Toivonen, Saija; Viitanen, Kauko

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Published in:
Land Use Policy

DOI:
10.1016/j.landusepol.2015.12.011

Published: 01/03/2016

Please cite the original version:
Environmental scanning and futures wheels as tools to analyze the possible future themes of the commercial real estate market

Saija Toivonen ∗, Kauko Viitanen

Aalto University School of Engineering, Department of Real Estate, Planning and Geoinformatics, P.O. Box 15800, FI-00076 Aalto, Finland

A R T I C L E   I N F O

Article history:
Received 14 April 2015
Received in revised form 30 October 2015
Accepted 12 December 2015
Available online 24 December 2015

Keywords:
Commercial real estate market
Trends
Futures research
Forecasting
Futures wheel
Environmental scanning

A B S T R A C T

The commercial real estate market is closely linked to the surrounding society, as commercial buildings have several economic, environmental, political, social and cultural influences. Correspondingly, the surrounding society, its actors and the different forces of change appearing in the market environment also have their own influence on the real estate market environment and its future development. However, this connection may be left without the attention it is entitled to and there is a danger that far-reaching decisions concerning commercial real estates will be made without sufficient analysis over possible future development. This paper investigates how the forces of change appearing in the present real estate market environment may affect future commercial real estates and their market environment. The forces of change are identified with an information collection method called environmental scanning known from future studies. After that the possible future influences of the identified forces of change are organized and analyzed with another future studies method called futures wheels. Finally, a holistic synthesis over the mutual future themes of the commercial real estate market is presented: (1) real estate themes: comfort, image, distinctive spaces and elements, technicality, safety and geographical location and transportation connectivity (2) market themes: interaction, demand for services, segregation and need for special knowledge and expertise (3) ideological themes: quality and redefinition of attractiveness, integration of space types, diversified demand and versatility of commercial real estate and owner-occupancy vs. tenancy. The database utilized in the environmental scanning and future wheel processes consists of 400 literary sources and 170 person sources presenting the views of different real estate market actors. Acknowledging the identified future themes is essential when preparing for future development. By being aware, it is possible to carefully study different development paths, their probability, essential factors and above all, the actors’ own possibilities to affect future development.

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1. Introduction

Commercial real estates and the society surrounding them have a strong link. A significant amount of capital is bound to real estates and they are a significant cost of (REF, 2011, p. 11; OSF, 2011). Real estates are also a remarkable cause of environmental impacts (Elving, 2009, p. 28; Niemi, 2009, p. 56; Noponen and Junnila, 2009, p. 5; UNEP, 2007), and consequently, they are often seen key in solving the environmental challenges set to our society. Real estates are also a physical action environment for many different actions such as working, shopping, living and recreation and consequently they have several political, social and cultural influences. It is clear that real estates affect the surrounding society, but also the surrounding society, its actors and the different forces of change appearing in the market environment have their own influence on the real estate market and its future development.

Real estate market actors making decisions concerning real estates are not necessarily aware of the forces of change appearing in their action environment and their possible influences on future development. In other words, they are in a situation where they have to make decisions that will have far-reaching consequences due to the long life cycle of real estates without sufficient awareness and needed analysis of possible future development. However, this awareness would be essential since the different forces of change together form a tangled network of reasons and consequences, conflicts and cohesions. By identifying and analyzing these elements, market actors would be more conscious and they would have better prospects of doing far-reaching and sustainable decisions concerning real estates and their market environment.

∗ Corresponding author.
E-mail address: saija.toivonen@aalto.fi (S. Toivonen).

http://dx.doi.org/10.1016/j.landusepol.2015.12.011
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The appearance and impacts of different forces of change relevant for the commercial real estate market have been previously studied by several researchers. Several studies concerning the manifestation and drivers of urbanization and its different impacts on land use can be found (Bart, 2010; Chen et al., 2014; Deng et al., 2015; United Nations, 2005; Yue et al., 2013 and Zhang, 2001). Also, there are various studies exploring globalization. Currit and Easterling (2009) have studied drivers of globalization and its effects on land use, while research by Falkenbach and Toivonen (2010) and Vongpraseuth and Choi (2015) concentrate on analyzing the phenomenon of globalization from the real estate investment point of view. In turn, a study by Williams and Shaw (2009) investigates one form of globalization: tourism and its impacts on land use. Environmental pressure is also a force of change that has previously been discussed in several studies. Researchers de Francesco and Levy (2008) as well as Sayce et al., 2007 concentrate on drivers and impacts of environmental pressure appearing in the real estate investment market environment, while the research by UNEP (2007) analyses the phenomena and its connections to real estates in a wider context. In turn, aging population is a force of change that is covered in the research conducted by Kroll and Haase (2010). They examine the relationship between demographic changes and land use changes.

