

Improving Multi-Organizational Team Integration using Organizational Strategies

Arina Binti Rahmat and Dr. Che Khairil Izam Che Ibrahim

Department of Civil Engineering
Universiti Teknologi MARA
40450 Shah Alam, Malaysia

rynn.90@gmail.com, chekhairil449@salam.uitm.edu.my

Abstract

This study is to review the multi-organizational team integration practice to enhance the organizational strategies in delivering the construction projects. Therefore, this paper aims to integrate the key determinants of multi-organizations and reviewing the literature in merging a set of key determinants of multi-organizational integration with the well-established McKinsey 7S model. Subsequently, a set of questionnaires was designed to gain insight and opinion from experts in terms of the relevancy of the determinants underpinning the dimensions of the McKinsey 7S model. The identified 23 key determinants (KDs) initially assessed by award winning construction organizations from Malaysian Construction Industry Excellence Awards (MCEIA). Then, the validated KDs presented by 34 construction practitioners to figured out its relevancy to the strategies in the McKinsey 7S model. The findings showed that the KDs of multi-organizational integration complementary with the strategies in the McKinsey 7S model. This study recognizes that while the success of multi-organizational integration depends on many determinants, it further extends the integration literature by giving insights into what are the dominant organizational strategies influencing the multi-organizational integration practice.

Keywords

McKinsey 7S model, Multi-Organizational Team Integration, Construction Projects

1. Introduction

In construction nowadays, organizations are giving more focus on the topic of multi-organizations integration. Thus, more integrated approach need to revise to solve the problems and constraints in construction as well as need to be strengthen. In addition, due to the complex nature of construction, the integration approach needs to be highlight and refined to avoid problems in construction. Therefore, the multi-organizational collaboration is a vital importance in construction needs to achieve significant cost reduction and to reduce overall service cost. Otherwise, will increase the trend towards a focus on core and outsourcing noncore competencies that will leads to a narrowing of capability and increased specialization (Purchase, Parry, Valerdi, D, & J, 2011). The various team unable to work as a team and collaborate as expected to deliver the project effectively because of the structure and current practice in the construction project delivery tends to be relatively fragmented (Ibrahim, Costello, & Wilkinson, 2013). The main influence on the effective integration is the organization strategies itself whereby the effectiveness of a conceptualization of an integrated team and well-established organization able to guarantee a successful restructuring. According to the previous scholar, strategic planning is one of the useful tool which helps on managing projects especially if strategic of the strategies and plans can be implemented successfully throughout the organization. Obviously, a great organizational strategies developing a strategic plan and once developed, a great deal of strategic management brings its aims to the good integration (Rahmat, Ibrahim, & Endut, 2017). The integration defined as the “combination of different disciplines or organizations into a single cohesive and mutually supporting unit, with alignment of processes and cultures” (Bernard K Baiden & Price, 2011; Rahmat et al., 2017). Therefore, the objective of this paper is to conducts a validation on a set of KDs with the McKinsey 7S model elements and to formulate a conceptual framework aimed at developing and sustaining good relationships and performance levels throughout the multi-organizational team integration (MOTI) for construction projects in the life cycle frame.

2. Literature Review and Conceptual Framework

2.1 Multi-Organizational Team Integration and Organizational System

Multi-organizational are involving to more than one organization in a team in which participants bring their specific skills in a joint effort to meet the requirements of the teamwork, briefing, face-to face interactions, learning, designing, innovation and constructing processes (Lizarralde, Blois, & Latunova, 2012). Team integration is vital for multi-organizations in the construction industry due to relationships and collaborative principles that flows through different levels of organizations and between individuals and a team (Moore & Antill, 2001; Rahmat et al., 2017). Multi-organizations team integration in this context is defined as the extent to which team members from different organizations were brought together in a systematic manner to deliver a high performance in specific project (Bernard K Baiden & Price, 2011). Consequently, the key determinants (KDs) of practice will establish a comprehensive database for benchmarking the performance of MOTI. This resulted in 7 categories which consists of 23 elements of KDs which adopted by the McKinsey 7S model that has been scheduled based on the previous studies from 1998 to 2016 (Rahmat et al., 2017). The extracted results of an assessment model could be collected and consolidated for further improvement to establish a comprehensive database for benchmarking the performance of MOTI. The data mentioned above provide a way to improve the performance of the team project in the industry if developed carefully. Thus, the private owners and the government should obtain a much better based on previous performance integration team to assist in designing the tender process (Rahmat et al., 2017). In addition, MOTI also included in a various project and if the organization has no strategy and not integrated, it has been to be relatively disintegrated. This will provide a more integrated approach to addressing frequent construction issues as a solution to the various problems and constraints in construction. Thus, this study presents the KDs of MOTI to be aligned with the McKinsey 7S model in construction projects. In addition, developing a conceptual framework that integrates the multi-organizational theoretical perspectives from construction projects offer a broader process-oriented integrative model.

2.2 McKinsey 7S model Approach

McKinsey 7S model was introduced by Tom Peters, Julian R. Philips and Robert H. Waterman in 1980s is the one of the most popular strategic planning which helps for analyzing and improving organizational effectiveness (Waterman, Peters, & Phillips, 1980). In combination with the key determinants of multi-organizational will provide effective framework for analyzing the organizational and its activities. Initially, this model has also been recognized as one of the approaches to foster collaborative culture among the organization and the most suitable for applications in the organization in the construction project (Ravanfar, 2015). Thus, this study presents a relation between key determinants (KDs) in MOTI with the elements in the McKinsey 7S model. This study aims to create the strategic alignment through 23 KDs between 7 areas of the model which influences the key determinants of MOTI in construction projects and it is vital to discover. The objective of this study is to assess and classify a set of KDs to integrate with the McKinsey 7S model in the view of multi-organizational team integration in order to developing an assessment model framework for the Malaysian construction industry. The McKinsey 7S model is the well-known concept in the world and it analyze very well an organization prior to achieve its intended objective. Therefore, this study is to assessed each of the KDs by isolating those KDs which has not been given much consideration in past researchers will then validating each of the KDs precisely. Thus, the management team will have the greatest impact in terms of its strengths and weaknesses as well as to plan of an improvement. In other hand, this research also helps in validating and demonstrate of an integrated development model as for benchmarking the performance of MOTI. The McKinsey 7S model involves seven interdependent factor as such strategy, structure, systems, style, skills, staff and shared values (Waterman et al., 1980) as shown in Figure 1 the dimensions of McKinsey 7S model encompasses the following:

