Key success factors of building management in large and dense residential estates

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Abstract

Purpose – Identifies major issues related to building management in the context of large and dense residential estates. Aims to understand the relationship between the owners and the building management company and determine the keys to success for building management in large and dense residential estates.

Design/methodology/approach – Field interviews are conducted with the management committees of three residential estates. Semi-structured questions are asked. A model of service quality is applied in the context of building management.

Findings – A framework of the context of building management is constructed. The relationship among the management committee and the building management company is a partnership. Guidelines for narrowing possible service gaps in the process of building management are proposed. Key success factors of building management are identified.

Research limitations/implications – The sample size is small. This study reflects the field practice of outsourced building management of a few large and dense residential estates in Hong Kong. Further validation is necessary elsewhere.

Practical implications – This is a useful source of information for building owners and service providers to effectively implement building management.

Originality/value – The context of building management is graphically represented. The gap model of service quality is applied in the study of the process of service delivery of building management.

Keywords Buildings, Outsourcing, Maintenance, Quality

Paper type Case study

Introduction

Out of 38,400 private multi-storey buildings in Hong Kong, 27,400 (or 71.4 percent) have owners' corporations served by some form of management company (Housing, Planning and Lands Bureau, 2003). The challenge of building management varies depending on size, high rise or low rise, age of building, design and the condition of the facilities.

In a multi-tenant property, the interests of the owners are represented by the owners' corporation. The owners' corporation is a legal entity formed under the Building Management Ordinance. The management committee (MC) is appointed by the owners to manage the owners' corporation. As the building management is usually outsourced to a building management contractor (contractor), the management committee is like the board of directors in a corporation and the owners are the shareholders.

For large and dense residential estates with an age in excess of 15 years, the complexity of building management and maintenance is expected to be among the

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highest in the current building stocks of Hong Kong. Successful cases may serve as a useful reference to owners and industry practitioners at large. For simplicity, building management is broadly interpreted to cover maintenance management.

The focus of this study is on the key success factors in the dynamic interaction among the stakeholders from the perspective of the owners. The finding is a useful reference not just for the management committee of the owners' corporation, but also for the contractor who wants to better align the service strategy with the needs of the client.

In this study, three large and dense residential estates accepted the invitation for an interview. For the sake of anonymity, the names of the residential estates are represented by the letters A, B, and C. They are located in Ching Yi, Wong Tai Sin and Ma On Shan, respectively. A brief description of the residential estates is shown in Table I.

The residential estates share similarities in terms of the age of buildings and the high density of residents in terms of number of flats per building block. Each has an owners' corporation and a management committee. Amongst the sample, the maximum size of the management committee is nine members. It is a tradition that they are all volunteer participants in the committees. These management committees have worked with other contractors before, but find the performance of current contractors satisfactory.

The requirements of building management for these estates are similar. The typical scope of work consists of security, cleaning and repairs. However, the complexity arising from the substantial scale is significant. Assuming an average of 3.5 persons per household, there are 2,500-3,000 residents per building block. These people share the common facilities on a daily basis. In addition to normal wear and tear, heavy usage and in some cases acts of vandalism may aggravate the workload of maintenance.

The objectives of the study are threefold:

(1) to identify major issues related to building management in the context of large and dense residential estates;

(2) to understand the relationship between the owners and the contractor; and

(3) to determine the keys to success for building management in large and dense residential estates.

The context of building management

In this study, the building is broadly defined to include all physical assets such as the multi-storey building blocks, electrical and mechanical plants, and common areas such as car parks, landscaping and recreational facilities. From the owners' perspective, the

	Estate A	Estate B	Estate C
Age of buildings (years)	16	17	18
Number of flats	7,338	6,874	5,932
Number of building-blocks	10	8	7
Average density of flats (flats per block)	733.8	859.3	847.4
Estimated density of residents (residents per block)	2,568	3,008	2,966

Table I.
Description of residential estates under study

building should provide a clean, secure and comfortable environment for living. As far as building management in a multi-tenant building is concerned, there are a set of obligations on the part of owners.

To facilitate the ease of understanding the context of building management, a framework is proposed. The context of building management is represented by a hexagonal cell, as shown in Figure 1.

