

ECONOMIC RECOVERY IN FINLAND THROUGH URBAN ECONOMIC RESILIENCE BUILDING

Managing Adaptive Change in Heinola, Kotka and Salo

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Työn nimi TALOUELLINEN ELPYMINEN SUOMESSA PERUSTUEN TALOUDELLISEN RESILIENSSIN KEHITTÄMISEEN Muutosjohtaminen Heinolassa, Kotkassa ja Salossa		
Tutkinto Insinööri (YAMK)		
Tiivistelmä <p>Viime vuosina on lisääntynyt tietoisuus eri kaupunkien ja seutujen yhteiskuntataloudellisten ja ympäristöjen erojen merkityksestä eurooppalaisen talouden elvytyksen onnistumisessa. Maakohtaisen talouden elvyttäminen voidaan tulkita niiden toimenpiteiden summana, joilla eri kaupunkitaloudet ovat vastanneet kansainvälisen talouskriisin ja liike-elämän äkillisten rakennemuutosten seurauksiin, ja lisänneet omaa kestävyttään. Tämä tulkinta on kuitenkin teoreettisesta näkökulmasta monimutkainen, koska ei ole olemassa yhtä hyväksyttyä määritelmää kaupungin tai talouden kestävyydelle. Tämä tutkimus käsittelee Suomen talouden elvyttämistä laajemmin Heinolan, Kotkan ja Salon näkökulmasta, keskittyen näiden kaupunkien soveltamiin toimenpiteisiin. Nämä valitut esimerkit edustavat pieniä kaupunkeja, joista jokaiselle on aikanaan myönnetty määräaikainen asema äkillisenä rakennemuutosalueena. Tutkimuksessa sovelletaan kestävyden ekologista rakennetta, huomioimalla kaupunkitalouden kykyä muuttua jatkuvasti ympäristönsä tekijöiden vaikutuksesta. Tutkimuksessa hyödynnetään jatkuvan syklin mallirakennetta, jolla kuvataan Heinolan, Kotkan ja Salon talouden muutosten tapahtumasarjoja ja kaupunkien soveltamia ratkaisuja ja prosesseja 1.1.2008 alkaen. Tutkimuksessa myös huomioidaan yhteiskuntataloudelliset, sekä ympäristöjen erot kaupunkien välillä, hahmottamalla merkittäviä yhtäläisyyksiä ja eroja kaupunkien soveltamien toimenpiteiden ja mallien välillä. Muutoksia kaupunkitalouksien kestävydessä seurataan, pohtien myös kestävyden mahdollista jatkokehitystä tulevaisuudessa. Kaupunkikohtaisia talouden strategioita yhdistetään myös Suomen talouden elvyttämisen aihealueeseen, viitaten Invest in Finland:in järjestämään invest-in toimintaan, ja mahdollisten ulkomaalaisten sijoittajien asettamiin keskeisiin kriteereihin. Tulokset tukevat syklimallin käytännön sovellusta eri talouden muutosten kuvaamiseen. Tuloksissa on myös merkkejä vahvemmassa talousymmärryksestä esimerkkipaunungeissa, mikä tukee kestävyden lisääntymistä tulevaisuudessa.</p>		
Asiasanat Kaupungin kestävyys, talouden kehitys, Suomen talouden elvytys, äkillinen rakennemuutos, muutoksen syklimalli, invest-in toiminta		