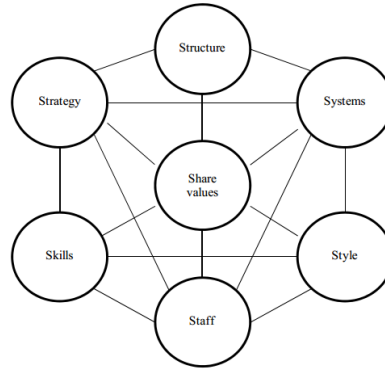


Figure 1: McKinsey 7S model (Waterman et al., 1980)

The *structure* itself is the basic organization in the construction projects, reporting lines and how they inter-relate which shows the way of organization in structured and who report to whom. Otherwise, behind the concept of structure involve with all key players in any construction project (Ravanfar, 2015). From the industry perspective, many owners are beginning to focus on the structure of the project team. The KDs underpinning in *structure* is creation of single team location and level of governance and structure. However, the *strategy* in terms of construction industry is the direction of strategic management prior to achieve goals and scope of the project over the long term in strategic planning. Strategy in team integration is important when collaborating with the team members (Murray, Tookey, Langford, & Hardcastle, 2000). Without a well-designed strategy, the MOTI model will not be able to achieve its objective. From a project manager point of view, the strategic planning is to predict the cost overrun and helps to planning the better schedule. The KDs underpinning under strategic element is predictability of overall cost and schedules and focusing on goals and objectives. Furthermore, the *systems* in construction industry comprise of the procedures and policies which defines how things should be done to achieve the goals and objectives of the projects (Lizarralde et al., 2012; Ravanfar, 2015). Otherwise, allowing the flexibility in terms of knowledge and approaches in different field and background which can be integrate the methods used by collecting information and updating the content delivery are well to defined (Ravanfar, 2015). From a consultant point of view, ICT has given high potential areas to improve the productivity and quality of the project such as computer aided design (CAD), interoperability, cooperation, ICT-policies and reused of experiences. The integration of KDs element underpinning *systems* is integrated ICT systems, effective management of safety and health, sharing of information and client care team. Part of that, the *styles* in construction project comprise of the participative style of management, effectiveness of leadership and the formation of network among team projects which suitable for the needs to sharing the idea, experience and knowledge (Nickols, 2016; Tsai, 2011). From a project manager point of view, the management must apply the bottoms up approach for encouraging and motivating employees working in the area. The KDs element underpinning *styles* is team leadership, commitment from top management, encouraging initiative, communication, accountability and transparency and common best for project culture and mindset. Generally, the *skills* of applying elements to a company ensures that employees know how to work professionally and perform tasks with innovative skills, technology and expertise in various skills techniques such as the skills sets of the persons involves in collecting, updating and delivering information which is needs to update from time to time (Ravanfar, 2015). This will help them be receptive to generate new ideas (innovative thinking) to develop in the team project prior to achieve the successful project. Otherwise, the core principles of collaboration in team integration by stimulating the team's ability in order to generate innovative solutions. The integration of KDs with skills element is commitment to innovation and improvement and integrated risks. The *staff* refers to the theory deals with people dimension as such the relationship among team project and managing the social structure of a relationship cross-functionally which among employees and their general capabilities (Senaratne & Samaraweera, 2015; Tsai, 2011). In terms of multi-organizational team integration, this theory is making use of the team members are contributing to the outcomes as well as defining the roles and responsibilities, social recognition among team members and encourage all team projects to produce the positive contribution to the project (Tsai, 2011). From a project manager point of view, this job development is important, and it is completely creating employee motivation using various tools which includes raises in income, greater benefits, and year-end bonuses. These could motivate the employees to work more efficiently and feel more responsibility to their organization. The KDs element categorized under staff is team flexibility and responsiveness to change and incentivization. Generally, for integration construction projects, the *shared values* are defining missions, vision, goals and objectives, which will be

shared among the team projects, contractors and stakeholders of partnering multi-organizations of the strategies and the implementations. These are the core values of the team projects that are evidenced in the corporate culture and the general work ethic (Ravanfar, 2015; Tsai, 2011). From a senior manager engineer point of view, this concept is fundamental to implementation success which developed the positive value that comes from the employees want to be fully participate members of high performing teams, and no one comes to work with the intention to doing a poor-quality job. This concept underpinning the KDs of no blame culture, trust and respect, seamless operation with no boundaries, collective understanding, and consensus decision making. Overall, this model is a comprehensive model which encompasses all aspects of the MOTI can influence, and vice versa. This model therefore can be used to describe the integration of multi-organizations and thus be used as background to determine which determinants of MOTI influence the degree of integration and collaboration in an organization.

3. Methodology

Initially, based on comprehensive literature review, 23 KDs of multi-organizational integration have been identified, which together form the basis for transforming typical project teams into a highly integrated team. The identification of the determinants followed by validation through a survey conducted with an award-winning construction organization from the Malaysian Construction Industry Excellence Awards (MCEIA) recipients. The validation confirmed that all 23 determinants are important to ensure the success of multi-organizational integration practice. Detailed survey results can be found in the study Ibrahim, Rahmat, & Belayutham, (2017). Then, the selected 34 construction practitioners were inviting to take part to the next stage of study (i.e. to show the relevancy of the 23 determinants to the elements of McKinsey 7 S model). Table 1 describes the profile of the practitioners involved in this study.

