A Model for Assessing the Maturity of Facility Management as an Industry Sector

Maulidi A. Banyani, The Hong Kong Polytechnic University, Hong Kong SAR, China, maulidi.banyani@polyu.edu.hk
Danny S. S. Then, The Hong Kong Polytechnic University, Hong Kong SAR, China, bessthen@polyu.edu.hk

Abstract

Over its three decades of evolution, Facilities Management (FM) has widened its scope of responsibilities from an operational focus to a strategic orientation. The FM role has shifted from a predominantly cost reduction approach to value adding. This shift follows a similar path towards 'perfection of the processes' in literature on organisation maturity models. It follows that if FM processes have been perfected then the industry is at its mature stage. However, to date, there is no consensus on developmental levels when assessing FM maturity due to the lack of a common yardstick. This conceptual paper presents an *Integrated Feeder Factors Framework* (I3F), based on six interlinked factors that are key to the continuous development of the FM Industry which are referred to as 'feeder factors'. It is argued that FM development depends on the integration of market, research, education, professional bodies, environment and practice. The proposed model identifies four maturity levels based on the links between, and strength of the existing feeder factors. At the highest level, there is Full Maturity Stage (FMS); followed by Developmental Transitional Stage (DTS), Formation Transitional Stage (FTS) and lowest level, Least Mature Stage (LMS).

The paper is based on extensive analysis of literature focusing on industry maturity with particular reference to FM. Content Analysis of existing literature was carried out to identify the potential 'feeder' factors. The paper aims to introduce a maturity model that at full development, can provide a consistent basis for evaluating maturity of FM industry. The proposed *I3F model* aims to provide a consistent basis for evaluating maturity of FM industry at national, sector-wise and organisational levels.

1. Introduction

The paper proposes a framework for assessing the maturity of Facilities Management (FM) as an industry sector. This is indeed a challenging endeavour due to the nature of FM. In a Delphi study conducted by Price and Green (2000) FM has been regarded to be neither an industry nor a profession. Discussions on whether FM is a profession has been well documented in the past by Grimshaw (2003) and Tay and Ooi (2002). The paper begins by discussing the extent of disagreement regarding FM development and maturity status. It further, explores the legitimacy of

the claim that FM is an industry as a stepping stone into discussing its maturity. The proposed framework is discussed in details in section 4.

Studies by Grimshaw (2003), Payne (2000) and Teicholz (1992), however, can serve to explain the divergence of opinions in terms of the stage of development and level of maturity of FM as an industry sector. Grimshaw (2003) is of a view that FM continuous to grow and is recognised as *"a useful function*" in most parts of the developed world. But, the lack of intellectual coherence within the core practice presents particular difficulties for the smooth onward development and for the establishment of a unified FM profession. On contrary, Payne (2000), studying FM profession development in the United Kingdom observed that it has evolved from an early formative stage, in the late 1980s, through a rapid growth phase which took place during the mid 1990's and reached maturity in early 2000s. Payne (2000) concluded that the evolving nature of FM and the maturity of its approach which is grounded in the experience of a buoyant and growing profession have begun to ensure that a strategic FM dimension is now a requirement for all successful and forward thinking organisations. In Teicholz's view the FM profession has, to some extent, became mature in 1990's (Teicholz, 1992). Inference that can be drawn from the studies is, while Grimshaw (2003) is sceptical of the development of the industry, Payne (2000) and Teicholz (1992) are certain that the profession has matured or "is maturing" since early 2000's or early 1990's. The disagreement on the level of development and maturity of the FM industry can also be witnessed in a number of the studies carried out in late 1990's and 2009:

- It is an emerging industry (Grimshaw, 1999; Green and Price, 2000; Price 2003a; and Ballesty, 2008).
- It is a growing industry (Price 2003b; Then, 2004; Mussa and Pitt, 2009).
- It is a mature industry (Atkin and Brooks, 2001; Barret and Baldry, 2003 and BIFM, 2008)

The word 'maturity' with reference to FM was first used at the first EuroFM conference held in Glasgow in 1990. The conference objectives, among others, were set with the aim of developing facility management research and education into a "*more mature activity*" (Alexander et.al, 2004). The above discussion revealed the following:

- The question of maturity in FM industry is neither new nor insignificant; as it can be traced as back as 1990. It has a place in FM industry literature but has not been clearly defined or the 'word' has been used loosely.
- It is obvious that current rating of the development and maturity of FM is based on personal judgement rather than based on a scientific approach.
- There is a need for a framework that can be used in assessing maturity of the FM industry as opposed to FM processes.
- Lastly, there is a need to define the development status of Facilities Management.

The objectives of this study are first, to understanding if FM has a legitimacy to claim an industry status and second, to identify the contextual meaning of maturity within the FM industry.

2. Facilities Management Industry: Justifications

This section uses materials from different sources to analyse the legitimacy of FM status as an industry. It starts by giving a broad definition of the term 'industry' and singles out pre-requisite attributes of an industry. These attributes then are analysed against FM contribution, objectives and functions.

