The Effective Use of Web-based Tools for Property Management Companies in Hong Kong

Final Report

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ACKNOWLEDGEMENTS

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EXECUTIVE SUMMARY

The aim of this research project is to study the ways to use web-based technology to provide process enhancement to the property and facilities management profession.

The objectives of this study are:

- to investigate the current developments in web-based property management tools in Hong Kong;
- to understand how the user-friendliness of the current user-interface can be improved so that residents can accomplish the available functions more effectively; and
- to explore the extent to which the capabilities of web-based and 'cloud' technology are maximised for the benefit of the property and facilities management profession.

A desktop study of private residential estates that provided web-based property management tools was carried out followed by face-to-face semi-structured interviews with experienced property managers. Feedback from residents served with web-based property management tools was collected by means of a questionnaire survey.

The Study was conducted in three stages. Stage 1 aims to explore the current developments in web-based property management tools in Hong Kong, including the scope of property management services provided by local property management companies, the number of private residential estates that used such tools, and their local distribution. Stage 2 aims to identify the weaknesses and challenges of the current development of web-based property management tools through interviewing professional property management managers and practitioners. Stage 3 aims to investigate users' habits of using web-based property management tools, their personal experiences of using such tools, and their levels of satisfaction.

The findings of this study show that a number of property management companies did provide web-based property management system (WPMS) services to residential buildings. Some property management companies committed a considerable amount of financial resources to develop web-based property management tools as platforms to improve property management services and collect feedback from users. Meanwhile, these companies strived to enlarge the scope of property management services through WPMS and encouraged residents to use it to request services. However, the results of the survey contained in this study showed that the usage rate of WPMS among residents was rather low. Even though Hong Kong's principal property management companies actively promote WPMS and commit a considerable amount of resources to WPMS development, most Hong Kong residents have yet to form a habit of requesting property management services through WPMS. They still prefer direct interaction with service providers before requesting property management services such as making phone calls to their offices and informing estate security.

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1 INTRODUCTION

1.1 Background

The use of websites as media for communication between property management companies and owners, residents, tenants, and the general public is more popular than ever. The capabilities of websites vary from disseminating notices and information to reporting faults, lodging complaints, requesting air-conditioning after hours, booking venues and vehicles, etc. Some functions have been automated (e.g. real-time approvals and charging of management fees) upon booking. Some systems provide real-time data feeds from plant rooms and equipment to the control stations. There may also be time and cost advantages in automating time-consuming routine tasks such as regular notices and newsletters using a web-based platform.

The capability of web-based software can operate under different platforms such as Microsoft IE, Google Chrome, Firefox, etc. With advances in mobile technology, analyses and prompts may be made available to various terminals, including desktop PCs, tablets, and even smartphones, through wi-fi and/or network connections. The recent use of Building Information Modeling (BIM) in design and the construction of real estate projects also provide challenges to study how, and to what extent, the 'information' contained in BIM for projects can be captured for use by property and facilities managers.

There are systems on the market that were developed specifically for a property or company that manages a range of properties. Some software might have been off-the-shelf with modifications and customisations to suit individual needs. The emergence of cloud computing in recent years has revolutionised the whole IT world. These 'shared services' made available data storage, the sharing of resources, etc, to achieve coherence and economies of scale (https://en.wikipedia.org/wiki/Cloud_computing, accessed on 11 September 2016). The possibility of collectively gathering and analysing data transferred from various facilities (within and without the same

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company) is fascinating. The work of a property manager will become 'anywhere, anytime' and s/he has to know and respond to 'anything' related to the properties s/he manages. Data exchanges and analyses will be made possible across geographic areas and time zones.

1.2   Property Management in Hong Kong

Professional property management first started during the late 1960s in Hong Kong. The first professional property manager was employed to lead the property management team of Mei Foo Sun Chuen in 1967. The practice was successful in employing a property management system, which led other private developers to adopt similar property management practices (Chiu, 2006). Professional property management companies emerged to free developers from having to provide property management services. Some developers have chosen to set up subsidiaries to take up the management of the estates they developed to enable a smooth transition from the construction to the occupancy stages.

Hong Kong has approximately 2.73 million residential flats (Census & Statistics Department, 2016) and 46 million m^2 of non-domestic floor space (Environmental Protection Department, 2016). This has generated a huge market and demand for quality property management services. The real estate sector includes three components (Census & Statistics Department, 2014):

(i)   *real estate development and leasing industry*, which includes real estate developers engaged in the development of land and/or re-development of existing premises into new properties that are intended for sale or lease; along with companies engaged in letting or sub-letting properties (e.g. commercial buildings, industrial buildings, service apartments etc.) under the current possession of the companies concerned;

(ii) *real estate brokerage and agency industry*, which includes companies engaged in the trading of actual or prospective properties or the leasing of premises by serving as middlemen in the transactions; and

(iii) *real estate maintenance management industry*, which includes companies engaged in maintaining buildings in good physical condition and order for landlord/tenants on a fee or contract basis.

Property management plays an important role in all three components, which emphasise the value of services and conditions of buildings. Sound property management services contribute significantly to real estate leases and sales on the market because they do not only guarantee the current quality of a living environment, but also the long term value of a real estate asset.

1.3 Core Competencies of Property Management Companies

Currently, Hong Kong has some 800 property management companies (Hong Kong Legislative Council, 2015), and 90 of them are full members of the Hong Kong Association of Property Management Companies (HKAPMC, 2016). Property management companies traditionally provide building management services to residential buildings including the early detection of defects and wear and tear of the building fabric and services. They also organise timely maintenance, cleaning, security, parking, and landscaping works and actions to comply with statutory building orders. As the scope of the real estate industry expands, property management companies have also been hired to provide professional services to commercial buildings, service apartments, industrial buildings, shopping centres, and other complex facilities such as clubhouses, sport stadia, transportation terminals, hospitals, airports, and infrastructure such as bridges and tunnels. This expanded range of services added dynamics to Hong Kong's property management market in terms of the increasing number of and scope of services provided by property management companies. The complexity of the work environment has also brought about the development of expert knowledge and enlarged the breadth of professional practice in property management. Practitioners' expertise is demonstrated by membership in professional institutions under their respective divisions. For example, the Hong Kong Institute of Surveyors (HKIS) has 765 professional members in its Property and Facility Management Division as of 5 August 2016 (HKIS, 2016). There are also real estate analysts, accountants, lawyers, etc, who work specifically in the property management sector.

1.4 Scope of Property Management Services

As the demand for multi-disciplinary property management services increases, property management companies in Hong Kong have adapted quickly to

market changes. A wide range of professional support services are offered including concierge, venue booking, ticketing services, etc., in addition to the more traditional building repair, maintenance, and cleaning services. There is also specific expertise being developed and offered to owners, tenants, investors, institutions, and the government.

The Hong Kong Qualification Framework (HKQF) has provided detail specifications of property management services practiced in Hong Kong, as shown in **Appendix 1** (Home Affairs Department, 2010). The most popular property management services in Hong Kong are divided into seven categories as follows (Home Affairs Department, 2011):

(a) Property management services for owners/tenants/communities
(b) Management of property environments
(c) Building repair and maintenance/improvements and enhancements
(d) Finance and asset management
(e) Facility management
(f) Human resources management
(g) Law in practice

1.5 Property Management Systems and Web-based Property Management Tools

A property management system (PMS) refers to a computer system that was originally developed and commonly used in the hospitality industry to support hotel operations such as check-ins, checkouts, cash transactions at the front desk, reservations, etc (Stutts and Wortman, 2006). The trend of adopting PMS to manage properties has influenced the real estate industry.

The real estate industry is keeping in pace with technological advancements. Aiming to provide high quality professional property management services, many property management companies have applied information technology to property management tasks (Wong, 2002) including:

- the use of computers and/or online systems to collect management fees;
- providing residents free access to the company's website to enhance communication;

- providing an electronic or online booking system to simplify bookings of the estate's facilities and services; and
- using a computerised system to process and count large numbers of votes when dealing with owners' corporation matters.

In recent years, there has been a substantial growth in the number of residential buildings. Thus, property managers face challenges in their management of various tasks and requests for multiple properties and residents on a daily basis. Web-based property management systems (WPMSs) have been developed in-house by individual companies with the support of advanced technology and are tailor-made for complex portfolios. There are many off-the-shelf software, add-ons, modules, and even mobile apps that aim to integrate various property management functions into one system. Residents can not only access a WPMS through computers, but they can also access it through their smartphones or tablets anywhere, any time. Recognising the effectiveness of WPMS in integrating residents' participation in property management and tasked with managing the operations of the properties under their charge, property management companies have committed a considerable amount of resources to developing their own WPMSs and applying it to an ever-broadening scope of property management services.

A WPMS can enable property management companies to provide the following benefits to their customers:

- significantly reduce costs on human resources;
- increase efficiency in providing prompt services upon request;
- strengthen the relationship between property management teams and their customers;
- enable comprehensive service performance evaluations, as management data can be collected through a WPMS; and
- improve the decision-making process with WPMS support.

