

# KNOWLEDGE MANAGEMENT STRATEGIES FOR SUSTAINABLE FACILITIES MANAGEMENT IN SRI LANKA

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## ABSTRACT

*The profession of facilities management (FM) is becoming knowledge driven. In this regard, managing facilities managers' knowledge helps for sustainable outputs through the creation of supportive and cost effective physical environment that strongly supports the primary objectives of office buildings sector. This study attempts to bring in knowledge management insights into facilities management and explores strategies of managing facilities manager's knowledge. Case studies of three in-house FM teams occupied in three leading office buildings in Sri Lanka were used to approach the research problem. Data was collected using semi-structured interviews with three individuals from each case. The findings revealed that a wealth of knowledge is accumulated within a handful of FM practitioners as tacit knowledge in the form of experiences, intuitions and insights. Hence, a personalisation approach is preferred to a codification approach in managing FM knowledge within individual organisations and the profession as a whole. However, codification strategies are also suggested to complement the process in the long term due to the emerging nature of the profession and the need for transferring knowledge to future FM professionals. This research is of exploratory nature, which explored an emerging FM profession in Sri Lanka. Further research is required to fully understand how knowledge management concepts could be incorporated within FM professions worldwide for sustainable FM.*

**Keywords:** *Case Studies; Codification Strategies; Facilities Management; Knowledge Management; Personalisation Strategies;*

## 1. INTRODUCTION

It is obvious that the secret behind returns on invested facilities lies upon proper and effective management of the built environment. Thus, the attraction of facilities management (FM) has become increasingly common as forward-looking organisations are beginning to realise FM as a function with clearly defined objectives and a strategic and commercially-oriented discipline (Pathirage *et al.*, 2008). Facilities Management is frequently described as “an integrated approach to operating, maintaining, improving and adapting the buildings and infrastructure of an organisation in order to create an environment that strongly supports primary objectives of that organisation” (Then, 1999. P.22). According to Atkin and Brooks (2000), FM services encompass broad and a large number of functions and roles towards a strategic concern. Nutt (2000) classifies these FM areas into four basic trails, in which one is identified as ‘knowledge resource trail.’ This trail reflects the growing importance placed on managing facilities knowledge as a strategic resource (Pathirage *et al.*, 2008). Bainbridge and Finch (2009) affirm this when they state that KM is permeating every aspect of FM role.

As far as KM is concerned, it is a process comprising of number of sub-processes such as knowledge sharing, capture, store and reuse. Robinson *et al.* (2004, p.735) provide a commonly cited definition for KM as, “any process of creating, acquiring, capturing, sharing and using knowledge wherever it resides, to enhance learning and performance in organisations.” When applying this definition to FM, managing

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FM knowledge could be seen as creation of FM knowledge; acquiring and sharing it; and, capturing and storing it for future reuse in the FM organisation. Hansen *et al.* (1999) identifies that organisations should focus on particular KM processes based on the nature of knowledge and mainly use two KM strategies namely codification and personalisation strategies to manage organisational knowledge resources. Since nature of knowledge is not well defined in FM context, what KM strategies are more applicable for FM is not well understood. This created the knowledge gap for this research and emerged the research question for the study. Accordingly, the research question that was developed for the study is ‘what KM strategies would be applicable to KM considering the nature of FM knowledge?’ Due to the evolving nature of FM profession in Sri Lanka, exploratory case studies were carried out to explore answers to the research question. The key findings from the literature review are discussed next in this paper. BIM and its development

## 2. KEY FINDINGS FROM THE LITERATURE

FM is relatively a new profession in the built environment. There are very few FM experts in developing countries like Sri Lanka who has extensive knowledge and experience in the field of facilities management (De Silva, 2011). FM is a multidisciplinary profession, which demands to link various types of knowledge that is borrowed from various professional fields (Nutt, 2000). As FM matures, it needs to think more for itself, to develop its own contribution to management expertise, with less reliance on borrowed concepts and imported expertise from other professional fields of activity. To achieve this, all working in the FM field need to be collaborating to build an expert FM knowledge base with supporting methods, techniques and data structures (Nutt, 2000). These reasons trigger out the critical need and the importance of managing facilities manager’s knowledge for the establishment and the development of the FM profession.

