The Promotion of Sustainability Agenda for Facilities Management Through People Capabilities

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Abstract: The increasing awareness of sustainability issues around the world has put a lot of pressure to the construction industry to improve sustainable practices. Sustainability principles need to be adopted not only in design and construction phase, but the entire life cycle of construction projects. Compared to the sustainability efforts at the early phase of development, the velocity to implement sustainability agenda during the operation and maintenance phase was not as fast during past practices of facility management (FM). The literature review shows that sustainable practices in FM activities can bring great benefits such as reducing energy consumption and waste, while increasing productivity, financial statements and positions in society. It also proposes a number of barriers that prevent the implementation of sustainability in FM practices, including lack of knowledge, the discrepancy between ability and skills, and the refusal of the FM personnel and organization to adapt to new routines to implement sustainability in their business. The FM personnel and organization’s capabilities has been regarded as the key enablers in managing sustainability agenda. In the context of sustainable development, capabilities are important to the fostering of competency in an organization to innovate in a more sustainable conduct and support the agenda in an organization. In addition, research that focused on the people’s ability and skills is still lagging behind the efforts to develop guidelines, technical manuals and knowledge portals. Therefore, it is useful to explore the issues of people capabilities in dealing with the implementation of sustainable practices in FM. This paper introduces a research aimed at establishing a people capabilities framework for the promotion of sustainability agenda in FM practices. It will explore and highlight the challenges to integrate sustainability as well as the personnel and organizational capabilities that are vital in addressing the issues in implementing sustainability agenda in FM practices. The progress to date of the research also reported in this paper. The expected outcomes of this research has the potential to further sustainability efforts in FM practices and at the same time providing a useful knowledge resources for the FM personnel and organization.

Keywords: Sustainability, Facilities Management, Capabilities, People capabilities

1. Introduction

Sustainability is becoming increasingly crucial for all parties in the construction industry in response to the challenges of environmental degradation, social change and economic development. Sustainability agenda should be improved throughout the entire life-cycle of construction projects, from planning, design, construction phases, operation and maintenance until its demolition. The integration of sustainability agenda during the operation and maintenance phase particularly in the facilities management (FM) practices requires more attention due to its benefits to the triple bottom line of sustainability. The FM personnel have the greatest capacity to define, analyse and examine sustainability issues as they are in a unique position to view the entire process as well as having the influence over the entire life cycle of a facility. The facilities managers can also create a long lasting value for the organization by developing, implementing and maintaining sustainable FM practices since they are armed with proper financial and strategic planning tools [1].

To date, there is a growing interest from facilities managers and building owners to integrate sustainability measures in the management of the built assets. However, due to the infant state of sustainable development in the FM practices, very few of them positively embrace sustainability ideas and implement them in their operation. Previous studies have identified various factors such as lack of knowledge, gap between capability and skills and the unwillingness of FM personnel and organizations to adapt new routines to implement sustainability in their business that act as barriers that inhibit sustainability implementation. Many research efforts in this respect have made an effort to overcome these problems by developing guidelines, technical manuals and knowledge portals. However, research which focuses on soft issues such as...
people’s capabilities and skills is still lagging behind. Therefore, to fill the gap, an on-going research project introduced in this paper is being undertaken at the Queensland University of Technology (QUT). The research is aimed at increasing sustainability exposure and implementing its agenda and actions in the FM practices through the development of people capabilities framework. This paper begins with an overview of sustainable construction development and how concept of capabilities may enhance opportunities of sustainability endeavours in FM sectors based on a literature review. It then discusses on the research methodologies and proposed an approach for this on-going research.

2. Sustainable Construction Development

The construction industry has been criticised for its contribution to environmental degradation. The awareness in this context has encouraged people in the industry to reflect on previous actions and search for a solution. The concept of sustainability has been recognised as a guiding paradigm to educate construction industry stakeholders in executing their practices. It has expanded as a result of the growing awareness of the global links between mounting environmental problems, socio-economic issues and concerns on a healthy future for humanity [2].