While commercial real estates are also an action environment for business, consumption and working, studies exploring these issues can be relevant when analyzing the possible future development of commercial real estates. For example, Mikkonen-Young (2005), Williams (2008), and Raiborn and Butler (2009) have studied the development of working. The results from these studies can be used to estimate the demand of commercial space. Similarly, the studies concerning the development of transportation are of great interest due to the fact that physical location is still often seen as an inseparable and vital characteristic of commercial real estates. The studies by Heinonen (2000, 2006) tackle issues such as the development of transportation and urban structure and future mobility (see also Schafer and Victor, 2000, Talvitie (2003) in turn studies the impacts of communication technology on land use.

The above mentioned studies investigating the drivers, appearance, and impacts of the different forces of change can be used when trying to foresee the possible future development of the commercial real estate market. However, while offering valuable information over individual forces, they have not analyzed the market environment as a target of several simultaneous forces and their impacts. Moreover, many of these studies concentrate on analyzing past development or the current situation and less frequently tackle the possible future influences of the investigated phenomena. Only one study exploring several different forces can be found (Toivonen, 2011). Therefore, it can be stated that there is a lack of research concerning the combined effects of the different forces of change appearing in the commercial real estate market environment. A holistic view is important because with separate and narrow scoped studies, the combined effects of different forces are difficult to estimate. Hence, it remains unclear if the different forces have reversing effects when put together or if some development directions are only confirmed by studying multiple forces. A holistic view also imitates reality better because the formation of the future commercial market is rather a sum of many different objectives, events and drivers set by the surrounding society, its market actors and different forces than development taking place in a vacuum.

This paper aims to identify common future themes of the commercial real estate market by investigating the possible future influences caused by the forces of change appearing in the present real estate market environment. With the help of futures studies methods, environmental scanning and futures wheel, this paper concentrates to offer a holistic view that is a result of many different forces of change leading to a similar direction. The study concentrates especially on the commercial real estate market of the Helsinki Metropolitan Area (HMA).

2. Study design

The introduction explained why a holistic approach is essential when foreseeing future development. This chapter introduces how the study revealing the future themes was conducted. This paper is a part of a bigger research entity. The research entity consists of three different levels: (1) Identification of the forces of change affecting the commercial real estate market conducted with environmental scanning, (2) Analysis of the possible influences of every specific force of change with futures wheels, (3) Synthesis of common future themes of the commercial real estate market revealed by the wheels. The different forces of change appearing in the commercial real estate market have been previously identified by Toivonen (2011) and Toivonen and Viitanen (2015). This paper presents shortly the forces of change but focuses on analyzing the possible influences caused by the forces, and on the synthesis of these influences by forming the future themes of the commercial real estate market. The synthesis part of the research is seen very important because it not only focuses on some individual phenomenon but rather forms a holistic synthesis of the elements that are seen to be important in the future market environment. Next, the paper describes the utilized database and research methods. Afterwards, the paper concentrates on explaining how the synthesis of the possible influences was conducted to form the future themes.

2.1. Environmental scanning

The forces of change affecting the commercial real estate market environment were studied with environmental scanning (ES). ES is a future research method that collects information from the environment under examination (Gordon and Glenn, 2009). This study refers to ‘the environment’ as the sociocultural, political, ecological and economical entirety where the actions of the commercial real estate market are happening. This market environment includes different resources such as finances and infrastructure but also actions of different market actors such as space occupants, owners, investors, and public parties and their interactions (see Rubin, 2014). With ES the different forces of change are identified, followed and analyzed from the market environment by investigating different data sources (Rubin, 2002, p. 904). This is seen important because the future is formed and shaped by the forces of change appearing in the market environment. The forces of change differ by their nature and magnitude, but they also differ by how recognizable they are by different market actors (Gordon and Glenn, 2009; Heinonen, 1993, p. 106; Heinonen, 1995, p. 16; Hietanen et al., 2002, p. 416).

Naisbit (1984) is one of the most known researcher utilizing ES in his studies. By using ES he identified megatrends that he proposed to be essential for future development (see also Naisbit and Aburdene, 1990). The ES method has also been appreciated by the business sector and several studies investigating ES activities of enterprises can be found (Babatunde and Adebisi, 2012; Bhardwaj and Kumar, 2014; du Toit, 2015). In the studies by Toivonen (2011) and Toivonen and Viitanen (2015) ES was utilized to identify the forces of change shaping the future commercial real estate market. ES is stated to suit well for studies investigating phenomena that are significant for human wellbeing and for studies monitoring and controlling development paths of phenomena (Bell 2003, p. 295). Therefore, the method is expected to suit the investigation of the commercial real estate market. Real estates have significant and versatile impacts on their surrounding environment. For example,
their environmental, economic and social impacts are argued to present a true challenge for future wellbeing and hence the future development of the commercial real estate market should be monitored (Toivonen and Viitanen, 2015).

It is argued that it is very challenging to recognize all relevant parties and their motivations and combine them into an entity describing the possible futures (Kamppinen et al., 2002, p. 24). While the commercial real estate market is influenced by different forces appearing in the market environment and includes several different market parties, future development can be seen as a synthesis of all of those affecting elements. Due to this, the study aims to include diverse data sources presenting a variety of influential elements such as the views of different market parties acting in the commercial real estate market. Next, the utilized data sources are described in more detail.