Abstract

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Title of publication Economic Recovery in Finland Through Urban Economic Resilience Building Managing Adaptive Change in Heinola, Kotka and Salo		
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Abstract <p>Over recent years there is a growing awareness that the successful advancement of European economic recovery requires an understanding of regional and urban socio-economic and environmental diversity. National economic recovery can be interpreted as the combined sum of the methods used by individual urban economies to respond and build resilience to the effects of the global economic crisis and abrupt changes in business structures. The theoretical foundation behind this interpretation is, however, complicated by the lack of a universally acknowledged definition of resilience within an urban or economic framework. This study addresses the broader subject of economic recovery in Finland through the response measures used in Heinola, Kotka and Salo. Each case study represents a small town or city in Finland, which has previously received the designation of an Area of Abrupt Structural Change. The study applies the ecological framework for resilience, considering the ability of the urban economy to continuously adapt to external conditions. The framework of the adaptive cycle model is used to describe the sequence of economic events and processes used in Heinola, Kotka and Salo from 1.1.2008 onwards as parts of an ongoing cycle of change. Consideration is also given to socioeconomic and environmental diversity, by outlining key similarities and differences in the response methods and models used in each case study and reviewing how the level of urban resilience has changed and may continue to change in future. The urban economic strategies applied in the case studies are related to the subject of national economic recovery in Finland with reference to the investment promotion activities of Invest in Finland, and the core requirements of prospective foreign investors. The conclusions provide support for the practical application of the adaptive cycle model to describe individual economic events. The results also demonstrate key characteristics of greater economic understanding in the case study urban economies, which supports future resilience building.</p>		
Keywords Urban resilience, economic resilience, economic recovery in Finland, abrupt structural change, adaptive cycle model, investment promotion		

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1 INTRODUCTION

1.1 Economic Crisis and Resilience Theory

Europe has been experiencing a period of economic transition for the last 10 years, marked by the effects of the global economic crisis, and changes to traditional business structures. These effects have included the steady decline of many forms of traditional industry, coupled with the rapid emergence of digitalisation and new business models which challenge established practices and decision making. This transitional state has left many national, regional and local economies vulnerable to rapid structural change, through the scaling-back or total closure of businesses and the related socio-economic impacts of large-scale unemployment. Other economies, in turn, have managed to thrive, finding new opportunities for growth. While much of the European development policy and funding continues to be targeted towards wider regions and sectors, the overall picture is complex and fragmented. Over recent years, there has been a growing awareness that the successful advancement of European economic recovery does require an understanding of regional socioeconomic and environmental diversity, and the actions taken by urban economies (van Winden and de Carvalho, 2015).

Finland represents just one national economy in Europe, which has experienced a series of economic challenges over the past 10 years and has been classified by the OECD (2016) as a “weak economy”. The challenges facing the country are linked to the global economic crisis and structural changes in many focus industries. Finland has been especially affected by the declining paper industry and electronic exports, as well as a reduction of exports into neighbouring Russia, traditionally a significant market for Finnish products. The weak economy and rising unemployment have not yet affected overall societal inequality in Finland, which remains low. While this can be partially attributed to the comprehensive social benefit system which has mitigated social impacts in the short-term, the resulting costs and long-term sustainability of this welfare model will come into question, if the Finnish economy does not recover. A long-term solution is needed to address unemployment, an ageing population, and most significantly the void left by former cornerstones of Finnish industry, such as paper, to map a course of national economic growth.

Considering the solution for national economic recovery as a sum of the parts played by the development of individual urban and regional economies, the researcher aims to evaluate the issue of Finnish economic recovery through the lens of 3 case study urban economies; Heinola, Kotka and Salo. These are 3 small towns and cities in Finland, each with a respective population range between 19 000 and 57 000 and have unemployment rates

above the Finnish national average of 13.6% in December 2016 (Statistics Finland). Each town and city has been marked by rapid structural change through the loss of major employers in their traditional industrial focus areas over the past 10 years, and consequently the Finnish government has previously designated each of these urban economies as an area of abrupt structural change. Despite the challenges, each of the selected case study towns and cities is actively pursuing economic recovery and they are consequently witnessing signs of investment and growth in new fields. The researcher will present the argument that these 3 particular case studies each represent the model of an urban economic crossroads, where traditional thought processes and decisions are being actively revised, demonstrated by their respective economic recovery and priorities for securing future growth.

