Open Plan Offices - The new ways of working
The advantages and disadvantages of open office space

KEY FINDINGS

Open office spaces are introduced for the following reason:
- Saving costs on real estate. Real estate expenses are the second largest costs for a company. By creating more workplaces in the same amount of square meters costs can be reduced on buildings and maintenance.
- Increase communication. If people are in closer proximity from one another and move around freely communication will increase.
- Improve team work. As teams are now sharing the same space knowledge sharing will increase both within the same team and across different teams.

The following arguments oppose the introduction of open office spaces:
- Loss of productivity. Employees are distracted faster because of noise or colleagues moving around. It takes on average 25 minutes to resume a task after distraction. In an open office space employees are distracted faster because of phone calls, people walking by or nearby conversations.
- Problems with noise, temperature and fatigue. As said before, noise is one of the main distractions in an open office space. Temperature is managed centrally and it could therefore be too cold of one person and too warm for another. Fatigue is a side effect from noise and temperature and the fact that people have a constant overload of information with the introduction of multiple screens like phone, tablets and computer.
- Increase of sickness. As employees are in closer proximity of one another diseases can spread faster. The spread of diseases raise the amount of sick days taken in a company.
- Decrease of overall well-being of employees. The main cause for the diminishing of well-being is the level of stress. The idea of being watched all the time increases the levels of stress in an open office space.

Open office spaces within the EU institutions:
- The European Commission has open office spaces and is planning to introduce more open office spaces in the future.
- The European Court of Auditors started a pilot project for open office spaces for external and security staff. There are no further plans for the creation of open office spaces.
- European Court of Justice has dropped the idea of open office spaces after a survey from the staff committee among ECJ staff. Staff expressed their reservations to the introduction of open office space.
Introduction

New ways of working introduced a different approach to the use of office space. With the development of laptops, tablets and smart phones, the purpose of offices changed towards a “fit the needs” concept. This also means that employees can work from anywhere; for example working from home or a café. This concept is called telework. The creation of open office space, collaborative work space or activity-based work space were introduced as a result of the new ways of working. These spaces all have in common that they have an open-plan layout in which employees from different teams work together in a common room. There are different reason why open-plan work spaces are introduced. The main reasons are to improve internal communication, reduction of real-estate costs, promote creative thinking and innovation. Nevertheless, while introducing open office spaces employees encounter negative effects from working in one big common room. Examples of negative effects are loss of productivity, problems with noise, temperature and fatigue, increase of sickness and a decrease in overall well-being of the employee. This briefing will give an overview of both the pros and cons of open office spaces.

The concept of open office spaces has a long history. The idea of working in an open-plan space can be traced back to the early 1900s when the first open work space was created and resembled a factory floor\(^1\). Until the 1960s open work places were designed for employees in jobs like clerks, secretaries and typists\(^2\). From the 1960s on, companies in the United States (US) developed the idea of open spaces divided by cubicles. Cubicles were introduced as a way to cut in real estate costs as the prices in the big cities went up. While cubicles were common in the US, in Europe the use of L-shaped corner desks was very frequent with four to six people working together in a room\(^3\).

With the introduction of the new ways of working open office spaces are back. Private offices in itself represent a hierarchical order in which every employee of the same team or conducting the same task sits in the same corridor\(^4\). In open office spaces this is no longer the case because managers and their teams are sitting in the same room. It depends on the type of open space if the same team even sits together or are spread over the floor. Nowadays, many start-ups are using the concept of open office space. This is mainly because it reduces costs which is very attractive for start-ups as they are generally searching for funding resources\(^5\). Start-ups are often located in cities like San Francisco (Silicon Valley) or New York where the prices for office space are high\(^6\). Besides start-ups open office spaces are used by a lot of tech companies who want to push for innovation. Currently open office spaces are prevailing in both the private and public sector, in various industries and in most job functions\(^7\).

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3. Ibid.
6. Ibid.
Definition of open office spaces.

