UNIVERSITY OF TURKU

ABSTRACT

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	Licentiate's thesis
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Oppiaine	Futures Studies	Päivämäärä	1.6.2020
Tekijä(t)	Kirsi-Maria Eronen	Sivumäärä	76+liitteet
Otsikko	Future places of business in Turku city center: adaptive cycle analysis and Futures Workshop		
Ohjaaja(t)	Ph.D. Sampo Ruoppila and Ph.D. Ville Lauttamäki		

Cities are economic hubs, places for enjoyment, social events, culture and consumerism. However, contemporary cities are difficult to understand, and picturing their long-term futures is challenging mainly due to the complex and diverse nature of the city as a whole. The aim of this Master's thesis is to study the long-term future (up to year 2050) of places of business in Turku city center. The particular study cases are the market square and its surroundings and a pedestrian shopping street, typical spaces which can be found from numerous other city centers as well.

These case studies are researched in the context of complexity theories using two analytical methods, one from complexity theories and one from futures studies. The first method is the adaptive cycle analysis which was conducted as a desktop study. The purpose was to find information related to the past and the present phases of the case studies. The second method was a Futures Workshop which was conducted as a participatory expert workshop. The reason for combining the theories of complexity and the analytical methods of the adaptive cycle and the Futures Workshop, was to form a new participatory and transdisciplinary method for studying urban fragments, such as the places of business.

This research produced a number of key findings: from the perspective of the analysis of adaptive cycles the marketplace and its surroundings is at the release phase of the current adaptive cycle phase. The pedestrian shopping street is at the conservation phase. The main conclusions drawn from the futures workshop concerning how to be succeed in the future are: widening the use of the market square and at the same time expanding the timeframe of use and making the area more attractive and accessible for citizens by creating better connections between the surrounding buildings and the market square, by planting trees and restricting automobile traffic in the area. For the pedestrian shopping street the suggested measures are: an inclusive and attractive place for every citizen and the sold goods and services as well as the places of business are flexible and work in cooperation so they can adapt to changes in consumer habits.

This research has utilized complexity theories using qualitative methods, rather than applied quantitative methods, and has combined two different analytical methods from different disciplines in order to contribute to the study of cities. This study, with complexity theories in the urban context as well as futures studies, has taken a step towards fostering better understanding of the characteristics of successful places of business in the future.

Key words	futures workshop, adaptive cycle, place of business, futures studies, complexity, urban development, Turku city

TURUN YLIOPISTO

TIIVISTELMÄ

	Kandidaatintutkielma
x	Pro gradu -tutkielma
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	Väitöskirja

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Kaupungit ovat talouden, palvelujen, elämysten, sosiaalisten tapahtumien, kulttuurin ja kuluttamisen keskittymiä. Kaupungin kokonaisuuden ymmärtäminen ja pitkän aikavälin tulevaisuuden hahmottaminen on haasteellista. Suurelta osin tämä johtuu kaupunkien kompleksisuudesta ja monimuotoisuudesta. Tämän Pro gradu -tutkielman tarkoituksena on tutkia Turun kaupungin keskustan liikepaikkojen pitkän aikavälin tulevaisuutta (vuoteen 2050 asti). Erityisinä tutkimuskohteita on kaksi liikepaikkojen keskittymää, tori ja sen ympäristö sekä kävelykatu. Nämä ideaalityypit on löydettävissä myös monien muiden kaupunkien keskustoista.

Näitä kahta tutkimuskohdetta tutkittiin kompleksisuusteoreettisesta näkökulmasta käyttäen apuna kahta eri metodia. Ensimmäinen metodi oli kompleksisuusteoriaan perustuva adaptive cycle analysis (kiertokulun analyysi), jota käytettiin menneisyyden ja nykytilan analysointiin. Toisena metodina käytettiin tulevaisuuden tutkimuksen metodia, tulevaisuusverstas. Tulevaisuusverstas toteutettiin asiantuntijatyöpajana. Näiden kahden eri metodin yhdistelmänä oli tarkoitus luoda uusi kvalitatiivinen, osallistava ja poikkitieteellinen tapa tutkia kaupunkikontekstissa esiintyviä kokonaisuuksia (urban fragment), kuten liikepaikkojen keskittymiä.

Tämä tutkielma tuotti monenlaisia tuloksia: menneisyyden ja nykytilan analyysin mukaan tori ja sen ympäristö on luovan tuhon vaiheessa (release) ja kävelykatu on kypsyysvaiheessa. Pääkohdat tulevaisuuden menestyvät liikepaikat -työpajasta olivat: torin käyttöä pitää laajentaa monimuotoisemmaksi ja samalla myös sen aikajännettä ja ympärivuotista käyttöä tulee lisätä. Torista ja sen ympäristöstä pitää tehdä mielenkiintoisempi ja helposti saavutettava kokonaisuutena, esimerkiksi lisäämällä vehreyttä ja rajoittamalla autoliikennettä sekä parantamalla alueen rakennusten yhteyttä toriin. Kävelykadun osalta pidettiin tärkeänä inklusiivisuutta ja vetovoimaisuutta kaikkien ikäluokkien näkökulmasta. Myytävien tavaroiden ja palvelujen sekä kiinteistöjen näkökulmasta joustavuus ja yhteistyö nähtiin tärkeinä elementteinä muuttuviin kulutustapoihin sopeutumisessa.

Tämä tutkielma tuotti monia vastauksia tulevaisuuden menestyvien liikepaikkojen ominaisuuksiin liittyen, hyödyntäen siihen kompleksisuusteoriaa, tulevaisuuden tutkimusta ja erityisesti niiden kahta kvalitatiivista metodia.

Avainsanat	tulevaisuuden tutkimus, kaupunkitutkimus, Turku, liikepaikka

UNIVERSITY OF TURKU
Turku School of Economics

FUTURE PLACES OF BUSINESS IN TURKU CITY CENTER: ADAPTIVE CYCLE ANALYSIS AND FUTURES WORKSHOP

Master´s Thesis
in Futures Studies

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1 INTRODUCTION

"Life can only be understood backwards; but it must be lived forward"
- Søren Kierkegaard

This famous quote by Kierkegaard suggests that although the final evaluation of our actions can only be done retrospectively, we can still look ahead and take action, even though the full consequences are not obvious in the present. This concerns a variety of issues which affect our lives and not least the places where most of us live and consume i.e. the cities. People have a strong responsibility to open their eyes and strive to do their best in the present to contribute to the future. Although the future is uncertain, and the issues affecting it are highly complex and partly, or even mostly, beyond the ability of one's influence, this does not mean that exploring and thinking about the possible events of the future should be avoided. Expanding the horizon of plausible events and taking into consideration scenarios beyond one's existing knowledge, helps to adapt to up-coming events. However, exploring the future is not synonymous with solving a puzzle, it is more like taking a hike – and we can assist ourselves by choosing the right shoes to wear for the journey. Futures studies, with its myriad of methods helps to understand urban futures by creating alternative futures and supporting decision-making. Futures studies provides a holistic and interdisciplinary viewpoint for a long-term future and these characteristics are well-suited to the qualities of the city (Heinonen, Parkkinen, Karjalainen & Ruotsalainen 2017, 74).

The aim of this Master's thesis is to study the future places of business in Turku city center. Cities, regardless of their size, are home to over 55% of the world's inhabitants today, and the number is expected to rise to 68% by the year 2050 (United Nations 2018). It has been widely recognized that the cities are economic hubs and also places for enjoyment, social events, culture and consumerism. However, contemporary cities are difficult to understand and envisioning long-term futures is challenging. This is mostly due to the complexity and diverse nature of the city as a whole. In other words, rather than having linear dynamics, it has various synergies and inter-connections between different issues and actors, and it transforms and develops on multiple levels simultaneously. Cities have concrete limits, spaces, infrastructures and natural features that limit and provide opportunities for them. Furthermore, cities are not individual entities on the national and global

levels, and it is common that they have to deal with external decisions, impacts and uncertainties as well as internal issues (Güell & López 2016, 455-456; Ravetz & Miles 2016, 471).

Complexity and particularly complexity in the urban context has been studied in the 21st century from multiple perspectives. Some have studied general principals of complexity theories (Manson 2000; Pike, Dawley & Tomey 2010; and Mitleton-Kelly 2013), some have predominantly studied complexity in the great urban context i.e. the cities (Batty and Marshall 2012, 2017; and Portugali 2012), and others have focused on a certain urban fragment (Aksözen 2012; and Partanen 2018). 'Urban fragment' refers to an entity of a city, either naturally occurring or artificially put together, and consisting of buildings, infrastructure, free space and stakeholders (Aksözen 2012, 12-13). In this thesis the urban fragments in focus are the specific places of business in the city center. In order for a city and its commercial center to sustain its position in a complex competitive environment, where weak signals of change and disturbances appear, a municipality together with other stakeholders must develop tools, strategies and processes which enable navigation in an uncertain future. Some classical ways for cities to alter their narrative and re-invent themselves in order to thrive are different kinds of transformative solutions and interventions, such as a renewed focus on consumption-oriented services, signature architecture or bringing public art to public spaces in the urban core (Pike, Dawley & Tomey 2010, 66). To solve problems or offer new solutions, as well as to understand the complex systems and problems, one must collect multilevel knowledge. This means that besides research and literature (the scientific knowledge), the expert knowledge and practical knowledge need to be included in proposed solutions as well (Jousilahti, Kolehmainen, Lonkia & Sorsa 2019, 5). The aim of this thesis is to study the future of the cities and identify the abilities that an urban fragment needs to ensure it has the potential to be resilient and adaptable in the face of an uncertain future. In addition, this thesis considers how this complex matter can be studied using methods from futures studies.

One aspect of thriving and lively cities is the built environment. The places of business, in which goods and services are traded, are one of the reasons why cities were once established. Globally, major changes in consumption habits, for example due to the building of car malls and the invention of the Internet, have also impacted the places of business in the city center. From the perspective of places of business, the last thirty years in the case study city Turku have changed the landscape of consumption considerably. Newly concentrated places of business have emerged, for example the Länsikeskus area,

Mylly mall and Skanssi mall. In addition to these, the development of e-commerce has changed consumption patterns and where shopping is done. The latest information indicates that people are returning to the city center and because of this, the momentum to study the places of business in the city center is here and now. However, this return of people and new interest towards the city center does not mean reverting to the times before the car malls; rather it is something new (Marjanen & Saastamoinen 2018, 265-270; Marjanen & Malmari 2012).

The definition of 'place of business' in this thesis is a building or a part of a building or a selection of multiple buildings or spaces, which are located in the downtown area and where services and goods are traded with private consumers on a commercial basis. The empirical study concentrates on two types of places of business, which are highly relevant to the case study city Turku. To ensure robust and distinct information and to produce in-depth knowledge, only two types of places were selected. The first type is called The Market Square and its Surroundings, referring to the marketplace itself and the commercial locations next to it. It can be considered the heart of consumerism in the city center. Some of the surrounding shops open up towards the streets and some shops are entered via the main doors of the mall buildings. The second type is The Pedestrian Shopping Street. In this case, the emphasis is on "the brick and mortar places", the street-lining ground floor shops and services, which are very common especially in dense city centers. These spaces have windows facing the sidewalks and customers can access them from the street directly. Usually the buildings have other functions on the upper floors, such as office space and apartments. Any single segment of commercial services, including restaurants, cafes and night clubs, are not studied independently.

Many studies have focused on the complexity of cities from the perspectives of planning and design as well as spatial data and computer models, such as the works of Juval Portugali, Michael Batty and Stephen Marshall. However, some issues have received limited attention. First, understanding complex systems means understanding their ability to transform, including the non-linear processes. Most importantly, the future aspect should be strongly linked to research. The future is often not discussed whatsoever, or it is treated as a side note. Therefore, the first objective of this study is to examine the complexity of an urban fragment by applying complexity theories and more specifically the adaptive cycles framework developed by Aksözen (2012) with small modifications. Second, even though some complexity studies on cities include empirical case studies on cities or their

entities, the studies are usually based on statistics or computer modellings, not with participatory methods. One of the core ideas of complexity theories is to understand the relationships between different entities, for which the participatory method of the futures workshop provides a solution. In this context, understanding complexity is the starting point for answering questions about the abilities needed by the urban fragment so that it can cope in uncertain futures. The methodological question is to what extent do the qualitative methods of futures studies suit this aim? The empirical part of this thesis consists of a Futures Workshop where invited experts and stakeholders pondered the future of the urban fragments in the light of information gathered by the researcher prior to the workshop as well as their own professional knowledge. The methods applied in the Futures Workshop were drawn from the futures studies discipline with some new small adjustments. The time horizon used in the Futures Workshop was until the year 2050. Envisioning the next 30 years provided the participants with enough leeway to be innovative and creative in their thinking. Furthermore, the timeframe is concurrent with the development vision "Towards New Turku – Vision for the City Centre 2050" produced in the year 2017.

Regarding the structure of the thesis, chapter two, explains the general principals of complexity theories, reviews significant urban complexity theories literature, defines the adaptive cycles framework as well as presents the research questions. Chapter three presents detailed information on the case study city Turku and the particular places of business examined in the empirical part. Chapter four presents the methods and materials being used. It explains how the adaptive cycle framework was further elaborated and modified for the purposes of this study and how the Futures Workshop was planned and designed. Chapter five presents the adaptive cycle analysis for the places of business and the results of the Futures Workshop. Chapter six presents the conclusions of the study and finally, and chapter seven provides a discussion.

2 THEORETICAL FRAMEWORK AND RESEARCH QUESTIONS

Cities are built environments where people live, work and spend their free time. The built environment defines and creates order and opportunities – at its best – for the city to thrive. The built components of cities, for example buildings, bridges and parks are not easily replaced; therefore, how they are established, planned and perceived matters. Urban development and the decisions made regarding the built environment should consider multiple perspectives and the interconnection of different issues and entities to ensure that the urban area is more resilient and can adapt more easily in the future. As such, complexity theories provide a promising paradigm for studying cities and urban development. However, it is important to keep in mind that this analysis focuses on the places of business, not their planning or design.

2.1 Complexity theories

The exact birth point of complexity theories is hard to pinpoint, but at least from the end of the 1960s, a broad set of researchers from different disciplines formulated them. Among the first influencers of the new paradigm were the physicists Hermann Haken and Ilya Prigogine who studied phenomena such as emergence and self-organization – both key characters in complexity theories. The ideas of complex systems quickly attracted interest from the natural sciences as well as the social sciences. Various complexity theories have covered topics such as the philosophy of organism, neural networks, cybernetics, synergetics, cellular automata and general systems theory. Today, complexity theories are not a unanimous framework but a group of different kinds of theories possessing similar models of thinking, comprehending and constructing the phenomenon (Manson 2001, 405-406; Partanen 2018, 28; Portugali 2008, 257).

"*The whole is qualitatively different from the sum of its parts"*

Depending on the philosophical perspective of science, the researchers approach the research topics differently. In positivism, the interconnections and relationships between different elements are recognized, and the stability and repeated patters of entities are

studied. This is perhaps the most used perspective for research; aiming to creating general laws, predicting average behavior and believing that it is possible to obtain an accurate and value-free knowledge of things (Fisher 2010, 19). Complexity theories are not part of the theory of positivism, but aligning them with one orientation of the philosophy of science is not simple.

In the greater context of theoretical research and traditions, complexity theories and complexity sciences, can be placed in several categories, depending on the arguments. Steven M. Manson (2001) argues that complexity theories can be seen as part of postmodernism because they are linked to knowledge and language as well as to the idea of a multiplicity of localized but also networked social and political discourses. This fragmentation is accepted as part of the human condition, and nothing is tangible or fixed in the social or intellectual world; things are in constant move. (Manson 2001, 411-412) Another perspective concerning the philosophy of science is provided by Jenni Partanen in her dissertation (2018). She claims that complexity sciences are postpositivist due to their base properties, non-linearity and inseparability from the environment. This implies that complex systems cannot be simplified – the explanation is as complex as the system, although as a subject to research, the system must be separated temporarily from the environment (Partanen 2018, 50). Postmodernism and postpositivism are separated by the idea of objective truth: postmodernism does not recognize objective truths but the postpositivism retains the idea of objective truth even though it is a mere hypothesis which has not yet been proven (Metsämuuronen 2003, 162-163). In his doctoral dissertation Harri Jalonen (2007) claims that complexity theories are part of the anti-positivist tradition. Jalonen's argument is based on the holistic view that the whole is greater than the sum of its parts. The complexity theories need to adopt a holistic view with a phenomenon, in order to understand the causal relationships as a natural part of the socio-economic systems (Jalonen 2007, 50).

Based on these interpretations, it seems that the epistemological categorization of complexity theories is delicate. In addition to the abovementioned, the works by Michael Batty (2005) and Andy Pike, Stuart Dawley and John Tomaney (2010) illustrate the aim of scaling results. Scaling the results of research, from study cases into bigger entities, for example from a city to regions or from a national level to a global level, is perceived as complicated yet possible. This aim can be perceived as an attempt to recognize general laws, which can be considered as a characteristic of positivism and even realism. Despite the philosophical perspective, it is clear that complexity theories do

not offer accurate, absolute answers to research questions, but many possible answers. As a result, they are particularly fitting for researching specific, complex case studies, which require a wide understanding of material from statistics to discourse. Case studies have been used in the academic research, for example, Partanen (2018) and Aksözen (2012) have used particular places of cities in their work. The questions related to society often have multiple answers and solving one issue and making a decision is not the end but a transition to another issue, problem or decision point. Perhaps it is most important to understand that complex systems have emergent structures which influence the system in uncertain ways, and the outcome cannot be reverted to the original state. This is well-put by Partanen, following Philip Anderson (1972): "*The whole is qualitatively different from the sum of its parts"* (Partanen 2018, 51).

In the context of urban research, complexity theories have been applied recently by a number of researchers such as Steven M. Manson (2001), Michael Batty (2005), Harri Jalonen (2007), Andy Pike, Stuart Dawley and John Tomaney (2010), Juval Portugali (2012), Stephen Marshall (2012), Mehmet Aksözen (2012) and Jenni Partanen (2018). The focus of research is on the edge of change, when systems develop and evolve. The old approach to modelling cities as systems from the top down and simulating the equilibrium of the systems, has become obsolete. Instead, in the context of complexity theories, cities are approached as open, continually out-of-equilibrium and dynamically driven, partly bottom-up and partly top-down systems. This change in mindset penetrates every aspect of thinking about and developing cities, starting with urban planning and resulting in for instance developing particular places of business. (Manson 2001; Batty & Marshall 2012; Batty & Marshall 2017; Partanen 2018; Portugali 2012a, 3-4; Jalonen 2007, 49-50). The idea of a city as a complex system with the notions of bottom-up developments as well as the idea of a city being far-from-equilibrium is already discernable in the writings and ideas of many great thinkers such as Christopher Alexander, Patrick Geddes and Jane Jacobs (see, for example Batty & Marshall 2009, 2017 and Batty 2008).

2.1.1 Connectedness and interdependencies

Cities have different places of business and despite their simple core task as territories for selling and buying goods and services, they also possess multiple other functions and connections between other entities; other places of business, social gathering places

for people and contemporary places of cityscape. Some relationships are internal and some external and they possess many interdependencies. Complexity theories study the inter-relationship, inter-action and inter-connectivity of elements within the system and between a system and its environment (Mitleton-Kelly 2013, 4). In aggregated complexity, such as in an economy or an environment, the system consists of multiple sub systems and components. As a whole, they do not have unified purposes. Instead, the interactions for the sub systems and components are largely limited locally. The internal structure of the system depends on the different levels and strengths of the components (Manson 2001, 409). This applies to urban development and the different parts of cities as well. Alhough there are many agents as well as aims in the same urban area, and they can have inter-relationships and inter-actions between each other, they still work independently.

In addition to internal relationships, the system and its components have relationships with the surrounding environment, systems and components. The experiences and knowledge about a system is stored in many places within the system and the learning occurs through a wide range of internal components and sub-systems which are interlinked. This way the system can react to disturbances and novelties (Manson 2001, 409). In the urban context, the surrounding environment refers to the surrounding geographical places and surrounding systems and components refers to the different entities such as the bigger region or different parts of the cities, decision-makers, areas of cities or clusters of businesses. Furthermore, this means that development occurs through partial knowledge of the whole, but the system does not need complete knowledge to act. In the urban development context, the connectedness and interdepencies mean that progress arises from the complex co-evolutionary interactions between multiple different actors, for example between city planning and autonomous processes as well as between the surrounding environment and independent actors. This means that planning in cities faces multiple challenges. Firstly, their dynamics and constantly changing nature, secondly, the self-organization of different actors and thirdly, the emergent patters and unpredictability of these processes. The conflicts and surprising emergent issues are prerequisite for a city's evolution and, for example, planning should accept these characteristics as part of the planning process (Partanen, 2018, 11, 16).

