

Space as organisational strategy

Pia Storvang

University of Southern Denmark
pia.storvang@sam.sdu.dk
DOI: 10.21606/drs.2016.443

Abstract: More and more companies use physical space as a way to enhance creativity, create change and stimulate interaction. There seems to be a strong link between work practice, learning and innovation in an organisation. This research investigates how space affects this interrelationship and explores how space can support organisational strategy. This is investigated by exploring three cases from an educational, a cultural and an industrial setting to illustrate how space can be used to support an organisation's policy and help its strategic intentions. The theoretical framing takes its departure point in design literature on workspace planning and creative spaces for learning. The paper also builds on literature from design management, organisational change and psychology to explain how space can influence people. The findings demonstrate how space can be used to enhance organisational strategy and demonstrate how closely the creation of space can be related to the development of that strategy.

Keywords: Space Strategy, Design Management, Organisational Change, Interaction

1. Introduction

Research on organisations has shown that there is a strong link between work practice, learning and innovation (Brown & Duguid, 1991) as well as having the capability to initiate change in an organisation (Hatch & Cunliffe, 2012). Dale & Burrell (2008: 232) also indicate that the organisation of space can have a profound social affect which emphasises the need for research to take a closer look into how space can influence an organisation's attempts to either support or change their organisational strategy.

The importance of investigating space has been seen in different settings such as office layout (Grangaards, 2009; Leonard, 2012; Luck, 2014), urban spaces (Munro and Jordan, 2013) spaces in the educational sector (Oblinger, 2006; Nussbaumer, 2014). More and more international companies use physical space as a way to enhance creativity, create change



This work is licensed under a [Creative Commons Attribution-Non Commercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/).

and stimulate interaction among employees (Kristensen, 2004; Doorley and Witthoft, 2012). Preliminary studies from the project “Design to Innovate” have shown that Danish companies as GJD, Royal Copenhagen and Kähler use workspace and company areas to place themselves in a specific league to attract certain types of customers and collaboration with other companies (www.d2i.dk, 2014). This trend of companies towards using space as a way to tell stories about who they are and how they work in order to attract customers and the right employees has been seen in companies like Google, Lego, Nike, Virgin, Johnson & Johnson and Innocent (Groves & Knight 2010). At the same time only few papers from Product Management and Lean Production have looked at industrial space and examined how a spacial layout could be effectively arranged to support the companies’ production strategy (e.g. Weber, 2012). But no published papers have looked at how space can support an organisation’s management and business strategy.

Research has shown that there is a need for organisations to be more concerned about how to create spaces for interaction (Paludan, 2010; Luck, 2014). This is supported by Hatch and Cunliffe (2012) who indicate ‘*loose ends*’ in organisation theory concerning learning, knowledge management and identity in relation to organisational culture and physical structure (p. 303). Taylor and Spicer (2007) also indicate that now more than ever the time is right to acknowledge space as a key dynamic in understanding management and organizations (Taylor and Spicer, 2007).

Much of the literature on company design and organisational strategy is more often concerned with managerial challenges in relation to goals, performance, system, structure, economy and processes (e.g. Mansfield, 2013). At the same time Cooren, et al. (2008: 1163) point out that there is every reason to believe that organisational research will continue to study organisations and organisational phenomena through sociological, economic, discursive or psychological lenses, which leaves little concern for other issues such as communication, interaction and strategies on the use of space. This is further supported by a review of organisational and management literature that shows a relative paucity of studies of space Fayard (2012:179).

This research will investigate how space can be used to support organisational strategy. It will look into the ways in which organisations can use the creation of space in their strategic considerations in generating interaction, learning and new relations.

In order to explore this, three cases with maximum organisational variation in special scale and organisational levels (Taylor & Spicer, 2007: 336) from an industrial, an educational and a cultural setting have been chosen to illustrate how a special layout can endorse the organisation’s policy to encourage and back its strategic intentions for what, why, and how they want the organisation to be developed (Sinek, 2009) to support its organisational strategy. The what, why, and how is in this research developed into a framework to analyse the organisational strategy and the design of space supporting the strategy.

The paper is structured into five main sections, including this introduction, to explain why research into organisational theory on strategy is of interest in understanding an

organisation's policy of change, interaction and the creation of new relations. After the introduction, section 2 takes its departure point in design literature to explain theory on the creation of spaces and theory from organisational studies that relate to strategic considerations involved in developing an organisation. In relation to the aim of this paper, which is to investigate how space can support organisational strategy, section 3 explains how the data was gathered in order to present, evaluate and discuss the data. This section will further assess the quality of the data according to the claims of the research and the methods used. In section 4, the findings will be discussed, ending with section 5 with conclusions and some perspectives for future research.

2. Literature and theory

It has already been stated that some of the literature concerning new ways of working, planning and re-arranging of space to support various kinds of working activities has been richly studied in the design literature as different ways of arranging physical space (e.g. Laing et al., 1998; Grangaards, 2009; Bakker 2012; Plunkett & Reid, 2014). The tendency to create extraordinary spaces in workplaces has led to research and experiments with re-design and the creation of social spaces that can enable increased collaborative working (Luck, 2014) and the need to establish physical environments that can accommodate personal and individual workspaces within open spaces (Grangaards, 2009). Documentation of studies on the human factor in the built environment has been found, in which certain types of users, e.g. the elderly, children, and disabled, have been subject to studies (Nussbaumer, 2014; Rengel, 2014).