Table 1. Summary of Respondents Characteristics

	Respondents Characteristic	No. of respondents No. of experts (n=34)	Percentage (%)
Designation	Directors	2	5.9
	Managers	20	58.8
	Executive	7	20.6
	Others	5	14.7
Organisation Type	Contractor	18	52.9
	Consultant	10	29.4
	Client	3	8.8
	Academic	3	8.8
Years of experience	0-10	10	29.4
	11-20	11	32.4
	21-30	6	17.6
	31-above	1	2.9

Out of thirty-four respondents, 16 (47%) respondents were interview and the remaining 18 respondents (52%) were approach via online survey. Twenty of the respondents (58.8%) named themselves as managers, two respondents (5.9%) were directors, seven respondents (20.6%) were executive and five respondents (14.7%) held other positions such as Senior Lecturer, Assistant Vice President and QAQC Assistant Manager.

Obviously, most respondents belong to senior and top management decision makers, with the balance in middle management. Overall, there was a good mixture of designations and years of experience of respondents with approximately 65 per cent of the respondents holding upper level management positions in their organizations.

4. Results

The analysis of 23 KDs in relation to the seven strategies in the McKinsey 7S model as such structure, strategy, systems, style, skills, staff and shared values are shown in Table 2.

Table 2. The analysis of the McKinsey 7S model

No	Key Determinants (KDs)	McKinsey 7S model						
		Style	Shared Values	Systems	Staff	Skills	Strategy	Structure
		No. of experts (n=34)						
1	Team Leadership	19	3	4	2	2	2	2
2	Commitment from Top Management	13	4	-	2	2	3	10
3	Encouraging Initiative	11	7	3	6	-	4	3
4	Accountability and transparency	10	6	4	-	3	7	4
5	Communication	10	5	2	4	8	3	2
6	Common best for project culture/mindset	7	5	5	5	2	6	4
7	No blame culture	5	14	5	4	2	1	3
8	Trust and Respect	7	11	6	2	2	3	3
9	Seamless operation with no boundaries	6	10	5	2	4	2	5
10	Collective understanding	5	10	6	3	6	2	2
11	Consensus Decision making	7	10	2	-	7	3	5
12	Effective Management Safety and Health	5	2	14	4	-	6	3
13	Sharing of Information	5	7	13	-	3	2	4
14	Integrated ICT System	-	6	11	3	2	10	2
15	Client care team	6	5	10	4	2	4	3
16	Team flexibility and responsiveness to change	1	5	5	12	3	3	5
17	Incentivization	2	6	5	11	4	4	2
18	Integrated Risks	1	4	3	-	18	7	1
19	Commitment to Innovation and Improvement	9	4	2	2	10	5	2
20	Predictability of Overall Cost and Schedule	4	4	3	2	7	12	2
21	Focusing on goals and objective	4	7	5	2	3	10	3
22	Creation of Single Team Location	2	6	4	4	2	5	11
23	Level of Governance and Structure	3	5	4	4	3	4	11

From the analysis, the selected areas of 7S model for each KDs are based on the highest score in each area. The experts Malaysian construction builders assessed the results. Overall, the 'Styles' received the highest rating compared to the other areas in which underpinning of 'team leadership' (19); 'commitment from top management' (13). Followed by the 'Shared Values' received the second highest votes with the five KDs to be the basis of 'no blame culture' (14); 'trust and respect' (11); and 'seamless operation with no boundaries', 'collective understanding', 'consensus decision making' get 10 votes respectively. The areas of 'Systems' received the third highest rating with 14 votes for 'effective management safety and health', 'sharing of information' (13), 'integrated ICT systems' (11) and 'client care team' (10). Meanwhile, the strategies areas of 'Staff', 'Skill', 'Strategy' and 'Structure' received 2 votes of KDs respectively. Half of the experts (n=19) had considered their choice through the KD of 'team leadership' underpinning 'Style'. In the nutshell, the supports of literature that the style itself as the prime principles which encourage to the success in team integration is the style of manager's ability to integrate the team member. This is supported by a team leadership in MOTI that encourages leadership influence in style.

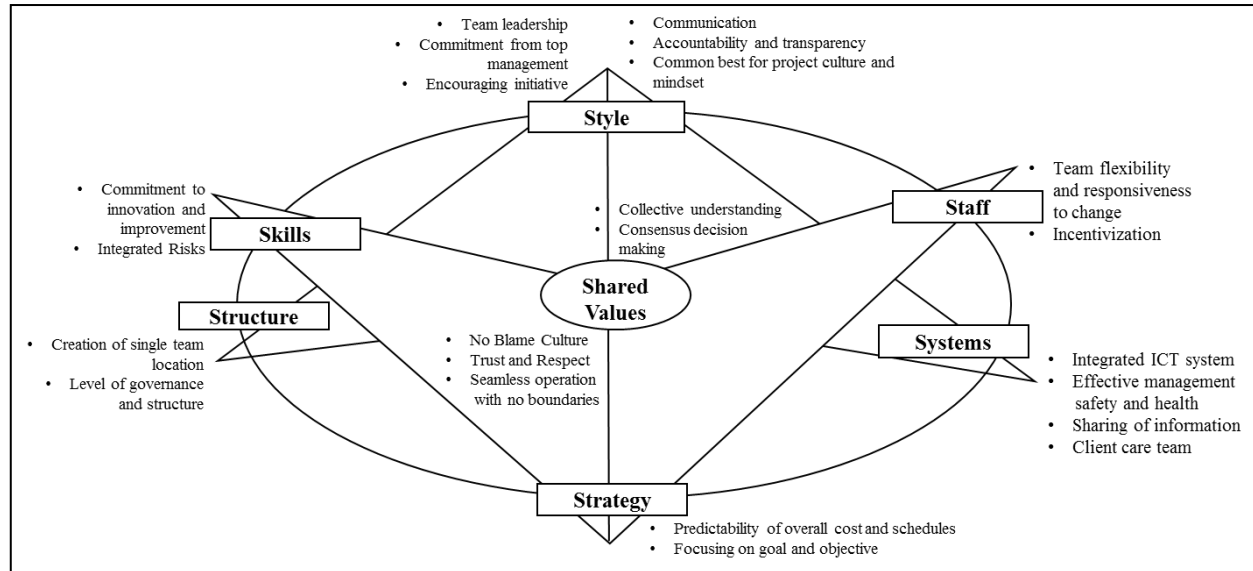


Figure 2. Evolution of Strategic Multi-Organizations Integration in Construction Projects
adapted from McKinsey 7S model (Waterman et al., 1980)