2.1.2 Emergence and transitions

In the context of cities, the realization that small, local events can spread and become global trends is important. The world is global and, for example, local ideas, like the "Before I die" writing boards for citizens or the Restaurant Day when anyone can have their own pop-up restaurant, are examples of small local events that are spread around the world. In these cases, the change starts from small emergent issues, not from big, global acts. In complexity theories, the concept emergence refers to the system's character where new and surprising patterns evolve or emerge from relatively simple rules and interactions between the different system components in local processes (Batty 2005, 66). The local process, containing microscopic events, can eventually evolve into macroscopic structures and in turn, this leads to a modification of the microscopic mechanisms (Mitleton-Kelly 2013, 20). The emergent outcomes are unpredictable and quite uncontrollable mainly because the complex network of actors does not possess the knowledge of other actors. The emergence of new qualities within the system can be hard to analyze or trace. Even if emergent issues are detected, it can be extremely challenging to comprehend their influence on different components and adjustments in the system as well as the changes in the external environment (Batty 2005, 66; Manson 2001, 410). Perhaps the value of detecting emergent issues originates from the same foundation futures studies: it is worthwhile to broaden the scope of the future to identify the many possibilities the future has to offer, even predicting the future accurately is impossible.

Change and evolution for a complex system, such as the urban systems, transpires through transitions. These transitions into new phases happen at many levels, for example technological and sociocultural levels. Transitioning to another phase can mean a functional change within an existing spatial structure, so the build environment itself does not necessarily undergo the same transition. The evolution of a complex system possesses three characteristics: *self-organization, self-organized criticality* and *dissipation.* Self-organization means that the system can adapt its internal structure autonomously to better fit the external environment. In cities, the urban dynamics can be explained through self-organization: it can have impact the various layers of the city, for instance the cultural, social and economic layers. Self-organized criticality means the ability of a system to exist near the edge of transition, balancing between randomness

and stasis. Self-criticality is disturbed when radical changes take place, for example disruptive technological development occurs. The system becomes dissipative after internal or external disruption which drives the system into an unorganized state before it becomes more organized (Manson 2001, 410; Batty 2005, 32; Partanen 2018, 100; Portugali 2008, 256-257).

Cities have always evolved with non-linear dynamics, for example, technological jumps, which have boosted urban renewal and differentiated development patterns among cities. The comparative advantages which facilitate cities in becoming more vital and enabling them to thrive compared to others are, for example the geographical location of the city. However, new possible innovations, for example in transportation and communication technology, may change their accessibility. It is believed that the cities of the future will be residential agglomerations and meeting places for people, despite the rising e-commerce and other transformations in consumerism. Furthermore, the cities will need to accommodate to citizens and their needs. The future of the city centers depends on their ability to adapt to the changing needs (Partanen 2018, 13,14, 16).

2.1.3 Resilience, adaptation and adaptability

The ability of a city or a place to adapt to changes is often described with the word resilience. Resilience refers to the ability of a place to react, respond and cope with uncertain, volatile and even rapid exogenous and internal changes. The change can mean transitioning into a new phase or bouncing back into the old regime. Resilience defines how the place reacts to the transition. It consists of *agents*, *mechanisms* and *sites* which all influence the resilience of the place. The agents are considered to be all of the autonomous entities that act independently. The agents act within the environment, pursuing their own agenda which can affect the system and other actors, so in other words, they are not simply reacting to external forces but can also influence the status quo through their agency. In cities and places of business there are numerous agents ranging from entrepreneurs and real-estate owners to customers and politicians. Mechanisms shape their ability to adapt or adaptability to the change. This can mean lock-in status for some places i.e. the incapability to respond effectively to changes and the lock-out capability for other related to how they interpret and address the change so that it is beneficial. The result of transition, depending of the resilience of the place, not only means altering the core industry, but also taking advantage of the strengths of the previous industry, or for economy bases

which are too narrow, it can mean destructing and diminishing without new prospects. Sites are the places where decisions and effects occur. This is not to say there would be no impacts on other interrelated sites, but for example from the point of view of the economy, there are usually cities, regions and states that are referred to as one site where the change occurs (Pike, Dawley & Tomaney 2010, 59, 62-64; Batty 2005, 210-211; Portugali 2008, 256-257)

The result of the transition is just another phase in the cycle. The longevity of the phases vary, and this also means that resilience can be divided into two levels, *adaptation* and *adaptability*. Adaptation can be seen as shorter-term resilience; the place can for example bounce back for a short term but in the long run, actions actually diminish resilience. Adaptability instead can be seen as long-term resilience and the place has greater abilities to react to forthcoming changes. Resilience in the context of geographical places, such as cities, can be attained for example through diversification and macroeconomic stability. Another perspective for examining resilience is to divide the changes. Is it a sudden shock, for example an immense hurricane, or a slow reform, such as digitalization that gradually reforms the job market? Both changes influence a city or a place within it, but their timeline and anticipation differ (Pike, Dawley & Tomaney 2010, 62-64; Batty 2005, 210-211)

2.1.4 Bottom-up development

Cities as complex systems in many ways are developed from the bottom-up as a result of the interactions of many different actors, individuals as well as groups, within a top-down frame, such as laws and regulations. This bottom-up development has drawn more interest recently. However, much of the traditional analysis focuses on top-down development. The top-down perspective seeks equilibrium for a “usual” state of systems in terms of systems theory. Concerning cities, the systems theory approach has meant focusing on their design and management by planning as a control system. In the mid twentieth century, the conflict between imposing a new and better equilibrium for a city plan and the rising individuality of the citizen aided by new technologies came quickly to the point where the top-down perceived equilibrium of urban development was no longer the ideal route for urban progress. For instance, the ideas of Christopher Alexander and Jane Jacobs can be considered as part of the new wave of bottom-up development, in contrast to the

top-down. The top-down approach to planning cities with a masterplan has not disappeared completely, but it has changed form: the top-down approach has been applied to designing urban fragments. This change has also enabled progress via bottom-up development because fragmented planning involves numerous actors and many simultaneous projects. The change from top-down development to bottom-up development remains an ongoing process. Through complexity theories, the mix of the city's different layers can be studied and future urban development can resonate the needs of the actors in the city better (Partanen 2018, 21-23, 189; Batty & Marshall 2012, 26-28).

2.1.5 Complexity

In complexity theories, complexity is one of the base properties of the system and the basic element for system development. In systems theories based on problem solving, the focus is on the control and prediction of the phenomenon, but complexity theories are more interested in studying and experimenting with the phenomenon. Contrary to systems theory, which assumes an equilibrium state within the system, researching social systems with complexity theories means that instead of balance and stability, the onus is on imbalance and transition (Manson 2001, 406).

Manson (2001) divides complexity theories into three different divisions, algorithmic complexity, deterministic complexity and aggregated complexity. The algorithmic complexity includes mathematical complexity theory and information theory and the emphasis is on understanding the systems characteristics. However, it focuses on computational algorithms that can reproduce system behavior and is ill-suited to social or environmental phenomena which require knowledge in addition to data. Deterministic complexity addresses chaos theory and catastrophe theory which are debated in the field of science, particularly because of their limitations in the results of research. Deterministic complexity is also hard to apply to social phenomena. The best suited category for social phenomena and the subject of this thesis is aggregated complexity. Aggregated complexity addresses the interactions between system components. The important key concepts are relationships, internal structure, surrounding environment, learning and emergent behavior and the different means by which complex systems change and grow. The critique of aggregated complexity is targeted towards its positioning between individuality and creativity as postmodern concepts on the one hand and biological determinism on the other hand (Manson 2001, 405-409, 412). As contemplated in the first

paragraphs of this chapter, the epistemological issues of complexity theories are not simple or inconclusive but the solution for the critique can be answered through rigorous disciplinary methods and clear and open research. As such, the researcher has the right and the responsibility to conduct research according to their best knowledge, which renders the reader in a position to challenge or accept their interpretation of the complex system.

Complexity theories in the urban context can be considered to have achieved few things. The complexity theories of cities (CTC) has provided a sound theoretical basis to study a variety of urban phenomena. These include land-use patterns, the spatial segregation of different social groups, and the structures of road networks—previously (often) regarded as independent of each other, yet having common properties such as complex interconnections and interdependencies emerging out of local interactions between urban agents, such as government officials, citizens and enterprises. The CTC has also provided new insights into urban dynamics, including the nonlinearity of processes and the potentially significant influence of small urban agents, even individual citizens. In addition, as complex systems, cities possess a characteristic called 'emergence', which means the rise of new urban entities and identities, such as those stemming from multiculturalism. This means that cities not only represent different cultural or socio-economic groups but they are also socio-cultural forces themselves. Finally, the CTC has introduced new insights into how urban development is comprehended. According to various researchers, such as Juval Portugali (2012), Michael Batty (2005) and Jenni Partanen (2018), the cities are not considered to be in equilibrium but as open complex adaptive systems in constant flux (Portugali 2012b, 48-50).

2.1.6 "A city is not a tree"

Complexity theories applied to cities are open to criticism. The heading above is refers to the well-known paper of Christopher Alexander from 1965, where he makes the distinction between thinking cities in terms of a hierarchy or a tree and in terms of a semilattice, with multiple interactions; vertically, horizontally and diagonally. The multiple origins of complexity theories, especially the natural sciences, have affected its applicability towards cities. (Alexander 1965; Portugali 2012b, 57-58) During the course of

history, cities have been referred to as machines, organisms and artifacts. The perspective towards the city as well as the purpose of the research greatly affect the application of complexity theories.

The most obvious criticism of the complexity theories of cities (CTC) is whether it produces new knowledge that is deep and profound? Algorithmic complexity especially can be considered to follow the quantitative-positivist approach of the twentieth century where calculations and efforts to find general, all-encompassing rules and even predictions regarding the future, overthrows the idea of bottom-up development and the importance of individual actors in the evolution of cities. Yet, different kinds of computational research and simulations based on algorithms and other calculations are a popular way of studying the cities. According to Portugali (2012), the new simulation models and their vast amount of data are not the problem. Rather, it is the perception of output: "the simulation models originally designed as media by which to study phenomena of complexity have become the message itself." This problem relates to the issue of the complexity theories of cities as a new form of science that is critical towards the previous sciences of cities, such as classical location theories and maximum entropy. Contrary to the classical theories' way of seeing cities as closed systems, which aim towards a state of equilibrium, in complexity theories the city is perceived as an open system and far-from-equilibrium and therefore it is not possible to predict or precisely control planning on the basis of simulations. In simulations, systems (the city or a fragment of it) are simplified and the key characters of complexity are lost (Portugali 2012b, 51-54).

Another problem concerning the complexity theories of the city, and also related to the above mentioned issues, is the failure to account for the qualitative dimension of urban phenomena. A qualitative study is perhaps more challenging and the results are not necessarily supported by quantitative data, so they do not provoke interest as much as the quantitative approach. Portugali (2012) claims that the qualitative side of complexity theories of cities can contribute understanding to the cities in general but the problem remains that complexity theories are only applied partially to cities with mechanistic applications. At the moment, the mainstream of CTC focuses on quantitative research and short-term complexity and in contrast, qualitative and long-term CTC has been less popular. This has meant that comprehensive complexity theories for cities and urban phenomena are not evident in CTC. Therefore, long-term and qualitative research would be important to gain a comprehensive general discourse for studying cities and urban phenomena (Portugali 2012b, 54-55).

Another challenge is that the application of the theories and models of natural sciences need critique or consideration of the fact that cities are not natural phenomena but instead complicated artifacts. Applications of theories and models transferred as they are from natural sciences to CTC can be seen as non-adaptive applications, meaning that the structure of the original domain is kept untouched and the unique properties of the new domain are not taken into consideration. This mechanistic way of applying theories and models is often done by researchers whom are more interested in the models itself, not the cities. The problem with these non-adaptive applications is that they do not produce qualitative and uniquely interesting information concerning cities nor do they produce new insights to the general complexity theories, in other words, the outcomes are mere indications or proofs of the similarities of cities as complex systems or natural systems (Portugali 2012b, 55-57, 61).

2.2 The Adaptive Cycle framework

In their article, *The origins of complexity theories in cities and planning* (2012), Michael Batty and Stephen Marshall claim that complexity theories for cities and urban development through planning, which focus on dialogue and consensus building and collaborative rationalism, can only be developed through analogies or metaphors. This statement is evident in many studies on the complexity of cities, for example, thermodynamics, energy flows or adaptive cycles (Batty & Marshall 2012, 9, 10, 42). The notion of complexity is followed by the idea of many layers (social, economic, cultural, environmental) of the city as well as layers of different urban fragments. In the context of cities, adaptive cycles were developed by Jenni Partanen (2018) and Mehmet Aksözen (2012). In his doctoral dissertation, Aksözen (2012) studied urban development through the adaptive cycles of urban fragments. The urban fragments in his study were small pieces of urban areas, neighborhoods, and he assessed their development using four dimensions of sustainability. The different layers, social, cultural, ecological and economic, all have temporal dimensions, but the layers do not have a hierarchical order between each other. The concept of the adaptive cycle was originally developed in the field of biology, where Gunderson and Holling (2002) developed the adaptive cycle theory based on the concept of succession. Aksözen argued that the adaptive cycle theory can be brought to the context of cities together with the mosaic cycle concept of landscapes (Remmert 1985) and the dimensions of sustainability. The mosaic cycle concept

describes landscapes as mosaics which are cyclical and asynchronous, meaning that each of the parts follows the same cycle, but can be at different phases. (Aksözen 2012, 13)

The framework for the adaptive cycle by Aksözen (2012) is an analogy from natural sciences, applied to the urban fragment. The meaning of the analogy in the context of the framework can be described as active and evolving from the original source. In order to make the analogy work, the original concepts and the application concepts are decomposed and the relationship between them are mapped. Finally predictions about the application target are made and tested (Aksözen 2012, 15). The general principal of the adaptive cycle is to comprehend a particular issue, for example an urban fragment, evolving in loops, where the state of elements vary between new order and destruction. This means that their evolution is non-linear and the multiple relationships affecting each other cause the cycle to be unstable and uncontrollable. When assessing the adaptive cycle framework with Manson's (2001) categorization, it falls under the aggregated complexity division. The concepts of aggregated complexity, relationships, internal structure, surrounding environment, learning and emergent behavior and the different means by which complex systems change and grow, are evident in the framework of the adaptive cycle.

2.2.1 Adaptive cycle

An adaptive cycle is drawn in the form of two joint loops. The idea of a cyclical development is that all systems go through certain phases in which they evolve or modify. The idea of the loops is that after one cycle, the system continues to follow a cyclical development pattern, whether it is similar cycle or a new one. The adaptive cycle has four main stages: 1) exploitation (r), 2) conservation (K), 3) release (Ω), and 4) reorganization (α) (see Figure 1).*The exploitation phase* is a stage of rapid growth where new entrepreneurs, institutions and businesses emerge, niche ideas develop and actors in the system seek new opportunities. After the exploitation phase, the system moves to *conservation phase*. In the conservation phase the system has stored "energy" and the system becomes more rigid, stable and less flexible. The focus moves away from the niche and new opportunities on to specific issues which have already formed and which reinforce the current regime by investing and conserving it. The "normal stage" of a system is not the conservation phase, although it might be tempting to think as such since it is

the stage where capital accumulates and well-being increases. Although the system is the most stable during this phase, it is vulnerable to shocks within or outside the system. The conservation phase is not the goal or the purpose, it is just one part of the cycle. The conservation phase is followed by *the release phase*. During the release phase, the system faces destruction or disturbance from within or from outside, the connection between different entities break down and this chaotic situation opens up new options. The destruction or disturbance opens the system up yet again to new innovations and experimentations. The immediate next phase after the release is *reorganization*, in which the future of the system is uncertain and the trajectory of the system may change, and a different cycle may begin or the same cycle can begin from the start. The classic idea of the adaptive cycle is that the system goes through all of the phases, but this is not necessarily the case in every system, different formations are possible, although going from release directly to conservation is not possible (Aksözen 2012, 6-7; Partanen 2018, 39-40).

The adaptive cycle has three dimensions which are 1) potential, 2) connectedness and 3) resilience. When comparing the phases of the cycle, the potential is higher in the conservation phase and in the reorganization phase. Connectedness means that the different parts within and outside the urban fragment are well-linked. It grows from the exploitation phase and reaches high levels in the conservation phase and in the release phase. Connectedness first provides stability, but also makes the system vulnerable against possible risks when the system becomes more mature. In other words, the different ways of performing disappear and the system becomes dependent on the existing structures which makes it vulnerable against disturbances. Resilience refers to the ability to react to disturbances. Major disturbances can have major impacts on the system and it might move to a completely new adaptive cycle after the disturbance. The resilience of a system can be supported by enhancing the self-organizational characters of the system, the adaptability and transformability. These can be supported by enhancing modularity, functional- and response diversity, as well as through tight feedback. Modularity refers to small, autonomous and isolated entities in the city without a strong hierarchical control from above. Functional diversity means diversity in actors and response diversity refers to the different ways to response with similar actors. Tight feedback refers to the tight feedback from the system level back to the actors, influencing possibly the capacity of renewal (Aksözen 2012, 9-10, 36-37, Partanen 2018, 40, 42-43). The adaptive cycle and the dimensions are illustrated in Figure 1 below.

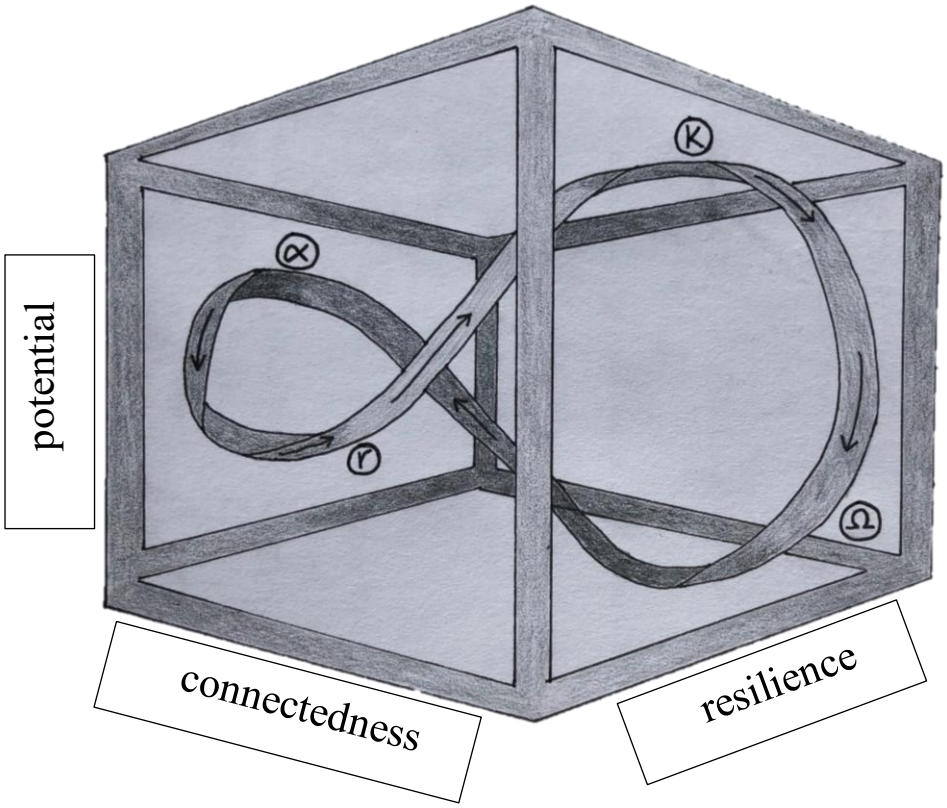

Figure 1. Adaptive cycle and the dimensions

2.2.2 Virtual layers of adaptive cycle

The adaptive cycle acts as an analogy for the evolving urban fragment, such as the places of business, but in order to have a better understanding of the whole, the virtual layers are added to the framework (Aksözen 2012). Each virtual layer of the adaptive cycle of the particular urban fragment can be perceived in the same way as the adaptive cycle presented in Figure 1. The virtual layers are their own but interdependent layers, which when combined forms the adaptive cycle of the urban fragment. The different aspects of the adaptive cycle, the virtual layers, have special focus, for example the economic or cultural perspectives. The virtual layers are not independent adaptive cycles but subdivisions of the entire adaptive cycle. The factorization of the adaptive cycle can give more in-depth information regarding the urban fragment through analysis (Aksözen 2012, 35).