Deed of Mutual Covenant, Building Management Ordinance and contracts

There are legal documents governing the rights and obligations of the owners in respect of the occupation of the building. Although some of the obligations might be delegated to a contractor through the service contract, the owners are ultimately liable for building management.

The Deed of Mutual Covenant (DMC) is a contractual agreement in the conveyance practice which contains details of collective ownership of the common elements in the property. The shares, rights and obligations of stakeholders in respect of private and shared facilities are detailed. There may also be provisions regarding issues such as the restriction of conveyance of equities and the formation of the owners' corporation. Usually, the developer drafts the covenant and signs with the first purchaser. It becomes binding for subsequent buyers when it is registered with the Lands Registry (Yip and Forrest, 2002),

The Building Management Ordinance (BMO) governs the management and maintenance of buildings in Hong Kong. There are detailed provisions for the formation and operation of owners' corporations (Building Management Ordinance, 2000).

Licences and certificates

For reasons of safety, health and the environment, the occupation of a building also has to comply with the regulations of authorities such as the Building Department, the Fire

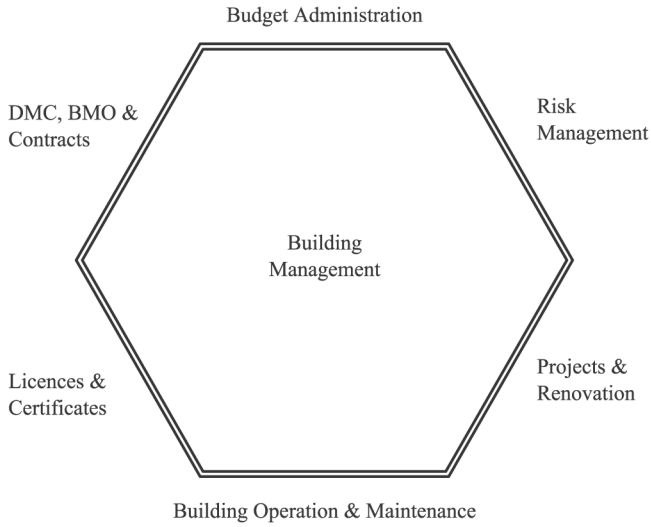

Figure 1.
Context of building management

Services Department, the Water Services Department, the Drainage Department, the Electrical and Mechanical Services Department, and the Environmental Protection Department, etc. After obtaining the occupation permit, a minimum standard of facilities maintenance is enforced through the renewal of licences and certificates annually or at stipulated intervals. In order to comply with these requirements, statutory maintenance of the facilities concerned is conducted, usually by registered contractors. For example, there are certificates for fire safety, electrical safety, lifts and escalators and effluence discharge, etc.

Not all certificates are compulsory. Some schemes may be entered into on a voluntary basis. For example, certificates may be awarded in recognition of outstanding green practices in building management.

Building operation and maintenance

Due to the high density of occupancy, the residential buildings in the study are subjected to heavy usage and stress under different weather conditions. The building and facilities naturally age with time. Wear and tear is inevitable. Wastes and external sources of pollution need to be managed. Proper operation and maintenance are necessary to prevent the condition of the building from deteriorating.

Regular maintenance is necessary on the building services systems, building fabric and amenities to ensure that they are in a sound condition. Examples of building services systems include lifts and escalators, fire services, water supply, sewage, gas, electricity, lightning protection, communication and television networks, security systems, etc. The owners have invested a considerable amount of their savings to buy the property. It is important that the building is safe, secure and comfortable for habitation. The key objective of building maintenance is to protect the property's value by ensuring a healthy condition of the building and facilities (Thompson, 1994).

Projects and renovation

From time to time, projects may arise due to decoration for festivals, community events, functions, or specific needs throughout the year. Improvement work is also required when it is found that the actual usage of the building might not be fully compatible with the current building design. In this respect, projects and renovation works are initiated to:

- satisfy the latest requirements with regard to statutory compliance;
- satisfy tenant requirements;
- optimize space utilization;
- improve security, health and safety; and
- upgrade building services systems for better energy efficiency and indoor air quality.

