

CEMS MIM Work Project

KONE – NewBz2020

Bernardo Fonseca Pinto Lopes dos Reis

MSc Finance #562

19th May 2014

Table of contents

- 1. The context of the Business Project2
 - Business Project Challenge3
- 2. Development of a specific topic4
 - Tacking the challenges in Business (offices) and coworking ecosystems4
 - a) The opportunity4
 - b) The concept7
 - c) Analysis of the recommendation8
- 3. Reflection on learning10
- 4. References12
- 5. Appendixes13
 - Appendix 1 – E&E New Installation Geomix13
 - Appendix 2 – E&E New Installation Global Market Shares13
 - Appendix 3 – E&E Market Split by Value14
 - Appendix 4 – Overview of the main conclusions of the Project14
 - Appendix 5 – Where do organizations expect people will work?17
 - Appendix 6 – Types of roles for system participants17

1. The context of the Business Project

KONE is a privately-owned Finnish engineering and service company, founded in 1910. It has as its main objective to offer people the best People Flow experience, enabling people to move more efficiently, smoothly and safely inside the buildings and urban environments. Albeit being known as one of the world's largest producers of elevators and escalators, KONE also secures its maintenance, produces and services automatic doors and gates, and provides planning, design and other innovative solutions for buildings. In the year of 2013, KONE registered annual net sales of EUR 6.9 billion, net income of EUR 713 million and, at the end of the year, it had over 43,000 employees.

The main industry where KONE operates is the elevator and escalator (E&E) one. Even though four big companies have a big control over the market nowadays, there are also smaller independent elevator companies that sell and service elevators in different places of the world. There is, however, a trend for consolidation, as the bigger companies keep on acquiring smaller ones. In terms of technology, there have also been some changes, with the multinational firms also leading the way.

The E&E industry can be divided into three businesses: new equipment, and services of maintenance and modernization. New equipment is the production and installation of new equipment and, given the fact that it depends highly on the growth of the construction market, it is considered a very cyclical business. The Asian markets, and in special China, are nowadays the main markets for new installation of E&E equipment (Appendix 1). In terms of competition, this is a consolidated market, with the four biggest players (Otis, Schindler, KONE and ThyssenKrupp) representing a large market share (see Appendix 2). The second and largest business (see Appendix 3), maintenance, consists on maintaining the installed equipment and its drivers of growth are the size of the installed base and the legislation and safety requirements. Finally, the third business comprises the services of modernization of the installed equipment. The profitability of these services depend on the age of the installed base and the legislation and safety requirements in each jurisdiction. In these two types of services, the structure of the market is relatively more fragmented than in the installation of new equipment, with small mid-sized local players having a stronger presence. For both these services, EMEA and North America are still very important markets while the Chinese market is still growing.

KONE is among the four biggest players in the E&E market, with an estimated market share of 18.5% of the new equipment sold and installed in 2013, and close to 8% in the maintenance

market. China remains the biggest market for KONE and it has been a key driver of growth for the group in recent years. Even though it is expected that China continues to grow over the next couple of years, the growth expected for 2014 halves the 20% seen in 2013. Furthermore, there has been a marked increase in the level of competition between the major international players which has been prompting KONE to search for new opportunities.

KONE recently changed the group's focus and shifted from being simply an E&E company to, more widely, ensuring a better people flow in built environments. The aim is now to allow people "to move smoothly, safely, comfortably, and without waiting in and between buildings" (KONE, 2014a). The result of this change was the extension of the company's portfolio of offerings to include access control systems, automated doors among many others.

Business Project Challenge

Several phenomena are changing the way buildings are being used nowadays. Trends such as urbanization and sharing economy have been leading more and more people to use buildings at the same time, which creates a possibility for a "smarter" utilization of the available space. Being KONE an engineering and service company that aims at improving end-user experience with solutions that facilitate the move of people in and between buildings, this is then an opportunity worth exploring. The goal of our business project was, by studying different ecosystems and the specific characteristics of each, to identify potential roles for KONE and evaluate their global scalability.

Starting our analysis with four different ecosystems (coworking, retail, offices and airport), we analysed the characteristics, needs and value creating activities of each one, which yielded three final recommendations (see Appendix 4 for more detailed information):

- 1) Booking and access control system with integrated billing. This system integrates a booking platform with the access control, in order to only allow the right people to access the space at the right time, and then invoice them accordingly;
- 2) Monitoring system to be able to analyse the people flow data. By understanding trends, it is possible to optimize the energy consumption, and improve flow of people. It can also help to understand behavioural patterns, especially useful for retail spaces;
- 3) Indoor navigation system. This system allows people to use their smartphones to help then navigate inside buildings, tracing their own route according to the available time and their own interests.