Knowledge is typically classified as either tacit or explicit. Tacit knowledge is highly personalised, which draws on the accumulated experience and learning of a person (Debowski, 2006). Explicit knowledge, on the other hand, is transmittable in formal, systematic language; and can be conceptualised and stored in information systems (Nonaka and Takeuchi, 1995). Approaches to manage these types of knowledge vary from organisation to organisation. Such approaches require the organisational optimisation of knowledge resources, such as human power, capital, and managerial efforts, to achieve enhanced performance through the use of various methods and techniques (Davenport and Prusak, 1998; Kamarat *et al.*, 2002). Hansen *et al.* (1999) argued that there are basically two strategies for managing knowledge in organisational level. They term these strategies as “codification” and “personalisation.” To Choi and Lee’s (2003), these are either system-oriented or human-oriented approaches.

System orientation emphasises on codified knowledge, which focuses on codifying and storing knowledge via information technology where attempts are made to share knowledge formally. When knowledge is seen as a ‘thing’, codification strategies, which especially disseminate explicit knowledge through person-to-document approaches, are considered. On the contrary, human orientation emphasises on dialogue through social networks and person-to-person contacts, which focus on acquiring knowledge via experienced and skilled people and where attempts are made to share knowledge informally. Hansen *et al.* (1999) state that in certain companies, knowledge is closely tied to the person, who developed it and is shared mainly through direct person-to-person contacts. They viewed this as personalisation strategy. This strategy refers to personal development of tacit knowledge that is based on insights, intuition and personal skills for solving complex problems.

The codification knowledge management strategy in the context of facilities management should start with understanding critical knowledge management areas and then capturing and storing such knowledge for future reuse. Nutt (2000) emphasises that understanding what knowledge that facilities managers may need, use and create in the future is an important area for investigation for FM organisations to remain competitive. Kincaid (1994) describes that FM requires knowledge of both management and facilities in order to perform two roles as management role and operational role. These management concepts and operational expertise, closely link with management and the operational level knowledge explained by Chotipanich (2004).

FM knowledge that is critical for the successful operation of the two identified levels need be considered for codification. Nutt (2000) states that capturing knowledge from experts and feeding forward their experiences is vital to the future success of FM. However, capturing all FM knowledge is not worthwhile and possible. Therefore, consideration has to be given to identify most critical knowledge that is crucial for effective FM performance. On the other hand, knowledge that is captured and stored will be of no use if it is not re-used in future situations. Nonaka and Takeuchi (1995) define knowledge reuse as adaptation of explicit knowledge of successful practices to generate new and useful ideas. According to Markus (2001), reusing knowledge involves both recall (that information has been stored, in what location, under what index or classification scheme) and recognition (that the information meets the users' needs, as well as actually applying the knowledge). According to Nutt (2000), the areas where FM knowledge reuse will give its highest contribution are in managing facility operations and support services; managing facility use and performance; and, managing facility procurement and adaptation. Hence, codification strategies should be appropriately adopted to identify, capture and store FM knowledge.

However, Puddy *et al.* (2001), through their research that applied knowledge conversion theory in KM to FM, found that codified FM policies and standards are not helpful if they do not incorporate FM tacit knowledge. Hansen *et al.* (1999) show that tacit knowledge is best transferred through personalisation strategies than codification. Through effective personalisation strategies, it is believed that tacit knowledge embedded in FM experts could be transferred and shared within the profession. Egbu *et al.* (2003) describe several knowledge management techniques that facilitate personalisation strategy such as communities of practices (CoP), face-to-face interaction, discussion forums, post project reviews, seminars, apprenticeship, mentoring and training. Egbu (2012) mentions that for KM, the term 'tools' is used loosely and too often, KM 'tools' is used to mean only IT tools and ignore those tools mentioned under KM techniques that help in tacit knowledge sharing. It is clear that these techniques would facilitate the exchange of FM expertise. However, little is known on how above KM strategies could be effectively applied to facilities management. Hence, this research aimed to explore how KM strategies such as codification and personalisation could be effectively used to manage facilities management knowledge. The research method is explained next.