The design literature also includes reports on how space can set the stage for creative collaboration (e.g. Doorley and Witthoft, 2012) and how new spaces influence work processes (Borges et al., 2013). Similarly, the design literature investigates how the physical context, the confined space, can restrict and enable interaction and how the induced emotions of this framing can facilitate or reduce creative processes and interaction (Kristensen, 2004). Furthermore, various types of case studies on the shaping of interior spaces have been located including studies on the different use of architectural elements e.g. material, form, patterns, expression, order, balance and enrichment (e.g. Rengel, 2012; Plunkett & Reid, 2014; Rengel, 2014).

In the development of architecture design of spaces have often been debated as the physical structure with an aesthetic or technological perspective. But also space has been investigated on the evolution of buildings and how buildings adapt to changing requirements over time with different kind of use (Steven, 1994; Myerson, 1998). Physical structures are likewise discussed as playing an essential element of organisational life whether we think of physical environments or places (Fayard, 2012: 178) or as an understanding of public life between spaces (Gehl, 2006; 2013). Basically this means that people are not only influenced by whom they are working with and what they are doing at work, they are also affected by the physical buildings, the workspace and the geographical locations of their organisation

(Fayard, 2012). At the same time research has also indicated how both materials as artefacts, arrangements and infrastructures and the use of technology has an impact on organisational life and how practices are performed (Orlikowski, 2007: 1436). Orlikowski suggests that we can get considerable analytical insight if we stop treating the social and material as distinct and largely independent spheres of organisational life (ibid.: 1438) because people in an organisation and the identity of organisational life can be affected by space (Storvang and Dalby, 2015).

But nowhere in the design literature is the focus on how people in organisations can use space in a strategic way to create an organisation because space is often viewed as how it can be used in terms of business and commercial building (e.g. Duffy, 1999) but not as the impact space has on an organization.

With this departure point in design literature on workspace planning, creative spaces and spaces for learning, the theoretical framing for this paper will also build on literature from design management and organisational literature to explain learning and organisational change. Duffy, Laing and Grisp (1993:164-214) has pointed out that the organisation can have impact on their workplace but the aim of this article is to discuss how spaces can support organisations from a strategic perspective. Due to its multidisciplinary stance the paper will regard an organisation as a frame for people's working and learning, a notion that we consider neither as a living organism nor as an absolute metaphor.

Concepts of organisational change and learning are rooted in human resource and management literature and focuses on how people can be used as change agents to make improvements in an organisation. But really to change life....*we must change space* (Lefebvre 1991: 190). Storvang and Dalby, (2015) have also suggested that space can create an impact on how people in an organisation relate and interact in their collaboration internally and with external organisations. So in this sense '*space matters*' because it is "*...a living system, a collection of interacting, and adjacent patterns of events in space*"(Alexander, 1979: 74).

With regard to management literature, Cooren et al. (2008) argues that in shaping organization, theory on firms are mainly associated with economics, management, and social psychology to guide research and practice in their work (ibid.: 1157) which leaves little concern for other issues such as strategies on the use of space. Other research on organisational theory has explained how the creation of identity is important to an organisation in relation to organisational culture and physical structure (ibid.: 303). Dale & Burrell have also looked at how identity, power and materiality are important both to the spaces of organisation and the organisation of physical space. In their examinations they go beyond an exploration of physical settings by looking at how the social and the material are entangled with modern life, which calls for a rethinking of mainstream theoretical approaches (ibid.: 203). In doing this Dale & Burrell (2008: 203) argue for the re-conceptualisation of theory by including materiality and embodiment as part of the social production of space. Some of the concepts they discuss are the use of different spaces over time and the different use of space during the day (ibid.: 241 – 243). Another concept is having alternative spaces for various purposes to create change and dissimilar working

patterns (ibid.: 243 – 244). Concepts for opening up spaces to be more transparent in an attempt to pull down barriers and division of work (ibid.: 257) or to engender a more democratic approach to work in an organisation (ibid.: 258). Dale & Burrell (2008) also point to the concept of private property and power as an alternative to organising space (ibid.: 269 - 278). As pointed out the relationship between property and space is linked to what is the individual, the local, the civic or the state level at which the concept and reality of private property is critiqued (ibid.: 276). This is similar to how Taylor & Spicer (2007: 336) have adapted Lefebvre (1991) in defining special scale and organisational levels as 1) a public space (Macro), 2) a semi-public space (Meso) and 3) a private space (Micro). These three levels will later be used in selecting the cases.

But so far, this research has found that none of the management or organisational studies focus on what, how and why space can influence and support organisations in their strategic considerations for organisational development. Finally, Dale & Burrell (2008: 326) argue that further conceptual development towards defining organisational spaces is needed.

In this line of thinking, the paper will in the following look into how an organisation can use the creation of space as strategy in generating interaction, learning and new relations.

3. Method and Data

The choice of using case studies in this research is related to the notion that “the interaction between a phenomenon and its context is best understood through in-depth case studies” (Dubois and Gadde, 2002, p. 554). Attention was also given to variation (Miles and Huberman, 1994) in terms of illustrating spaces with maximum variation at three different organisational levels: a public space, a semi-public space and a private space (Taylor & Spicer, 2007). The case studies present: 1) A new university campus hosting Faculties of Humanities, Engineering and Business and Social Sciences; 2) A culture and production centre for performing arts, visual arts and literature and 3) A private manufacturing company of air-laid technology for non-woven fibre production. All the cases are from a Danish setting. The studies consist of three semi-structured interviews with management and/or architects as well as a series of observations on the different locations. This also included regular visits at the premises and meetings on site as well as a series of unstructured conversations with employees and researcher about space and how space matters both as conceptual discussions and talks about how the observed spaces matters in relation to their work and use of the facilities.