2. Development of a specific topic

As mentioned, the aim of this project was to find potential roles for KONE to participate in the different ecosystems studied, which could serve as a stepping stone for new businesses within dynamic space allocation. The recommended approach, for a matter of simplification was to study four different ecosystems separately, their activity and how they created value, their intrinsic characteristics and, very importantly, their challenges and limitations, to understand where KONE could intervene. By comparing each these analysis with a study of KONE's core capabilities, we were then able to make recommendations for each ecosystem, paying special attention to the scalability factor. It was important that these ideas could be applied not only to the studied ecosystems but also to other companies within the same business, to companies in different businesses that faced the same challenges and companies in different locations in the world. This prompted us to develop a set of three different recommendations that tackled the challenges related to the management of the space in the companies' buildings.

When preparing the conclusions we realized that there were multiple possible combinations of the three recommendations and interactions of different ecosystems that could result in very interesting new concepts. By making the ecosystems work together, it could be then possible to offer a solution for problems that, at first, did not seem to be inside KONE's area of intervention. Naturally, this would have some limitations too, especially in what concerns to scalability, as these would have a more restricted applicability to different businesses. Nevertheless, the integration of systems could be a better fit to real world problems and some of the ideas generated could result on interesting business opportunities.

The presented ideas add to the original study an analysis of a current trend in corporations and relate that to coworking and office hotels ecosystems. The recommendations for this case combine two presented on the Business Project to offer a much more comprehensive solution, better capable of rising up to the challenges of each of the ecosystems.

Tacking the challenges in Business (offices) and coworking ecosystems

a) The opportunity

- *Business offices*

As detected in the interviews and presented in the project, the way businesses operate nowadays is changing and it is expected to change even more in the future. According to PWC (2011), the

Millennials (generation of people that were born between the early 80's and early 2000's), will be roughly 50% of the global workforce in 2020. What makes this a challenge is the fact that the Millennial mindset is, in some points, completely different than the mindset of previous generations. Characteristics such as the wide use of technology and the cooperation are likely to motivate big changes in the way work is done nowadays (Meister & Willyerd, 2010). To announce their plans of action for those changes in the work environment, several companies started publishing studies with concrete measures to be applied in a foreseeable future. These studies, generally presented under the name of workplace 2020, aim not only to make the companies more adapted to the presence of the Millennial generation but also to make sure they do not become so different to the different model that older generations cannot easily adapt too.

One of the changes common to most companies that presented their report is the change in the work setting. Up to now it was common to see people from the same company working together every day in corporate offices. However, according to the beliefs of many companies, that is changing as the newer generations are more concerned with work-life balance and are more used to technological resources. As mentioned by Russ McFadden (2012), VP at AT&T, it is expected that office space “sits vacant, as the worker uses their home, hotel, coffee shop or other ‘third place’ to work”. The same source adds that “by redesigning work spaces and processes for more flexibility, organizations can gain in productivity and reduce their real estate footprint.” One of the companies that started this process already was IBM. In the year of 2012, 39% of the 300,000-member worldwide staff worked in some kind of remote environment and the staff-per-desk ratio that used to be of 4:1 before the adoption of this model increased to an average of 12:1 (GSA, 2012). This programme saved IBM a total of 2 million square feet of office space just in the US and annually it represents a saving of over \$100 million.

In a study presented in 2012, the software company Citrix interviewed 1900 senior IT decision makers and reached the conclusion that only 9% of the organizations do not have plans to adopt mobile workstyles before 2020. The same study refers that the organizations themselves expect their employees to start working from different locations other than the employee's local workplace (see Appendix 5).

All in all, the adaptation of corporation to the new workstyles to better fit the need and expectations of the newer generations has already started and is expected to be intensified over the next few years. The integration of corporations with coworking spaces and office hotels might then be worth exploring.

- *Coworking and office hotels*

Coworking spaces are shared working environments usually rented desk by desk to different people or companies. Besides a space to work, the people that rent the desk usually get access to some services such as printing, telephone, among others. These spaces usually gather a group of people with similar values that are interested in the potential synergies that might arise from working with like-minded people in the same space, on a daily basis. In general, the main users of this space are start-ups, freelancers and work-at-home professionals.

From the interview with Ola Sundell, CEO of HUB Helsinki, it was possible to understand that the space he manages and the other spaces he has been in contact with have not been able to live up to the high expectations that they had at first. According to Mr. Sundell, one of the main reasons for this is the fact that governments are increasing the help to start-up companies, and providing them places to work at for a price lower than the minimum price that coworking spaces can charge. According to the CEO of HUB Helsinki, the best positioning for coworking spaces is then start-ups that have already left the government subsidized spaces but are not yet big enough to get their own offices. A game changer for this industry could be, however, the moment big companies start to incentivize mobile workstyles.