Following the description of the 7 areas of model given earlier, each KD gives their own values to each strategy. From the results as shown in Table 1, the shape of the model has been developed as shown in Figure 2 explains the interdependency of the key determinants. The results decided by the 34 participants from the experts Malaysian construction builders' point of view. Each category has reviewed by the element of the McKinsey 7S model through interview and the online survey. The variables considered to be critical importance among top management and practitioners. Therefore, the McKinsey 7S model adopted in this study to organize the criteria of the 23 key determinants prior to assess the compatibility of the multi-organizational forms with the key determinants of team integration. As a result, it creates a significant impact on project level strategies and organization. The KDs for each area are verified and the value itself is figuring out with a variation that encompasses with the McKinsey 7S model preferences of all KDs are presented below.

In **styles**, the ability of *leadership* is to influence people or groups. It is vital in all areas and level to give direction to the teamwork and inspire people to give their best. Where this KD is the core values in *styles* that determined success and failure of the teamwork. The causes of the team leadership failure may reside in team member inability such as failure to coordinate and synchronize their individual contributions (Ibrahim et al., 2013; Zaccaro, Rittman, & Marks, 2001). One of the interviewees of the projects described that the team members will followed their leader to satisfy the needs in which different styles and backgrounds which lead to the different stage. Otherwise, the team has a formal leader, but the leadership functions as always shift from time to time and depends on upon circumstance as well as the needs of the group. However, team leadership must have in every team members is a way to appropriate the good behavior of style and helps establish the positive norms. The *commitment from the top management* is vital important such in many ways. The commitment itself will give strength in the level of integration, such as the construction projects which involve complex organizational and technically challenging design or in construction systems. In addition, this *style* was encouraged due to the changing of the process of empowerment and coordination (Godfrey Ochieng & Price, 2009). One of the interviewees who is a Project Engineer agreed on the commitment from top management underpinning in style element. The experts pointed out that, the way of management from top level will affect the team members in a project. If the superiors are responsible and guide the team members in a good norm it will technically assist to the effective management. Reveals promoting the teamwork to *encourage initiatives* by offering more active role in problem solving also defined as *style*. It helps to overcome the problems faced by managers to improve their sense of satisfaction towards team members in their role with keeping all lines of communication open. In addition, team members feel free to concentrate on planning or other leadership tasks (Costa et al., 2006; Newell et al., 2004). One of the interviewees who is a Construction Manager agreed on the encouraging initiative is categorized in style element which create the kind of culture that encourages team members to use their initiatives. The experts stated that, the sharing learning across project knowledge transfer in term of best practices initiatives encourages the lesson learnt on one project which can be reused by others project. *Communication* considered into two basic types; (1) free flow

communication and (2) effective communication. The free flow communication means there is no restrictions in the flow of communication and everyone is free to communicate or giving some ideas with anyone in the organization. Meanwhile, an effective communication is not only just exchanging information but it is about understanding the emotion and intentions behind the information as well as improvise the communication skills, improve teamwork and problem solving (Ibrahim, Costello, & Wilkinson, 2014; Kajewski et al., 2003; Levine & Marketing, 2015). From this statement shows that, both are the type of *styles* that creates people will be able to convey a message and makes the other person feel heard and understood. Hence, the proper communication and coordination between parties should be establish right from the start and revisited during each phase of construction project so that the information will convey effectively in team project. Otherwise, the most important is the collaboration and communication among project team in order to mitigating delays and reduce the risk occurred (Kajewski et al., 2003; Levine & Marketing, 2015). *Accountability* is the responsibility of a person to act; about something that can be explain if something happens, and an explanation to justify the action. This suggests that a person has the right to know and hold a responsible organization must have an obligation in explaining all his actions (Sohail & Cavill, 2008; Team & Litvack, 2018). *Transparency* is about easy to understand, an open transparent in all communication, transactions and operations. Something need to be answer with a long and technical explanation of each item. But if information is not understood by some parties and the main fact is hidden then it is not referred to as transparency (Franz, Leicht, Molenaar, & Messner, 2010; Krishnan, 2009; Team & Litvack, 2018). *Accountability and transparency* is the type of *style* which can go hand in hand and involves the joint responsibility for notification of important information to be submitted and how to communicated most effectively in order to convey information accurately and correctly (Franz et al., 2010; Murray et al., 2000; Sohail & Cavill, 2008; Team & Litvack, 2018). One of the interviewees who is a Project Engineer agreed that accountability and transparency is part of style. The experts stated that, transparency promotes responsibility by making it clear to the entire team which needs to be accomplished. If the team members don't have a clear understanding of the problem, it would become up with the solution. Based on this statement, team members should motivate each other to improve their performance because only them will know the actions impact the work of their team. Whilst, managing projects becomes difficult when people does not work as a team. Otherwise, to understand the roles expected of each other can support one another when necessary. The *common best for project culture and mindset* relates to the focus being placed on value and *style* which in generated in delivering the project compared with the objective of delivering what was explicitly requested or demanded. This matter is related to a focus on the delivery of the project compared to what is clearly described and claimed (Walker & Lloyd-Walker, 2015).

