
  - Habit changing: direct interaction with end-users/customers is a requirement for all project members; changing from organizing a few long meetings to daily short meetings to be able to quickly response to any necessary problem; self-responsibility is encouraged by assigning independent project works to each member and receiving complete results.
  - Setting KPIs: changing criteria for evaluating final results based on following factors
    - Concurrent users (CCU): number of customers using product at the same time. This is important factor to know whether new product attracts end-users or not. This number is based on system statistics.
    - Number of new users (system statistics)
    - Total time using product of end-users (system statistics)
    - Percentage of operational works decreased (compared with previous projects)
    - Satisfaction of internal customers
    - Satisfaction of external customers through comments, feedbacks

- Result comparison plan
  - In order to evaluate the efficiency of project management using Agile method, pilot project will be compared with previous projects (using traditional method) by some criteria, such as: time to finish, number of updated content, number of changing requests, time to response…
  - Projects (about 15 projects in the past 2 years) will be used for evaluating have the same size and duration with pilot project.
  - For comparison of project success, above criteria will be arranged in 3 kinds of project success: Individual success, Technological success and Organizatinal success.

6.2 Experimentation Results

After applying Agile method in software development of Web-based application department for testing project (SGN), some positive results in improving efficiency of project management could be summarized as follows:

- Concurrent users (CCU) of Gunny product (a system supported by SGN project) increased 1.5 times compared with CCU of this product before.
- Number of new users increased quickly through new features added by SGN project ("friend invitation" through users' connection network).
- Total time using product of end-users also increased through promotion events of SGN project.
- Total time and cost for operational works of Web-based application department, such as: inputting and updating web contents, has been decreased. Currently, these activities are run automatically due to a new feature added by SGN project. Quantity of web content needed to input manually is only 1/5 compared with before.
- Satisfaction of internal customers increased because product of SGN project connected existing products/services of VNG together through social networking, which facilitates internal communication and collaboration.
- Overall satisfaction of external customers also increased (90% satisfied, through an online survey) because of higher quality of final product (faster response time, better information, higher stability and simpler process).

In general, testing project showed that Agile method helps to increase satisfaction of customers, and to improve efficiency of project management through above KPIs. As a result, Agile method could be a suitable software engineering process for VNG to overcome its current problems and it should be applied in an enterprise-wide scope to increase software quality of VNG.

However, during process of testing project, some difficulties are also realized as follows:

- Unfamiliar of some project members with Agile process made it difficult for them to deal with overloaded works.
- It is difficult for project members to make a final decision and to remember all details of project works without an effective collaborating system.

Above difficulties can be overcome by

- Training and applying Agile model for a while makes developers familiar with new method,
- Getting supports from an effective communication and collaboration platform.

In order to check whether Agile method can help improving efficiency of project management, results of SGN project (Agile group) will be compared with previous projects (No-Agile group) by some criteria, such as: time to finish, number of updated content, number of changing requests, time to response…, which will be arranged into 3 kinds of success: Individual success, Technological success and Organizational success. The comparison results are summarized in following tables:

Table 2. Comparison of Agile group and No-Agile group by Organizational Success

ID	Criteria	No Agile Group	Agile Group
1	Time to finish	Later than plan 1-2 days.	Finnish on time
2	Customers' satisfaction about product	Average, because final product covered all users' requirements	High, because any feedback from customers will be added into final product
3	Possibility of project structural change or cancellation of some features of project.	Low, because there is a baseline of agreements between project group and customers.	High, because all users' requirements could be solved during project process.
4	Project efficiency	Meet requirement	Higher than requirement

Table 3. Comparison of Agile group and No-Agile group by Technological Success

ID	Criteria	No Agile Group	Agile Group
1	Technology complex	Average	High
2	Specification of users' requirements	Clear	Unclear, final result is different from original requirement
3	Request changing rate	Frequently (avg. 6 requests/ project)	Frequently (avg. 8 changing requests/ project)
4	Responding time	Average 1 day/ request	Average ½ day/ request
5	Extensibility of final product	Difficult because of fixed architecture	Easy because flexible and updatable architecture
6	Transferrable of product to another developer/ project group	Easy to transfer because of clear and multi-referenced documents	Difficult to transfer because of not priority of documentation and direct interactions between developers and end-users.
7	Difference of final product with original design	Low, because requirements and designs must be agreed at the first time of project.	High, because of high changing request during project time. Original design is just a draft version and can be changed gradually in implementation.
8	Product maintenance	Easy to maintain because final product is 90% similar to original design & documents are completed.	Fairly difficult to maintain because lack of documents and difference between final product and original design.