As a data source for the ES, this study utilizes a database of about 400 literary sources and approximately 170 person sources. The literary sources were for example scientific journal articles, research publications, articles and books of different character, statistics, seminar materials, magazines, newspapers, company and authority releases, blogs and advertisements. The data sources were chosen to present a multidimensional and cross-disciplinary view so that their content would echo the nature of the commercial real estate market and its versatile connections to the surrounding society and different parties. The environmental scanning was mainly conducted during the years 2008 and 2009. Later some updates were made for example to the statistics. The information sources were published 1984–2011.

In addition to the literary sources, the database consists of questionnaire and interview answers of different commercial real estate market parties such as questionnaire answers of 43 office space users and 57 retail users as well as interview answers of 20 municipality authorities of the HMA, 20 domestic real estate investors, 18 international real estate investors and 7 real estate developers and constructors. Office space users were randomly chosen among companies having at least one office located in the HMA and at least 50 employees. The retail space users were chain retail stores located in the HMA shopping centers. The domestic investors and constructor companies belonged to the biggest ones acting in the HMA. The foreign investors in turn were investors who had either invested or showed interest toward the Finnish real estate market for example by taking part in a transaction process. While all of the participants were involved in the decision making of their organization concerning commercial real estate markets, it was assumed that they not only possessed ideas concerning possible future development but also were in practice the actual actors shaping future development through their decisions and actions in the market environment. The interview and questionnaire answers were collected during 2007 and 2008. Anonymity was guaranteed to all respondents. In addition to these 165 questionnaire and interview answers, the person sources included also a few seminar presentations and public speeches (see in detail Toivonen and Viitanen, 2015).

The approximate future time span for the entire study was determined to be the year 2020. For the real estate market parties this meant that they were foreseeing circa 13 years ahead of them. For futures studies, this is a reasonably short time period and it preferably should be longer (Benckendorff, 2007). However, even this time perspective was found to be challenging for some market parties. In the same market environment, there are actors such as short term investors with a time perspective of 1–3 years and on the other hand there are actors such as public sector representatives analyzing extremely long time periods such as 30–50 years ahead. The year 2020 was assumed to be a compromise of these different time perspectives and was therefore chosen.

During the ES process 32 forces of change appearing in the commercial real estate market environment could be identified (see Table 1). In previous studies (Toivonen, 2011; Toivonen and Viitanen, 2015) the forces were analyzed and categorized based on their content under nine main categories. In this study all the 32 identified forces were further investigated to reveal their possible future influences on the commercial real estate market with the help of the futures wheel method. Next, the futures wheel method will be presented in more detail.

### Table 1

<table>
<thead>
<tr>
<th>32 forces of change studied with futures wheels.</th>
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<tbody>
<tr>
<td>1. Globalization</td>
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<td>2. Action optimization</td>
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<td>3. Differentiation</td>
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<td>4. Technology as an enabler</td>
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<td>5. Urbanization</td>
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<tr>
<td>6. Aging population</td>
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<td>7. Environmental pressure</td>
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<td>8. Safety</td>
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<td>9. Search of meaning</td>
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<tr>
<td>1. Global location of companies</td>
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<tr>
<td>2. Increase of work productivity</td>
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<tr>
<td>3. Individualism in space requirements</td>
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<td>4. Increase of demand and supply of information</td>
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<td>5. Changing population structure in work life</td>
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<tr>
<td>6. Changing population structure in work life</td>
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<tr>
<td>7. Attention to user behavior</td>
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<tr>
<td>8. Highlighted ecological image</td>
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<tr>
<td>9. Highlighted stories</td>
</tr>
<tr>
<td>2. Commercial real estate costs</td>
</tr>
<tr>
<td>3. Increasing inequality</td>
</tr>
<tr>
<td>4. Commercial real estates attracting employees</td>
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<tr>
<td>5. Generalization of remote work and e-commerce</td>
</tr>
<tr>
<td>6. Centralized decentralization</td>
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<td>7. Changing population structure in work life</td>
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<tr>
<td>8. Worsening global security situation</td>
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<td>9. Highlighted stories</td>
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### 2.2. Futures wheel

After the identification of the different forces of change, their possible future influences were analyzed with a research method called the futures wheel. The futures wheel resembles structural brainstorming. With futures wheel it is possible to organize, understand and clarify different future elements and their possible influences. This is done by searching primary, secondary and tertiary influences of different forces of change. The influences can be addressed to a certain actor or to some other element. (Glenn, 2009, pp. 1–2; Rubin, 2002, p. 906). Despite its simplicity, the futures wheel is seen as an effective method to investigate the future and due to this it is commonly used among futurost (Glenn, 2009, pp. 1, 8–9). However, the method is not often utilized in academic studies. Boujaoude (2000) applied the futures wheel among students to examine multiple effects of science related social issues such
as the banning of bird hunting. Deal (2002) in turn organized the impacts of the internet with the method. Shakweer and Youssef (2007) utilized the futures wheel in a foresight study concerning the future of water in Egypt, while a study by Benckendorff (2007) investigated the future of tourism. Toivonen (2011) concentrated on the future of the commercial real estate market, while a study by Rantasila (2015) examined the possible impacts of mobility as a service concept for land use. Despite the variety of contexts, the above mentioned studies offer valuable information concerning the applicability of the futures wheel method. Especially the study by Benckendorff (2007) was found to be very useful since it offers a broad analysis over the futures wheel as a research method.