In *shared values*, Hall, (2001) highlighted that '*no blame*' culture is a way to integrate people to confess their mistakes rather than frighten to admit fault then learned from it. So that, collective responsibility in decision making achieved for the best of the project. It has been suggested that it is vital importance to have fair relationship and acknowledge human fallibility that encouraged the project team joint the resolution of problems, work together in spirited of cooperation and collaboration (B. K. Baiden, Price, & Dainty, 2006b; Ibrahim et al., 2014). Learning to each other and not blaming others is the only value to be nurtured between team projects. Collective identification and resolution of problems, and an acceptance of joint responsibility for its achievement is one of the way that obviously said the *no-blame culture* have the value of *shared value* that need to contribute towards controlling the quality in team integration. As concurred by (B. K. Baiden et al., 2006b) it helps to resolve the problems, collective identification and responsible towards all projects outcomes. *Trust and respect* is vital important for construction companies to develop trust, mutual understanding with their working partners and respect for the entire teams prior to achieve the successful completion of modern construction projects (B. K. Baiden et al., 2006b; Forgues & Koskela, 2009). Otherwise, the trust and commitment are important factors that brings bad influence on the development of integrated teams. This indicates especially when lack of trust comes, it can cause tensions and problems among team members (Cicmil & Marshall, 2005; Kumaraswamy, Ling, Anvuur, & Motiar Rahman, 2007). All members need to trust each other, equitable team relationships, opportunities in get involved in project decision-making process and respect to all and treated as having equal and significant professional capability required on the project (B. K. Baiden et al., 2006b). This determinant indicate as the *shared values* which integrated among team members, whereby trust and respect among team projects which empowered to be transparent with no boundaries and shared the importance information among the team projects, contractors and stakeholders of partnering multi-organizations. For example, in the safe workplaces culture, project participants need to have the *shared values* in trust leaders and co-workers by their perceived treatment in terms of a working in a safe psychological, physical, and intellectual environment (Walker & Llyod-Walker, 2015). Many authors (B. K. Baiden, Price, & Dainty, 2006a; Godfrey Ochieng & Price, 2009) identified *seamless operation with no-organizational defined boundaries* as an aspect of act collaboratively, efficiently and sharing the knowledge, skills and expertise prior to make it beneficial outcomes for the project. As described by (Moore & Antill, 2001), the existence of

professional boundaries in a team-oriented projects within the project team contributing to problems in construction projects. It comes to the *shared values* when establish the identity of the organization or operation without borders can show that they are part of an integrated and joined the team thought would lead to mutual benefit for construction project. In technological advances, the higher expectation from the client in the organizations to be more globally integrated, collaborative work force in the team up to solve the complex problem. *Collective understanding* underpinning *shared values* which refers to the common understanding in collectively agree in the common team culture and the consultation of members for contribution at all phases of project before the decisions is made. The project teams need to have their “voice” heard in an environment where all ideas are open to discussion, thereby aligning the multiparty disciplines towards joint decision making (Che Ibrahim, Costello, & Wilkinson, 2015; CIRC & Tang, 2001). *Consensus decision making* which supports *shared values* refers to a creative and dynamic way to reach an agreement for all parties and the decision made at the project strategic and project operational execution level. It is not simply a majority vote even have to get way and committed to finding solutions that everyone support actively. However it required extensive time for discussion, exploration and testing mental models, and this may be against the interest of speedy decisions and action to counter crises (Walker, Llyod-Walker, Melorose, Perroy, & Careas, 2015).

In the value of *systems*, managing of an *effectiveness of health and safety* can rarely be achieve by one-off interventions. It is a sustained and systematic approach is necessary for the scheduling the construction project. Otherwise, integrated project teams can improve health and safety performance through collaboration (Tinhnam, 2013). Performance records, for example safety records, are one of the factors that helps in building a project-based integrated team. In such a scenario, there is a collective responsibility for the whole life health and safety implications of the project. Otherwise, the collective responsibility is to ensure the effective management of health and safety is one of the factors that facilities building an integrated project team (Ibrahim et al., 2014). One of the interviewees, who is a Project Engineer agreed on the effectiveness management of health and safety underpinning as the *systems* as state, this system can evaluate the staff performance focusing into safety with three constraints which is time, quality and cost, compliant from external or internal with the aimed without no NCR or major NCR (Nonconformance Report), HSE (Health and Safety Environment), no fatality and no major accident on site. This statement agreed that safety and health is the most significant value and it helps in reducing the accident occur on site. The construction industry used the NCR as the way to record and keep track of work being perform that does not meet the standards or specifications. The following scenarios are the most common situations that require the issuance of an NCR: Obviously, the *effectiveness of management of safety and health* is one of the *systems* that includes the creation and upkeep of a health, safety and welfare plan covering the activity of the project teams. In terms *sharing of information* purposely need to be share the project information, to be accessible, available to all team members and unrestricted to sharing information. There is no need to hide anything because the results are mutually beneficial to share among team members (Che Ibrahim et al., 2015). This is call it as one of the *systems* in the way by ensuring that the right people such as the stakeholders, project team members get the right information at the right time for project status and to make decisions on projects which need a great deal of planning. Effective distribution of information relies on the selections of the right tools and methods to ensure you reach the people you need to reach in the manner best suited for them to evaluate decide the decision. In terms of MOTI, the team members should fully equip to express their opinions on the tasks as well as on the group operation. Otherwise, they will be able to deliver the information to others and sharing the knowledge among team members. Hence, easily understood by the receiving party and can substantially contribute to the commercial success (Alashwal, Rahman, & Beksin, 2011). One of the interviewees who is the Senior Engineer agreed on the sharing of information is underpinning systems as stated, “.... availability in access to all project information by all parties involved in the project such as unrestricted cross sharing of information, encourage various forms of knowledge sharing, and incentivize knowledge sharing is the way to increase the knowledge sharing in your team ...”. Supported with the statement in literature, without of this dimension, it would not help the team projects to create a collaborative environment which essential for the team to success. Otherwise, it would maximize the impact of every single team member’s valuable contributions on the sharing knowledge and contribute the ideas (Alashwal et al., 2011; Newell et al., 2004; Walker & Llyod-Walker, 2015). The use of modern technology, *integrated ICT system* which is common used throughout the *systems* in the project team that are very useful through alignment of processes with others in project boards such as sharing CAD models to ease the design and cost up to the development of industry standards and procurement protocols. The use of an integrated ICT system will provide effective and efficient communication and information flows thereby enabling more integrated and collaborative efforts between project teams (Ibrahim et al., 2013). One of the interviewees agreed on the integrated ICT system which given a lot of opportunities in use the project. From a consultant point of view, ICT has given high potential areas to improve the productivity and quality of the project such as computer aided design (CAD), interoperability, cooperation, ICT-

