The Development of a Strategic Communication Plan in Heavy Transportation Auto Part Manufacturing Factories

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Abstract—This research proposal is a continuum of the master's dissertation with the title "What are the most Crucial Operational Risk Factors associated with a production line of Heavy Public Transportation Vehicle's Auto Part Manufacturing and Assembling Factories." which concluded that communication is a very important yet neglected risk factor in assessing such manufacturing fields. Auto part manufacturing is a multibillion Dollars industry that has been growing by the years rapidly. Transportation manufactures faced three important factors of money, time and planning, which would not have been easy to be assessed by one single company, especially in producing such complex industrial features, thus companies that were specialized in making specific auto parts were created. In this research proposal two co-existing sister companies will be an empirical environment for the research at hand, to obtain the importance of using one of the most crucial risk factors, which is communication, in their strategic planning. The aim of the research would be to obtain a well-defined, technically accurate and step by step plan or model to assist communication planning in such fields.

Index Terms—communication, planning, manufacturing, strategic, risk

I. INTRODUCTION

When defining the term risk, it differs from one topic to another, thus the perspective and the aim of the discussion that is going to be undertaken comes into play, and so it leads to various definitions and explanations of the term. A risk in manufacturing may be defined as an uncertainty that would result in losses or some form of damage [1]. Risk according to the Risk Analysis society is known to be the potential of any unwanted, adverse consequences to the property, environment or human life. But risk doesn't always mean loss, it may be taken as a state where there is a possibility that a loss will be made but at the same time gain may also be achieved, this definition emerges from the notion that, no one would willingly put themselves in a situation of making a loss unless there is hope they will emerge to be winners if it was done purposely; An example would be taking risks in accepting a high order with a short deadline. In this proposal, the term risk is defined as being simply any

undesirable state, which would harm the three important factors of strategic management obstacles of time, money and operational goals.

Auto parts manufacturers are mostly expected to produce various parts that are used in production of new vehicles or as replacements of old parts to satisfy the national and international demands, which creates high levels of vulnerability in their demands and management complexity [2]. Heavy public transportation Auto part manufacturing is a fast growing industry (The term heavy public transportation refers to busses, trucks, trains and ships.) Following the pervious master's dissertation done on the similar topic, which aimed to find the risk factors affecting these industries; An interesting result was obtained that communication is one of the most important risk factors, that is usually neglected, which can be defined as lack of follow-ups or miscommunications, on and off the operation fields.

The problem that comes with evaluation of a risk scenario through strategic risk assessment is that in the predictions of major or even minor disasters, it is likely to have misjudgment, which could be harming the finances, deadlines, human casualties, or the reputations of an organization. While the occurrence of these disasters might have been notated in advance, given as warning or a simple small notation by the junior managers on the site or the simplest comments from the labors to the most serious warnings given by the head mangers in charge, yet a small negligence can cause catastrophic results. A commutation strategy or also known as a commutation plan would help solve and ease many of the occurring, foreseen or unexpected problems in these fields, which would also help achieve a stronger organization culture [2]. The importance of risk management has been studied and analyzed in many journals and publications; In the past recent years, many companies have found it crucial to take actions on the external and the internal risks occurrences, including the manufacturing companies, that after the financial crisis their main focus pointed towards being prepared in case of any disruptions [3]. There are numerous number of consequences that occurs due to disruption of operational processes, which has also been studied and found to be loss of time, financial losses, health damages and bad reputation that would result in loss of demand [3]. Nowadays many organizations

Manuscript received Dec. 15, 2016; revised Jan. 1, 2017.

perform business in global stages, which is due to having sourcing abroad and being able to attract global customers. For an organization, being global comes with many responsibilities and expectations, which has been analyzed to be very much crucial in highly volatile production lines in manufacturing. The aim of managerial risk assessment is mitigation of the negative impacts of internal and external processes [4].

Risk factor assessment and risk factors have also been analyzed from a supply chain perspective and since supply chain management endures high vulnerability, researchers [5] emphasized in the need of very prompt supply chain and operations risk management assessment. Risk management has also been analyzed from the Hazard management aspects by Sun [6] explaining what might or could have been avoided if risk management had been applied in assessing incidents. In organizations that are characterized as being fierce competitors, especially in manufacturing, exists a great need to have proper supply chain risk and operations assessment, where one of its most important steps is communication.

It is also established that connections between Hazards and risk factors is analyzed in details by using risk factor tables by many authors, companies may suffer from major disruptive events such as supplier bankruptcies, industrial accidents, natural disasters and as such. [7]. Results show a positive relation between applying risk factors and prevention of casualties and operational losses. From the literature, it shows that there are other reasons leading to the need of implementing risk management principles in operations, such as ensuring that the company is following the laid down rules and regulations that have been set up by the organization or by law. Another important need of risk management is assurance that is achieved by the means of internal audits that oversees the execution of an organization's activity; This is done by identifying risks and adjusting to their proper assessment. It also clarifies the implication in the information used as an aid in making decision in the organization. By applying risk factors an organization will eventually benefit from efficiency in operations and effectiveness in strategy and processes without enduring unnecessarily losses [8]. Communication as a risk factor has been mentioned by Hopkins [4] as a risk factor that achieves its importance, while various expectations from the stakeholders and costumers. Having a strategic communication plan can help many organizations in dealing or preventing problems that are occurring or might occur in the future. The framework analysis of risk assessment has also been studied, it noted that the framework specifications that would meet the outlined requirements in a manufacturing plant are based on their prior identifications of communication resources. By looking at an organization's resource-based assumptions and by following in line with the minimal primary assumption of communication necessity, communication plans can be non-firm specific or firm specific [9].