WPMS has become a permanent part of property management companies' operations in Hong Kong. It is, therefore, necessary to investigate the current

development of WPMS and explore its potential in integrating property management activities efficiently. The objectives of this study are:

- to investigate the current developments in web-based property management tools in Hong Kong;
- to understand how the user-friendliness of the current user-interface can be improved so that residents can accomplish the available functions more effectively; and
- to explore the extent to which the capabilities of web-based and 'cloud' technology are maximised for the benefit of the property and facilities management profession.

2   RESEARCH DESIGN

The following research activities were carried out to answer key research enquiries:

- a desktop study of private residential estates that are served by a WPMS;
- face-to-face semi-structured interviews with experienced property managers; and
- a questionnaire survey with WPMS users.

A work programme was developed and the above research activities were conducted based on it (**Figure 2.1).**

2.1   Desktop Study

A desktop study was conducted to identify private residential estates that were supported by a WPMS. This study included three procedures:

First, a list of private residential estates in Hong Kong was obtained through three databases: (a) Database of Private Buildings in Hong Kong from the Home Affairs Department (https://bmis1.buildingmgt.gov.hk/bd_hadbiex/home.jsf?lang=tc), (b) the website of Midland Realty (http://proptx.midland.com.hk/cs/?lang=en), and (c) the website of Centaline Property (http://hk.centanet.com/findproperty/zh-HK/Home/Index).

Second, the functions of the WPMS for each estate served were verified through the estates' websites.

Third, after acquiring the building list through the three databases, the Research Team searched the websites based on the name of the building shown in the list. If the website of the building could be identified and accessed through a portal log-in by the Research Team, the building was marked with "WPMS available". Altogether, 151 private residential buildings

were identified as having web-based property management services, excluding estates that had no website. **Table 2.1** shows the district information and number of private residential estates that were served by WPMSs.

Figure 2.1 Work Programme

Tasks	2014		2015										
	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
1. Literature Review	■	■	■	■	■								
2. Interview Preparations													
• Draft invitation letter	■												
• Sort out potential interviewees and sent out invitation letters	■	■	■	■									
3. Pilot Study		■	■										
4. In-depth Interviews			■	■	■	■	■						
5. Survey													
• Questionnaire development			■	■	■								
• Pilot study for the survey				■	■	■							
• Survey distribution							■	■	■	■	■	■	
6. Data Analysis													
• Analyse the research results			■	■	■	■	■	■	■	■		■	■
• Present the initial findings for discussion								■	■	■			
7. Final Report and Seminar Presentation										■	■	■	■

Note: cells highlighted in blue are planned milestones.

Table 2.1   District Information and the Number of Private Residential Estates That are Served by Web-based Property Management Systems (WPMSs)

District	No. of Estates		District	No. of Estates
Central and Western	23		North	6
East	7		Sai Kung	8
Islands	1		Sha Tin	16
Kowloon City	6		Sham Shui Po	4
Kwai Tsing	2		Southern	16
Kwun Tong	3		Tai Po	2
Tsuen Wan	11		Tuen Mun	31
Wai Chai	1		Yau Tsim Mong	5
Yuen Long	10			

Note: the sample excludes estates that had no website.

2.2   Face-to-Face Interviews

2.2.1   Design of Questionnaire

A face-to-face interview is a one-on-one interview guided by a series of structured questions. Typically, such interviews last 45 minutes and questions are designed with specific purposes:

Questions 1 to 3 identify the common property services provided by web-based property management tools in Hong Kong. Question 4 collects information on the technical support for the WPMS. Questions 5 to 8 explore the difficulties in developing and implementing WPMS. The list of interview questions is shown in **Appendix 2**.

2.2.2. Sampling of Interviewees

With the support of the HKAPMC, the Research Team sent two rounds of interview invitations by e-mail to member companies between January and March 2015. These were followed by telephone calls to confirm the targeted interviewees' receipt of the invitations. The interviews started in January 2015. A typical invitation letter is shown in **Appendix 3**.

Altogether, eight interviews were conducted. The interviewees were property managers from the Hong Kong Housing Society, MTR Property Management Limited, Sino Estates Management Limited, Urban Property Management Limited, Shui On Properties Management Limited, and Kai Shing Management Services Limited. Four of the interviewees were managers in their companies, while the other four were responsible for providing property management services in specific buildings or housing estates. Their profiles are shown in **Tables 2.2** and **2.3**.

Table 2.2 Profiles of Interviewees – Job Titles

No.	Job Titles of Interviewees
1	Senior Property Manager
2	Head of Property Management
3	Property Support Manager
4	General Manager – Property Management
5	Senior Property Asset Manager
6	Centre General Manager
7	Business Portfolio Manager
8	Property Asset Manager

Table 2.3 Profiles of Interviewees – Companies

No.	Property Management Companies Interviewed
1	MTR Property Management, Ltd
2	Sino Estates Management, Ltd
3	Shui On Properties Management, Ltd
4	Urban Property Management, Ltd
5	Hong Kong Housing Society
6	Kai Shing Management Services, Ltd

2.2.3 Interview Data Analysis

Content analysis was the main data analysis method applied to analyse the interview data collected. It is the systematisation of text analysis. There are two approaches for content analysis, namely inductive approach content analysis and deductive approach content analysis. The former is better when there is insufficient or fragmented of the phenomenon, while the latter is preferred when the structure of the analysis is operationalised on the basis of previous knowledge.

For this study, inductive content analysis of the interview data obtained was used due to a lack of profound knowledge of WPMS. It was divided into three steps:

- *Transcription and Preparation*
  - ➢ The interviews were recorded with the interviewees' permission and transcribed into written text.
  - ➢ Units of analysis were selected (one or more sentences that reflected the same or similar meanings were categorised as one unit). The statements of each interviewee contained a considerable amount of information, which did not fully reflect the theme of the interview questions. The analyst selected the units of analysis based on the relevance of the discourse to the interview questions.
- *Making Sense of the Data*
  - ➢ This process included a summary of the theme of each unit of analysis and categorisation of that unit.
- *Interpretive Analysis*
  - ➢ Analysis of the associations among different categories.
  - ➢ This entailed interpreting the associations.

2.3 Questionnaire Survey

A questionnaire was designed to collect users' opinions of the WPMSs they experienced.

2.3.1 Design of the Questionnaire

The questionnaire consisted of four sections:

- Personal information

- User habits

- Personal experiences

- Satisfaction with the WPMS

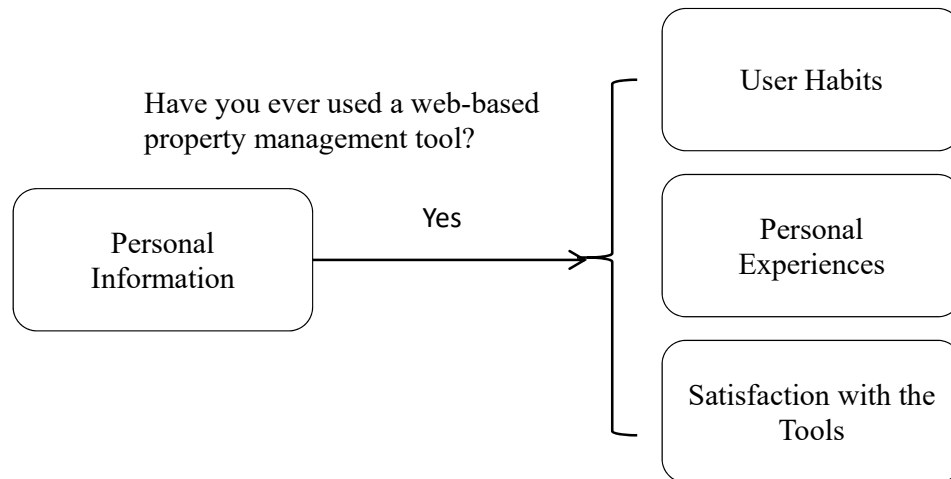**Figure 2.2** illustrates the structure of the questionnaire. The questionnaire is in **Appendix 4**.

Figure 2.2 Structure of the Questionnaire

2.3.2   Sampling of the Respondents

In the desktop study, 151 private residential estates were identified with property management services through active web-based platforms. Fifteen private residential estates were randomly selected from the 151, or about ten percent of the total, in which the survey was conducted. The selection of the estates was constrained by the following conditions:

(a)   approval of the property management office of the estate

(b)   approval of the owners' corporation (OC)

(c)   residents' response rate

The Research Team sought approval from each estate's property management office before conducting the survey. The property management office of three estates did not approve the request. Two other offices claimed that their OCs rejected the request to protect their residents' privacy. The Research Team visited the remaining ten estates that agreed to participate in the survey. However, the response rate to the survey was nil in three of the estates. Thus,

data from the questionnaire survey were collected from only seven private residential estates:

- *South Horizons* in Southern District
- *Les Saisons* in Eastern District
- *Island Resort* in Eastern District
- *Dawning Views* in Northern District
- *Vista Paradiso* in Sha Tin District
- *The Merton* in Central and Western District
- *Laguna Verde* in Hung Hum District

A total of 165 residents from these estates were interviewed based on their answers to the questionnaire. The survey commenced in May 2015 and ended in November 2015. Six part-time helpers were employed and assigned to the selected estates to conduct the survey.

