Propuesta de metodología que coordine el levantamiento de requerimientos en apoyo a los estudiantes de la Universidad estatal de Sonora, unidad académica Navojoa, para introducirlos en el desarrollo global de software

Methodology proposal that coordinates the requirements gathering in support to the students of State University of Sonora, Navojoa academic unit, to introduce them in global software development

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Resumen

El presente trabajo contextualiza el desarrollo global de software (DGS) como una nueva tendencia de trabajo, así como la posibilidad de crear una metodología para coordinar el levantamiento de requerimientos que apoye a los estudiantes de la carrera de Ingeniería en Software de la Universidad Estatal de Sonora, Unidad Académica Navojoa, a incorporarse en esta área. Para ello, se abordan las problemáticas actuales en DGS y los beneficios de esta nueva tendencia de desarrollo de software.

Palabras clave: metodología para DGS.

Abstract

The present paper contextualizes Global Software Development (DGS) as a new trend of working, as well as the possibility of creating a methodology for coordinating the lifting of requirements to support students of engineering in Software of the University of Sonora, Navojoa Academic Unit, to be incorporated in this area. To do this, the current problems in DGS are addressed, as well as the benefits of this new trend in software development.

Key words: methodology for DGS.

Fecha recepción: Enero 2015 **Fecha aceptación:** Julio 2015

Introduction

Today, thanks to technological advances, it is possible that people communicate in a labour context even though they are in different regions. Something similar happens with software development: possible projects with teams, where the members are miles away, which is known as Global Software Development (DGS), which offers advantages such as lower costs if you are working with regions where labor is cheaper, for example, India and China. Also, the time difference between countries allows that software development cycle is nearly continuous and thus can be considerably reduced the time of conclusion of the project. Always refers to the advantages of a working method it is appropriate to investigate to discover its disadvantages and eliminate them, improve the efficiency of equipment of DGS, maximize the benefits in this new trend and, above all, to achieve that new generations of engineering students in Software of the Sonora State University engage in this form of employment and can be linked to entrepreneurs who are in practice under this development environment, or that can create among the students development teams, under a strong lifting of requirements methodology and work independently within this mode of software development.

Software development is a framework that is done with different practices. Pressman (2008) mentions five practices to be carried out in any process of talking about software engineering: communication, planning, modeling, building and deployment. Then practice described communication.

The same author states that "the way from communication to understanding usually bumpy", which means that effective communication is the biggest challenge for a software engineer. In the book of Pressman 10 important for the lifting requirements are detailed principles to be successful. One is "OTL", as well as verbal communication exists gestural, which provides more information about customer requirements. But what happens in environments DGS? The OTL is zero or near zero, despite knowing that the requirements gathering phase is the most important because it determines the success or failure of an application. In university life it is virtually certain that students will not have enough experience to make a survey of requirements, complicated in a global environment.

JUSTIFICATION

The current reality of project development information systems is to be carried out more frequently in a distributed environment, for which development teams are formed in several countries or companies make up its team of software development with people different regions within the same country; thus save costs and increase their competitiveness. However, the management to achieve these advantages in the working environment is more complex, since no good communication between people working in different places, the final product may be chaos, thus increasing costs.

Some authors (Leandro Lopes, Rafael Prikladnicki, Jorge Audy) indicate that lifting requirements is the most critical phase in the development of software and is further complicated environments DGS as the ideal framework is that all equipment project (developers, customers and users) are gathered in the same place to facilitate communication and reach the understanding of the requirements in a favorable manner.

To work in distributed development environments, often the team consists of people who speak different languages, preventing clear communication between them and a good understanding of what you want to achieve. In addition, the cultural aspect should not be left outside the scope of the requirements and coordination of activities among different team members DGS. This way of working requires more cooperation from people who come from different cultures, as there is diversity in their communication styles and sense of time, giving rise to serious misunderstandings that negatively affect the development of software projects (James D . Herbsleb & Deependra Moitra).

These aspects that hinder the work in the distributed environment between teams of professionals, students grow when college level wish to practice their knowledge in the area and join the type of employment, but due to his lack of experience was demoralizing to his first failed attempts. As recent graduates who are entering a normal working environment where team members and users are close, in the same office or city, or the possibility of holding a conversation in person, live in a more complex way even in distributed environments.

There are methodologies that support the development of software, such as RUP (Rational Unified Process), which gives us an approach to build a software implementing four phases: inception, elaboration, construction and transition (Larman, 2006). In these phases it shows what must be covered in each and the products we get, but does not tell us how.

Another methodologies widely used today are the agile, such as extreme programming (XP), Scrum, adaptive software development, among other methods, whose main objective is to implement a set of best practices to work collaboratively in teams and that so get good results in the implementation of projects, although not specifically detail how to make a survey of requirements, which is what this research is focused.