Importance of communication has also been analyzed from other aspects were the results showed a positive relation between the emotional intelligence and the communication effective, and a positive relation has been found between job satisfaction and communication effectiveness [10]. This also highlights the importance of a communication plan in an organization.

There are many different communication plans, which cover various types of organizations, but there exists a gap, since there isn't any specific prepared framework that can be used in industrial manufacturing, thus by combining the risk assessments, which is done by treating communication as a risk factor, it can help achieve a model that assesses communication plans needed internally for the industrial factory sectors that are targeted by financial and production volatiles.

II. RESEARCH OBJECTIVES AND JUSTIFICATION

The aim of this study would be to develop a framework in order to find the best possible strategic approaches in challenging communication plans in an industrial manufacturing factory, also the proposed research focusses to develop a strategic framework in assessing communication plans in heavy auto part manufacturing factories. The questions raised in this research would be revolving around measuring how and in what way communication plans effect the productivity of an organization; What would be the criteria for a welldefined communication plan and what shortage or losses would an organization face by discarding or adapting the plans at hand, that is why, finding relations between communication plans and risk management assessment, and then coming up with a model or communication plan in assessing the communication strategy in such fields would become one of the most important objectives. The objectives of this study are as follows: Determining the nature and importance of using communication strategic frameworks, Finding the relations of commutation strategic plans with heavy transportation vehicles auto part manufacturing companies and creating a complete model on how to assess the communication plans in such fields.

The reason that this research has an importance to be done is that the topic is very much novel in its field and such a communication plan in not existing in any of these manufacturing companies at hand. If this study is done successfully not only a plan can be provided as an empirical research to these fields but it can also be an innovative approach in assessing their strategic planning. Having an engineering and management background followed by experience in this specific field would make it very much achievable to peruse in such topic, also there exists an unlimited access and resources to apply real life scenarios of experimentations in two different heavy machinery auto part manufacturing companies for this research.

Yet there are limitations that would surround the topic as well, such as lack of enough literature on the specific topic, disclosure agreements with the factories being studied, which might prevent mentioning their names and locations, lack of enough experienced people to be interviewed or surveyed on such matter and more importantly since two commutation plans will be applied in real life scenario, but in different time periods(not concurrently), adjusting the control variables and keeping the same experimental environment would be very much challenging.

III. CONCEPTUAL FRAMEWORK

The research hypothesis in this study would be divided in two steps. The first step would be finding the proper commutation plans and then after finding the twodifferent communication plans A and B, creating the null and alternative hypotheses of both communication plans would be applied. The null hypothesis are as follows:

-H1: communication plan A has a negative effect on the heavy transportation auto part manufacturing company's productivity.

-H2: communication plan B has a negative effect on the heavy transportation auto part manufacturing company's productivity.

Studying the literature would be a continuum; The first part as explained before was done to find the existing gap and creating the research topic. The second part which would be done afterward, will be finding different communication plans and their effects on operations from literature reviews and the interviews, then the two independent variables created would be communication plan A and communication plan B. Communication plans A and B will be applied on the two factories at two different concurrent six months' periods and gathering results from all cases and then combining them in order to achieve the finalized communication plan. The effects of each variable would be tested by achieving results from experimental data. From the literature review it was shown that communication plans upgrade the operation status of factories [4], which means that a positive correlation and effect must be gained from the communication plans, this however needs to be proved by applied research.

Some of the most important risk factors have been gathered form the pervious findings in the master's dissertation and literature review that would affect the communication plans created, which is given below in "Fig. 1". Each of the given risk factors are mediator factors, while each of them is having a positive relation to creating the final plans of A and B. The unorthodox but yet achievable method of this applied research is using each of these factors in creating two different communication plans. The factors listed are obtained from the base and theoretical plan which led to the creation of the elementary conceptual framework given as such. These communication plans will be the final independent variables of the study. While in many studies there exists several independent variables and the aim is to find relations of them to the dependent variable at hand, in this research several risk factors comes together in order to create two communication plans, where they would act as our independent variables to be studied. This approach is usually used in applied and case study researches that is why it has been used as the core approach and foundation of the conceptual frame work as follows in "Fig. 1":



Figure 1. Conceptual framework

IV. RESEARCH METHADOLOGY

The research would be an inductive exploratory study which will embody empirical analysis. The literature review analysis will be done to find if there are any similar studied in the same fields and then finding the communication plans in other similar industrial areas. Afterwards interview would be done in operational, managerial and financial levels to address different levels of strategic planning and getting ideas and comments on finding the possible communication plans. Then Expose this framework to critique by using a combination of research, interviews and quantitative analysis, revise the framework based on the findings, then based on the data that is collected and the interview results creating two communication plans and implementing it in two different real life factory grounds(empirical) and then collecting the results and creating the best possible communication strategic plan for such fields. The more detailed step by step design is given below in "Fig. 2":



Figure 2. Research methodology

V. CONCLUSION

The proposed research study would cover a novel topic of introducing a communication strategic plan in heavy auto part manufacturing factories, which would be strongly influenced by risk factors, also the proposed framework would cover the steps to be taken. The outcome is forecasted to be a properly structured plan which would contribute to employee engagement and productivity of the organization.

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