policies and reused of experiences. Besides, ICT has influenced project management by introducing and implementing new management tools and latest technologies such as Industrialized Building System (IBS), Building Information Modeling (BIM) and Interpretive Structural Modeling (ISM) to experience cyclical levels in construction project management. Construction is an activity that needs collaboration of teamwork, accumulated knowledge and experience of many people. But, simply bringing people together does not necessarily guarantee the project will function successfully and effectively as a team without an effective integration of team work (Godfrey Ochieng & Price, 2009). By developing a *client care team* is to oversee the expectations of the client and end-users throughout the construction project and play an important role prior to satisfy the needs and expectations of the users (Forgues & Koskela, 2009). The client care team refer to a system that acts as a central point of interaction between end users and projects, consultants ensure the objectives are efficiently calculated and assist end users to understand the importance of meeting objectives such as budget, time and sustainability (Izam Ibrahim, Costello, & Wilkinson, 2013). One of the interviewees who is the Construction Manager agreed on the client care team underpinning system stated that “.... good profitability allows you to provide good client service, good client service leads to good profitability, this leads to better profitability for the contractor ...”. From this statement, refer to the systems most profitable change orders that a contractor can turn out, and their acceptance is directly affected by the relationship with the contractor sets up on the projects. Obviously, the client and project is unique when the team must be flexible and in constant communication with the rest of the team to make the project success.

In terms of *staff* values, the *team flexibility and responsiveness to change* are referring to the requisite personnel that are required to participate in a specific project and willing to leave the project team and their skills when no longer required or necessary (Bernard K Baiden & Price, 2011). A flexible team member composition enabling responsibilities to change for example team changes and design amendments. The descriptions of the team flexibility and responsiveness to change in relation to the literature is the greater responsiveness to the changes and uncertainties throughout the project lifecycle (Khairil et al., 2015). *Incentivization* refers to the incentive strategy to the *staff* by giving the rewards for achieving or exceeding those objectives (Hughes, Yohannes, & Hillig, 2007; Walker & Llyod-Walker, 2015). By giving the rewards and incentives is a good strategy implementation which focusing on employees in organizational and reward them for achieving or exceeding those aims. In this case, there is a direct link between effort and reward that is lacking in basic compensation schemes. *Incentivization* is rewarding employee after giving a good performance. This is a good strategy to lead the observation and focus on workers in an organization. Furthermore, it can stimulate the enthusiasm and efforts in achieving the goal of team project and successful performance (Walker & Llyod-Walker, 2015)

In terms of *skills* value, *integrated risk sharing* involves collaborating with others to share responsibility for the risk activities among all project team members. Many organizations that work on international projects will reduce political, legal, labor, and others risk types associated with international projects by developing a joint venture with a company located in that country (Walker & Llyod-Walker, 2015). Collaborating with another company to share the risk associated with a portion of the project is advantageous when the other company has expertise and experience which the project team does not have which can be highlighted as a *skill* that have to developed. If the risk event does occur, then the partnering company absorbs some of the negative impact of the event (Bernard K Baiden & Price, 2011). One of the core principles of collaboration is to stimulate a team's ability and *skills* which provide to generate the *commitment to innovation and improvement* solutions in the construction process. Encourage innovative thinking that contributes to the improvements in the construction process, and generate innovative process to maximize the value of creation for example introduction of something new in the construction technique (Khairil et al., 2015). This part known as the *skills* value that can empower people to become more innovative in structured mechanism. It is closely related to the capacity of the project team which requires the expertise of a creative high point of learning, reflection and is a core value of the organization and rewarding questioning the status quo (Walker & Llyod-Walker, 2015)

In terms of *strategy*, despite focus has been given to the goals and objectives of multi-organizational team integration, internal integration is also crucial in determining *predictions of costs and overall schedules* tables to align incentives and desired of the outcome of the projects (Costa et al., 2006; Walker & Llyod-Walker, 2015). The *prediction of the overall cost* is vital in the construction management process. The purpose of such cost estimates is to foster a better allocation of resources to research and development projects. (Bernard K Baiden & Price, 2011). Meanwhile, the *prediction of the overall schedule* is the precaution way to overcome the uncertainty risk occurrences as well as to educate the team member to collaborate among them and more discipline. A more disciplined process involves using checklists of potential risks and evaluating the likelihood that those events might happen on the project. Continuous review of schedule through interaction and collaboration is important prior to eliminate or minimize the impact of the risk occurrences that have a negative impact on the project (Khairil et al., 2015). From expert's point of view, *predictability of overall cost and schedules* is a part of the strategy technique

that aid in improving the forecast results of the project as well as a master control schedule and budget need to be made include phase and project scope. For example, one of the interviewee said that, determining and predict the cost overrun by conducting qualitative and quantitative risk analyzes, measure probable costs and determine the risks involved would be easier if planning the better schedules. However, this strategy also known as risk identification which can play a complementary role in laying the foundation for cost-effective project management and project performance. Another strand of literature, the strategy is vital important to overcome the challenges in managing the project. Hence, the strategic planning and schedules is important to remain effective and software needed to manage the costs and budget (Walker & Llyod-Walker, 2015). Developing a strategic plan by *focusing the goals and objectives* that will lead to the outcomes in the long-term results and one of the *strategy*. This dimension provides a perspective or *strategy* that can then be mapped and managed through stated objectives, identifying the most appropriate measures that provide evidence of success, to document the goals, and initiatives that provide fast action in reaching the goal (Walker & Llyod-Walker, 2015). This element is categorized under the *strategy* as it provides a manageable and well-defined perspective, and a great way to identify the steps to measure the success, document the targets and deliver fast initiative action in achieving goals. From the construction manager points of view, focusing on goals and objectives is part of the strategy in which more focus on a team and organization level is priority instead of an individual level. For example, creating objectives helps the organization to set the priorities for its goals. In addition, set goals and develop a comprehensive management strategy prior to focus on employees is an important part of strategic management (Pellicer, Sanz, Esmaili, & Molenaar, 2016).

