RISK MANAGEMENT SYSTEM WITH SOFTWARE DEVELOPING

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DEPARTMENT OF PROGRAMMING

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BONAFIDE CERTIFICATE

This is to certify that the project report entitled **“risk management system in software developing"**submitted by"T.ADITYA SATYA SRI HARI ,192110559”,MD. TAUFEEQ HUSSAIN to Saveetha School of Engineering, Saveetha Institute of Medical and Technical Sciences, Chennai, is a record of bonafide work carried out by him/her under my guidance. The project fulfills the requirements as per the regulations of this institution and in my appraisal meets the required standards for submission.

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ABSTRACT

Effective risk management contributes to the success of the software development project. The goal of this work was to identify risk management gaps, perspectives, the evolution of the theme and the study trends, in software development projects, using systematic literature review as a method. For the biometric analysis, articles referring to the topic were selected in the period from 2010 to 2018. As tools of analysis, Citespace and VOS Viewer software were used, allowing a comparative evaluation between the articles, as well as the analysis of clusters. Beyond content analysis of articles found. Gaps were identified for performance; team involvement; attention to failures; identification of tools for decision-making; and business strategy. In turn, perspectives were determined for research trends, such as the close relationship between business strategy, risk management and new management models. The research can propose new strategies and perspectives for risk management in software development and show their importance to the academic and practical spheres, demonstrating that the themes are complementary and important in the current technological and innovation sector.

Key words:

Biometric Analysis, Project Management, Risk Management, Software Development.

INTRODUCTION

Risk Management:

The activities of an organization are influenced by internal and external factors that make it uncertain whether the company will achieve its objectives. The effect that this uncertainty has on the organization's goals is called risk (Ferreira et al., 2013). In this section, we try to provide an idea about the basics concepts of risk management based on the liturature review. This includes a generic definition of risk, risks management and their method. The risk The thematic of risk management is not new, but it is recent and not very studied in logistic chain (or supply chain), the first work that explicitly addresses for the risk management in the supply chain dating from 2003. The risk is present in many activities including the logistic in which one consequence of the risk that it is increasing and affect around all the logistic networks, therefore the managers need to make a great deal of effort to identify and manage risks. The meaning of risk can be differ from one person to another depending on their point of views, attitudes and experience what makes the study of risk more and more complex. Aven , proposed a basic risk theory based on brief selected review that over the last 15-20 years and he presented the evolution of risk concept in Oxford English Dictionary since 1679, we think that definition followed the environment evolution. Veland and Ave , proposed the same based classification of risk given by Aven and they used theses definition to discuss how the risk perspectives influence the risk communication between the decision-makers, the risk analysts, experts and lay people.

Indeed, for Karimiazarietal, engineers, designers and contactors view risk from the technological perspective, lenders and developers tend to view it from the economic and financial side. So, the question is: what is a risk? The first answer, the risk is the probability that an event or action may adversely affect the organization. For Mazouni , the risk is an intrinsic property of any decision, it is measured by a combination of several factors (severity, occurrence, exposure to, etc.), although it is generally limited to two factors: severity and frequency of occurrence of a potentially damaging accidents that incorporate some exposure factors. In the BS OHSAS 18001 (British Standard Occupational Health and Safety Assessment Series), the risk is a combination of the likelihood of an occurrence of a hazardous event or exposures to danger and the severity that may be caused by the event or exposure. In this context (BS OHSAS 18001), the concept of risk asks two oriented question:

1. What is the probability that a particular hazardous event or exposure will actually occur in the future?
2. How severe would the impact on health and safety be if the hazardous event or exposure actually occurred?

The risk can be defined as an uncertain event or set of circumstance which, should it occur, will have an effect on achievement of one or more objectives. For Marhavilasetal , the risk has been considered as the chance that someone or something that is valuated will be adversely affected by the hazard, where the hazard is any unsafe condition or potential source of an undesirable event with potential for harm or damage. For Bakr et al , the word “risk” means that uncertainty can be expressed through probability. We can concluded that the risk is an probabilistic event that can exist and affect the activity of an organization positively (opportunity) or negatively (hazards). For more definition see. There are several risks that can be divided into different types according to how its realization will have impacts on the activity of organization and its environment. For example and according to Harlandetal , risk can be divided on:

− Strategic risk: affects business strategy implementation.

− Operations risk: affects a firm’s internal ability to produce and supply goods/services.

− Supply risk: adversely affects inward flow of any type of resource to enable operations to take place.

− Customer risk: affects likelihood of customers placing orders, grouped with factors such as product obsolescence in product/market risk.

− Asset impairment risk: reduces utilization of an asset and can arise when the ability of the asset to generate income is reduced.

