SPECIAL ISSUE ON INFORMATION TECHNOLOGY IN FACILITIES MANAGEMENT: EDITORIAL

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EDITORIAL

Facilities management (FM) has become a focus of attention for academics and practitioners. The former view it as a rapidly developing field that offers, amongst other things, rich sources of data that can be used to explain or develop new theories about how we manage buildings and other constructed facilities. The latter regard it as an opportunity for business or a means for controlling operational costs, depending on whether there is a primary interest in providing FM services or in procuring them. Common to both is the application of information technology (IT) as a means for obtaining, managing and exploiting data. Since FM is concerned with long term operations, as opposed to the medium term activities associated with the design and construction of the asset, there is both scope and motivation for improvement. Indeed, the concept of continual improvement can be more easily applied to long term, continuous processes than projects.

This special issue looks closely at four inter-related aspects of FM: how organisations are being innovative in their practice of FM and the role of IT with that; how they have been able to rationalise operations using the support and efficiencies that IT offers; how new forms of IT are being promoted by housing developers and accepted by occupants; and how one particular technology (RFID) is influencing the way in which we manage data throughout the lifecycle. These four aspects are mirrored in the papers published here.

The first of them discusses approaches to innovations in FM and how they differ between in-house and external providers. The second takes a hands-on approach and, from a practitioner perspective, discusses how IT has been used to improve performance in two different settings. The third looks at people's disposition towards new technologies (exemplified by digital home services). The method by which they are assessed could be adapted for uses in the FM sector. The last is largely a theory-driven paper which discusses implementations of technology that is likely to change significantly how facilities are designed, constructed and managed in the future.

Mapping IT innovation in facilities management

The paper by Cardellino and Finch presents eight case studies showing how a diverse set of IT applications has been introduced into the FM operations of different companies. Using Rogers' model of diffusion, the paper assesses the various innovation pathways that were taken by the implementing companies. It provides valuable insights into the differences in approach to innovation between in-house FM teams and professional FM providers. The authors found that:

1. Major changes within the subject organisations were not seen as the primary stimulus for innovation. Instead, clients and end users were more likely to provide the impetus for forcing the organisation to come up with new ideas.

2. Whilst most of the innovations were non-technological in nature, they were dependant on technology to enable the innovation to develop. Usually, this involved further refinement of 'of-the-shelf' software, a particular finding that is reflected in the second paper in this special issue.

3. Companies measured the success of their innovations not only in terms of financial performance but also in relation to other performance criteria such as competitiveness and quality. The financial measures identified included not only profitability but also the attainment of cost targets and the degree to which costs were lowered.

4. IT innovations are often portrayed as purely technical undertakings. The case studies reveal that the social and organisational factors are as important as the merits of the IT innovation itself. The use of pilots, the engagement of product champions, senior-level support and user-training are essential determinants of an IT innovation's success.

Enabling technology for outsourced facilities management

Brooks and Lilley show how appropriate IT support can significantly improve the quality and quantity of support services in an organisation. They do so by providing two case studies examining the deployment of technology in the context of a central support desk. The facilities management delivery mechanism and the part that integrated technology plays in delivering high-quality services in a set of demanding locations are described. The authors found that:

1. Understanding the organisation at both the strategic business and operational levels is the key to deploying appropriate technology. Failing to understand the context within which the new system will operate and the connection between these two levels would be to ignore the realities of the operating environment.

2. Understanding the organisation at both the strategic business and operational levels is the key to deploying appropriate technology. Clients and end-users should enjoy the benefits generated by ubiquitous technology so long as their needs and business objectives are not compromised by 'solutions looking for problems'. The studies show how to strike the right balance, by understanding the nature of the problem that has to be solved, or rather its characteristics, and then to match that/those with the functionality of tried and tested solutions – something that is widely accepted, but not always done.

3. The two case studies share common technology, although deployed in different environments. This should not imply that a generic solution exists for all situations, but it is nonetheless suggestive of the likelihood of finding a solution that is widely utilised and validated in various industrial and commercial contexts.

Planning digital home services through an analysis of customers' acceptance

Eom and Paek provide a method for assessing how individuals perceive the future benefits of new technologies and how well disposed (or not) they are to adopting them. The authors discuss the available technologies and then systematically seek to measure the extent to which users (typically occupants/tenants) are motivated to adopt, select and pay for digital home services. The paper provides a thorough assessment of the current balance between the provision of technology and its desirability. The authors found that:

1. Occupants/tenants' intentions to install and use digital home services were lower than their recognition of the necessity of, and preference for, these services due mainly to their conservative attitudes. Many of the services are known, but can be considered to be at an early stage of development, where the associated costs of installation and use are not sufficiently attractive for users.

2. There is a divergence between the responses of those who either have experienced these kinds of technologies directly or who claim to be knowledgeable, and those who know little or nothing about them.

3. The last finding is broadly consistent with neo-institutional theories of innovation diffusion that highlight persuasiveness and the notion of something being 'taken for granted'. In other words, the more you have to justify something the less likely it is to be adopted and the more something is taken for granted the more likely it is to be adopted.

RFID applications in construction and facilities management

Wing has assessed RFID as potentially important technology that is likely to influence greatly future developments in a host of sectors. Whilst the technology, as of today, has not broken the cost threshold below which it will become ubiquitous, it is believed that its implementation in the construction and retro-fitting of buildings and other constructed facilities will increase significantly within the foreseeable future. The paper discusses some likely applications and presents possible benefits, as well as current inhibitors, stemming from the utilisation of the technology. The author specifically finds that:

1. The technology will remain too expensive for widespread implementation for some time, because take-up across industry generally has been slower than anticipated. The mass production needed to reduce costs to a level where it no longer is a barrier to adoption has not occurred, but will follow the same trend as many other novel technologies in the past that have subsequently become commoditised.

2. Notwithstanding the relatively little take up of RFID technology across the breadth of the construction sector it has, nonetheless, generated considerable interest. Growing awareness of the technology is likely to trigger some owners and clients to 'test the water' and so provide reference sites for future interest, thereby helping to accelerate take-up of the technology.

3. RFID is well placed to provide solutions for inventory control and location that conform to recognised data exchange standards and will provide efficient links across multiple suppliers.

4. Control of inventory is one of the widest application areas of RFID technology, and is used for applications ranging from hand-tool logging on construction sites to monitoring spare parts for plant and equipment, and controlling entry to secure facilities.

Conclusions

Four very different, yet insightful, papers help us to see how IT is finding its way into facilities management. The IT discussed in these papers can be seen to exist at two levels within business organisations – at the strategic and operational levels – and is found in two areas within facilities (when considering the example of residential development), i.e. embedded in the fabric and as an integral part of digital services delivery. Thus, IT supports both the organisation in its core business, supporting its change management and innovation as well as making it more efficient, and it offers the possibility of new services for users. The former is driven by costs, whereas the latter is concerned with added value. This may help to explain why the use of IT to support organisational change could be regarded as a must and why new, value-adding services are not readily accepted.