Group Dynamics in IT systems

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Abstract— **Group dynamics are the relationships that developed between the members of a team and the forces that effect people's behaviour and well-being. Group dynamics are extremely vital for the process of a project development. Software development projects are different in many aspects than other projects. So, the study of group dynamics in software development it's critical and vital when we talk about software processes and software development, because of the software particularity. The aim of this paper is to explain the definition of group dynamics and to find the differences between the group dynamics in software development and the group dynamics in a general project development. The methodology that used for this paper is a literature review of articles and academics journal papers.**

I. INTRODUCTION

In every subject that concerns software development is critical to study the differences between the software and other projects. Software development has some attributes that make it different from other development project. Some of these attributes are that software is complex and intangible. In all software projects development processes a lot of people cooperate to implement a project. In this case forces are developed between them. These forces referred to as group dynamics. So, a team is a dynamic entity, always changing in response to project and environment circumstances. (Rusher, 1997)

There are many factors that affect how a team works and if this team will complete the project that must implement. There are multiple examples and solutions for this topic in the literature. But the main reason of this paper is to identify the differences and the problems that a software development team faces during the implementation of a project.

These factors in many cases, cause unknown outcome of a specific software project. The unknown outcome of a project make the development process more complex, difficult and insecure.

In the next sections, it is discussed how these factors affect the way a team works in the software development processes and the solutions that proposed when these factors can cause the failure of a project.

II. APPROACH

There are a lot of literature concerning group dynamics. One of the most important proposals is the Belvin's nine team roles. This proposal says that the member of a team must have specific roles and every team should have diversity of duties. But, there are evidence that prove that in because of the software systems difference, this proposal does not always fit in software systems development process.

A. Software systems

The main difference of software systems and at the same time the vital aspect that every development team must face is that the software is intangible and complex in many ways. In a lot of cases, the scope of the project changes during the implementation process or the whole software project is underestimated. (8) Because of these reasons, when a software development starts, there is a lack of standards and poor requirements specification. These are the main reasons that that every software development process has an uncertain outcome.

B. Software systems failure

A great majority of software systems fail during the implementation process, or in the end of the final product they don't meet the requirements or the client's expectations. Apart from that, a main reason of IT systems failure is the inadequate requirements specification at the beginning of the project. (8). Furthermore, a significant factor that software projects fail is that some risks do not identified from the beginning of the project or they cannot be controlled from the projects managers. Organizations and people know that fact and the IT project's particularity.

C. Team and personal insecurity

Because of the fear that a project will fail, the members of the team that participate in the implementation process feel usually insecurity (8). The insecurity sometimes causes stress and procrastination. Apart from that when developers or members of a team feel insecure, conflicts created between them and the organization. Another possible dynamic that may developed in a team is a lack of motivation to complete the project. A significant factor for the successful implementation

of a software project is the interest that the development team has on the project (Komiyama et al., 2000).

D. Team dynamics Knowledge

To reduce the stress and the insecurity in a team it is vital to create this team properly from the beginning of the project. Beaver and Schiavone (2006) identified four phases in team progress. The two more-vital concerning the software development are forming and the norming. The first is the process when the members of a team get to know each other and the second one is the establishment of rules and social relationships. Furthermore, a guidance from a mentor can enhance the members of a team concerning their knowledge and self-confidence (Komiyama et al., 2000).

An extremely vital aspect to reduce the insecurity and stress in a team is the ongoing support. When a member of a team feels insecure or demotivated, a project support procedure existence its crucial. In the end, fellowship between the members of a team can motivate the others and reduce conflicts and defensiveness in a team.

III. CONCLUSIONS

Software systems are intangible and have poor user requirements specification when these systems are to develop. Because of these factors and the uncertain outcome of a software project, members of a team tend to fell a fear of failure and personal insecurity. The outcome of this aspect is the development of some dynamics in a software team such as stress, lack of motivation and conflicts between the members of the team.

There is no solution that solve the difficulties that created because of the software's particularity and complexity. Each software project is different and it has its unique problems and difficulties. Team members cannot know from the beginning of an IT project development what to expect and the risks that will face during the implementation In this case, the only solution is the acceptance of this particularity and the existence of palliative solutions, when a team or members of a team feel insecure or stressed about the outcome of a software project.

The main knowledge outcome of this paper is that there are palliative solutions to decrease the stress and the insecurity in a team. The only way to encounter the dynamics that grown in a team is to monitoring the specifics that an IT project has, and accept these differences and difficulties. To solve and decrease the problems and dynamics, such as stress and insecurity in a software team, there are many solutions, such as team building activities, team membership and efficient team management.

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