Table 4. Comparison of Agile group and No-Agile group by Individual Success

ID	Criteria	No Agile Group	Agile Group
1	Developing experience and skills	Average	High
2	Experience accumulation of project members	Average because each member only works in separated phase of project	Very high, because project members must take part in all phases of project
3	Working pressure of project members	Average, 6 hours/day, according to project leader's plan	Very high, because each member takes responsibility for whole module. Members are highly focused & task-oriented.

In summary, comparison results showed that projects of Agile group got higher efficiency than projects of No-Agile group in all kinds of success: Organizational, Technological and Individual success. Although there are still few disadvantages of Agile group in some criteria, it is proven to be a suitable method because overall benefit of Agile method is higher than its limitation to the efficiency of project management at Web-based application department of VNG Company.

7 Conclusion

From above results, Agile method is found to be suitable software development process for Web-based application department at VNG company. This method can help improving efficiency of project management and contributing to the success of software development project in all aspects: Organizational success, Technological success and Individual success.

Firstly, this research found some difficulties of software development at Web-based application department of VNG Company through internal data analysis and interviews with projects' members. These problems include: Inappropriate software engineering process, High cost for maintenance, Improper project schedule, Unsuitable setting of priority of changing request, Lost of past experience, High leading time, Complex project architecture.

Then, through discussion with project managers at Web-based application department, possibility of applying Agile method for improving efficiency of software project management at VNG was analyzed and testing projects was conducted for evaluation. Experimentation results showed that Agile method can help improving efficiency of project management at Web-based application department and solving problems of software development at VNG Company. This pilot project proved that Agile could be applied in VNG at enterprise-wide level with minor modifications.

However, Agile method should be applied for those projects with following characteristics: Low criticality, Experienced personnel, Dynamism, Small sized project, Open culture. Therefore, in order to apply this method in practice, companies should change their environment to fit with above conditions through some activities, such as: training, changing regulations, setting suitable KPIs, changing business culture…

Beside above advantages, this research also found some limitations of applying Agile method in practice and they should be improved to ensure the success of software development project. For example, applying Agile method may lead to difficulties in transferring product to another developing group and maintaining final product because of insufficiency of consistent project documents. These difficulties could be overcome by focusing on documenting phase after each project to have a complete project document. As a result, well organized documents will facilitate transferring of projects' work to other groups and make it easy for maintenance activities.

7.1 Limitations

This research explored the ability to apply Agile method for a small sample (1 project/ 1 department) of VNG Company. It is difficult to generalize the result to the

whole company. Especially, it is very difficult for establishing a standard approach for applying Agile method for similar departments or companies because it depends on project size and characteristics of developing group.

Moreover, qualitative method used in this research is somewhat subjective because many conclusions are based on literature review and interviews with project members. This reduces the applicability of research results in practice.

7.2 Implication for Future Researches

Some directions for future research include:

- Apply Agile method for a bigger sample, such as: other departments of VNG, other software companies in Vietnam, service businesses…
- Quantitative research for measuring influence of Agile on the success of software project
- Combination of Agile method and CMMI for a better software engineering process.

Acknowledgements. Many thanks to employees and managers of VNG company, who provided internal data for analysis or participated in several interviews of this research for discussing possibility of applying Agile method for solving problems of Web-based application department and improving efficiency of software project management at VNG company.