− Competitive risk: affects a firm's ability to differentiate its products/services from its competitors. − Reputation risk: erodes value of whole business due to loss of confidence.

− Financial risk: exposes a firm to potential loss through changes in financial markets, can also occur when specific debtors defaults.

− Fiscal risk: arises through changes in taxation.

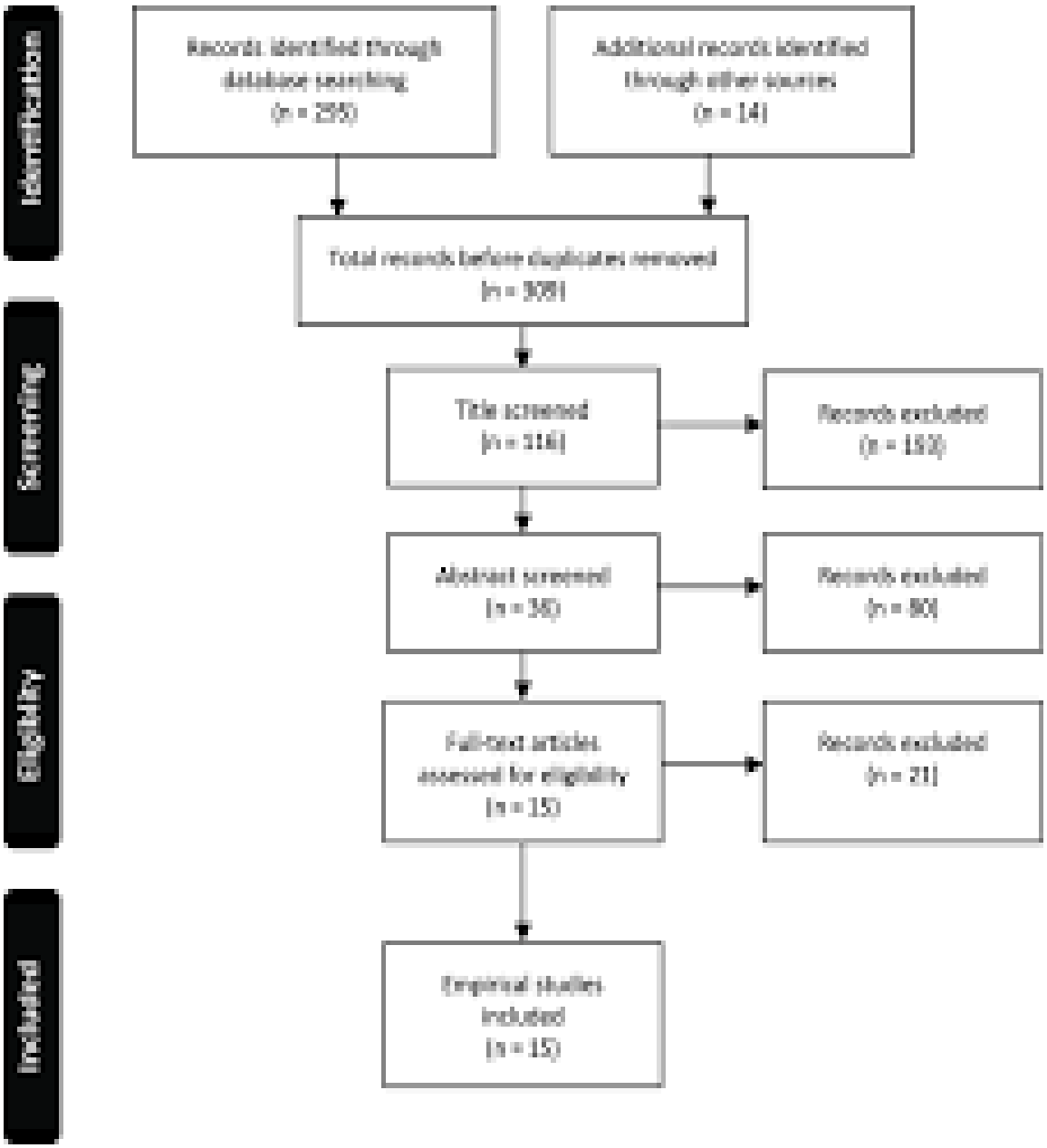
− Regulatory risk: exposes the firm with changes in regulations affecting the firm's business such as environmental regulation.

− Legal risk: exposes the firm to litigation with action arising from customers, suppliers, shareholders or employees.

In the logistic and based on the literature review, all of these risks may have one of three possible origins:

1. organizational,
2. network relations
3. external environmental.