For the long-term future, the ideas of sustainable development give a good starting point for how to develop cities and the smaller urban fragments in a way that is efficient and beneficiary for every entity from the people to the environment. Probably the most

cited definition of sustainable development is the definition from the World Commission on Environment and Development, commonly known as the Brundtland report, from 1987: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” Sustainable development is usually divided into three dimensions, although other forms exist depending on the source. The three generally agreed dimensions are ecological, economic and social aspects (Aksözen 2012, 32, 36; Purvis, Mao & Robinson. 2018). One dimension that is often included in the dimensions is cultural sustainability. Culture has integrated the values of the past and the present of a certain cultural area and there is a strong emotional side which may affect our otherwise pragmatic decision-making considerably. In his dissertation, Aksözen has also included culture as one of the pillars of sustainable development and it is also included in this thesis.

2.2.3 The five steps for analyzing the urban fragment

Aksözen has created a five-step framework for analyzing the urban fragment and its historical, current and future phases of the adaptive cycle. The first step of the framework is *urban fragment definition*. The urban fragment is determined based on features or the project. The chosen urban fragment must have homogenous characteristics in order to be an urban fragment. The second step is divided into two sub steps: *urban fragment’s state description* which means discovering the current adaptive cycle phase and to *historic state descriptions* which means assessment of the past points in time. In this step the indicators for assessing the phases of the virtual layers are identified and the data is collected. There are eight to fourteen indicators per virtual layer, for example cleanliness and care of green areas and diversity of uses. In addition to determining the phases of virtual layers, the indicators also inform the different dimensions of the adaptive cycle, resilience, potential and connectedness. In the third step, the virtual layers are combined in order *to define the current phase of the adaptive cycle* of the urban fragment. The fourth step is *creating and testing scenarios*. The scenarios for the possible futures of the urban fragment are created to test development within the current and future adaptive cycles. The fifth step of the framework is *creating strategies and calculations* concerning the future of the urban fragment (Aksözen 2012, 148-149, 156-158, 162, 168).

2.3 Research questions

The future cannot be predicted or known but this does not mean that it cannot be influenced. One of the principals of futures studies is that there is not just one future but many possible futures. One's idea of the possible future is affected by facts, fears and wishes. The three perspectives of how the future can be perceived are possible futures, probable futures and preferable futures. Sometimes a fourth, plausible futures, is added to the perspectives to highlight the most probable futures (Masini 1993). In the context of cities, which are built by humans for humans, the aspect of desired futures is perhaps the most dominant, but the question is then, desirable for *who*? Complexity theories argue that cities are complex, open systems where bottom-up development is essential. From these premises, the question of many possibilities and also the plausibility of different possibilities, come to the center focus of studying the future of cities. The answers to research questions depend on the perspective but in any case, there will be multiple answers.

According to Portugali (2012), there is a recognized research gap between the theoretical development of the complexity of cities and their application to real cases. Another aspect is connected to the future: the complex systems, such as cities, are incomplete and all the possible components as well as their connections are not known. This means that the future of cities is beyond our knowledge and even defining their optimum state cannot be done. (Batty & Marshall 2012, 43) These arguments open up an interesting path for research, which can be conducted by combining complexity theories with futures studies methods.

Cities are major entities and in order to provide more rigor for the study, choosing a fragment of the city for the study is a reasonable option. For example, Partanen (2018) and Aksözen (2012) have been studying particular areas of cities. In Aksözen's dissertation, the concept of 'urban fragment' refers to an entity within a city, a spatially and temporally defined construct with a specific focus. It can be either naturally occurring or artificially put together, and it can consist of buildings, infrastructure, free space and stakeholders. It can be for example a neighborhood, a single building or a commune (Aksözen, 2012, 13). In this thesis the chosen urban fragments are the places of business in the city center. The two case study places of business are The Market Square and its Surroundings and The Pedestrian Shopping Street.

The research question of the thesis is, in the light of adaptive cycle theory, what are the current and possible upcoming phases of city center places of business. The thesis combines two kinds of analysis to answer this question. First, it employs a modified framework of the adaptive cycle to examine how the fragment (places of business) is transforming and what the long-term future might look like. To do this, a desktop study was carried out to gather and analyze data according to the adaptive cycle framework. Second, it connects the information from the current phase and the long-term future in order to find out what measures need to be taken to reach the successful future. To do this, a Futures Workshop was carried out to examine the stakeholders' perspective on the characteristics of a successful places of business in the year 2050. Combining the theories of complexity and analytical methods of the adaptive cycle and the Futures Workshop, will form a new participatory and transdisciplinary approach to studying urban fragments.

3 CASE STUDY INFORMATION

This chapter provides an overview of Turku city and its development and introduces the two places of business, the Market Square and its surroundings and the pedestrian shopping street. The case studies are typical global places of business which can be found from several cities, especially in Europe, regardless of their size and location.

3.1 Overview of Turku city

The City of Turku is the oldest city in Finland, founded in 1229. It is located in the South-West of Finland, on the coast of the Baltic Sea. Turku is a maritime city, and it has been described as the capital of the archipelago. The most known cultural landscape of Turku is the Aura River banks, especially the area of Turku Cathedral. Turku has buildings from different ages, but most of the oldest buildings were destroyed during the many fires in its history. The first local master plan, imposing a grid of Turku, was designed by C.L. Engel in 1828. The present city center has retained many of the features of the original plan that was made almost two hundred years ago. (City of Turku Urban Environment Division 2017). The entire city center area of Turku is quite low-rise built, there are no skyscrapers for instance, and the central place of business is the market square. The city center is rather concentrated and most of the goods and services are located within a few blocks from the market square.

3.2 The case studies

The places of business can be divided into different categories, for example based on their location, vitality, construction, and specialization in particular types of goods and services or based on target groups. The two case study places of business in this thesis are the Market Square and its Surroundings and the Pedestrian Shopping Street. These two types of places are classical examples of places of business located in the center of a city which exert an important influence on its vitality in many respects. In addition to the commercial functions of these places, they are also meeting places and places for traffic and citizens to connect. Their influence is interrelated and interconnected in a variety of ways, such as cultural, social, economic, environmental and political aspects.

3.2.1 The Market Square and its Surroundings

The market square and its surroundings are important places from a variety of perspectives. The marketplace is a flexible place for business and leisure as well as an inclusive public space for everyone. In addition, it facilitates interaction between multiple actors and flows of people, information and goods. The marketplace can also be considered as the core or the heart of the city. It is a place for the improvised and spontaneous synergy of different kind of people, whether they are categorized as residents, workers or tourists (Janssens & Sezer 2013, 169).

The market square and its surroundings is an important developmental place for the city of Turku, and it is part of the spearhead project *The development of the city center*. Next to the market square, from the perspective of retail business, is the Hansa mall, the smaller Forum mall, the Wiklund property (department store and services such as hotel and restaurants), the Kop-kolmio mall, the Market Hall and the pedestrian shopping street Yliopistonkatu. Some of the shops and restaurants surrounding the market square also face the market square area. The center of Turku has multiple other functions besides the retail business and these are quite widely represented in the surroundings of the Market Square. Next to the square, there is residential housing, hotels, church, banks, a movie theatre, bars and restaurants, offices and healthcare facilities next to it.

At the moment, the market square is under renovation and will only be completed during the years 2021 and 2022 (City of Turku 2019a). In addition, the Hansa mall is currently being renovated and the Forum mall will undergo renovation in the near future. The hotel next to the market square, the Hamburger Börs Hotel, has been demolished and the new building will be completed in the year 2021. The Wiklund property has already been renovated in recent years. Other developmental projects are possible during the next few years, since many properties are either reaching renovation age, or are otherwise undergoing changes.

3.2.2 The Pedestrian Shopping Street

The development of pedestrian areas and streets has its origins in Europe (since the 1950s). These streets were primarily based on a commercial concept, but gradually the recreational and social aspects were also introduced as well. The newest wave of building pedestrian streets is based on the concept of ‘the re-conquered city’. Starting from Barcelona and spreading across the world, the idea in that this concept is creating new

forms of public life for new urban spaces or renewed old spaces. The particular features of re-conquering the city are that the initiators are visionary individuals or groups and that various themes, such as traffic safety or public health, are combined with the vision (Gehl & Gemzøe 2003, Gehl 2003).

The definition of a Pedestrian Shopping Street is a street which is located in the city center with a few distinctive features: the people can walk down it freely without a fear of cars, and the street possesses many possibilities for consumerism, whether it is shopping for goods or services. The pedestrian shopping streets can be further divided into shopping-oriented streets where the dominant function is shopping and window-shopping and for those where urban recreation, such as leisure and entertainment, has a substantial role (Gehl & Gemzøe 2003; Gehl 2003). The street can have small boutiques as well as bigger shops. The shops are located on the ground level and they have windows and doors facing the street. The upper levels of the buildings may have other functions such as apartments or offices. In addition to the shopping possibilities, there are also bars and restaurants and recreational features such as benches and flowerpots.

The Pedestrian Shopping Street referred to in this thesis, is Yliopistonkatu. It was transformed into a pedestrian street in 2001. The pedestrian part of the street is approximately 350 meters long and it starts from the market square and ends at Humalistonkatu. The street has a variety of small, medium and large shopping facilities, restaurants, hotels and entrances to the Hansa mall as well as to the department store Stockman and an entrance to the parking facility Louhi. The street itself has frequent pop-up activity such as vendors of vegetables and fruits and ice cream, different sorts of production promotions, street musicians, political events and Turun Ydinkeskustayhdistys which organizes a street fair (last organized 10th of August 2019) along Yliopistonkatu as well. The city has also invested in the street, for example with flower arrangements, benches and an underground frost protection system. It is also the official Christmas Street in Turku. Besides the shopping possibilities, the street has a few architecturally high-level buildings, which were designed by Erik Bryggman, and some artwork from different artists.

During recent years, there has been some development on Yliopistonkatu, for example the real estate of Kivikukkaro has been renovated, but mostly the street view has not change during the past ten years. The biggest ongoing development is extending the pedestrian part of Yliopistonkatu over to the other side of the Market Square. With this

change, the connection between the pedestrian street and market square is strengthened, although the decision regarding bus routes via Aurakatu has diminished the connection.

4 METHODS AND MATERIALS

This chapter introduces the methods used in this thesis. These include the modified adaptive cycle framework as well as the Futures Workshop.

4.1 Virtual layers, steps and indicators for modified adaptive cycle framework

The dissertation of Aksözen is based on the adaptive cycle, where different phases, exploitation (r), conservation (K), release (Ω) and reorganization (α) vary, depending on the internal and external developments of the system and its entities and their interactions. In addition to the adaptive cycle, Aksözen uses the concept of *virtual layers* to separate different perspectives of the adaptive cycle of the system. The virtual layers are a means of adding more rigor to the study; they are not perceived as independent adaptive cycles, but as layers of one adaptive cycle of the chosen urban fragment (Aksözen 2012).

In Aksözen's dissertation, the sustainable dimensions—ecological, economic, social and cultural—are perceived as virtual layers of the adaptive cycle. The perspective of this thesis is not sustainable development, but the wider perspective of the future. The classical approach to perceiving a phenomenon in futures studies is to take multiple aspects towards the phenomenon in order to gain as wide a perspective as possible. To do this environmental scanning, the PESTEC-table provides a well-known and widely used form (Rubin 2003). The PESTEC-table can be modified to tailor it to the purposes of the study. The sustainable development dimensions are part of the PESTEC-dimensions. The word PESTEC is formed from the first initials of the words: Political, Economic, Social, Technological, Environmental (or more recently 'Ecological') and Cultural. In this thesis, the PESTEC-table is used in the form of PESEC, with political, economic, social and cultural aspects. The technological aspect is omitted from this thesis owing to the lack of data available. The additional virtual layer to the adaptive cycle framework of Aksözen is the political aspect. The political aspect has a strong foothold in the cities since they are governed by political entities which are chosen (at least in the Western Countries) democratically by the citizens. These elected officials and their decisions have a great impact on the cities and the smaller urban fragments through, for example, planning and taxation policies.

Aksözen has created a five-step framework for analyzing the urban fragment and its historical, current and future phases of the adaptive cycle. This five-step framework was modified for the purposes of this thesis (see table 1). The first step, *defining the urban fragment* was done based on the dissertation with small adjustments. The two case-study places are both places of business with certain characteristics which unify the chosen areas. Their impact on the city as a whole as well as their external impacts are recognized, but for research purposes, the focus is on the urban fragments themselves. The dissertation uses integrated tools for assessment, such as the MED-tool but in the thesis, there will not be any additional tools or computer programs used for analyzing the data. Also, the urban fragments in the thesis vary from the dissertation; they are far smaller fragments, not neighborhoods as in the dissertation.

In the Aksözen dissertation, the second step is divided into two sub-steps: the *urban fragment's state description* and the *historic state descriptions* but in this thesis, these two sub steps are not separated, and the information and data collated for the analysis is more focused on the present than the past. The focus of this thesis is on the future and historical in-depth data was not collected. The timeline for the urban fragments in question is limited to a short period in history. In this thesis, there are also three to five indicators per virtual layer and the indicators were constructed for the purposes of the thesis. The current adaptive cycle phase was evaluated by first evaluating the virtual layers. In the third step, the virtual layers were combined in order *to define the current phase of the adaptive cycle* of the urban fragment.

The fourth step, *creating and testing scenarios*, was modified. In the dissertation, the scenarios were created for testing development within the current and the future cycles. In this thesis, a Morphological Map was constructed. The map consists of small pieces of images of future. The Morphological Map will be further elaborated later in this chapter. The fifth step, *creating strategies and calculations*, was not included in the thesis since the goal and purpose was not to develop strategies and calculations. The fifth step was replaced with the Futures Workshop and the outcomes of the workshop. The Morphological Map was used in the Futures Workshop. The Futures Workshop itself, the methods and the goals, will be further elaborated later in this chapter.

	Methods following Adaptive Cycle Analysis	
	Steps	Description
1	Urban fragment definition	Determining the urban fragment's parameters: feature based and project oriented
2	Historic and current state description (adaptive cycle phase)	Identifying and measuring indicators for the aspects/virtual layers
3	Adaptive cycle evolution description	Combining the virtual adaptive cycles
4	Morphological Map	Creating Morphological Map for the futures workshop
5	Futures Workshop	Creating methods for futures workshop and applying the information from the steps 1-4 to the workshop

Table 1. Steps for applying the adaptive cycle analysis framework in this thesis

Regarding step two, identifying and measuring indicators for the virtual layers, the following table 2, presents the chosen indicators. From the perspectives of this thesis, it was important to require sufficiently enough information from the past and the present in order perceive the adaptive cycle of the urban fragments. It is important to note that the thesis is future oriented, and the main focus is in the future – not in the history or the present. One aspect of the chosen indicators is also the availability of data and time series of the issues. The following indicators were chosen because there was sufficient data and also resources to collect the data. Some seemingly good indicators were left out because of a lack of data or resources. For example, interviews or surveys were not possible because of a lack of resources and data from tele-information or traffic cameras were not used because there was a lack of access to the data.

	Political
Indicators	Liability of political decision making
	Political decisions in the process
	Political vision or other documents
	Economic
Indicators	Vitality index
	BTV-index

	Structural dynamics and change dynamic
	KTI rents and yields
	Social
Indicators	Demographics in the city center
	Prospects of complementary building
	Pedestrian point of view taken into consideration (heating system, benches etc.)
	Location of the urban fragment
	Environmental
Indicators	Source of energy
	Prospects of complementary building
	Strategic green goals
	Carbon neutrality
	Cultural
Indicators	Prospects of complementary building
	Popularity as a meeting point for citizens
	Events

Table 2. Indicators for the virtual layers.

4.2 The Futures Workshop

The origins of the Futures Workshop can be traced to the 1950s. The two pioneers of the method were Robert Jungk and Norbert Müllert and Robert Jungk especially has been named as the father of the Futures Workshop method. The idea behind the workshop is to give the participants the power to imagine desirable, better futures and this way, make a difference and implement new ideas into action. The workshop was expressly meant to enhance democratic municipal decision-making. The ideological basis for the Futures Workshop can be divided into three origins. First, the socialist notion of participation, the notion that critical citizens participate in decision-making and become emancipated individuals. Secondly, the notion of brainstorming (originally by Alex Orborne) which allows

creativity and innovations to become part of problem solving. Thirdly, the notion of activating the intuition of individuals, the synergy effect of a group and the potential creation of alternative solutions (Lauttamäki 2014, 2; Vidal 2006, 3). Jungk and Müllert themselves describe the Futures Workshops as "two poles of human thought and action – logic/reason and emotion/intuition – interact" (Jungk & Müllert 1987, 18-19, 115). Their book about the method, *Futures Workshop*, was published in 1987 (orig. Zukunftswerkstätten 1981). Today the workshops can also be used to collect and refine information from the workshop participant and as an instrument for tackling complex problems and fitting contradicting views together (Lauttamäki 2014, 2).

As a method, the Futures Workshop is a qualitative method. The Futures Workshop method can use quantitative methods as part of the workshop, for example previously collected databases or other results, and the Workshops can represent part of a wider study which can be based on more quantitative methods. However, the workshop itself is a classic example of a qualitative method. In this thesis, the knowledge base is formed in two ways: the prior information and data collected by the facilitator and the knowledge that the experts (participants) brought with them. To distinguish the Futures Workshops from other types of workshops, the most important issues are the methods that are used in the workshop and the scientific background of the workshop methodology. In other words, when referring to the Futures Workshop as a real method of futures studies, it should be based on generally accepted, used and studied methods and the workshop should follow the paradigms of futures studies (Lauttamäki 2016, 157). The futures workshop in this thesis is based on the classic workshop by Jungk and Müllert which was modified for the purposes of this thesis.

The classical Futures Workshop method emphasizes the critique, learning, teamwork, democracy and empowerment of the oppressed groups. The method supports creativity and creates synergy between the participants (Slocum 2003, 5). The success of a workshop is difficult to measure, but perhaps the idea is that a successful workshop is able to cut holes into old thinking and make room for seeing the fresh horizon ahead, even though it might be far away (Jungk & Müllert 1987, 72).

As the idea of the Futures Workshop is to be simple and informal so that it is easy to participate, the workshop must follow a framework. The original Futures Workshop consists of four phases during the workshop and the follow-up: Preparatory phase, Critique phase, Fantasy phase, Implementation phase and Follow-up phase (Vidal 2006, 5). More detailed information about the phases is described in appendix 1.

4.2.1 Forming the Futures Workshop for the case study

The time horizon was set to the year 2050 because of the Towards New Turku – Vision for the City Centre 2050, and also because a time horizon of approximately 30 years is still quite understandable to people. The two aims of the workshop, creating or enhancing a better atmosphere and connectedness between different stakeholders as well as encouraging futures thinking are an attempt to influence the future of the case studies. Urban development needs several different stakeholders, and they need to understand the different motives behind different agents affecting the development. Without comprehensive knowledge about the potential, resilience and connectedness of the system, it may be hard to survive future changes and disturbances. The future is uncertain, but there is a possibility for the city to thrive and be successful as long as the perspectives of stakeholders are wide enough. In other words, the intention of the workshop was to simulate the process of strategic intentions and emergent progress. The participants of the Futures Workshop were experts and stakeholders of the city, building environment and commerce. They brought many "strategic intentions" to the workshop based on their knowledge and work life. The emergent progress in the workshop was simulated with the futures-oriented information gathered prior to the workshop, for example with the Morphological Map.