Apart from the shortage of demand, other recurrent challenge of coworking spaces is the personnel costs necessary to keep the spaces running on a daily basis. In order to be able to control that only the allowed people access the building, save energy costs by turning off the equipment after utilization and do the billing of the clients, coworking spaces have some employees, which somehow limits their ability to lower the prices. Keeping the spaces open for an extended period during the day or even 24/7 has been a demand from some clients that most spaces cannot suffice.

The concept of office hotels, that is becoming a trend these days, is similar to coworking except for the fact that the clients rent offices instead of desks in an open space. It is then natural that these spaces become more attractive to companies whose work requires more privacy such as consulting firms, as suggested by CNN's reporter Daisy Carrington (2013). These are usually rented on a daily or hourly basis and, recent pilot tests done by Marriott Hotel in several of its hotels in the US and Europe, proved to be very successful (idem). Differently from coworking spaces, office hotels are usually inserted in other ecosystems such as hotels and airports to suffice the needs of transient workers.

- *Corporate meets coworking*

The recommendations provided in the Business Project could offer a solution to some of the challenges of the office and coworking ecosystems. In both, the booking of spaces could be arranged through the booking and access control systems and the flow of people could be studied through monitoring system to enhance the efficiency of space usage and decrease energy costs. The access control with integrated billing would also help to solve some of the personnel costs of the coworking spaces.

An integration of both ecosystems could, however, help the companies on their will to allow for mobile workstyles. On the other hand, also coworking spaces could benefit from this integration as it would increase the demand for their services.

It is now important to assess how exactly could that integration be done and how could the recommended services be of help to overcome the challenges of both spaces for supply and demand of space.

b) The concept

In order to connect the business office and working space rental businesses, it would be useful to have a platform that could combine the ecosystems in the first place. While the online platform suggested in the booking and access control system in the Business Project was more directed to a general audience that could be looking for a temporary place to work, in this specific case it would make more sense that the platform could be incorporated in the systems of the businesses themselves.

The first step to create this network is to find a group of companies and coworking and office hotels spaces interested in being part of this platform. Having a group of big corporations interested should attract the space rental companies to adhere too. With a network in place any employee could then easily choose a place from the available offer in each location. The next step is, therefore, to think about the booking system.

According to the estimations of the research firm Gartner, Microsoft Office had in 2012 a market share of about 90% in the enterprise market (CNN Money, 2013). This means that the vast majority of the companies offers Microsoft Outlook for their employees to manage their email and calendar. A booking system associated with Outlook, where the employee would book the space simply by putting in his agenda the desired date and location would, therefore, ally the convenience and efficiency desired.

To make the system more interesting for both parties involved, other capabilities could be included, such as the access control and a billing system. The access control, possible to be done through a smartphone, would allow only the person that booked the space (and its guests, if any) to access the building at the booked time and control the amount of time of usage. The billing system would then use that data to invoice automatically the partner company for the space utilization.

Finally, and since the automation of the facility management could be taken even one step further, the monitoring systems could be installed in the coworking spaces, answering to their challenge of personnel costs. This system, allied to the systems previously presented would allow the spaces to run on a daily basis only needing people to assure cleaning services, maintenance and preparation of rooms. This model of self-service spaces that already used in the hotel business (e.g. Omenahotels in Finland and Sweden) could then allow for greater financial flexibility in these spaces and, therefore, a reduction of prices.

c) Analysis of the recommendation

Customers. The potentiality of this system lays on the capability to create an extensive and active network of companies, and coworking and office hotels. If that mission is accomplished, the advantages for the companies lay on the fact that they can give the next step towards more mobile workstyles, increasing employer satisfaction and reducing real estate expenses. The fact that the corporations can be invoiced automatically is also very convenient. This network opens the door to increases in productivity while their employees are in international assignments, as they could find places to work even in transit times. Additionally, it makes the international ventures of companies easier because instead of acquiring or renting their own space while abroad, the companies can simply temporarily rent offices or desks to test the foreign markets before making a bigger investment to expand there.

Coworking and office hotels can also profit from being part of this network and using these systems. Firstly, they can benefit from an increase in demand and also more predictability in the usage of their spaces as the bookings need to be done in advance. Secondly, with the integration of monitoring systems, coworking and office hotels can become almost self-service as a big part of the facility management starts being done in an automated way.

Competitors. It is important to have in consideration that this is a bundle of several individual systems that are offered individually by different companies. The booking service

can be done via direct contact or else through any of the existent online platforms. These platforms are, however, very dispersed and the Outlook integrated booking system would certainly be more practical. Access control is offered by KONE and some of its competitors such as ThyssenKrupp. Billing is usually still done by someone in the spaces, either by hand or using very little automation. Companies such as IBM and SAP gathered strong capabilities in automated billing systems but they do not integrate those solutions with any of the aforementioned. Finally, monitoring is starting to be offered by different companies (e.g. Schneider Electric) but it is still a business in development.

