Facilities management organisations recognise the value that management information can bring to the effectiveness of their businesses.

Written for those operating at both the operational and strategic level of facilities management, this information paper aims to provide an outline to help client-side facilities management organisations to generate, analyse, use and report on management information to the benefit of the host organisation.
## Contents

**Acknowledgments** iv  
**RICS information papers** 1  
1 Introduction 2  
   1.1 Scope 2  
   1.2 Background 2  
   1.3 Information age and facilities management 3  
2 Developing a facilities MI strategy 4  
3 Defining facilities data and information requirements 5  
4 Collecting facilities data from various sources 8  
   4.1 Sources of information 9  
5 Analysing facilities data and management information 10  
6 Reporting on facilities management information and data 12  
7 Continuous improvement and innovation 13  
8 Conclusion and summary 14  
**Appendices** 15  
1 Relationship modelling for key facilities stakeholders 15  
2 Alignment to industry standards for reporting purposes 16  
3 Reporting on facilities management information and data 17
Acknowledgments

RICS would like to express its thanks to the lead author and RICS Facilities Management Executive Board for their contributions to the content and publication of this information paper.

Lead author
Sezgin Kaya, Managing Consultant, IBM Global Business Services

RICS Facilities Management Executive Board
Iain Brodie MRICS, Mid Yorkshire NHS Trust (Chairman)
Connel Bottom MRICS, PricewaterhouseCoopers LLP
Paul Francis, Modus Services
Mike Packham MRICS, Bernard Williams Associates
David Parkinson FRICS, Facilities Management Consultant
Michael Pitt, University College London
Michael Ripper MRICS, Cortex International
Steve Surridge MRICS, Institute of Cancer Research
This is an information paper. Information papers are intended to provide information and explanation to RICS members on specific topics of relevance to the profession. The function of this paper is not to recommend or advise on professional procedure to be followed by members.

It is, however, relevant to professional competence to the extent that members should be up to date and have knowledge of information papers within a reasonable time of their coming into effect.

Members should note that when an allegation of professional negligence is made against a surveyor, a court or tribunal is likely to take account of any relevant information papers published by RICS in deciding whether or not the member has acted with reasonable competence.
1 Introduction

1.1 Scope

This RICS paper aims to support chartered facilities management practitioners by providing an outline to help client side FM organisations to generate, analyse, use and report on management information (MI) for the host organisation’s success.

1.2 Background

‘Information’ is one of the key aspects of management. Almost all workplace activities now involve production, consolidation and conversion of information into recognised organisational formats. Using information, organisations can create business rules, make robust decisions and learn from the consequences of their actions.

Facilities management (FM) organisations recognise the value that management information could bring to the effectiveness of their businesses. Over the last few years, many FM organisations have increasingly adopted MI in a wide range of business discussions, including:

- performance management
- business improvement
- resource optimisation; and
- statutory reporting.

These discussions involve both operational and strategic elements by which data and information are captured, processed, shared, applied and reported to relevant stakeholders. Until recently, the use of MI was limited to the collection of maintenance records associated with routine or reactive tasks, or completion of compliance activities. With the potential for facilities service management models to become integrated into the host organisation, and widespread enabling technologies, facilities management has become more information-rich than ever before.

However, this comes with its own challenges. To make the best use of the data and be credible enough to impact on business decision making, the data needs to be:

1. accurate, complete and up to date
2. easily obtainable and retrievable from storage;
and
3. relevant and aligned to the organisational processes.
1.3 Information age and facilities management

There is currently a great deal of internally and externally generated information available through reports and bulletins. However, their suitability and use depends upon the particular MI needs of the audience at operational or strategic levels of business. From the client’s perspective, it is important to recognise that facilities MI is not only used for operating an effective and efficient facilities portfolio, but also for demonstrating operational results in relation to its host organisation’s success at strategic level.

This paper focuses on the process which facilities managers can follow in order to identify their MI needs for the clients, articulate the data, and report to their target audience in client organisations. The process consists of the following five steps:

Figure 1: Framework for building up a facilities MI

1. developing a facilities MI strategy
2. defining facilities MI requirements
3. collecting facilities data from various sources
4. analysis; and
5. reporting facilities outputs.