2.1 Understanding the term industry

In generic terms, industries are categorised into four sectors owing to the nature of activities performed. These sectors are primary (dealing with extraction of materials from nature such as mining, agriculture and fishing), secondary (which is devoted to manufacturing), tertiary or service (concerns with the service provision) and quaternary (involved in information business).

The word 'industry' is derived from a Latin word '*industria'* meaning "diligent, industrious" *(http:www.wordia.com/industry)*. In its simplest form, an industry is an *economic activity* concerned with the production and distribution of goods and services (http://www.answers.com). An economic activity has been correlated with employment and aims at creating income to participants (Marcijonas and Paulauskas, 2007). The Organisation for Economic Co-operation and Development (OECD, 2002) defines an activity as a process i.e. combination of actions that results in a certain set of products. Of late, Marcijonas and Paulauskas (2007) argued convincingly that the word 'activity' as an economic activity indicates that transactions are performed systematically and in a continuing basis. Neva et.al (2008) expresses the view that an economic activity should be analysed based on resource maintenance, production, distribution and consumptions. Resource maintenance is concerned with the tending to, preserving, or improving the stocks of resources that form the basis of preservation and quality of life (Neva et.al, 2008).

In summary, from the above discussion, it can be inferred that an industry should possess the following attributes:

- It should provide products (tangible items) or services (intangible items);
- As an economic activity, an industry is capable of generating income and provides employment;
- The activity should be conducted systematically with prospects of continuity, and
- Aimed at tending to, preserving or improving the stocks of resources.

These attributes are important in analysing and ascertaining the legitimacy of FM as an industry. The analysis to this effect is carried out in the following section by gauging FM contribution, objectives and functions against the attributes identified above. It is expected that the analysis may provide an understanding of the role played by FM as a sector of economy and an independent industry sector.

2.2 Facilities Management as an Industry: Analysis of the Attributes

This section uses the factors identified above in analysing the legitimacy of FM as an industry.

Proposition 1*: An industry should provide products (tangible items) or services (intangible items)*

Facilities Management (FM) is a business of managing work space (McGregor and Then, 1999). In its simplest form, FM deals mainly with technical and operational aspects of providing services necessary to support the core business. The focus at this level is to minimise operational costs associated with the provision and management of work space. At the highest level, it is concerned with appropriate work space strategies and abilities to cope up with the rapid changes in the business environment. The focus at this level is to add value through effective management of facility provision and support services (Then, 2004). The provision of facilities support services to core businesses is a global business measured in billions in terms of major international currencies. Specific responsibilities (services) of the Facilities Manager are summarised in Figure 1:

Proposition 2*: An industry should be able to generate income and provide employment.*

Price (2003a) and the International Facility Management Association (IFMA, 2009) estimate the global value of the FM market to be in the tune of US$100billion. In the UK alone, the British Institute of Facility Management (BIFM, 2009) estimated the FM sector is worth between 40b and 95b pounds. In Germany, the FM market is estimated to be in the region of 55 billion Euros (GEFMA, 2009). FM is the largest contributor to gross national product (Price, 2003b and Ballesty, 2008). Ballesty, (2008) noted that FM in Australia in 2002-03 contributed about A$12.2 billion of value added, A$12.4 billion in GDP terms and employed 172,000 persons.

Proposition 3: *An industry should allow for systematic performance of the activities and prospects for continuity*.

Available literature suggests that over the last 30 years FM has evolved from operational focused to strategic orientation. Then, (2004) noted "FM has grown from managing and maintaining corporate property (operational buildings) to strategic management with a deliberate slant towards meeting stakeholders' expectations".

The management of work space in modern businesses has become increasingly complex, both at organisational and country level. Workplace is no more defined by four walls of a building. Technological advancement has made it possible for work to be conducted from a variety of locations. Unlike in the past where the functions of the Facilities Manager were to ensure availability of workspace; today's challenges lie in the provision and management of strategic infrastructure and support services that enable business continuity. The Facility Manager is required to anticipate changes in demand and act swiftly while considering adding value to the core business. FM organisations need to pay attention to strategic issues while considering tactical and operational matters. Lord et.al (2002) has identified that unlike other management fads and fashion, FM has been able to withstand the test of time. Geographical expansion of FM profession is also evidence that the industry is here to stay. Over the last 3 decades, the industry has been able to establish itself in United States of America, Europe, Asia, Australia, Africa and Latin America.