The thesis' Futures Workshop was developed based on the classic workshop introduced earlier in this chapter and in appendix 1. The thesis' futures workshop consisted of the following phases:

1. Orientation for the workshop
    a. grouping and introductions of the participants
    b. introduction to the topic with short pitch talks
    c. letting loose with a small survey exercise
2. Group work in small groups, *Sketching Futures*
    a. forming general ideas, opinions and facts for the given questions about places of business (made with Futures Wheel method)
        i. questions were: What does success demand from the perspectives of planning and political decision-making in the future? What will successful places of business look like in the future? What does it mean to have an active and enabling environment built in reality? Who are the future actors, and what sort of functions will there be in the places of business?

        ii. background information is given about the current situation in Turku
    b. Making PESTEC-table based on the ideas in the Futures Wheel
3. Group work in small groups, *Forming Futures*
    a. each group is given a certain place of business
    b. discussing the Morphological Map and creating the image of the future.
    c. reflecting the PESTEC-table information towards the chosen image of the future and forming the future successful place of business
        i. supplementary questions available
4. Final conversation
    a. every small group introduces their topic, findings and results
    b. comments and observations are given and questions are asked
5. Follow-up
    a. report written by the facilitator
    b. image of the topic, made by a graphic designer

The origins of the original Futures Workshop can be seen throughout the workshop: the idea to influence the decision-making of the municipality, the idea of creativity and innovations and the involvement of many different stakeholders which activates the synergy effect of a group and possibly creates alternative solutions. The thesis' workshop varied from the classical workshop in some details, for example there was no voting and the critic phase was done using discussions and the Futures Wheel. The fantasy and implementation phases were combined in the thesis and the presentations of the groups were formed in discussions based on knowledge of the participants and the information given in the workshop. More detailed information regarding the making of Futures Workshop can be found from appendix 1.

4.2.2 The Futures Wheel, PESTEC and Morphological Map

The Futures Wheel is a classic futures studies method, which can be modified to fit different purposes. In this case the purpose was, with the help of the four questions, to think and write down all the ideas that participants had about the matter of successful business places in the future. After the groups had written their ideas down onto post-it notes and put them onto the Futures Wheel, they started to organize the ideas in the PESTEC-table.

The technological perspective was included in case the participants had had information or thoughts on the matter as well. The ideas presented in the Futures Wheel can be supplemented with more ideas in order to collate ideas on every topic of the PESTEC-table.

The Morphological Map is a term invented to describe the possible future alternatives from which the participants can choose the images of the future. An image of the future is a detailed description (a picture or/and text) of a certain time point in the future. The idea behind the Morphological Map originated from the morphological analysis, horizon scanning and scenario building and it was created for purposes of this thesis. The main reasons for designing and using the Morphological Map were that the participants of the workshop were not experts of future, the time was limited and the focus was on the places of business themselves, not in creating the images of the future. The purpose of the Morphological Map was to speed up the creation of the images of the future but also to leave room for the participants to decide themselves how the future would look. The Morphological Map was constructed based on global megatrends and local trends. The trends were formed from different sources: megatrend listings, trend listings, city documents, corporate websites, research papers, books and other sources of futures studies, such as lectures. For the final version, eight megatrends and eight local trends were selected. The decision was made based on the occurrence frequency of the trends and their suitability for the context of cities. Each megatrend and local trend had four to five claims of the future image and in total the participants had 70 claims to construct the image of the future. The participants were asked to build the image of the future from at least two global and two local claims of the future images. The four claims were the frame, the image of the future of the city of Turku, in which the particular place of business and its abilities to thrive were elaborated. The Morphological Map can be found in appendix 2 of this thesis.

5 RESULTS

5.1 The adaptive cycle analysis

The analysis was conducted by first collecting data for the virtual adaptive cycles and then combining the information from the virtual layers as one adaptive cycle for each case study. The analysis can be described as quite general and it does not go into great detail. The purpose of the analysis was to gain a sense of the current phases of the places of business as well as the up-coming phases, create information for the Futures Workshop as well as the basis for this thesis. The analysis gives a starting and comparison point for the expert information gathered from the Futures Workshop.

5.1.1 Virtual adaptive cycle phases

All the data and information regarding the chosen indicators can be found in appendix 3. This paragraph focuses on presenting the phases of virtual layers. There are five different virtual adaptive cycles which are presented next. The following table 2 presents the indicators for the different virtual layers.

Table 2. Indicators for the virtual layers.

	Political
Indicators	Liability of political decision making
	Political decisions in the process
	Political vision or other documents
	Economic
Indicators	Vitality index
	BTV-index
	Structural dynamics and change dynamic
	KTI rents and yields
	Social
Indicators	Demographics in the city center
	Prospects of complementary building

	Pedestrian point of view taken into consideration (heating system, benches etc.)
	Location of the urban fragment
	Environmental
Indicators	Source of energy
	Prospects of complementary building
	Strategic green goals
	Carbon neutrality
	Cultural
Indicators	Prospects of complementary building
	Popularity as a meeting point for citizens
	Events

Political virtual layer analysis

The past political decision-making regarding the market square has been quite slow and confusing. Since as early as 1995, politicians have tried to solve the future development of the market square. Now that the renovations have finally started, the potential for the market square and its surroundings can be realized. The political interest concerning the city center at the moment can be considered rather high. The strategy, strategy of planning and land use and the Towards New Turku – Vision for the City Centre 2050 and spearhead project for the development of the city center can be considered as indicators for a strong political will to keep the city center thriving in the long-term future. These political documents have not yet come to realization or they are in the early stages of concrete action so their outcome cannot yet be assessed. The special focus on the market square itself is written in the spearhead project and the politicians have decided to invest in the market square in order to emphasize its importance as an inclusive public space. In the light of the above mentioned information regarding the current political phase of the Market Square and the Surroundings, it seems that the virtual layer is at then early exploitation phase. The exploitation phase emphasizes rapid growth and the

emergence of new business, niche idea development and actors seeking new opportunities.

The Pedestrian Shopping Street does not have significant political interest at the moment. It is part of the strategies and visions as it is in the center, but it does not have its own goals or major plans. It is more connected with other bigger plans that it might benefit from, such as the market square planning. When considering the political virtual layer of the Pedestrian Shopping Street, it is at the conservation phase. During the conservation phase, the system is rigid and stable but also less flexible.

Economic virtual layer analysis

The developments in the global economy, especially the bigger downfalls and the up turns, are visible in Turku when looking back at the historical timeline. The movements in the regional and global economy are reflected in the places of business, for example the profits, margins and number of empty spaces. The economic virtual adaptive cycle can be understood as moving faster than the other virtual layers, or it can just experience more fluctuation within the phases of the cycle. The current state of the real estate business and up-coming projects and plans combined with other information such as the demographic forecast and the outcome of national or EU-level transportation projects as well as the city's own strategic goals, can be seen as potential progress but the ideas have not yet been realized. The real estate business is in good shape at the moment: the transactions are expected to increase, the renovation regarding the market square and the surroundings brings potential and new possibilities to the rental markets, the vitality index and the BTV-index are somewhat high and real estate experts have positive prospects regarding the near future markets. Sudden, unpredictable external shocks could have impacts that alter the near future. The economic virtual adaptive cycle of the Market Square and its Surroundings is at the re-organizing phase. In the re-organizing phase, the future of the system is uncertain, and the trajectory of the system may change and a different cycle may begin or the same cycle can begin from the start. The extensive renovations and new building sites suggest that the Market Square and the surroundings are moving towards a new virtual economic adaptive cycle.

The Pedestrian Shopping Street has had little development compared to the Market Square in recent years. The renovations in the Kivikukkaro property have brought new places of business to the street and there have been some changes in the rentiers during

the past few years. The overall real estate business is in good shape as stated in the paragraph above. The virtual economic phase in the Pedestrian Shopping Street is the conservation phase. In the conservation phase, the system is rigid and stable but also less flexible.

Social virtual layer analysis

Both of the urban fragments are located in the very center of the city. The public spaces or semi-public spaces represent important social aspects such as meeting other people and observing the city life. Although both case studies are places for these actions, neither is in full use at the moment. After the renovations, it is possible that the Market Square and its Surroundings will be an enjoyable and a truly inclusive place for all people. The Pedestrian Street is occupied by all different groups from youth to elderly people as well as drunken vagrants to average workers. The amount of people walking through the market square and the pedestrian shopping street is high and the number of different events organized along the street is high. Also, the positive growth of inhabitants in Turku and especially in the downtown area can enhance the liveliness and heterogeneity of people using the public spaces in the downtown area. The prospects for complementary building will have an effect through the increase in inhabitants in the city center as well as the increase in other segments such as tourists via new accommodation facilities. The virtual social layer of the Market Square and its Surroundings is at the release phase. During the release phase, the system faces destruction or disturbance from within or from outside, the connection between different entities break down and this chaotic situation opens up new options. The Pedestrian Shopping Street is at the conservation phase, where the system is rigid and stable but also less flexible.

Environmental virtual layer analysis

Environmental sustainability is slowly coming into realization. There has been a lot of talk, but concrete actions are still quite low in the context of the built environment. The city of Turku has set high goals for itself, for example, carbon neutrality by the year 2029. The city can do a lot for the energy efficiency of the Pedestrian Shopping Street and the Market Square and its Surroundings, especially regarding the used energy source, lighting and the maintenance and quality of the public spaces. At the moment,

renewable energy is one of the concrete actions that are being used. The private owners or bigger actors, such as SOK and Hansa mall, are at different levels when it comes to environmental issues, at least in the light of publicly available information. The numerous small business owners and real estate owners may have their own hidden green agendas but there is no overall, joint, effort in either of the case studies to emphasize the importance of greener values. The prospects of complementary building can have a positive result regarding environmental sustainability but at the moment, linkage and concrete results are not yet to be found. Both of the case studies, the Market Square and its Surroundings and the Pedestrian Shopping Street, are in the conservation phase, although the change to release phase might come quite suddenly, if the future goals of the city are going to be accomplished and the importance of the environmental issues is really understood in the real estate sector as well as in the retail sector.

Cultural virtual layer analysis

Both of the case studies are popular meeting points for citizens. There are quite many events along the Pedestrian Shopping Street which bring culture and life to the street. Turun Ydinkeskustayhdistys has also started to organize their market event along the street after a long pause. Cafes, bars and restaurants with outdoor facilities can be considered as part of the culture in the Pedestrian Shopping Street. The current situation in the Market Square and its Surroundings is poorer compared to the Pedestrian Shopping Street, but it is understandable since many of the properties are under renovation. Before the renovations, the Market Square and its Surroundings had some events and the market square was a popular place for shopping or just for walking. The market square is generally considered as the heart of the city and with this strong metaphor, the cultural meaning of the place for the inhabitants is emphasized. In the near future, the Market Square and its Surroundings could have a massive increase in events since the preplans include a variety of activities which have the potential to influence the place in a positive way. The prospects of complementary building can also increase the popularity of both places but for example, there are not many possibilities for complementary building in the Pedestrian Shopping Street. The increased capacity of hotel accommodation next to the market square can have a positive influence in the near future for both places. At the moment, the Market Square and its Surrounding is at the release phase. During the release phase the system faces destruction or disturbance from within or

from outside, the connection between different entities break down and this chaotic situation opens up new options. The Pedestrian Shopping Street is in the conservation phase, where the system is rigid and stable but also less flexible.

5.1.2 The overall adaptive cycles of the case studies

Based on the information and analyses made above, the current phases of the adaptive cycle of the case studies can be represented. The different virtual layers or the case studies is presented in table 3.

Table 3. The virtual layers.

Virtual layer	Market Square and surroundings	Pedestrian Shopping Street
Political	Exploitation (r)	Conservation (K)
Economic	Reorganization (α) / (Exploitation (r))	Conservation (K)
Social	Release (Ω)	Conservation (K)
Environmental	Conservation (K)	Conservation (K)
Culture	Release (Ω)	Conservation (K)

The Market Square and its Surroundings has virtual layers in different phases. The political layer is at the exploitation phase and the economic phase is on the brink of exploitation but currently in the reorganization phase. The social and cultural layers are at the release phase and the environmental layer is at the conservation phase. The whole adaptive cycle's phase is hard to determine. The balance and influence of the virtual layers need to be taken into consideration. The economic layer has a major influence on the built environment, the political layer can influence the long-term future and the new, small progressive ideas can be first seen in the social and cultural layers. The Market Square and its Surroundings is influenced by internal disruptions which are mostly due to the renovations. From this perspective the current adaptive cycle phase is the release phase, but, at least for the short-term, the phase could change quite rapidly to reorganization once the biggest renovations are ready.

The Pedestrian Shopping Street is at the conservation phase at every virtual layer so the whole adaptive cycle of the case study is at the conservation phase. At the conservation phase, the system is rigid, stable and less flexible and also vulnerable to shocks within or outside the system.

5.2 The results of the Futures Workshop

The Futures Workshop was held on the 24th of October 2019 from 11.00 to 16.00 in Turku. The title of the Futures Workshop was *The Future's Successful Places of Business - active and enabling built environment*. The official invitation for the workshop came from the Urban Environment division of Turku City and the writer of this thesis was responsible for the entire process of the workshop from start to finish excluding the poster which was created by a graphic designer. The documented outcome of the workshop was a written report and the poster, which were both send via email to all participants. In addition to the email, the poster was also sent in paper form to all participants. There were 22 participants plus the facilitator (writer of the thesis), an assistant and the graphic designer at the workshop. The participants were all stakeholders of the built environment, they represented planning, real estate development, entrepreneurs, consultants of build environment, researchers, owners of the buildings and politicians.

There were altogether five pre-determined groups and two of the groups had the Market Square and its Surroundings as a case study. The group work was divided into two parts: *Sketching futures* and *Forming futures*. After the group work, every group presented their outcomes to the rest of the participants. The Futures Workshop had four cases, so two additional places were presented to the participants apart from this thesis. The four cases were: Market Square and its Surroundings, Pedestrian Shopping Street, New Pedestrian Shopping Street and New Public Transportation Street. The two additional cases were part of the workshop because the Urban Environment division of Turku City wanted to include them into the workshop due to the Towards New Turku – Vision for the City Centre 2050. The two additional cases are not addressed in this thesis.

5.2.1 The beginning

Before the group work started, there was a short introduction of the method of the Futures Workshop, a pitch talk about the transformation of the retail business (given by a researcher from Tampere University, Harri Hokkanen, in Finnish Kaupan transformaatio – näkökulmia kaupan sijainnin merkityksen muuttumiseen) and a warming up exercise which was conducted as a mobile survey.

The mobile survey exercise

The purpose of the game was to warm up and direct the focus of the participants towards the future. There were a total of six questions and four claims for each question and the participants had to choose the one which they preferred. This exercise was done at the early stages of the workshop and the time to answer was limited but it can be considered to reveal the mindset of the participants, the ideas of the future which they consider to be the most possible. Table 4 shows all the questions, claims and the answers.

In the year 2050 Turku is a successful city because	**Answers per alternative**
broad culture and leisure time services attract habitants	10
the amount and diversity of business is great	6
the political decision-making is smooth, goal-oriented and transparent	4
sustainable development is part of every action and decision	2
In the year 2050 the biggest challenge for the city of Turku will be	**Answers per alternative**
keeping a balanced age structure of habitants	10
maintaining reasonable funding for the public services	9
supporting the multicultural operational environment	2
extreme phenomena such as floods and storms caused by the climate change	0
In the year 2050 the places of business in the city center of Turku	**Answers per alternative**
are strongly divided into winners and losers	8
have managed to reform themselves along the restructuring	8
look pretty much the same as they did in the 2020s	3
have spread around the downtown area	3
In the year 2050 the places of business in the city center of Turku	**Answers per alternative**
are mostly occupied by different kind of service and experience companies	15
offer consumers a broad variety of things to buy	5
are mainly occupied by pop-up-stores	1
have not been able to renew the range of products as believed in the 2020s	1
In the year 2050 the places of business in the city center of Turku are known for	**Answers per alternative**
functional and flexible facilities	10
their easy reachability and accessibility	8
high level architecture	4
comprehensive environmental friendliness	0
In order to have a lively and attractive city center in Turku in the year 2050	**Answers per alternative**
we need bold and radical changes in our mindset	10

the development should be above all market economy driven	5
we need multidisciplinary cooperation for planning and designing facilities	4
we need clear, long-term, strategic plans	4

Table 4. Questions, claims and answers of the warming up exercise.

In the first questions, there were a few claims that were clearly preferred by the participants. Especially the most popular claim was interesting because it shows the orientation of the experts towards places of business and particular interest towards the future functions in these facilities. Other claims suggested different type of answers for a successful city.

It is no surprise that in the second question the age structure was a great concern among the participants, given the latest statistics about Finnish population. Also the funding of public services is very much related to the age structure since most of the public services are funded with tax money. Perhaps the most interesting notion about this question was that possible multiculturalism or climate change hazards did not get much attention.

The following questions, number three and four, had the same question but different claims and perspectives on the issue. The two most popular answers in the third question, can be understood as contradicting: some referred to strong division and others to reforming, but it can also reflect more about the current situation and the fears and hopes towards the future, some see it in a more positive light than others. The most popular answers for the fourth question can already be seen happening in the city centers and the answers just resonated the on-going change.

The most popular answers for the fifth question reflected the mindset of the participants; they understood that the four elements of the build environment, functionality, flexibility, reachability and accessibility will be important in the future and with the additional importance of architecture in the background, the answers resonated the well-known idea of architecture and design: “form follows the function”, in other words, they are both important and cannot be separated.

The last question divided the answers between the four claims, although one was twice as popular as the others. The last question with multiple answers was actually quite a good ending for the exercise, since undoubtedly there would not be one correct answer. It also resonated the different mindsets and ideas that different stakeholders of the build environment had.

Since the purpose of the exercise was to orientate the participants towards the workshop topic and probe the mindset and thoughts of participants, the answers cannot be understood as the only truths or beliefs of the participants. Also, the whole exercise, the set-up of questions and claims, leads participants and the possible variations in thoughts and even alternative claims were not present during the exercise. The answers to the questions showed that sustainable development and climate change were not topics that would pique the interest of the participants. The answers would suggest that other issues are considered more important in the future. Based on the exercise, far reaching assumptions about the topic and the participants cannot be made, but the usefulness of the exercise in the workshop can be recognized: the participants enjoyed the exercise and small talk about the questions and claims started after the exercise. The exercise gave the participants some perspective towards the topic and the transition to the next phase of the workshop went smoothly.

5.2.2 Group work exercises

After the loosening exercise and the pitch talks, the group work in small groups began. The topic of the day was the heading of the workshop, *the Future's Successful Places of Business - active and enabling a built environment*. In addition to the headline, the groups were handed information about the present situation in Turku, questions, paper, post-it notes and pens and they were asked to start writing ideas with the help of the four questions. The questions were:

- What does success demand from the perspectives of planning and political decision-making in the future?
- What do the successful places of business look like in the future?
- What does it mean to have an active and enabling built environment in reality?
- Who are the future actors and what sort of functions will there be in the places of business?

The questions were intentionally broad so answering them would generate a lot of ideas. The amount of idea notes per perspective was from 20 to 41 and the total number of ideas was 158. All the ideas from the post-it notes are included in appendix 5. The diversity of different ideas and perspectives was high. After the first round (Futures Wheel), the groups were given PESTEC-tables and were asked to divide the ideas according to the headings of PESTEC. It is noteworthy to state that some of the notes in the PESTEC-

tables could have been put into different sections of the table and some might have just been misplaced during the workshop and two of the groups used post-it notes also in the next section (Forming the Future) so it is uncertain if the groups took some of the post-it notes from the PESTEC-tables or wrote new ones. However, these details do not affect the overall analyze of the workshop. From the perspective of analyzing the PESTEC-tables, the most important thing is the amount and variety of different ideas. The aim is to comprehend the overall ideas and perspectives on the topic, and a few misplaced notes do not compromise this. The Sketching the Future phase lasted approximately 45 minutes, so the groups had a good amount of time to do this part of the workshop.

There were a total of 22 ideas in the *political* perspective. The ideas and perspectives in the political frame were mostly concentrated on predictability, flexibility and the speed of public decision-making, with 14 out of 22 notes concentrated on these issues. These ideas can be perceived as a counterstrike to public conversation, particularly the media, where decision-making and planning are quite often presented as confusing, slow and not taking the end users' needs into consideration. An alternative way to perceive the political perspective is to take into consideration the other side of the process, the right to appeal against public decision-making. A few ideas suggested that the appeal policy should be developed, for example the timeline for appeals should be shorter.

The *economic* perspective had 23 ideas altogether. The economic perspective was seen quite broadly and there were multiple ideas, but few of them can be clustered under common headings. A few themes arose from the notes, for example the participants thought that the rental agreements should change in the future to be more short-term and flexible. Also, related to this, entrepreneurs and sold items were seen to change forms quickly so flexibility and multi-use spaces would be ideas for the future as well. Other ideas varied from monorail to logistics and to environmental protection taxes. One note stated that business will still be based on the market economy in the future and control would not be possible. This is an interesting topic that would require its own Futures Workshop.

