

INGENIOUS CRISIS MANAGEMENT IN CONSTRUCTION WITH APPROACHES AND PROCESSES

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Abstract : The crisis management is becoming a need to reduce financial impact to the organization. Hence it has become necessary to forecast and detect crisis and provide a proper solution to overcome it. This project report presents study of various crisis that occur in construction industry the approaches and processes to overcome them. A detail discussion is done on the approaches and the processes for the crisis management in construction firms and companies. There is a huge scope for contribution in the management literature in the form of innovative and creative management .this would help companies which have potential risks and crises in macro and micro levels. Consequently, this study attempts to show innovation based measures to manage a crisis faced by a construction firm in a better way and in a short term of period.

IndexTerms - Crisis, Construction, Factors, Processes, Approach.

1. INTRODUCTION

A series of events that occur in the world leads to crisis. These in return affect the construction companies. Their occurrence is sudden or even after proper preparation against it. The construction industry is a process based industry. The crisis here are processes based. These usually send a signal prior to the crisis. If a construction company is able to identify the signal long before the crisis, the crisis can be avoided. So it's is necessary to create a proper system to detect the upcoming crisis and create an alarm if one is detected.

Proper precautions can be thus taken to avoid the crisis. The construction company can then inform their respective important persons and set up a crisis management team which can handle the struggle during crisis and come out of the situation with minimum loss. Crisis management is system which depends on the situation that a company is facing. For this purpose the system includes clear role distribution, fulfilment of requirements to manage the crisis and sharing of responsibilities over the period of time. A proper response is to be given to crisis in the form of Prevention, assessment, handling and termination of crisis. The soul reason for crisis management is to be prepared for it in advance, make sure to have quick and sufficient response to the crisis. This must be done in accordance with the reporting and communication with the crisis management team.

1.1 Aim

To study the significance of factors affecting crisis in construction projects as well as studying approaches and process for each factor affecting.

1.2 Objective of study

- To study the significance of factors affecting crisis in construction projects as well as studying approaches and process for each factor affecting.
- To understand the Crisis and different crisis management system for construction projects
- To find out the difficulties faced in crisis management for construction projects.
- To assess factors causing crises in a construction project
- To evaluate ingenious approaches in construction crisis management.
- To analyse ingenious processes in construction crisis management

2. LITERATURE REVIEW

2.2.1 "Hidden reserves of post-crisis development of construction industry." Natalia Yaskova, Inessa Lukmanova , Procedia engineering 165 (2016) pg 1293-1299 DOI:10.1016/j.proeng.2016.11.853 ^[1]

The authors here have discussed about the potential of the construction industry. Any crisis affects the economy of country which is facing it. According to authors its general and construction industry in particular promote the development of construction companies Construction industry and the organizations in it achieve it in condition that they use all visible and hidden opportunities to full extent. Such opportunities that fully develop the potential of economy

It promotes effective transformations in internal as well as external environment of investment and construction industry. For this purpose, they stated the following are necessary in the economy

- Modification of objectives
- Partnerships and process models of activities,
- Standards of estimation to be developed
- System of prompt responses to challenges

- Use of potential of suspended investment and construction projects

These implications provide the fullest will allow for practical transformation of management issues into opportunities for development.

2.2.2 “Innovative business models and crisis management “ Genti Beqiri. *Procedia Economics and Finance Vol 9 (2014) pg 361 – 368 DOI: 10.1016/S2212-5671(14)00037-9* ^[2]

This study by author presents the set of reason on the need of investing in innovative business models. Using data from two or three big companies the literature performs a comparative study to show how innovative business models can be helpful for the management to carry out the right action when facing crisis situations.

The notion of business model was studied at first part in this literature. To understand the importance and basics, study of the business model was important. The link between latest financial economic crisis that are illustrated by case study and the business mode is provided in the second part. Third part this study presents the use of SWOT analysis. This is done to give conclusions and recommendations based on this study.

The inability of the management in innovating the business model is also the reason for company’s failure and not the Crisis alone.

2.2.3 “Crisis management in construction and real estate: conceptual modeling at the micro-, meso- and macro-levels.”, *Kaklauskas A., Kelpsiene L., Zavadskas E. K., Bardauskiene D., Kaklauskas G., Urbonas M. & Sorakas V. (2011). Land Use Policy, 28, 280-293. DOI: 10.1016/j.landusepol.2010.06.008* ^[3]

The authors have given the way of crisis management for real estate and construction. They state that joined analysis and reasonable decision-making at different levels are required to reduce the effects of recession on the construction sector. According to this Study crisis management involves numerous aspects that should be considered in addition to making economic, political and legal/regulatory decisions. This study presents a model for such considerations and discusses certain composite parts of it.

