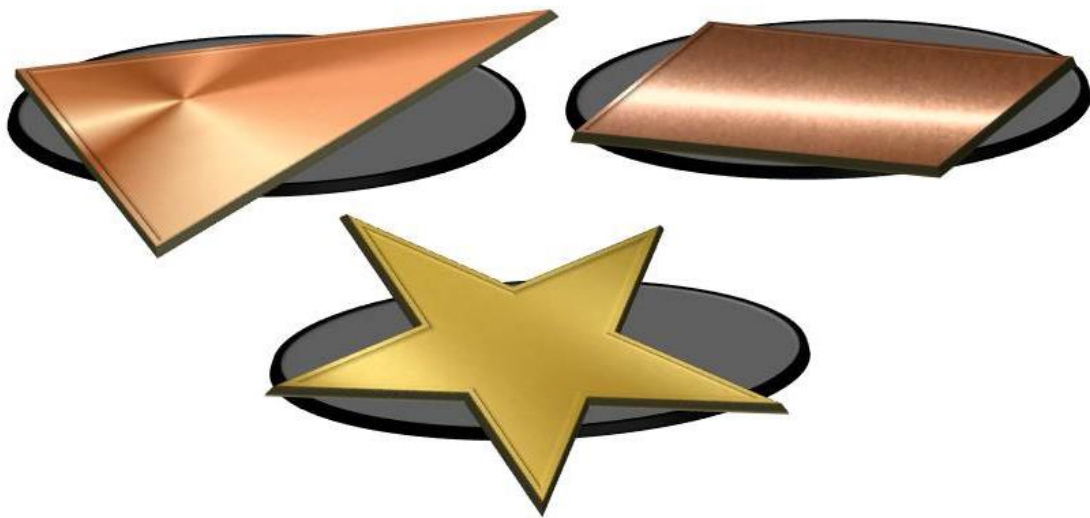


CHALMERS



Activity-based workplace - One size does not fit all

*Master of Science Thesis in the Master's Programme Design and Construction
project Management*

VICKY LINDELL

Department of Civil and Environmental Engineering
Division of Construction Management
CHALMERS UNIVERSITY OF TECHNOLOGY
Göteborg, Sweden 2015
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Examensarbete / Institutionen för bygg- och miljöteknik,
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ABSTRACT

SKICKAS SEPARAT

Abstract (should fit on this page). Example: Limited information concerning the bond behaviour of indented three-wire strands has been found in the literature. A three-dimensional bond model for strands will be developed and test results from pull-through and push-in tests are needed for the calibration of the model. The bond model will be used in FE-analyses of prestressed concrete sleepers. The tests are conducted with indented three-wire strands, as this type is used in the sleepers. The aim was to simulate the lower and upper bond capacity by allowing and preventing the strand to rotate within the concrete. Furthermore, the bond capacity during the stress release was simulated by use of push-in tests. The maximum bond capacity was found to be almost equal in the two kinds of pull-through tests as rotation of the strand occurred in all tests, despite that it was intended to be prevented in one of the test series. The post peak bond capacity was however higher in the case where the rotation of the strand was intended to be prevented. Push-in tests with increased strength of the concrete indicated that the compressive strength had minor influence to the maximum bond response of the strands. However, the first part of the bond response, (the mechanism denoted as adhesion) was influenced by the compressive strength of the concrete. All test results had moderate scatter and will be useful for calibrating future bond models used for indented three-wire strands. However, the measured strains in the encasing steel tube had some scatter. A clear trend of the development of the strain could though be found in all three test series.

Key words:

Aktivitetbaserad arbetsplats – En storlek passar inte alla
Examensarbete inom Design and Construction Project Management

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Chalmers tekniska högskola

SAMMANFATTNING

Sammanfattning på svenska.

Nyckelord:

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Preface

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In this study, pull-through and push-in tests have been done with indented three-wire strands. The tests have been carried out from December 2000 to March 2001. The work is a part of a research project concerning mechanical properties of concrete sleepers. The project is carried out at the Department of Structural Engineering, Concrete Structures, Chalmers University of Technology, Sweden. The project is financed through the competence centre CHARMEC with the company Abetong Teknik AB as the main financier.

This part of the project has been carried out with Lic. Eng. Rikard Gustavson as a researcher and Professor Kent Gylltoft as supervisor. All tests have been carried out in the laboratory of the Department of Structural Engineering at Chalmers University of Technology. My co-workers Kent Gylltoft, Karin Lundgren and Mario Plos are highly appreciated for their help with planning the tests. I would also like to thank Fundia Hjulsbro AB for their co-operation and involvement.

Finally, it should be noted that the tests could never have been conducted without the sense of high quality and professionalism of the laboratory staff.

Göteborg December 2015

Vicky Lindell

1 Introduction

The introduction describes the background and difficulties that institute the motive for this master thesis. The purpose, methods, limitations and structure of the report are presented as well.

1.1 Background

An employed person spends the majority of their time at work (Bodin-Danielsson, 2014). In the western world, 50-80 percent of these persons work at an office and the amount of people is predicted to rise. With continuously influences from new generations, religion and ethnical backgrounds it is very important that we develop our physical work environment as well. According to Van Ree (2009), accommodation can have a positive impact and add performance value to an organization such as creativity and productivity. In a study made by Roelofsen (2002), the conclusion was drawn that investing in the quality of the working environment, is the most efficient way of combating loss of performance. Roelofsen (2002) also state that various studies indicate that improving the quality of the indoor environment improves performance by between 5 and 15 per cent. Appel-Meulenbroek, Groenen and Janssen (2011) also state that the field of environmental psychology is growing in interest because organizations acknowledge their employees as the most important company resource.

According to Bodin-Danielsson (2014) is it important to improve our working environment for the future for a number of reasons. Firstly, we will have a wider range of ages working together and different generations have different preferences and needs that have to be met. Secondly, good standards regarding sound, air and lightening will not be competitive parameter as it will be taking for granted. Also, a tough housing market will make the workplace more important and strengthen the needs of soft values and an attractive location. Bodin-Danielsson also state that nowadays, employees are a company's best spokesman as their referrals on social media reaches out to a wide audience.

Due to the complexity and importance of implementing new office arrangements, there are consultants that support organisations in this process. Tenant & Partner is a tenant's dedicated consulting agency that handles property and commercial premises-related financial and legal issues. According to Tenant & Partner, activity-based workspaces (ABW) are an office platform that has an increasing interest from tenants. They acknowledge a lack of cohesive information about the concept and requests further evaluation and connection with end-users.

1.2 Purpose and research question

The purpose of this master thesis is to, through an explorative approach, review, summarize and analyse the existing theories and practises regarding ABW. The master thesis aims to be a tool for the consultants at Tenant & Partner to get a collective overview of the subject.

The following questions are planned to be evaluated:

1. How have the theories regarding office arrangements change over time?
2. What is ABW?
3. When is ABW being used?
4. What differences and similarities can be connected between literature and real life experiences?

1.3 Structure of the report

To be able to answer the research questions, the report can be viewed as three parts; A, B and C, see figure 1. It starts with part A that is an introduction with background and history to give the reader a prerequisite for the report. The purpose of part B is to collect as much information about ABW as possible and therefore includes a literature study that explores research- and consultant praxis within the concept. Part B also includes a chapter of summarised case studies followed by an empirical chapter based on interviews to get an end-users perspective on ABW. Part A and B will together lay the foundation for the discussion in part C that results in a summary of the conclusions.