Often, the terms facilities data and information are used interchangeably and are misunderstood. This paper refers to data as recordings of transactions or events, which are meaningful in the context in which they are gathered. Basically, processed data becomes information; information then becomes ‘knowledge’ for those who operate and use it, and applied knowledge becomes intelligence to make effective management decisions.
2 Developing a facilities MI strategy

The success of an FM organisation depends on its ability to manage the way in which operations conform to the overall business strategy, and the delivery of efficient and effective customer service. Information contained in FM organisations therefore tends to either demonstrate how the FM organisational outputs are aligned to its host organisation’s business, or capture facilities delivery with accurate operational records to make day-to-day business decisions. Every activity that creates, modifies or retires a data element needs to support a business activity contributing to the organisation’s business objectives.

However, to align operational outputs to a business activity, the chartered facilities managers need an in-depth understanding of the business needs and objectives. The conversion of those needs to generate relevant FM information is the key to a successful MI strategy.

That strategy enables the production of relevant business reports, accurate and complete build up of data hierarchies from operational and tactical levels of organisation. They can be also providing guidance to integrate FM data into enterprise-wide information systems. With regard to the typical content of MI strategy, a number of areas are considered (see Table 1 below).

Strategies usually require a mandate. This necessitates sign-off and ownership by an accountable executive. Strategy also needs to be reviewed regularly to ensure its relevancy to changing business conditions, report against deliverables and ensure that the strategy remains suitable. Once the MI strategy is ready, with high level principles and terms of standard use in place, facilities managers can define their specific data and information requirements, and start capturing data at its source.

Table 1: Typical contents of a facilities MI strategy

| Business drivers: refers to business demand by articulating the need; i.e. what information is needed to achieve the business goals, e.g. customer service, safety, quality, growth, profit, environmental targets, etc. |
| Scope and Targets: outlines scope that the deliverables are covered. Often MI strategies become intrinsically linked to improvement projects. These may be to improve quality of services, enhance facilities efficiency, competitiveness, accessibility to services based on user or stakeholder needs, customer satisfaction, etc. as a few examples. |
| Governance and Information Handling Procedures: includes a defined and agreed set of principles for the governance of the MI. For instance: security, ownership, accuracy, sanity, review, electronic transmission rules, share of information guidance, and accessibility. For security of information, reference and guidance from ISO 27001 Information Security Standards (BS7799-2 in the United Kingdom) can be sought. Besides making information secure, procedures enable it to be readily accessible for those who need it for operational or business purposes. |
| Technology: includes standard and type of technology that will be used – this often forms a rationalisation to consolidate certain activity onto a standard technology toolset (e.g. a common Computer Aided Facilities Management, data repositories, links with Enterprise Resource Systems, Space Planning Tools and Software, etc). |
| People: covers people management, training standards and development |
| Costs: endeavours to set a cost for managing the information – this may often be in the form of a business case or cost justification. The value gained by use of information should not exceed the cost of its management, which may be measured in terms of cash or time. |
3 Defining facilities data and information requirements

This section: (a) outlines a process by which organisations can capture and define their data and information requirements; (b) explains construction of ‘data matrices’ in platforms/repositories, and (c) suggests alignment to industry standard data codes and structures.

To define facilities data and information requirements, it is helpful to understand the sources and dynamics of an organisation’s data flows, as follows:

A **downstream data flow** allows facilities managers to query supply chain information via contractual or business-to-business engagements in order to oversee portfolio or supply chain outputs, i.e. information related to resource deployment, service scheduling, labour and material costs, customer feedback, quality of delivery and service delivery outputs.

A **upstream flow** puts data generated from FM operations and processes in the context of business views in order to demonstrate an FM organisation’s success. This flow is necessary to relate operational outputs to enterprise-wide MI and the facilities MI produced for executives, other business units, internal clients, shared service operations and, where appropriate, clients of the host organisation are all typical examples of upstream data flows.

It is important to achieve a balance between downstream and upstream flow. While too many activities on downstream flow can over-burden supply-chain and operations, too few upstream activities can isolate FM outputs from the rest of host organisation’s business.

**Figure 2: Typical FM data flow**
Downstream data flow from supply chain operations are critical for the success and efficiency of an FM organisation, and are typically associated with a variety of sources, (see section 4.1).