The case of the campus and the manufacturing company has both been followed as a longitudinal study by participating in on-going discussions with people in the organisation about space considerations in relation to the development of their organisations. The researcher of this paper has in the case of the university campus participated in several formal and informal meetings discussing strategies on workplace and spaces for learning. Further, the case of moving the campus to the new university facilities has been used by the researcher as a teaching case, in which groups of students facilitated interviews with

stakeholders and other students concerning issues in relation to the move to the new campus. Finally, all the data includes secondary data from Web pages and other organisational documents.

To some extent, this diverse data collection is an advantage, but on the other hand the data is very uneven and sometimes lacks consistency and would perhaps have benefitted from a more systematic way of collecting. The data was at times collected when least expected, as the author visited the locations many times and was also a member of one of the organisations involved.

After all, man is, in his ordinary way, a very competent knower, and qualitative common-sense knowing is not replaced by quantitative knowing . . . This is not to say that such common sense naturalistic observation is objective, dependable, or unbiased. But it is all that we have. It is the only route to knowledge--noisy, fallible, and biased though it be (Campbell 1975)

In the following the three cases will be presented and after each case the design of space and organisational strategy will be analysed as well as three themes will be identified as: 1) *“Space as an organisational meeting place”* in the University campus, 2) *“Space as a network organisation”* in the Culture and production centre and 3) *“Space as a cell organisation”*

Case 1: The new university campus

The first case is the open space of a new university campus that hosts Humanities, Engineering and Business and Social Science faculties. The idea for the campus is, according to the Associate Dean and former Head of Campus, a *“main station for open knowledge”* that could facilitate cross-disciplinary work. The campus is designed as an equilateral triangle, in which classrooms, offices and open terraces line the perimeter. The core of the building is a triangular atrium twisted as it ascends from the ground floor to the 6th floor. The decks leave a variation of space for student areas: circular sofa areas provide private areas for group work and long desks placed with a view over the open atrium provide study areas. The open space in the centre also offers a variation of additional spaces for interaction, meetings, contemplation and learning. Each floor is designed in order to create crossovers between teachers, researchers and students by giving all users a legitimate presence on all floors as well as areas of immersion and quietude (se figure 1).

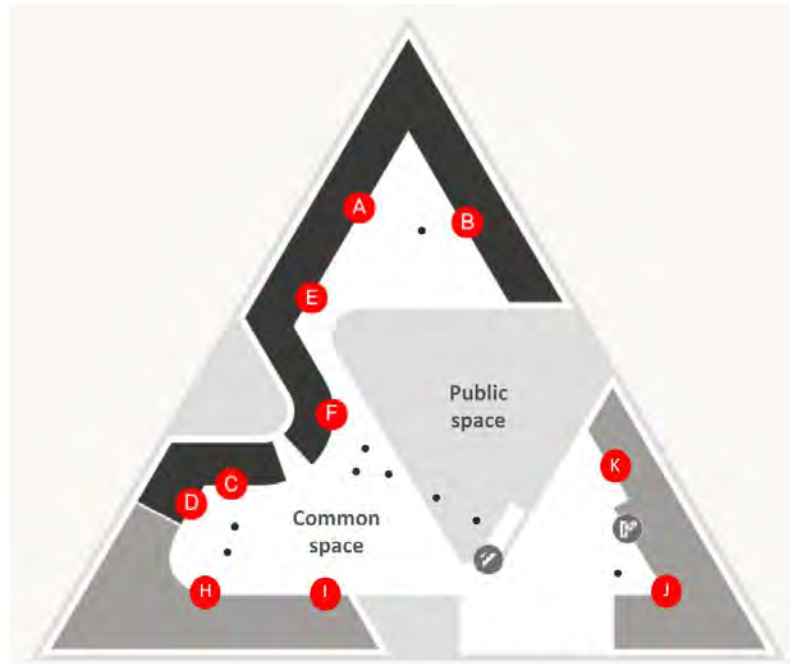


Figure 1 One of the six floor plans of the university campus

The red dots represent the different departments and units within the departments, but also studio facilities for specific groups of students and different spaces as meeting, class and other supporting rooms. The smaller black dots characterise different individuals attending courses, meetings and other types of activities as collaborators, guests or visitors.

Analysis of design of space and organisational strategy in the university campus

The co-operation across faculties is the overall profile of the campus along with the strategic focus on interdisciplinarity as an initiative to enhance Design Research. Encouraging students and researchers from different fields and departments to work together by embracing interaction and student centred learning is the core idea of the new campus. *“If research is supposed to concern the real world, it is a good thing that the university and the real world meet”* (Associate Dean). This design approach to learning also plays a significant role in education, research and in the co-operation with public institutions and companies in the region.