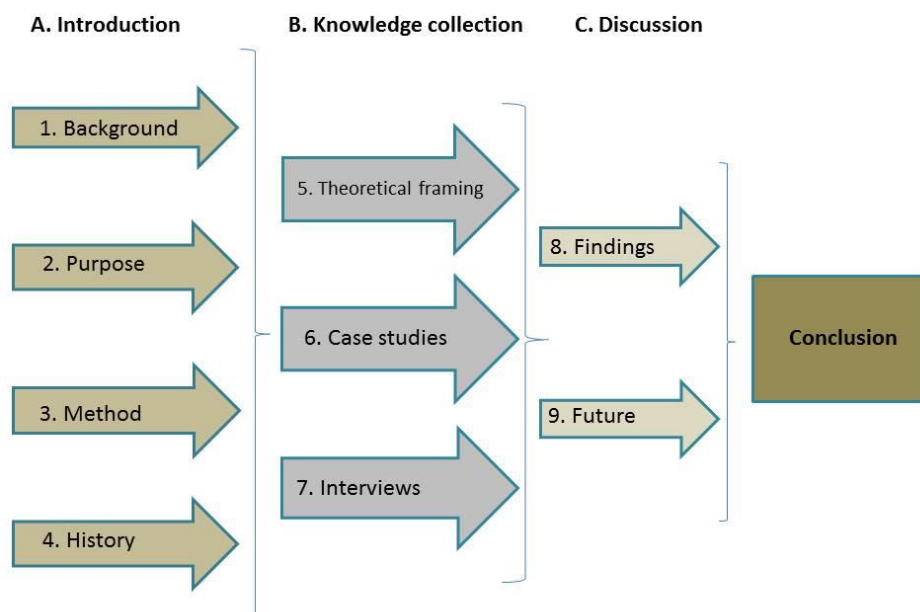


Figure 1 - Schematic figure over the structure of the report

1.4 Method

The thesis started with a literature study to achieve a basic understanding of the subject relevant in this study. The literature study was also necessary to be able to formulate relevant questions for the interviews. Two methods were mostly used to find relevant articles and books about the definition of ABW and the theories and practices related to it. The first method was to use key words in different combinations at databases such as Summon and Google Scholar. Some of the key words were: “Activity-based workplace”, “Office design”, “implementing”, “new office arrangement” and “historical background”. The other method was to study references from articles of interest to find new sources of information. In addition to this, books and articles were provided by the supervisor at Chalmers University of Technology.

To be able to connect the literature study with end users of an activity-based office, summaries of existing student thesis were made. The thesis was found in different databases of universities in Sweden. The same key words were used as in the literature study. Thesis made during 2014-2015 was chosen based on relevancy for this thesis research questions.

Apart from the literature, the study is based on empirical material collected from two interviews. Two organisations that had implemented this type of office design in Gothenburg were chosen based on suggestions from Tenant & Partner. Interviews were carried out with persons that have been involved in the planning and implementation process of a new office. Both interviews that were held in Swedish were recorded and then transcribed afterwards.

1.5 Limitations

2 History of office design

By presenting a historical background of office development, this chapter aims to illustrate how trends have developed over time in order to get an understanding of how history influenced our business climate of today.

In the second half of the nineteenth century, there were especially three innovations that contributed to the start of unified office buildings (Christiansson & Eiserman 1998). Thanks to the telegraph in 1844, the typewriter in 1866 and the telephone in 1876, the office no longer had any need to be centralized at the fabrics. Another invention that was crucial for the office agreement was the elevator which in 1853 made it theoretical possible to build premises on the height.

According to Anna Toivanen (2015), there are five historical oscillations regarding organisational changes that have led to new trends of office arrangements. The start of large office environments came during the early years of the twenty century because of the rationalisation of routine work. Here the workers sat in long rows supervised by superiors on high chairs, figure 2 (Toivanen, 2015). Characteristic for this period was a materialistic view on the organisation with little focus on the individual (Christiansson & Eiserman 1998). This era was influenced by the American Fredric Taylor who focused on cutting down time in production at eg. Ford Industries which later was transferred to office work (Danielsson, 2010).

Insert picture (figure 2)

Later on in 1935, Manne Carlman, had an important role in Sweden when he wrote an article about how new experiments and studies had been made in the Unites States regarding office buildings (Christiansson & Eiserman 1998). In the article Carlman list the new requirements an office should have such as:

- A good location with access for parking spaces.
- The office should provide amenities such as restaurants, rooms for exercise and stores.
- The rooms should have desks with daylight, access to individual workspace and good internal communication.
- The importance of good heating and ventilation were recognized as well as.

In this interwar period, the trend changed for the first time and health and individualism came in focus which later led to an introduction of the cellular office (Toivanen, 2015). What used to be divided between routine work in big rooms and qualified work in

smaller rooms, were now all changed into cellular offices (Christiansson & Eiserman 1998).

In the 1950s, offices were called “paper factories” due to the layout of the office were based on the flow of processing paper based information (Laing in Worthington, 1998). A decade later, the need for better communication were recognised though a work pattern study in Germany which resulted in an opened layout and the trend were changed again. The concept was to be called “The Bürolandschaft landscaped office” and the layout of the office based on lines of communication between groups, figure 3. In 1967 the concept was introduces as “office landscaping” in USA. The concept then changed into new directions as the managers got their own private rooms while the office workers remained in large open spaces but without the casual meeting places and coffee bars on the office floor. The Bürolandschaft landscaped office developed in Germany later returned to Europe as “landscape” or “open plan” and the trend had changed again.

Insert picture figure 3

At the same time period, Robert Probst worked for the furniture company Herman Miller in USA and introduced his “Action Office” in 1964 (Laing in Worthington, 1998). His idea was modular furniture kit that the worker could select and adapt with different components according to changing needs. A disadvantage with the action office was the lack of ergonomic functions such as the screens had no noise absorption although this was improved by other manufactures later on (Christiansson & Eiserman 1998).

In Sweden, administration became a big part of a company’s organisation and an opened rationalised office layout had economic advantages (Christiansson & Eiserman 1998). Although the architects and planners designed the new open plan offices with high standards regarding heating, ventilation, light and furniture, there became a big resistance from the staff, the Swedish labor union and media. As a result, the Swedish government decided to go back to cellular offices when a lot of their public authorities were to change premises at the end of the 1970. It was not only in Sweden the American approach were faced resistance at this time (Laing in Worthington, 1998). The multinational companies acknowledge the cultural differences in Europe and realised that it could no longer be seen as “one country”. In studies comparing work environment in different national concerns, a tension between corporate loyalty and individual goals were identified. As the individual concerns for personal identity, privacy and environmental control were acknowledged ones again, the complexity of users variated requirements of space were recognised.

The criticisms against the open plan office made the architect Herman Hertzberger form the Central Beheer Office in the Netherlands with a new perspective (Danielsson,

2010). Hertzberger introduced workstations designed with a home-liked atmosphere that was individually controlled and contributed with both privacy and openness. However, the concept was argued to not be economic in the use of space (Laing in Worthington, 1998). Although Hertzberger had an important role in the history of office arrangements, the next trend became the so called combi-office. In 1977 the Swedish architect Svante Sjöman introduced the concept in a design journal and in 1978 the first actually combi-office were built in Stockholm (Christiansson & Eiserman 1998). Once again, the individual came in focus and the combi-office supposed to combine the benefits from open space offices and cellular offices (Toivanen, 2015). Although the office furniture companies quickly adapted their supplies to be suitable for combi-offices such as standardised walls made of glass, the cell-office still had a very dominant position in Sweden during the 1980's (Christiansson & Eiserman 1998).

However, the 1980's were to change the world of office- work and design forever (Laing in Worthington, 1998). This year, the computer was no longer in need to be stationed in special computer rooms as IBM introduced the personal computer (PC). The new information technology demanded a re-thinking for organisations, not only regarding their premises but for their corporate and way of work as well. Around the same time, in 1985, Stone and Luchetti wrote their article "the office is where you are" that will be presented in the next chapter.

By the 1990's the technology were more developed and this contributes to a new office-type, the flex-office (Toivanen, 2015). The idea of a flex-office is that the employees do not assign any personal workspace, instead all work is available from a common computer system that can be access even from home (Danielsson, 2010). For personal working material the employees gets a personal cupboard for storage at the office.

Since the beginning of the 21st century there are two more office arrangements being discussed. One is the so-called "hotel office" were small businesses can rent office space in buildings with shared work facilities with other tenants (Danielsson, 2010). This is a way to get modern technology to a reasonable rent. According to Toivanen 2015, the latest trend in Sweden is the "Activity-based workplace" that will be explored in the next chapter.