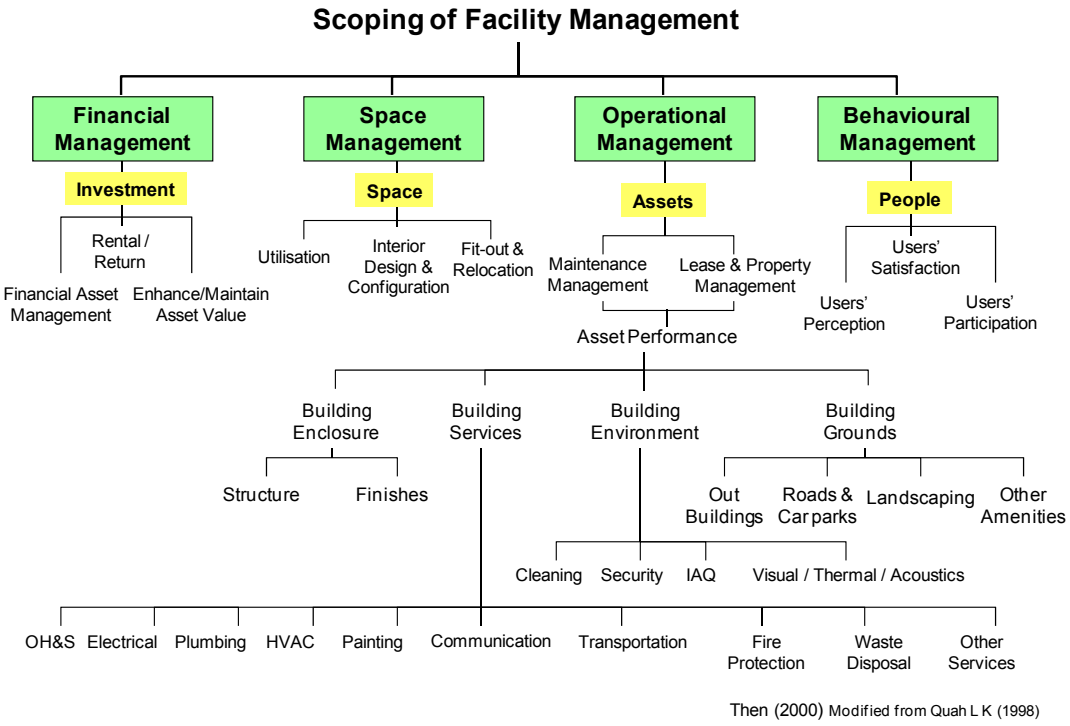

Figure 1: Scope of Facilities Management responsibilities

Proposition 4: *An industry aims to tend, to preserve or to improve its stocks of resources*

The continuity of FM industry can be reflected in the importance placed on it from a national and business perspective. It must be understood that apart from direct contribution of the FM sector to the economy, it is also entrusted with the crucial function of tending to, preserving and improving important infrastructure resources used to provide crucial services to society. The introduction of public-private partnerships (PPP) and private finance initiatives (PFI) in the United Kingdom have opened up the FM market and created direct relationship between the public sector and the FM sector. Payne (2000) noted that PFI has been used in the UK to fund a wide range of high profile and varied projects such as the Channel tunnel rail link, prisons, hospitals, fire stations, roads and bridges.

Discussion of the objectives and functions above reveals that FM is an industry that provides services to the core business. Suffice to note that from the categories of the industry introduced in section 2.1 above, FM falls within the tertiary industries sector.

2.3 Defining the FM Industry

Weck (2005) argues that an industry can be defined in two ways. In a narrow view, an industry comprises only direct competing firms within a sector of economic activities; whereas a broader definition also includes surrounding parties such as suppliers, buyers, producers of related and substitute products as well as the associated legal political and regulatory governances. This research embraces the broader definition of an industry.

In this study the FM industry is defined to mean *"an institution or entity that provides or monitors optimal workplace solutions based on competencies developed within and demand arising from a defined business environment"*.

The definition embraces an institution or entity approach which includes all of the factors and stakeholders that contribute to the formation, development and FM maturity of an industry (see Figure 4). The definition also focuses on the competencies that are developed within a defined business environment. Business environment has been used in this context to mean individual organisations within a defined economic sector or countries. In order to provide optimal solutions, service providers need to be guided by abilities to analyse the business demand. This is best done, when the supplier is competent and able to perform the business demand analysis and benchmark the performance against the business norms or best practices. It is to the benefit of the institution receiving the services to ensure that the services are as per set service levels. In this respect, competent FM experts are required internally to analyse and monitor the performance of the service provider from the clients' perspective. The definition considers both supply and demand sides of the industry. While the provision of the optimal services is more aligned to supply side, the monitoring is slanting towards the demand side. It is only when these two sides agree on the efficiency and effectiveness of the level of the services provided in response to the business demand that the optimal level can be achieved. Based on this fact the definition includes the needs of the demand arising from within the defined business environment.

The bottom-line in this definition is Facilities Management is a localised industry that provides local solutions to local demand using local competencies. While understanding the local environmental (internalisation) is fundamental the industry can not exclusively isolate the impact caused by globalisation (internationalisation). The FM industry is guided by knowledge and expertise obtained from within and outside the country. The fusion of the internal and external knowledge will determine the development, maturity and sustainability of the industry (Figure 2).