Open office spaces can be defined as follows: space ‘where walls and partitions have been removed and have been replaced with other instruments such as cubicles, plants and furniture to give the sense of separating departments and teams physically’⁸. There are different names used for open office space. For example, traditional open space, collaborative space, activity-based workplaces or activity-based flexible offices. They all have in common that the main workspace is constructed as an open-plan layout where people of different teams work together in one big space. One of the most commonly used open-plan designs is the activity based workspace also called an activity-based flexible office. It does not matter how it is called exactly because the concept is similar. There is an open-plan layout and employees do not have assigned seats⁹. Besides the open-plan layout, these offices have multiple workspaces designed for specific activities. For example spaces for social meetings and activities, spaces for bigger meetings and spaces for tasks that require concentration¹⁰. The philosophy is that employees will choose the workspace that best suits their current work. It is thereby understood that people change work places during the day¹¹. That employees do not have an assigned desk is called “hot desking” or “desk sharing”¹². By requiring employees to work in the same space and searching for a desk, the office enables for spontaneous encounters and more interaction¹³.

Technology has made it possible for employees to work from different places. This is why the activity-based workspace became popular. It helps organisations to use the space as efficient as possible and keep up to

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¹² Ibid.
speed with the new ways of working. The development in the information technologies (IT) has contributed to working remotely. For some people working in a cafe, from home or any other preferred place contributes to their performance. Others prefer working in a quiet surrounding. An activity-based workplace provides in both needs. Nevertheless, working in and open-plan layout brings both advantages and disadvantages with it for the employer and employee.

The advantages of open office space

The arguments most often used to introduce open office spaces are cost reduction, increased communication and more teamwork. These arguments will be discussed one by one in the next part.

Cost reduction

For most companies the cost of office space is the second largest financial burden. Reduction of costs for real estate is therefore a major argument for open office spaces. Despite the costs of real estate, employers do not have to pay for walls and more employees fit in the same amount of square meters. It is even argued that increased collaboration would enhance productivity and therefore contribute to cost savings. Another reason why real estate costs could be cut, was the introduction of teleworking. Teleworking has as a result that the occupancy rate of employees within the office will go down. As employees work from remote work places, the office space could be used in a more flexible way for example by the introduction of quiet spaces, common spaces and relax spaces. Teleworking and open office spaces are therefore a good combination for employers to not provide working spaces for all the employees. As the idea of teleworking is that employees are not all at the same time in the office. This is not a given however as employees still decide by themselves if they want to work in the office or from a remote place. The employer needs to provide work spaces for all employees if they want to work from the office. There is of course another cost that is introduced by the new ways of working and that is the costs of equipment. To be able to work remotely employees need laptops, tablets and smart phones. Nevertheless, these costs will most probably be lower than the costs of real estate.

Increased communication

Open office space provides the opportunity to move around freely and therefore interact more with the people around. This enables creativity and increases internal communication. Networking contributes to improving ‘employee morale, increase productivity, and result in innovation’. A well designed open office space is often considered as the driving force for innovation and productivity because of better communication and knowledge sharing. The Corporate Partner Program found that open office spaces ‘had twice the number of interacting employees than cellular workspaces’. These interactions can also

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18 Forastieri, Valentina. Technical note prepared by SAFEWORK concerning open-plan offices. SAFEWORK ILO Staff Union. 24.08.2012.
20 Forastieri, Valentina. Technical note prepared by SAFEWORK concerning open-plan offices. SAFEWORK ILO Staff Union. 24.08.2012.
22 Walsh, John. « Designing Work: Collaboration Versus Concentration in Open Plan Workspaces? » Level 3 (Dublin Institute of Technology) 12, n° 1 (March 2015).
happen by chance as employees move around the open office space. This can lead to unexpected collaboration.24

Team work

As more employees are seated in the same space, interaction is easier. This is both the case with employees of the same team but also for interaction across teams. Research found that 'employees sitting within 30 meters of each other, within walking distance, shared significantly more knowledge at their workplaces than employees farther away.25 As employees are closer to one another and communicate more in the open office space, they tend to establish friendships at work which in turn contributes to the overall feeling of well-being at the workplace.26 While moving around employees also meet colleagues from different teams and this makes cross-team interaction more feasible and easier. Also by overhearing other colleagues talk colleagues can intervene easier in the conversation and share their interest and experiences. With the introduction of activity-based workspaces, employees can choose what kind of space they need to perform their current task. Therefore, they can switch between interaction but also avoid interruptions. Hence, employees can decide for themselves how much interaction they need and want. This in theory will improve productivity as the employees have the opportunity to choose the right environment for their current work.

The disadvantages of open office space

Despite the arguments in favour of open office spaces there are also arguments against the use of it. The following are arguments most often used against open space offices: loss of productivity, problems with noise, temperature or fatigue, increase of sickness and decrease of overall well-being of employees. Below all the arguments against open office space will be discussed.