3 FINDINGS OF THE INTERVIEWS

3.1 Current State of WPMS in Hong Kong

3.1.1 Scope of the Property Services Provided

As stated earlier, Hong Kong's property management companies provide property management services to various venues including private residential buildings, public housing estates, shopping malls, office buildings, clubhouses, industrial buildings, etc. The property management services provided for residential buildings typically include:

- Cleaning
- Security
- Parking
- Maintenance
- Management of sports facilities
- Landscaping
- Shuttle bus services
- Owners' committee meeting organisation

Property management services provided by WPMS typically include facilities booking, service timetables, notifications, communications, information sharing (such as meeting minutes), producing annual reports, etc.

3.1.2 Lack of Provision in Public Housing Estates

As an interviewee from the Hong Kong Housing Society (HKHS) disclosed, the HKHS does not yet commonly use WPMS. However, it uses an online booking system to facilitate the booking of facilities in its community centres and halls. Although it does not provide web-based property management services to its estates, it is devoting great efforts to incorporating a computer-aided management system into its future construction. For example, it has adopted electronic forms during the construction process to collect construction information for analysis.

Most of the buildings managed by the HKHS are public housing estates. Residents there are generally satisfied with their basic property management services such as cleaning, security, and regular maintenance. A lack of demand for WPMS is the main reason for its non-provision in these estates. It was believed that residents' recognition and knowledge of the internet and its applications was limited and, hence, they showed little interest in applying for property management services online. Also, the scope of the property management services was rather limited, so residents preferred to talk directly to management on most matters. Last, but not least, the interviewee believed that a lack of financial support also explains why WPMS has not yet been developed for public housing estates. He agreed that the adoption of WPMS has become a trend in the property management industry and the HKHS needs to develop WPMS for its estates in order to remain competitive.

3.1.3   Scale of WPMS and Outsourcing Models

Due to the small size of the sample, the Research Team could not determine the percentage of property management companies that use WPMS to provide services. However, most interviewees indicated that it was common for private property management companies in Hong Kong to provide services through WPMS, although their range of services varied and is determined by the amount of programming tasks or scope of services within the WPMS, which is closely related to the amount of financial input received. For example, booking and payment services through WPMS involve a lot more programming tasks and need to be supported by additional IT software than the traditional telephone and paper-based methods.

According to the interviewees, it was common to outsource the development of WPMS to IT consultants and service providers. Some property management companies have in-house IT teams and develop their own WPMSs, while others outsource the development of WPMS and retain the maintenance and updating tasks in-house. The degree of outsourcing is determined by the scope of services the property management company expects the WPMS to perform.

3.2   Strengths of WPMS in Hong Kong

3.2.1   Savings on Administrative Resources

A considerable amount of resources has been spent to build up the "communication channels" between residents and property management companies.   Before there was WPMS, residents requested property management services mainly through contacting property management staff by telephone or in person.   However, property management staff typically could not be reached in person or in a timely manner for a number of reasons. Alternatively, residents chose to leave messages at the front desk of the management company's office.

Property management companies need to arrange channels to deliver information to residents including *ad hoc* maintenance notices, suspensions of services, owners' committee (OC) meetings, activities notifications, etc. Such information used to be delivered to residents via notice boards or flyers in mailboxes with the help of security or on-site management staff. As a result, property management companies need to increase their expenditures on administrative resources, such as hiring more property management staff to deal with *ad hoc* issues, establishing and maintaining records, arranging separate accounting systems for facilities bookings, conducting regular paper-based resident satisfaction surveys, etc. Also, information delivery failure could lead to the postponement of projects or activities and cause financial loss and/or resentment between residents and management staff.

Cost savings is not the only reason to develop WPMS for property management. WPMS also helps property management companies save on administrative costs.

> *The Tools have freed us from a number of tasks which were originally dealt with by hand. These tasks can now be undertaken through the online system, which really saves the company a fortune. For example, we used to spend quite a sum of money on stationary. We used to mark down the booking records in logbooks and there are piles of logbooks now lying in the storeroom. Now, several clicks online help to complete the bookings.*

---Interviewee A

One thing for sure is that it (the portal) has saved the company a great sum of money on administrative resources, which is regarded as very costly in property management.

---Interviewee D

3.2.2 Inclusiveness of a Variety of Information

Web-based property management tools allow large volumes of information to be shared. Property management companies share a great variety of information with residents through a WPMS, hoping to increase residents' convenience and satisfaction in their daily lives.

The interviewees shared with the Research Team information provided through their own WPMSs. Generally, two types of information are shared: notifications and general information. The former includes important notices of property services such as the cleaning of water tanks, pest control, common area floor cleanings, small maintenance projects, etc. This information needs to be delivered to residents well before the work commences so that residents have time to adjust to the temporary inconvenience. WPMS provides an additional channel for informing residents of the services provided by their property management companies.

Aside from notifications, residents can also access other types of information through a WPMS, such as local weather forecasts, leaflets on government services, relevant legislation and codes of practice, meeting minutes, annual reports, nearby community services, etc. This type of information is not constrained by a specific time frame and simply serves as a record or reference for residents, who can easily find information on property services and building/community-related issues through a WPMS.

According to the property managers interviewed, WPMS not only provides convenience to residents, but also serves as an important channel to deliver information to them.

The portal has helped [property managers] greatly by providing a platform to share important information, such as important notice on maintenance work schedule or service to be suspended. Even though not every resident is able to use the portal regularly to receive information from the property management office, it has been convenient for the property management office to provide integrated information on a platform which is designed to be accessed by every resident.

---Interviewee C

We use [the portal] to provide various kinds of information including notices, local weather broadcasts, brochures, relevant Buildings Ordinances, meeting minutes, annual reports, etc. Our aim is to provide as much information as possible to offer convenience to the residents.

---Interviewee F

3.2.3 Enabling Efficient Communication and Enhancing Mutual Understanding

Owing to inefficient communications before WPMS, property management companies were unable to provide timely services, which undermined residents' satisfaction with them. WPMS not only provides a platform for integrating information-sharing, but also serves as a channel for direct and indirect communication. It has, to a great extent, enabled more efficient communication and enhanced the mutual understanding between residents and the property management companies.

Usually it takes quite some time for the residents to become familiar with the schedule and arrangements of the property management services of their own buildings. WPMS has shortened the time and enhanced the efficiency of communication

---Interviewee B

WPMS enables information-sharing in a bi-directional manner. This kind of information-sharing enhances communication and mutual understanding.

---Interviewee C

[The portal] has helped to enhance the communication between the property management company and the residents of the buildings. First of all, the residents are informed of the service provision status on a timely basis. Second, they can choose to communicate with our staff by leaving a message through the WPMS, e.g. e-mail, forums, etc. Third, the residents are able to understand our scope of services and workloads while we can get to know the needs of the residents.

---Interviewee F

According to the interviewees, residents who use WPMS have left very positive feedback on the system. Property management companies conduct service satisfaction surveys every year and evaluate the performance of WPMS in them. Based on the results of these surveys, residents who became familiar with using WPMS welcomed and would continue to use WPMS to obtain services from their property management companies.

3.3 Challenges for WPMS in Hong Kong

3.3.1 WPMS Usage Rate

The interviewees generally agreed that the usage rate of WPMS is the biggest challenge for its continued development in Hong Kong. But they warned that a well-developed WPMS was costly. The process of developing and maintaining a WPMS involves a considerable amount of financial input into user analysis, client meetings, trial launches, adaptive revisions, user satisfaction surveys, regular maintenance and upgrades, etc. For a property management company, the decision to develop a WPMS for the buildings under its management depends on if its clients and residents are willing to chip in to invest in one and how much they are willing to invest. If the WPMS's usage rate is low, then clients and residents will not continue investing in it and property managers may also limit their services as a result.

Currently in Hong Kong, the usage rate of WPMS is low, according to the interviewees. They believed that users' habits and experiences with using WPMS, along with the design of WPMS, affected the low usage rate.

Our concern is that not many people use this kind of tool in our estates.
                                        ---Interviewee A

The biggest challenge…to further develop the management portal is that few people are actually using it for services.
                                        ---Interviewee B

I don't see that many people are keen on using it. Many people tend to take alternative approaches to get what they need, such as sending us a message through WhatsApp
                                        ---Interviewee D

Frankly speaking, the elderly don't use [WPMS]. People who are busy do not have time to use it. They do not even have the time to remember their usernames and passwords. Other people do not use it because they prefer contacting us directly in person. I doubt there are more than 50% of residents who use it.