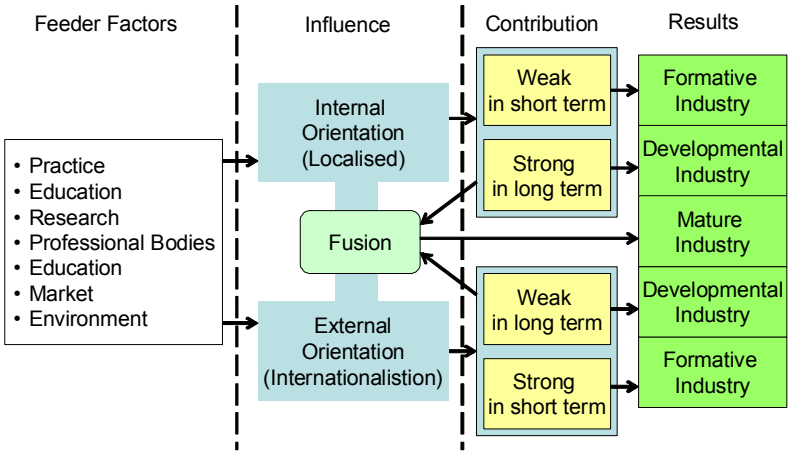

Figure 2: The influence of Internalisation and internationalisation to FM industry

Figure 2 shows that formation of the FM industry at a country level can be influenced by external factors, internal factors or both. Externally influenced industry relies on the feeder factors that are imported from other countries through internationalisation/globalisation. The study hypothesis that imported feeder factors are useful during the formation stage of the industry as experiences from other countries are introduced or brought into the host country. During this time, internally influenced feeders are either non-existent or weak and borrowing a leaf from the developed

counterparts is essential. The evolution of the industry into the development stage goes hand in hand with the development of the local factors to adapt, transform or replace the imported feeders which may not keep pace with local condition. During the development stage, locally developed feeder factors become stronger and are essential in maintaining the performance of the FM industry. For example, locally conducted research in the level of FM market will provide first hand information on the existing situation and be useful to practice, education and professional bodies which in turn will influence environment. It is essential to note however, that the host country may not be able to replace all of the influence of the external feeder factors due to globalisation and the need for knowledge sharing. It is suggested that for the FM industry to be matured and sustainable, fusion between internal and external influences should be encouraged.

3. Conceptualising the term 'Maturity'

Cookie-Davies (2004) has argued that the term 'maturity' may not mean the same thing to different professions or industries. He noted that the whole field of capability and maturity models is a semantic mine-field; with specific technical meanings for certain words being very different from the normally accepted breadth of use in common speech. Maturity models embody both different concepts and different suggestions as to the path to maturity and can be defined to mean, fully developed or grown up or perfected (Cooke-Davies et.al 2003).

When considered from a specific area of specialization, maturity has been viewed differently in each one of them. In life cycle models, the term maturity signifies a step before industry decline (Figure 2a). McGahan and Silverman, (2000) noted that an industry hits maturity at the earliest date for which the number of firms grows at a rate less than a fraction of the growth rate in the prior period. In Capability Maturity Models, the term maturity is used in a very technical sense to mean "*the extent to which an organisation has explicitly and consistently deployed processes that are documented, managed, measured, controlled, and continually improved (Cooke-Davies, 2004)"*.

This study is concerned with the development of an assessment tool for maturity of FM industry. It transcends beyond the analysis of FM processes alone. In this way, maturity models that are designed solely for the analysis of 'internal' processes falls short of being applied in this study. This elimination leaves the study with one option, the use of general industry lifecycle models. It has been however, considered prudent to evaluate the context within which maturity in FM is construed. The analysis has revealed that unlike in the industry lifecycle models, in which maturity level is a step before decline (see Figure 3a), in FM it signifies a state of perfection, sophistication and development of the industry (see Teicholz, 1992; Payne, 2000 and Alexander et.al, 2004) as shown in Figure 3b. This situation challenges the use of the normal lifecycle industry models.

Figure 3a: Industry Maturity Curve.

Figure 3b: Process Maturity Model

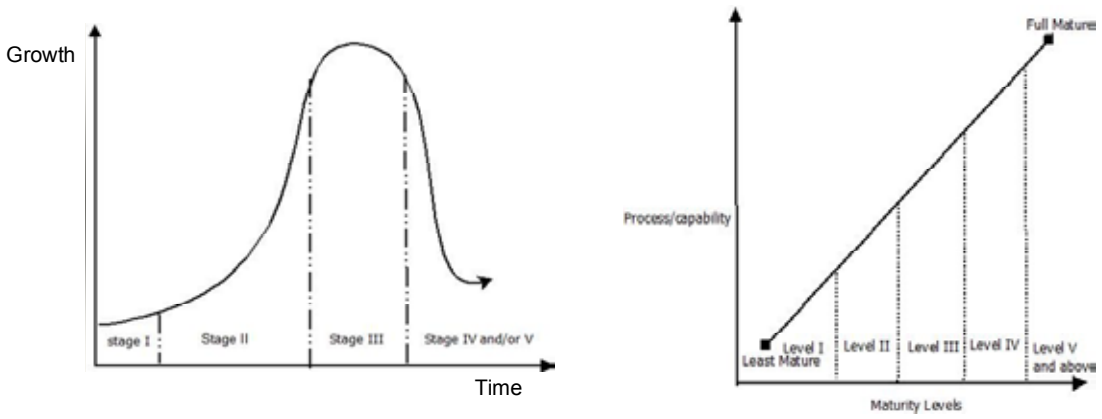

Figure 3: Industry Maturity Curve and Process Maturity Model

It is evident from Figure 3a that after stage III the industry declines. While in Figure 3b it is shown that the perfection of the process is the final stage of development in process maturity.

