Case Study of agile practice in company X

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Abstract

Company X introduced agile for software development, and it help the company improve the productivity, quality of products, satisfaction of stakeholders etc. However, there still some problem in their agile practice. The first and foremost is the communication problem. The second weakness it that they do not work with product owner well and response to the change form product owner negatively.

Introduction

Company X (CX) is an international software development company. They are trying to introduce agile development method for their software development. The purpose of this case study is aim to learn the current agile practice in CX to find the positive and weakness in their practice. An interview was executed to a developer of CX face-to-face.

2. Case Presentation

2.1 Previous software development practice of CX

CX has development teams in New Zealand, China, India and Germany. They are working relies the traditional waterfall development method. The size of the team is large with 40+ developers. The scale of the project is also big. They are developing a product aiming to release after a 2-years development period. All requirements are discussed and decided by product architects who are analysing the market requirements and dispatch those requirements as separate features to each development teams. All developers and testers will only accept the features description and develop, test and deploy the codes.

CX value testing, the numbers of tester is twice more of developer’s number. Four phases of test is implemented to ensure the quality before the product is released. They are Unit Test (tested by developer), Function Test and Globalisation Test, System Test, Integration Test. Some extra performance test, scalability test and service test are executed to test some important part of the products.

However, because the long development period and no requirement change is allowed in waterfall process. The released software cannot satisfy the product owner because the requirement of product owner is changed because of the target market of the software is changed and the cost of modification is prohibitive.

2.2 Introduce Agile Development Method

Driven by more the requirement of producing high quality product and find problems before it released. CX introduced the Agile Development Method.

2.2.1 Hume resource for development teams

There are multiple software in progress at the same time in CX. The types of software they are developing are various. They also need to cooperate among teams located in different country for some projects. So they maintain a human resource database which call “Pool” by them. All staffs such as developers, testers, analysts and architects are treated as resources in the pool. When a new project is starting, the available resources are selected form the pool to form a new team. This help CA to organize the team quickly and dynamically and make sure the resources are ready for the new projects.

2.2.2 Team and its roles

Each team have at least five roles. They are a projects manager, an iteration manager, a business analyst, developers, testers, architects, product owner. Subject Matter Expert (SME) may be included in if needed.

Software requirement is come from product owner and SME

The development team analyse the requirement and fulfil it with the attendance of the product owner.

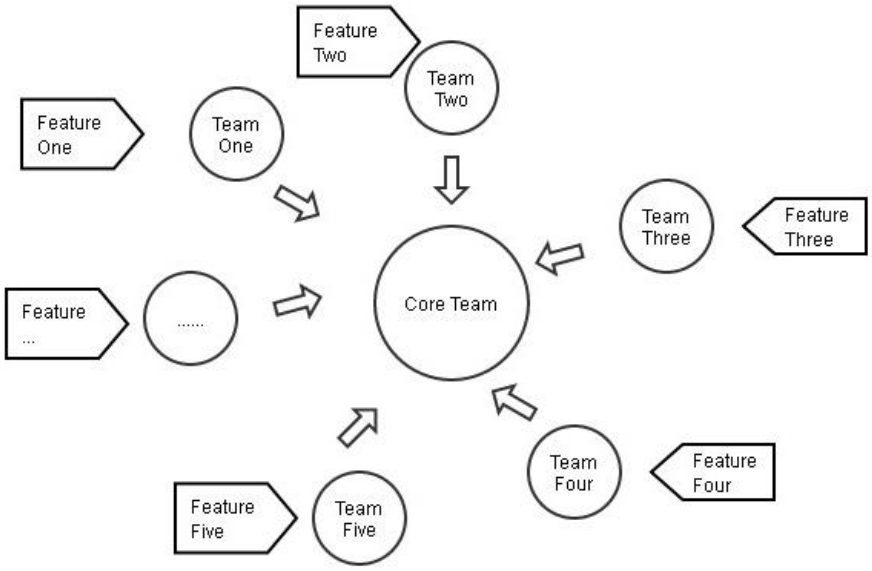
2.2.3 Team organization for bigger projects

When it comes to bigger projects which cannot developed by only one single team. At this circumstance, the project are split to sub features and assigned to different teams. So different teams need to cooperate for the same projects. Figure 1 illustrates how multiple teams are organized.

1) Each team have the same organization and roles of a typical agile team
2) There is a Core Team on behalf a project level, include program manager, Business Analyst, Architect, sub team iteration manager.
3) Sub features are assigned to each agile team

4) Projects attend twice stand up meeting each day, one in their own teams, and they also attend the stand-up meeting of the core team.

Figure 1: Team organization



2.3 Big view of the development process.

The four phase of software development in CA are Business Concept, Initiate, development and delivery. They apply Agile and Lean software development methods in the development process. And they adopt scrum for their agile practice.

2.3.1 Business concept

This is the business investment theme, the software requirement is driven by business strategy.