3 Theoretical framing

According to Toivanen (2015), activity-based workplaces are promoted as something new and an approach for organisations to secure the future. In this chapter the background, definitions, advantages and disadvantages will be explored with unbiased sources. At the end of the chapter, The Service Profit Chain is explained as a theoretical foundation for further discussion.

3.1 What is an activity-based workplace?

When doing a google search on “activity based workplace”, nearly six million hits appears. By skimming the first page the general headlines promotes positive outcomes. When doing the same search but with adding the word “definition”, the hits drops till around one million. If the word “benefits” are added instead, one would get 2.7 million hits compared with adding the word “disadvantages” and the hits drops till one million again.

3.1.1 History of ABW

The oldest case regarding an activity-based workplace found for this thesis is mentioned in an article written by Allen and Gerstberger in 1973. In the article the authors describes the “non-territorial office” at IBM in the 1970s. At the new office, product engineers moved into a space without no permanent walls or workstations. The aim of this new office project was to improve and increase the sharing of problems and experience within the group. The authors of the article describes the office as “radically new” and that the engineers could position themselves wherever they could work the most effectively at the given time, including all managers. The office had a computer lab, a quiet area and a total quiet area that could be used for a variety of situations.

Before the implementation, the employees had mixed feelings about the concept mostly due to the loss of personnel space, however the feeling shifted after they moved in. Allen and Gerstberger (1973) studied the workplace for a whole year and their result showed that the internal communication had significantly improved. The employees even expressed a feeling of more privacy, less distraction and the perception of an bigger office bigger although the amount of space had not changed. Allan and Gertstberger (1973) draw the conclusion that it was a successful concept and that the employees preferred the non-territorial office over their old traditional design.

The next case regarding ABW for this thesis is found from 1985. In 1985, Philip Stone and Robert Luchetti introduced the concept of “activity-setting” (Toivanen, 2015). In their article “Your office is where you are”, they question how managers can combine the communicative advantages of an open office with the privacy of an cellular office.

The concept is based on that an all-purpose workstation at one place for one person is not suitable (Luchetti & Stone 1985). Instead, they acknowledge that the employees need access to quiet spaces, shared equipment, different-sized meeting rooms, work at tables and teleconferencing facilities. The biggest challenge is described to keep in touch while being “away from one’s desk” as often means that the person are not plugged into the network. Luchetti and Stone (1985) describes the needs to stay connected outside the office and being able to book appointments, schedule meeting places and reserve equipment in an easy way. Electronic bullpens for communication, computer-based scheduling and “small portable terminal about the size of a cigarette package” for receiving and send messages are mentioned as future requirements.

It was not until 1994 that the term Activity-based workplace (ABW) first was mentioned (Bodin-Danielsson, 2014). In this year Erik Veldhoen, founder of the consultant company Veldhoen+Companys, visited the Scandinavian flex-offices and brought back this concept to Holland but with a new name and focus on activity instead of flexibility. According to Bodin-Danielsson, activity-based workplaces are just a generic term for all types of concepts where the activity decides the layout of an office. Bodin-Danielsson argues that there are a number of reasons why it took until 2010 to raise interest for this concept. The first reason is said to be the successful introduction in Holland by Veldhoen+Companys that later led to international projects such as Microsofts Office in Amsterdam (2008) and Commonwealth Bank in Sydney (2011). Secondly, it is argued to be a bigger need for flexibility of organizations today which not only concerns consultants or IT-companies as it did when the flex-office first was introduced. Also, a cost reduction is described as a factor for popularity although the most important is the technical progress such as wifi, smart phones and laptops .that Luchetti and Stone predicted in 1985.

3.1.2 How is ABW defined?

Apple-Meulenbroek et al (2011) explains that the concept of ABW means that the employees can choose a workstation that best suits the activity at hand, both from a functional perspective but also from a preference match. In a report by Black & Kuan (2011) it is stated that “it is a different type of work environment where workers are not assigned a permanent workspace, nor are they assigned a particular type of space based on status, rather they choose the appropriate workspace for the activity undertaken”.

Mosselman et al. (2009) also have a similar approach saying that: “activity-based working is a form of flexible working: the workplace is best fitted for special activities such as focused working, making phone calls, group work, meetings and filing”. In many reports this kind of list of needed alternatives are recognised. Luchetti and Stone (1985) mention the following space and requirements:

- A home base with personal storage that stands for stability and inclusion in a flexible and fast-moving organisation.
- Bullpen areas with flexible layout and furniture to support a variety of work settings.
- Secure areas for confidential projects.
- Quiet places for concentrated work, both tables to spread out work and lounge chairs for reading.
- Different sized meetings rooms with display-equipment.
- Areas for shoulder to shoulder activities over charts or computer.
- Room for face to face exchange.
- Work at table/informal lounge arrangement.
- Teleconferencing facilities.
- Settings for housing equipment that employees can share.

Bouvier & Eriksson (2014) recognise that quiet areas, open landscape, formal and informal meeting places, workstations for projects, smaller rooms for phone calls and coffee/lunch areas can generally be found in most projects. Whyllie et al. (2012) states that there is no one-size-fits-all solution. Likewise, Appel-Meulenbroek et al. (2011) agrees saying the share and size of different work zones and stations depends of the organisational activity and needs, a view also shared by Kuan & Black (2011).

3.1.3 Advantages and benefits

Mosselman et al. (2009) states that the social interaction and communication are one of the main benefits when implementing ABW. Peponis et al (2007) emphasize saying that one of the main perks of ABW is a growing information and knowledge sharing between employees. According to Black and Kuan (2011) it is the exposure of other employees in an activity-based office that results in new and strengthens relations between different divisions. If this leads to a wider understanding of the different roles in the organizations, employees might feel a higher satisfaction and loyalty towards the company. Whyllie et al. (2012) also believe that the unassigned seating policy enhance and encourage knowledge sharing and state that it can lead to increased organizational performance and space efficiency. In a study made by Millward et al. (2007) the result showed that employees with a personal desk had a tendency to identify themselves with their workgroup compared to employees with no personal desk who felt a stronger identification with the organisation. The employees without a personal desk believe that their unseated situation contributed them to meet new people at their office.

According to Harris (1992) in Black and Kuan (2011) can an implementation of ABW result a potential cost reduction of 30%, mainly due to reduction of floor space. Black and Kuan (2011) also state that a typical target reduction in space would be about 15-20 %. In the same report, they acknowledge a reduction of the carbon footprint of an

organization to be one of the great advantages. By reducing floor space they argue that it would lower energy consumption and reduce cleaning costs. Reduced storage space is argued to eventually reduce printing and recycling costs. Bodin-Danielsson (2014) point out the importance of providing right kind of functions and back-up areas and don't fall for the temptation to cut cost by neglecting that floor space.

In a comparison to other office types Bodin-Danielsson and Bodin (2009) found that activity-based offices showed lower risk of emotional health problems and less days of sick leave. In a research made by De Been and Beijer (2014) it is found that employees in flex offices are the most satisfied with the architecture and layout compared to cellular offices and combi-offices.

3.1.4 Disadvantages and challenges

The biggest challenges according to found literature are to make sure that all employees accept the new ways of working. Black and Kuan (2011) state that the lack of opportunity for the employees to personalise their workspace may have a negative effect on morale. They also emphasise the competition that might arise regarding prime spots and develops of territories by leaving personal items to claim spots.

In De Been and Beijers (2014) research, the flex office had the strongest negative impact on productivity support, privacy and concentration compared to cellular offices and combi-offices. Furthermore, contrary to earlier research, working in a flex office did not lead to higher satisfaction regarding social interaction and communication. A third finding was a less satisfaction with the indoor climate compared to people working in shared or individual rooms.

3.2 The service profit chain

In 1997, Heskett et al. published their book "The Service Profit Chain – How Leading Companies Link Profit and Growth To Loyalty, Satisfaction and Value". The book is still used as a course literature at Chalmers University. The service profit chain is a schematic relationship between profitability, customer loyalty, and employee satisfaction, loyalty, and productivity, see figure 4.