These sources of information are typically generated or collected by facilities managers or surveyors who manage and maintain the day-to-day operations. However, operational data may not necessarily be aligned to organisational objectives, and therefore needs to be built upon a series of ‘data matrices’ to structure and form the data into meaningful formats to feed into upstream data flow. These matrices may consist of data hierarchies based on physical assets and services. Depending on the detail required, drill-down functionality can be introduced so that global or regional level views can also include asset, equipment, or consumable level records.

In order to establish the level of data hierarchy, and decide at which level to stop recording data, facilities professionals need to know the detail required to support MI at organisational level. This could be influenced by the criticality of the asset or the service to the host organisation’s businesses. To avoid unnecessary data collection, it is useful to consider cost and resources deployed for collecting data against its value to the business.

Once hierarchies are set up, data can be filtered by a number of attributes for either customers (business units or functions) or facility functions (e.g. office, warehouse). They are typically associated with a service or asset’s cost, quality, volume, budget, or utilisation, etc. (as shown in Figure 3). Such information can help facilities managers with decision making during evidence-based discussions with business unit managers and executives.

The more flexible the data matrices to filter up and down, the wider the content of MI reports can be. This flexibility enables facilities managers to use MI for various purposes, including, benchmarking, and generation of executive and managerial level reports. It also enables easier integration to enterprise-wide information management systems and industry-recognised service structures, such as BOMA, REEB, IPD, etc. (see Appendix 2).

Although data matrices could be built up with the functionality to filter up and down in the data hierarchy, this process needs to be auditable. Loss of data trail can be a risk, and such cases could become exposed to business controls. To avoid this risk, and create an auditable data trail with links to existing or legacy data structures, data mapping exercises are undertaken.

*Figure 3: Data hierarchies and typical attributes of facilities MI*
Data mapping is an auditable process, which aligns new data to the old data. In this way, chartered facilities managers can track and trace its origins and eliminate potential business controls exposure arising from non-auditable data entries. Data mapping can also make it more efficient to move data during a business change. In particular, when tendering FM contracts, mapping the legacy scope and cost into the future can help facilities managers to align scope, cost and expected price for the tendered services. This enables a like-for-like comparison between existing (before) and future (after) scope and price. In addition, if an industry-recognised and standardised service structure is used, the existing and future costs can also be used in external benchmarking. This not only helps to evaluate and demonstrate the added value of the business change, but also enables a structured assessment of facilities outputs against its peers.

**Figure 4: A data mapping exercise – mapping existing facilities scope and definitions to industry-standard scope**

### Existing scope and definitions

<table>
<thead>
<tr>
<th>Code</th>
<th>SLA Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary</strong></td>
<td>Maintenance - Elevators</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>Elevator/Escalator (including window cleaning cradles)</td>
</tr>
<tr>
<td><strong>Primary</strong></td>
<td>Maintenance - HVAC</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>Refrigeration Systems</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>Control Systems (Building Management System)</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>Boiler (Maintenance &amp; Operations)</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>Water Treatment Services/Systems</td>
</tr>
<tr>
<td><strong>Primary</strong></td>
<td>Maintenance - Electrical</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>Emergency Lighting Operation</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>Lighting</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>Bldg Electrical Low Voltage Maintenance</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>Bldg Electrical High Voltage Maintenance</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>Emergency Generator Operations</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>(D)UPS System Maintenance &amp; Static Switches</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>PA Communication Systems Maintenance</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>Building Electrical Grounding System Maintenance</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>Lightning Protection Systems Maintenance</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>Portable Appliance Testing</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>Electrical Equipment and Materials [NAT]</td>
</tr>
<tr>
<td><strong>Primary</strong></td>
<td>Maintenance - Plumbing</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>Grease Traps/Sewer Systems</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>Oil &amp; Water Separation Systems</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>Eyewash Stations and Safety Showers</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>Sanitary Drains</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>Rain and Storm Drains</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>Hot &amp; Cold Water Supply and Distribution</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>Water Heating and Distribution Systems</td>
</tr>
<tr>
<td><strong>Secondary</strong></td>
<td>Compressed Air Systems</td>
</tr>
<tr>
<td><strong>Primary</strong></td>
<td>Maintenance - Fire and Life Safety</td>
</tr>
</tbody>
</table>
This section provides guidance on typical sources of facilities data to be captured/used by the chartered facilities surveyors. It will also explain how to deal with situations where data is incomplete, inaccurate or not up-to-date.