Sustainable construction can be seen as a way for the construction industry to respond to the achievement of sustainable development objectives [3]. According to Spence and Mulligan [4], environmental sustainability of construction activities can be improved by building more with less, reducing inputs, operating efficiently in resource terms, find less environmentally damaging substitutes and increase the life of assets.

However in this respect, sustainability considerations and applications in the construction sector are still at an early stage. Much needs to be done to achieve sustainability goals. It is widely known that the concept of sustainable construction is still vague and ambiguous [5, 6]. According to Wai et al.[5], despite the efforts to define, promote and develop sustainable construction, many construction companies and professionals hesitate to implement sustainability. A study by Myers [7] on construction companies’ attitudes towards sustainability in the UK revealed that very few of the major companies positively embrace sustainable ideas and implement them in their operations. Moreover, specific sectors in the construction industry, such as FM sector are often neglected by researchers and therefore require an immediate resurgence and adoption of the sustainability agenda [8].

3. Facilities Management (FM) and Sustainability

The concept of FM is continuously expanding since it gained a progressive foothold as a discipline and profession within the property and construction industry starting from the late 1980s [9, 10]. It represents an increased awareness of the importance of physical surroundings for the development of an organisation. FM expresses a change in paradigm if compared to operation and maintenance, where it focuses more on the management field which centred on the activities in buildings to support the core business of an organisation [10, 11]. The FM scope is now broader as it includes the development of real estate and both short and long term building use as well as the operation and maintenance of building [10]. Various support services such as financial management, change management, human resource management, health and safety and contract management are also included in the FM scope [12].

Various definitions of FM have been generated by different institutions, professionals and organisations. The British Institute of Facilities Management (BIFM) defines FM as “the integration of processes within an organisation to maintain and develop the agreed services which support and improve the effectiveness of its primary activities”. According to the International Facility Management Association (IFMA), FM is “a profession that encompasses multiple disciplines to ensure functionality of the built environment by integrating people, place, process and technology”. Meanwhile, the FMA Australia’s Glossary of FM Terms defines FM as “a business practice that optimises people, process, assets and the work environment to support delivery the organisation’s business objectives”.

The integration of sustainability agenda in FM practices can bring substantial benefits such as reducing energy consumption and waste while increasing productivity, financial return and standing in the community which corresponds to the triple bottom line of sustainable development. The need for new ways of working to meet sustainability criteria as well as for skilled facilities managers to conduct tasks is increasingly important. Nielsen et al. [13] stated that there is a growing interest in integrating sustainable measures in building operations as more facilities managers and building owners are showing interest in sustainability issues.

Although the FM profession has been presented with an opportunity to make real and measurable differences by driving the sustainability agenda forward, it does not at present have an easy access to the specialist knowledge, tools and supporting case study material necessary to make this a reality [14]. Previous researchers in this respect have identified the challenges in the knowledge, capabilities, organizational and authority in the effort to integrate sustainability agenda in FM practices as indicated in Table 1.

<table>
<thead>
<tr>
<th>Challenges / Issues</th>
<th>Past Research</th>
<th>Main Barriers</th>
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<tbody>
<tr>
<td>1 Capability challenges</td>
<td>Shah (2007)</td>
<td>• Lack of capabilities/skills</td>
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<tr>
<td></td>
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<td>• Lack of awareness on building whole-life value</td>
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Previous researchers in sustainability have highlighted the importance of personnel and organisational capabilities in achieving sustainability goals. Gloet [18] indicated the importance to develop capabilities in four key areas such as learning, roles, responsibilities and strategic focus to support sustainability agenda in organisations. These capabilities are crucial to ensure ideas on the ecology, sustainability and social justice form part of the management’s thinking and priorities.

Similarly, van Kleef and Roome [19] have identified that the systematic thinking capabilities, capabilities for learning and developing, capabilities to integrate business, environmental and social problems capabilities, capabilities in developing alternative business models and methods, networking capabilities and coalition and collaborating building capabilities are needed to allow businesses to innovate more sustainable practices. For this reason, capabilities were vital to heighten the competency of people and organizations particularly in managing the sustainability issues and challenges, operating in a more sustainable way as well as to support the sustainability agenda in an organization.