The ultimate aim of future research is not to predict a single correct vision of the future but to investigate several possible development paths (Kampinnen et al., 2002, p. 25; Mannermaa, 1999, p. 19; Mannermaa, 2004, p. 34). Jarva (1993, pp. 251–252) argues that especially phenomena influenced by human actions are highly complex systems that are difficult to predict unequivocally. It can be assumed that this is also the case with the commercial real estate market. There are a variety of different market parties that are executing their actions driven by different motivations in the market environment. In addition to these internal elements, also many external forces are shaping the market directly or indirectly. Due to these reasons the futures wheel method was seen as a suitable tool to analyze the different possible influences of the forces of change affecting the commercial real estate market.

By utilizing the experiences from the previous studies, the formation of the wheels was decided to be conducted by an internal research team. First, this enabled the investigation of multiple forces. Benckendorff (2007) suggests that the number of investigated forces should be reduced by concentrating on the most important ones if the wheels are formed in joint sessions with external participants. In this study this approach was not seen suitable since it was not possible beforehand to ensure that the forces that would have been listed as “the least important ones in the present situation”, would not have significant impacts in the future. For this reason, all 32 forces identified during the ES process needed to be analyzed. The futures wheels have often been formed during joint sessions with external participants estimating the possible influences (Benckendorff, 2007; Boujaoude, 2000; Shakweer and Youssef, 2007). The joint sessions have presented some restrictions. Benckendorff (2007) found it challenging to analyze circa 12 forces during a single session. According to his experiences, a high number of investigated forces could lead to mental exhaustion of the participants. This could again weaken the results. In our study the high number of forces for analysis was assumed to be a too demanding task for a joint session of external participants and an internal team was decided to be used instead.

A second reason supporting the use of an internal research team when forming the wheels was the high number of participants that were targeted to be included in this study. The number of participants have been quite modest in the previous studies. In the study by Boujaoude (2000) 3 to 4 participants attended a joint wheel formation session, while Benckendorff (2007) had 8 to 11 participants. While the inclusion of relevant participants is seen crucial (Kampinnen et al., 2002, p. 24), and the aim of the study was to form a holistic view, it was seen essential to include a variety of different market parties to the study. The use of an internal research team enabled the inclusion of 165 market parties which would have been difficult to attain in a joint session.

The third reason for utilizing an internal research team was the assumption that the role of the facilitator guiding the participants and drawing the wheels was crucial (see also Rantasila 2015). Some challenges concerning external participants had been reported. For example Shakweer and Youssef (2007) noted that the futures wheel method was challenging to most of the participants and therefore it was not seen as useful as was hoped. For these reasons it was decided that the formation of wheels would be conducted by the internal research team and the external participants would not take part in the actual visual formation of the wheels. The external participants acted as an information source to define the possible influences which could then be organized into the wheels by the internal research team.

The futures wheel process was started by placing, one by one, all 32 forces of change presented in Table 1 under examination in the middle of the wheel into the center circle (Fig. 1). Benckendorff (2007) reported that by including all investigated forces into one individual wheel at the same time led to increased complexity in conceptualizing the wheels. While aiming for clarity, it was decided that each of the 32 forces were to be investigated separately in their own wheels, one by one. After the force was placed into the center circle, the primary influences of the force were written on the circles located on the first ring surrounding the center circle. These circles present the primary influences of the force placed in the center circle. The primary influences were also connected to the center circle with lines to demonstrate the connection between them. After that, the primary influences were all analyzed carefully to reveal their possible future influences. These secondary influences were then written on the circles located on the second ring. Also these secondary influences were connected with lines to the primary influences to show their interconnection. The same procedure was continued to form the possible tertiary influences of the secondary influences. Finally, the different rings surrounding the center circle presented the different levels of the influences. The procedure can be continued as long as a clear picture about the possible influences of the force can be seen. This study mostly investigates the influences up to the tertiary level, and in some cases also up to ring four. The procedure ended when the influences seemed to part from the commercial real estate market context.

There are several possibilities to select the influences that are finally accepted to the wheel. One possibility is that all the possible influences that can be named are accepted. Another possibility is that only the influences that are agreed by all the participants taking part to the formation of the future wheel are written down (Glenn, 2009, p. 5–6). This study used the first option and included all the influences that appeared in the utilized data sources to form a holistic view that included the opinions of all different parties. It was assumed that the different market parties are not necessarily aware of influences that are not part of their own specific business environment and by requiring unity in the presented influences some relevant influences could otherwise be ignored (see also Gordon and Glenn, 2009; Heinonen, 1993, p. 106; Heinonen, 1995, p. 16; Hietaen et al., 2002, p. 416). The possible influences were searched from three different data sources: ES database consisting of (1) 400 literary sources (2) 170 person sources and (3) brainstorming and discussion sessions of the internal research team. The research team investigating and analyzing possible future influences and forming the wheels based on the information sources included four researchers representing four different viewpoints of the commercial real estate market as follows: (1) real estate economics and future development of the real estate market, (2) real estate investment market (3) corporate real estate management and (4) land use policy. The involved researchers and their fields were seen to represent the characteristics of the commercial real estate market, where the space and investment market as well as the public and private objectives are interacting and shaping together the future market development.