There are specific facilities data points that virtually every organisation needs. Examples can include metrics such as amount and type of space, number of employees and end-users, indoor air and temperature conditions, and square metres per employee. This data can be used in several ways, including operational decision making, optimisation of resources, or internal and external benchmarks.

The required facilities information may not always be available from facilities operations or management functions. It could be found in property and estates, IT, human resources, finance, environment, or health and safety related functions, and could be cumbersome to collect. To get the best value from management information, the data needs to be in the right format, accurate and collected at the right time. However, not all facilities information may fit into these qualities, and data can often be incomplete or inaccurate. Before any corrective action is taken, it is important to identify the ‘data gaps’.

A ‘data gap’ refers to any missing or poor quality data that impairs a facilities professional’s ability to make decisions, carry out duties, or meet objectives. Listed below are a few methods that can be used to identify data gaps:

1. Data audits ensure data held is complete and free from common problems such as:
   - a field is blank
   - no field is blank, but format is incorrect; and
   - data is complete in the right format, but inaccurate, out of date, or presented as default (e.g. job start date: 01/01/01)

   Data audits can be undertaken by observing data in its source, and conducting regular reviews.

2. Sampling data from registers. It is common to take a representative sample of data to verify accuracy and completeness. The sampling might be repetitive depending on the results of the verification. In case the first sampling ends up with data gaps, further sample checks could be undertaken to identify the areas with poor quality information. This continues until a satisfactory level of representative sample is achieved.

3. Simple data sensitivity analysis is usually used to determine how the variation of an input could impact on the overall baseline information. The higher the impact of an input, the more data audits or sampling can be undertaken to increase its accuracy.

Once data gaps are identified, it is important to assess the impact of those gaps by asking a simple set of questions, as follows:

- What data is incomplete or inaccurate?
- What are the implications of data inaccuracy or incompleteness?
- What decisions cannot be made in the absence of (quality) data?
- What is the minimum effort required to complete the data to make those decisions?
- Does the effort needed to complete data exceed the value gained by its existence?

It may not always be necessary to re-collect data, especially if the lack of data does not hinder the decision-making process.

Other challenges facing data quality are changing business conditions, and shifting regulation requirements. Regular data reviews on relevancy, topicality and accuracy of information could help to keep the data in alignment with those changes.
4.1 Sources of FM Information

It may prove useful to recast information from horizontal functions or systems, such as accounting, supply chain and procurement, HR, environmental management, and facilities operations, to provide a business process view. This is typically a challenging task. With horizontally integrated enterprise-wide technologies increasingly capable of providing multi-layered information from various sources, information can turn into management reports in an instant. However, it still remains for facilities managers to identify their own requirements before starting to engage with other functions. Typical sources of facilities management information can be found in the following places:

Financial information:
- rent and rates
- insurance
- service charges
- service spend
- total cost of ownership
- supplier spend
- asset value
- residual asset value
- total cost of forward maintenance
- backlog maintenance costs
- cost of failures
- routine and corrective maintenance costs
- utilities, waste and recycling costs
- environmental management costs
- project spend
- budget; and
- actual, year to date, and forecasts.

Supply chain and procurement information:
- service and geographical coverage
- contract performance scores
- health and safety records
- compliance scores
- credit scores
- access to funds
- liability and insurance cover

- turnover and profit margins
- number of employees operating in the contract
- expertise; and
- rates of contract retention.

Human resources information:
- number of employees
- employee geographical location
- average travel to work times
- special requirements and needs
- accessibility
- mobility of workforce
- recruitment trends and space needs; and
- demographics.

Environmental information:
- utilities consumption
- carbon footprint
- waste produced
- waste recycled and disposed of
- waste disposal methods
- environmental management systems and compliance; and
- future projection and targets against actual energy and environmental measures.

Estates information:
- property value
- portfolio size
- lease terms and conditions
- space and building utilisation; and
- occupancy profile and tenancy.

Maintenance operations:
- number of facilities staff
- shifts and hours of operation
- asset and service performance
- service and asset availability
- maintenance schedule
- reactive, planned, preventative, predictive maintenance
- manufacturer’s warranty; and
- customer service feedback and experience score.
This section elaborates on the exploitation of data mentioned in previous sections and explains key considerations, methods and technologies for analysis by giving examples where facilities management information can improve business performance.