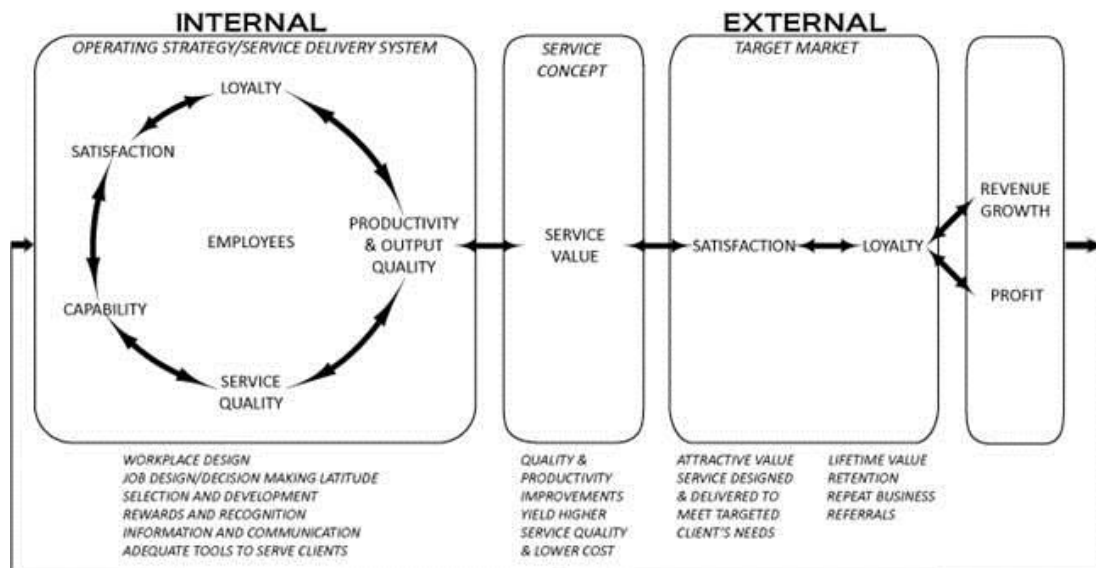


Figure 4 - The chain shows how profitability, customer loyalty, and employee satisfaction, loyalty, and productivity are linked with organisational profitability and growth. (lägg till källa)

The authors of the book emphasize the importance of employee satisfaction in turn to reach profit and growth in an organization. Furthermore the authors state that employee satisfaction is primarily a result from high-quality support services and policies that enable employees to deliver results to customers. These internal services are listed such as workplace design, job design and employee selection and development and are measured by the feelings that the employees have toward their jobs, colleagues and company.

The service profit chain is also defined by a special kind of leadership. The authors of the book highlight examples of CEOs from successful companies that share similar traits and leadership styles mostly related with genuine concerns about their employees. It is mentioned in the book that one important aspects of the employee satisfaction is linked to the level of impact of profitability an employee experience themselves to have. Another characteristic for the internal quality is the attitudes that the employees have towards one other at the office.

4 Recent case studies

To connect the theoretical framework with end users, the following chapter will summarize some of the most recent case studies made of organisations implementing ABW in Sweden. All information is based on the stated report under each headline.

4.1 Workplace for the future by Bouvier and Eriksson

This master thesis was made during the spring of 2014 at the Royal Technical institute in Stockholm by Christian Bouvier and Jakob Eriksson. Their purpose was to investigate how to implement ABW in an efficient way by a qualitative study of five companies that has implemented or had the intention to implement AWB at their office. Four of the studies will be summarized in this chapter.

4.1.1 JLL

JLL is a service and investment management firm specialized in real estate services. JLL has more than 200 corporate offices and operates in 75 countries worldwide. The head office in Sweden is located in Stockholm had has around forty employees.

4.1.1.1 Before the implementation

In 2012, the Swedish CEO for JLL wanted to make a change in the business and signed a new lease agreement for a new office. One of the main reasons for JLL to choose an activity based workplaces when moving to their new premises were that they sell a consultant-service that is based on ABW. Also, the CEO believed that an implementation of ABW would signal JLL to be a modern and attractive employer. A cost reduction was never an incentive but a wider collaboration and knowledge sharing between employees were one of the aims.

JLL had a project group existing of three intern employees with support of external consultants such as architectural designers and technical consultants. Different reference groups were created where all employees were invited to join. The office was divided into different type and sized zones that were decided by these reference groups. This group also made some rules and etiquette for the new office-zones. Some employees, which worked around 90% of their time at the same desk, were handed a personal workspace for the first period of time until most of their paperwork were digitalized. Except from the reference groups, information to the employees has been received from blogs, intranet, meetings and a visit to the new premises before moving in.

4.1.1.2 Remarks after the implementation

- The implementation phase were overall good and the employees felt involved in the process although some thought that the time spent in the reference groups took too much away time from the daily working tasks.
- Some employees believed the implementation of ABW to be cover for saving space and costs.
- Many experiencing a greater interaction between different departments and felt a greater understandings for the others way of work.
- The biggest downside is linked to the communication, hence the employees feel that the interaction between employees within the same department has decreased.
- The quiet working-zones and informal meeting places are the most appreciated areas compared to the old open-planed office.
- The zones for project-based work are not being used much due to an unsatisfied level of discretion.
- Some employees also had higher expectations of the design of the office, something that the CEO also recognized after the implementation.
- New employees felt that the ABW supported their acclimatizing of the workplace.
- The CEO believes that the ABW will make it easier to employ new personnel due to the impersonal workstations.

4.1.2 Försäkringskassan

This company is the third largest public authority in Sweden. Försäkringskassan is responsible for a large proportion of the social security systems in Sweden and has around 13 400 employees. The head office is located in Stockholm were 1200 people work.

4.1.2.1 Before the implementation

The old premises were located in the city center of Stockholm and were about 32 000 sqm designed with both opened-plan and cellular offices. The necessary rebuilding of the premises would make the rent to high and therefore Försäkringskassan decided to move their head office to an old, 24 000 sqm, industrial building outside the city center. The discussion of implementing ABW was explored after the new lease agreement was signed. The incentives for the implementation are described to be many although the main reasons were:

- To create something different and more modern that could attract new employees.
- To go from an introvert organization to be more customer organized.
- To have an office arrangement that supports their new Lean way of work.

- To work with the space reduction.
- To get a less hierarchal status among employees and manages.

Except for the internal project group, a close collaboration between external consultants and the landlord has been conducted throughout the whole process. Different project teams based on the different departments in the company were also created to support the project group.

Different parts of the office were divided into something that can be called home-bases. Every home-base were then divided into different work-zones such as a quiet working area, a project zone, work desks in an opened-plan, telephone rooms and areas for formal and informal meetings. The different types and size of the home-base were decided in collaboration with the project teams. In addition to the home-base, there are common areas such as group- and meeting rooms that can be booked, library and a big diner area. The home-base was implemented to contain the team-feeling within every department but it is still encouraged to move and work between different departments.

To inform all employees about the change, a webpage was created were the whole project could be followed and also common questions be answered. Articles about ABW were sent out to everyone and the project manager was available at the cafeteria one hour every Friday for questions. All employees were also invited to workshops, seminars and a trip to see the new premises. Also, everyone with a leading position got an education regarding the differences for a leader in an activity-based work situation compared to a more traditional.

According to Försäkringskassan, the information towards the employees together with the technology and IT was the two most important subjects to consider before an implementation of ABW.

4.1.2.2 Remarks after the implementation

- Some of the employees believe that management was clear about the motive regarding the lean perspective but also the economical benefits.
- A split between the employees occurred dividing the people between one positive side and one negative side. A share of young employees could be noted in the group with a positive side and older employees were noted within the group of negative perspectives.
- The premises perceived as bigger although the size of the office was reduced with 10 000 sqm compared to the old office.
- Employees experience the concept of working with Lean more supported with the activity-based workplace. A greater communication and collaboration between employees occurred.