The *social* perspective gathered 29 ideas in total. There were several different ideas and most of them fall into two categories: the general type of future places of business (9) and specific features in them (13). According to the participants, the general type of future place of business seems to be a multifunctional mix of different sorts of services and other forms of businesses, also including the third sector and public sector. Also, every customer or citizen segment from kids and young people to elderly people will be

taken into account when planning and designing the places of business. The participants also stated that places of business are part of the everyday movement and that there will be fragmentation and specialization among businesses and one note stated that the basic needs of human beings are not going to change.

The *technological* perspective proved to be quite hard to grasp in the context of places of business. This problem was also present in the data gathering for the virtual layers of the adaptive cycle and it was left out. There were 20 ideas in this perspective and finding clusters or a golden thread was not possible. Few notes concerning virtual reality (2) and experimentations (3) were presented but otherwise the notes presented a wide variety of different ideas from digitalization to energy self-sufficiency.

The *environmental* perspective gathered the most ideas, a total of 41. The ideas resonate the wide understanding of the environment and a variety of issues that the environment can have affect or issues that can affect the environment. The three main categories of ideas (total of 31 ideas) were: 1) flexible and multi-use facilities with different kinds of hybrid solutions, 2) the easily reachable and access to the city center and the facilities with multiple transport possibilities, including walking and 3) wellbeing environment with features such as pleasant, clean, safe, stylish, accessible and tempting.

The last column on the PESTEC-table was *cultural* perspective. There were a total of 23 ideas in this section. A few general ideas arose from the notes. First, the participants highlighted the word *experience* (word in 7 notes), for example: places look tempting to experience, experience services and the shopping is an experience. Another common idea was that culture is part of the places of business, as a service or part of the events. Culture was seen broadly, it included art and sports and culture hybrids. Values were also mentioned as part of the cultural perspective. Distinctive features were seen as part of the built environment as well as part of the businesses.

All the perspectives had a good amount of ideas and most of the perspectives also had clusters of similar ideas. A few bigger themes can be identified throughout the PESTEC-tables. Firstly, the need for flexibility, starting from the decision-making up to the built facilities and even the business itself. Secondly, the idea that the city and the places of business are for every citizen from children to elderly people. A third theme that arose from the ideas of participants, was that there will be multiple, small, actors in the places of business.

Surprisingly, a few issues were lacking. First, there was hardly anything about sustainable development or climate change. Given the current situation and knowledge of

the long-term effects, it could have been assumed that these issues would have been present. Another issue was that a lack of bold ideas were suggested. In the first exercise, participants expressed the need for bold and innovative ideas but instead of them, the ideas presented could be described more as tamed and present-day oriented. Some notable exceptions included seasonally changing places of business, movable places of business and a free city (at least in Turku).

The next phase of the workshop was Forming the Futures. For this task, every group had a specific case study place in the city center of Turku. The purpose was to build the image of the future of Turku in the year 2050 and imagine the place of business in question. Two of the groups had the Market Square and its Surroundings and one had the Pedestrian Shopping Street. The two other groups' cases are not analyzed in this thesis. The groups were given the Morphological Maps for creating the images of the future. Each group formed the images themselves, based on the various options in the map. The conversations were lively and many of the groups thought about the options from multiple perspectives and participants described their thoughts towards the future and the possible outcomes. After the groups had picked their images of the future, they started to think about the successful future of the given place of business with the help of the same four questions which were handed to them at the beginning of the workshop. The last task of the workshop was to present the image of the future and the particular place of business in this future for the other groups. Forming the Futures lasted approximately two and half hours. The presentations were recorded, and they are opened up below.

The first Market Square and its Surroundings group chose an image of the future where the two global trends were *transformation of traditional retail business* and *urbanization* and the local trends were *carbon-neutrality* and *reputation, history, atmosphere and emotions*. From these headlines they chose a particular future and formed an image of the future where:

- Age structure, multi-culturalism and individualism have caused fragmentation in consumer habits and this has negatively affected the sale of mass productions. In particular, this has influenced the properties and renting of places of business.
- New ways of work have created a phenomenon in Finland: a transformation in work life, individualism and nature values are attracting well-educated people with children and purchasing power to certain, smaller locations instead of bigger cities. The rivalry over these citizens is brutal.

- Turku reached the set goal and became carbon neutral in 2029. Based on good results, the city continued on the road towards being emission and waste free and this aim was reached in 2040.
- Turku is known for its strong brand. It is an attractive city with excellent and well-known public image.

This image of the future could be described as very positive, since it possesses several positive features and it seems that group one believed that Turku is a thriving city in 2050. The environmental perspective, emission and waste free city, is part of the image and individualism is also highlighted in this future. These features are reflected towards the place of business in question, the Market Square and its Surroundings. In the presentation, the group pondered what a place of business will even mean in the future and they came to the conclusion that at least for the Market Square, there has to be other functions as well in addition to the traditional market business. The size of the Market Square makes it possible to add different kinds of features and functions to the area. The Market Square and its Surroundings has to be attractive and interesting around the clock, all year around. As a solution to this, the group suggested a permanent, vivid cultural space and restricting automobile traffic in the area.

The underground parking facilities are not for cars in the future, but for people. The underground facilities are in multifunctional use: there is for example facilities for events and sale and office spaces. In addition to these, the hyperloop station (Turku-Stockholm route) is situated there. A lit glass pyramid rises from the underground. There is also a crematorium that serves a certain function: when a citizen of Turku dies and is cremated, the ashes are pressed to diamonds. The idea is that "Every citizen of Turku is a diamond itself". The possible Wall of Diamonds would be placed in the market square and it would be an attraction.

In the future, the traditional market and goods that are sold there, would focus on real local and locally produced goods, for example, part of the greens could be cultivated in the market square. The group also thought that internationality and multiculturalism will affect the goods that are sold on the market square in the future.

The second group that had the Market Square and its Surroundings chose an image of the future where the two global trends were from the same *transformation of traditional retail business* and the local trends were *reputation, history, atmosphere and emotions*

and *complementary building in the city center*. From these headlines they chose a particular future and formed an image of the future where:

- The value-base and consumer habits of young adults changed in the 2020s. The children of this generation are now young adults and yet again new values are emerging
- Online shopping and home deliveries are everyday functions when it comes to ordering goods and services. Saving time on mundane tasks is a trend. People do not go out for shopping everyday goods and services anymore.
- Participation has been one of the elements of urban development and it has helped to build the brand and a good atmosphere. Turku has implemented real participation as part of its activities and the city has a reputation as being a true city for its citizens.
- Complementary building is ongoing and the experimental and innovative atmosphere has created unique solutions and architecture for the city center.

The group presented their plans as a drawing of the market square and its surroundings. In the future, the market square is a place for people, for citizens as well as other groups of people. The market square has a variety of activities and expanded operating-times. There is an art park and cafes in addition to the traditional market sale. The surrounding blocks are connected to the market square and to each other and this has really created genuine cooperation between the different places possible. The connections are made with public or semi-public spaces that are covered with heated, see-through elements. The possibilities to use the market square have also been expanded with a covered sales facilities. The market square has a Host Manager who, for example, is in charge of renting parts of the market square for pop-up events. The green aspects have also been taken into consideration and trees have been planted on the market square. This has increased the attraction of the market square, added comfort and helped to manage the vast space.

The third group had the Pedestrian Shopping Street as their case and their chosen image of future consisted of two global trends which were *urbanization* and *transformation of traditional retail business* and the local trends were *complementary building in the city center* and *reputation, history, atmosphere and emotions.* From the last trend they chose two claims instead of just one. From these headlines they chose a particular future and formed an image of the future where:

- The new ways of work have created a phenomenon in Finland: a transformation in work life, individualism and nature values are attracting well-educated people with children and purchasing power to certain, smaller locations instead of bigger cities. The rivalry over these citizens is brutal.
- Age structure, multi-culturalism and individualism have caused fragmentation in consumer habits and this has negatively affected the sale of mass productions. This has particularly influenced the properties and renting of places of business.
- Complementary building is ongoing and the experimental and innovative atmosphere has created unique solutions and architecture for the city center.
- Turku is known for its strong brand. It is an attractive city with an excellent and well-known public image.
- According to the new citizens, the long history of Turku, its safety and stability were the key characters why they chose Turku as their new place to live.

Group three had their own interpretation of the trend where smaller locations attract people instead of bigger cities: from a European perspective, Turku is the smaller location where people want to move. The other interpretation would be that Turku is competing for habitants with smaller Finnish locations. The group took the well-known slogan "Varför Paris vi har ju Åbo" as the basis of their planning and from this derived the idea that the Pedestrian Shopping Street would have more cafes and restaurants in the future. The street would have more services and showroom spaces. Part of the places of business would have several different activities under the same roof. In 2050, the retail business would still be based on the market economy. The planning is more flexible. The built environment (the public spaces and as well as the places of business) is clean and tidy and green elements and water features are added to the street. There are activities also for kids. The shopping experience of the street is enhanced with visual and sound elements. The sound world is a major part of the experience and there are several different types of sound worlds along the street. The public space is a crucial part of the attractiveness of the shopping street and well designed and executed public space adds value to the places of business. The core idea behind designing the Pedestrian Shopping Street is that the public environment has to be safe for an eight-year old as well as accessible for an eighty-year old for them to move there independently. The retail business will evolve along with

the customers' needs and the possible new residents from abroad might have a great impact towards the goods and services that are sold in the Pedestrian Shopping Street.

5.2.3 Poster and feedback

The poster from the day (appendix 6), captures the ideas of the day on an abstract level and most of all is a reminder for the participants. The overall feedback from the workshop was very positive. In one feedback, a person wrote: "I'm looking at the built environment through new lenses". People enjoyed the workshop, most of all, the discussions with other experts and different viewpoints. There was a joint request from the participants to share the contact information of every participant. One suggestion to improve the workshop was to think about presenting in a new way: could there be another way to present the ideas to others instead of traditional presentations?

The groups worked differently from each other, some had more lively conversations and some concentrated on few specifics and critical discussions. The sentence "that just is impossible" was heard a few times, which indicates that some of the participants were not ready for bold ideas and the workshop's long-term future orientation was somewhat difficult for some of the participants. After the presentations, people were perhaps tired because of the long day, or they just did not have anything to add and the end conversation was mainly between the facilitator and the groups.

6 CONCLUSIONS

While writing this part of the thesis, the COVID-19 outbreak is ongoing on a global scale. Finland has declared the disease to be at the pandemic stage and the government has closed for example restaurants and has forbidden meetings for over 10 people. The consequences of the COVID-19 will be, at least in the short-term, devastating and severe. The Market Square and its Surroundings is already at the release phase and the next phase for the Pedestrian Shopping Street would be the release phase, which could begin during the summer 2020 if the economic consequences of the pandemic are realized on a wide scale. The shock of the disease will signal the beginning of a new cycle, since bankruptcy is highly likely for some of the businesses. The measures that can be taken for the long-term future and the properties that make their places of business more resilient and adaptable to change, can still be elaborated.

In the light of the data and information gathered concerning the places of business in question, and to answer the research question in the thesis, “In the light of adaptive cycle theory, what is the current and possible upcoming phases of city center places of business? ”, the following paragraphs conclude the findings.

In addition to external disturbances, the Market Square and its Surroundings is influenced by internal disruptions which are mostly due to the renovations. From this perspective, the current adaptive cycle phase is the release phase and next phase would be reorganization. Reorganization could start once the biggest renovations are complete. In the current release phase, connectedness is still relatively high and the resilience of the system is tested. The agents, mechanisms and sites influence the resilience of the place. Regarding the Market Square and its Surroundings, there are many agents who are involved, from the city decision-makers, entrepreneurs and real estate owners to the citizens. The mechanisms shaping adaption or adaptability can mean lock-ins, the lack of capability to respond effectively to changes or lock-outs, the capability to interpret and address the change so that it benefits the place. The near future will tell if the change and the transition of the Market Square and its Surroundings mean taking advantage of the strengths and the possibilities. The location of the place itself, in the heart of the city, gives positive prospects to thrive in the future. Also, the new design of the market square can make the place more attractive. Possible lock-ins may occur if the place is still considered as an old-fashioned marketplace and if the traffic still continues next to the marketplace, diminishing the safety and attractiveness of the place.

The Pedestrian Shopping Street is at the conservation phase. In the conservation phase, the system is rigid, stable and less flexible and also vulnerable to shocks within or outside the system. If the development of the Pedestrian Shopping Street continues according to the cycle, the next phase will be the release phase, perhaps already during the summer 2020. In the conservation phase, potential and connectedness are high. The connectedness provides first stability, but also makes the system vulnerable against possible risks when the system becomes more mature. In other words, the different ways of performing disappears and the system comes dependent on the existing structures and this makes it vulnerable against disturbances. The current situation on the Pedestrian Shopping Street seems to be quite mature and it will be interesting to see how the development of the street will turn out in the future. The boldness and progressiveness of the ideas and responses to outside development and shocks can have a major effect on the future of the Pedestrian Shopping Street.

When facing major disturbances, the system, in this case the places of business, can be supported by enhancing the self-organizational characters. It would be important to recognize the small, autonomous entities, diversity of actors as well as their different ways to respond and make sure that the feedback from the system level back to the actors, as well as between the actors, including the municipality, is made as open and fast as possible.

According to the results from the Futures Workshop, the overall success of the places of business in the city center, can be enhanced with a few elements. These elements could benefit the resilience of the places of business and this way help them to bounce back or alter their trajectory towards a new successful future. The first element that arose from the Futures Workshop is the need for flexibility, starting from decision-making up to the built facilities and even the business itself. This can be seen as an understanding of the fast-changing world and the need to respond to changes quickly or as a statement that the current situation does not respond to changes as quickly as it should. The highlighted need for flexibility is a common message; the stakeholders seem to agree with it widely. This can be seen as a positive sign towards the future development of built environment, since the cooperation of different stakeholders is important and the unanimous aims can help the development.

The second element that arose from the ideas of participants, is the idea that city and the places of business are for every citizen from children to elderly people. Safety, accessibility and easy reachable with different forms of transport were mentioned multiple

times. The idea of inclusion, whether it is different social groups or different age groups would first seem self-evident in the cities but in reality, the city centers are not for everyone. There are several types of obstacle for citizens, for example: transportation, renovations, high doorsteps, a lack of restrooms, a lack of places to hang-out without spending money, a lack of places for kids, insecurity and even racism. The aim of the built environment in the city center was best put in the note that stated, "built environment: safe for an eight-year-old and accessible for eighty-year-old". This captures the idea of ideal planning, especially when it comes to the public spaces. In the city center, every place of business needs the support of well-designed public spaces. The consumer may have multiple roles, for instance she can be a mother and a worker or teenager with a disability and these characteristics have an effect on how they move in the city center and what they consume in the city center.

The third element that arose from the ideas of the participants of the Futures Workshop is the multiple actors in the places of business. Smaller, distinctive, experience driven actors, with specific focus was present in many ideas. It seems that the big companies or homogenous supply would not be things of tomorrow. These ideas go well with individualistic thinking and a platform economy – although the end result might be just an illusion of small, distinctive entrepreneurs and behind it all are major global companies which are making the executive decisions. This theme is somewhat contradictory with the current trend, for example the big consumer goods retail chains and clothing stores are the most popular stores to buy clothes in Finland by far and the growth of the big stores and brands has been increasing, not decreasing. Other trends related to big companies is also centralization, in other business sections for example in food delivery services, media companies and agricultural products, the mergers are an increasing trend. But the timeline of the discussion was the next 30 years, so this trend can alter in favor of the smaller companies.

The final presentations in the Futures Workshop gave more detailed ideas concerning the particular places of business in the city center. The two presentations concerning the Market Square and its Surroundings were different, although some similarities can also be found. The chosen images of the future resembled one another since they both took into consideration the new consumer habits and the positive brand of Turku as a city. The first group also focused their image of the future also towards the environmental issues and the second group took participation in urban development and architecture into consideration. From these perspectives, the successful places of business were created. The

two presentations gave a good overall perspective towards the future of Market Square and its Surroundings. The first presentation focused more on the market square and the second group considered the connections between the surrounding buildings and the market square. The key issues which make the Market Square and its Surroundings successful in the year 2050 are: 1) widening the use of the market square from its traditional commercial use into different kinds of activities, for example cultural events and at the same time expanding the timeframe of use (around the clock and all year around) and 2) making the area more attractive and accessible for citizens by creating better connections between the surrounding buildings and the market square, by planting trees and restricting automobile traffic in the area.

The group which presented the Pedestrian Shopping Street chose an image of the future where Turku is a popular and international city. It has attractive features, such as great architecture, safety and stability. These features are reflected towards the Pedestrian Shopping Street where the public space has been developed with several new ideas, such as green elements, water features and visual and sound effects. The key elements that make the Pedestrian Shopping Street successful in the year 2050 according to the presentation are: 1) inclusive and attractive place for every citizen and 2) sold goods and services as well as the places of business are flexible and work in cooperation so they can adapt to changes in consumer habits.

All of the groups chose the same two trends, *transformation of traditional retail business* and *reputation, history, atmosphere and emotions* even though there would have been others to choose from. In addition to this, *urbanization* and *complementary building in the city center* were chosen by two groups. The *carbon neutrality* was picked by only one group. These choices were perhaps mostly due to the topic of the workshop and the ongoing general conversation in media. For example, the transformation of the traditional retail business and urbanization are topics which are discussed widely at the moment and they have direct links and effects towards the places of business. *The reputation, history, atmosphere and emotions* is the topic which is very much related to the customers and citizens and how they will perceive the future of the city. The chosen future images were quite positive, although there would have been options with less positive connotations. The obvious reason to choose positive images of the future comes from the topic of the workshop; it is easier to imagine the possibilities of the places of business to be successful in the light of positive image of future. In addition, the stakeholders, who have the ability to influence the future, want to believe that the future is positive.

The connection between the created images of the future and the successful places of business would have benefited from deeper elaboration. Now the connections are somewhat loose and the issues derived from the images to the places of business are slightly vague. This is understandable, since the timetable was limited, but perhaps the final presentations would have benefitted from one more round of discussions and suggestions for improvements. This could have been done with a set of sparring questions from the facilitator. Perhaps if this kind of workshop is produced again, it could contain a supplement section via an online or another meeting where the final outcomes are presented.

The images of the future as well as the presentations concerning the successful places of business were quite conservative apart from the crematorium and hyperloop station. This can be explained in several ways. Firstly, it might be that the stakeholders were not that familiar with the futures studies and the methods and this influenced the bold innovation of ideas. Another reason might be the timeline. Even though 30 years can be considered as a long time, from the perspective of the built environment and the basic needs of human beings, it is a moderate time. An extreme change concerning the built environment and places of business would require drastic and even sudden changes such as war, a dramatic rise in sea level or a total destruction of the market economy. The presentation showed that the participants share a common understanding that in the future, more flexibility and cooperation with multiple stakeholders is needed in order to make better places for citizens to spend time and consume and experience new things.

The groups were quite unanimous with the chosen trends as well as with the themes along the workshop. This can be perceived as a positive or a negative issue. The positive side is that the stakeholders share a common understanding of the built environment and its future development. This could have a great effect on cooperation between the stakeholders. The negative side is more about the wider perspective. Is there enough diversity and even radical thinking among the stakeholders in order to reach or maintain resilience and adaptability in the future? The chosen trends in the Morphological Map determined the options for the participants. The variety of possible futures was vast (70 different options) and based on the group conversations in the Futures Workshop, the participants discussed and argued for and against the given trends with great interest. The Morphological Map can act as a good starting point for the participants towards the future and the perspectives that may be less familiar to them.

The used methods, adaptive cycle framework, the Futures Workshop and the Morphological Map, which was created for the thesis, worked quite well but some issues

could be proven or further elaborated in order to get better results. The adaptive cycle analysis could be done in co-operation with several researchers and the study could benefit from computational tools. Also, the possibility to add more indicators and a longer time-series could make the analysis more in-depth. Regarding the Futures Workshop, moving from the conservative side to more radical and innovative thinking, could be enhanced with a few alternatives. During the Futures Workshop, there could be more facilitators, for example one in each group, to make the focus and end result more long-term oriented and bold. Another enhancement would be holding more than one Futures Workshop, in that case, the participants themselves could evolve from the conservative side to more innovative as they get to know each other and the topic more thoroughly. Also the options on the Morphological Map could be more radical and perhaps even more negative, in order to encourage the participants to consider more radical and innovative solutions for the future.

From the perspective of complexity theories, the thesis shed some new light on the development of cities. The city and its places of business should be perceived in a new light that reflects the multiple nuances of different perspectives. The importance of taking multiple perspectives into consideration in the future and challenging the old ways of developing the cities will be crucial in the future and every attempt to reform the development can be seen as a positive step towards a better future. Detecting the emergent issues, in addition to experimenting and innovations, gives tools to manage the complexity of the city and its fragments successfully and withstand the uncertain future.