The main purpose of data is to help businesses make decisions on optimisation of resources and act upon the information gathered about a product, condition or customer needs. With the increasing technological advancements, businesses have become more capable of effectively processing and analysing data.

Facilities management data flowing from operations can now be stored in data warehouses, with the option to analyse it at any time using analytical models, such as data mining and interface models. The outputs can be provided to corporate management enabling them to align the information to corporate objectives.

Examples of some of the most common facilities management information generated as a result of data analysis are summarised in the table below:

<table>
<thead>
<tr>
<th>Common facilities MI (not exhaustive)</th>
<th>Analysis methods</th>
<th>Method description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveys (e.g. number of end users satisfied with service).</td>
<td>Frequency</td>
<td>Entries in a table contain frequency or count of a value, event, or occurrences.</td>
</tr>
<tr>
<td>Number of incidents over a period (e.g. number of failures in a critical asset, security, health and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>safety incidents).</td>
<td>distributions.</td>
<td></td>
</tr>
<tr>
<td>Average number of visits to a building over a month.</td>
<td>Descriptive</td>
<td>Means, standard deviations, correlations demonstrating degree of relationship</td>
</tr>
<tr>
<td>Relation between building utilisation/NIA and service (e.g. cleaning) costs.</td>
<td>statistics.</td>
<td>between two variables.</td>
</tr>
<tr>
<td>Relation between closure of high priority jobs and technician’s induction.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relation between customer experience and satisfaction scores and changes in business/physical</td>
<td>Regression.</td>
<td>Helps to understand how a dependent variable changes when any of the independent</td>
</tr>
<tr>
<td>environment.</td>
<td></td>
<td>variables are changed.</td>
</tr>
<tr>
<td>Predictive maintenance (possibility of asset failure under certain conditions).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance cost of an asset over time (to make replace or repair decisions).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explore impact of potential lower customer satisfaction scores due to changes in service staff,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>indoor air temperature, allocated space, lighting, etc.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
There are a number of other data analysis methods, such as cluster analysis, latent class analysis, hierarchical linear modelling and differential item functioning. Facilities business analysts may choose to use a combination of these analyses depending on the following considerations:

- the purpose of the analysis or project
- sample(s) under study
- instruments being used to collect data; and
- data layouts and formats.

In a typical facilities business analysis, it is essential to scrutinise and validate data; relate the results to the business context, and build up realistic action plans to improve, change and optimise facilities processes and resources. For instance, with the introduction of smart metering systems to monitor energy consumption in buildings, vast amounts of data can be collected from operations for analysis. Facilities managers, assisted by business analysts, can now interpret this information to make decisions related to energy improvement and efficiency. The results of this analysis are usually used to monitor the contribution to an organisation’s carbon reduction targets.

Another typical example of facilities data analysis is the set up of correlations between reactive and planned works for asset life-cycle management and optimisation programmes.

By examining the maintenance, failure and repair patterns of an asset over time, facilities managers can identify an optimum balance between reactive and planned activities, determine frequency of maintenance schedules, and make replace versus repair decisions for assets and building systems.

An increasingly important aspect of analysis is the power to predict recurring events by looking into past patterns. Scenario modelling is one of the techniques by which analysts can predict the likelihood of a risk before it is visible or obvious to a usual practitioner, thus mitigating the risk before it happens.

The ability to collect vast amounts of information from operational or tactical level activities is increasingly enabling facilities managers to optimise resource use, spot maintenance trends, prevent management failures, combat health and safety issues and increase end-user comfort and experience in buildings.

Managed well, facilities information can unlock new value added services to businesses, provide fresh insights into making relevant business rules, and hold an emerging credibility and accountability in positioning chartered facilities management practice in their respective organisations.
This section explains the outcomes by describing and categorising typical FM reports where the data and information flows into, and elaborates on, the contribution of facilities MI to management decision making.

Reporting is the tangible output of facilities management information and data. It is therefore the front-end face of credibility, relevancy and accountability of information, its processing rigour and results. The most common output of facilities management information is ‘performance reporting’. It includes reporting on the information related to four aspects of businesses:

1. **statutory reporting** (statutory or legislative requirements) such as health and safety incidents, security, hazardous waste
2. **contractual reporting**, where supplier or in-house facilities managers audit and demonstrate performance achievements against the agreed service levels
3. **in-business reporting**, where in-house facilities managers report on agreed business performance targets or other achievements to business executives; or
4. **regular, or on-demand reporting**, where reports are generated to provide information for business-as-usual activities. These might include monthly or quarterly reports on budgets, actual and forecast, or a report including on request building specific utilisation.