Figure 2 The Pubic space at the university campus

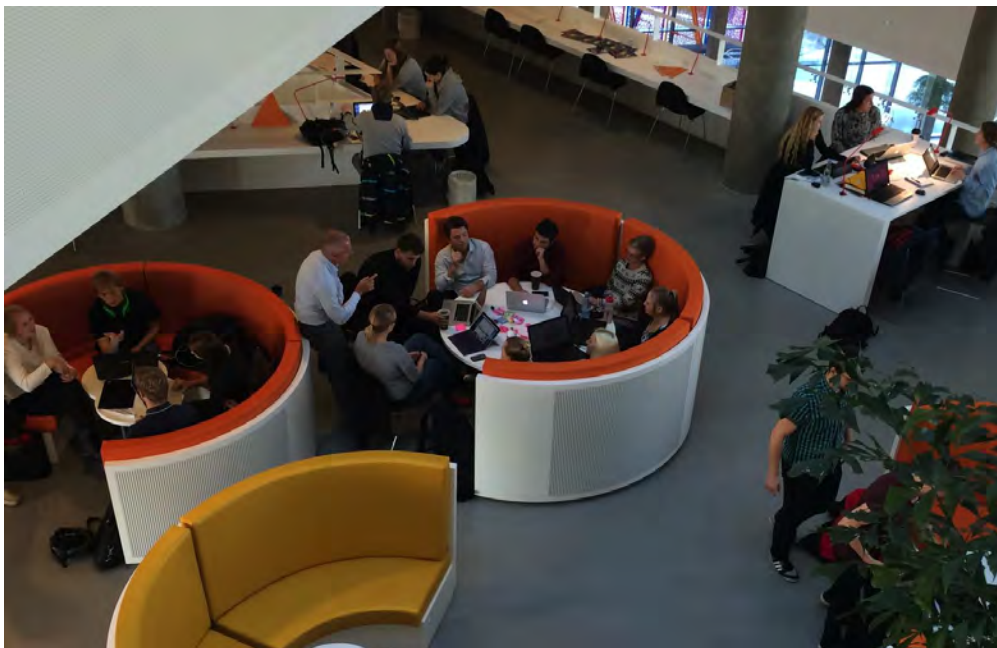


Figure 3 The Pubic space at the university campus

The challenge of collaborating and working together across disciplines in the different departments, interacting and learning from each other, has in many ways been translated into the huge, open six storey high space in the centre of the new campus. Internally, the open space is transparent as it is possible to look across the space to the other departments at all floors. It is also possible to extend the more private department spaces into the big open space to share and exchange knowledge. Since the open space is a student working area, the students to a large extent act as agents across the space and they also represent

the ways of working in the different departments. The more private areas of the various offices along the perimeter of the building have glass doors, so the transparency is extended into the offices and further out into the city.

Case 2. Culture and production centre

The second case is a public space organised as open workshops for performing arts, visual arts and literature (www.godsbanen.dk, 2015). The spaces are a re-design of an old closed rail freight facility that is located close to the city's other cultural places such as music scenes, venues, theatres, museums and art exhibitions. The aim of the centre is to create a multifaceted cultural production complex across the arts to develop talents, but also to make the city visible and strengthen the city's position as a cultural, national and international centre for innovative art – and cultural production.

According to manager of the workshops the centre functions as an *"idea factory"* for creative people, who wants to design their ideas, makes projects, create exhibitions and events or test themselves in a creative and open environment. He describes the facilities as a *"transformation factory where dreams can become reality"* and he also explains how the open workshops can create *"stars"* that can earn their own living from their talents (Hansen, 2015a). The workshops have 20 volunteers who serve as facilitators for users so they can operate the machines and tools to develop their ideas. Among other facilities the workshops offer is one of the world's most advanced laser cutter for wood, plastic, textile and metal that can also be used to engrave stone and glass. The place is open 28 hours a week and in addition the super users and seniors who are professionally trained have all received a course in how to operate the machines outside opening hours (Hansen, 2015a).

The spaces at the centre are designed as a series of workshops placed in a long row connected through a pedestrian area. This is the building's main street, which in principal operates as an extension of the city streets from where the various workshop spaces can be entered (figure 4). In addition to the complex there is an open scene, which groups of users can hire for various types of artistic activities. Joint events, seminars and exhibitions are also organised in the many common areas.

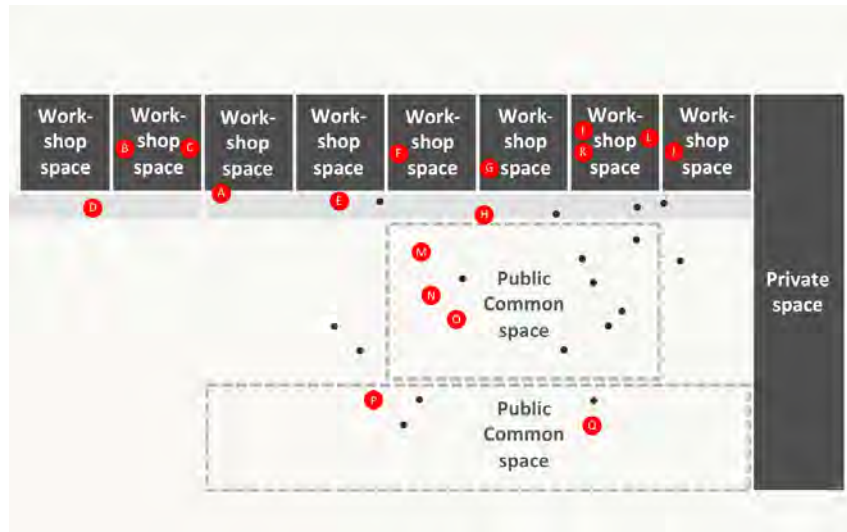


Figure 4 Diagram of how the spaces in the centre is organised as various workshop spaces.

The red dots in figure 4 represent different users at work who either come from various organisations or are working there independently and the smaller black dots show different individuals attending events and other types of activities as guests or visitors.

Analysis of design of space and organisational strategy in the cultural production centre

The idea behind the design in the culture and production centre is rooted in the idea of railway tracks where people visiting the centre can go into different compartments to work or to participate in activities, exhibitions or other types of events. The comparison to a railway is also reflected in the name of the rooms as: *Train Remise, Boiler, Railway Wagon, Platform and Railway Track* etc.



Figure 5 Pubic and semi public spaces in cultural production centre. The spaces at the centre are designed as a series of workshops placed on a long row connected through a pedestrian area.