Loss of productivity

The loss of productivity is the result of the other arguments against the use of open office spaces. Employees struggle to concentrate on their tasks because of noise, decrease of overall well-being and lack of privacy. This is a contradiction to the argument that open office spaces would contribute to an increase in productivity. There is the general idea that the proximity of other team members would provide for more communication and knowledge sharing. Theoretically, this makes sense as employees see their colleagues physically. In practice, people tend to create privacy even in an open-plan layout. As Ethan Bernstein and Ben Waber found in their study that employees in an open office space construct the so called ‘fourth wall.27 This means that even if there are no physical walls around them they will create them by using headphones or staring intensely at their screen. As a result their colleagues will respect this ‘fourth wall and communication will go down.28 Their research showed that in some companies physical interactions went down by almost 70 percent.29 The physical interaction was replaced by electronic interaction, mostly through email.30 This has a direct influence on social relations and communication.31

28 Ibid.
The research of Edward G. Brown shows that ‘office workers at all levels lose three to five hours of productive time every day due to unwanted, unneeded and unproductive interruptions’33. Other research shows that employees are distracted every three minutes by either electronic or face-to-face distractions34. It takes about 25 minutes on average to concentrate on a task again after an interruption35. It is therefore difficult to focus on an assignment which needs a high level of concentration in an open office space. Loss of productivity is a hidden cost for companies which can run into billions36.

Noise, temperature and fatigue

Noise is one of the main distractions in an open office space. Noise is caused by phones ringing and nearby conversations37 or other people moving around. It is difficult for employees to focus on their tasks when an activity is going on nearby38. Morrison and Macky argue that ‘there are consistent findings that distraction caused by overhearing irrelevant conversations is a major issue in open plan office environments and further, that distraction is negatively linked with employee performance, negative perceptions of the workplace, and/or stress’39. Constant noise and low levels of privacy have a negative influence on brain activity and concentration40. This shows that noise has a big influence on the work environment of employees. Women are more affected by noise disturbance than their male counterparts. Laboratory studies have shown that noise negatively impact motivation and cognitive performance which could lead to fatigue.41

Another common problem in open-plan layout is temperature. A comfortable temperature is for every person different. Some employees like to work in a cold office whereas others prefer to work in a warmer surrounding. This is very difficult to manage in an open office space where temperature is regulated for the whole area. Not only the temperature is a problem in an open office space, also air quality can cause problems for employees42.

Both the problems of noise and temperature leads to the problem of fatigue. The introduction of multiple screens (computer, tablet or phone) has led to an overload of information on a day-to-day basis. Many people are feeling overwhelmed by the constant flow of information. All the information needs to be processed and this leads to a reduction in productivity43 and the feeling of fatigue. Employees also have the feeling that they need to be “on” all the time and be aware of everything new that happens. This feeling increases in an open office space as employees have the feeling they are constantly being watched by others44. As a result employees are leaving the office late, as they do not want to be the first to leave, and arrive early in the morning as they do not want to seen as coming late45.

34 Gan, Kenneth, “Personal Space and Privacy in Open Offices” (2019). Creative Components. 140 slides.
36 Forastieri, Valentina. Technical note prepared by SAFEWORK concerning open-plan offices. SAFEWORK ILO Staff Union. 24.08.2012.
39 Morrison, Rachel, and Keith Macky. « The demands and resources arising from shared office spaces ». Applied Ergonomics 60 (September 2016), P104.
40 Forastieri, Valentina. Technical note prepared by SAFEWORK concerning open-plan offices. SAFEWORK ILO Staff Union. 24.08.2012.
41 Bodin Danielsson, Christina, and Töres Theorell. « Office Employees’ Perception of Workspace Contribution: A Gender and Office Design Perspective ». Environment and Behavior, 4 April 2018.
42 Forastieri, Valentina. Technical note prepared by SAFEWORK concerning open-plan offices. SAFEWORK ILO Staff Union. 24.08.2012.
45 Ibid.
Increase of sickness

In an open office space more employees are working together in the same amount of square meters. The spread of diseases is easier in a space where people are in closer proximity of one another. The spread of diseases also increases because of more face-to-face interactions[^46]. The Corporate Partner Program stated the following:

*Researchers from the National Research Centre for Working Environment in Denmark found that taking sick days was significantly related to sharing an office. Their study of 2,403 employees found that workers who had an open plan office, with greater than 6 people, had 62% more sick days than workers who had cellular office.*[^47]

Short sick leave, one week or less, is higher among employees in open office spaces[^48]. Sick leave does not necessarily concern colds or the flu but also the general well-being of employees.