In terms of **structure**, the *creation of single team location* as one fundamental indicators and needs to be brought together from the beginning of the project. Otherwise, throughout share information within team will increase collaboration through shared information. However, some of the procurement does not necessarily call for the creation of the single co-located although collective working was encouraged in the project. Additionally, project teams will integrate effectively, work collectively as well as build relationship throughout enables project by locating together at the common office (Izam Ibrahim et al., 2013). From the expert's point of view, project manager points out that, project teams will be able to effectively integrate if they work on the same site and thus solve the problem easily. For example, by locating the project team in the same building or adjacent sites and held discussions at a strategic project team. This statement supported with literature, the establishment of a single project team, where all members are located together in a common office in a single project team (Bernard K Baiden & Price, 2011) enables project team to integrate effectively, build relationships and work collectively (Izam Ibrahim et al., 2013). Additionally, project teams will integrate effectively, work collectively as well as build a relationship throughout enables at the same office (Rahmat et al., 2017) In general, the *level of governance and structure* in the project organization known as **structure** that shows the coordination and implementation of project activities. The objective is to create interactions among team members by reducing duplication tasks as well as conflicts and disruptions in the organization. This is one of the important decisions for the project management to establish the organization structure that will be used for the project (PM4Dev, 2007; Walker & Lloyd-Walker, 2015). However, it can be conceptualized through the different sets of decision making, coordination mechanisms, incentives (Yin & Zajac, 2004) also in different level of influences that coordination and controlling the activities in the organizations. The level of governance and structure is having a unified way that each project delivery team party legitimizes its actions through rules, standards and norms, values and coordination mechanisms such as organizational routines, and the way that committees, liaison and hierarchy represents a unified or complimentary way of interacting. This impacts the quality of explicit understanding of how teams should collaborate and communicate (Walker & Lloyd-Walker, 2015). From the expert's points of view, project manager stated that, "To be effective, the individuals who direct the program and those who oversee its work activities must be organized, and their contributions must be modeled to ensure that authority and decision-making has a clear source, the work of management and oversight is efficient, and the needs for direction and decisions are all addressed". From the statement supports with literature stated by Walker (2015), with regulatory and structural projects, a method identified to unite the project team is to verify the action through rules, standards that conform to norms, values and coordination mechanisms such as routine organizations for each unified and easy-to-understand committee. This can provide an understanding among team project in order for information to be clearly convey within team members about their roles, collaboration and communicate effectively and well (Lin & Ho, 2013; Walker & Lloyd-Walker, 2015).

5. Conclusion

The study aims to give an overview of the key determinants of multi-organizational team integration using McKinsey 7S model in construction projects from experts Malaysian construction builders' point of view. Based on 13 interviews and 21 online survey, it has shown that 23 key determinants are important and have relationship with

the McKinsey concept. This research suggests that McKinsey 7S model in team integration is useful for improving the effectiveness of multi-organizational teamwork. Practices that meets the various requirement of multi-organizational team integration in fulfilling the key determinants of effective integration teamwork. Therefore, it has been identified the key determinants in seven categories of McKinsey 7S model supports the position of that multi-organizational team integration is desirable to improve the teamwork effectiveness. Since the key determinants were validated from Malaysian organizations' perspective towards McKinsey 7S model, it is suggested that further study should be conducted to further understand on the nature and characteristics of the KDs locally and in other countries for comparative purposes.

Acknowledgements

This research was supported by a grant from the Fundamental Research Grant Scheme (FRGS) of the Ministry of Higher Education, Malaysia through Universiti Teknologi MARA (UiTM) Malaysia (ref: FRGS/1/2015/TK06/UITM/02/2). Special gratitude is also extended to those construction practitioners and academics who kindly participated in the interview and questionnaire survey reported in this paper.

References

- Alashwal, A. M., Rahman, H. A., & Beksin, A. M. (2011). Knowledge sharing in a fragmented construction industry: On the hindsight. *Scientific Research and Essays*, 6(7), 1530–1536.
- Baiden, B. K., & Price, A. D. F. (2011). *The effect of integration on project delivery team effectiveness. International Journal of Project Management* (Vol. 29). Elsevier Ltd and IPMA.
- Che Ibrahim, C. K. I., Costello, S. B., & Wilkinson, S. (2015). Key indicators influencing the management of team integration in construction projects. *International Journal of Managing Projects in Business*, 8(2), 300–323.
- Cicmil, S., & Marshall, D. (2005). Insights into collaboration at the project level: Complexity, social interaction and procurement mechanisms. *Building Research and Information*, 33(6), 523–535.
- CIRC, & Tang, H. (2001). Construct for excellence: Report of the construction industry review committee. *Climate Change 2013 - The Physical Science Basis*, 213.
- Costa, D. B., Formoso, C. T., Kagioglou, M., Alarcón, L. F., Caldas, C. H., & Asce, M. (2006). Benchmarking Initiatives in the Construction Industry: Lessons Learned and Improvement Opportunities. *Journal of Management in Engineering, ASCE*, 22(4), 158–167.
- Forgues, D., & Koskela, L. (2009). The influence of a collaborative procurement approach using integrated design in construction on project team performance. *International Journal of Managing Projects in Business*, 2(3), 370–385.
- Franz, B., Leicht, R., Molenaar, K., & Messner, J. (2010). Impact of Team Integration and Group Cohesion on Project Delivery Performance. *Journal of Construction Engineering and Management*, 4016088–6, 1–12.
- Godfrey Ochieng, E., & Price, A. D. (2009). Framework for managing multicultural project teams. *Engineering, Construction and Architectural Management*, 16(6), 527–543. <http://doi.org/10.1108/09699980911002557>
- Hall, M. (2001). 'ROOT' Cause Analysis: A Tool For Closer Supply Chain Integration in Construction, 1(September), 5–7.
- Hughes, W., Yohannes, I., & Hillig, J. (2007). Incentives in Construction Contracts: Should we pay for Performance? *CIB World Building Congress*, (2000), 2272–2283.
- Ibrahim, C. K. I. C., Costello, S. B., & Wilkinson, S. (2013). Development of a conceptual team integration performance index for alliance projects. *Construction Management and Economics*, 31(11), 1128–1143.
- Ibrahim, C. K. I. C., Costello, S. B., & Wilkinson, S. (2014). Establishment of Quantitative Measures for Team Integration Assessment in Alliance Projects. *Journal of Management in Engineering*, 31(5), 4014075.
- Ibrahim, C. K. I. C., Rahmat, A., & S, B. (2017). Ensuring Teams Integrate Better: Views from Malaysian Construction Builders .pdf. In *22nd International Conference on Advancement of Construction Management and Real Estate (CRIOCM 2017)* (pp. 1013–1020). Chinese Research Institute of Construction Management (CRIOCM).
- Krishnan, C. (2009). Combating Corruption in the Construction and Engineering Sector: The Role of Transparency International. *Journal in Leadership and Management in Engineering*, 9(3), 112–114.
- Kumaraswamy, M. M., Ling, F. Y. Y., Anvuur, A. M., & Motiar Rahman, M. (2007). Targeting relationally integrated teams for sustainable PPPs. *Engineering, Construction and Architectural Management*, 14(6), 581–596.
- Levine, B. T., & Marketing, V. P. (2015). *Using Communication and Collaboration Technology to Keep Construction Projects On Schedule and On Budget*.