The next section will provide a brief overview of two categories of models that are popular in analysing industry and process capability maturity: Industry Lifecycle models and Process Capability Maturity models.

3.1 Industry Lifecycle Models

These models are useful in analysing the industry and product life cycle based on the assumption that industries and products have a definitive life cycle. Studies have revealed that the fundamentals of industry development can be compared to living creatures, which has its cycle of life. In Tellis and Crawford (1981) views, the product or industry life cycle is modelled on the fixed cycle of birth-growth-maturity-death. Industries pass a number of stages from their inception (Table 2). Each one of these stages signifies a level of capabilities developed within the industry. The life cycle has a significant impact upon business strategy and performance (Hofer, 1975). Although these models are similar in concept, they differ as to the number and names of the stages as shown in Table 1.

Table 1: Industry Development Stages

S/N	Model	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
1	Ferguson and McKillop, (1997)	Nascent	Transition	Mature		
2	Fox, (1973)	Pre-commercialisation	Introduction	Growth	Maturity	Decline
3	Tay and Ong, (1994)	Developing	Mature			
4	Kotler, (2003)	Fragmentation	Shake out,	Maturity	Decline	
5	Hill and Jones (1998)	Embryonic	Growth	Shakeout	Maturity	Decline
6	Anderson and Zeithaml (1984)	Introduction	Growth	Maturity	Decline	
7	Wasson, (1974)	Market development	Rapid growth	Competitive turbulence	Saturation/ maturity	Decline

Source: Authors' compilation (March, 2010)

Product and industry lifecycle models are common in economics and marketing. These models are used to assess and classify the position of the development of industry (Kotler, 2003, Ferguson and McKillop, 1997) and maturity assessment (Tay and Ong, 1994). Revision of these models is essential in indentifying the factors used by other researchers in assessing and classifying industry development. These models also, provide an overview of the perceptions of the term "maturity" as viewed by different disciplines. The definition of the term maturity will be discussed in details in the next section.

3.2 Process Capability Maturity Models

These models are useful in evaluating process maturity. The basic idea behind this category of models is the notion of evolution, suggesting that the subject may pass through a number of intermediate states on the way to maturity. Generally, a maturity framework is a measure to aid organisation in gauging their performance relative to industry best practice. Cooke-Davies (2004) noted that maturity models make an assumption of the existence of the perfected end state, whether it is unfolds from within or otherwise (Cooke-Davies, 2004). Furthermore, maturity implies that the processes are well understood, supported by documentation and training is consistently applied in projects throughout the organisation and is continually being monitored and improved by its users (Fraser et.al, 2002). Kerzner (2006) noted that maturity indicates availability of appropriate infrastructure of tools, techniques, processes and even a good culture. In many maturity models some form of best practices act as a core concept for assessment which enables adopting organisations to measure and rate its current abilities in a specific area of knowledge. According to

the Kerzner's (2006) best practices are those actions and activities undertaken by the company or individuals that lead to sustained competitive advantage. The key term in this definition is sustained competitive advantage**.** In other words, best practice is what makes you different from your competitors.

Process capability models construct tend to depict maturity as a number of successive levels. The first or lower tiers in the model tend to represent the lower level of development or immaturity (Figure 3b). Levels can range from 3 to 10. Similar to life cycle models, the names of the levels can vary depending on the subject (Fraser et.al, 2002). In some situations a model can be constructed using non traditional levels descriptive format such as one used by Facilities management Organisation Model (FMO) in item 3.3.1.

3.3 Maturity Models related to Facilities Management

This section discusses two capability maturity models that are relevant to the FM industry. It must be noted that while the second model has been validated and published, the first one was not.

3.3.1 Facilities Management Organisation Model (FMO)

Internet search reveals that IWMSNews.com in America has been hosting a series of articles in Facilities Management Organisation (FMO) maturity model. The model is based on concepts similar to that of the Project Management Institute process model. The FMO model is developed by James Turner and is formed around 11 competencies that are organised at five levels (http://www.iwmsnews.com/fmo-maturity-model). The model looks into five questions that are important to identify the competencies required to deal with them (Table 2). The identified areas in the questions are size of portfolio, access to management information, focus and improvement, budget allocation and budget justification. Each of the questions corresponds to a FM maturity level attained by the FM organisation. Unlike common maturity models, FMO does not use identifiers in labelling maturity levels; instead number "1" signifies the lowest level, with "5" representing the highest.