### **3. RESEARCH METHODOLOGY**

This research took an exploratory nature and it required access to FM professionals, who could explain their views and experience. As such, case study has been selected for this research. In Sri Lankan office building sector, there are very few in-house divisions for facilities management, who are practicing FM in its full sense. Three such FM divisions in office buildings were selected for these case studies. Within one organisation, three professionals from the FM division were interviewed. The description of cases and professionals interviewed are given below.

#### **Case A**

With over 750,000 square feet of prime office and retail space, this organisation is an international business complex on par with premium grade buildings in major cities around the world. Built to the highest standards, this impressive landmark comprises two 39 storey towers connected by a 4 storey retail block. It has attracted prestigious local, international and multinational companies as tenants, making it the most sought after business address in Sri Lanka. With its prime location in the heart of the city in the Central Business District (CBD) and easy access to all main banks, major five star hotels, government offices, shops and the headquarters of some of the largest businesses, this towering business complex is Sri Lanka's tallest and most impressive commercial landmark. Within this organisation, interviews were conducted with the facilities manager, assistant facilities manager and electronic engineer.

#### **Case B**

This organisation is a largest banking and financial services organisation. It has more than 32,000 skilled professionals operating out of 15 Group Service Centers present in five countries in Asia, including India, China, Malaysia, Philippines, and Sri Lanka. The service centre in Sri Lanka is managed by the business process outsourcing arm of the Group and it is occupied by the bank's back offices service providing

professionals within over 350,000 square feet. Interviews were made with the facilities manager, assistant facilities manager and the outsourced facilities manager in this organisation.

### *Case C*

This organisation is one of the leading government banks in Sri Lanka. This building is a 32 storied head office building with a total built up area of 600,000 square feet. It was constructed in 1987 to house all administrative offices, international division and corporate branch of the bank. Managing this building is done with the involvement of well qualified and experienced FM related professionals. Therefore, data has been collected from three key FM related professionals namely maintenance manager, human resource manager and the electrical and plumbing engineer.

While interviewing, note taking and tape recording (with permission of the interviewee) were performed to maintain the accuracy of data collection. The data gathered from the interviews were analysed by manual code-based content analysis. Finally, conclusions about the overall research problem were drawn by analysing the findings as described next.

## **4. RESEARCH FINDINGS**

### **4.1. FM KNOWLEDGE AREAS**

Case studies highlighted that facilities, standards and culture of the organisation can significantly influence the FM practice. Therefore, only basic areas of knowledge can be identified common to any facility manager. Within these, the respondents in all cases highlighted the importance of Property management. Under property management, a respondent in Case A revealed importance of knowledge such as strategic property management, property acquisition, disposal of real property, risk management and lease management. Other critical knowledge areas as identified the interviewees include energy management, facilities maintenance along with conditions assessments, building services management and financial management. Overall, interviewees mentioned that a typical facility manager should possess knowledge on corporate objectives, support infrastructure, human resource management and skills such as communication skills, interpersonal skills and business skills (see Figure 1).