The research in this study has six stages:

- (1) Analysis of crisis management for the construction industry in developed countries and specifically in Lithuania,
- (2) Difference of crisis management in construction and real estate in developed countries and specifically in Lithuania.
- (3) General suggestions for betterment crisis management process in Lithuania’s construction sector,
- (4) Recommendations that are specific for Lithuania.
- (5) Multiple criteria analysis for crisis management aspects and choosing effective crisis management process in construction.
- (6) Transformational learning and redesign of mental and practical behavior.

A complex analysis of the research object was formulated by the authors with the help of the new multiple criteria project analysis method which they have especially innovated for this. Hence preparing models for different levels.

2.2.4 “Crisis management in Turkish construction industry.” *Ocal, E., Oral, E. L. & Erdis, E. Building and Environment, Vol 41, pg 1498-1503(2006). DOI: 10.1016/j.buildenv.2005.05.042* ^[4]

This paper by authors gives us the crisis management scenario in Turkish construction industry. Turkish economy has been facing crises during the last few years and has been dominating the economy from that moment itself. Construction industry is the one which faced the impact more as compare to the industries during the crisis period. Giving the idea that a universal approach to crisis management is essential.

For testing the extent of application of the crisis management techniques, a survey was conducted which included 120 companies. Questioner was formulated and passed and based on the replies the results were prepared

The analysis was done with the help of

- Frequency analysis,
- Likert scale of comparison,
- Thurstone’s paired comparisons,
- Pearson’s chi-square test
- Fisher’s exact test.

The results showed that government policies and instable market conditions were the most important causes of crisis for Turkish construction companies. Only few of the companies implemented a systematic crisis management and the limit of crisis management’s use changed according to the size and structure of the companies.

2.3 Need of study

Crisis can occur in any construction project given the amount of uncertainties present in this field. Thus crisis management is necessary for such projects to reduce effect of the crisis on the project as well as the economy of the organization which carries out these projects. With this study we can innovate the approaches and processes which will help the organization to effectively reduce the damage and loss caused by the crisis.

2.4 Problem Statement

There are various factors which affect the project and cause crisis in the project. Major factors like technical, labour, organizational, material, time, equipment, communication, financial and other factors are responsible for the cause of crisis in projects. The problem present today is lack of such strategies to handle crisis which causes the fall of an organizations economy or sometime the total fall of organization itself. To avoid this, the factors causing crisis are needed to be studied, their significance has to be measured on the practical basis and proper solutions are to be provided to avoid these factors hence avoiding the crisis.

3. METHODOLOGY OF WORK

This study will involve the various crisis management methods, various factors causing a crisis in a project, measurement of their significance, and analyzing the significance of those factors. For this purpose data will be collected from project managers of various construction sites which will give practical results at the end.

1. Various research methodologies are studied and suitable one is selected
2. Data collection carried out through questionnaire survey
3. Analysis of the collected data through ranking the factors influencing the projects using Likert scale for clear understanding.
4. Finding solution for the crisis by using approach and processes

4. Theoretical contents

4.1 Factors causing crisis

Crisis is caused in a construction projects due to the internal as well as external factors which don't go as planned by the organization. The amount of variation in these factors determines factors for finally providing a crisis solution for each individual factor the severity of the crisis.

- Technical factor
- Supplier relationship
- Government norms
- Scheduling variances
- Contractor performances
- Safety issues
- Crisis prediction
- Labour Factor
- Organizational Factor
- Material Factor
- Time Factor
- Equipment Factor
- Communication Factor
- Financial Factor
- Other Factor

4.2 Approaches

The approaches which can be followed for above factors are as follows:

- The escaping approach,
- The solving approach,
- The proactive approach,
- The reactive approach,
- The interactive approach.