Table 2: Facilities Management Organisation Model

FMO Maturity Model level	1	2	3	4	5
Key Management Question Answered	What am I responsible for managing?	How can I access the management information I need	What improvements should I be focused on now (short term improvements)	What is the best allocation of my budget?	How can I justify a request for a budget increase (long term improvements)?
Core Competencies	Organisation, policy, inventory	Process, systems	Metrics and assessment	Short term planning performance improvement	Mission validation and long term planning

Source: (http://www.iwmsnews.com/fmo-maturity-model)

3.3.2 Standardised Process Improvement for Construction Enterprises (SPICE-FM) model

In a more recent development, the Standardised Process Improvement for Construction Enterprises model (SPICE) has been used to assess FM process capabilities in the UK. The model is known as SPICE FM and is primarily concerned with management processes, and its philosophy is that if the management processes are performed well, they will have an impact on the performance of the core processes (Amaratunga, *et.al*. 2008). The model is organised in five tiers under the headings of maturity levels, Identifiers, process enablers and process areas (see Table 3).

Table 3: Standardised Process Improvement for Construction Enterprises (SPICE-FM) model

Maturity levels	1	2	3	4	5
Identifiers	Initial	Services delivery management	Knowledge Management	Quantitatively improved	Continuously improving
Process enablers (5)	Commitment	Ability	Verification	Evaluation	Activities
Process areas (7)	Service requirements, Service planning,	Service performing monitoring,	Supplier management, Contractor management	Risk management	Service coordination

Source: Amaratunga et.al, 2008

3.4 Suitability of the Existing Maturity Models to this Research

The FMO and SPICE FM models like other maturity models such as CMM, OPM3 and CSMCMM are processes, project, object or activity based models. These models are useful in addressing processes within a particular organisation and/or terminable projects. Terminable projects, tasks or activities are objective specific, carried out within stipulated time and budget. They are not lifelong endeavour. Progress of a project and a task can be determined by the efforts by individuals within the team. On the other hand, FM, as an economic activity, is a continuous on-going process and its progress is not determined by internal factors alone. There are external factors that have direct influence on its development and maturity. It is therefore opined that existing maturity models within and from other disciplines and specifically, terminable projects, cannot be directly applied to the FM industry, and defined here in its widest meaning to include not only processes but also external factors. In order to assess the degree of maturity of the FM industry, measures that incorporate and integrate external factors should be adopted. It is evident that process based models concentrates on *practice* only which is only one of the six factors that influence the pace of development and maturity (see Figure 4). The concentration of these models in practice (internal process) limits their application in assessing industry maturity in FM as a unique industry. The following section will introduce the feeder factors and the Integrated Feeder Factors Framework (I3F).

4.1 Identification of Feeder Factors

Feeder factors are six factors, necessary for development and maturity of FM. These factors are mutually dependent on each other and have to be linked in order to realise the perfected industry. The six factors are practice; professional bodies, education, environment, market and research. These factors are further broken down into critical success factors (CSF). The parameters will be used in determining the contribution of each individual factor towards the maturity of the industry. These factors have been identified from Then and Akhlaghi (1992), Lomas (1999), Nutt and McLennan (2000), Lord, et.al. (2002), and Barret and Baldry (2003). This study postulates that knowledge and expertise on one hand and FM development and maturity on the other, results from the contribution of individual feeders into the Integrated Feeder Factors Framework (Figure 4). It is only when each one of these is effective that the industry will develop and reach maturity

4.2 The Integrated Feeder Factors Framework (I3F)

This section introduces the Integrated Feeder Factors Framework (I3F) and provides a discussion on its conceptual development. The proposed I3F Model is a framework of intertwined, interdependent and interrelated (feeder) factors that are necessary for the existence, development and maturity of any industry (Figure 4). Unlike other maturity models, I3F takes into consideration external factors that feed into the development of the industry at an organisational, sector, national and regional levels. It transcends the common norm of focusing only on the internal processes of the practice. The rationale behind this framework is hinged on the fact that the evolution of FM as an industry from

one level to the next depends on the development of each one of these factors, preferable labelled as 'feeder factors'. Maturity of the industry is dependent on simultaneous growth or co-maturation of each of these feeder factors. Any one of the factors that lagged behind will tend to delay development of the industry, as a whole, to the next stage of maturity level. In this study, the term maturity is defined as the *"The degree of sophistication of the Facilities Management industry within an economy measured by the strength of relational feeder capabilities interface."* This definition is intended to provide an understanding of the maturity model based on the relationship that is formed by the feeder factors. The relationship will be assessed based on five attributes discussed in item 4.2.