- Some areas in the home-bases were not used according to the plan. E.g. some workspaces in the quiet zone were viewed as the best place to work and the rules of lower sound was not followed.
- It felt easier for the leaders to connect with the employees and understand their everyday problems.
- The negative progression was increased after the move although it was highly linked to technical problems in the premises such as ventilation and heating.

4.1.3 iStone

iStone is a business and IT consulting company with over 500 employees, offering expertise in the leading business systems. Around 200 employees work at the head office in Stockholm. At the office, every employee had their own workstation although they were getting too many for this arrangement and some employees were working from home. As the office became too small, the management signed up for more space in the same building. A senior executive got handed the role as a project manager for the new office project as nobody else had time for it. The aim was to get a more flexible office and cut down the workstations per employee to a total of 100 workstations.

The project manager had worked in an activity-based workplace before and was inspired to implement this arrangement at iStone. He believed that the concept were good, efficient and would work very well with the companies' way of work. After the concept were presented to the management team, the response were hesitant and cautious. The project manager then got four months to explore ABW and design the new office. Initially there was no extern consultants involved, only a reference group of three employees within the company. However, consultants were later on hired to handle the decoration and furniture. During the process, the project manager realize the difficulties of implementing a new office design and understood the need to investigate how the company want to work and prepare all employees for the change.

To collect more information, the project manager and the reference group visited the Microsoft office and then inform the rest of the employees about ABW. The response from the employees was very negative. The employees believed that it was very important that the different workgroups sat together and that ABW would complicate this. The employees, who also believed that the suggestion of an implementation of ABW was a cover to cut cost, stood by their negative opinions and the managers decided not to implement ABW.

According to the project manager, the employees are a valuable asset for the company which made the managers listen to them. The project manager also believed that the top management should have a better understanding of ABW and really believe in it in

order to achieve a successful implementation. Also, the project manager does not believe that an implementation of ABW will work if the motive is to cut cost and downsizing the premises.

4.1.4 Poolia

Poolia is in the field of temporary staffing and permanent placement of qualified professionals. The company was established in 1989 and in 2014 they had around 1,200 employees in Sweden, Finland and Germany.

In April 2012, 150 employees moved to new premises in Stockholm since their old office was going to be demolished. At the old office, every employee had their own workplace and one year before the move, the managers decided to implement a more flexible and activity-based workplace at the new location. In order to make this happen, Poolia got help from an architectural- and design consultant agency. The development of the new office design and layout started with collaboration between a project group from Poolia and the consultant agency, along with consultation from top management. When the concept were decided and presented to all of the employees, the project group received a lot of negative reactions. To handle this attitude and issues, workshops were held to inform and inspire the employees. Most of the concerns from the participants were regarding details like e.g. bacteria problem when sharing a keyboard together.

Although the move itself went well and all IT-systems were working from the first day, there were still negative thoughts about the concept from some employees. It did not take long time until the manager decided to go back to personal seats.

According to the Facility Manager and one of the consultants at Poolia, one of the main reasons for the failed implementation of ABW depended on the lack of conceptual beliefs from the managers. They believe that the managers did not understand or believed in the concept and therefor had a hard time to inspire all of the other employees at the company. This conclusion was mad since the managers in charge still had their personal cellular office at the new premises. The same employees also believed that another explanation for the failure concerns the layout and function of the office. They believed that the office did not support the daily tasks of some of the departments. After the move, one of the departments got an exception and were handed private workstations.

The facility manager also believed that the new premises were not suited for ABW since it was an old building with a lot of inflexible bearing walls. Another notation from the same manager was that the resistance from the employees could partly educe from age

and time spent working at the company. Younger employees at Poolia were noted to be more opened minded for the change.

4.2 The individuals' experience of an Activity based office by Nilsson

The focus of this thesis was to investigate the psychosocial work environment at Skanskas headquarter in Stockholm. This bachelor thesis is made by Jenny Nilsson at the Department of Sociology and Work Science at the University of Gothenburg in 2014.

Skanska is a project development- and construction group. In the beginning of 2014 they moved to a new headquarter in Stockholm which they designed and built by themselves. Their previously premises in Stockholm was mostly opened landscape with some cellular offices. The reason for implementing ABW was mostly the fact that 60% of the workstations very often were empty. Another incentive for the implementation was the expectation to get a better collaboration between employees, to creatively inspire them and to get a profitable growth.

The result from the study showed that the overall change-process had been good. The employees felt that they got the opportunity to be well prepared for the change by workshops and informational meetings. Some respondents felt unheard regarding their way of work hence the person had very unvaried activities. The same respondent also felt more stressed about work and unhappy with the productivity at the end of the day in comparison to before the move. The respondent explained that there were not enough quiet workstations for concentrated work. Another respondent felt that the change was very positive and liked the flexible options. According to Nilsson, the respondents with a calm and positive view of the change have also been actively involved in the process.

Regarding motivation and productivity it is stated that the change has led to wider knowledge sharing between different professions that in turn, have led to a wider work motivation. It is also stated that an increased social exchange takes up more working hours than before which may affect the productivity negatively. The results regarding communication are divided, hence some employees finds the new workspace more "alive and exciting" while some believe it is harder to keep in touch with colleagues since you do not know where to find them.

4.3 We probably have a way to go by Hansson et al.

This is a bachelor thesis made by Hansson, Landén and Orrefalk in the field of occupational science in 2015. Their aim was to study an implementation of an activity-based office at the public sector from an employee's point of view. Their thesis is mostly based on interviews with employees working at Kungälv's Stadshus (city hall) where the office was implemented. One of the desired outcomes for the implementation was to get a connection between departments by working with a more movable workplace that supports better interaction between employees.

The office is divided into six floorplans with two "home-bases" at each floor. Every department has their own home-base for around 60 employees. At the home-base there are different work environments such as quiet zones, creative zones, meeting rooms, private rooms and a total of 40 working desks. Every department also has its own coffee area, copy, toilets and small library. All employees have a personal locker at their own home-base but are encouraged to move around and work at the whole office. An exception is made at the confidentiality zones where only the concerned employees have access.

In the result from the thesis, the authors decided to denominate the office design as a flex-office instead of an activity-based office. Their conclusion is based on the description from the employees and their own findings. For example, the employees assigned the different zones by talking about the rules rather than the activity it was supposed to support.

The overall experiences of the respondents were good. A diversity of opinions regarding the different zones was shown between employees with different departmental tasks. A shared view from the respondents was that the new office did not support movability because every department had all the functions they need within their own home-base. Another result from the thesis shows that the employees had some difficulties changing their old habits and not work at personal seating. Although, the results also show that the respondents were aware of that they had a responsibility in making sure that the office works as it intended to.

5 Implementations in Gothenburg

5.1 Volvo Car Corporation

The following chapter is based on an interview with Maria Forssell that took place the 9th of November 2015 at their office in Torslanda. Around 9000 employees work at Volvo Car Corporation in Gothenburg and around 1300 works in an activity-based office.

Since 2007, Maria Forssell works as a “change specialist” at the human resource department at Volvo Cars in Gothenburg. In 2011 she was a part of developing a new type of corporate culture, a desired culture as she describes it. When the new culture was design elaborated, the project group looked around their opened landscape and realize that the current office layout did not support the desired culture, see figure 5. Forssell states that it is not only the physical environment that effects our whole work environment, it is also the technical tools and your colleagues. So in 2011, Maria Forssell initiated a project group for the change programme with the three departments she believed could contribute to their work environment; human resources (HR), IT and facility management.



Figure 5 – The old opened landscape office before the implementation of ABW.

Forsell explains how the process started with four different parts. The first part regards the vision. The vision is explained through what kind of company Volvo Cars wants to be and what they want to achieve to attract to right kind of employees. To do so, a hundred managers got to write a so called “letter from the future” where they got to

explain how they saw their office in the future. From the letters, a word analyse were made to find repetitive themes.