2.3. Forming the synthesis

After the formation of the futures wheels, the influences placed into the wheels were investigated carefully (Phase 1, Fig. 2). The
Fig. 1. The formation of the future wheel.

PHASE 1: Analyze of the possible future influences of the forces of change

PHASE 2: Formation of 14 future themes

PHASE 3: Formation of 3 main future themes to categories based on their target impact

1 Real estate themes
- Comfort
- Image
- Distinctive spaces and elements
- Technicality
- Safety
- Geographical location and transportation connectivity

2 Market themes
- Interaction
- Demand for services
- Segregation
- Need for special knowledge and expertise

3 Technological themes
- Quality and redefinition of attractiveness
- Integration of space types
- Diversified demand and versatility of commercial real estates
- Owner occupancy vs. tenancy

Fig. 2. Forming a synthesis over the future themes of the commercial real estate market.
influences of the different wheels were analyzed together to form the mutual future themes. This was achieved by investigating the content of the ultimate influences which were found on the furthest rings of the different wheels (the circles highlighted with blue in Figs. 2 and 3 and 4.1). Based on their content, the different ultimate influences were divided into different categories representing a certain theme. Altogether 14 future themes were formed. (Phase 2, Fig. 2). After this, the formed 14 future themes were investigated further and categorized based on their target impact under 3 main future themes: (1) Real estate themes, (2) Market themes, and (3) Ideological themes (Phase 3, Fig. 2). Real estate themes include themes that are connected to real estate attributes. These themes are directly related to real estates themselves. Market themes in turn are themes that are connected to market attributes. These themes describe phenomena that are affecting the commercial real estate market environment. Finally, Ideological themes are themes that are connected to ideological shifts. These themes derive from an ideological change happening in the market action environment. Next, the identified future themes will be described in detail.

3. Results concerning the future themes of the commercial real estate market

Next the future themes of the commercial real estate market will be described. They are categorized under three main future themes: (1) Real estate themes (2) Market themes and (3) Ideological themes according to their content and target of impact (see Table 2).

4. Real estate themes

4.1. Comfort

Comfort of commercial real estate is a result of many different forces and linked both to office and retail properties. In the office context, comfort helps to optimize workforce resources, maximize the productiveness of work and attract quality workforce. In addition, comfort is linked to customer satisfaction and recreational activities in retail premises because it is seen as a tool to maximize enjoyment. In the future, comfort can also mean new, more down-to-earth elements, which can be achieved by introducing real or artificial nature elements to real estates. Also different services and spaces reserved for casual interaction or relaxing can be seen as elements increasing comfort. There are also contradictory influences indicating that future commercial real estates can become very simplistic environments which could in turn decrease their comfort.

4.2. Image

The significance of real estate image might be highlighted in the future. Image can be diverse. It can be especially distinguishable, technically alluring, safe or ecological. This development is seen both in office and retail contexts. According to the futures wheels, it becomes more important to take care of also the virtual image of a real estate. This means that the real estate becomes a unit that presents itself and interacts also in social media. Image is above all a way to stand out from the mass and attract customers, partners and workforce. Image is also influenced by the area image and actors located nearby.

4.3. Distinctive spaces and elements

According to the futures wheels, a growing number of different distinctive spaces and elements are making an entrance into the future commercial real estate market. Distinctive spaces and elements have not traditionally been connected to commercial premises, but rather belonged to some other property types. This impact is seen as a result of nearly every force but its content differs. Distinctive spaces and elements can be needed for entertainment,
rest, innovation, meditation, freshening up, technical equipment, religious or cultural purposes or different user groups such as the elderly.

### 4.4. Technicality

The technical characteristics of future commercial real estates are highlighted. Some of the forces influence in-built technical systems, while some of the forces seem to bring increasing numbers of separate technical elements to commercial real estates. Some of the technical elements are optimizing the actions conducted in the commercial spaces while others are measuring building performance. This development will increase the need for specialized technical knowhow.

### 4.5. Safety

Different safety issues are seen important in the future. For example, increasing outsourcing seen in the commercial real estate market highlights the significance of security. Also health and ergonomic aspects as well as accessibility of real estates are emphasized. Safety is also a locational criterion when deciding between different local and global locations for commercial real estates.