The core ideas of complexity theory – open system, inter-relationships, bottom-up development, far-from-equilibrium, emergence, resilience, transitions, adaptability and self-organization – as well as the loop structure and the virtual layers of adaptive cycle, give hope and a sense of structure even if the current phase in the place of business would be at the chaotic release phase. The multilayered, qualitative approach in this thesis, with the interdisciplinary features of complexity theories and futures studies, has given a good overall picture of the whole; usually a study takes a narrower, one discipline-oriented approach. The multidisciplinary approach can trigger new ideas and connectivity between the different expertise as well as different disciplines. This kind of research can benefit the overall conversation and perhaps even make the subject of the study interesting for those who have not considered it to influence their own interests or for people who have not thought that they could have influence on the matters.

Approaching the fragments of the city using complexity theories and the qualitative methods of futures studies has given answers and propositions concerning the future development of the places of business. This means that the success of the places of business in the future can be influenced with multiple actions. It is clear that drastic, sudden changes from outside cannot be completely modelled beforehand or anticipated in a way that they would not have an impact, but the bouncing back or creating new ways to move forward successfully can be influenced. This research has utilized complexity theories, using qualitative methods, instead of the usually applied quantitative methods, and has joint two different analytical methods from different disciplines to make a contribution to the study of cities. This study, with complexity theories in the urban context as well as futures studies, has taken a step towards a better understanding of the characters of successful places of business in the future.

The challenge of this kind of study comes from the same source as its possibilities. The wide perspective of the research question and the resources for the master's thesis possess the risk that the focus of research is not sufficiently defined and some significant small details have not been taken into consideration, or the results should have emphasized some other points instead of the ones discussed. When going back to the original aims and thoughts on the matter, the study can be perceived in a positive light: the quest was to find multiple answers, not an exhaustive list of answers. Reading this thesis will hopefully make the readers further elaborate the issues with discussions and cooperation with others interested in developing a better future for the city centers.

Further research could be done with the two methods used in this thesis, with the addition of the current hot topic, the COVID19-pandemic. The global pandemic will impact cities, some more short-term and some more long-term. It would be interesting to modify the methods in order to get the focus on this particular issue, in the context of places of business. The adaptive cycle analysis could concentrate on the level of the case studies but also take into consideration particular facilities and clusters of business in order to get more in-depth information. The questions in the Futures Workshop would focus on issues such as why some businesses survived or why did they not, which of them bounced back relatively quickly or found new ways of coping and which facilities people and entrepreneurs deserted and why (what was the relationship between the facilities/location and the business itself). The Morphological Map could be modified for the purposes. This further research idea could produce information concerning the resilience and

adaptability of the places of business and the influence of diversity, innovations and bottom-up development.

7 DISCUSSION

Complexity needs flexibility

Regarding the businesses occupying the future city center, it seems that there will be multiple actors in the places of business and particularly small, distinctive, experience driven businesses, instead of big companies or homogenous supply. Numerous small businesses and the change of retailers into even smaller entities would mean that the inter-relationships, interactions and interconnectivity between the actors and outside the system would increase. First it could seem that the system would be even more complex. However, the amount of different business might not necessarily mean more complexity since we do not know how the future businesses are built. Are they perhaps based on a platform economy, and what possibilities could the technology regarding it offer?

In terms of the built environment, smaller businesses could create a need for smaller facilities or joint facilities and pop-up facilities. This would mean that modifying and using the places would need to be easy, efficient and flexible and of course, this would also mean that the same characteristics would be needed from the agreements and planning. The increase of new, experience and service driven business would also mean the emergence of new consumer products as well as new ways to be an entrepreneur. From these perspectives, the decision-making towards the built environment needs to understand the importance of flexibility. This means that planning should take a broader perspective towards the purpose of use. It can still provide a frame and guidelines for use but this should not prevent rapid changes and new innovations. General planning which is too strict with details will result in stagnation and when quick measures need to be taken, they represent an obstacle to renewal and reorganization. From the perspective of real estate owners flexibility means altering the old way of perceiving rental agreements. Instead of long-term, standard rental agreements, agreements need to be more dynamic in the future. This means more cooperation and even partnership with rentier and renter and flexibility concerning the facilities and the rents. From the perspectives of the retail business itself, the entrepreneurs need to carefully consider their businesses: what are they really selling, the items currently available or could the goods or services be modified and the core idea transferred into something new?

Five star experience – the all-inclusive city center

The inclusive spaces and places in the Futures Workshop meant safe, accessible and easily reachable, as well as versatile goods, services and amenities for different groups. The present and future situation regarding, for example, public transportation, lights and measures during the wintertime, are factors that the municipality can influence. The municipality can provide the foundations for better inclusiveness and encourage other actors to take steps as well. The places of business themselves can influence the interiors of the facilities and of course the offered services and goods. In order to be an inclusive space, the planning and designing would need participation. In addition, the ideas of bottom-up development could benefit the change. The opinions of single citizens and experimentations of niche entrepreneurs could be utilized in the frame of top-down rules. To reach the goals of inclusive space, in addition to bottom-up development, there should be an understanding of the city as an open system as well as an understanding that the center and its development consists of multiple inter-relationships and interactions which are not all known or need to be known in order to act. This does not mean that thorough planning would not be necessary, rather there could be more room for trying new solutions and experimenting with innovations instead of years of careful planning. With small experimentations, the overall planning might be enhanced and even corrected before major implementations.

The places of business in the center of Turku

The Market Square and its Surroundings seem to be on the edge of change and there are multiple actions and agents working and developing the whole. The concrete actions regarding the market square and its surroundings would be widening the use of the market square from the traditional commercial use into different kinds of activities, for example cultural events and at the same time expanding the timeframe of use (around the clock and all year around). The perfect time to start developing these issues is now. The renovation of the market square is ongoing and by the time it is ready, experimenting with new ways to use the market square can begin. Even though the coordination of the whole is on municipality, the market square can be developed in cooperation with multiple stakeholders and individuals. The traditional market sales can be placed into one area of the market square, leaving the rest of the vast area for new emerging activities. There

should be space for people to meet, space for performances and also space for other business ideas. The timeline to use the market square should also be discussed. The traditional market is from the early hours of the morning until 2pm. This could be altered, perhaps extended or there could be additional market sales during the afternoon to early evening. Also, restaurant trucks or other movable enterprises could be added to the list of vendors in the market square. In addition to extending the hours of the day, also adding events and sales throughout the year would make the market square more attractive. Some of the months could be more event driven and some more sales driven. Furthermore, new kinds of experimentations and business could have try-outs along the year. The market square as an open, easy access place could also be one stages in which to enhance participatory democracy. The city could easily hold different sorts of events for citizens in the market square. Adding trees and other greenery to the market square as well as restricting the traffic in the area would result in making the place more safe, enjoyable and environmentally friendly. Regarding the enhancement of the connectedness of the market square with its surroundings, this could be taken into the planning program after the current renovations are ready. It would be important to study the possibilities for adding weather-proof corridors between and to the market square. This would ensure year-round use of the place and would tighten the connections around the market square.

Many people walk down the Pedestrian Shopping Street, but the question of how they can be encouraged to spend more time along the street and consume the goods and services is a central issue. The enhancement of the public space by adding comfort and inviting features and connecting the brick and mortar business with the potential of the street would make the places of business in the street more successful. If people perceive the street merely as a corridor to walk through, the opportunities of the street as a place for business are wasted. There should be more places to hangout, lean and sit. This would benefit the shops as well, since the time spend along the street would increase and people would become aware of the places of business being offered. In addition to the enhancement of the public space, theme fairs on weekends or cooperation of the shops with unifying themes could increase the liveliness of the streets. The street would be a great place to hold for example events, competitions and even short-term art shows.

The introduction of this thesis stated a metaphor for the future: “Exploring the future is not synonymous with solving a puzzle, it is more like taking a hike – and we can assist ourselves by choosing the right shoes to wear for the journey”. One can hope that this

thesis has provided inspiration for picking the right shoes to wear – perhaps even more than one pair – for the long-term journey called the future.

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APPENDICES

Appendix 1
Description of generic Futures Workshop and details of the thesis' Futures Workshop

The detailed description of generic Futures Workshop by Robert Jungk and Norbert Müllert

The original Futures Workshop consists of four phases during the workshop and the aftercare:

1) Prepatory phase
2) Critique phase
3) Fantasy phase
4) Implementation phase
5) Follow-up phase (Vidal 2006, 5)

The prepatory phase includes all the actions before the actual workshop, for example choosing the venue and gathering the materials and data for the workshop. The workshop also needs a facilitator that keeps up with proper phasing and encourages people participating to the workshop. The facilitator introduces the topic, takes care of the timetable and is responsible for the overall execution of the workshop. (Jungk & Müllert 1987, 49-55)

The critique phase starts with writing up critical views and possibly with very short statements on the issue. Discussions are avoided during the critique phase. This phase can also be encouraged by the facilitator with possible questions. After the group has written their comments into the papers, the facilitator will go through all the comments and briefly clarifies possible misunderstandings. If the list contains a lot of same issues, the comments are gathered into clusters. After this, the group gets to vote which of the matters are picked for the next phase. The voting can be made in secret or in open. Each participant gets several votes. (Jungk & Müllert 1987, 56-60)

In the phantasy phase, the group is trying to rethink the issues and figure out fresh solutions without any constraints. In order to switch the mind onto fantasy phase, the participants have to adopt thinking such as think the unthinkable, be wrong and be spontaneous and flexible. This might be hard for some people, so the phase is good to start with some loosening-up exercises, for example games, improvising or storytelling. The negative, critique phase's issues, are turned into positive statements and after that, the brainstorming starts. In the brainstorming phase, all the ideas, without criticism, are written down to the paper sheets. Closely related ideas are clustered and then the most

popular ideas are once again voted from the alternatives. If time, participants are divided into smaller groups and utopian schemes are created based on the ideas. (Jungk & Müllert 1987, 60-67)

Implementation phase starts with presenting the results from the previous phase. After presentations, the group starts in-depth discussion and the goal is real action proposals on the issues. The utopian schemes are carefully examined in order to evaluate their potential. In this phase, critique is allowed and even encouraged. This phase emphasizes facts and for example literature can be used at this point. The proposals for action can be gathered first from smaller groups and then based on those make the final action plan or project recommendation. The group will decide how to proceed, what is the strategy to go forward. It is also possible to make new experimental schemes where the innovative ideas are fully tried out in detail. If there is not enough time for the whole workshop's joint proposal, the workshop may also be concluded with the small group ideas. After the workshop has ended, either the participants or the facilitator should produce a report of the proceedings and the follow-up actions. This report is sent to all workshop participants to comments and with a question of further meetings. If the group decides to continue meetings, it might be in a form of continuing workshop. (Jungk & Müllert 1987, 67-70)

Forming the Futures Workshop for the case study

The planning of the futures workshop started from the needs of The Urban Environment division of Turku City. The wanted outcomes of the workshop, in addition to getting more insights and in-depth information regarding the future development of the case studies, was to start a dialog between different stakeholders, to widen the perspectives of the experts and to promote the futures thinking in order to improve the urban development. They wanted to have a workshop that would bring together the stakeholders that plan, make decisions, invest and studies the built environment. Since the built environment is made for several years to come, typically 60 to 100 years, the time horizon and the idea of future of built environment comes naturally for many stakeholders. The time horizon was set to the year 2050 because of the Towards New Turku – Vision for the City Centre 2050, but also because time horizon of approximately 30 years is still quite understandable to people. After deciding title, *The Future's Successful Places of Business - active and enabling built environment*, the groundwork for the workshop started.

Appendix 1
Description of generic Futures Workshop and details of the thesis' Futures Workshop

Creating a good atmosphere for the workshop depends on many issues but the ones the facilitator can influence are related to the prior preparations of the workshop and one essential issue is the venue and amenities. In this case the chosen place was a compact conference place near center, at Kupittaa. The facilities were new and the design of the place was very colorful and suitable for group works. The place had also a vast terrace from which the skyline of Turku center could be seen. The workshop included also lunch and small snacks for the participants which is important when the meeting takes several hours.

The timeline for workshop is always limited. The prior work for the workshop takes time and it is part of the thesis and can be adjusted, but the invited participants do not have a lot of time. Especially when organizing events where multiple persons would have to be at the same place at the same time can be hard. This Futures Workshop set aim to have roughly 30 experts in the workshop. The size of the workshop was based on three things: the possibility to host and organize the event, the budget and the wide enough variety of stakeholders. The workshop was held in Turku on the 24th of October 2019 as a half day event. The timeframe for the workshop was from 11.00 until 16.30. This timeframe was thought to be enough but also possible from the perspective of the participants. The list of possible participants was formed in collaboration with people from The Urban Environment division of Turku City. The invitation list was much larger than the number of the places in the workshop since it was quite certain that all the wanted experts could not participate. The workshop gathered total of 22 expert participants from wide range of stakeholders.

The loosening survey exercise

The questions for the loosening survey exercise were meant as probing questions for the participants. The aim was to get thinking of the participants future-oriented, make them think about their perceptions towards the future and also get information concerning the thoughts of other participants. The questions were meant to be quite broad and simple so they would be easy to answer in the set time limit of 30 seconds per question. The loosening exercise had six questions, three general questions about Turku and three more specific about the places of business. Each question had four claims to choose from the most suitable answer. There was no correct answers, the claims reflected different

perspectives of future, some more positive and some negative. Also different sort of trends were taken into consideration. The questions, claims and answers are all presented in the chapter five of the thesis.

Other materials for the workshop

Prior to the workshop, the possible participants were sent pre-invitation email, invitation email, reminder email and instructions email. During the futures workshop and in order to make the workshop fun, easy, interesting and meaningful for the participants, supplementary materials were given for the groups. Some of the materials were designed for the workshop and some were already produced. In addition to the loosening exercise, Futures Wheel, PESTEC-table and Morphological Map, the were pictures of the places of business, info poster of the current facts about Turku and Towards New Turku – Vision for the City Centre 2050. After the futures workshop, the participants were sent the final report and the poster from the day. The poster was made by a graphic designer who was present at the workshop for the whole day.

Appendix 2

Globaalin tason trendit	A: Kaupungistuminen	B: Digitalisaatio	C: Ilmastonmuutos	D: Ilmastopakolaisuus	E: Luonnon monimuotoisuuden (biodiversiteetti) katoaminen	F: Perinteisen kaupan transformaatio	G: Teknologia, liikenne ja turvallisuus	H: Muutokset maailmantaloudessa
Tulevaisuus-väittämät	A1: Kaupungistuminen kiihtyi ennakoitua nopeammin ja tämä vaikutti Turun väkimääriin siten että asukasluku on noussut ennusteita nopeammin.	B1: Digitalisaatio on vaikuttanut ennen kaikkea työntekemiseen. Työnmurros on vaikuttanut mm. toimistotilojen kysyntään ja vaatimustason nousuun. Myös julkiset ja puolijulkiset tilat ovat 2050-luvulla luonnollinen osa työskentelytiloja.	C1: Ilmastonmuutos etenee ennakoitua nopeammin: erityisesti sään ääri-ilmiöt lisääntyvät. Tulvat, myrskyt, kuivuus ja vuodenaikojen siirtyminen ovat uusi normaali.	D1: Ilmastopakolaisuudesta tulee arkipäivää: elinkelvottomista tai erittäin vaikeista olosuhteista muuttaa ihmisisiä paremmille seuduille kuten Suomeen.	E1: Luonnon monimuotoisuuden köyhtyminen ja uusien tautien leviäminen Suomeen on aiheuttanut suuria vaikeuksia maatalouden kannattavuuteen, vaikka tukien määrää lisätään. Ruuan hinta nousee merkittävästi.	F1: Kuluttamisen arvopohjan-muutokset muuttivat erityisesti nuorten aikuisten kulutustottumuksia aiempiin sukupolviin verrattuna 2020-luvulla. Nyt näiden nuorten lapset ovat nuoria aikuisia ja uudenlaiset arvot ovat nousemassa pinnalle.	G1: Päästöttömät ja automatisoidut kulkuneuvot (esim. sähköautot ja muut vastaavat) ovat valloittaneet Suomen tiet.	H1: Tuottavuus on kasvanut maltillisen tasaisesti, mutta erityisesti Euroopassa kansalaisten kuluttamiseen käytettävissä olevat varat eivät ole kasvaneet samassa suhteessa.
	A2: Kaupungistuminen tarkoittaa paikallisella tasolla lähikuntien pienenemistä ja Turun väkiluvun kasvua. Yhteistyö lähikuntien kanssa on heikentynyt.	B2: Digitalisaation jättiharppaukset eivät ole toteutuneet ja kehitys on ollut ennakoitua hitaampaa. Erityisesti tähän on vaikuttanut uudet rajoitukset ihmisistä kerättävän datan ja sen käytön suhteen.	C2: Ilmastonmuutos vaikuttaa erityisesti rakennetun ympäristön kestävyyteen: kosteus, kuumuus ja nopeat muutokset säässä aiheuttavat haasteita erityisesti talotekniikalle ja infrarakentamiselle.	D2: Ilmastopaikolaisuudesta tulee arkipäivää globaalisti, jokaisen vähemmän kärsineen maan on otettava vastaan pakolaisia: Turku päättää toimia ajoissa ja markkinoi onnistuneesti itseään erityisesti nuorille, koulutetuille ja lapsiperheille.	E2: Biodiversiteetin köyhtyminen ja osittainen tuhoutuminen on saanut Suomen panostamaan uusiin viljelytapoihin, kuten kaupunkiviljelyyn, vertikaaliviljelyyn ja laboratoriokasvatukseen.	F2: Perinteisten kaupan isojen toimijoiden lisäksi markkinoille on tullut paljon pieniä toimijoita, mikroyrityksiä ja väliaikaisia tai osa-aikaisia yrittäjiä.	G2: Liikkuminen palveluna -ajattelu on lyönyt läpi erityisesti lähellä keskustaa asuvien mielissä. Eri kulkuvälineiden vaivaton yhdistäminen on arkipäivää.	H2: Globaali maailmantalous jatkaa nousuaan, mutta voimasuhteet ovat muuttuneet: esimerkiksi Intian ja Nigerian taloudet kasvavat nopeasti, Kiinan talous on hidastunut 2020-luvun Euroopan tasolle ja Euroopan talous hiipunut. Yhdysvalloista on tullut 2030-luvun lopulla energiaomavarainen ja se on jatkanut omavaraisuusasteen kasvattamista myös muilta osin ja lisännyt eristäytymistä globaalista taloudesta.
	A3: Turun väkiluku on kääntynyt laskuun 2035 huippuvuoden jälkeen. Maan sisäinen muutto ei ole kohdistunut Turkuun, eikä maahanmuutto ole lisännyt merkittävästi Turun asukasmäärää.	B3: Jatkuva ja vaivaton internet-yhteys on mullistanut osallisuuden. *Uusi demokratia* on korvannut vanhat perinteiset tavat ja esimerkiksi julkinen päätöksenteko tapahtuu suoran vaikuttamisen keinoin. Bottom-up-ajattelu on korvannut top-down -ajattelun. Koordinointivastuu on kuitenkin edelleen virkamiehillä.	C3: Ilmastonmuutos on aiheuttanut merkittävissä määrin investointipaineita erityisesti rakennusalalle, vanhan korjaamisesta on tullut huomattavasti kalliimpaa ja vaativampaa kuin uudisrakentamisesta.	D3: Suomeen on saapunut suuret määrät ilmastopakolaisia. Muuttoliike ei ole vähenemässä lähivuosina. Turkuun ja muihin suuriin kaupunkeihin muuttaa suurin osa pakolaisista. Hallitsematon tilanne tuo haasteita kaupungin arkeen.	E3: Ilmastoviisas maatalous on pelastanut Suomen maatalouden, vaikka biodiversiteetin kato on maailmanlaajuisesti ollut suurta. Ilmastoviisas maatalous (käytännöt, opetus ja teknologia) on noussut yhdeksi Suomen vientituotteeksi.	F3: Alustatalous (taloudellinen/ sosiaalinen/yhteiskunnallinen toiminta, jossa olennaisessa osassa internet-infrastruktuuri ja sen päälle rakennetut palvelut) integroituu osaksi rakennettua ympäristöä.	G3: Drone-logistiikka on korvannut pienten ja keskisuurten pakettien kuljetuksen kaupunkialueella ja tämä on vaikuttanut mm. rakennusten logistiikkatarpeisiin (mm.välivarastointi lisääntynyt, kattojen merkitys kasvanut) ja vähentänyt perinteisten logistiikkakuljetusten määrää.	H3: Kiertotaloudesta on tullut merkittävä osa talousjärjestelmää: erityisesti arvontuotannon aineeton tuottaminen (palvelut, resurssien jakaminen) on noussut merkittävään osaan kaupankäyntiä. Eurooppalaiset yritykset ovat tässä kehityksen kärjessä ja Euroopan talous kehittyy kestävästi.
	A4: Kaupungistumisen myötä asukkaat muuttivat myös lähikunnista Turkuun ja väkimäärän vähentyminen tuotti suuria ongelmia Kaarinalle, Raisiolle ja Liedolle. Nämä kaupungit yhdistettiin Turkuun 2040-luvulla.	B4: Digitalisaatio on edennyt harppauksin. Kaikkea ihmisten toimintaa seurataan ja arvioidaan. Sekä kaupunki että yksityiset toimijat käyttävät aktiivisesti ihmisten tietoja toiminnassaan.	C4: Ilmastonmuutoksen vastainen todellinen työ lähti valtioiden sijaan kansalaisten, yritysten ja kaupunkien toimista. Yksittäiset kaupungit, kuten Turku, ovat pystyneet tekemään ilmastonmuutoksen vastaisista toimistaan vientituotteen maailmalle.	D4: Suomi ottaa vastaan ainoastaan muiden EU-maiden ja muutaman muun sopimusmaan ilmastopakolaisia. Tämä auttaa hillitsemään maahanmuuttoa mutta aiheuttaa ongelmia EU:n suhteen. Mm. T&K- ja maataloustuet on toistaiseksi jäädytetty.	E4: Luonnon monimuotoisuuden kaventuminen on vaikuttanut myös kaupunkiluontoon. Erityisesti pienten pölyttäjien katoaminen, tätä kautta lintujen vähentyminen ja tuholaisten lisääntyminen ovat tehneet puiden ja kukkien elossa pitämisestä haasteellista.	F4: Ikärakenne, monikulttuurisuus ja individualismi ovat aiheuttaneet kulutustottumusten pirstaloitumisen ja se vaikeuttaa ns. massatuotteiden myyntiä. Tällä on erityisesti vaikutuksia liiketilojen vuokraukseen ja ominaisuuksiin.	G4: Teknologia ja turvallisuus puhuttavat. Vaikka teknologia on mahdollistanut paljon uusia asioita, on se tuonut myös mukanaan ongelmia, kuten uudet rikollisuuden muodot ja digitaalisesta maailmasta syrjäytymisen.	H4: Uusi taloudellinen ajanjakso, joka on hiljalleen syntynyt Euroopassa 2040-luvulta alkaen, on nimeltään post-kapitalismi. Post-kapitalismi on uudenlainen talousmalli, jossa jakamistalous, alustatalous ja kansalaisten perustulo ovat avainkäsitteitä.
	A5: Uudenlaiset mahdollisuudet tehdä työtä on aiheuttanut uudenlaisen ilmiön Suomessa: työntekemisen muutos, individualismi ja luontoarvot vetävät hyvin koulutettua, ostovoimaista, perheellistä väkeä tietyille pienille paikkakunnille suurten kaupunkien sijaan. Kilpailu heistä on kovaa.		C5: Ilmastonmuutoksen hidastaminen on ollut globaali tavoite, johon jokainen maa saatiin sitoutumaan 2020-luvulla. Merkittävät toimet aiempina vuosikymmeninä on kannattanut ja ilmaston lämpeneminen on saatu pysähtymään 1,5 asteeseen.			F5: Online-ostaminen ja kotiinkuljetus ovat arkipäivää palveluiden ja tavaroiden ostossa. Arjen ajansäästö on noussut trendiksi. Enää ei arkipäivän palvelujen tai tavaroiden takia vaivauduta ostoksille.		