Facilities managers can be involved in reporting facilities MI at three levels. These are explained in more detail in Appendix 3:

1. relationship management level
2. operational management level; or
3. service management level.

---

**Figure 5: Facilities management reporting levels**

<table>
<thead>
<tr>
<th>Report</th>
<th>Key information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategic Scorecard</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Balanced Measures - finance, customer, environmental, process maturity</td>
</tr>
<tr>
<td></td>
<td>- Business performance with high level KPIs</td>
</tr>
<tr>
<td></td>
<td>- Contribution to shareholder / stakeholder value</td>
</tr>
<tr>
<td><strong>Operational Reports</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Risk based management</td>
</tr>
<tr>
<td></td>
<td>- Efficiency and effectiveness reporting</td>
</tr>
<tr>
<td></td>
<td>- Asset / portfolio maintenance and life-cycle value reporting</td>
</tr>
<tr>
<td><strong>Service Reports</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Customer interface</td>
</tr>
<tr>
<td></td>
<td>- Source documents</td>
</tr>
<tr>
<td></td>
<td>- Transactions</td>
</tr>
<tr>
<td></td>
<td>- Day to day reporting</td>
</tr>
</tbody>
</table>
This section reinforces the need to revisit the status of various information management practices and demonstrates best practice and innovation as an ongoing management process for chartered FM surveyors.

Whether it is to meet the host organisation’s expectations or to keep up with innovation in the IT domain, FM organisations need to review their facilities information management strategy at regular intervals and make informed decisions about relevancy, utilisation, and the efficiency of their existing information.

Unanticipated needs and use of information will arise for facility management information due to business changes, new regulatory requirements and a myriad of other conditions. The information strategy, data collection process and analysis methods and tools, as well as the level of reporting required, needs to be reviewed and adapted continuously for changing business conditions. Information once critical to business can become less important or even unnecessary over time. Other information that once seemed insignificant may become of prime importance. The key is to remain flexible and sensitive to business needs and to change the management information strategy accordingly.
Traditionally, creation, processing and conversion of management information were not the core business of facilities organisations. This is changing as the information is becoming seemingly rich and available across all facilities functions, from operations to management. Facilities management organisations are being challenged by not making the relevant information available for the organisation; or conversely, having pushed their resources into the unproductive administrative activities involved in dealing with vast amounts of information.

Chartered facilities managers are recognising the need to put in place facilities MI strategies and policies to collect the right information, at the right time, for the right purposes with robust analysis to relate it to the host organisation's business objectives. Now, more than ever, having quality information to enable a facilities organisation to deliver more effective, efficient and demonstrable results to its value chain is the core part of its organisational success.
Appendix 1: Relationship modelling for key facilities stakeholders

Relationship modelling helps to define key stakeholders, their influence and interests in facilities management outputs, and ensures there is an effective relationship in place to engage with them, understand them, and manage their expectations. Stakeholders can be described as ‘individuals or groups who have interest or some aspects of rights or ownership … to contribute in the form of knowledge and support or can impact or be impacted by a specific event or action’.

In facilities service environments, where expectations change rapidly, effective reporting to key stakeholders becomes important. Stakeholder maps, as illustrated below, are one of the most influential relationship modelling tools to construct a communication strategy for reporting purposes.

Figure 6: Example of a stakeholder map

They consist of three dimensions: influence (x-axis), interest (y-axis) and involvement (size of bubble) of each stakeholder.

The first step is to define potential stakeholders inside (upwards and downwards in organisational hierarchy) and outside (e.g. suppliers, industry, public, government) of the organisation.

The second step is to assess stakeholders’ interest, influence and involvement in facilities management outputs, and map these on the plot diagram. The last step would be to cluster the stakeholders to prioritise and identify a plan to communicate the key facilities MI in order to give consistent messages, and ensure their needs are understood and managed.
Appendix 2: Alignment to industry standards for reporting purposes

How can an organisation align facilities service level information with industry standard codes and structure as well as ERP (enterprise resource planning) systems?