---Interviewee E

…we provide basic management services through the online system. Our plan is not to provide property management services through the online system because we do not believe that many of our residents have developed the habit of seeking services through the online system…
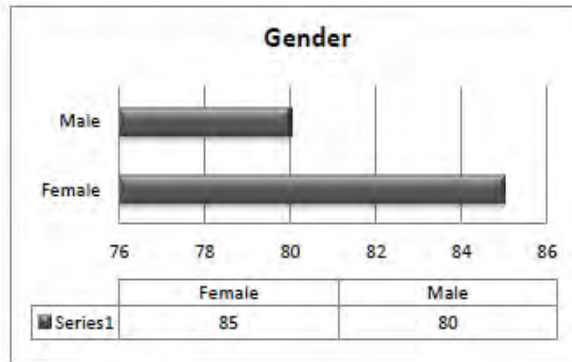
---Interviewee F
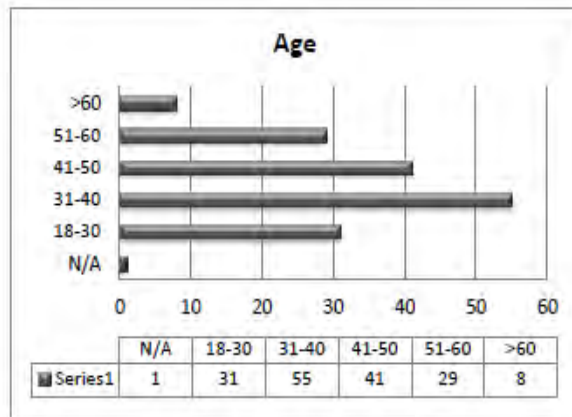
3.3.2   Limited Service Provision through WPMS

Most interviewees believed that in Hong Kong, WPMS plays only a supporting role in providing property management services. Even though some property managers were eager to explore new functions and enlarge the service scope of WPMS, the fact is that it has provided very limited services in Hong Kong. According to the interviewees, WPMS was mostly used to book venues and activities and provide very basic information on property management services.
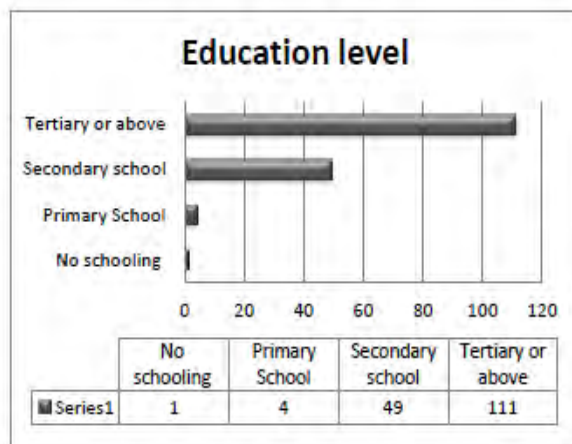
4 FINDINGS OF THE QUESTIONNAIRE SURVEY

4.1 Demographics of the Respondents

Gender

	Female	Male
Series1	85	80

Sex 性別： ☐ Male 男
☐ Female 女

Age

	N/A	18-30	31-40	41-50	51-60	>60
Series1	1	31	55	41	29	8

Age 年齡： ☐ 18 ─ 30
☐ 31 ─ 40
☐ 41 ─ 50
☐ 51 ─ 60
☐ > 60

Education level

	No schooling	Primary School	Secondary school	Tertiary or above
Series1	1	4	49	111

Education level 教育水平：

☐ No schooling / Kindergarten 小學以下
☐ Primary 小學
☐ Secondary 中學
☐ Tertiary or above 大學及以上

Figure 4.1   General Demographics of the Respondents (N = 165)

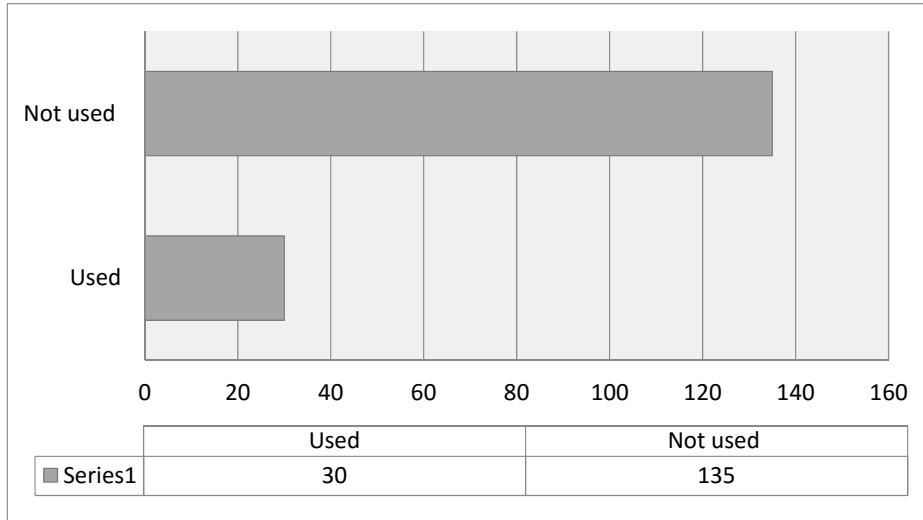|	Used	Not used
Series1	30	135

Figure 4.2   Interviewee Responses on Using WPMS (N = 165)

A total of 165 residents were interviewed (respondents) based on a structured questionnaire.   Only 19% had used the WPMSs provided by their property management companies.   Interestingly, 16% of the respondents did not know the names of the property management companies that managed their estates.   It was clear that WPMS was not popular among the residents of the sampled private residential estates.   However, it is still worth investigating their user habits, personal experiences, and satisfaction (or lack thereof) with WPMS.
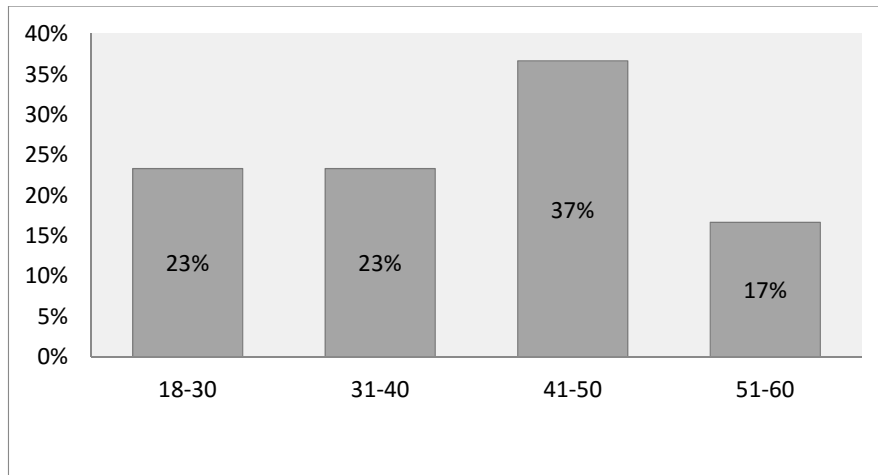

Figure 4.3   Use of WPMS by Age Group

According to **Figure 4.3**, the 41-50 group used it considerably more (by over 60 percent) than the two youngest groups, while the 51-60 group's use lagged behind

that of the two youngest groups by over 25 percent. The results implied that the common belief that younger residents use web-based property management tools more frequently than older residents did not hold.

4.2 WPMS User Habits

Four questions were formulated to investigate residents' methods used to request property management services, their frequencies of using WPMS, their most frequently-used web-based property management services via WPMS, and the media they used to access WPMS.
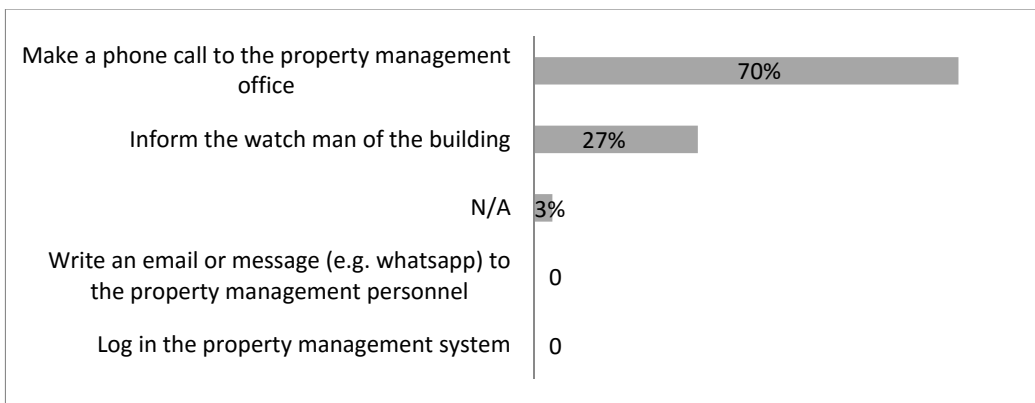

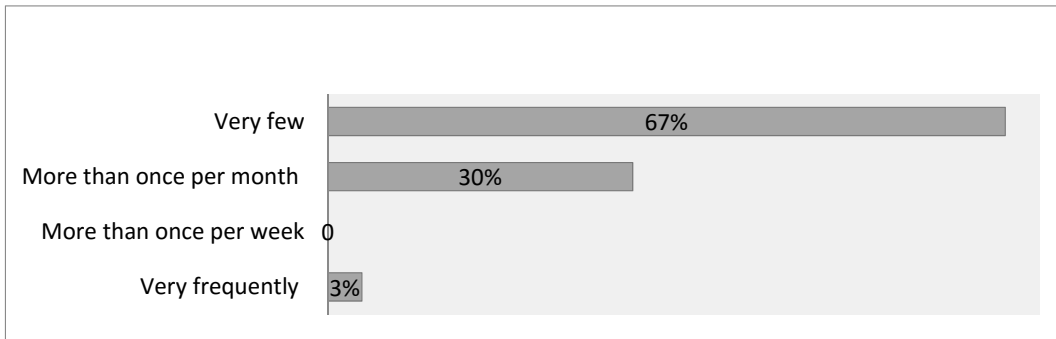**Figure 4.4**   Residents' Methods Used to Request Property Management Services