Thus, it is beneficial to explore the issue of capabilities in order to overcome these challenges, as has been suggested in previous research especially in supporting sustainability practice implementation in the FM sector. The capabilities of the FM personnel and organizations were regarded as the key enabling factors to facilitate a sustainability agenda. Moreover, the need for strong capabilities in people and organizations is increasingly important in dealing with the requirements of sustainability practice in FM. Additionally, through literature study, the authors have identified that up to now, compared to the research efforts on external aspects (e.g: developing guidelines, technical manuals and knowledge portals), research focusing on the soft areas or people-centred orientation (e.g: people’s capability, skills, personal motivation) is still lagging behind. Therefore, there is a need to explore the concept of capabilities in the effort to integrate sustainability measures in FM practices.

### 4. Current Gap in People and Capabilities

According to Hodges [1], facilities managers and building operators are the key actors in implementing sustainable measures in building operations. Hence, it is crucial for them to have the appropriate capabilities, skills and knowledge to respond and act towards a sustainability agenda. For example, in discussing issues regarding knowledge, the people aspect should be considered as significant as technology and technical factors [20]. Bhatt [21] also stated that firms which give equal attention to people as well as technology, by encouraging informal meetings among employees, get-togethers and personal interaction, are able to perform better. Bredin [22] suggested that it is important to pay attention to the contribution of people’s capabilities in an organization instead of focusing solely on organisational capabilities. This is because, the organisational capabilities are built from “an agglomeration of lower-order activities” that are feasible through individual skills, accumulated experience and organisational arrangement [23].

The construction industry is known as the labour intensive sectors due to its reliance on the capabilities and skills of the workers in their operations and activities. According to Cooke-Davies [24], it is the people who deliver the construction projects and not processes or system. Additionally, the concept of the knowledge worker is regarded as important to construction organization since much knowledge in construction industry is experience-based and involves tacit knowledge.

<table>
<thead>
<tr>
<th>2 Knowledge challenges</th>
<th>3 Organizational challenges</th>
<th>4 Authority challenges</th>
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<tbody>
<tr>
<td>Hodges (2005)</td>
<td>Lack of capabilities / skills</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unwillingness to implement sustainability</td>
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<tr>
<td>Yang et al. (2005)</td>
<td>Lack of competence in managing the changing attitude process of people and institutions</td>
<td>Shah (2007)</td>
</tr>
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<td></td>
<td>Undervaluation of contribution to organizational success</td>
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<tr>
<td>Bosch and Pearce [17]</td>
<td>Lack of guidance documentation</td>
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There is a necessity for this industry to consider the capabilities, skills, behaviour inputs and knowledge of the people which contribute to superior performance in both project and organizational level. Therefore, this situation reflects the importance of people’s capabilities, skills and knowledge for organisational competitiveness and success factor in construction industry.

In the FM sector, the issue of personnel and organisational capabilities has been identified as one of the major obstacle in the implementation of sustainability agenda as highlighted by Shah [8], Shafii et al. [27], Hodges [1] and Yang et al. [28]. The necessity for sustainable practice in FM and for skilled facility managers to conduct this function is increasing. A few early studies have been conducted in an effort to integrate sustainability measures in FM practices and to overcome challenges faced by FM personnel and organizations. Shah [8] introduced a book on practical guidance and comprehensive information which can be implemented to integrate sustainability into daily activities of FM. Hodges [1] suggested the key steps in developing a sustainability strategy for a facility and highlighted the importance of the Life-Cycle Cost (LCC) and Total Cost of Ownership (TCO) techniques to justify any potential costs of implementing sustainable practice in FM.