In what concerns to more integrated systems, no companies have currently on their portfolio of offering concepts as comprehensive as the proposed one. Decomposing the concept into different services could create some competition but the lack of practicality and the lack of a network of companies and rental spaces could work as an advantage for the proposed concept. KONE's brand recognition and broad product offer could offer the company some competitive advantage.

Corporation. A facility management system with an integrated network of companies would be in the scope of KONE's People Flow vision, as it helps to enhance the efficiency of people moving inside the buildings.

Even though KONE has among its capabilities some of the resources required to this new concept, the company might not be able to develop the whole system alone. The booking capability integrated with Outlook, billing system and the whole system to use the data retrieved with the monitoring equipment would certainly need some capabilities that KONE does not currently possess.

KONE has in its current portfolio of offerings equipment to do access control and is starting already to monitor the flow of people (KONE E-Link). It is then natural that the Finish company plays, in the first place a role of pure-play product vendor (see roles description on the Appendix 6). Working as an integrator with access to the network would also be interesting as it would allow for control over the platform. This could offer a potential profit opportunity, if a rate is charged in each booking but also the opportunity to be closer to potential clients for other products that the company offers. Further integration of services that can then be cross-sold is also a possibility (e.g. elevators self-directed with the booking reference). Partnership with other companies (e.g. Microsoft, IBM) would be necessary nonetheless.

3. Reflection on learning

Evaluating my work throughout the Business Project, I can conclude that it had very little to do with the content of my previous studies. Focusing my Master studies in the fields of Finance and International Management, and my Bachelor in Economics, I never got to study much about innovation. This way, the working habits and methodology acquired during my university studies ended up playing a bigger role than the scientific knowledge required.

The work practices and openness gained throughout my years in the university, in the three school where I had the chance to study, were pivotal for the success of this project. Even though, from my experience, it was rare to have works where we started from a very vague concept and had no concrete idea of where the project would end, the experience gained in some of the CEMS-MIM courses was particularly helpful. In fact, as I had the chance to take more advanced courses in fields that I had not studied before, I got more comfortable with the uncertainty of working in a field that I do not fully dominate and got used to have to do some extra work to be able to catch up with group members more experienced in the topic, and be more useful in the group discussions. In that sense, courses such as Luxury Marketing and Management at NOVA SBE or Managing in a Global Context in Aalto helped me a lot. From my year on the Masters in Finance I could take the importance of having a clearly defined structure, and to manage the project according to the available time. Both in the Business Project and in most of the works in the aforementioned Masters, the topics allow for several completely different approaches and deepness of the analysis. It was then essential to manage the project according to the time available and follow a very specific structure to make sure the final outcome is at the same type broad, diverse but taking care of each issue in deep.

The Business Project was also a great learning tool. Being this an innovation project, a field with which I had no previous experience, almost every step of the way was new to me and, therefore, a learning opportunity. Firstly, I needed to get acquainted to the type of approach that we were supposed to use. While, during my years as student, I had almost always to use a more mathematical deductive reasoning approach, for this project we had to use an inductive one. In that sense we had first to analyse the four chosen ecosystems to try to understand how the companies in each sector operate and then make recommendations scalable not only to those businesses but also to others in completely different sectors. The whole search for literature-based frameworks was also something new to me. While in Finance the structure for the projects is more straightforward, this project needed to follow a very rigorous approach to make sure

that it would be scientifically correct. The usage of network theory frameworks was also something that I learned better with this project.

Regarding the general contribution to the final project, and I believe that my key strength was the ability to adapt. Being this project developed in a field in which I had no previous insights, I had to adapt my entire process in order to be able to succeed and be a valuable contribution. The fact that I was an “outsider” ended up working on the group’s best interest as my struggle to first understand the methodology that we had to follow led me to always make sure that the deliverables were clear enough, with a flowing and convincing storyline. This step-by-step approach opened the possibility to create a more comprehensive project, easier to read and understand and also more useful to the R&D team of KONE that could, this way, try to do a different analysis of the retrieved data.

Nevertheless, I should recognize that my greatest weakness was my nervousness. As a very results oriented person, the fact that we could not think about any conclusion without first interviewing the people from the different ecosystems was not easy to manage. That became specially complicated when, after more than half of the time elapsed and more than 40 companies has been contacted, we did not have the four interviews done yet. To control this weakness it was necessary trust more in my team colleagues who were more used to these processes and also to develop a contingency plan – a group of companies that would not be as interesting as the ones we had chosen at first but that would be easier to reach and therefore ensure that our project could be finished. In the future I believe I should try to trust more other group members with more experience (even in groups without a defined vertical hierarchical structure) and create backup plans since the beginning, to be able to approach every adversity in a more tranquil way.