Figure 4.5   Frequency of WPMS Use

Figure 4.4 shows what residents tended to do first when they needed property management services and **Figure 4.5** shows their WPMS use frequencies. The results implied that even though some residents habitually used WPMS, they continued to rely on the more traditional means of contact when they needed property management services. According to **Figure 4.4**, no resident logged into a property management

system to request a property management service. Also, the usage rate of WPMS was rather low, with only 30% of residents using it more than once per month. In fact, 67% of residents revealed that they rarely used WPMS. In short, not only have few people used WPMS, but those who have seldom used it to request a service from their property management companies. Instead, most of the activities they performed using WPMS would be considered self-service, as **Figure 4.6** shows.
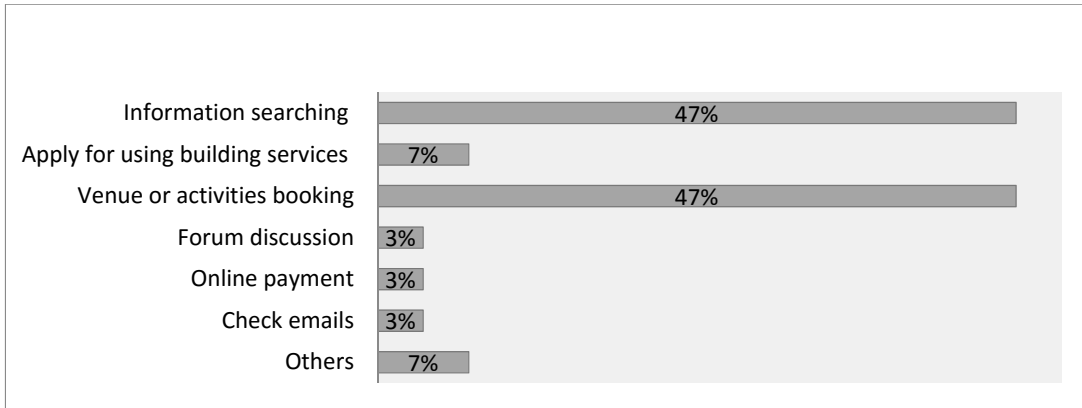

Figure 4.6   The Most Popular Activities via WPMS

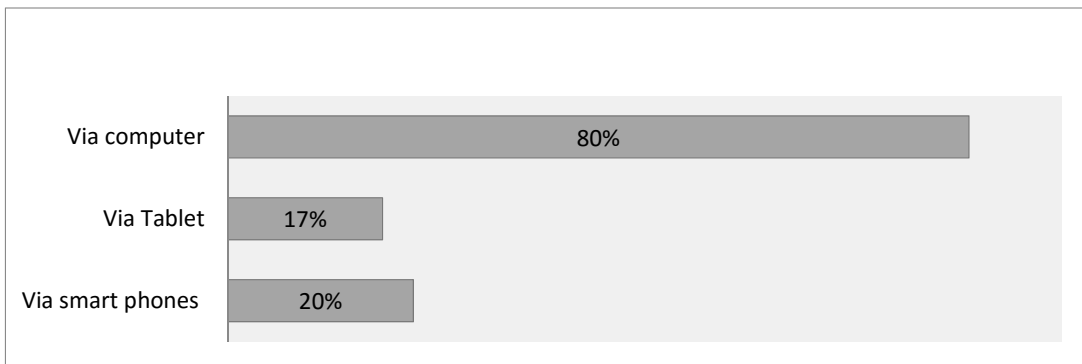**Figure 4.7** shows the media residents used to access WPMS.

Figure 4.7   Media Used to Access WPMS

25

Although property management companies usually strive to provide more property management-related services via WPMS, **Figure 4.6** revealed that under most circumstances, residents used WPMS to search for information and book venues or activities. Very few residents used WPMS to apply for building services, participate in forum discussions, check e-mails, submit online payments, etc. Also, **Figure 4.7** showed that most residents accessed WPMS on their computers rather than on their mobile devices.

4.3   Personal Experiences with WPMS
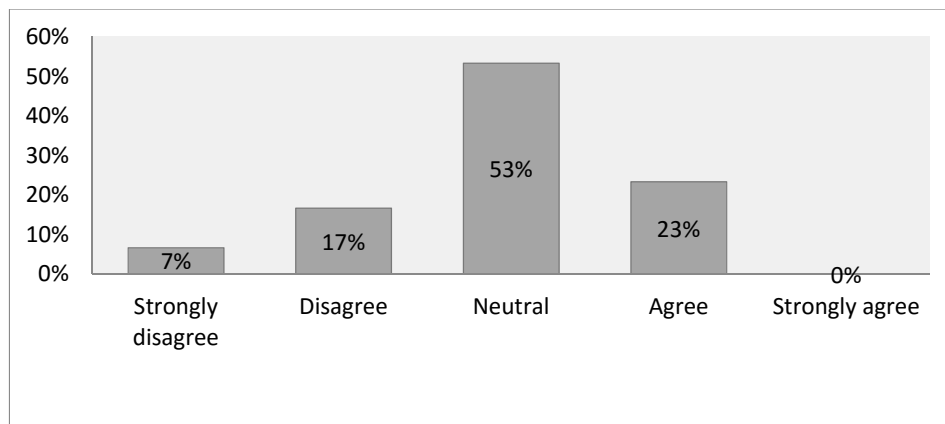

Figure 4.8   Residents Asked if the Graphic Designs were Attractive
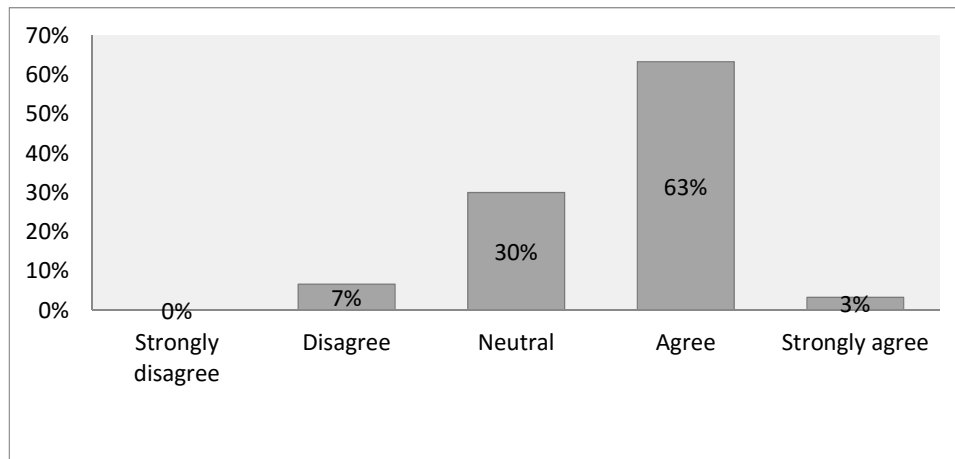

Figure 4.9   Residents Asked if the Webpage Contents were Clear and Easy to Understand
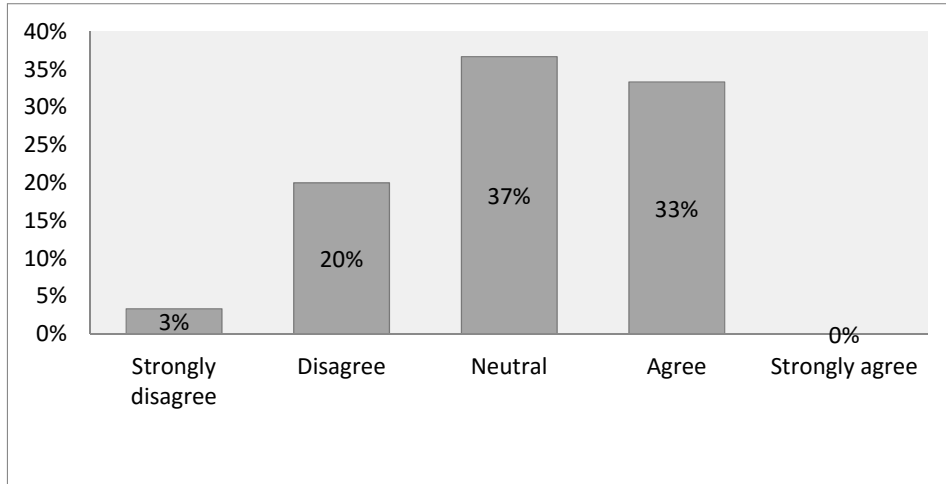
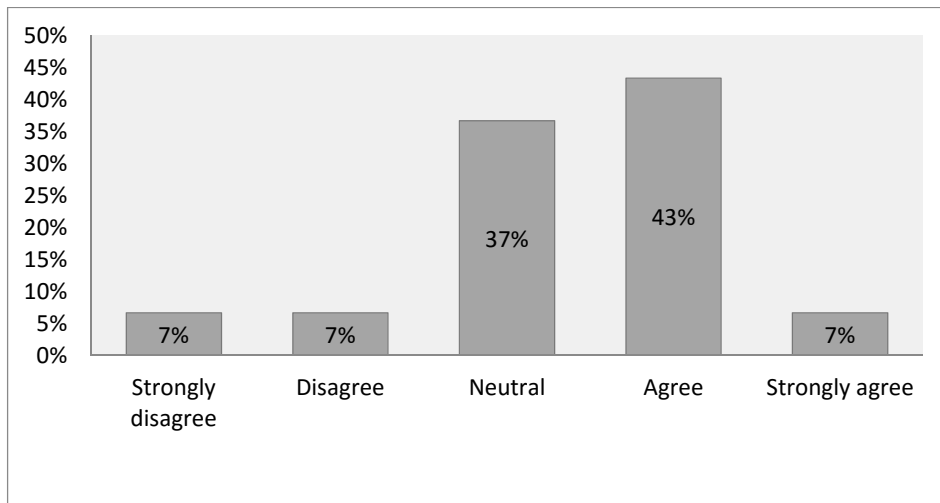**Figure 4.10** Residents Asked if the Information Met Their Needs