Additionally, Elmualim et al. [29] developed a knowledge portal to share good sustainability practice in FM by conducting several case studies. The portal was developed to aid FM stakeholders in searching for easy access to the specialist knowledge, tools and supporting case study material necessary which research suggested does not exist in the FM context for implementing the sustainability agenda. However, these studies tended to focus solely on external factors and not on the soft areas of people factors, including facilities managers and organizations especially in terms of their capabilities and skills needed to perform this function. Therefore, there is a known research gap in this area that needs to be addressed in order to take advantage of the vast opportunities available to improve the present scenario.

5. A New Research Approach

Due to the significance of improving the people capabilities for incorporating sustainability agenda in FM practices, a research is being conducted at QUT. The improvement of capabilities and skills amongst the FM personnel and organizations in dealing with sustainability challenges can enhance the implementation of sustainable practice (Figure 1).

This research aims to establish a people capabilities framework in dealing with sustainability issues to enhance sustainable practice in FM. The focus of this research is on people capabilities and skills within the organisational or work related context. It will explore and highlight the barriers that hinder the sustainability implementation in FM as well as the key components of personnel and organizational capabilities to facilitate sustainability consideration. Based on the research aims and objectives, a mixture of quantitative and qualitative methods will be adopted to collect and analyse data based on the Australian and Malaysian FM industries. According to Fellows and Liu [30], research in the social science and management field that involves asking and obtaining answers to research questions through conducting survey of people usually will use questionnaires, interviews and case studies as the research methods.

Therefore, in this research a questionnaire survey will be administered to ask the industry participants on what capabilities they think the most important to facilitate the implementation of sustainability agenda in FM practices. Single choice questions, multi-choice questions and five-likert scaled questions with open-listed items will be adopted in the questionnaire design. Questionnaire surveys can be carried out in a variety of way. As for this research, a web-based questionnaire survey will be used due to its advantages such as low cost, time efficiency and large capacity. Data obtained will be quantitatively analysed using SPSS software to obtain the mean, standard deviation and frequency analysis before the initial framework is developed.

Following this, a case study will be employed to further explore important issues and to test and validate the framework to ensure the completion of holistic, valid and reliable results. It will also provide feedback and response from experts in enhancing the understanding to solve the research problem. Finally, a people capabilities framework in enhancing the application of sustainability agenda in FM sector will be established. Figure 2 illustrates the planned research development processes and information flow.
A structured questionnaire consists of five (5) sections was designed according to the key elements of the people capabilities based on the findings from extensive literature review to collect responses. The respondents represent the key stakeholders of FM industry were carefully selected from various types of organization involves in FM project from both private and public sectors across Australia. These organizations include clients, consulting firm, FM contractors, sub-contractors, government agency and local authorities. A pilot study has been conducted within the potential key respondents to help validate and test the capability and consistency of the questions. It is conducted with ten (10) respondents whose experts in sustainability and FM field. Table 2 shows the structure of the questionnaire.

### Table 2 Structure of the questionnaire

<table>
<thead>
<tr>
<th>Category</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 General respondents Information</strong></td>
<td>This section collects basic information to classify respondents e.g. professional roles in FM industry, length of professional experience, type of organizations, etc</td>
</tr>
<tr>
<td><strong>2 Barriers for sustainability agenda in FM sector</strong></td>
<td>This section collects information to identify the performance of each barrier in the efforts to integrate sustainability agenda in FM practices. These barriers are categories into four main challenges namely capabilities, knowledge, organization and</td>
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</table>

**Fig. 2 Research development processes**

6. **Conclusion**

Facility managers are in a unique position to promote sustainability as they have a long term connections with and can apply a high level of influence on the built assets. Barriers in terms of the capabilities and skills amongst FM practitioners and stakeholders inhibit proper implementation of sustainable practice in the FM sector. A number of key factors, such as capabilities discrepancy, time constraint, diversity of FM functions, and lack of incentives, has been identified and requires remedy. A new research focusing on uplifting people’s capabilities will work towards sustainable FM delivery. This paper discuss the research progress to date for the formulation of a people capabilities framework for sustainable FM practice based on expert opinions and industry feedback in the local context. The research has the potential to promote sustainability integration in FM practices, while providing a useful source of information for FM personnel and organizations.
References