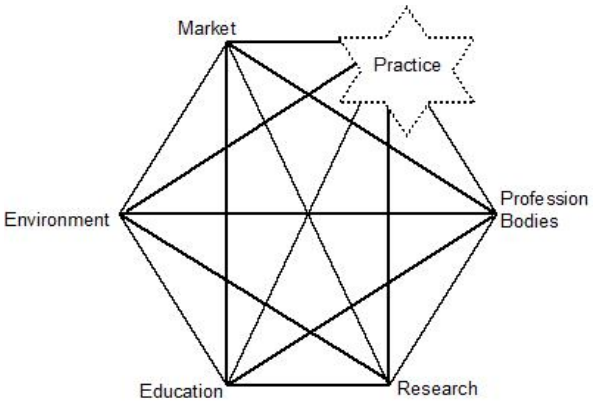

Figure 4: Proposed Integrated Feeder Factors Framework (I3F)

The co-maturation of the feeder factors is essential in resisting life cycle 'industry maturity' effect. It has been observed from literature that after maturity, industries will tend to deteriorate in performance and decline (see Table 3 and Figure 3a). It is postulated in this study that if all of the feeder factors can attain maturity status at the same time, then the industry maturity effect will not be felt. Since each one of the feeder factors will continue feeding into others and sustain the growth towards maturity. It is envisaged that if evaluation of the level of development, adoption and application of each individual feeder factors is conducted, the proposed model can provide a picture of development and level maturity of the FM industry as a whole.

The study intends to establish the causal linkages between the identified feeder factors shown in Figure 4. The individual links between the feeder factors is a reflection of the strength of their relationship i.e. strong or weak. A strong relationship indicates a situation when the five active feeder factors feed into one active feeder factor at any given time. In this situation the industry is said to be at Full Maturity Stage (FMS). The industry focus is on strategic issues and its influence is high. This ensures the perfection and stability of the industry. This ensures the perfection and stability of the industry. However, there are three more possible situations that can exist. In a situation where inactive feeder factors feed into active feeder factors, then the relationship is construed to be at Developmental Transition Stage (DTS). At this stage some feeder factors are active enough to influence the development of others. In the second situation, inactive feeder factors feed into another or other inactive feeder(s); the relationship is regarded as weak and the stage is known as a Formative Transition Stage (FTS). Lastly, is a situation where inactive feeder factor(s) feeds into non-existing feeder factor or factors, the industry is said to be at the Least Mature Stage (LMS). At this level, the existing feeder factors tend to be not closely related. FM activities are often disregarded and misunderstandings between the existing traditional professions are high. The focus is on operational functions.

4.2 Assessment of FM Industry Maturity using the I3F

Two assessments are carried out to determine the maturity level of the FM industry. Assessment level one involves verifying the availability of the feeder. This is a straight forward and simple assessment when an assessor is required to only verify the availability of the feeder factors to

ascertain their presence. It is suggested that a yes or no parameters can be used, it is however suggested that the assessor should establish reasons for non-existence of the other factors.

The second assessment is a detailed treatise of the factors after the "yes answer" in the first assessment. This assessment has two levels. Level one, deals with evaluation of individual feeder factors based on the identified critical success factors that define the strength (Table 1). It is expected that each of the parameter will be assigned a unit score of 1 point. The more the factor scores the more active it is. The results of the analysis will be classified as active or in-active. Factors with a score of more than 75% of the parameters will be considered active.

Level two of the assessment looks into the integrated contribution of individual factors into the overall development of the FM industry. In this assessment, the factors will be evaluated based on five attributes. These attributes are *dependability, influence, stability, consistency and trustworthiness* shortly they are referred to as *(DISC-T)*. The attributes will reveal a situation to be technically referred to as *relational feeder capabilities interface* which shows a bonding between feeder factors. In order for a relationship to be strong, each of these attributes should be fulfilled. Development of strong relational feeder capabilities interface is essential in the stability and sophistication of the industry. It is regarded that the strength of the relational feeder capability has a positive correlation with the development and maturity of the FM industry. In such a situation, where all feeder factors are active and forming strong relationships, the industry will be strong

5. Summary

The study has established that Facilities Management is an industry perceived to be at different levels of maturity based on personal judgement. This situation is due to lack of a tool that can be used in assessing maturity levels. In dealing with this problem, the study proposed the Integrated Feeder Factors Framework (I3F) as a yardstick. Research is continuing and progress will be further reported in the near future.

References

Alexander K., Atkin, B., Bröchner J., and Haugen, T.I (2004); Introduction of Facilities Management: Innovation and Performance, Spon Press, Oxon

Amaratunga, D., Haigh R., Baldry, D., and Sarshar M. 2008, Process improvement in Facilities Management: The Spice Approach. In *Facilities Management Processes,* edited by Alexander K. (Manchester: European Facility Management Network), 90-106.

Anderson, C.R., and Zeithaml C.P. 1984, Stages of Product Life Cycle, Business Strategy, and Business Performance. *The Academy of Management Journal,* **27**, 5-24.

Atkin B. and Brooks A. 2001, Total Facilities Management, (Oxford: Blackwell sciences).

Ballesty, S. 2008, Facilities Management Action Agenda: The Australian Government and Industry working together for Improvement in Engineering Asset Management, (London: Springer).