The example framework below shows how information from operations can be linked to both industry standards on service levels, benchmarking, and ERP systems for an organisation’s financial reporting purposes. The operational data such as occupancy costs, job completion rates, service costs, resource availability and environmental information can be gathered using a pre-defined format incorporated into primary and secondary service level agreements (SLAs).

A primary SLA represents a broader scope of services such as mechanical and electrical maintenance. A secondary SLA is a sub-set of this service, e.g. HVAC, or electrical maintenance. Defining SLAs in a hierarchical format enables chartered facilities managers to break down the cost of a broader service into its sub-categories and so achieve more visibility on cost allocation and resource utilisation.

Secondary SLAs would be of sufficient detail to be aligned to the industry benchmarks and ERP codes. Once these are done, each and every time a report is needed, the information will be readily available in the required format and granularity.

*Figure 7: Example framework for aligning FM operational information and data with enterprise and industry-wide data codes and structures.*
Appendix 3: Reporting on facilities management information and data

(1) Relationship management level – This level of reporting focuses on demonstrating the results of facilities outputs to key customers, executive stakeholders and businesses. The primary objective of reporting at this level is to retain, improve and expand existing business relationships continuously, as well as contribute to the host organisation’s productivity, reputation and image. Management results of a balanced approach between operations, finance, customers and environment are typically demonstrated as strategic scorecards at this level of reporting.

To best define these reports, ‘relationship modelling’ tools can be used (see the example in Appendix 1). These are helpful mechanisms to define key stakeholders in an organisation, and assess their influence and involvement in decision-making processes. This not only helps to relate facilities outputs to the interests of each stakeholder, but also to tailor the information to support their decision making.

The strategic scorecards mainly comprise of a number of balanced measures, including:

- accounts (e.g. actual and forecast on the targets achieved)
- customers, process maturity, growth
- corporate social responsibility and environment; and
- impact statement on shareholder/stakeholder value.

(2) Operational management level – This level of reporting focuses on effectiveness and efficiency of maintaining a portfolio and managing it to an agreed standard by adding value, mitigating risks and increasing the portfolio or asset quality. The primary objective of this level of reporting is to demonstrate tangible benefits in all areas of scope with increased business performance and reduced risks.

Information generated from operational processes can be incorporated at this level of reporting. Typical sources of the operational management information are:

- risk or condition-based management – maintenance, compliance, criticality assessment, and service downtime reliability measures
- efficiency and effectiveness of portfolio by external or internal benchmarks on cost, quality, environment, space and occupancy; and
- asset and portfolio life-cycle value assessment over the contract or asset life-span. This may also include forward maintenance registers, asset utilisation figures, life expectancy and future value of assets.

The collection of asset registers and asset condition surveys are part of the data that could be used to report at this level, primarily to demonstrate an asset’s actual performance in relation to its condition, with its historic and projected maintenance spend. Operational reports are critical for the efficiency and effectiveness of daily service provision, and adequate information to support those reports is generated by business-as-usual service transactions, as explained in the next reporting level.

(3) Service management level – This level of reporting focuses on the transactional level of services. The primary objective of FM service management is to offer quality services to provide positive customer experiences in a compliant, safe and secure service setting. Service reports typically include the results of daily service transactions between customers and services.

Approaches to service management have changed significantly over the past few years. Facilities managers previously tasked to report on service accomplishment against an agreement, or contractual obligation, have now been pulled into holistic service approaches, where the ultimate goal of a service setting is to enhance ‘customer experience’. These approaches require specific customer surveying methodologies to gather data from customers and understand the feedback on their interaction with services.
In addition to customer feedback, information related to daily operational transactions such as completion of jobs, scheduling tasks, call desk records, room bookings, cleaning audits, and security alerts, etc. can be listed as further sources to build up service reports. The service reports typically include results from a combination of categories of information, such as:

- customer feedback and experience
- delivery compliance to contract service levels
- daily financial transactions, invoice processing; and
- daily service alerts, logs and responses.
Facilities management organisations recognise the value that management information can bring to the effectiveness of their businesses.

Written for those operating at both the operational and strategic level of facilities management, this information paper aims to provide an outline to help client side facilities management organisations to generate, analyse, use and report on management information to the benefit of the host organisation.