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Appendices

A. Questionnaire for Exploring Problems of Project Management at VNG

Purpose: to find facts and figures for understanding about current difficulties of software project management at Web-based application department of VNG company from 2009 to 2011

Main objective: project team leaders and project managers

Number of interviewees: 3 people

Questions:

1. Number of projects conducted in your department from 2009 to 2011?
2. Please provide percentage of success project in this period according to following criteria
    a. Finnish on time
    b. Meet technological requirements
    c. Make customer satisfied
    d. Meet customers' requirements
3. How many projects cannot be finished by deadline?
4. How many projects cannot meet technological requirements?
5. How many projects finished on time but cannot satisfy customers?
6. As a project manager, are you satisfied with your group works? Rate your satisfaction with your project members (percentage)?
7. For you, which skills of your project members should be improved?
8. For you, within your success projects, how many percent of them could be considered:
    a. Individual success
    b. Technological success
    c. Organizational success
9. Is budget the most important problem of your projects?

10. Please tell me about average size of your projects by following criteria
    a. Number of project members
    b. Time constraint of your projects
11. How many changing requests your projects received from customers during or after each project? Please provide average number of changing requests/project/month?
12. Do you think most problems of your project management come from current software engineering process?
13. Do you think frequent changing requests or personal problems of project members have an effect on the success of your projects (time and quality)? Please give an example.
14. Please arrange following items in an priority order for improving efficiency of your project management
    a. Applying a more suitable software engineering process
    b. Improving problem solving skill of project members
    c. Closely collaborating with customers for receiving and analyzing requirements
    d. Providing more budget for your projects
    e. Changing projects' duration and scope

B. Questionnaire for Lesson Learnt of Project Management at VNG

Purpose: Extract lessons learnt after each software development project at Web-based application department from 2009 to 2011

Main objective: Members of software development projects

Number of interviewees: 15 people.

Questions:

1. How many projects did you participate at Web-based application department from January 2009 to December 2011?
2. Did you attend the project closure meeting after each project?
3. For you, what are main causes of late projects?
4. As a developer, do you have any experience in unsuccessfully integrating individual modules of a project?
5. Did you care about project cost? If yes, which kind of cost did you care about?
6. For you, does personal experience contribute to the success of your projects?
7. Is current software engineering process suitable with your projects? If not, please show some unsuitable points of current process.
8. How do you think about number of changing requests from customers in your projects?
9. Currently, does indirect communication with customers through access point (group/ project leaders) delay information flows in your projects?
10. How frequent of changing requests occurred in your projects? Is responding to these requests difficult to you/ your group? If yes, please give some main difficulties.

11. For you, are your customers satisfied with your products? If not, please give some reasons why you are unsatisfied.
12. What do you expect from your project manager?
13. According to your experience, which factor is the most important one affecting on the success/ failure of a software project?
14. What should be improved for ensuring the success of your projects?

C. Questionnaire for Exploring Suitability of Agile with Projects at VNG

Purpose: Collecting internal data and statistics of testing project and past projects for evaluating suitability of Agile method for improving efficiency of project management at Web-based application department of VNG company.

Main objective: Team leaders and project managers.

Number of interviewees: 3 people.

Questions:

1. Do you know about Agile method?
2. What is the average size of your projects? Do you think your projects' size is suitable with Agile method?
3. What is your current company culture? Do you think your company culture is suitable with Agile method? If not, what should you do to have an open culture for enabling Agile?
4. Do you think software engineering process affects on the success of your projects? Please give an example to explain your answer?
5. Agile method requires high discipline. Do you think your projects' members have a good discipline? If not, what should you do to improve the situation?
6. Agile method requires quick response time to customers' changing requests. Do you think there is any difficulty for direct interaction with customers? Which communication methods are currently in used at your department?
7. How do you think about current relationship between projects' members and customers? If not good, what is the most reason?
8. Ranking following items in priority order for applying Agile method in your department:
    a. Independent working ability of project members
    b. Analysis and planning skill
    c. Time management ability
    d. Skill for direct interaction with customers
    e. Programming skill
9. Agile method requires frequent short meetings. Do you think this kind of meeting is suitable with your project group? Is there any difficulty in applying short meetings in your project?
10. In your projects, did you receive changing requests frequently? Is there any difficulty in responding to these changing requests? Please give an example. For you, compared with total project cost, how many percent does cost for changing account for?