The complex includes predefined spaces for particular artistic groups, and open workshops, and project facilities for graphics, laser cutting, textile, montage, wood and metal workshops. The supplementary spaces outside the building are further extended along the old railway tracks with alternative workshops, additional spaces for subcultural activities and other types of open street events. The organisation of the place is community driven and the idea is for people to meet, create networks and new organisations and to put the city's culture on "track". In this sense the centre has an event driven space strategy where people can jump "on" and jump "off" when activities pass by and people are on the move to create new opportunities and learn together in their production and creation of art and new types of cultural events.

Case 3: Private manufacturing company

The third case is a private engineering company working with air-laid technology for non-woven fibre production for all kinds of natural and synthetic fibres. The company holds a couple of worldwide patents for their technology, which can either be used for different customer production processes of non-woven fibre or for the cutting techniques of their products. The company also has a pilot line with a testing facility where the company can, in cooperation with their customers, develop their production. Their customers are mainly very big companies in other industries where they are experts, specialists or lead users in their field.

This means the company is really keen on learning and working together with their customers since they are specialists. Equally the company is an attractive partner to collaborate with as they are able to work with the restrictions, contractual constraints and strict specifications from user requirements. On the other hand collaboration is difficult to initiate as the company has to be extremely careful about revealing what they are developing together with their customers. In order to do, as the Managing Director points out it is *"...important to create a long-term trust relationship with our customers and the customers need to be able to trust the company in their collaboration"* in order to protect their business secrets and visa versa. In their collaboration with the different customers they therefore need to separate the different types of customer collaboration, which also demands the separation of production technologies and types of fibre production. In order to do this the mother company divides the company into closed cells as different smaller organisations (figure 6).

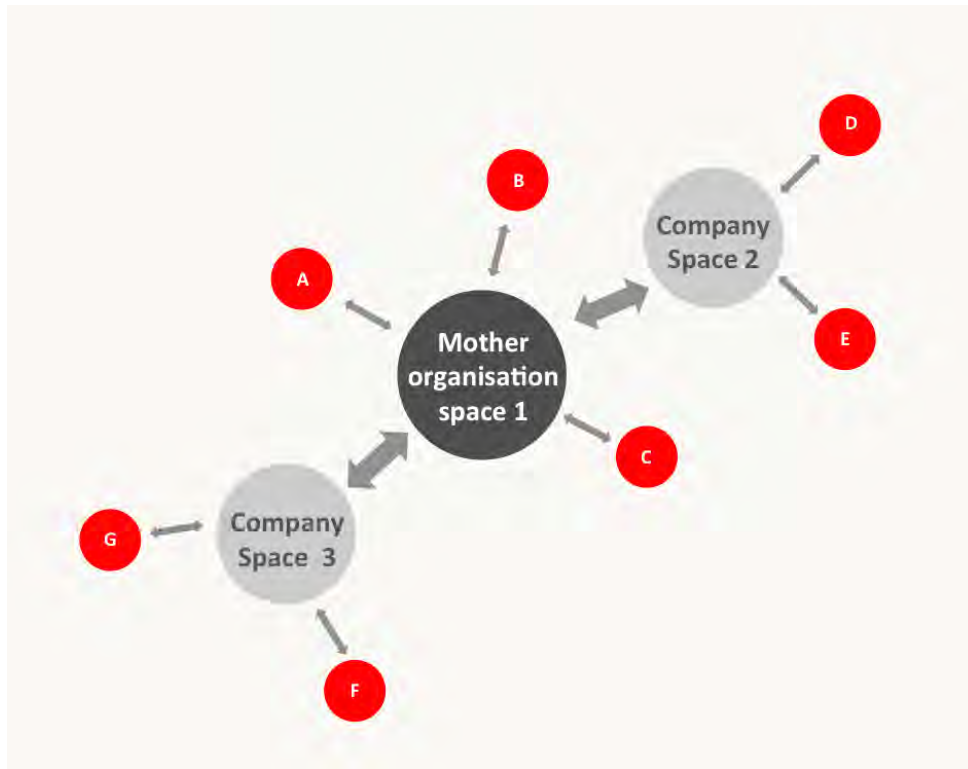


Figure 6 Diagram of how the spaces are organised as cells in the manufacturing company

The red dots symbolises the different customers that the mother company works with in the different business areas.

Analysis of design of space and organisational strategy in the manufacturing company

When the company develops new products by working with a customer, it hires spaces as new storage or warehouse space in the nearby surroundings that are within walking distance from the mother company area.

The warehouses are then turned into different production areas with one big space for the production line and the additional areas on the location functions as storage for what is produced and tested on the specific production line. As such the company only needs to have supporting facilities such as offices and meeting room etc. in one location. This makes it possible to run different kinds of productions and tests with different kinds of materials but also to alter the production line according to the material that is tested.

But it also means that the customers and business can be separated into different organisational cells even though the technology is fundamentally the same.



Figure 7 Organisation of space in the manufacturing company

At the same time this approach also reduces the need for employing new staff every time they go into a new market, since the same employees can be used in the various production areas regardless of which customers they are working with. This also makes it possible for the company to grow without hiring new and untrained staff or making large investments before entering a new market. In principle the technology is the same in spite of customer segments so basically whenever they want to enter a new market they just hire some more space.