Appendix 2

Paikallisen tason trendit	I: Hiilineutraalius	J: Kansainvälistyminen	K: Keskustan täydennys-rakentaminen	L: Demografiset muutokset	M: Keskittymis- ja harvenemiskehitys	N: Liikenne- ja kasvukäytävät	O: Maine, historia, ilmapiiri ja tunnelma	P: Suuret kansalliset reformit
Tulevaisuus-väittämät	I1: Turku saavutti vuonna 2029 tavoitteensa olla hiilineutraali ja kehitys jatkui resurssiviisauden periaatteiden mukaisesti kohti päästötöntä ja jätteetöntä Turkua, joka saavutettiin vuonna 2040.	J1: Turusta on tullut vahvasti kansainvälinen kaupunki erityisesti yliopistojen ja muiden korkeakoulujen ansiosta.	K1: Keskustan täydennysrakentaminen on edennyt takkuillen. Vision suunnitelmat eivät ole käyneet toteen lainkaan toivotussa mittakaavassa.	L1: Turun kaupungin väkiluku on noussut huomattavasti ennusteita nopeammin.	M1: Suomen keskittymis- ja harvenemiskehitys kiihtyy. Turku on yksi keskittymistä, mutta ympäryskunnissa väki vähenee.	N1: Tunnin juna Helsinkiin toteutui 2030-luvulla, mutta muut merkittävät ratahankkeet kohti Ruotsia ja Keski-Eurooppaan eivät ole toteutuneet.	O1: Turku tunnetaan vahvana brändinä ja vetovoimaisena kaupunkina, jonka julkisuuskuva on erinomainen ja laajasti tunnettu.	P1: Sote-uudistus venyi pitkälle 2020-luvulle ja epäonnistuneen uudistuksen korjailu venyi 2030-luvun loppuun. Tämä aiheutti epäselvyyttä ja viivästyksiä moniin rakennushankkeisiin ja aiheutti myös ulkomaalaisten investointien vähentymisen.
	I2: Tavoitetta olla hiilineutraali vuonna 2029 ei saavutettu ajallaan vaan 10 vuotta myöhemmin. Pääkaupunkiseudun isot kaupungit, Tampere ja Oulu pääsivät tavoitteeseen jo vuonna 2030.	J2: Turusta on tullut vahvasti kansainvälinen kaupunki erityisesti maahanmuuton ansiosta.	K2: Keskustan täydennysrakentaminen on edennyt vision mukaiseen suuntaan, erityisesti kaupallinen keskusta on rakentunut vuosien varrella haasteista huolimatta.	L2: Turun väkiluvun voimakas kasvu pysähtyi 2030-luvulla ja on noussut maltillisesti 2050-luvulle tultaessa.	M2: Suomen keskittymis- ja harvenemiskehitys kiihtyy. Turku ja lähimmät ympäristökunnat pärjäävät kilpailussa.	N2: Tunnin juna Helsinkiin sekä merkittävät parannukset yhteyksissä Ruotsiin ja Keski-Eurooppaan ovat toteutuneet 2050-luvulle tultaessa.	O2: Turun pitkä historia, turvallisuus ja vakaus ovat nousseet valttikorteiksi uusien asukkaiden mielissä.	P2: Maakuntauudistus oli epäonnistunut kokeilu, joka alkoi 2020-luvulla. Uudistuksen jälkeen huomattiin pian, että järjestely oli liian raskas taloudellisesti. Uusi maakuntauudistus saatiin valmiiksi 2040-luvulla, jolloin maakunnat muodostettiin vapaaehtoisuuden pohjalta. Maakunnille tuli pääkaupungit ja Turku on uuden maakunnan pääkaupunki.
	I3: Tavoitetta olla hiilineutraali ei ole saavutettu vuoteen 2050 mennessä.	J3: Turku ei ole kansainvälistynyt merkittävästi ja tämä on vaikeuttanut korkeakoulujen opiskelupaikkojen täyttämistä ja myös rahoituksen saantia. Korkeakoulujen toiminnan merkittävästä supistamisesta keskustellaan.	K3: Keskustan täydennysrakentaminen on edennyt mutta se on aiheuttanut odottamattomia yllätyksiä. Ihmisvirrat keskustassa ovat siirtyneet perinteisistä kauppapaikoista uusille alueille keskustassa. Erityisesti jokiranta ja sen välittömässä läheisyydessä olevat liikkeet ja palvelut vetävät ihmisiä puoleensa.	L3: Turun väkiluku on noussut enemmän kuin 2020-luvun alussa ennakoitiin. Erityisesti tähän on vaikuttanut kaksi seikkaa: maahanmuutto ja nuoret opiskelijat.	M3: Suomen keskittymis- ja harvenemiskehitys on hidastunut vuodesta 2030-alkaen valtion voimakkaiden toimien ansiosta. Tämä on aiheuttanut merkittäviä eroja tulonsiirroissa valtiolta. Turku on yksi kärsijöistä, sillä valtio suosii huonompiosaisia kuntia. Tämä on tarkoittanut kiristyksiä kaupungin taloudenpitoon.	N3: Tunnin juna Helsinkiin ei ole toteutunut, asian käsittely lopetettiin 2030-luvulla eikä siihen ole enää palattu.	O3: Turun maine on huono tultaessa 2050-luvulle. Erityisesti isojen rakennushankkeiden kaatumiset, pitkät viivästykset ja epäselvä tilanne maankäytön linjausten suhteen on karkottanut kansainvälisiä sijoittajia.	P3: Sote-uudistus 2020-luvulla otti pois ison vastuun kaupungeilta ja tämä auttoi kaupunkeja fokusoitumaan muihin asioihin, kuten maankäytön- ja kiinteistökehityksen hankkeisiin.
	I4: Turusta tuli hiilineutraali tavoitteiden mukaisesti ja myöhemmin myös päästötön, jätteetön ja kestävästi luonnonvaroja käyttävä kaupunki. Tämä saatiin aikaan, koska tavoitteet ulotettiin koskemaan myös yrityksiä, joille tarjottiin kannustimia tavoitteiden saavuttamiseksi	J4: Turku on kansainvälistynyt vahvasti ja tämä on vaikuttanut moneen asiaan, mm. kaupallinen tarjonta on monipuolistunut ja englanti on noussut vahvasti suomen ja ruotsin rinnalle palvelukieleksi.	K4: Keskustan täydennysrakentaminen on toteutunut vain paikoin ja alueiden eriytyminen keskustassa on voimakasta, osa paikoista on jäänyt kehityksestä jälkeen, osa kukoistaa.	L4: Turkuun on muuttanut ennakoitua enemmän vanhuksia tai lähellä eläkeikää olevia ihmisiä. Tämä on aiheuttanut huoltosuhteen nousun ja lisännyt kaupungin menoja.	M4: Väestö ja investoinnit ovat keskittyneet pääkaupunkiseudulle ja 2050-luvulle tultaessa myös Turussa on pelkona, että asukkaita muuttaa sankoin joukoin pääkaupunkiseudulle. Kaupunki aloittanut hankkeen, jossa kartoitetaan pitovoimatekijöitä.	N4: Hyperloopin rakentaminen Turusta Tukholmaan on aloitettu. Valmistumisajankohta on 2060. Hyperloop on supernopea merenpohjan alla toimiva liikenneyhteys. Matka Turusta Tukholmaan taittuu noin 20 minuutissa.	O4: Turku ei onnistu uudistumaan ja houkuttelemaan uusia asukkaita tai pitämään vanhoja asukkaita. Vetovoima- ja pitovoimatekijät ovat Turussa vähissä. Jo 2040-luvulta lähtien erityisesti nuoret ja koulutetut muuttavat pois kaupungista.	P4: Maakuntauudistus onnistui isoissa tavoitteissa: erityisesti laaja-alainen maankäytönsuunnittelu on tuonut tehokkuutta ja nopeutta hankkeisiin ja mahdollistanut laajojen hankkeiden toteutumisen Suomessa.
			K5: Täydennysrakentaminen on saatu käyntiin mukavasti ja erityisesti kokeileva ja innovatiivinen ilmapiiri on luonut uniikkeja ratkaisuja keskustaan. *Kokeileva rakentaminen* on päivän sana.				O5: Osallisuus osana kaupungin kehittämistä on ollut yksi osa maineen ja hyvän ilmapiirin rakentamisessa. Turku on ottanut toiminnassaan laajasti käyttöön aidon osallisuuden ja kaupungilla on hyvä maine todellisena asukkaiden kaupunkina.	P5: Eläkejärjestelmän reformiuudistukseen herättiin liian myöhään. Eläkeitä ei enää pysytä maksamaan 2020-luvun mallilla. Eläkkeitä on laskettu ja mahdollisuutta saada eläkettä muutettu. Enää ei puhuta eläkeiästä eikä eläkerahasta vaan vanhuuden sopeutumisrahasta, jota maksetaan elämäntilanteen mukaan. Vaikutuksia erityisesti vanhusten ostovoimaan.

1 DEMOGRAPHICS IN TURKU

From the year 1990 Turku has increased the number of habitants from the 159 000 to the current 192 000. The past 20 years Turku has had a positive growth of habitants, excluding years 2004-2007. The downtown area has the biggest number of residents compared to other areas of Turku. The number of habitants living in the downtown area has increased steadily from the year 2008 being now approximately 57 000 habitants (2019), although the number of habitants used to be much higher, approximately 68 000, during the 1960's. Over 80% of the habitants of Turku live in maximum of 5 kilometers from the market square. Most of the people in Turku (66,6%) is between ages of 15 to 64. Age structure in Turku is affected by the universities. The city has approximately 40 000 university students (including the universities of applied sciences). The vast number of students can be seen also in the sizes of households, 52,1% are single person households. (Turun kaupunki, 2019b, Turun kaupunki, Turku Alueprofiilit 2019, Blomqvist 2019)

At the moment Turku as a city is growing quite fast compared to the general development in Finland. Turku is aiming to have 220 000 habitants and 115 000 jobs by the year 2029. The consulting company MDI made analysis concerning the future population of different regions in Finland by the year 2040 (starting point 2018 statistics). In this analysis Turku will have positive population growth, although the population of the region of South-West of Finland will decrease. They estimate that population growth in Turku will be 9% by the year 2040. (MDI, 2019). Finnish Statistical Center has also made estimation (2019) and in that Turku will have approximately 12% of increase by the year 2040 (Tilastokeskus 2019a). The 12% increase means approximately 23 000 new residents. These estimations differ from the target Turku has set already by the year 2029. Turku is aiming to have 30 000 people more which means approximately 15,80% increase by the year 2029. It is also important to note that the increase of habitants is relying on immigration quite heavily, because the estimation of population (self-sufficiency) without immigration is approximately 180 000 habitants by the year 2040 (Tilastokeskus 2019c)

2 THE BUILT ENVIRONMENT IN THE CITY CENTER

The newest local master plan of Turku should be ready in the year 2020. It lays the general features on how different functions should be placed in Turku and gives the principals for the development of transportation system. In addition to the local master plan there is also several smaller detailed plans of areas in progress. (Lappi 2019, 14) At the moment, a great number of the current building stock of Turku center has reach the renovation age. The city center has multiple renovation, demolition or new building sites at the moment. Many areas of the center have been built during the 1960's, the period of car cities and open block concepts. The characteristics of this period are the combinations of taller apartment buildings and low-built places of business as well as the parking spaces in the courtyards. Many of the buildings in the center have seen multiple uses, e.g. from apartments to offices and from office to restaurants. (Turun kaupunki, kaupunkiympäristötoimiala, 2019)

The strategic program of Turku city mentions, among many other developmental goals, the sub goals of complementary building. The goals include the defragmentation of the city structure and the focus of complementary building (the city center along the way of public transportation system) and the future development of the complementary building (towards the sea). And as a result, the tightening city structure will emphasize the quality of urban environment (Turun kaupunki 2018a, 39) The city officials of Turku have made a report of suggestions for complementary building in the city center. The suggestions are not yet been approved but the draft will give the overall understanding on how the city officials see the issue. The main aim in complementary building is to add housing and develop the urban landscape. New habitants in the city center are crucial for the lively and thriving atmosphere which can aid in keeping and restoring the brick and mortar business. The complementary building is also important from the perspective of environment. The efficient urban landscape can help diminish the carbon dioxide emissions and encourage people to take advantage of the public transportation system and other greener ways of moving such as bicycling. The current trend in the city center is the change of use from office real estate into apartment real estate. This can be seen as a problem because the lively city center also needs workers in order to keep the services in the center. Another challenge is to maintain and even

grow the amount of public services (schools, daycare, health-care center) in the center. (Turun kaupunki, kaupunkiympäristötoimiala, 2019)

3 THE POLITICAL PERSPECTIVE

According to the strategic program of Turku, “City is as vibrant as its center. The center of the city is a portrait of its success, well-being and competitiveness and that is the reason why it has to constantly renew itself”. (Turun kaupunki 2018a, 38) In the Towards New Turku – Vision for the City Centre 2050 the center is spread wider compared to the current situation, especially with new solutions regarding the transportation systems and with new pedestrian streets. The two new big changes would be making a transport terminal area, around 1 kilometer along the Eerikinkatu and making the Linnankatu a pedestrian street in the downtown area. These two developments might have a significant impact on how people move in the city center and also where they consume. (Towards New Turku – Vision for the City Centre 2050, 2017)

Unfortunately, the big changes require bold decisions and sometimes the decisions that would benefit the long-term future, but might harm the short-term future, are hard to make. This has been the case in Turku and a good example of poor decision-making is the development of market square. The city governance and the several different stakeholders have argued for years, since the mid 1990’s, about the development of the market square. The debate has mostly been about the underground parking facilities and the costs and ownership of the real estate development. Finally, after almost 25 years later, the renovation of the market square and the building of the underground parking facilities are at full speed. Another example of the lack of progress could be the stagnation of the Pedestrian Shopping Street Yliopistonkatu. The street was changed to pedestrian street in 2001, which could be considered quite late, if compared to the overall change in European cities and the desire for pedestrian street. And now, approximately 19 years later, the street has not seen great improvements despite some efforts like the flower arrangements and new Christmas lightning, although in the near future pedestrian connection to the market square will be an improvement.

One of the strategic goals of Turku city is to have active and well-being citizens and to provide platform for the entrepreneurs for sustainable business. Turku claims that it is a city where decision-making is fluid and the atmosphere is open for new ideas and innovations. The vitality and growth of the city should be based on social, ecological and economic sustainability. One aspect in boosting the growth and entrepreneurship in

Turku will be the proactive planning and land use solutions. (Turun kaupunki 2019c) Turku city has made separate strategic programs for planning and land use policy in order to give more in-depth information on the strategic points and tools for reaching the strategic goals. The land use policy of the city will be advanced with its own action plan and sub goals. The focus is on improving the quality and the appeal of the urban development throughout co-operation and partnership with stakeholders. One of the main tools how the city is promoting these goals is to take planning and land use as part of the city's spearhead projects such as *the development of the city center*. The goals emphasizing particularly the commercial parts of the city center include an action plan for the development and marketing which is done in co-operation with multiple different entities of business life and other stockholders, lifting the status of the city center as a common living room of all the citizens with high quality public spaces and new pedestrian areas and improving the market square area. (Turun kaupunki 2018a, 37-39)

Also the debate concerning the public transport and its benefits for the market square surroundings have been a topic of discussion. The opposite sides in the conversation have different views about the location of the bus stops and their effect on attraction of the place. Other side wants to remove the bus stops from the streets surrounding the marketplace and the other side wants to keep the bus stops next to the marketplace. At the moment the decision made for time after the renovation are in favor of bringing back some of the bus stops (Turun kaupunki 2016). The Towards New Turku – Vision for the City Centre 2050 presented a plan where the public transport would be in new terminals, approximately the length of one kilometer, along the Eerikinkatu. There is also plans and debate concerning a new light rail lines through the city. This could have a positive effect on size and length of the pedestrian areas in the city. According to studies concerning European cities and the influence of light rail lines, there has been significant improvements in the pedestrian spaces as well as for cyclists after introducing the light rail lines as a form of public transportation (Hass-Klau 2003).