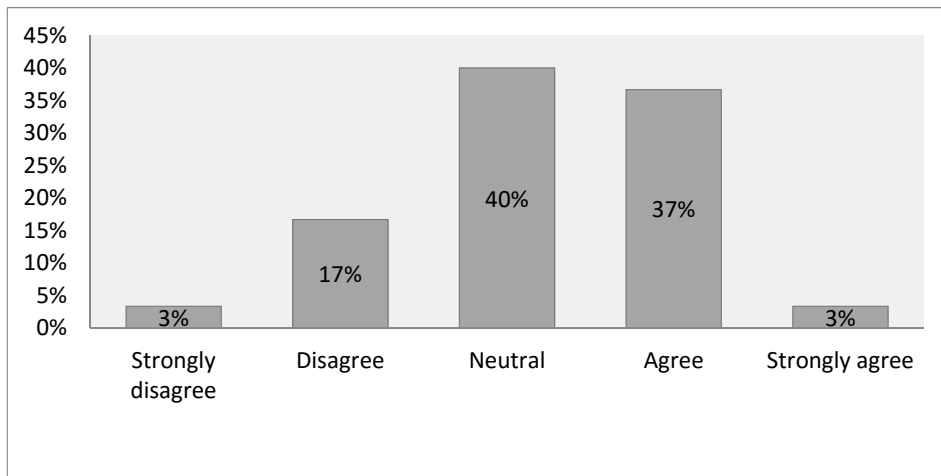**Figure 4.11** Residents Asked if the Information was Easy to Find

Figure 4.12 Residents Asked if the Speed of the Response was Fast

Figures 4.8 to **4.12** were generated based on the residents' answers to the following questions:

- Do you think that the graphic design is attractive?
- Do you think that the webpage contents are clear and are easy to understand?
- Do you think that the information meets your needs?
- Do you think that the information is easy to find?
- Do you think that the speed of response is fast?

These questions were designed to determine residents' perceptions of the design and functions of the WPMS interface. Residents' perceptions affected their behaviour. The attractive designs and functions of the webpages were able to retain many WPMS users. The figures suggested that residents were satisfied overall with the design and functions of the WPMS interface.

4.4 Satisfaction with WPMS

According to **Figures 4.13** to **4.17**, over half of the residents believed that WPMS was convenient and, to a certain extent, reduced the cost of employing a property management service. Half of the residents agreed that WPMS enhanced their property management service's efficiency. However, 40% disagreed that WPMS adequately applied web-based technologies to property management services. In other words, residents expected that there was room for improvement by utilising the untapped potential and capacity of web-based technologies in WPMS.
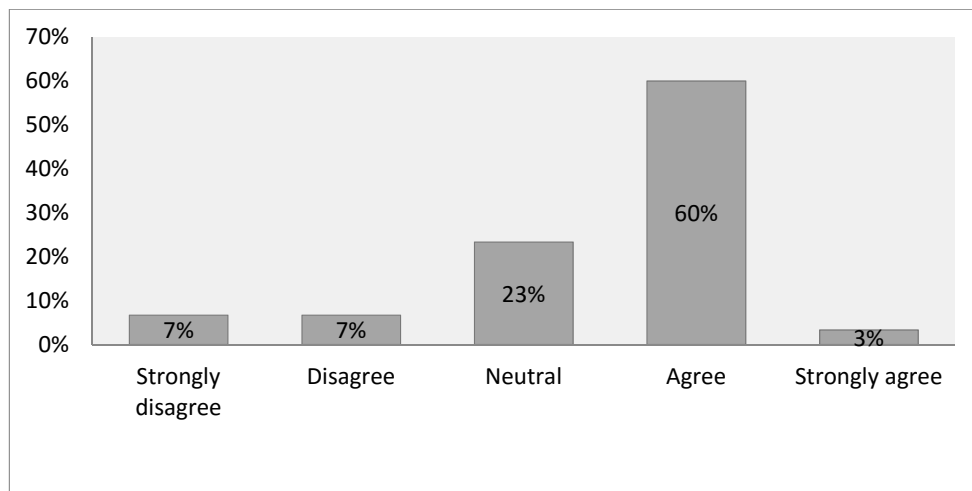

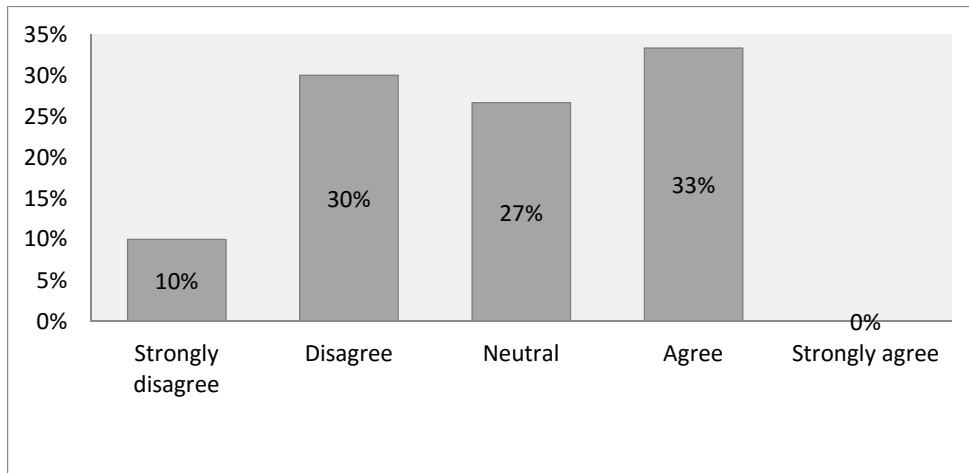**Figure 4.13**   WPMS Provides Convenience

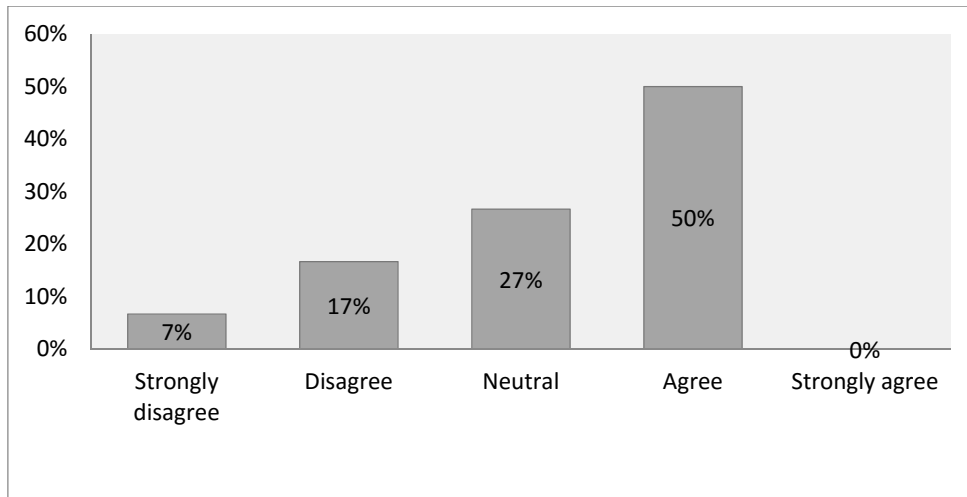**Figure 4.14**   WPMS Provides Various Types of Information