Enhancing the environment, health, safety and security also adds value as a result of projects. In accordance with Schwaller's "hierarchical design needs", facilities design should have safety, reliability, control and energy efficiency in mind. This is supported by necessary policies and the deployment of appropriate level of operating and maintenance staff (Schwaller, 2003).

Risk management

Hazards such as fire, gas leakage, typhoon, flooding, landslide and power outage are of great concern to the residents. Following the outbreak of severe acute respiratory syndrome (SARS), bird flu and dengue fever in recent years, the list for concern has been lengthened. What is the contingency when a flat is on fire? How do we evacuate a population of 3,000 people, many of whom are aged citizens?

As always, prevention is better than cure. A good risk management strategy has the advantage of preventing the above-mentioned hazards from occurring. There is also the benefit of reducing insurance premiums. Through a computerized supervisory control and data acquisition system (SCADA), an early alarm of a hazard will trigger immediate action before it is too late. For critical facilities, there should be design provision for redundancy, hot standby and the right level of essential spares provision.

The program of cleaning and sanitation might need to be strengthened to control the spread of microbial pathogens. The program of pest control needs to be regularly reviewed to remove certain risks. Some diseases may spread by animal vectors such as birds, rodents and mosquitoes, so the risks of building neglect can be too high to ignore.

Budget administration

The annual management fee collected from the residents is virtually a fixed ceiling. It is important to utilize the limited resources wisely. The maintenance expenditure is on average 3.7 percent of the facility acquisition value (Baldwin, 1994). "Repairs and maintenance" is the second largest item after "Staff" in the expenditure accounts. It may account for as much as 20 per cent of the management fee. While the staff cost is more or less fixed, strict control of the maintenance expenditure is necessary to ensure that the budget ceiling is not exceeded. A well-planned budget and cost control will have a direct bearing on the bottom line.

Outsourcing building management

It is common for building management and maintenance to be outsourced (Blumberg, 1998; Dubbs, 1992). The contractor is usually selected through an open tender process. Careful administration of the process is necessary (Burstow, 1994).

The reasons for outsourcing building management are four-fold. First, the scope of building management and maintenance requires a lot of manpower. The majority of the owners have full-time jobs and family obligations. In addition, not many retirees possess the drive to take up the challenge. Usually only a handful of owners are willing to serve the neighborhood on a voluntary basis. Second, the owners lack expertise. Even if there are contractors selected to do the cleaning, security and repairs, the coordination and supervision of the work requires a team of experienced and dedicated staff. Third, it is value for money. Good quality and cost effectiveness of service are possible if professional services are solicited. Fourth, the owners are ultimately legally liable for the proper management and maintenance of their buildings. The owners cannot afford to neglect building ills as well as issues of safety and security. It is for the peace of mind of the owners that the building management is well taken care of.

All three estates have a maintenance supervision team led by a management committee member. In the case of Estate A, the committee member works in the construction industry and understands issues of building maintenance. Although the

management contractor operates on pre-approved budget and with a high degree of autonomy, there is control on the amount of spending for major repair works. For example, Estate B requires the approval of the owners in a specially convened meeting when the cost of planned repair work is over HKD200,000.

Modes of resident participation

As a result of rising expectations of residents, building management has become a profession that requires a lot of expertise and commitment. Ideally, the members of the management committee are enthusiastic volunteers. It is not uncommon to find residents who hold office in public services also sitting on the management committees of owners' corporations. For example, the chief of the maintenance supervision team of Estate A is a district councilor. The chairman of Estate C is also a member of the local district council. In terms of resident participation, there can be three approaches to building management and maintenance, as shown in Figure 2 (Wekerie *et al.*, 1980).

In the resident mode, the residents have extensive participation in the affairs of building management. For example, they take part in identifying problems and making decisions concerning implementation. This mode is infrequently used in multi-storey buildings with owners' corporations.

In the professional mode, the contractor plays the dominant role in decision making and the management committee is inactive. The staff of the contractor are experienced in technical and commercial aspects of property management. Usually, there is an established system of quality assurance in terms of staffing, works planning and supervision, and financial reporting. Issues of employee insurance and property insurance are taken care of. The contractor also advises the management committee on issues concerning compliance with the relevant provisions of the Deed of Mutual Covenant and the Building Management Ordinance, etc. In everyday operation, the contractor has a free hand to manage property and tenant affairs. For works of substantial value, the contractor tables all the facts and figures to the management committee and makes recommendations. After obtaining a green light from the owners through the management committee, the contractor oversees the process of tendering and works administration.