4 THE ECONOMIC PERSPECTIVE

The Elävät Kaupunkikeskustat ry (The Lively City Centers Association) makes yearly publication (since 2016) on vitality index of the main city centers of Finland. The index is calculated based on the number of stores, restaurants and empty business places and the difference is divided by the number of habitants. The vitality index of Turku center has been between 3,388 to 3,83 compared to the average of whole Finland which has been from 2,71 to 2,99. (Wilhelms 2017, Wilhelms 2019) The index is quite sensitive to changes and for example the index of 2019, which was 3,388, clearly resonates the big renovations that are occurring in the city center (the market square, Hansa mall and partly Wiklund property). Overall the vitality index has gone down in almost every city center from year 2018 to 2019 which means that there are less stores and restaurants and more empty business places. The total average of the vitality index in Turku is 3,62 which is clearly above the number of total averages of the cities. The vitality numbers are affected by different factors, for instance the overall size of the city (affects the number of habitants in the area) and the possible multi-centered system, so the cities cannot be compared just looking at the index numbers. (Wilhelms 2017, Wilhelms 2019)

The vitality index does not have longer time series so drawing long-term conclusions from it is not possible, but it backs up other research which indicate that Turku is doing better compared to the average cities in Finland. For example, the BTV-index (from the words BKTA, työllisyys and väestö), which describes the regional development in Finland, shows that from year 2000 to 2014 Turku region has had positive development in each basic parameter. The BTV-index consists of population development, number of jobs and regional GDP. (Kuntaliitto 2017, Tilastokeskus 2019b). Addition to these, analysis made concerning the 20 largest cities in Finland 2017 shows that Turku is the third best city when comparing structural dynamics and change dynamic. The analysis was based on data from 2010-2016. The structural dynamics consisted of different information from the year 2014, 2015 or 2016 (newest available year) such as the GDP, income per habitant, municipal taxation income, employment rate, change in population rate and the economic dependency ratio. The change dynamics consisted of the change from 2010 to 2014, 2015 or 2016 of the same parameters. (Tenho & Aro, 2017)

Appendix 3
Data and information for the indicators

At the moment, the numerous developments, renovation and even demolition projects in the center has feared to affect the business in the city center. At the moment it seems that the fears of multiple shops going bankrupt and great losses have been unwarranted and some shops have even increased their sales and the number of people visiting center have even increased from the year 2018 to 2019. (Turun kaupunki 2019f; Turun Sanomat 2019a; Turun Sanomat 2019b) When considering the places of business from the perspective of investors and owners, the current situation is positive in Turku. The big projects, such as the parking hall under the market square, renovations in the malls and new Hamburger Börs, mean approximately 200 million euros investments for the city center (Turun kaupunki 2019f). There is no data available just for the case studies, but long-term statistics about the downtown area should provide adequate enough indication about the situation. In expert surveys made by KTI, there is a positive prospect towards the future. When looking back the time series, the real estate markets (investments and rents) have usually followed the trend lines in overall economic development, especially the development of the region, but also the global crisis, for example the 2009 crash in stock markets, can be seen in the statistics. The regional economic and employment development supports the real estate markets in Turku. The high interest for real estate investments means lower yields for the top places. The long-term development in yields (the places of business) have been steadily going down for the past few years in Turku which is due to the high demand in investment markets. (KTI 2018, KTI 2019)

5 SOCIAL AND CULTURAL CITY PERSPECTIVES

In a study made by Kohijoki & Koistinen concering the perspective of elderly people, the market square was described as a heart of the center and the surrounding properties, such has Wiklund property, Market Hall and Hansa mall were considered as an important meeting point for acquaintances. The atmosphere was one of the triggers to come and spend time in the market square. Also the small shops, the brick and mortar business, was mentioned as a inviting shopping opportunity along with the department stores. Negative aspects mentioned from the perspective of built environment were for example the fragmented styles of buildings which makes the market square area look too messy and the fairy lights in the Yliopistonkatu as well as the lights in the market square which were considered too dim and modest. (Kohijoki & Koistinen 2018, 4-7, 9) Turku city conducted a survey concerning the market square and the nearby surroundings in 2015. They got 1106 answers in total and multiple ideas how to enhance particularly the market square and the surroundings but also other issues. The survey showed that the most common ways to use the market square was shopping, but almost as important was the possibility to walk by or through it to other places. There was also a strong wish for more pedestrian streets to the city center, especially next and near to the market square and towards the river. (Antikainen, Keskikastari & Mäkinen, 2015)

For resting and enjoyment in the public space, different sort of places to sit are important. Before the renovation of the market square started, there was a lack of resting places (excluding the cafes and their stools) according to elderly people (Kohijoki & Koistinen 2018, 9). Yliopistonkatu has some benches but they are quite often occupied by homeless people and addicts and they are also untidy. This affects their appeal for example from the perspective of elderly people (Kohijoki & Koistinen 2018, 9). People occupy and use the public space with various different types. Younger people use the pedestrian shopping street and the market square for example for hanging out, meeting with friends, being online and, attending to public events and shopping (Peltonen 2016, 5-6). The market square is under renovation at the moment and the current situation is lacking many features which would enhance the enjoyment and usage of the market square. After the renovation of the market square, there will be more resting places and places for hanging out, a performance stage, trees and

flowerpots, water feature, bicycle racks, underground heating system, new lighting and better accessibility for visually impaired according to the pre-plans. The market square will also have new places of business as well as the traditional moveable market carts and there will be space for pop-up events and entrepreneurs. Especially possibilities for cultural events will be enhanced from the previous: there are pre-plans with movable performance stage and special events during the Christmas and an ice-skate ring during the wintertime. (Turun kaupunki 2016)

The city politicians and administration can help to create the culture in the city by enable it through investments to public spaces, especially for spaces where people can meet, spend time and have new experiences. All events in the city center need to have a permit from the city officials and by looking the listings from resent year 2019, it seems that particularly the shopping street Yliopistonkatu is a popular place. The events vary from small promotions to NGO events and the total amount in the year 2019 was 74 (Kauma-Laula 2020). The market square is under renovation at the moment, so besides the typical market sale, there is not much happening at the moment. There are no events for example in the official event calendar of the marketplace (Turun kaupunki 2019e). Before the renovation, the market square had some events but during the recent years, the marketplace has not been as vibrant as it could have been due to the uncertainty and lack of decision concerning its future. Now that the renovations have begun, the future looks a lot clearer, at least from the perspective of built environment. The whole of market square surroundings has not had a common action plan or strategy and this has affected the attraction of the market square surroundings. One of the aims of spearhead project, *The development of the city center*, is to unite the stakeholders, especially the entrepreneurs, of the core of the city center in order to create a thriving and lively place to interact and make business all year around (Turun kaupunki 2018a).

6 THE ENVIRONMENTAL PERSPECTIVE

To find exact data or indicators of how the environmental issues are taken into consideration in the particular cases of Market Square Surroundings and Pedestrian Shopping Street is somewhat challenging. The following information is mostly about the city as a whole and the actions of the city, not information regarding the particular case studies. Even with the more general information gathered some assumptions can be made. Also the lack of particular data can be seen as a sign: the issue has not been particularly interesting and or not yet measured. When thinking sustainable ways to renovate, greener building methods is one issue and the end product's (building, surface of the street, infrastructure underneath) long term environmental sustainability is another issue that can be evaluated. The renovation itself usually provides at least energy efficiency through better insulation and technical solutions regarding the electric, water, air conditioning and automation systems.

How the energy that is being used is produced, is another issue that have effect on the sustainability. For example, the Pedestrian Shopping Street, Yliopistonkatu, has an underground frost protection system. This means that the street is heated during the wintertime, so the street is not frozen at any point. Is heating streets sustainable from the perspective of sustainable development? One could argue that from the environmental point of view it is not, but the case in not that simple. Turku uses only renewable energy and when thinking the social and economic aspects, the heating is beneficial to many: the street is safer to walk, which decreases the chance of health hazards (broken bones etc.) and it increases the amount of people using it during the wintertime and this benefits the entrepreneurs along the street. Especially elder people have considered the heating as a good solution (Kohijoki & Koistinen 2018, 7). Accessibility and quality will be issues that city will take into consideration when choosing the new materials for the market square surface and the city will soon decide whether the Market Place underground heating system uses solar energy or something else (Turun kaupunginhallitus 2020a, Turun kaupunginhallitus 2020b). The environmental issues are not collectively taken into consideration with agreements or such by the different real state owners or entrepreneurs of the study cases, but for example SOK, the owner of the Wiklund Property, has green targets in their strategy. The SOK has for example set targets to make their facilities more energy efficient by monitoring the consumption,

making renovations with green targets and producing electricity with wind and solar energy and this way cut down their emissions radically (S-ryhmä 2019). The Hansa mall does not offer any information regarding their environmental targets. The only indication of their interest towards environmental issues was a survey they conducted concerning the ways of transportation of their potential customers and a competition where a person could win a bus ticket for a year (Hansakortteli 2019).

Turku has set a goal to be carbon neutral by the year 2029. Reaching this goal has effects on multiple sectors, and for the places of business in the city center, it means making them more reachable with public transport, bicycling and walking at any time of the year. Also encouraging the stakeholders, entrepreneurs, NGOs and private citizens for more carbon neutral or even carbon negative ways to make business and consume is one of the targets of the strategy of carbon neutral Turku 2029. Turku has a downward trendline in the CO2-emissions from the 1990's, even though the emissions have not dropped every year during the period (Turun kaupunki 2018b, 2, 7, 13).

Appendix 4. Ideas for PESTEC

POLIITTINEN	ennustettavuus päätöksenteossa
	poliittisilla päättäjillä pitää olla yhteistä näkemystä
	päätöksenteko ennustettavaa
	mahdollistava päätöksenteko
	joustoa käyttöihin ja päätöksentekoon
	päätöksenteon joustavuus
	suunnittelu ja päätöksenteko nopeaa
	vaikuttavuuden arviointia ja priorisointia päätöksenteossa
	nopeutta poliittiseen päätöksentekoon
	"diktatuuri" päätöksentekoon
	suunnittelussa kanssakäyminen loppukäyttäjän kanssa
	suunnittelulta vaaditaan joustavuutta, palvelu/asuminen/kauppa eivät enää 100% erikseen
	rohkeutta ja innovatiivisuutta
	muuntojoustavuus
	sanktiot valittajille
	lyhyemmät valitusajat
	julkiset palvelut osaksi kokonaisuutta
	kilpailu kaupungien välillä vähentää poliittisen päätöksenteon liikkumavaraa
	paikallisdemokratia
	läpinäkyvyys
	monipuolisen saavutettavuuden lisääminen
	kestävä kehitys poliittiseen päätöksentekoon

Appendix 4. Ideas for PESTEC

TALOUDELLINEN	vuokrasopimuksilta vaaditaan uusia joustavia malleja
	tarvittaessa lyhyet vuokrasopimukset
	uudenlaiset vuokrasopimukset (lyhytaikaisemmat, uudet vuokranmääritystavat)
	toimijat ovat monimuotoisia/monialayrittäjiä, vaatii skaalautumista myös liikepaikkojen suunnittelulta
	joustavat tilat & rakenteet, helppo vaihtaa käyttöä
	liikepaikat voi muuttaa rooliaan jopa päivän sisällä
	monikäyttöisyys
	monimuotoisuus
	vuodenaikojen mukaan muuntuvat kauppapaikat
	taloudellinen aikajänne lyhyt (kuoletusaika)
	virtuaalitodellisuus- ja kulutus
	monorail
	markkinatalous + yhteistyö
	palveluhybridit
	liiketoiminta on markkinalähtöistä, sitä ei voi määrätä
	haittaverotus
	visuaalisesti houkuttelevia ja ympäristöön sopeutuvia
	toimijat: erikoisalojen comeback, esim suutarit
	logistiikka
	skaalautuvuus
	asukastiheys/rakentamisen tehokkuus
	kustannus
	paikallinen

Appendix 4. Ideas for PESTEC

SOSIAALINEN	tulevaisuuden liikepaikat näyttävät enemmin elämyskeskuksilta ja show roomeilta
	erilaisten toimintojen sekoittuminen
	tulevaisuuden liikepaikka on monimuotoinen ja persoonallinen
	verkostoituneet toimijat
	vaihtoehtoja
	paljon palveluita ja erilaista kauppatavaraa
	toimintoja: paljon erilaista
	toimijoina 3-sektori, palvelut, ruoka ja elämykset
	julkiset ja yksityiset tilat limittyvät
	käyttäjä- ja asiakaslähtöisyys
	käyttäjän huomioiminen kaavoituksessa ja suunnittelussa
	kaikkien ikäluokkien huomioiminen
	lapset
	tilaa nuorille, lapsille ja vanhuksille
	rentoutustupia
	osallisuutta
	kohtaamispaikkoja
	yhteisöllinen
	paikallisuus
	kylämäisyys/heimot lisääntyvät, turvallisuus ja viihtyvyys
	konsepti, tuttuus
	ihmisten mittakaava
	turvallisuus!
	salliva, esteetön
	liikepaikat osana arjen liikkumista
	erikoisuus, erottuminen
	hajautuneisuus
	ihmisten perustarpeet ei muutu miksikään
	markkinavuoropuhelu eli toimijoiden ja päättäjien kesken

Appendix 4. Ideas for PESTEC

TEKNOLOGINEN	virtuaalimaailma vahvasti läsnä
	virtuaalitodellisuus ja -kulutus
	ideoiden testaaminen
	kokeiluja
	kokeiluja
	yksilöllisemmät, räätälöidyt palvelut
	energiaomavaraisuus
	suunnittelu: helposti muokattavia
	näyttävät suunnitelluilta tiettyyn käyttötarkoitukseen
	liikepaikat menestyäkseen edellyttävät yksinkertaista toimivuutta
	robotit
	rakenettu ympäristö: 8-vuotiaalle turvallinen, 80-vuotiaalle esteetön
	teknologia
	showroom
	saavutettavuuden varmistaminen
	tavaroiden ja palveluiden vaihtaminen ja vuokraaminen, alustatalous
	houkuttelee olemaan ja viettämään aikaa
	toimijoiden määrä kasvaa; digitalisaatio
	liikkuvat liiketilat
	pysyvät (liiketilat) luovat lisäarvoa -> yhteisöllisyys

Appendix 4. Ideas for PESTEC

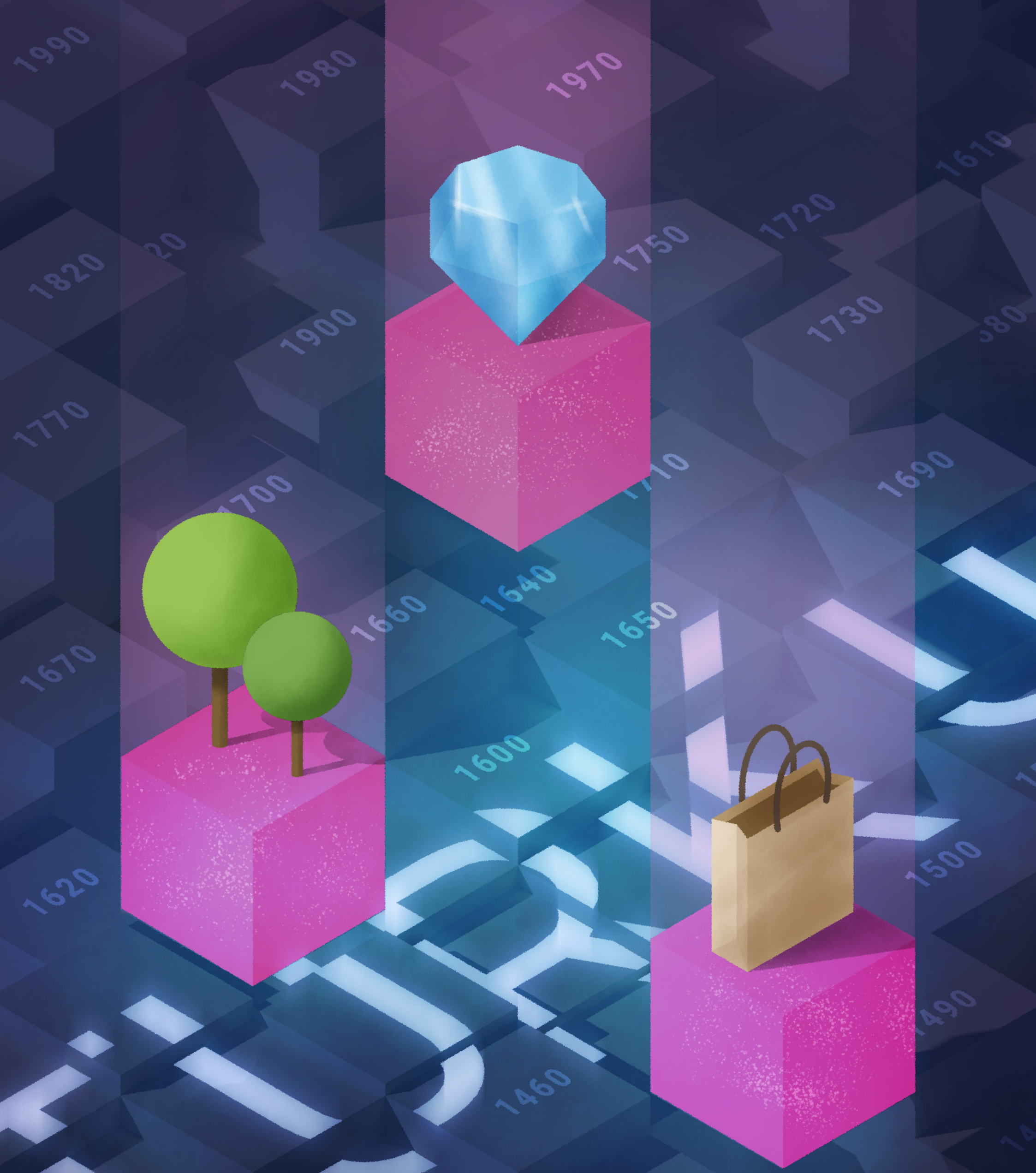
YMPÄRISTÖ	joustavat tilat
	joustavuutta
	joustavat tilat
	toimialoja on yhdistynyt, enemmän tilaa ajanvietteelle
	hybridiratkaisut
	hybridit
	palvelutaloja
	co-working tilaa
	toimijat: useita palveluja saman katon alla
	toimijoita: useita erilaisia toimijoita
	helppous, toimintojen monipuolisuus
	vaihtelevat käyttötarkoitukset
	muuntojoustavat monikäyttöiset tilat
	päättäjien luotava esim. kaavoitukseen väljempää raamia
	liikepaikka saavutettavissa kaikilla liikkumavälineillä
	liikkumisen helppous
	helppo saavutettavuus, asioimisen helppous
	saavutettavuus
	lisää kävelyä
	hyvinvointia tukeva ympäristö
	meluton, hyvä ilmanlaatu
	siisteys, puhtaus
	tarpeeksi huolto ja wc-tiloja yleisölle
	laaja, viihtyisä kävelykeskusta
	viihtyisyys
	turvallisuus
	esteellisyys
	esteettömyys
	näyttävät houkuttelevilta
	houkutteleva, viihtyisä ympäristö

Appendix 4. Ideas for PESTEC

liikepaikat näyttävät tyylikkäiltä
vapaakaupunki
kustannustehokkuus ja kierrätettävyys, ekologisuus elinkaariajattelussa korostuu
ilmaiset nettipalautukset kielletty globaalisti
lentorajoitukset, matkailu ja tavarat
mahdollistava ympäristö mahdollistaa asioita, joita ei muuten voi toteuttaa
toimijat: verkkokauppojen näytöstilat
liikepaikoissa mukana verkkokaupan toimituspisteet
kaupan fyysinen tarve on vähentynyt merkittävästi
paikallisuuden lisääntyminen
palvelut verkosta siirtyvät myös osaksi kivijalkaa

Appendix 4. Ideas for PESTEC

KULTTUURI	kauppa näyttää houkuttelevalta, elämykselliseltä
	kokemus
	keskusta: showroom, keskustapalvelut, elämykset, ajankuluttaminen, kauppa netissä
	helppo ostaminen vs. elämyksellinen ostaminen
	ei-välttämättömyys tarvikkeiden osalta elämyksellisyys
	palveluita, elämyksiä
	laadukas rakennettu ympäristö aktivoi taidetta, elämyksiä ja tapahtumia
	liikepaikoissa mukana kulttuuri
	kulttuuripalvelut
	kulttuurihybridit
	kulttuuria monipuolisesti
	tapahtumia, taide, urheilu
	arvot
	yritys/liiketila brändi johon kuluttaja voi samaistua ja peilata omia arvojaan
	omaleimainen ja muista erottuva liiketila
	pienehköt, erikoistuneet toinen toistaan tukevat yksiköt
	monikulttuurinen
	toiminnallisuus
	kauppa seuraa ympäröivää kulttuuria
	vihreys, kasvit, vesi
	tunteita herättävä
	historia ja omaleimaisuus ympäristössä
	lähimatkailu-mentaliteetti lisääntyy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