We may consider the risk in the supply chain, as a breaking of flows between different components of the supply chain. All risks must be identified and bringing under control to keep all process in good working order, this is the risk management. The risks management in the supply chain The concept of risk management in the supply chain has developed rapidly over the recent decades and has become very important, we can consider, if we refer on Lavasteretal, that the paper of Jutteretal in 2005 "Supply Chain Risk Management: outlining an agenda for future research" was the first scientific researcher in the Supply Chain Risk Management (SCRM), furthermore and according to Fekete , risk management is an area with conflicting terms, and there is a widely acknowledged need for a critical reflection of its definition, core contents, principles and regulation. According to Lavasteretal , the first definition of SCRM was given by Juttner 2005, "the SCRM is the identification and management of risk for the supply chain, through a co-ordinate approach



amongst supply chain members, to reduce supply chain vulnerability as a whole". The SCRM plays a major role in successfully managing business processes in a proactive manner.

LITERATURE REVIEW

KevinMacG.Adams, *OldDominionUniversity*

C. Ariel Pinto, *Old Dominion University*

26th Annual National Conference of the American Society for Engineering Management 2005 - Organizational Transformation: Opportunities and Challenges, ASEM 2005, Virginia Beach, Virginia, 26-29 October, 2005

The rapid and unprecedented growth in software has brought with it some of the most spectacular and costly project failures in modern history. How risk management is presented in the scholarly journals may give insight into the risk management methods and techniques in use on software development projects. This paper provides a glimpse into the risk management methods, methodologies and techniques available to those who are responsible for software development projects by conducting a non-experimental content analysis. The findings reveal that risk management has not received sufficient attention and does not appear to be widely accepted within the software engineering community.

MacAdams, K. G., & Pinto, C. A. (2005).

Software development project risk management: A literature review. 26th Annual National Conference of the American Society for Engineering Management 2005 - Organizational Transformation: Opportunities and Challenges, ASEM 2005, Virginia Beach, Virginia, 26-29 October, 2005. (pp. 635-641). American Society for Engineering Management.

Adams, Kevin MacG. and Pinto, C. Ariel, "Software Development Project Risk Management: A Literature Review" (2005).

Engineering Management & Systems Engineering Faculty Publications. 68.

In the survy that I had created there are 30 people were responded in that the 18 people don’t know about the risk that occurs in the software development. And remaining 12 people responded that they have risk analysis the data that they have given by the statements or code. From the survy that I have created .

All of these cases highlight the importance of understanding and studying organizational risks and the best way to manage them. The article is structured in sections:

- Presents the research, its objectives and the justifications;
- Is a review of the literature on risk management and its application in software development projects;
- Presents materials and methods;
- Analysis of results; and finally,
- Presents the conclusions and direction for future research.

METHODS & TECHNIQUES

Based on the literature review, we can find several methods for the risks management. These methods can be classified into two categories: the deterministic approach (that includes the qualitative, quantitative and hybrid techniques) and the stochastic approach (that includes classic statistical approach and the accident forecasting modeling). We can mention the checklists, what-if analysis, task analysis, Hazard and Operability (HAZOP), Quantitative Risk Assessment (QRA), the Critical Risk and Error Analysis (CREA), Fault Tree Analysis (FTA), the Event Tree Analysis (ETA), Failure Mode and Effects Analysis (FMEA), Probability Distribution of Failure and Reliability (PDEA), Petri networks, Bayesian networks, etc. According to our level of knowledge, we will try to give an overview of some new applications of risks management and their methods. For example, and to study the impact of disruption risks on the process of inventory management of a newsvendor, a stochastic model has been developed by Xanthopoulosetal. [4]. This model is considered as the first on the joint examination of inventory management and disruption risks for supply chain networks considering risk-averse decision-making. It can be applicable to different types of disruption (production process, supply of raw materials, etc.). These potential issues might harm cost, schedule or technical success of the project and the quality of our software device, or project team morale. Risk Management is the system of identifying addressing and eliminating these problems before they can damage the project.

Risk Management:

A software project can be concerned with a large variety of risks. In order to be adept to systematically identify the significant risks which might affect a software project, it is essential to classify risks into different classes. The project manager can then check which risks from each class are relevant to the project.

There are three main classifications of risks which can affect a software project:

1. Project risks
2. Technical risks
3. Business risks

1. **Project risks:**

   Project risks concern differ forms of budgetary, schedule, personnel, resource, and customer-related problems. A vital project risk is schedule slippage. Since the software is intangible, it is very tough to monitor and control a software project. It is very tough to control something which cannot be identified. For any manufacturing program, such as the manufacturing of cars, the plan executive can recognize the product taking shape.

2. **Technical risks:**

   Technical risks concern potential method, implementation, interfacing, testing, and maintenance issue. It also consists of an ambiguous specification, incomplete specification, changing specification, technical uncertainty, and technical obsolescence. Most technical risks appear due to the development team's insufficient knowledge about the project.