### 4.6. Geographical location and transportation connectivity

Both public and private transportation connections are highlighted by different forces. Accessibility by pedestrians and cyclists is emphasized especially by environmental pressure, while global connectivity is driven by globalization. Remote working and e-commerce affect the accessibility in contradictory ways. For example, distance working can decrease its meaning while e-commerce can even highlight the accessibility issues of certain retail premises. Location will also be an important way to affect image, availability of workforce and real estate costs. A central location and nearness of other actors are highlighted by some of the forces while a lonely and distant location is appreciated by others and leads to an increasingly dispersed urban structure.

## 5. Market themes

### 5.1. Interaction

Physical experiences and social interactions are elements that will be emphasized in future commercial real estates. In the future we will need spaces that are especially planned and designed to support this highly appreciated physical interaction between people, products and services. This will be the most crucial advantage of physical real estates compared to remote working and e-commerce. Interaction will also increase between different real estate market parties.

### 5.2. Demand for services

The significance of services is highlighted in the future. Services are linked to several things such as supporting business activities, employee satisfaction, entertainment and customer support. In the future, services may increasingly mean versatility, individual customization, specific know-how and sustainability. Different services located into commercial real estates can increase the need of distinctive spaces and elements presented earlier.

### 5.3. Segregation

Several forces in the market environment may lead to a deeper segregation of the future commercial real estate market. This means that market actors, real estates and market areas would resemble each other less and less. Specialization of actors, real estates and market areas and also the emphasis of image are all strengthening the segregation phenomenon. On the other hand, globalization can be seen to unite real estate markets and their actions.

### 5.4. Need for special knowledge and expertise

The importance of special knowledge, expertise and information in general is emphasized in the future market environment. This phenomenon means different things in different contexts. Traditional real estate knowhow will no longer be enough but also expertise of other fields is needed and needs to be adapted to the real estate context. Special knowhow is needed for example when adding special spaces and elements or technical systems such as safety and ecological instruments to commercial real estates. Also new kinds of real estate investment decisions require new kind of knowledge. This means that in the future, market actors should possess the needed knowhow themselves or they have to acquire it from outside their own organization from different specialists and advisors. Also the growing amount of information and requirements as well as the lengthened and more complicated market processes will increase the need for advisors.

## 6. Ideological themes

### 6.1. Quality and redefinition of attractiveness

Space quality will be highlighted in the future. Perceived quality is always dependent on the current values of the market environment. High quality can mean the newest technology which is linked to good business conditions and positive image. Quality can also mean high quality materials, versatile service and space selection, possibility for tailoring, other respected space occupants, sustainability certifications, fulfillment of global quality standards, or comfort. Interestingly enough, the definition of “high quality” and “attractiveness of real estates” can be redefined in the future and the significance of the known quality elements could decrease. For example, a modestly equipped real estate can be pursued when...
wishing to minimize space costs or environmental impacts, or when respecting the ideology of simplicity.

6.2. Integration of space types

Future commercial real estates may include different kinds of spaces and elements which have not traditionally been linked to office or retail spaces. Commercial real estates are influenced by private homes or spaces used for leisure and hobby purposes. Eventually we are in a situation where we are able to carry out the same functions regardless of where we are. This means that it becomes more difficult to separate elements that belong to a certain space type. Hence, it might become questionable to continue to plan and design spaces strictly for certain purposes. In the future, it will be more relevant to concentrate on the flexibility, adaptability, and versatility of commercial real estate.

6.3. Diversified demand and versatility of commercial real estates

Demand of commercial real estates can be seen multilayered and versatile due to several reasons. For example, it is no longer enough to pay attention to goals set by space occupant companies but also to increasingly consider demand from the perspective of customers and employees. Also, an individual space occupant may simultaneously have several aims concerning a future real estate that is no longer a place for one activity but rather a multiuse space. Real estates can respond by diversifying or by specializing. This can mean that future real estates become unique and highly specialized units, or on the contrary, they will all become versatile entities with endless options to offer. Due to globalization and integration, market actors might in the future appreciate similar commercial real estate attributes regardless of their global location and expect for example certain characteristics or procedures wherever they are located globally. This would lead to unilateral demand and global unification of real estate markets.

6.4. Owner occupancy vs. tenancy

There is constant pressure to minimize costs and space use. Remote working, development of remote connections, lack of time and negative influences caused by traveling may support the utilization of alternative solutions such as office hotels. Nevertheless, there are still forces presenting owner-occupancy as a preferred choice. For example, the growing importance of image can highlight the position of real estates in companies’ facility strategies. Also, increasing demand for individuality may favor owner-occupancy. Alternative solutions might be real estates which are leased with long lease agreements and occupied by a single occupant. The contradictory forces concerning ownership can lead to a segregation of different locations so that for example the headquarters is owned for image reasons but other functions are placed in spaces that allow constant adjustment of used space.

7. Discussion and conclusion

This paper set out to identify the different future themes of the commercial real estate market. This was done by investigating the possible future influences caused by the forces of change appearing in the present real estate market environment. The forces were investigated with the help of ES, while their influences were analyzed with futures wheels. Through a synthesis of the possible influences identified by the different wheels, altogether 14 future themes were formed. The presented future themes concern different subjects. Firstly, there are themes that are connected to real estate attributes and reflect real estates themselves. Secondly, there are themes that are connected to market environment attributes. Thirdly, there are themes that are describing an ideological change happening in the market environment. The different commercial real estate market actors are assumed to be influenced by all of these themes.