In the following the analysis of design of space and organisational strategy of the three cases will be further discussed

4. Discussions

In the cases three approaches as to how to work with space to support organisational strategy have been presented: 1) *“Space as an organisational meeting place”* in the University campus, 2) *“Space as a network organisation”* in the Culture and production centre and 3) *“Space as a cell organisation”* in the private manufacturing company. As already introduced the what, why, and how the organisation is being developed to support its organisational strategy (Sinek, 2009) is in this section developed into a framework to analyse the organisational strategy and the design of space supporting the strategy (table 1). The organisational strategy of space in the three cases of the University Campus, the Culture and Production Centre and the Private Manufacturing Company are compared in the following:

Table 1 The organisational strategy of space in the three cases.

Case:	University campus	Culture and production centre	Private manufacturing company
Strategy:			
What - is the strategy?	<i>Space as an organisational meeting place</i>	<i>Space as a network organisation</i>	<i>Space as a cell organisation</i>
Why - this strategy?	"A main station of knowledge" to create collaboration and learning across different faculties, researchers, students and external organisations.	"A transformation factory where dreams can become reality" to create collaboration, entrepreneurship and learning between creative people cross different arts in an "idea factory"	To create 'a long tern trust relationship" to be able to innovate, develop and learn together with customers that are specialists, experts and lead users from other industries.
How - is the strategy implemented?	Open space with visual interactive spaces and possibilities to look into all spaces such as offices, reading rooms, library and canteen to make the spaces transparent with a focus on interaction and collaboration in an interdisciplinary environment where students act as change agents in the meeting between teaching, research and external collaboration partners.	Semi open multiple creative environment designed as a series of workshops combined with various large meeting, event, exhibition and restaurant areas where people can occasionally meet. An event driven space strategy where people can jump "on" and jump "off" or they can work together for a period of time while they try out different professional opportunities.	Closed spaces to create separation between customers and knowledge sharing. Business areas are thereby not dependent on each other and it is therefore also possible for the company to enter new types of markets. By splitting their customers into different locations it is also possible to work with them to understand their needs and how to act, organise and sell in the new and sometimes emerging market

Space as an organisational meeting place

In the case of "space as an organisational meeting place" in the University campus the space has according to the chief architect the intention to be the "...main station of knowledge" from the very beginning. The new building should help facilitate new approaches to teaching and make the organisation more transparent, making it easier to see and get inspired by each other.

Right from the start, the heart of the new university has centered on the concept of collaborative space. As the chief architect states: the job of the architects has primarily been to provide "a lot of different spaces for collaboration with each other". The architects' design intentions were to ensure intimacy by making the distance between spaces short in order to engender the feeling of cohesion and enable people to see each other across the spaces. The glass box meeting rooms, the desks along the perimeter of the atrium, the lounge areas, the stairs ascending from a large open space at the bottom of the building, the reading

rooms and the visual lines into the library and canteen are elements introduced as answers to 'how to make a transparent building with focus on interaction'.

As well as an effort to break down the traditional academic boundaries the campus is further designed to open up for collaboration with the outside world and accommodate collaboration with external organisations.

In this sense the university campus has a space strategy both to enable the organisation to change in the new facilities created as a meeting place for interaction and collaboration, and also to learn together to create new opportunities.

Space as a network organisation

In the case of "*space as a network organisation*" in the culture and production centre the space is about community driven learning. The idea is for people to meet, create networks and new organisations in a sub cultural environment. Here they can tap into the community to learn as they grow their talent.

An example of this a design company which grew out of the production centre to develop their own store where they sell Scandinavian Design in a high class shopping district. As the owners of the design company explains, he has learned and got to know how to do this from his experience in the the cultural production centre. As the company grew there was a need for them to have their own store to get into closer contact with their customers and study them in order to understand what they were thinking about the products (Hansen 2015b). Although they now have their offices in the store they still use the cultural production centre as "*a factory for new ways of thinking*" and as "*a laboratory for development*". At the production centre they have facilities they can use to learn from others in order to make inspiring projects with them.

Space as a cell organisation

In the case of "*space as a cell organisation*" in a private manufacturing company, the organisation is divided into smaller cells. Businesses and customers are separated when the company collaborates and tests new products and processes with their customers. From this they can use the business-customer interactions to learn and generate adequate knowledge and legitimacy in a new market. In this way they can also learn about the industry and its product application and create the credibility and position necessary in order to become known in the new market.

The Managing Director explains that they are dependent on their cooperation with the customers in order to learn about their needs. They need to work closely together with them to understand how they act in the emerging market including how they sell and organise in order to penetrate that new market.

In order to work with this type of sidestepping the company needs to divide the different collaboration partners into closed cells, which are not dependent on each other, so they can operate with them individually. This also means that different business areas and customers are separated to different locations. Equally, as the different customers do not collaborate

or interact, and as the business areas are not dependent on each other, it is also possible to sell off a business area if it is not interesting enough for the company portfolio.

Findings across the cases

All three cases have learning and space as a change agent as central issues in their strategy. It is therefore interesting to compare and look at how space can influence an organisation's learning and willingness to change. It is also important to explore how learning is facilitated and mediated as a social practice, as this is one factor among many in a complex relationship that engenders learning outcome (Oblinger 2006). This understanding is in line with Brown & Duguid (1991) who have pointed out the need for more research into organisational learning in order to understand, how people communicate in organisations (e.g. Orlikowski, 2007; Ashcraft et al., 2009). In the three cases it is also seen how space is organised to generate learning, create new relations. This is in line with what Duffy, Laing and Grisp (1993) have found that the organisation can have impact on the workplace. But in this research we have also seen how space can have impact on how people in an organisation interact with each other and the surrounding organisations. In the three cases the spaces have been closely related to organisational strategy. In two of the cases (the cultural centre and the private company) the organisations have turned existing spaces to fit the organisations strategic intension and in the university case the space was design for the purpose of the new campus. The university was build to fit changes in the organisation. The purpose of the new building was to help facilitate student centred learning, new approaches to teaching and transparency in the organisation. But also to make it easier for staff and students to interact and collaborate both cross faculties and with external partners such as private companies, local political systems in a multi-disciplinary environment. The opportunity to change the organisation both in a new campus and in existing facilities found in the two other cases were also found by Myerson (1998: 32) who has learned from the studies at DEGW that change in location may act as a catalyst for change but, more often, change has to take place on an existing site and within the confidence of an existing building.