Barrett P. and Baldry D. 2003, Facilities Management: Towards Best Practice, 2nd edition, (Oxford: Blackwell sciences)

Cooke-Davies, T.J. (2004), Project Management maturity models. In J.K. Pinto and P.W.G Morris (eds.), The Willey guide to managing projects, New York

Cooke-Davies T.J. and Arzymanow A. (2003) The Maturity of project management in different industries: An Investigation into variations between project management models. International Journal of Project Management, Vol. 21, pp 471-478

Ferguson, C., and McKillop, D.G 1997, An Industry Approach to Classifying Credit Union Development, working paper available at http//www.creditunionresearch.com retrieved on 19th October, 2009.

Fox H. (1973). "Product Life Cycle-An aid to Financial Administration" Financial Executive, 41, pp 28-34.

Fraser, P., Moultrie, J and Gregory M. (2002); 'The use of maturity models/grids as a tool in assessing product development capability' Proceedings, IEEE International Engineering Management Conference, Cambridge UK, pp 244-249

Green A. and Price I 2000, Whither FM? A Delphi Study of the Profession and the industry, *Journal of Facilities,* **18**, 281-292.

Grimshaw, B., 1999, Facilities management: The wider implications of managing change, *Journal of Facilities,* **17**, 24-30.

Grimshaw, B., 2003, FM: Professional Interface, *Journal of Facilities,* Vol. 21, No. 3/4, 50-57.

Hill, C.W.L, and Jones, R.G, 1998, Strategic Management Theory: An integrated approach, 4th ed., (Boston: Houghton, Miffin Company).

Hofer, C.W. (1975). "Toward a contingency theory of business strategy". Academy of Management Journal, Vol. 18. No. 4 pp 785-810.

International Facilities Management Association (2009) www.ifma.org, retrieved on 25th October, 2009.

Kerzner H. (2006). Project Management best practice: achieving global excellence. New Jersey: John Willey & Sons Inc.

Kotler, P. (2003), *Marketing Management*, Prentice Hall, New Jersey.

Lomas, D.W., 1999, Facilities Management development in Hong Kong, *Journal of Facilities*, **17**, 470-475.

Lord, A., Lunn, S., Price, I., and Stephen P., 2002, Emergent Behaviour in a New Market: Facilities Management in the UK. *In proceedings of the ideas that make a Different Conference on Tackling Industrial Complexity*, edited by Richards, H., London.

Marcijonas A. and Paulauskas A. (2007). Definition of Economic Activity in the Tax Law. Journal of Law; Vol. 62. viewed at www.leidykla.eu

McGahan A.M and Silverman B.S. (2000), How Does Activity Change as Industry Mature?

McGregor, W., and Then, S.S., 1999, Facilities Management and the Business of Space, (Elsevier, Butterworth –Heinemann).

Mussa Z. and Pit M. 2009, An Introduction to facilities management in UK Shopping Centres, A paper *presented at ERES Conference* in Stockholm Sweden.

Neva, G., Nelson J.A., Ackerman, F., and Weisskopf A. (2008). Microeconomics in Context, M.E Sharpe, Publishers, 2nd edition.

Nutt, B., and McLennan, P., 2000, *Facility Management: risks and opportunities*. (Oxford: Blackwell Science).

Payne, T., (2000). Facilities Management: A Strategy for Success, Chandos Publishing (Oxford) Limited, Oxford

Price, I., 2003a, Facilities Management as an Emerging Discipline In *Workplace Strategies and Facilities Management Building in Value* edited by Best, R., Langston., C. and De Valence, G., (Oxford: Butterworth Heinemann).

Price, I., 2003b, The development of Facilities Management In *Workplace Strategies and Facilities Management Building in Value* edited by Best, R., Langston, C., and De Valence., G. (Oxford: Butterworth Heinemann).

Tay P.H., and Ong S.E., (1994). *"The Fuzzy Industry Maturity Grid (FIMG): Its Application to the Singapore Banking Industry"*. International Journal of Bank Marketing, Vol. 12. No. 4. pp 32-34.

Tay, L., Ooi, J.T., 2001, Facilities management: a Jack of all trades? *Journal of Facilities*, **19**, 357-63.

Tellis G.J and Crawford M. (1981). An Evolutionary Approach to Product Growth Theory. Journal of Marketing, Vol. 45 No.4. pp 125-132.

Then D.S.S., 2004, The Future of Professional Facility Management Education in the Asia-Pacific Region; A paper presented at 'New World Order in Facility Management', Hong Kong.

Then, S. S., and Akhlaghi, F., 1992, A Framework for Defining Facilities Management Education. In *Facilities Management – Research Directions*, edited by Peter Barrett, (University of Salford).

Weck, M (2005) The Effects of Industry Life Cycle on the Formation of Inter-Organizational Relationships, IEEE proceedings, 2005.

www.IWMSNews.com/FMNotes from the field. Retrieved on 20th October, 2009.