# STRATEGIES FOR MAXIMIZING THE EFFECTIVENESS OF VIRTUAL TEAMS IN THE CONSTRUCTION INDUSTRY: A CASE IN MALAYSIA

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## STUDENT'S DECLARATION

I hereby declare that the work in this thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at Universiti Malaysia Pahang or any other institutions.

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# ABSTRAK

Projek pembinaan telah berkembang dengan pesat sejak beberapa tahun kebelakangan ini, namun produktiviti buruh masih rendah berbanding produktiviti sektor lain. Pembesaran dalam produktiviti buruh pembinaan menyumbang kepada ekonomi. Oleh itu, usaha yang besar perlu diterapkan dalam menguruskan projek-projek pembinaan. Kejayaan saintifik telah menghasilkan sekumpulan individu yang bekerja bersama dari pelbagai lokasi geografi yang bergantung kepada teknologi komunikasi untuk bekerjasama (iaitu, pasukan maya). Bersama dengan faktor lain, pasukan maya menjejaskan produktiviti buruh pembinaan. Oleh itu, adalah jelas bahawa pasukan maya juga memerlukan perhatian untuk meningkatkan produktiviti pembinaan. Kajian ini bertujuan untuk mengenal pasti strategi yang paling biasa digunakan untuk memaksimumkan keberkesanan pasukan maya dalam industri pembinaan. Wawancara individu telah dijalankan sepanjang kajian ini. Penemuan kajian ini dijangka meningkatkan tahap pemahaman pasukan maya dalam industri pembinaan.

# ABSTRACT

Construction projects have been expanding exponentially during the past few years, yet the labor productivity is still low compared to other sectors' productivity. Expansions in construction labor productivity contribute to the economy. Therefore, an immense effort should be applied in managing construction projects. Scientific breakthroughs have resulted in a group of individuals working together from different geographic locations that rely on communication technologies to collaborate (i.e., virtual team). Along with other factors, virtual teams are affecting construction labor productivity. Therefore, it is clear that virtual team also requires attention to boost construction productivity. This study aims to identify the most common strategies used to maximize the effectiveness of virtual teams in the construction industry. Individual interviews were conducted throughout this research. The findings of this study are expected to increase the level of understanding of virtual teams in the construction industry.

**TABLE OF CONTENT**

# LIST OF TABLES

# LIST OF FIGURES

# LIST OF SYMBOLS

VTC           Virtual Team Communication

# LIST OF ABBREVIATIONS

VTC              Virtual Team Communication

# CHAPTER 1

# INTRODUCTION

## 1.1    Introduction

. Managers who organize and operate their firms globally are the most prosperous due to their ability to expand to farther destinations that definitely carries unpredicted outcomes compared to local organizations. Even more fascinating is the fact that those managers accomplish such expansion in a competitive environment. One of the most effective methods that is used widely in expansive firms is the use of technological aspects such as virtual teams. Virtual teams, also known as a geographically spread group of colleagues who participate in a work from different geographic locations and rely on communicational technologies such as email, FAX, and video or voice conferencing callings in order to collaborate [15]. Motivated by globalization, companies often resort to using virtual teams in greater numbers which increases the communications strategies and their efficiency [16]. Which helped increase their motivation. The Virtual teams eases a firm's path in continuously producing a change in environments [11]. According to [3], the concept of virtual teams wasn't a deliberate result from planning, it was rather spread due to its availability thanks to the supporting technologies. Organizations can nowadays, through the availability of virtual team, access various capabilities either locally or globally due to integration of members with effective expertise, thus increasing the time and distance compared to traditional methods [11].

Virtual teams can be considered as a two edged weapon due to the fact that virtual teams are often temporary, which makes the acquired tacit knowledge where the team process vulnerable to be lost as a dispersed team [1]. Tacit knowledge is known as personal hunches, intuition, insights, emotions and values that are generated from individual actions and experience [13]. Virtual team users have heterogeneous sets of expertise, however they may not comprehend the team members' work context because

1

the accumulated information among members can be scarce [1]. Although the natural purpose of virtual team has a lot of benefits, the immense reliance on technology for communication can deprive the contextual advantage of having a face to face collaboration [1].

Through the emergence of internal communications and knowledge based technology, organization struggled in implementing those approaches through and creative ways in order to improve competitiveness and efficiency [15]. The technologies of communication being in continuous changed its rhythm that firms operate, leading that greater use of virtual appliances [15]. A real world virtual team which is made up of members from the private and public sector, used a variety of collaborative technologies to design, build and deploy new products to operational application. Teleconferences, video teleconferencing, collaborative data exchange software, shared network and virtual private units are included by these technologies. The project was specifically represented by functions of Washington, DC; San Luis, MO etc. Functions that were included in the project and in production, management, design, evaluation and testing, operational and training integration. Occurrences of high levels of functional collaboration might not be practical or profitable just a just a couple of years ago.

A brief background information on the problem of ineffective communication and coordination that can cause a fatigue outcome in virtual teams is provided in Chapter 1. The purpose, nature, and significance of this study is also provided, accompanied with the conceptual framework, assumptions, and definitions. The chapter's conclusion goes through a description of the scope, limitations, and delimitations.

## 1.2 Virtual Teams

Figure 1.1: Virtual Teams

Virtual teams, also known as dispersed, remote, or geographically extended team, are a group of individuals who participate in a task or work located in different geographic areas which rely on communication technologies, for example: e-mail, teleconferencing, fax, in order to contribute together. This term also refers to a group of people working asynchronously or between organizational levels. [5] Has identified virtual teams by a "groups of workers dispersed individuals, who came together through information and telecommunications technologies to achieve one or more organizational visions." Virtual teams is also known to be a small groups of individuals who temporarily work in dispersed geographical areas, organizationally or in individual forms where there is an ability to coordinate work frequently with virtual information and technological communications in order to accomplish one or more organization tasks [4].

Imposingly, virtual teams are exposed to the same attributes that affect them in a positive way [15]. Inability for virtual team members to adapt to technology, evolution, cultural differences and geographic distribution may resort to communication failures, resulting in a misunderstanding, meaning and knowledge [2]. The lack of reciprocity among member organizations represented in virtual teams can inhibit the exchange of knowledge due to the accumulation of competitive information [10]. The exact problem explored was that, despite of technology improvements, virtual team performance is continuously affected by the loss of knowledge resulting from inefficient communication and coordination, and lack of information exchange in a timely manner [10].

Knowledge is a belief of relationships involving views that are similar to a definite area [3]. Knowledge is created through the progress of information; whereas Information are streams of data and messages; Knowledge is originated by the commitments and beliefs stakeholders [13]. According to [3], knowledge has been defined as the management of pursuing what is mostly needed to make the most out of the available

3

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