In the partnership mode, the management committee not only delegates duties of building management to the contractor, but also has frequent interaction with the contractor and provides necessary guidance and support to the contractor in service delivery to stakeholders. The partnership mode of building management can be represented by Figure 3. This is an intermediate form of the resident mode and professional mode.

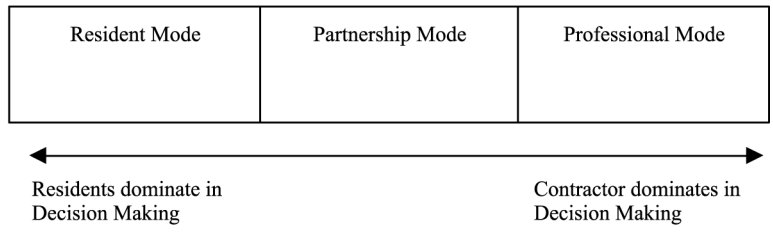

Figure 2.
Modes of resident participation

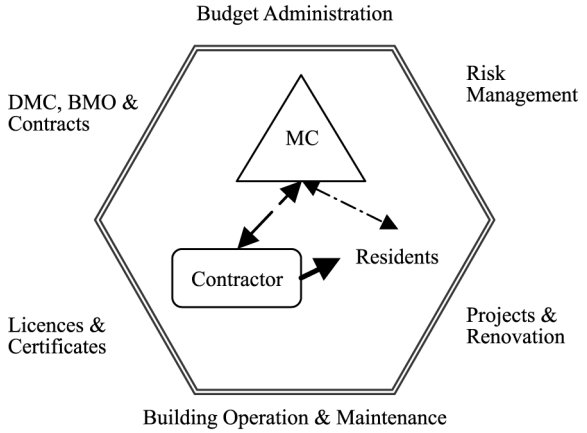

Figure 3.
Partnership mode of building management

Relationship between management committee and contractor

From the perspective of the contract, the management committee is the buyer and the contractor is the supplier of the service. It is apparent that the contractor reports to the management committee. When asked to describe the relationship, Estate A regarded the relationship between the management committee and the contractor as an open-minded boss and employee-type relationship, Estate B treated the contractor as a business partner, while Estate C also stressed the notion of collaboration on top of a principal-agent relationship. The relationship in these estates is more like a partnership than a buyer-supplier in the market sense (Bull, 1996).

In the organization, there can be two forms of structure, depending on the preference of the management committee. Having a single contractor to provide all the services is simple to administer. However, this could be a suboptimum decision. The contractor in Estate A has its own security division. According to the chairman of the management committee, the security force of the company had a high turnover rate and the training of staff appeared inadequate.

In addition to the advantage of job specialization, cost is also a concern to the management committee. It is common for the contractor to practice subcontracting. Non-core works are selectively outsourced (Hui and Tsang, 2004). As shown in Figure 4, an alternative organizational structure is to have nominated subcontractors. The chairman of Estate B had the following comments about this:

> We wanted to have tight control of expenditure. In order to reduce the costs, we had separate tenders for cleaning and security. However, we put them under the supervision of the building management contractor.

Roles of management committee

The management committee acts for the interests of the owners' corporation and supervises the contractor. The management committee is effectively the bridge between the residents and the contractor. The management committee should consist of enthusiastic leaders who are willing to commit time and energy to serve the interests of their fellow owners. Members of the management committee with experience of

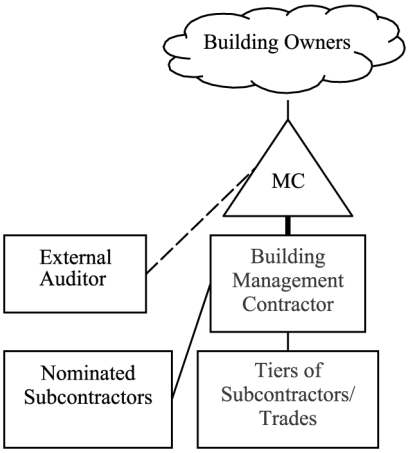

Figure 4.
Organization with nominated subcontractors

community service are advantageous. In the words of the chairman of Estate A, and echoed by Estate B and Estate C:

> The management committee should behave in fair, just, and transparent way, be accountable to the owners' corporation and bound by the law.