The study shows that some of the forces are internally congruent in that possible future influences while others are contradictory, and leading to contradictory results. Similarly, some of the forces seem to be externally congruent with each other leading to similar influences while others are indicating conflicting results. For example, “Generalization of remote work and e-commerce” can lead to both decreased and increased significance of space quality. Similarly, “Globalization of the real estate investment market” can lead to either decreasing or increasing of the importance of advisors. The inner conflicts of the forces or contradictory results of different forces can complicate the interpretation of possible future developments compared to situations where the end results of the wheels seem to be united. This is a recognized challenge but it is also seen as a special advantage of the futures wheel method, when futures wheels can reveal these internal and external conflicts that could otherwise remain unnoticed (see Glenn, 2009, p. 8). The recognition of these kinds of conflicts is essential, when trying to prepare oneself for the future. When one is aware, it is possible to carefully study the different development paths, their probability, essential factors and above all, the actors’ own possibilities to affect future development.

This study connects the forces of change to the commercial real estate market in a concrete way through their possible influences. In other words, abstract phenomena are connected to concrete elements. For example, a phenomenon such as remote working might decrease the significance of transportation connectivity of an office. By connecting the forces to concrete real estate elements and market impacts, it is possible to examine which are the forces that are the most relevant ones in the eyes of some particular actor. Furthermore, by recognizing a connection between forces and influences, market actors can estimate which are the wanted and unwanted development paths, direct their actions toward the wanted development paths or try to prevent the unwanted ones, or altogether examine if their future goals concerning real estates are against or in favor of the possible future developments and future themes.

As it was also earlier stated, it is not the aim of the future studies nor it is even possible to present comprehensively all the possible future development paths (Mannermaa, 2004, p. 34; Naissibit, 1984, p. xxii; Niiniluoto, 1993, p. 15; Niiniluoto and Nyman, 1986). The predictions are always incomplete (Gordon, 1992, p. 26). In this study the scanning of forces continued over several years. Nevertheless, it is very likely that the scanning lacks some important factors, while new phenomena affecting future development are continuously emerging. Therefore, the list of presented future themes is not either complete and cannot even be such when taking into account the nature of future research. According to Bell (2003, p. 295) the extent of the scanning and the certainty of detecting the phenomena are crucial concerning the success of ES. In this study the forces and their possible future influences were investigated based on a database including a wide range of different information sources. The information sources were targeted to offer a multidimensional and cross-disciplinary view so that they would describe the versatile nature of the commercial market environment and its different parties. Also, the scanning was conducted during a considerably long time period to detect the appearing forces. The interviews and questionnaires pursued to include all current significant market actors that would potentially be relevant for the development of the market. However, the power relations of different market actors may change in the future and some other market actors could possess a more relevant position in the market than estimated. However, the existence of the presented forces can further be proven by other studies that have identified...
similar forces (McBlaine and Vrlick, 2006; Hiltunen, 2010; Kuusi and Kamppinen, 2002; Mannermaa, 1998; 2004; Mäkelä, 2001; Naisbitt, 1984; Suomen Akatemia and Teke, 2006). In addition, the presented forces have not only been recognized by the research team but also identified by the actual market parties that act in the market environment in focus.

As ES, also the futures wheel method is highly dependent on the involved data sources (Glenn, 2009, pp. 1, 8–9). Due to that the identification of the possible influences of the forces is also exposed to the weaknesses of the database as described earlier. Only the influences that were seen possible according to current knowledge were accepted to the wheels. Nevertheless, it is possible that some of the excluded influences would be possible in the future. On the other hand, it is also possible that some of the presented influences may prove to be untrue in the future. The aim was to eliminate this by using an extensive database and by discussing the possible influences with the internal research team. The results are dependent not only on the comprehensiveness of the database but also on the competence of the researchers which has been strengthened by including specialists representing relevant fields. However, it seems unlikely that the wheels would have revealed all possible influences. It is probable that the most obvious influences were easier to recognize than emerging development. In principle, by increasing the amount of data sources (e.g., studies, theories and market parties) and researchers involved (specialists of different fields) to interpreted the possible influences, it might be possible to increase the probability of recognizing more influences. However, there is always something that is unrecognized, as stated by several researchers (Jarva, 1993, pp. 251–252; Mannermaa, 2004, p. 34; Niimiluoto, 1993, p. 15; Niimiluoto and Nyman, 1986; Naisbitt, 1984, p. xiii). Yet, in an ideal situation the foreseeing of the future of the commercial real estate market is the result of cooperation between actors representing many different fields.