2.3.2 Initiate

It is the initiate stage of the project, the high level requirement will be defined in this stage. Requirement analysis work with product owner to elicit the software requirement, the requirement will be write as user stories which will be put in a product backlog.

2.3.3 Development

The development phrase is an iteration of sprint which is a regular, repeatable work cycle. During each sprint, team create a specific value no matter how small it is.

Every sprint start with Sprint planning held at the beginning of a sprint. Sprint planning meeting are usually an hour per iteration. In the meeting, Product backlog is prioritized by product owner. And they use planning poker to estimate the effort of each user story.

Some user story with higher priority will be selected in the meeting and put in the sprint backlog. The total amount story points of the selected user story should be decide the team velocity.

Daily stand-up meeting is usually held in the every morning about 15 minutes. The purpose is make each team know what happened quickly. Three typical questions are asked, they are what they have done yesterday? What they will do today? And am I block anything?

After every sprint, retrospective is held at the end of an interaction. It is the time to continuously improve the team. It is held to find what is working and what is not working in the team. The creative solution also need to be found to improve the team.

Iteration review meeting will be held at both the end of a sprint or milestone. It is the time do demonstrate the finished work and get the feedback form each stakeholders.

2.4 Tool

CX adopt many software to support their software development. Following are the software used most frequently:
JIRA is used as story Wall.
WIKI is use to confluence documentations.
Jenkins CI is the leading open-source continuous integration server.
Mainframe as400.
JQuery
DB2
Oracle
Intellij eclipse
Planning poker

Testing

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However, besides developers will develop the test case in JUnit or CUnit code when they are coding, they do not test before all development have been finished. All the other test are planned after development time.

3. Weakness

3.1 Communication problems

The first communication problem is the way they interact with each other. CA have multiple teams work in the same projects, and some projects event need to corporate between international team. Now, they mainly use email, IM and voice call to contact with each team and their

The other communication problem is that the product owner fail to attend in some important agile meeting, The product owner is busy on doing his other work, so he fail to attend some important meeting and cannot give his feedback.

3.2 Negative response to the requirement change from product owner

Previously, CA use waterfall development method. Thought they introduce agile development method, they still do not like the change of requirement. They tend to refuse the change from the product owner in their own perspective.

4. Recommendations

4.1 Face to face discussion

Talking face-to-face is the best way for communication. For international team, Video call and online video conference is a best way.

4.2 Documentation together

For domestic team, working together to make sure the documentation are interpreted in the same meaning by all teammates.

4.3 Open to change

For products, change is welcome because it help the team make better and competitive product.

For team, continually improve

4 Conclusion

5 References

6 Appendices

6.3 Questions prepared for expert

6.3.1

6.3.2 What important software development methods and practices do you think I should understand to be part of a successful development team?

6.3.3 What roles do you think are needed in a successful software development team?

6.3.4 I have been told that it is important to treat testing as important as coding through using methods like automated regression tests, automated builds, and a test first approach. What do you think?

6.3.5 We learn about practices like stand-up meetings, sprint planning and sprint reviews to keep in touch with other team members and the client in some projects. What would you recommend to keep in touch and get feedback during development?

6.3.6 We have been told that you review the team process in retrospective meetings after every sprint and it's ok to experiment with the process and make changes. This is part of continuous learning for the team. What do you think works well to keep the team learning?

6.3.7 There are lots of tools to help with software development methods, like continuous integration tools. What do you think the important tools are to support development team over the development lifecycle?

6.3.8 What do you think the main success factors are, with respect to methods and tools in developing software?

6.3.9 In your opinion, what are the main challenges related to software development methods and tools I should learn about.

6.4 Expert Opinion of Critical Success Factors

6.5 Answers to curiosity question

6.5.1 How requirements are elicited (discovered)

6.5.2 How shared understanding of requirements (elaboration, clarification) is done

6.5.3 What is done for release planning and scheduling

6.5.4 How the order of features to work on (priority) is agreed on

6.5.5 How the expected effort to develop features is estimated for planning

6.5.6 How the progress of the development is monitored

6.5.7 How the team is organised – what roles and responsibilities

6.5.8 How the team keeps in touch with each other

6.5.9 How the team keeps in touch with the client (product owner)

6.5.10 What the team's reaction is to changes in features

6.5.11 Do the team experiment with process and practices

6.5.12 Do the team reflecting and continuously learn

6.5.13 How iterative and incremental development is done (e.g. three week sprints)

6.5.14 How requirements are documented/represented (eg user stories)

6.5.15 How changes to requirements are handled

6.5.16 How testing is done and what levels of testing– unit, regression, integration, acceptance, performance, load.

6.5.17 What testing is automated

6.5.18 Is exploratory testing done?

6.5.19 Is test coverage measured

6.5.20 Are any quality metrics (measures) tracked?

6.5.21 Is a test first approach used? How is the build managed– any automation?

6.5.22 How about the frequency of the builds?

6.5.23 How is Continuous integration achieved?

6.5.24 How are non-functional or quality requirements managed?

6.5.25 What programming languages are used?

6.5.26 Are there any other important tools?