The management committee has to select the most suitable contractor in the first place. Apart from price competitiveness, past references, the service culture and professionalism of assigned management staff are also important considerations. Furthermore, the performance standard should be clearly stated in the contract. The terms and conditions in the contract should be as detailed as possible and contain all conceivable contingencies and termination clauses (Dubbs, 1992). It is preferable to have at least one member of the management committee who is well versed with contracts. Estate A even has access to the services of a solicitor.

In addition, the performance of the contractor has to be monitored closely. The areas of focus are:

- discipline;
- key performance measures;
- necessity and cost-effectiveness of maintenance; and
- expenditure against budget.

Members of the management committee therefore have to be prepared to attend long hours of meetings almost every other week. In the case of Estate B, evening meetings can go on beyond midnight. The phenomenon is also found in Estate A and Estate C.

Roles of contractor

The contractor should be professionally qualified. The management staff should understand the context of building management inside out. Knowledge of the Deed of Mutual Covenant and the Building Management Ordinance is important, because the contractor is expected to serve as an advisor to the management committee in owners' annual general meetings and ensure that the passing of motions complies with the

relevant regulations. Apart from familiarity with the renewal of licences and certificates, technical competence in the maintenance of critical and essential physical assets, implementation of projects and renovation works, risk management and the administration of budget are essential.

The contractor should be well versed with the service contract. There are quality as well as commercial aspects of the contract. The scope of work and performance standard explicitly stated in the contract have to be complied with at an agreed sum. For a win-win partnership relationship to be sustainable, it is important that the management committee is satisfied and that the contractor is a viable business. Any major change with significant implications for costs might necessitate renegotiation between the management committee and the contractor.

Above all, the whole organization of the contractor should be committed to service quality. (Fitzsimmons *et al.*, 1998; Storbacka *et al.*, 1994) No matter how comprehensively the contract is written, what actually happens on a daily basis between the duty staff and the residents cannot always be precisely prescribed. The discipline, professionalism and attitude of front-line staff have a great impact on how the residents perceive the delivered service.

The contractor should adopt a proactive role in fostering a partnership relationship with the management committee. The management staff of the contractor should prove to the management committee that they are really value for money. In addition to attending formal meetings to report progress, they should treasure every opportunity of informal contact to obtain timely feedback and exchange constructive ideas. They should listen to the management committee to understand the needs of the residents and take any necessary action for service recovery and future improvement.

Process of building management

Building management is a service rendered to residents under the supervision of the management committee. The satisfaction of the customer depends on service quality (Lee and Lee, 2000). The concept of service quality has extensive applications in the hospitality industry and service marketing (Douglas and Connor, 2003; Lee and Lee, 2000).

In the context of building management, the service consists of tangible and intangible dimensions. The tangible aspect of building management is best considered as the baseline of the service. In some incidences, even the tangible aspects of the service can be difficult to deliver. Consequently, the downtime is long. For example, failures may be rare and the duty technicians may not be familiar with the particular method of repair. Also, there may be shortage of spares, and the lead time may be long. This may also happen in some situations of *ad hoc* or emergency repair. During "fire fighting", duty technicians could subconsciously divert all their attention to dealing with the technical issues concerning the physical asset and overlook communication with the residents. In any case, the intangible dimensions of a service are too important to ignore.

For complete customer satisfaction, the quality of service should be perceived on the basis of five dimensions, namely:

(1) tangibles;

(2) reliability;

(3) responsiveness;
(4) assurance; and
(5) empathy.

"Tangibles" refers to the condition of physical assets such as the building fabric, infrastructure and building services systems. "Reliability" is defined as the ability to perform the promised service dependably and accurately. "Responsiveness" is defined as the willingness to help building stakeholders and provide prompt service. "Assurance" is defined as the knowledge and courtesy of employees and their ability to convey trust and confidence. "Empathy" is defined as the caring, individualized attention provided to building stakeholders (Fitzsimmons *et al.*, 1998; Ling Hin and Amy, 2000).