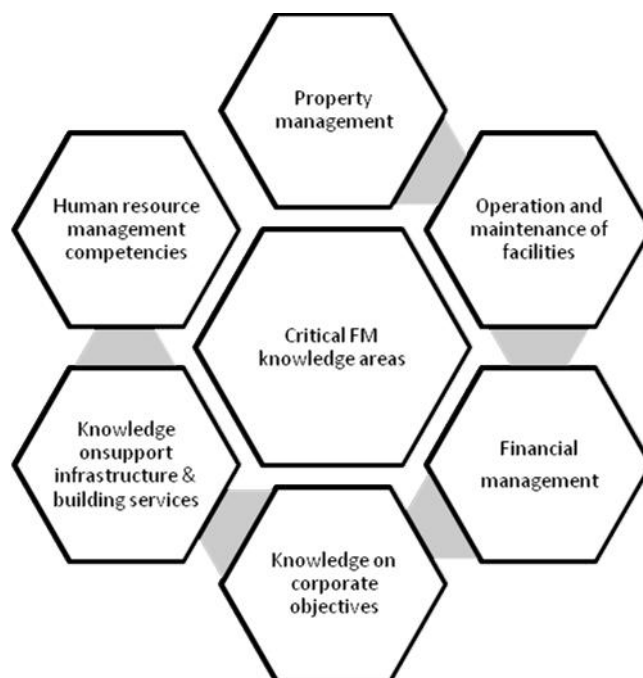


Figure 1: Critical Knowledge Areas of FM from Case Studies

Being consistent with the literature, case study findings revealed that generally, the facilities managers were performing two main integrated roles within their organisations as ‘strategic role’ and ‘operational role’. The strategic role of the facilities managers was highly interrelated with the activities with the top-level management of the organisation while the operational role was highly associated with their own subordinates within the FM team. For each of these two roles, there were specific knowledge areas equipped by the facilities managers. Generally, the strategic role required more knowledge on management subjects than other knowledge areas for which they were expected to participate in making and implementing critical decisions to shape the future in relation to the goals achievement of the organisation. The operational role required more knowledge on technical, operational, regulations and legal aspects for which they participated in optimising workflows and usage while keeping down the operating cost of the building.

#### 4.2. USE OF CODIFICATION STRATEGIES

In terms of the requirement for codification, most of the respondents agreed that with time, FM would be challenged to build its own distinctive knowledge-base with supporting methods, techniques and data structures to underpin best practice (see Figure 2). For example, a respondent in case A stated, “*it is critical to have a knowledge base for the further development of the FM profession. However, entire knowledge cannot be stored, there is certain knowledge that is unique to a person and will die down with the person.*” According to a respondent in case B, the good practices should be stored. A respondent in case C further elaborated these good practices such as reusing knowledge about what was done, how and why things were done and how this knowledge can be applied in other settings.

In the view of a respondent in case A, “*FM organisations have knowledge-intensive working environments, so it requires critically relevant knowledge to find flexible solutions and solve problems under tight deadlines.*” A respondent in case C agreed on this when he mentioned the need for storing standards for the decision making of a facilities manager. At the moment, the documents both in hard and soft copies in the forms of manuals and service agreements provided them with a common FM knowledge. The individuals were reluctant to use IT based methods although the organisations provided them such methods. Intranet was used in certain situations while company websites with online forums were rarely used. It was noted that specific knowledge bases were not used by FMs. All the respondents in case studies highlighted that using knowledge as it is to achieve day-to-day FM functions will not be successful, because FM is a profession which involves facing different and novel situations in each and every day. Hence, they preferred personalisation strategies compared to codification.

##### Codify Good Practices

Reusing knowledge about

- what was done
- how and why things were done
- how this knowledge can be applied in other settings

Make available common knowledge for FM within the organisation

- Standards
- Manuals and Service agreements

FM involves knowledge-intensive work environments

- Need critically relevant knowledge to solve problems under tight deadlines
- Need to face different and novel situations

Need to improve use of technology

- Intranets
- Online discussion forums
- Specific FM knowledge-bases

**Codification Strategies**

Figure 2: Codification Strategies for FM

### 4.3. USE OF PERSONALISATION STRATEGIES

Case studies revealed that a facility manager generally seek personal assistant from their peers or subordinates within their organisation favouring personalisation knowledge management strategies. See Figure 3 for a summary of the case studies' findings related to this. Face-to-face interaction with other members in the FM department was very common. Among formal sharing methods, the individuals' priority was given to meetings. Ad-hoc meetings were very common, which brought the team members together to discuss about FM subject matters. Post project reviews were another form where knowledge sharing took place between facilities managers. The organisations' investments in providing infrastructure for close interaction were at a good level. The formal and informal places and methods provided by the organisations were highlighted by the respondents. It was observed that these places and methods significantly contributed to promote personalisation strategies. As the individuals' workstations were arranged in a way that they exposed to each other, the physical work environment and the layout of work areas were encouraging this process.