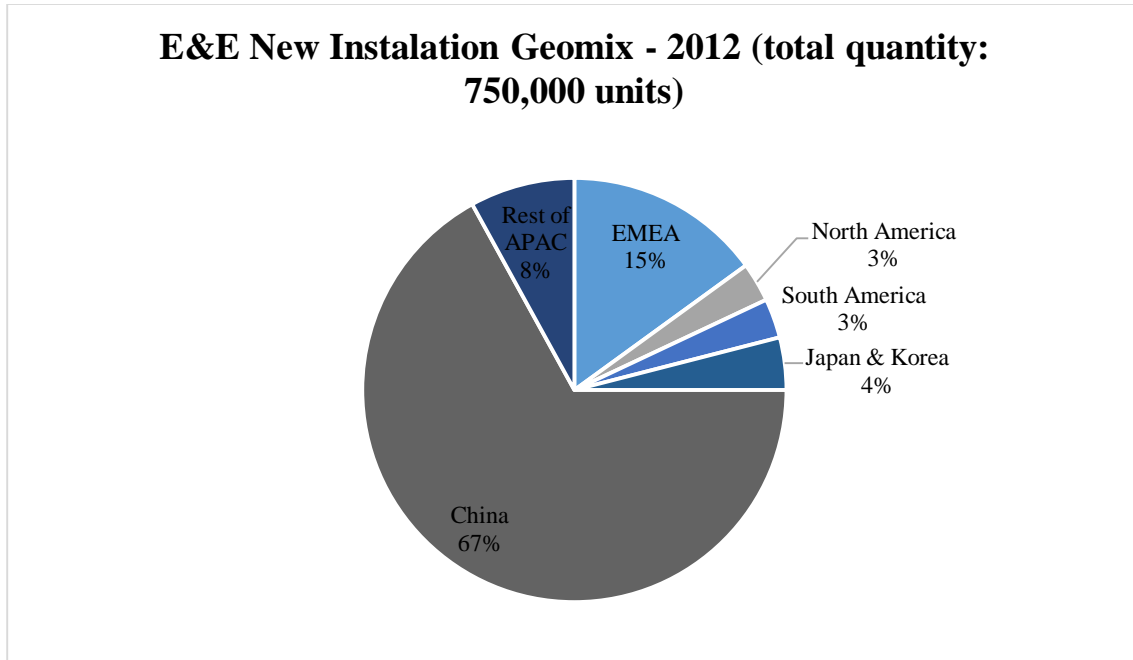
Looking back, I believe that a stronger communication with Business advisor since the beginning could have benefited our project as it would have helped us to understand faster what the desired outcome was. In fact, with the intention of not biasing our recommendations, we were provided with a very vague description of the project, desired outcomes and even of the concept of dynamic space allocation. Furthermore, the company had several contacts that could have been helpful to make the ecosystem analysis more interesting, which we only learned close to the end of the project. On the bright side, we counted with close collaboration of the Academic Advisor that helped us managing the Business advisor’s expectations, matching them better with the group’s capabilities (business oriented recommendations rather than more engineering related ones).

4. References

- Carrington, D. (2013, April 10). Hotels vie to become offices of the future. *CNN*. Retrieved from <http://edition.cnn.com/2013/04/09/travel/business-traveller-hotel-workspace/>
- Citrix. (2012). *Workplace of the Future: a Global Market Research Report*. pp 2-9. Retrieved from http://www.citrix.com/content/dam/citrix/en_us/documents/products-solutions/workplace-of-the-future-a-global-market-research-report.pdf?accessmode=direct
- CNN Money. (2013, November 13). *Will Google Docs kill off Microsoft Office?*. Retrieved from <http://edition.cnn.com/2013/04/09/travel/business-traveller-hotel-workspace/>
- Frost & Sullivan. (2013). Strategic Opportunity Analysis of the Global Smart City Market. Retrieved from http://www.ibm.com/smarterplanet/global/files/us__en_us__cities__smart_city_e_summary.pdf
- GSA Office of Governmentwide Policy. (2012). *Workspace Utilization and Allocation Benchmark* (July 2011 edition). pp 32-34. Washington, DC: Office of Real Property Management Performance Measurement Division. Retrieved from http://www.gsa.gov/graphics/ogp/Workspace_Utilization_Benchmark_July_2012.pdf
- KONE. (2014a). People Flow. Retrieved from <http://www.kone.com/en/company/in-brief/people-flow/>
- KONE. (2014b). KONE in brief. Retrieved from <http://www.kone.com/en/company/in-brief/>
- KONE. (2014c). Elevator and escalator market. Retrieved from <https://www.kone.com/en/investors/kone-as-an-investment/default/default.aspx>
- Kuhhnin, A., Mitchell, J. et al. (2012, April 17) *Credit Suisse Connections Series: Elevators & Escalators*. London, UK: Credit Suisse
- McFadden, R. (2012, May 29). *The Workplace of Tomorrow is Here – and There: How Mobile Technology is Transforming the Workplace*. AT&T Networking Exchange Blog. [Web log post]. Retrieved from <http://networkingexchangeblog.att.com/enterprise-business/the-workplace-of-tomorrow-is-here-and-there/>
- Meister, J. C., Willyerd, K. (2010). *The 2020 Workplace*. New York, USA: HarperBusiness. Abstract retrieved from <http://ascendislearning.com/sites/default/files/2020-workplace-meister-e.pdf>
- PWC. (2011). *Millennials at Work: Reshaping the Workplace*. Retrieved from http://www.pwc.com/en_M1/m1/services/consulting/documents/millennials-at-work.pdf