The gap analysis approach provides excellent information for building a true customer-centered attitude to service delivery (Headley and Choi, 1992). The process of building management may be examined by means of the gap model of service quality (Zeithaml *et al.*, 1990). In the context of building management, the model is slightly adapted, as shown in Figure 5. In the model, the service expected by the management committee and residents may not be exactly the same. Therefore, the contractor has to look after two types of customers. On one hand, the residents of each household are individual customers. On the other hand, the management committee is a corporate customer who provides consolidated feedback to the contractor.

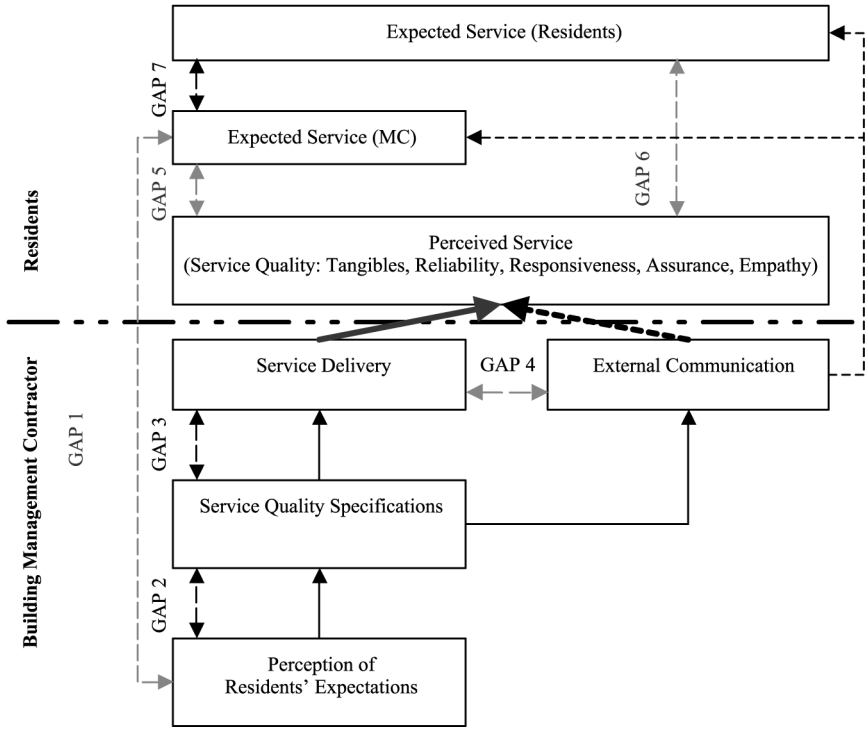

Figure 5.
Gap model of service quality

The mechanism of interaction among the management committee, the contractor and the residents is dynamic. It is worth focusing on issues on the service demand side and the service supply side, and what actually happens at the interface. On the service demand side, the major issues are service expectation on the part of the management committee, service expectation on the part of residents, and how a service is perceived. On the supply side, the major issues are perception of residents' expectations, service quality specifications, external communication, and service delivery. Perceived service is the output of the contractor, and perception of residents' expectations is the input as well as the feedback. In general, gaps may exist among various states. Possible explanations for these gaps are listed in Table II.

Gap 1 is the gap between the expected service from the perspective of the management committee and the perception of residents' expectations by the contractor. It may be due to insufficient detail and contingency in the contract. There may be an absence of a clear set of performance indicators. The contract may not be flexible enough to allow for contingency in the future. This may be due to inadequate communication between the management committee and the contractor to reach a consensus on how performance should be evaluated. Feedback from the residents may not be passed on to the management of the contractor in a timely manner. It may also be due to poor understanding of residents' expectations which are specific to the particular neighbourhood.