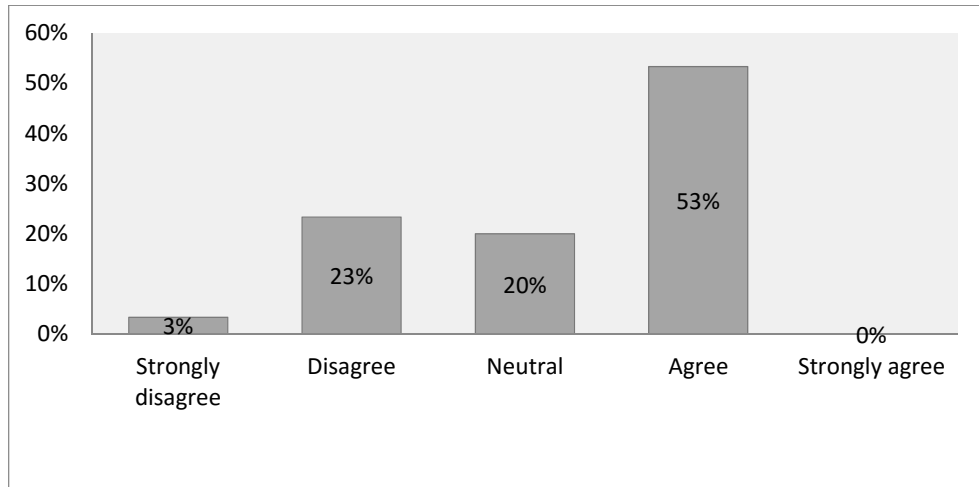**Figure 4.15**   WPMS Enhances Property Management Service Efficiency

Figure 4.16 WPMS Reduces Property Management Service Costs
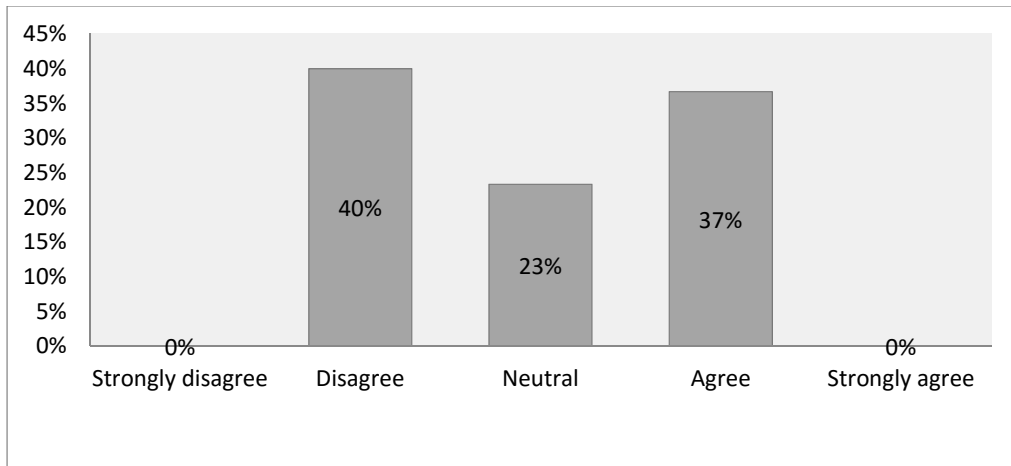

Figure 4.17 WPMS Has Satisfactorily Applied Web-based
Technologies to Property Management Services

5 DISCUSSION

The findings of the desktop study showed that a number of property management companies provided WPMS to residential buildings. According to the interviewees who were property managers, developing web-based property management tools to manage residential estates has become common practice among property management companies. Some interviewees revealed that their companies had committed a considerable amount of financial resources to developing web-based property management tools as platforms to improve property management services and collect feedback from users. Also, these companies planned to enlarge the scope of their property management services through WPMS and encouraged residents to use WPMS to request services. However, the results of the study showed that the usage rate of WPMS among residents has been rather low.

5.1 Active Provider and Passive Receiver

Internet technologies can support the provision of various property management services including online bookings and payments. Recognising that technology is and will be an inevitable trend worldwide, property management companies have been actively developing WPMS over the past decade to help support their services. Technology is no longer an obstacle for web-based property management tools. The main issue that prevents residents from using WPMS is culture. This must change before more people can start to request property management services through WPMS. It will take time.

Hong Kongers generally prefer direct interaction with service providers and tend to approach property management personnel via telephone or face-to-face conversations. Property managers think that it will take a long time to educate and convince residents to adopt WPMS to request property management services. The results of the interviews with property managers and survey of residents confirmed that the level of understanding of WPMS for residents was not high, which made them unaware of the scope of services provided by WPMSs. Although property management companies have committed a lot of resources to develop and support WPMS, it remains a fringe channel for requesting property management services.

It is evident that the usage rate of WPMS in Hong Kong is low. Besides, property management companies had mixed views about WPMS, according to the interviews. Some companies held conservative attitudes towards WPMS and did not actively promote it in the estates they managed, while others were keen on the long-term potential of WPMS and integrated it into their organisation development plans. The latter seek further opportunities to provide WPMS with more technical support, thus enhancing the quality of their property management services. They actively offered WPMS to their residents and encouraged its use among them.

5.2   Resources Support

The way to increase the general public's awareness of WPMS and its functions is a task for on-site property managers and their teams. The former shoulder many important responsibilities to promote WPMS and help residents increase their use of WPMS. In the meantime, on-site property management teams are responsible for updating information, maintaining WPMS on a regular basis, and meeting residents' requests through WPMS. In addition to providing convenience to residents, property managers have to expend a lot of effort studying the residents' behaviours and facilitating their use of WPMS.

The results of the survey verified some interviewees' concerns, notably that the usage rate of WPMS was low and few residents used WPMS to request services from their property management companies. Aside from the resources needed to operate a WPMS, a considerable amount is also needed to promote and develop it. A more user-friendly system with marketing and/or advertising functions may need to be incorporated. Activities such as demonstration workshops should be organised to facilitate the use of WPMS among residents. It is clear that the development of and support for WPMS require a long-term commitment of resources.

6 CONCLUSION

This study created a database of private residential estates that provide WPMS. The recent status of its development and usage was investigated through interviews with professional property managers and a questionnaire survey of the residents in those estates with WPMS. The results of both demonstrated that property management companies in Hong Kong were generally active providers of WPMS, while residents were generally passive recipients of property management services through WPMS. More research on residents' behaviour in requesting property management services should be conducted.

The Research Team encountered a lot of difficulties when it tried to increase the size of the samples – both for the interviews with property managers and the surveys of residents. Thus, the sample size remained small, which indicated a low research culture among Hong Kong's property management sector and general population.

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Appendix 1   Major Functional Areas for Property Management under Specification of Competency Standards

Functional Area	Description
Building Repair and Maintenance	Repair and maintain the building's structure and its facilities (ventilation, fire services installations, plumbing and drainage, air-conditioning, and electrical installations); maintain and continuously improve the building's functions in order to enhance its value; purchase and outsource its repair and maintenance works. **Building Facilities** Ventilation systems, fire services installations, plumbing (water tanks/booster pumps) and drainage systems, air-conditioning systems, electricity supply and emergency electricity supply, lifts, escalators, closed circuit TV/security systems, telecommunications networks and electronic technology, gondola, work platforms, etc. **Building Improvements and Enhancements** - Major projects such as re-roofing, upgrading electricity supply, external wall renovations, etc - Project/construction work management
Management of the Property Environment	Cleanliness, hygienic conditions, landscape improvements, and safety of the environment **Cleanliness, Hygienic Conditions, and Landscape Improvements:** - Cleanliness of common areas of buildings - Landscape design and maintenance - Environmental protection **Safety of the Environment** - Security - Control of private roads - Emergencies - Fire safety
Property Management Services for Owners, Tenants, and the Community	Daily services for and liaison with owners/residents/tenants/clients, etc. **Management Services to Owners' Representatives** - Convening regular meetings such as owners' committee meetings, management committee meetings, owners' general meetings, annual general meetings, etc - Submission of periodic work reports **Customer Services for Residents** - Handle and follow up on enquiries, complaints, and suggestions,

etc
- Formulate a residents' handbook according to the stipulations of the deed of mutual covenant
- Promote community development and develop good neighborhood relations

General Management Services
- Pre-management
- Management record
- Insurance and risk management
- Take note of and carry out occupational safety and health initiatives
- Devise management contracts and tenancy agreements
- Quality assurance

Facility Management	Focus mainly on property-related facility management. Other functions of the facility manager are not included. Mainly concerns clubhouse, shopping centre, industrial and commercial buildings, other types of premises, ancillary facilities of car parks and loading areas, and other facilities managed by property management companies.
	Clubhouse, Cultural, and Recreational Facilities
	- The use and management of common types of facility including the application of licences, maintenance, and the replacement of recreational facilities
	Shopping Centre, Industrial and Commercial Buildings, and Facilities on Other Premises
	- The use, management, and development of common types of facilities on premises
	Facility Management of Car Parks and Loading Areas
	- Car park facilities (access control systems, illumination, air quality, direction signs, etc), driveways, car park spaces, service lifts and their management, control and repair, and the maintenance of other facilities
Law in Practice	Understand the general scope of each government department's work and the judiciary system, the arrangement of litigation and mediation, drafting of contracts, etc, and provide suggestions on the Building Management Ordinance.
	Legal Procedures, Litigation, and Mediation Arrangements:
	- Appoint a legal retainer to commence legal proceedings such as litigation/defence, etc
	- Application of injunction from the court
	- Arrangement of mediation or arbitration
	Write Contracts
	- Execution of contracts on the supply of goods or services (including outsourced management contracts)
	- Formulate contract clauses
Finance and Asset	Financial management and budget preparation

Management	
	Income and Expenditure Account - Collection of management fees (including surcharges on interest and administration levied on outstanding payments in accordance with the deed of mutual covenant/Building Management Ordinance - Arrangement/confirmation of daily expenses - Submission of income and expenditure statements and balance sheets - Allocation of funds **Budget** - Calculate the annual expenditure on regular items and service contracts - Make provisions for non-routine expenses - Allocate funds to building repair projects **Corporate Financial Management** - Asset management - Calculation of financial income/cash flow
Human Resources Management	Plan for manpower needs, staff recruitment, training, performance assessments, building of management team with close cooperation, work safety and good communication with clients. At the same time, take into consideration the unique circumstances of the property management industry, for instance the code of practices of the profession, personal ethics, language requirements, and legal provisions.