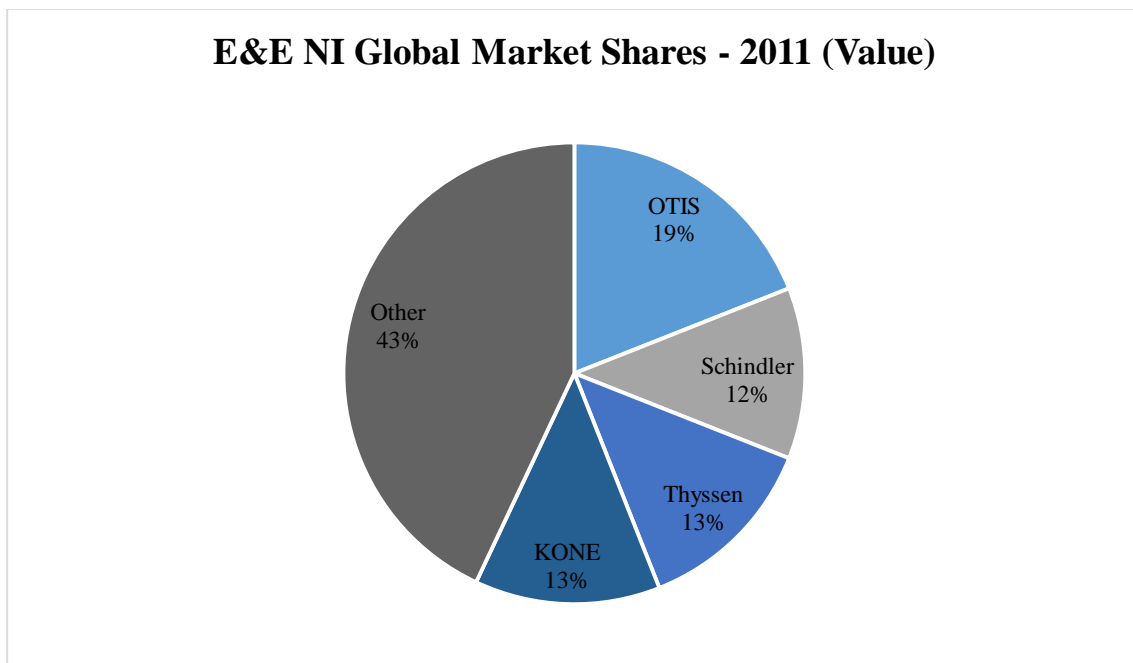
5. Appendixes

Appendix 1 – E&E New Installation Geomix



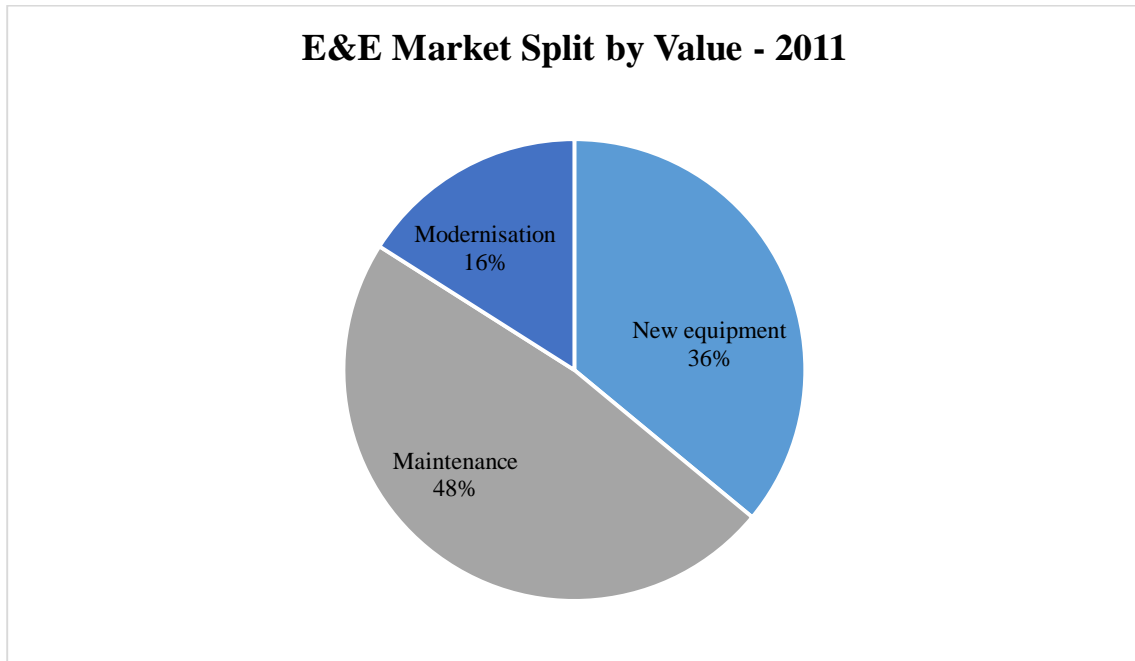
Source: KONE, 2014c

Appendix 2 – E&E New Installation Global Market Shares



Source: Credit Suisse

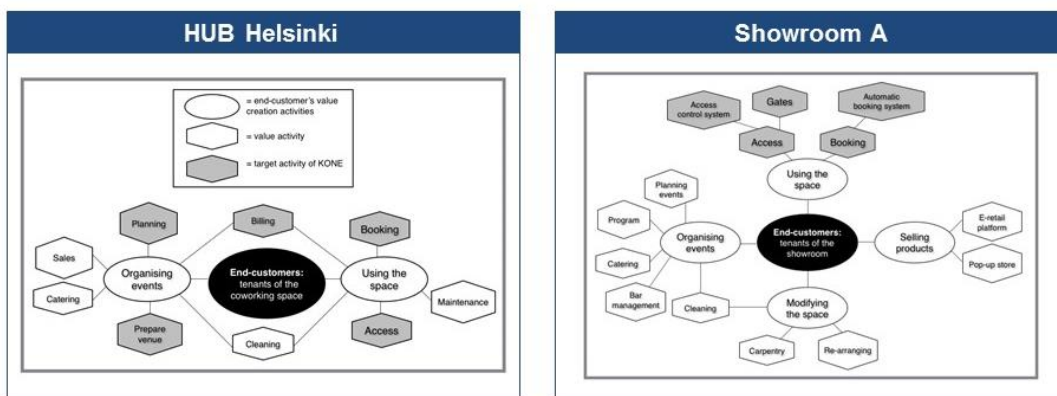
Appendix 3 – E&E Market Split by Value



Source: Credit Suisse

Appendix 4 – Overview of the main conclusions of the Project

Case Study of 4 Ecosystems
Coworking & Retail



- Needs**
- Better control of space availability
 - Offer 24/7 access

Case Study of 4 Ecosystems

Offices & Airport

Technopolis

The diagram for Technopolis shows a central hub for 'End-customers: tenants of the office provider'. Surrounding this hub are various service categories: Business services (including Advertising in Technopolis network, Booking of services, and Barbershop services), Wellbeing services (including Car wash services and Gym services), and Premise services (including Renovation services, Cleaning services, Moving services, and Reception services). Other services include Networking events, Meeting room booking, Monitoring services, Access control, Restaurant services, Catering services, Office rent, and Hospitality (including Booking events and conferences).

Needs

- Optimize buildings
- Connect network partners
- Combine space booking with service booking

Munich Airport