3. **Business risks:**

   This type of risks contain risks of building an excellent product that no one need, losing budgetary or personnel commitments, etc.

Other risk categories

1. Known risks:

Those risks that can be uncovered after careful assessment of the project program, the business and technical environment in which the plan is being developed, and more reliable data sources (e.g., unrealistic delivery date)

2. Predictable risks:

Those risks that are hypothesized from previous project experience (e.g., past turnover)

3.Unpredictable risks:

Those risks that can and do occur, but are extremely tough to identify in advance.

PRINCIPLE OF RISK MANAGEMENT

1. **Global Perspective:**

   In this, we review the bigger system description, design, and implementation. We look at the chance and the impact the risk is going to have.

2. **Take a forward-looking view:**

   Consider the threat which may appear in the future and create future plans for directing the next events.

3. **Open Communication:**

   This is to allow the free flow of communications between the client and the

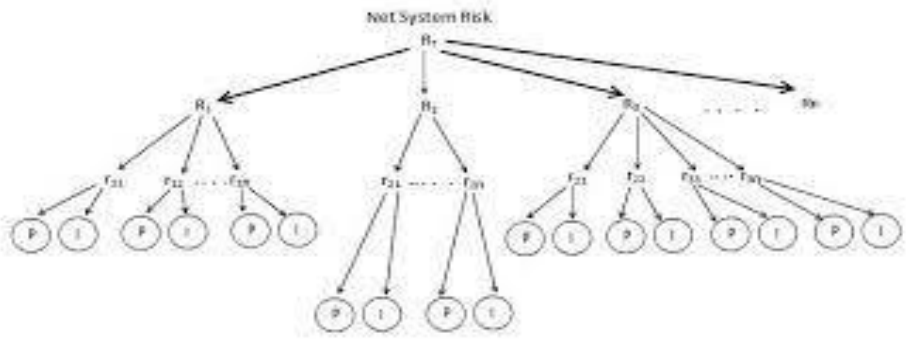
   team members so that they have certainty about the risks.

4. **Integrated management:**

   In this method risk management is made an integral part of project management.

5. **Continuous process:**

   In this phase, the risks are tracked continuously throughout the risk management paradigm.



SUVERY IN GOOGLE FORM

DO YOU KNOW RISK MANAGEMRNT

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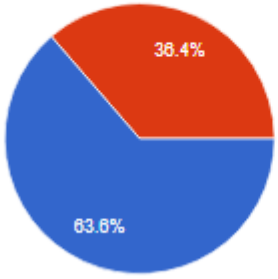

YES
NO

HOW TO CONTROLL RISK MANAGEMENT

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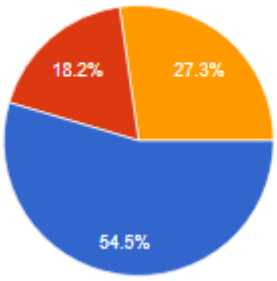

RISK ANALYSIS
RISK DEVELOP
NONE OF THE ABOVE

FIRST PROCESS TO FIND RISK MANAGEMENT

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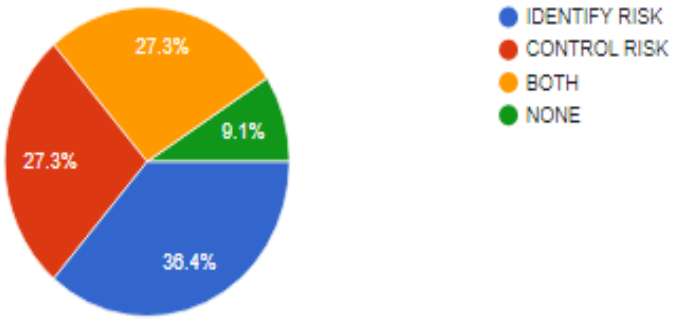

SECOND STEP TO THE RISK

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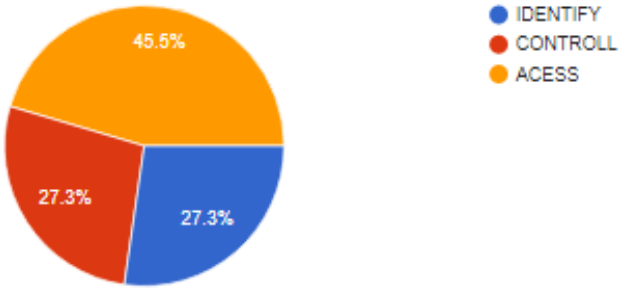

CONCLUSION

Risk management is an important process that managers should maintain in an organization. It is inevitable to have risks and managers should have better strategies to deal with risks. The long-term survival of an organization depends on the ability to manage risks.

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