4.3 Processes

Crisis management is to be applied with a specific process. The process for this can thus be separated into five parts as follows:-

- Prediction
- Prevention and Preparation
- Control
- Recovery
- Learning and Evaluation

5. CONCLUSION

The events that can affect a construction company can occur on a sudden as well as a timely basis. Being prepared against any circumstances that may cause crisis will help the construction company to reduce the risk as well as the loss due to the crisis. The major work in construction industry is being dependent on the large value of money invested for it and hence is most liable to be damaged under a crisis. An early warning system will definitely reduce the losses that occur during a crisis. Analysis must be undertaken for this purpose which must include (i) environment study of both internal as well as external (ii) Interest rates and unemployment affecting the project (iii) New political and legal regulations. Crisis can be also taken as a positive point for a company if it utilizes it under its strengths. These strength and weakness can be found out by a SWOT analysis.

Planning efforts must be made to be prepared against the crisis by improving various crisis scenarios solutions. To overcome a construction crisis a construction firm or company must study the situation and condition prior to crisis in the case of cost expended, management capabilities of the firm. The obtained data must be processed and used for learning the mistakes that were made during the crisis events. Rewarding the people with high performance in such critical activities and firing low performing employees under such circumstances will help in avoiding future crisis losses. Finally, permanent commercial relationships with suppliers and customers should be reviewed for an innovative crisis management process.

REFERENCES

- [1] Natalia Yaskova, Inessa Lukmanova (2016) Hidden reserves of post-crisis development of construction industry. *Procedia engineering* 165: 1293-1299 DOI:10.1016/j.proeng.2016.11.853
- [2] Genti Beqiri (2014) Innovative business models and crisis management *Procedia Economics and Finance* Vol 9: 361-368 DOI: 10.1016/S2212-5671(14)00037-9
- [3] Kaklauskas A., Kelpsienc L., Zavadskas E K., Bardauskiene D., Kaklauskas G., Urbonas M. & Sorakas V. (2011) Crisis management in construction and real estate: conceptual modeling at the micro-, meso- and macro-levels. *Land Use Policy*, 28, 280-293. DOI: 10.1016/j.landusepol.2010.06.008
- [4] Ocal, E., Oral, E. L & Erdis (2006) Crisis management in Turkish construction industry. *E. Building and Environment*, Vol 41: 1498-1503(2006). DOI 10.1016/j.buildenv.2005.05.042
- [5] Abdullah Alkharabsheh, Zainal Ariffin Ahmad, Abdulrhman Kharabsheh (2014) Characteristics of Crisis and Decision Making Styles: The Mediating Role of Leadership Styles. *Procedia Social and Behavioural Sciences* Vol 129: 282-288. DOI: 10.1016/j.sbspro.2014.03.678
- [6] Loosemore M. (1999) A grounded theory of construction crisis management. *Construction Management and Economics*, Vol 17: 9-19. DOI:10.1080/014461999371781
- [7] Loosemore M. (1998) Reactive crisis management in construction projects patterns of communication and behaviour. *Journal of Contingencies and Crisis Management*. Vol 6 No (1), 23-34
- [8] Loosemore M (1998) Organisational behaviour during a construction crisis. *International Journal of Project Management*. Vol 16, No (2): 115-121
- [9] Loosemore M. (1998) The three ironies of crisis management in construction projects. *International Journal of Project Management*, Vol 16. No (3): 139-144
- [10] Loosemore, M (1998) Social network analysis: using a quantitative tool within an interpretative context to explore the management of construction crises. *Engineering, Construction and Architectural Management*, Vol 5, No (4): 315-326
- [11] Loosemore, M. (1998) The influence of communication structure upon crisis management efficiency *Construction Management and Economics*, Vol 16: 661-671(1998). DOI: 10.1080.014461998371953
- [12] Loosemore, M (1997) Construction crises as periods of social adjustment. *Journal of Management in Engineering*, Vol 13 No (4) July/august 1997 ASCE, ISSN 0742-597x/97/0004, 0030-0037
- [13] Loosemore M., Hughes K (1998) Emergency systems in construction contracts *Engineering, construction and Architectural Management* Volume 5 No 2: 189-198
- [14] Markus Hallgren, Timothy L. Wilson (2008) The nature and management of crises in construction projects Projects-as-practice observations. *International Journal of Project Management* Vol 26: 830-838 DOI:10.1016/j.ijproman.2007.10.005
- [15] Hadley, Constance Noonan, Todd L. Pittinsky S. Amy Sommer, and Weichun Zhu (2009) Measuring the Efficacy of Leaders to Assess Information and Make Decisions in a Crisis: The C-LEAD Scale. HKS Faculty Research Working Paper Series RWP09-021, John F. Kennedy School of Government, Harvard University