The international crisis of Covid-19 urged employees to work from home as much as possible. It will probably also change the way of working in the offices. As said before diseases spread easier in open office spaces as more people are working in closer proximity of one another. Therefore, the outbreak of Covid-19 could potentially influence the use of open office spaces. The future will tell if Covid-19 meant the end of open office spaces or that open office spaces are being updated with the latest protection against diseases.

Employee overall well-being

One of the main indicators of overall well-being is the level of stress. Working in an open office space increases ‘stress, the mental workload, poor performance, conflict, high blood pressure, lower job satisfaction and internal motivation’ and has as a result ‘a high staff turnover’[^49]. The dissatisfaction of working in an open office space has a direct influence on the psychological and physical well-being of employees. The lack of privacy contributes to the feeling of stress[^50]. Decreased privacy also adds to feelings of crowding and territoriality[^51] which in turn leads to coping strategies. For example: withdrawal, decreased cooperation or making it unpleasant to work together and avoid communication[^52]. Employees want to signal to their colleagues that they are busy so they look intently at their work. Other colleagues do not want to disturb so a norm is created. These norms form even quicker in an open office space as colleagues see each other the whole time[^53].

Another problem that adds to a decrease in overall well-being is the loss of personalisation. With the introduction of hot-desking (nobody has their own assigned desk) employees are not allowed to decorate their workspace or leave papers on their desk. Decorating the workspace increases the feeling of identity, positive emotions, reduces stress and give a feeling of control at work[^54]. Lack of personalisation of the workspace does not only reduces the identity of one self but likewise a lack of team identification[^55]. It was even found that productivity went down 15 percent by not being allowed to personalising one’s desk. The

[^47]: Ibid, P7.
[^52]: Morrison, Rachel, and Keith Macky. « The demands and resources arising from shared office spaces ». Applied Ergonomics 60 (September 2016).
[^54]: Morrison, Rachel, and Keith Macky. « The demands and resources arising from shared office spaces ». Applied Ergonomics 60 (September 2016).
explanation for this is that employees do not feel comfortable in their surrounding.\textsuperscript{56} Hot desking also causes problems with colleagues. With the hot desking concept nobody has an assigned desk nevertheless, employees choose a preferred desk and stayed to that one and their colleagues knew which desk this was.\textsuperscript{57} This behaviour can lead to negative relationships, distrust and a worsening in co-worker relationships.\textsuperscript{58}

This shows that the overall well-being of employees is affected by working in an open office space. It should be kept in mind though that different factors influence the adaptability of employees. For example age, sociability and seniority are factors that affect how well employees cope with change. Another factor is if employees moved from a private office to an open office space as they often experience it as ‘a loss of status and benefits’.\textsuperscript{59}

Open office spaces in the EU Institutions

Below you will find an overview of the open office spaces in different EU institutions. Table one shows the total amount of open office spaces in Brussels and Luxembourg and the number of square meters necessary for different type of offices.

Table 1 Number of open office spaces per institution

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<tr>
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<th>EC (Brussels)</th>
<th>ECA</th>
<th>ECJ</th>
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<tbody>
<tr>
<td>Number of open office spaces</td>
<td>477</td>
<td>24 as part of the pilot project</td>
<td>Still have about 500 people in shared offices of 3, 4 or 5 people</td>
</tr>
<tr>
<td>Number of people per Square meter</td>
<td>Individual office: 10 sqm</td>
<td>As ECA does not have open space besides the pilot project so most offices are occupied by one or two people</td>
<td>The ECJ has dropped the plans for more open office spaces after a survey among staff</td>
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<tr>
<td></td>
<td></td>
<td>Shared office (between 2 to 4 people): 8 sqm</td>
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<td></td>
<td></td>
<td>Collaborative spaces (as of 5 people): 7 sqm</td>
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Source: questions raised by email to the different institutions.