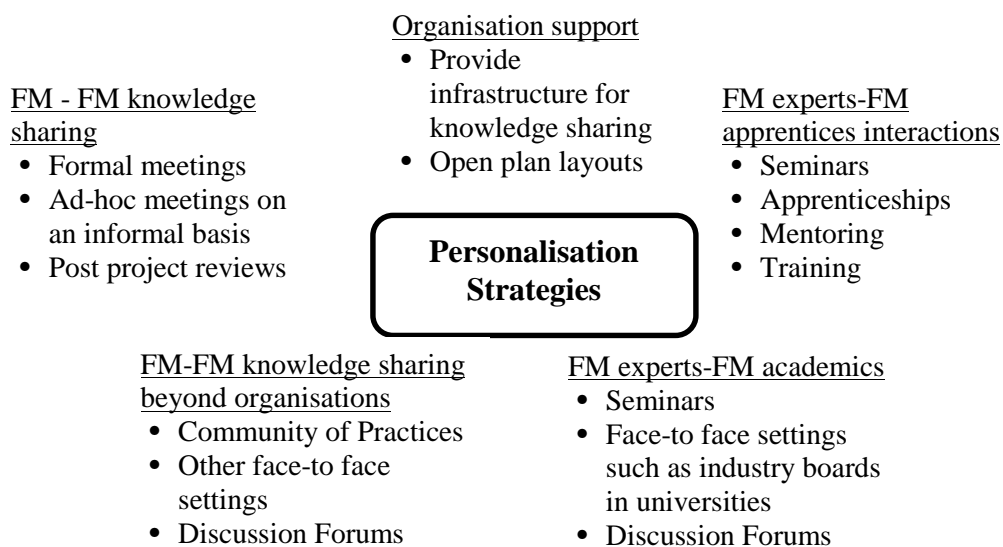


Figure 3: Personalisation Strategies for FM

In order to share FM expert knowledge through personalisation to other FM experts from different organisational settings Community of Practices (CoP), face-to-face interaction, and discussion forums were identified as more important than other techniques by the interviewees. For enhancing interaction between FM experts and apprentices, most suitable techniques mentioned were seminars, apprenticeship, mentoring and training. Similarly, to encourage the interaction between academics and FM experts, techniques such as face-to-face interaction, discussion forums and seminars were identified as the best techniques.

On the whole, the findings established that pioneer FM professionals hold a unique set of knowledge, which has been gained through facing new challenges and personal experience such as work practices, operational know-how, own opinions about the profession, success stories, best practices and insight about the industry. This unique knowledge is much critical to FM community in order to spread the profession in Sri Lankan context. The case study participants viewed the importance of having a collective body that could attend to FM knowledge development process. The areas that they highlighted in specific are listed below:

- Identify new strategic directions: exploring the changing priorities, potential scope, future functions and impact of FM
- Identify future performance imperatives: developing the basis for the next generation of property and facility performance criteria, management methods, operational procedures and decision techniques

- For policy and investment development: investigating the key property and FM issues for the future and the development of radically new approaches to investment and risk.

Overall, personalisation strategy is found more effective at present. However, codification strategies should also be in place towards the development of an ultimate FM knowledge base. Next section concludes the findings of this exploratory study.

## 5. CONCLUSIONS

The research findings confirmed that there is relatively a small number of facilities managers who operate in the local industry and most of their knowledge is almost locked in their heads. In fact, the existing knowledge management practices of a facilities manager in the building sector were unnoticed, unfamiliar and inefficient in its implementation. Hence, it would be important to use some codification strategies to mainly capture FM best practices, while it would be critical for organisations to store such FM knowledge, and provide access for future re-use. This will ease the heavy reliance on specific individuals and the possible knowledge loss when they leave the organisation. Overall, it is recommended that appropriate codification will be required for FM organisations possibly to initiate a knowledgebase that incorporates advanced FM practice experience; cross-sector benchmarking criteria; forecasts of key future FM issues and possible solutions; and, the distinctive features and functions of the facilities management.