In the second part Forssell, explains how they looked at the existing research regarding office development with an objective perspective as they did not know what kind of office design they wanted to have. In the third part they studied how other successful companies works with office design and office development. In the fourth and last part they investigated the different trends that effect the whole work environment. With the result from the four parts, they learned that the new generation entering an adult work life, are growing up with a digital existence. They also discovered that the concept of ABW was mentioned in different contexts which made them curious to know more about it.

According to Forssell the project group got an aha-feeling when visiting Microsofts activity-based office in Amsterdam. The visit made them realize that this was the way they wanted to work and that it would support their new desired culture. The project group returned inspired to Gothenburg and shared their experience with the rest of the involved managers. When Forssell got positive response from the managers she stated the importance of making a comprehensive study before the implementation, due to the complexity of change. She also elucidated the fact that they were going to be questioned many times during the process and therefore must have well established decisions. In order to prepare all employees for the implementation of a new activity-based workplace the Union were involved from an early stage. They also informed employees by articles about ABW at the intranet and in a magazine for employees.

At this time, Volvo Cars were divided into different buildings and when one of their premises stationing 150 employees was damaged by fungi they decided to demolish it and rebuilt it as an activity-based pilot. In this pilot, they got room for 200 employees at the same area. The pilot mostly concerned employees working with finance and their assistances were sceptical as they worked with a lot of papers. These employees then got the chance to visit Microsofts ABW in Stockholm. Forssells describes how the employees returned to Volvo Cars with a new positive perspective just like herself and the project group had experienced in Amsterdam. The pilot later worked as a showroom where other departments could come and see for themselves and not only read or hear about ABW.

According to Forssell, consultants from Veldhoen+Companys helped them to plan the process, challenged their way to think and coached her to lead the project in a successful way. Before the implementation, the occupancy of workstations were measured and an activity analysis were made to see the employees work pattern. Forssells believe that the results from the analysis are a good proof to justify why ABW should be

implemented. The new activity-based office is divided into different areas for different levels of focus. There are space for individually work with high focus and other areas for individual work with lower focus. The same applies for areas of collaboration as well. Figure 6 shows an area for collaboration. There are also areas for breaks and social contacts. In the first pilot, the share between private work and work in group were divided fifty, fifty. After the implementation of the pilot, the next premises that were rebuilt to an activity-based setting concerned around 900 employees. In this office, the share was changed to 25% private work and 75% for collaboration.



Figure 6 – A picture of the new office design after the implementation. (Lägg till källa)

At the activity-based office, nobody got access to a personal workstation. Forsselles believes that it is important that he managers act as role models by not having cellular offices, although they have a reserved meeting room that is accessible for others when not being used by the managers.

5.2 HSB

The following chapter is based on an interview with Dan Henriksson who is a business developer at HSB head office in Gothenburg. The interview took place on the 11th November 2015. HSB is a company that develops, builds and manage housing for over one million people.

In the end of June 2015 HSB moved into their new premises in Gothenburg. The move was carried out due to an opportunity to be a part of Johanneberg Science Park. The desired advantages for the move was to strengthen the collaboration both intern and with other companies. Also, the move would bring them closer to their project HSB Living Lab in the same area. According to Henriksson, the move was an opportunity to

make greater changes for the whole company. The managers set two main goals that they wanted to strive for during to whole change process. The first goal was to have 90 % less physical work material and the second goal was to have a way of work that did not tie an employee to a specific workstation. Henriksson describes how he and the most important managers shared the same vision of creating collaboration, sustainability, efficiency and a clean look at the office. One year before the move, the decision were made to implement an activity-based workplace at their new office as they believe it supported their vision. According to Henriksson, it is important not to start with how the company work today but to focus on what the desired way of work looks like and design the office to support that vision.

At the time before the implementation, Henriksson believed that there was a lack of similar cases to study. Henriksson describes how the process had to be handled gradually as they did not have every answer in the beginning since they were innovators in the area.

To work with the implementation, HSB had a project group existing of three employees including Dan Henriksson. They also had a reference group to discuss with although Henriksson highlights the importance of believing in the vision and realize that every person involved might not understand the vision from the beginning. Henriksson also believes that there is no external consultant that could tell a company what to do or how to do it because the vision has to come from the managers. Although he further states, when a company has a vision, consultants might be helpful to fulfil it. In HSBs case, they got help from an interior designer and with the physical move.

When deciding the different layouts at the new office, Henriksson explains that they were following their gut feeling. They did not do any activity analysis due to the fact that they wanted to change the way the organisation worked. By implementing an activity-based workplace and aim for the two main goals mentioned before, Henriksson believed to get the following benefits:

- **A more flexible work environment.** HSB recognise a more frequent movement the office when it comes to employees due to that people might be sick, on parental leave, part time consultants or working outside the office. HSB aims to have a short period of time for a new employee to get started with the production.
- **A more efficient work environment.** By optimising the logistics by e.g. downsizing in storage and digitalising as much as possible, unnecessary lead time could be cut. By forcing the desks to be empty and clean it makes you become more efficient in your individual way of work.

- **An open and welcoming office.** HSB aims to get a wider collaboration between the different professions and wants the office to be a home-base for all employees that works at smaller local offices or out in the field.
- **Environmental sustainability.** By downsizing 50 % in office area the environmental effects are less. By working as digital as possible, the physical consumption and waste should be less.

Today they do not have any personal workstation for the 130 employees, although there are around 300 places to choose and sit at during the day. Among those places there are around 90 desks and the rest are different types of formal and informal meeting places. Figure 7 shows an informal meeting area. Also, around the office there are areas of “no disruption” for concentrated work. At the ground floor of the building there is a cafeteria for all tenants and guest to buy lunch or to bring your own. All employees have a personal locker that opens with your personal public transfer card that you also use to log into your computer with.



Figure 7 – The left of the picture shows an area with sofas that can be used to formal or informal meetings, breaks or personal work. (lägg till källa)

The greatest challenges around the implementation were believed to be the transition into becoming more digitalized and the changes of the daily routines for the employees. HSB recognise that it was going to be a struggle in the beginning to change the way of

work but that it would lead to efficiency in the long run. To work with this, a lot of effort were put into prepare the employees for the new digital tools and systems. Also, visits at other activity-based companies were offered and monthly meetings are still being held to discuss the new office.

Henriksson describes that it has been some resistance from the employees. Mostly due to fear that the new way would not work in practice. Some employees also feared that it would be hard to find colleagues and some expressed their requirements of special ergonomically needs. There was also a debate regarding confidentiality. HSB did not believe that any position at the company needed any special treatment regarding personal workstation. Henriksson explains that there are rooms for high confidentiality available for everyone to exceed their daily tasks and that the only difference is that it is not your own. The managers got a lot of arguments before the implementation but they decided not to give up their vision before it was experienced.

At the office a special “house book” has been written. In the book the most common questions are being answered, the different functions of the office are explained and rules are being listed. The rules are regulating for example how to book meeting rooms, what happens if you leave things behind and how long you can occupy a workstation without using it. Henriksson believe that discipline is necessary and emphasise the importance of following the rules before a desired culture are created. Henriksson also believes that it was a successful implementation and highlights the importance of not being satisfied when everything works but to keep on working with the process. The project group does not longer exist but an ongoing dialog with the different managers is hoped to continually improve the work forward although it is expected to be a challenge.

There has not been any systematically evaluation of the employees point of view yet as Henriksson emphasise the challenge of how to conduct such evaluation. He believe that a typical survey regarding how pleased an employee might be only reflects an individual level and might be hard to reflect the improvements of the group or the whole company.

According to Henriksson there are three main things to consider while implementing an activity based workplace:

- 1) Be inspired by others but remember to find your own solutions.
- 2) A company has to believe in a vision and have the courage to follow through all the way and not just try out to see what happens.
- 3) Do not see the implementation as a chance to downsize the office area, it is a opportunity to change the whole organisational way of work.