Gap 2 is the gap between the perception of residents' expectations by the contractor and the translation of this gap into service quality specifications. Assuming that the contractor is acting in good faith, gap 2 may be due to the absence of residents' defined

Gap	Possible causes
Gap 1	Insufficient detail and contingency in the contract Inadequate communication between the owners' corporation and the contractor Poor understanding of residents' expectations
Gap 2	Absence of residents' defined service standards Inadequate understanding of physical assets Inadequate sensitivity to risks
Gap 3	Management practices need to be more proactive Poor information cascade Inadequate training on technical competence and customer service
Gap 4	Communication is not clear Poor coordination of communication and planned actions Improper management of customer expectations (over-promising)
Gap 5	Failure to achieve service pledges Inadequate service recovery Complaints from residents
Gap 6	Poor customer service Inadequate service recovery Overly high expectations of residents
Gap 7	Different understanding of contractual requirements of the contractor Inadequate communication between the management committee and residents Unreasonable expectations of residents

Table II.
Possible causes of gaps

service standards. This may be due to inadequate understanding of the physical assets, resulting in a wrong choice of maintenance methodology. It may also be due to inadequate sensitivity to potential risks, so that there is no provision for contingencies in the plan and work procedure.

Gap 3 is the gap between service quality specifications and service delivery. It exists because the management of the contractor may not be acting in a proactive manner. It may be due to poor information cascading from management to lower tiers. Also, the people at the front line may not have received adequate training in terms of technical competence and customer service.

Gap 4 is the gap between service quality specifications and external communication. This gap exists because communication may be unclear, or because the coordination of communication and planned actions may be poor. Insufficient resources may be allocated by the management. It may also be due to improper management of customer expectation, such as over-promising.

Gap 5 and Gap 6 represent how well the contractor satisfies the management committee and the residents. It is important to close both of these gaps. Very often, the challenge lies in the intangible dimensions of a service. If a service only fulfills the tangible aspect, the customer will not be satisfied. Gap 6 is the gap between the service level expected by the residents and that of perceived service over the recent period. It may be due to poor customer service. The staff handling the case might have over-looked the importance of politeness. It may be due to inadequate service recovery. The response to the service requisition might be too slow. It may be due to over expectation of affected residents who do not understand the actual scope of service in the contract. Sometimes it may also be due to over-promising by the contractor. Gap 5 is the gap between the service level expected by the management committee and that of the perceived service. It may be due to failure to achieve service pledges specified in the contract. As in the case of Gap 6, it may be due to inadequate service recovery. It may also be due to complaints from residents of alleged poor service.

Gap 7 accounts for the difference between Gap 5 and Gap 6. There could be different understandings of the contractual requirements of the contractor between the management committee and the residents. Alternatively, the communication between the management committee and the residents may not be adequate. Occasionally, some residents might feel frustrated when an unreasonable request cannot be entertained.

Gap minimization

In the process of service delivery, the moment of truth is how the service is perceived by residents at the front line. All tangible and intangible dimensions of service quality should be well taken care of as far as is practicable.

From the perspective of the contractor, the customers are the residents, and in particular the management committee, which represents the interests of the owners. In this respect, the contractor has a key role to play in minimizing these service gaps. As far as the management committee is concerned, the contractor should focus on Gap 1. As for service delivery to the residents, the contractor should concentrate on Gap 4, Gap 5 and Gap 6. For internal administration, the contractor should concentrate on Gap 2 and Gap 3.

This concept may be illustrated by a scenario of service requisition. Suppose Resident A reports a problem of a water mark emerging on the ceiling of her house. She

calls the hotline of the estate management office. The duty supervisor tells her that a technician will be at the scene within an hour. A technician is dispatched to attend the service call within 30 minutes. The problem is diagnosed to be due to leaky water pipework in a recently relocated bathroom immediately above it. This flat belongs to Resident B. The problem is temporarily mitigated by tightening fittings accessible to the technician. As a plumbing defect is suspected, Resident B is advised to call back the last contractor to do a thorough check-up. Both of the residents are briefed about the situation. However, Resident A is not entirely happy. The duty supervisor follows up the case by advising the two owners talk to each other about a possible claim for compensation for ceiling plaster repair. A log is taken and the case is reported in the next meeting with the maintenance supervision team of the management committee.