To date, the above methodologies taught in the subjects Fundamentals of Software Engineering and Software Engineering in UES, UAN, but not enough to help the student to join in the world of global software development. It is therefore very important to create a methodology to support the students of the State University of Sonora Navojoa academic unit, to join this way of working, as this increasingly prevalent. However, there are still many problems that create uncertainty in the success of this discipline, more in the case of students with no work experience. For this reason it is very important to apply methods that increase reliability to continue benefiting from this form of work.

Despite the challenge, the DGS has been growing at a considerable pace, the degree to become a necessity, as it deals with issues such as cost, shortage of resources and location of the development close to customers; Also, the problems that limit their optimum performance should be reduced.

PROBLEM STATEMENT

Several authors have studied the advantages and disadvantages of the discipline of global development of software (Oktaba 2010-2011) (Eckstein, 2010). Among the problems that are mentioned more:

-The Lack of successful processes to organize the coordination of a project among several organizations or teams.

Communication Trouble: in the face-off between staff and customer communication are frequent problems of understanding, which is further accentuated with teams working in geographically distributed environments, leading to misunderstandings, omission of information, and so on.

Cultural-differences: different ways of thinking and expression, different customs and ways of working are latent for software product quality threat.

These problems are due rework, making the cost advantage ceases, for the extra time investment.

Despite these obstacles, this practice is a reality in the software industry that is growing as time passes. Based on these situations, the following question arises:

What impact would the development of a methodology for students of Software Engineering in the State University of Sonora, Academic Unit Navojoa, so they can coordinate the lifting of requirements of software, and then enter the new labor market, as is the overall software development?

ASSUMPTIONS

The methodology proposed to efficiently coordinate the lifting of requirements of software, helps students UES UAN to join in this new form of employment efficiently, so that the problem of rework caused by decreases misunderstandings in the specifications given by the customer, impacting positively on reducing production costs, development times and delivering a full functionality of the software, and generating confidence that the students of the UES can be considered for work on the medium.

GENERAL PURPOSE

Develop and evaluate a methodology to coordinate the lifting of requirements of software in a distributed development environment globally, to support the students of the UES UAN to join in this approach to work.

SPECIFIC OBJECTIVES

1. Provide a methodological tool to coordinate the lifting of requirements to help reduce the problem of re-work the DGS, impacting production costs and delivering the client software with full functionality and the projected time.

2. Evaluate the methodology formed by students of the UES UAN equipment.

3. Check through a comparative study the reduction of time for re-work in software development, considering systems designed in equal times, one of them using their traditional way for the lifting of requirements and another using the use of methodology developed by this proposal.

4. To support the students of the UES UAN to enter the labor area in an environment of global software development.

GOALS

1. Develop a methodology to coordinate the lifting of requirements to guide participants to capture a clear customer specifications and project to the other members of the project in an understandable manner, without ambiguous interpretations accommodate equipment.

2. To contribute through the methodological tool, a model for the lifting of requirements of software projects DGS environments.

METHOD

In this research various stages posed a methodology that is tailored specifically to the lifting of requirements in an environment of DDS were developed. These stages are:

1. Start a thorough investigation of current methodologies oriented software development, in order to assimilate the issues addressed and rescue the part concerning the elicitation of requirements; then its advantages and disadvantages to a conclusion why has this problem yet in this area are discussed.

2. Next, conduct an interview with systems analysts from different factories operating in software mode distributed environment, to gather important information from the actual operation on the details of the current problems related to the lifting of requirements.

3. Then proceed to develop a methodology and is based upon research methods and other information gathered from experts in the field who have been directly affected by the problem that this thesis studies.

4. Once you have the elaborate methodology, students select a project in DGS mode, where tests the efficiency of the methodology developed; This selection is made minutely in order to obtain effective results that help conclude whether the methodology developed provides important support in the elicitation of requirements, to decrease the problem of misunderstanding in the software requirements.

EXPECTED CONTRIBUTIONS

Despite complication representing lifting requirements in software development process, no methodology specifically contributing to this activity; if done incorrectly, it will fail in the project, even in cases where stakeholders to communicate face to face. This problem increases DGS environments, above. However, this way of working in the global environment has become a recurrent alternative by the organizations that have the need to provide software development more customers, taking advantage of the low cost of labor and the enormous amount of professional development in some regions (Damian, 2006).

Because of this, it is important to provide an effective methodology that supports the most critical phase of software development, ie, lifting requirements so that more and more students have better bases in college life and adhere without major problems working life and, above all, be incorporated into this type of work in DGS, which according to research has much to offer new software development professionals, regardless of where they live.

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