6 Findings and discussion

My first reflection throughout the thesis regards the sources of information. I found it quite interesting, although not very surprising, that the concept of an activity-based workplace are now promoted by many as something new and unordinary. The part about ABW being unordinary is something that I can agree with as fully implemented examples are quite few compared to other office designs described in the second chapter. On the other hand, when it is being described as something new, I do not agree. I believe that an activity-based way of work has been applied by humans for a long time. An example I believe could justify this are the old agricultural work pattern where the farmers needed different stations to practise the different task to produce seed to flour. A more modern example could be the industrial way of work where the process is optimised by dividing tasks in different stations. So why is it promoted as something new when Allen and Gerstberger as well as Luchetti and Stone share more or less the same description of the concept over 20 years ago as in the newer articles? I believe that there are a number of reasons. Firstly, as I mentioned before in the theoretical chapter, when searching for information about this subject you will get a lot of positive aspects of the concept. Consultants advertise to be experts, furniture companies claiming to have all you need for ABW and pictures of fun and colourful offices. When adding words like benefits instead of disadvantages in the literature search, there are a lot more articles to read. My thoughts about this are that companies in the industry of office design have understand that this is a new business opportunity where one can expand the services for increased profits. For this thesis, I have tried to only base my information on unbiased sources although it has been challenging to criticise whether an article or book are sponsored or gain anyone's personal interest. Another limitation for this thesis is the fact that only project managers of an implementation was a part of the empirical material which may affect the positive view of the project.

The second aspect and according to me, a more interesting aspect, regards why this office design has started to be a wider discussed subject at this period of time? In 1985, Luchetti and Stone describe the need of technology to support their concept that the office is where you are. Today, we are far beyond the limitation of a small portable device which only can receive messages. Bodin-Danielsson describes the technical progress as the most important reason why it took so many years for ABW to grow in interest. This view is shared by many of the respondents from the case studies in chapter 4 and 5. For example, in cases from Försäkringskassan, Volvo and HSB the technology is considered as one of the most important factors to consider while implementing ABW. I agree with many statements in the literature and the cases that technology is one of the main enabler both for a successful implementation and the increased popularity.

In some articles a generation change is mentioned as a reason for why ABW is growing in interest. I find it hard to see that it is the people of a certain generation who are extraordinary in any particular way compared to other generations. Even if the generation of people growing up in the 21st century is used to a digital lifestyle from birth, I do believe that we are facing a great cultural change in our whole society today where technology is one of the main source. New technology and digitalisation are also mentioned to have a positive impact on the environment. In some of the articles as well as in some case studies, ABW is mentioned as a sustainable way to work due to the digitalisation. By working towards a paperless culture, production, consumption and storage are predicted to decrease.

Technical innovations may be the start of office culture and a huge factor for its development over the past century although in the historical background, the human preferences has influence our trends a lot as well. Poolia is one example where technology and IT were prioritized and worked from the first day after the implementation of ABW. Even so, the implementation was not successful which leads to the next subject of discussion regarding some more soft values.

Throughout the thesis, the greatest challenge with an activity-based workplace is repeatedly mentioned to regard the adoption for the employees. Many cases emphasise the importance of involving the employees and making sure that they are a part of the process. An interesting finding is the correlation between involvement in the process of an implementation and the initial attitude towards ABW. In other words, I believe to see a pattern were employees that have a negative attitude towards ABW are also the least interested in taking part of the information given from managers. I do not believe that the challenge of change has to do with either gender or age but with personality. The importance lie in making sure the employees understands why the change is necessary and what the change can contribute with. The service profit chain explained in chapter 3 emphasises the importance of employee satisfaction. Also, in the introduction it is stated how the field of environmental psychology is growing in interest because organizations acknowledge their employees as the most important company resource. So how do you make sure all employees are satisfied?

I personally believe in the service profit chain and the perception that a company will benefit in the long turn if believing and investing in their employees. An interesting perspective of the service profit chain is “employee satisfaction is linked to the level of impact of profitability an employee experiences themselves to have”. In other words, if an employee feels that the daily work they do matters and that they are a part of something bigger, the employee will feel more satisfied at the workplace. This is featured in the theoretical framing regarding advantages of ABW as well. An example

could be drawn from the study made by Millward (2007) where the result showed how employees with no personal desk had a strong identification with the organization. This result could be compared with case studies such as Skanska where some employees felt the new office design has led to wider knowledge sharing between different professions which in turn, have led to a wider work motivation. Another reflection regarding the positive side of knowledge sharing and non-personal workstations is the subject of newly recruited employees. For example, HSB is one of the companies who believe that ABW will support the organization towards short lead times between being new at the office and getting started with the production. This theory could be supported by the reflections of a new employee at JLL who experienced the office design to support the acclimatizing of the workplace. I do believe that an activity-based workplace might lead to a relaxed environment where it is easier to ask colleagues for help compared to a cellular office. I also think that the overhearing of conversations and the moving patterns of colleagues would help a person to learn the organizational culture and work tasks faster.

From the theoretical framing I also acknowledge communication and social interaction as one of the main benefits with ABW. In many results of the case studies, I found the same outcome. Compared to other office designs described in the thesis I do believe that an activity-based office supports social interaction more, due to a greater movement around the office and the availability for informal meeting places. I also believe that, with a greater social interaction, the attitudes between employees have a greater chance to be positive which in turn, leads to higher employee satisfaction.

On the other hand, a question that has to be discussed is whether social interaction could be exaggerated and be a disadvantage instead. Although I interpret that the majority of employees experience a greater social interaction as a benefit, there were still people expressing their concerns for the extra time it took. One of the greatest concerns, in almost all case studies before an implementation, was the fear of not finding a workspace. This concern can be linked to the article by Black and Kuan (2011) where they emphasize the competition that might arise regarding prime spots. They mentioned that this might develop territories by leaving personal items to claim spots. This behaviour is proven by some case studies but also found prevented by rules and regulations.

The negative side of a greater movement in an office is found to be about keeping track of your colleagues. From the case studies it is found that some employees believed to put a lot of unnecessary time and effort to find the right person. Some employees also mention that the new design had a negative impact on their collaboration and fellowship with their closest colleagues. I find it interesting to compare Försäkringskassan and

Kungälv's stadshus with each other as they both have implemented home-bases for different departments and project groups. I think the concept of home-bases is a very good idea to make sure employees feel connected with a smaller group within the organization. Although the two cases share the same layout concept, their result regarding communication and collaboration between colleagues differs. I believe that Kungälv did not become as mobile as they had hoped due to no shared spaces between the departments. At Kungälv every department had all necessary functions within their own departmental area compared to Försäkringskassan where all departments shared meeting rooms, cafeteria and toilets.

These negative aspects can surely be prevented by technology. An example could be a tracking app in your smartphone that could show you where all employees are located within the office and what status each workplace has, if it is being occupied or free to use. Even if the employee could control at what time they wanted to be found through a map, the aspect of privacy and integrity raises. On the subject of integrity, I found a dilemma. On one hand, I believe that ABW works best when the principle of freedom with responsibility is applied. In other words, it is a principle where the managers genuinely trust the employees and believe that they always perform their best at work. As mentioned before, this is one linkage to the service profit chain and a part of the fact that the level of impact affects the productivity and motivation. On the other hand, in a lot of the cases, they have done activity analysis before an implementation of ABW to study the work patterns in the office. One of the most negative results from the cases is that the final design does not support all the daily activities. As I see it, there are three ways to prevent this. Either the company do as HSB, where the managers had a clear view and vision of how they wanted the daily work to precede and stands by this to a hundred percent or, you have a long and deep going dialog with all concerned parties. A third way is to use technology to track and get a precise measurement of the employees daily tasks and movement around the office. The third alternative may be time and cost effective although it is the reason for the earlier mentioned dilemma. An issue I will take with me concerns whether it is necessary to monitor the employees to be able to give them freedom?

On the subject of privacy, it is worth mentioning the challenge stated by Black and Kuan about the lack of opportunity for the employees to personalise their workspace. I believe that the culture of personal photos, posters and other accessories at a given desk or cellular office is a way for an employee to make the workplace a bit more inspiring. As stated in the background, there are studies which show that accommodation can add performance value to an organization such as creativity and productivity. I have personally experienced how my own work motivation can depend on the environment around me and thereby acknowledge the importance of it as well as the personal preferences of it. In many of the case studies, architectural designers have been involved

in the implementation and my interoperation from pictures and site visits is that a lot of new produced furniture is used. I also believe that the new furniture in combination with extended alternatives workstations can be a substitute for the personal items. Another reflection is that, as an activity-based workplace aims to be supported by digitalisations, an employee's personal photos in frames can now be replaced by desktops pictures in the computer and phone.