More importantly, case study findings revealed the importance of people-to-people interaction in managing FM knowledge. KM techniques, which supports for people-to-people interaction should be carefully chosen and applied to gain benefits for the collective level FM parties. Since there are very few FM experts in Sri Lanka, absence of them would create a knowledge gap in the field of FM. Therefore, it is essential to disseminate knowledge that resides within FM experts to a wider community in order to maintain the consistency of the profession. It is recommended that this wider community should go beyond a single organisation to the industry level and connect three parties: FM experts, apprentices and academics. The interaction could be provided by an organised body such as an institution. Determining the knowledge requirements of the FM community and taking appropriate steps to manage FM knowledge within the FM community would be the key responsibilities of such an institution, in terms of managing FM knowledge industry-wide. Finally, Figure 4 captures the key findings of this study and their implications to sustainable facilities management in Sri Lanka.

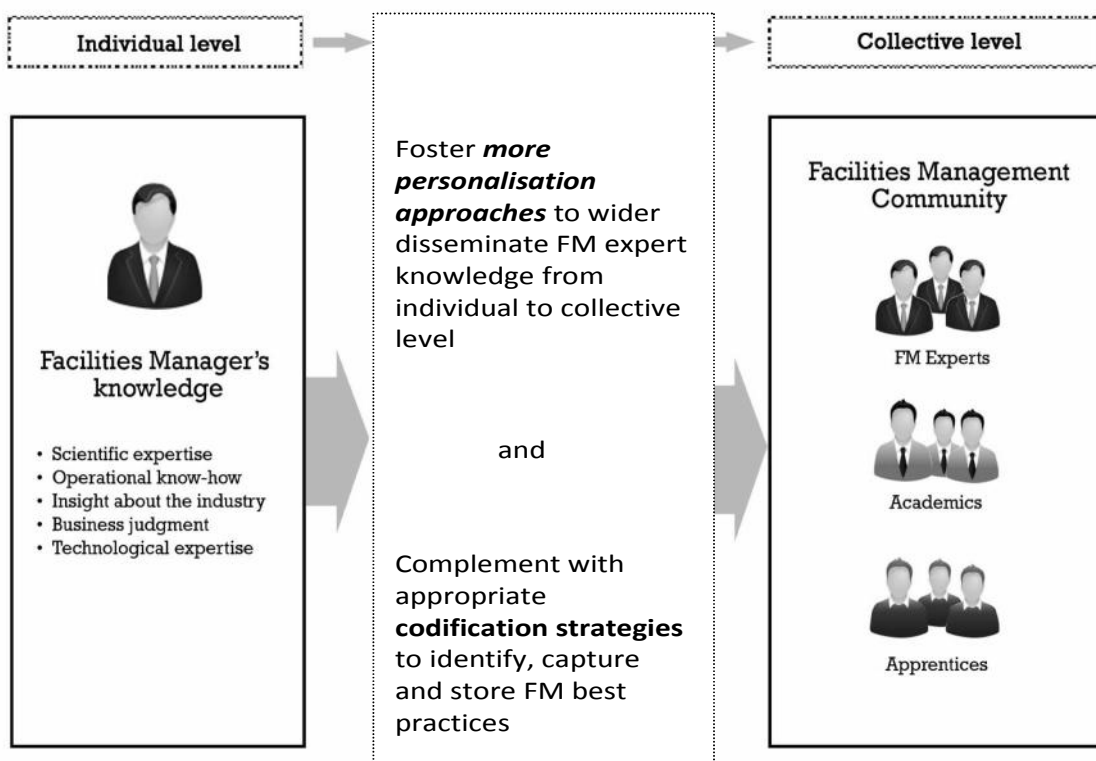


Figure 4: KM Strategies for FM

Further research is required to identify above aspects and to fully understand how knowledge management concepts could be incorporated within FM professions worldwide.

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