The European Commission

The main reasons for the European Commission (EC) to introduce open office spaces or collaborative spaces are to ‘become a more agile, flexible and modern service able to respond quickly to changing needs and priorities’.\textsuperscript{60} By using different types of workspaces they could also respond for example to the creation of temporary task forces or intensification of cross-DGs collaboration. It also contributes to optimising the work space and to renew and improve the working environment. Open office spaces also contribute to cope with the Commission’s budgetary constraints of office spaces’ reduction.\textsuperscript{61}

In 2019, the EC has created a document on the development of the workplace: “Communication to the Commission: The workplace of the future in the European Commission”. An important concept for the EC is that there is no one-size fits-all for working, offices and technology. The EC wants an approach that fits the

\begin{itemize}
\item Forastieri, Valentina. \textit{Technical note prepared by SAFEWORK concerning open-plan offices}. SAFEWORK ILO Staff Union. 24.08.2012.
\item Morrison, Rachel, and Keith Macky. \textit{The demands and resources arising from shared office spaces}. Applied Ergonomics 60 (September 2016).
\item Forastieri, Valentina. \textit{Technical note prepared by SAFEWORK concerning open-plan offices}. SAFEWORK ILO Staff Union. 24.08.2012, p2.
\item Email exchange with the European Commission.
\item Email exchange with the European Commission.
\end{itemize}
task an employee is working on. The workspace should be made suitable to fit the norm of team-based collaborative working and knowledge-sharing. The open office spaces (the EC calls them collaborative spaces) should include areas for work that needs a high level of concentration and for work that needs to be performed in a team. Hot-desking (or desk sharing) should also be considered for those offices that have a low occupation rate. A low occupation rate is seen as the average presence of staff is lower than two-thirds of employees in the office. As the layout of the offices will be based on building blocks they can vary in the numbers of certain types of workspaces such as quiet spaces, social areas or a mix of those. The configuration of workspace should always be informed by a proper needs assessment and a consideration of the cost-effective options available. The staff that will be affected by the changes should be included in the process of implementation. Team leaders and managers should give an example by using the same kind of workspaces as their staff.

The EC has created 477 open office spaces (zones) in Brussels since 2013 (see table 1). As open office spaces need less square meters per staff member than private offices they result in savings costs which the EC wants to invest in physical, digital and well-being aspects of future workspace.

The European Court of Auditors

The European Court of Auditors (ECA) has a general rule that all staff should occupy a single or shared office with two people. ECA has offices for more than two people for external consultants in IT and security staff. A pilot project started for open office spaces for corporate communication teams and the Legal Service in 2016. During the pilot the idea of kitchen corners, small discussions rooms, etc. was tested. Some of the elements of the pilot project were applied in the renewal of the K2 building although the main strategy of single or double occupancy office remained the rule. Therefore, no significant cost reductions were made for ECA as there are no open office spaces in place apart from the pilot project. The pilot project was introduced as a means of trying out new working habits instead of cost reduction.

The distribution of the ECA offices are as follows:

- 723 offices are occupied by one person (69% of the employees)
- 97 offices are occupied by 2 employees
- 88% of staff are working in individual offices or shared office with two people
- 24 offices (131 employees, most of them are external staff and security staff) are occupied by more than two people (the largest being 14 workplaces). Regarding the security staff the occupation is not continuous as the teams are working in shifts, night and week-ends included. Not all external staff is working daily either.

The European Court of Justice

The European Court of Justice (ECJ) decided to not introduce open office spaces after a survey was conducted among their staff which was reluctant for the introduction of open office spaces. The survey executed by the staff committee of ECJ came to the following conclusions:

- 68% prefer a private office instead of an open office space
- 61% find working in an open office space annoying and 7% find it unbearable
- 40% of the respondents said they would not mind sharing an office with no more than four people

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63 Communication to the Commission, 2019.
64 Email exchange with the European Court of Auditors.
• 87% have problems with concentration while working in an open office space\textsuperscript{66}

This survey shows that employees prefer a working environment where they can concentrate on their work and are not distracted by noise and other colleagues.

**Conclusion**

The concept of open office spaces is a topic of discussion. While it could contribute to the reduction of costs, improve teamwork and communication, it affects employees' overall well-being and productivity. The future of open office space is unsure with the outbreak of Covid-19, as diseases spread faster in an open office space where people are closer to one another. Some researchers suggest that open office space will continue for those companies that need a high level of teamwork and to save costs in the long term\textsuperscript{67}. The use of open office space should be based on the common goal of the company and they should communicate these goals to their employees. The best way to let employees adjust better to an open office space is to include them in the designing process. This will make the goals of the new work environment clear and helps them to create the best working space for them. In the end this could help to avoid the pitfalls of open office spaces.


\textsuperscript{67} Forastieri, Valentina. Technical note prepared by SAFEWORK concerning open-plan offices. SAFEWORK ILO Staff Union, 24.08.2012.