The diagram for Munich Airport shows a central hub for 'End-customers: pilots, employees, tenants'. Surrounding this hub are various service categories: Hospitality (including Restaurants, cafes, Retail, Hotel, Hospital, and Catering), Airport management (including Traffic management, Facility management, Access control to facilities, Security, and Handling of spaces), and Flight operations (including Document handling, Border inspection, Carpu/height, Storage, Freight handling, Passenger rights, Ground handling, Rump service, Passenger service, and Baggage service). Other services include Office rent, Meeting events and conferences, and Real estate management.

Needs

- Improve and facilitate the flow of people inside the building
- Reduce stress of facility users

Recommendation

Booking & Access Control System



Need

- Better control of availability of space
- Offering 24/7 access to customers

Customers	Competitors	Corporation
<p>a) Spaces that change tenants regularly</p> <p>b) Spaces that want to work more autonomously</p> <ul style="list-style-type: none"> • Public Spaces • Private Spaces 	<p>Systems are offered independently already by competitors</p> <p>Unique Value Proposition: Combine booking, access control and billing</p>	<p>Access control already integrated in People Flow Intelligence portfolio</p> <p>BUT Booking and Billing fall outside of the main capabilities</p> <p style="text-align: center;"></p> <p style="text-align: center;">Cooperation with external parties should be considered</p>