The perceived level of service is studied qualitatively from the perspective of five dimensions of service quality:

(1) tangibles – the water leakage problem is diagnosed and temporarily mitigated;

(2) reliability – he handing of the case is in accordance with the standard work procedure;

(3) responsiveness – within 30 minutes, the technician arrives at the scene and meets Resident A;

(4) assurance – professional advice is given in the follow up; and

(5) empathy – the duty technician is sensitive to the feelings of the residents and takes necessary steps to mitigate the problem, even though he cannot solve it.

Some lessons can be learned from this case from the perspective of gap minimization. Regarding Gap 1, the needs of the residents are well understood. First, the duty technician empathises with the residents concerned. They understand the urgency of mitigating the problem, albeit temporarily, and settling the liability issue later. Second, communication takes place at the operational and management levels. The residents concerned are kept informed of the findings. The management committee is also briefed at regular review meetings. Third, through a track record of professional service, the credibility of the contractor is maintained. This is conducive to developing trust between the management committee and the contractor.

A few points can be made regarding Gaps 4, 5 and 6. First, the expectation of the caller is deliberately managed. The duty supervisor knows that it is not an urgent requisition. Besides, the duty technician may be working on a job and cannot always respond immediately. The response time turns out to be shorter than what has been promised. Second, the staff are proactive to go beyond contractual requirements to solve the problem. Third, a service culture is at work. What motivates the staff of the contractor to go this extra step is ensuring that residents feel satisfied.

Gaps 2 and 3 relate to effective internal administration. First, the right people are an asset. The contractor needs employees with the right service mentality. In circumstances where a subcontractor is brought in to do the work, a similar work ethic is expected. Secondly, training and teamwork are important. Regardless of shift work, a reasonable standard of performance of duty staff is required. Also, teamwork is expected among staff of all ranks. Third, the contractor should be able to learn from experience. The feedback may be from the management committee or any resident. It may also come from their employees or subcontractors. In a large and dense residential

estate, complaints are inevitable. It is important to act fast on service recovery. The contractor should learn from a mistake to prevent similar ones from occurring in the future. Through the process of continuous improvement, the contractor should perform better and better as time goes by. In summary, the guidelines for gap minimization are shown in Table III.

Conclusion

Interviews have been conducted with the management committees of three large and dense residential estates. In these estates, the building management is outsourced. In this context, the "partnership mode" of building management is preferred. Irrespective of whether there are nominated subcontractors, the contractor is effectively acting as the main contractor for the owners' corporation.

The dynamics of interaction among the management committee, the contractor and the residents may be represented by an adapted version of the gap model of service quality. By means of the model, the mechanism of service delivery has been studied. The key success factors of building management are summarized as follows.

Leadership of management committee chairman and commitment of management committee members

All management committee members are volunteers. Apart from having a small share of equity in the residential estate, there is no tangible reward to provide motivation. Creative incentives must come from intangibles such as self-actualization and social recognition. The leadership of the management committee chairman and the commitment of the team members to serve is no less important than that in the profit-seeking commercial sector.

Competence of contractor staff

The staff of the contractor is effectively the management team of a corporation. Building management requires multidisciplinary expertise. In order to provide "value for money" outsourced service and achieve cost-effective building management, the staff of the contractor should be familiar with the technical details of the physical assets, should be knowledgeable about the commercial and legal requirements, and should possess the administrative skills in the context of building management.

Gap	Guidelines
Gap 1	Think "in the shoes of residents" (empathise) Information sharing Build trust through professionalism
Gaps 4, 5 and 6	Realistic communication Be proactive, go beyond contractual requirements Ensure that residents feel satisfied with the outcome
Gaps 2 and 3	People/subcontractor selection Training and team work Performance feedback and continuous improvement

Table III.
Guidelines for gap minimization

The service culture of the contractor

The business of building management is a service. The service has to be delivered through people. Internally, the contractor should build a team of willing and capable people. Externally, the contractor should be people- and outcome-oriented, and accountable to the management committee as well as the residents.

At the front line, the level of service is perceived in terms of tangible and intangible dimensions of service quality. In this respect, effective communication, proactive management and residents' satisfaction are important. To reduce the gap between the expected level of service and the perceived level of service, customer orientation, information sharing, and a consistent track record of professionalism are important. Regarding the functioning of the contractor, the selection of management staff and subcontractors with the right service ethics, training and teamwork is important.

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