- Lin, Y.-H., & Ho, S. P. (2013). Impacts of Governance Structure Strategies on the Performance of Construction Joint Ventures. *Journal of Construction Engineering & Management*, 139(3), 304–311.
- Lizarralde, G., Blois, M. de, & Latunova, I. (2012). Structuring of Temporary Multi-Organizations: Contingency Theory in the Building Sector. *Project Management Journal*, 42(4), 19–36.
- Newell, S., Laurent, S., Edelman, L., Scarbrough, H., Swan, J., & Bresnen, M. (2004). Sharing learning across projects : Limits to Current ‘ Best Practice ’ Initiatives. *Business*.
- Nickols, F. (2016). Strategy, Strategic Management, Strategic Planning and Strategic Thinking.
- Pellicer, E., Sanz, M. A., Esmaili, B., & Molenaar, K. R. (2016). Exploration of Team Integration in Spanish Multifamily Residential Building Construction. *Journal of Management in Engineering*, 32(5), 5016012–1–11.
- PM4Dev. (2007). The Project Management For Development Organizations: A methodology to manage development projects for international humanitarian assistance and relief organizations. In *The Project Management Structures* (p. 14). Retrieved from www.pm4dev.com
- Purchase, V., Parry, G., Valerdi, R., D, N., & J, M. (2011). Enterprise transformation: Why are we interested, what is it and what are the challenges? *Journal of Enterprise Transformation*, 1(1), 14–33.
- Rahmat, A., Ibrahim, C. K. I. C., & Endot, I. R. (2017). Human Oriented Determinants in Construction Project.pdf. in *Journal of Engineering and Applied Science* (Vol. 12, pp. 782–786). Medwell Journals 2017.
- Ravanfar, M. M. (2015). Analyzing Organizational Structure based on 7s model of McKinsey. *Global Journal of Management and Business Research: A Administration and Management*, 15(10).
- Senaratne, S., & Samaraweera, A. (2015). Construction project leadership across the team development process. *Built Environment Project and Asset Management*, 5(1), 69–88.
- Sohail, M., & Cavill, S. (2008). Accountability to Prevent Corruption in Construction Projects. *Journal of Construction Engineering and Management*, 134(9), 729–738.
- Tsai, Y. (2011). Relationship between organizational culture, leadership behavior and job satisfaction. *BMC Health Services Research*, 11.
- Walker, D. H. T., Llyod-Walker, B. M., Melorose, J., Perroy, R., & Careas, S. (2015). Collaborative Project Procurement Arrangements. In *Collaborative Project Procurement Arrangements* (Vol. 1, pp. 1–97). Project Management Institution.
- Waterman, R. H., Peters, T. J., & Phillips, J. R. (1980). Structure is not organization. *Business Horizons*, 23(3), 14–26.
- Yin, X., & Zajac, E. J. (2004). The strategy/governance structure fit relationship: Theory and evidence in franchising arrangements. *Strategic Management Journal*, 25(4), 365–383.
- Zaccaro, S. J., Rittman, A. L., & Marks, M. A. (2001). Team leadership. *The Leadership Quarterly*, 12, 451–483.

Biographies

Arina Rahmat is currently a fulltime doctoral student in the Faculty of Civil Engineering at Universiti Teknologi MARA, Malaysia. She holds a Bachelor of Science degree in Town and Regional Planning (Hons) and a Master of Science in Urban Development and Management from the Universiti Teknologi MARA, Malaysia. She also carries out research on team integration multi-organizational issues in construction projects and other topics in construction development industry. Her main areas of interest include the development of project management and transportation. She is a recipient of Best Paper Awards in Putrajaya International Built Environment Technology and Engineering Conference (PIBEC) entitled The Transit Oriented Development (TOD) Model in Malaysia. She has published a conference papers on Journal of Engineering and Applied Sciences.

Dr Che Khairil Izam Che Ibrahim is a Senior Lecturer at the Faculty of Civil Engineering, Universiti Teknologi MARA, Malaysia, where he is currently the Head of Department of Construction Business and Project Management. He holds a PhD Degree from the University of Auckland, New Zealand. He is currently leading a project on Multi-organizational integration funded by Ministry of Education, Malaysia and has been involved in several projects funded by public and private organizations. His research mainly concentrates on the relationship based on procurement, team integration, organization performance and engineering education. More than 20 of his papers were as an article in various scientific and professional construction journals. His recent publication on team integration has achieved the Emerald Literati Network Awards of Excellence, a ‘Highly Commended Paper of 2015’. He is also received a ‘Best Reviewer Awards’ from Construction Economics and Building in 2016.