Some of the possible influences of the forces were based on individual opinions of market parties. It could be questioned how relevant these influences are and could they even exist if they are not commonly recognized. However, the unity of views is not always seen as a pursued goal among future studies and a view presented by one individual source can be as important as commonly shared views. Rare notions are potential weak signals that can potentially be very important concerning future development (see more about weak signals: Hiltunen, 2010; Mannermaa, 2004; Rubin, 2005). On the other hand, this study does not concentrate on the individual influences of the forces but combines them together to form a synthesis over mutual future themes. This means that the presented themes are results of several different development paths leading to the same direction.

According to experiences gained during the study, both ES and futures wheel methods seemed to be suitable to be used in research concerning the commercial real estate market. Environmental scanning enables the use of different types of data sources. While the commercial real estate market is versatile by its nature, the data concerned is also often spread into various sources such as statistics, interviews and market reports. When utilizing these methods, the data sources did not have to be in certain form and a cross-disciplinary research attitude was possible to attain. The futures wheel as a research method was seen especially useful when structuring the relationships between different phenomena and influences due to the illustrative nature of the wheels. This was found to be a very helpful feature especially when analyzing the commercial real estate market that contains several complex causal relationships. Based on the conducted research, the futures wheel method would be both beneficial and possible to carry out also in other contexts. The method itself allows a variety of objects to be analyzed. In addition, the method is quick and simple to use, and easily applied. It can also be used when aiming to view the possible influences most relevant to a certain actor group such as space users, investors or the public sector. The wheels could stimulate actors to foresee the future and the possible influences more actively than before.

However, some challenges concerning the utilized research methods were also found. Firstly, the ES process is time and resource consuming and this hinders its attractiveness. This is also a previously recognized challenge by Benckendorff (2007), Shakweer and Youssef (2007), and Toivonen (2011). Secondly, while the scanning should preferably be a continuous process (Toivonen and Viitanen, 2015), it might be difficult to achieve in practice. Also, the futures wheel method has its limitations. One difficulty remarked also by Benckendorff (2007) is the identification of influences. There is a danger that the influences describe the appearance of the force itself and not its direct effects. In this study, the futures wheels were formed based on the database by the internal research team. Some other researchers (e.g., Benckendorff, 2007; Shakweer and Youssef, 2007) have formed the wheel during a joint session with external participants. This kind of approach enables interaction between different actors as mentioned by Benckendorff (2007) but restricts the number of participants. By using an internal research team, a high number of participants was gained but the interaction between external participants was absent and therefore there was no possibility for the participants to develop each other’s ideas further. On the other hand, in a joint session a participant may not be willing to present his views as freely as during interviews or questionnaires.

This study shows that ES and futures wheel possess great potential to be used when investigating phenomena of the real estate market. However, the methods could be developed further. When the wheels are formed by the internal research team, success is dependent on the capability of the team. While the influences might be various in their nature, it is recommended that the results be later confirmed with specialists of the field concerned. It is also suggested by Benckendorff (2007) that participants could be asked to reflect on the final wheel. He sees that this would help the participants to clarify their thoughts and thereby develop the future to be more realistic. In addition, the definition of the future time perspective of the study (year 2020) was a challenging task as described in the study design section. We are not able to yet present how this challenge should be solved.

The study concentrated on the HMA. The results might be applicable to some other geographical locations. The global unity of the several forces of change could indicate this (Toivonen and Viitanen, 2015). However, possible influences of the forces cannot be generalized based on this study since the influences could vary in different market environments. For example, the views of different market parties cannot be generalized as they only present the views of the participants in question. Therefore, a further study is needed for confirmation. This study concentrated on commercial real estates. Some of the forces might be relevant when analyzing possible future development of the housing market. However, further research is also needed concerning this since the causal relationships may vary depending on the relevant market parties and their motivations. Also, the geographical scope of the study could be widened and validated in other locations globally. In addition, further research could also be done by concentrating on the interconnections of the possible influences and their joint influences. It would also be of interest to estimate the probability of different influences and especially their desirability among different real estate market actors. In the next stage of the research, we will analyze each future wheel more in-depth and present the possible influences in more detail.
Acknowledgements

Funding sources are TEKES (project 400709/06), Aberdeen Property Investors Finland Oy, Huoneistokeskus Oy, IVC-Polar Oy, Julius Talberg-Kiinteistöt Oy, Kiinteistötaito Petola & Co. Oy, KTI Kiinteistötieto Oy, Kuiten eläkekaukutus, Maakanta Oy, NCC Property Development Oy, Ovenia Oy, Pääkaupunkiseudun yhteistyötuksu YTV, Rakennusosakeyhtiö Hartela, Senaatti-Kiinteistö, Skanska Oyj, Sponda Oyj, SRV Viitoite, Technopolis Oy, Opetusministeriön rahoittama KIKSU -kiinteistö-, rakentaminen- ja suunnitellututkijakoulu, Maannuottasanalan edistämiässä, Insinöörito- eteiden ja arkitehtuurin tiedekunta, Insinööritoettieden korkeakoulu, Aalto-yliopisto, Helsinki kaupunki, Emil Aaltoisen säätiö. The funding sources provided only financial support and had no other involvement to the study. Dr. Riikka Kyrö has provided help during the research with language and proof reading.

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