What is also interesting in the university case is that the original plans for the campus changed already before it was taken into use since a faculty from another campus was relocated to the new campus in order to create synergies in the directions for change that the top management wanted for the new campus. Therefore some of the original plans for spaces had to change. The need for change of plans is supported in an interview with the former head of campus who says that he does not believe in the complete solution because it is not possible to imagine all kinds of situations: "*... the task is now to take it in (author: the building) and make it better*". But it is also in line when Myerson (1998) quotes architect Frank Duffy as he say he has "*...learned that client organisations are in a constant state of change*". This means that organisations will also change over time and therefore they will have changing needs for space.

Despite all challenges, the move to the new campus has initiated a change process and influenced the identity and self-understanding of the employees as some of them have started to work in new ways by collaboration cross faculties and introduction new teaching

methods. The analysis have further shown that the new building made it possible for people to unfold a new identity, evolve the vision and slowly change their culture. The campus is an aesthetically pleasing building, but it is designed as a place for classic thinking and interaction performed as dialogue. It is not designed for alternative ways of interaction and a designerly way of learning e.g. experimenting with messy prototyping, large scale visualizing and organisational theatre. Therefore some new workshop facilities and lab space has been leased in a close-by external building. The question is now whether the arrangement is going to be permanent. The debate is now whether to make yet another new building in a nearby location to the campus to fit the needs for alternative spaces or will the existing campus space change over time to be able to accommodate the requirements for use (Steven, 1994; Myerson, 1998: 40-53). The issues of time and how the space will change over time will as Myerson (1998) points out influence the management of space. In the case of the cultural production centre debate is going on for how to be more self-financed in the future as some public funding may come to an end. In the near future the local school of Architecture will also be building a new architectural school in the close by area of the cultural production centre.

One can therefore only speculate what will happen when the school is moving to the nearby location in terms of synergies between the two organisations. Will this for instance create an opportunity to combine the two organisations in order to develop a better economy for both institutions? And if, how will such a strategy change direction for the use of space? What will change the direction of the strategy and evolve the spaces will in the public and semi public organisations depend on the political situation but also in the private organisation outside factors such as changing performance rules on technology, environmental credentials and/or changing economic conditions may influence the organisations use of space.

5. Conclusion and perspectives

The research in the three cases has shown how space can be used to enhance organisational strategy and demonstrates how closely the creation of space can be related to the development of that strategy.

The cases have shown how space can influence an organisation's learning to create change and new relations and how an organisation can reinforce its identity, generate interaction and strengthen collaboration with internal and external partners. The cases have also shown how space can have impact on how people interact, whether the strategy of space is an organisational meeting place, a network organisation or a cell organisation.

The case studies have shown three different models for change but there might be more as it is seen organisational change have impact on space. But the risk factors associated with literally setting an organisational management system in stone may ultimately be a significant risk in terms of how and whether architectural and spatial organisation can be both flexible and impactful.

But the argument in this paper is the challenges in organisational strategy, creation of space and use of space as a change agent to generate interaction and new relations is interesting for the field of design, in particular when it comes to actually creating new spaces for interaction and learning, as well as designing the right spatial challenges to support an organisation's strategic intentions.

The research is also interesting for managers of strategic processes in organisations to help define the spatial challenges and the means to support and perform the changes needed – and, as the cases shows, design of spaces could be one of those means. But also the issues of time and how the space will change over time will influence the management of space and how management can work with space to fit the organisational strategy.

The findings are also of interest to applied research on design, design management, management and organisational learning literature and for designer on spaces for learning and organisational change. The case deals with the relation between the design of physical space and its impact on the practice of organisational interaction and learning.

The findings are vital in understanding, diagnosing and analysing the connection between space, strategy and design as organisational practice. The study has shown that the design and operationalization of spaces can influence organisational strategy, as space influences relations between people. That organisations can use space to support their strategic intentions seems to have been overlooked in the literature.

Although the research is based on a limited sample of cases, they do however present some interesting insights as to how space can influence an organisation's strategic intentions, interaction, learning and the building of relationships within different sectors on various organisational levels in a public space, a semi-public space and a private space. The usefulness of the research needs further investigation based on a larger sample of cases within the three levels of spaces. It might perhaps also be interesting to test whether there are some typologies of strategies within the different levels of spaces.

6. References

- Alexander, C. (1977) *A pattern language: Towns, buildings and constructions*, Oxford: Oxford University Press.
- Ashcraft, K. L., Kuhn, T. R. and Cooren, F. (2009) Constitutional Amendments: "Materializing" Organizational Communication, *The Academy of Management Annals*, Vol. 3(1), pp. 1-64
- Bakker, M. L. (2012) *Space Planning for Commercial offices interiors*, Fairchild Books, New York.
- Borges, S., Ehmann, S, and Klanten, R. (ed.), (2013) *Work Scape. New spaces for new work*, Gestalten, Berlin.
- Brown, J.S., & Duguid, P. (1991) Organizational learning and communities-of-practice: Toward a unified view of working, learning, and innovation, *Organization Science*, 2 (1), pp. 40-57.
- Duffy, F. (1999) British Airways at Waterside: a new model office?, *Design*, 3(2), pp. 125-140.
- Duffy, F; Laing, A. & Crisp, V. (1993) *The Responsible Workplace. The redesign of work and offices*, Butterworth Architecture in association with Estates Gazette