Source: Adapted from http://www.buildingmgt.gov.hk/pdf/Consultation%20Paper_eng.pdf accessed

on 3 July 2016

THE HONG KONG INSTITUTE OF SURVEYORS
香港測量師學會

香港大學
THE UNIVERSITY OF HONG KONG

Appendix 2

Research Project on the Effective Use of Web-based Management Tools for Property Management Companies in Hong Kong

This study is funded by the Hong Kong Institute of Surveyors' Property and Facility Division to explore the current development of web-based management tools used in property management/facilities management. In this study, the web-based management tool refers to a media tool (e.g. portal, websites, apps, etc) for communication between property management companies and owners, residents, tenants, and the general public.

1. **What types of properties/assets are managed by your company? Please tick the box that applies:** ☑
Shopping malls □ *Public housing* □ *Residential buildings* □
Commercial buildings □ *Multi-functional buildings* □ *Clubhouses* □
Others □   *Please specify*:

2. **Which of the following services are provided by your company? Please tick the box that applies:** ☑
Maintenance and repairs □ Building services & operations □
Real estate & consultancy □ Client services □
Others services   Please specify:

3. **What kind of property management services is supported by the web-based property management system (WPMS)? Please tick the box that applies:** ☑ **Can you also specify? For example:**   **Maintenance and repair services** ☑   **Including: building refurbishment and renovation, landscaping, and landscape maintenance**   **Client Services** ☑   **Including: client communication, online notifications, online bookings, payments, etc.**
Maintenance and repairs services □   Including:
Building services & operations □   Including:

Real estate & consultancy services ☐ Including:
Client services ☐ Including:
Others services Please specify:

4. **What systems/software is (are) used to support the WPMS (e.g. portal, apps, etc)?**

5. **What are your thoughts regarding the difficulty of the system? What are the main points/causes that led to the existence of this difficulty?**

6. **What are the main indicators that show this difficulty?**

7. **According to your understanding, what is the possible solution to this difficulty?**

8. **What do you think of the implementation of a web-based property management tool by your company?**

Appendix 3

Interview Invitation Letter

Dear xxx,

<u>Hong Kong Institute of Surveyors Research Fund</u>

<u>Project Title: The Effective Use of Web-based Management Tools for Property Management Companies in Hong Kong</u>

Interview Invitation

I, Daniel C.W. Ho, Associate Professor of the Department of Real Estate and Construction, The University of Hong Kong, has been commissioned by the Hong Kong Institute of Surveyors' (HKIS) Property and Facility Management Division (PFMD) to conduct a research project entitled, "*The Effective Use of Web-based Management Tools for Property Management Companies in Hong Kong*". The project intends to study the way to use web-based technology to provide process enhancement to the property and facilities management profession. You are cordially invited to participate in a 20-minute interview that aims to explore the above issues.

All information obtained from the interview will be kept strictly confidential and a research report will be shared with you when the research project is completed. Either the Research Assistant for this project, Dr. Cynthia Hou, or I will contact you soon for the interview. If you have any question about this project, please contact me at 28592146 or e-mail: danielho@hku.hk. Thank you very much for your assistance with the research project.

Yours sincerely,

Dr. Daniel C.W. Ho
Department of Real Estate & Construction
The University of Hong Kong

Appendix 4
Research Project on the Effective Use of Web-based Management Tools for Property Management Companies in Hong Kong
關於香港網上物業管理系統的使用調查
<u>Questionnaire Survey</u>
<u>問卷調查</u>

You are invited to participate in a research project funded by the Hong Kong Institute of Surveyors' Property and Facility Division. This study aims to explore the current development of web-based management tools used in property or facilities management. This questionnaire will take only five minutes to complete. All information collected will be treated in strict confidence. Individual details will not be disclosed or identified from this survey. Your participation is entirely voluntary. If you have any question on the research project, please feel free to contact Dr. Daniel C.W. Ho (2859-2146) or Dr. Cynthia Hou (6347-6473).

A. Personal Information 個人資料

1 Sex 性別：□ Male 男 □ Female 女	2 Age 年齡：□ 18-30 □ 31-40 □ 41-50 □ 51-60 □ > 60
3 Education level 教育水平：□ No schooling/Kindergarten 小學以下 □ Primary 小學 □ Secondary 中學 □ Tertiary or above 大學及以上	
4 Which property management company is responsible for the property management services of your estate/building? 你所在大廈的物業管理公司是：	
5 Does the property management company provide a web-based property management tool (e.g. portal, apps)? 你所在大廈物業管理公司是否有提供網上物業管理系統（如：網上服務平台，Apps 等）？ □ Yes 是　　□ No 否	

| 6 | Have you ever used the web-based property management tool?
你是否有使用網上物業管理系統？

☐ Yes 是　　　☐ No 否 |

B. User Habits 網上物業管理系統的用戶使用習慣

7	Which option would you choose first when you need property management services? 當你對物業管理服務有需求的時候，你的首選是? ☐ Write an e-mail or message (e.g. WhatsApp message) to the property management personnel 　　電郵或發信息於物業管理公司職員 ☐ Make a phone call to the property management office. 　　打電話至物業管理公司辦事處 ☐ Inform building security. 　　讓大廈保安向物業管理公司轉達 ☐ Log into the property management system. 　　登錄並使用網上物業管理系統
8	How often do you use the web-based property management tool (e.g. tenant portal)? 你使用網上物業管理系統的頻率是? ☐ Very little, almost never 非常少，幾乎從未使用 ☐ More than once per month　一個月使用多於一次 ☐ More than once per week　一個禮拜使用多於一次 ☐ Very frequently　非常頻繁使用
9	Which online services provided by your web-based property management tool have you used? 你有使用網上物業管理系統所提供的哪些服務? ☐ Information search 資訊瀏覽及查詢 （各類通知，綜合資訊等） ☐ Application to use building services 申請使用大廈設施服務 ☐ Venue or activities booking 場地或活動預約 ☐ Forum discussion 參與網上論壇討論 ☐ Online payment 繳付費項 ☐ E-mail 查詢電郵 ☐ Others 其他（Please specify 請註明：　　　　　　　　　　　　　　）
10	How do you usually access the web-based property management tool? 你通常是如何登錄及使用網上物業管理系統？ ☐ Via computer 使用電腦 ☐ Via tablet 使用平板電腦 ☐ Via smartphone 使用數碼手提電話

C. Personal Experiences 網上物業管理系統的用戶體驗

11	The graphic design is attractive. 版面設計美觀吸引. ☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree 　非常不同意　　　　不同意　　中立　　同意　　非常同意
12	The webpage content is clear and easy to understand. 內容清晰，容易理解. ☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree 　非常不同意　　　　不同意　　中立　　同意　　非常同意
13	The information meets my needs. 所提供資訊滿足我對物業管理服務對需求. ☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree 　非常不同意　　　　不同意　　中立　　同意　　非常同意
14	The information was easy to find. 容易找到相關資訊. ☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree 　非常不同意　　　　不同意　　中立　　同意　　非常同意
15	The speed of response was fast. 響應速度快. ☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree 　非常不同意　　　　不同意　　中立　　同意　　非常同意

D. Satisfaction with the Web-based Property Management Tools
對網上物業管理系統的總體滿意度

16	They are convenient. 提供了便利 ☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree 　非常不同意　　　　不同意　　中立　　同意　　非常同意
17	They provide a variety of information.

	提供了多樣化的資訊.
	☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree 非常不同意 不同意 中立 同意 非常同意
18	They enhance the efficiency of property management services. 提高了物業管理服務的效率. ☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree 非常不同意 不同意 中立 同意 非常同意
19	They reduce the cost of property management services. 降低了物業管理服務的成本. ☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree 非常不同意 不同意 中立 同意 非常同意
20	They apply web-based technologies to property management services in an effective manner. 很好地在物業管理服務上使用了網絡技術. ☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree 非常不同意 不同意 中立 同意 非常同意

Thank you for taking part in this survey!
多謝你的參與！