Recommendation

Monitoring System



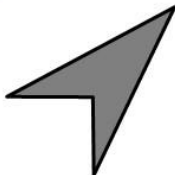
Need

- Better optimize buildings to:
 - i. Reduce facility management costs
 - ii. Improve working environment
 - iii. Become more environmentally friendly

Customers	Competitors	Corporation
<ul style="list-style-type: none"> • Public Spaces  • Private Spaces  	<p>Few but strong companies that are interested/already operating in the monitoring area e.g. IBM, Cisco</p> <p>Unique Value Proposition:</p> <ul style="list-style-type: none"> • Integrate system with current solutions • KONE can leverage its gate-keeper position 	<ul style="list-style-type: none"> • In line with KONE's People Flow vision • Current technologies (e.g. E-link) enable data gathering <p>BUT</p> <ul style="list-style-type: none"> • Data mining and analysis are not in KONE's interest • Software development not currently a core capability <p style="text-align: center;"></p> <p style="text-align: center;">Cooperation with external parties should be considered</p>




Recommendation

Indoor Navigation system



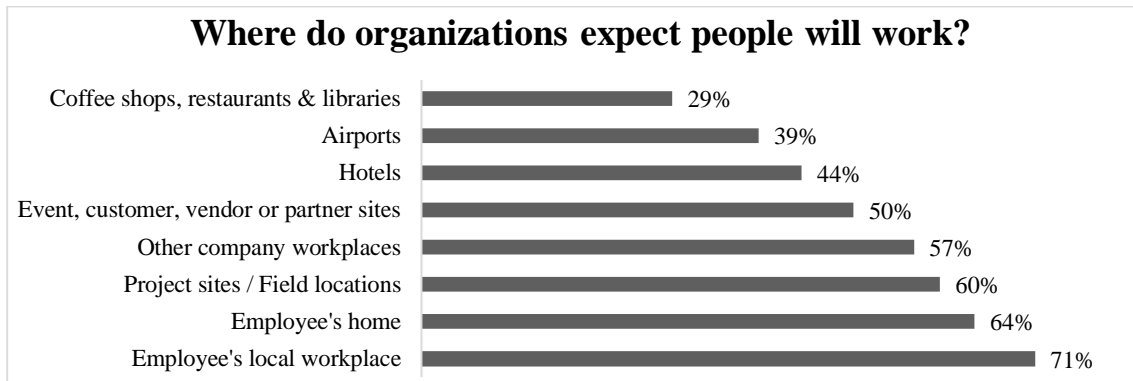
Need

- Improve and facilitate flow of people inside buildings
- Reduce stress of facility users

Customers	Competitors	Corporation
<ol style="list-style-type: none"> a) Many people use the space at the same time b) Users are unfamiliar with the environment <ul style="list-style-type: none"> • Transportation hubs  • Commercial areas  	<ul style="list-style-type: none"> • Indoor navigation systems in other forms (e.g. screens) • Navigation services providers (e.g. Google Maps) <p>Unique Value Proposition:</p> <ul style="list-style-type: none"> • Increased accuracy inside the buildings • Customized routes 	<ul style="list-style-type: none"> • In line with KONE's People Flow vision <p>BUT</p> <ul style="list-style-type: none"> • Software development not currently a core capability • Cannot work without involvement of multiple partners <p style="text-align: center;"></p> <p style="text-align: center;">Cooperation with external parties should be required</p>

Source: KONE – NewBz2020 Report

Appendix 5 – Where do organizations expect people will work?



Source: Citrix

Appendix 6 – Types of roles for system participants

<p>1 Integrators</p>	<p>System Integrators</p>	<p>Smart city integrators are project integrators that bring together various sectors of the smart city through pre-packaged platforms, thereby providing a unified, holistic, and end-to-end integration of multiple sectors.</p> <p>Example: IBM, Oracle, Accenture</p>
<p>2 Network Service Providers</p>		<p>Smart city network providers offer collaborative networks, data analytics and enterprise working solutions that connect people, assets, systems and products by leveraging on their networking and M2M capabilities.</p> <p>Example: Cisco, Verizon, Ericsson, AT&T</p>
<p>3 Pure-Play Product Vendors</p>		<p>Smart city product vendors provide 'hard assets,' such as smart meters and distribution devices (e.g., automated switches, controllers for capacitor banks and voltage regulators) that operate as the main nodes of connectivity.</p> <p>Example: Eaton, Honeywell, ABB, Schneider Electric, Siemens AG</p>
<p>4 Managed Service Providers</p>		<p>Smart city managed service providers offer round-the-clock monitoring, complete management, compliance monitoring, and on-site consulting. These services are provided either in house, co-managed, or are completely outsourced (third-party providers).</p> <p>Example: IBM, Serco, SAIC, Infosys</p>

Source: Frost & Sullivan

Source: Frost & Sullivan – IBM Smarter City