- Cooren, F. et al. (2008) Communication, organizing, and organization. *Organization Studies* 32, 9: 1149-1170.
- Dale, K & Burrell, G. (2008) *The space of organisation & the organisation of space*. Power, Identity & Materiality at Work, Palgrave Macmillan.
- Doorley, S. and Witthoft, S. (2012) *Make Space: How to Set the Stage for Creative Collaboration*, Wiley.
- Dubois, A., Gadde, L.-E. (2002) " Systematic Combining: An Abductive Approach to Case Research." *Journal of Business Research*, 55 (7), pp. 553–560.
- Fayard, A-L. (2012) Space Matters, But How? Physical Space, Virtual Space, and Place in Materiality and Organizing. Social Interaction in a Technological World, Leonardi, P. M., Nardi, B. A. and Kallinikos, J. (ed.) Oxford University Press, pp. 177- 195.
- Gehl, J. (2006) *Life between buildings - using public space*, 6. Edition, Danish Architectural Press
- Gehl, J. (2013) *How to Study Public Life - Methods in Urban Design*, Island Press
- Grangaards, S. (2009) *Med mennesker i rammen - Dialogorienteret registrering af rum og aktivitet i kontormiljøer*. København, PhD-Thesis. Center for Designforskning og Kunstakademiets Arkitektskole.
- Groves, K. with Knights, Will (2010) *I Wish I Worked There. A Look Inside the most Creative Spaces in Business*, Wiley.
- Hansen, B. T. (2015a) Aarhus har en idéfabrik, *Århus Weekend*, June 31, pp. 6.
- Hansen, B. T. (2015b) Nordic Tales er vokset ud af Godsbanen og ind i Guldsmedgade, *Århus Weekend*, June 31, pp. 7.
- Hatch, J. H. with Cunliffe, A. L. (2012) *Organization Theory. Modern, Symbolic, and Postmodern Perspectives*, Oxford University Press, Third Edition, Oxford.
- Kristensen, T. (2004) The Physical Context of Creativity, *Creativity and Innovation Management*, 13 (2), pp. 89–96.
- Laing, A., Jaunzens, D., Duffy, F., & Willis, S. (1998) *New environments for working: The re-design of offices and environmental systems for new ways of working*. London: Construction Research Communication.
- Lefebvre, H. (1991) *The Production of Spaces*. Oxford: Blackwell.
- Leonard, P. (2012) Changing Organizational Space: Green? Or Lean and Mean?, *Sociology* 47(2) 333–349.
- Luck, R. (2014) Organising design in the wild: location multidisciplinary as a way of working, *Architectural Engineering and Design Management*, DOI:10.1080/17452007.2014.892472.
- Mansfield, R. (2013) *Company Strategy and Organizational Design*, Routledge, New York, NY.
- Miles, M. B. and Huberman, A. M. (1994) *Qualitative Data Analysis—an Expanded Sourcebook*, 2nd ed., Sage, Thousand Oaks, CA.
- Munro, I. and Jordan, S. (2013) 'Living Space' at the Edinburgh Festival Fringe: Spatial tactics and politics of smooth space, *Human relations*, Vol. 66(11) pp. 1497-1525.
- Myerson, Jeremy (1998) *Design for change. The architecture of DEGW*, Birkhäuser Verlag
- Nussbaumer, L. L. (2014) *Human factors in the build environment*, Fairchild Books, New York
- Oblinger, D. G. (2006) *Learning Spaces*, Educause.
- Orlikowski, W. J. (2007) Sociomaterial Practices: Exploring Technology at Work, *Organization Studies*, 28(09), pp. 1435-1448.

- Paludan, T. (2010) *Creating Spaces of Learning* in: J. Halse, E. Brandt, B. Clark and T. Binder (ed.) *Rehearsing the future*, The Danish Design School Press.
- Plunkett, D. and Reid, O. (2014) *Detail in Contemporary Office Design*, Laurence King Publishing.
- Sinek, S. (2009) *Start With Why - How Great Leaders Inspire Everyone to Take Action*, Penguin Group USA.
- Stacey, Ralph (2003) Learning as an activity of interdependent people, *The Learning Organization*, Vol. 10, No. 6.
- Steven Brand (1994) *How Buildings Learn: What Happens After They're Built*, Viking Press
- Storvang, P. and Dalby, M. S. (2015) Room for improvement : Space as a change agent in generating interaction and new relations, *Proceedings of the 4th Participatory Innovation Conference 2015*, The Hague, The Hague University of Applied Sciences, 2015, pp. 249-257
- "Syddansk Universitet, Kolding" (2014) SDU, Kolding.
- Taylor, S., & Spicer, A. (2007) Time for space: a narrative review of research on organizational spaces. *International Journal of Management Reviews* 9(4): 325-346.
- Weber, A. (2012) Lean Plant Layout, *Assembly*, Vol. 55 (3), p. 52.
- www.d2i.dk (2014.08.01).
- www.godsbanen.dk (2015.05.21).

About the Author:

Pia Storvang is associate professor in Design Management at SDU-Design Research, Department of Entrepreneurship and Relationship Management, University of Southern Denmark where she is affiliated with the research project "Design to innovate (D2i), Reframing the Future". She holds a Ph.D. in Participatory Design and Innovation. Pia Storvang' research is related to Design Innovation, Management processes, Design Entrepreneurship and Design Thinking, Architecture, Creativity and the intersections between the areas.