Another founding is the fact that it was hard to find disadvantages and challenges of an ABW for the theoretical framing. In the case studies on the other hand, it was found that implementations were not successful due to the lack of beliefs from the managers, something that was not found in any articles. The two cases of iStone and Poolia are good examples for this statement. I believe that it is very important for the managers to "practice as you preach". When studying the different definitions of an activity-based office I find similar descriptions that could be summarised by: the office should be design to support the different tasks an employee perform during a day. I believe that an activity-based workplace is more than just office design and the use of space. I believe that ABW is a way to work with all parameters within an organisation, an organisational culture. It is not only about the layout since the fundamental of the concept has its base in the organisational vision of the leaders. I interoperate all offices, which are designed to support the task of the employees, to be activity-based. Whether that means changing workstation ten times a day for one organisation or to work concentrated at one desk for the whole day for another one, it is still activity-based. I do not think that hiring consultants to solve the problem and give you one ready solution would be enough. The vision of the company's future has to come from the managers although I do believe that different consultants can be helpful and even necessary as a support system. Consultants can help a company in the process by giving them tools and ask the right questions but the important part is that the managers have to give the answers.

Beside the already mentioned discussion, the following reflections are aspect to consider as well. If an organisation implements ABW, it is important to understand that it might be a continuously changing work environment. To make sure that all functions in the office is supported correctly, I would recommend the organisation to form a specific project group who works with improvements after the implementation. Another reflection is that the subject of environmental perspectives such as heating and ventilation are not found in the studied theories as much as predicted. Some articles mention space reduction an advantage of ABW which could lead to lower energy consumption and an overall cost reduction. However, I personally agree with Bodin-Danielssons statement regarding the importance of providing the right kind of functions and back-up areas at the office and don't fall for the temptation to cut cost by neglecting floor space. In the case studies the subject of cost reduction varies. A commonly

mentioned initiative to implement ABW regards inefficient use of space at the old office. As ABW aims to optimise the design and function of the premises, a result could be reduced floor space although saving money by implementing ABW is believed to be viewed as a potential bonus and not an incentive.

To summarize the discussion, my overall reflection is that the flexibility in our society has reached a new peak. Due to technology, we are constantly exposed to a wider range of alternatives and information in our everyday life. Smartphones has become an essential for many functions such as paying bills or book tickets. Nowadays you can study and work all over the world without being on site due to new technology. An employed person does not have to work full-time, as options such as part-time, temporary consultant, parental leave or other flexible alternatives are widely accepted. As all these options are affecting our everyday life, it is important that the office design support this development. As mentioned in the historical background, organizational change can be described as five historical oscillations that have led to new trends of office arrangements. I do believe that we will stay at this last oscillation for a long time as there are still many technical functions in our everyday life that could be implemented in the way we work at the office.

7 Future research

A subject of interest that is not found to be discussed in the literature regards ergonomics. An activity-based workplace gives the employee the opportunity to choose different workplaces during the day and I find it important for future research to investigate the possible outcome of it.

One of the main challenges with an activity-based office is the possible to measure the expected advantages. For future research it is recommended to explore the alternative parameters to get a justified evaluation of an implementation. It is also a challenge to find an evaluation of the employee experience that evaluates the organizational progress without being affected by personal preferences.

Another interesting subject would be to investigate what kind of leadership traits differs between different organizational structures and office designs.

8 Conclusions

ABW is not a short cut to success. In contrast, ABW is for the organisations that really want to invest time and effort to understand what the best options for the company and the employees are. ABW is for organisations where trust is deeply rooted in the culture. ABW is not about adjusting the way you work according to the physical layout, it is about customizing your office design so the premises is a tool to support the daily work. The term “activity-based workplace” is promoted as something new although the concept is found to be described and already implemented in the 1970s. Technical progress is found to be the main reason for the development of ABW. An uneven division between advantages and disadvantages of the concept is found in the literature research as well as a lack of unbiased sources of information.

This study can not give the answers to how an implementation process should be conducted regarding what functions the office should have or to what level the employees should be involved, since there is no solution that fits all. Both literature and case studies emphasises the importance of finding an individual solution. From the case studies it is found that one of the most important success factors of an implementation is to have a strong and genuine conceptual belief from the leaders. One of the greatest challenges mentioned, both in the literature and from the end-users, is to prepare the employees for the adoption of an activity-based workplace. Both literature and case studies emphasizes concerns regarding impersonal workstations. ABW is believed to support internal communication and knowledge sharing between employees and departments by both theory and practice.

As ABW aims to optimise the design and function of the premises, a result could be reduced floor space although, saving money by implementing ABW should be viewed as a potential bonus and not an incentive. In some of the articles as well as in some case studies, ABW is mentioned as a sustainable way to work due to a paperless culture as a result of digitalisation.

I believe that an activity-based workplace is more than just office design and the use of space. I believe that ABW is a way to work with all parameters within an organisation, it is an organisational culture.

9 References

Apple-Meulenbroek, R., Groenen, P. & Janssen, I. (2011). *An End-User's Perspective on Activity-Based Office Concepts*. Journal of Corporate Real Estate, 13 (2), 122-135.

Black P. & Kuan J. (2001). *Activity Based Workplaces*. Melbourne: Colliers International.

Bodin Danielsson, C. and Bodin, L. (2009), "Difference in satisfaction with office environment among employees in different office types", Journal of Architectural and Planning Research, Vol. 3 No. 3, pp. 241-258.

Bodin Danielsson C. (2010): *THE OFFICE - An Explorative Study: Architectural Design's Impact on Health, Job Satisfaction and Well-being*. Ph.D. Thesis. KTH School of Architecture and Built Environment.

Bouvier, C. & Eriksson, J. (2014). *Framtidens arbetsplats - Riktlinjer för en implementering av Aktivitetsbaserade Arbetsplatser*. Stockholm: KTH. (Examensarbete inom Institutionen för Fastigheter och Byggnad).

Christiansson C. & Eiserman M. (1998): *Framtidens kontor, kontorets framtid*. Stockholm Byggförlaget.

De Been, I. and Beijer, M. (2014), "The influence of office type on satisfaction and perceived productivity support", Journal of Facilities Management, Vol. 12 No. 2, pp. 142-157.

Millward, L., Haslam, A. & Postmes, T. (2007) *Putting employees in their place: the impact of hot desking on organizational and team identification*. Organizational Science 18(4) ss.154-559

Mosselman, N. Gosselink, A. & Beijer, M. (2009). *Long-Term Effects of Activity-Based Working*. Delft: The Center for People and Buildings.

Nilsson, J. (2014). *Individens upplevelse av ett aktivitetsbaserat kontor - En studie av psykosocial arbetsmiljö på Skanska*. Göteborg: Göteborgs universitet. (Examensarbete inom Institutionen för Sociologi och Arbetsvetenskap).

Peponis, J., Bafna, S., Bajaj, R., Bromberg, J., Christine, C., Rashid, M., et al. (2007). *Designing Space to Support Knowledge Work*. Environment and Behavior, 815-840.

Roelofsen, P. (2002). The impact of office environments on employee performance: The design of the workplace as a strategy for productivity enhancement. *Journal of Facilities Management*, Vol. 1, No. 3, pp. 247-264.

Toivanen, S. (2015): *Framtidens arbetsplatser – Att utveckla hållbara och friska kontor*. 1. Uppl. Stockholm: Vitt Grafiska AB.

Wyllie T., Greene M., Nagrath R. and Town A. (2012): *Activity-Based Working*. Jones Lang LaSalle. Sydney, Australia.

Worthington J. (1997): *Reinventing the workplace*. Oxford: Architectural Press.

Appendices