The theoretical foundation for the concept of an urban economy at the point of crossroads should be linked to resilience theory, but this can be challenging within an urban framework, specifically because there is no universally acknowledged agreement on the definition of resilience (Simmie and Martin, 2009). It has been argued, that resilience is the ability to recover successfully from a disturbance or shock, but there are conflicting views on whether this definition should be expanded to include resistance to an initial disturbance or shock. Simmie and Martin go on to question whether recovery within resilience should refer to the capacity to maintain integrity in the face of disturbance, or rather change successfully in response to a disturbance, a concept that is characteristic of ecological resilience. Within ecological resilience theory, it is maintained that an urban economy, through industry, technology, institutions and the workforce, has the ability to adapt to the pressures of external economic conditions and evolve to suit new opportunities. The researcher will support the further application of this approach in the present study, using the ecological framework of the adaptive cycle model to consider the urban economy within an ongoing chain of continuous readjustment. Similarly, the triple helix (3H) model will be used to evaluate the relationship between different internal sectors within each urban economy, namely governments and authorities, businesses, and knowledge institutions, such as universities.

1.2 Research Aims

Through the use of primary research, supported by relevant secondary literature, the researcher aims to outline and review the respective structural change, economic recovery, and resilience building in the 3 selected case study towns and cities in Finland, using the adaptive cycle and triple helix models as theoretical reference points. In using the theoretical foundation of ecological resilience and panarchy theory, the researcher recognises the

possible case-specific variations between those external and internal factors and pressures which have shaped the urban economic structures of Heinola, Kotka and Salo, and how these may complicate the accurate assessment of resilience in these 3 cases. Taking these into consideration, the researcher is not attempting to critically evaluate the individual decisions made, or methods used, to manage structural change and pursue economic growth in each case study, nor to outline a single, correct method of resilience building. Instead, the researcher is proposing to contrast the individual case study examples, which share the common variables of abrupt structural change and high unemployment, to try to identify recurring themes and patterns, as well as key differences. The researcher will also be widening the scope of the research to consider the future potential and priorities of each case study for achieving economic growth, through the lens of national investment promotion in Finland, and the criteria of prospective foreign investors, when considering new locations.

1.3 Chosen Research Questions

Based on the chosen case study urban economies, and use of primary and secondary research, the researcher has selected the following 5 research questions as the foundation for the present study.

1. Support the application of panarchy theory in urban economic resilience, by using the adaptive cycle model to categorise the major economic changes which have occurred in each case study town and city from 1.1.2008 onwards.
2. Outline the methods used to manage abrupt structural change and pursue economic growth in each case study town and city, and identify recurring themes and patterns, and the key differences.
3. Review how the level of resilience has changed, and could change in future, in each case study town and city, with reference to past stages of the adaptive cycle and the methods used to manage structural change and pursue economic growth.
4. Consider the potential for overcoming economic transition on an urban level by reviewing the future focus areas and priorities for each case study town and city, through the perspective of national investment promotion in Finland.
5. Using the 3H model as a reference framework, identify examples of the model being used in each case study town, and possible other opportunities for its application in future.

The 5 research questions outlined above are linked to a specific timeframe, from 1.1.2008 onwards. This is an attempt to limit the scope of the study to the designated periods of

abrupt structural change in each case study town or city, which began in, or after 2008, as well as the backdrop of the global economic crisis, which began slightly earlier, in 2007. The researcher does recognise that within the context of changing business structures, strategies and planning, there can potentially be significant causal factors, patterns or drivers which originate from before 1.1.2008. Where relevant to the later structural changes occurring after 1.1.2008, the researcher will also include background information from before the study timeframe.

Through the present study, the researcher proposes to not only support the application of ecological panarchy theory in addressing urban economic resilience, but also contribute to discussion surrounding the wider issues of economic recovery in Finland and achieving the Europe 2020 goals, through a critical analysis of how the key challenges are being addressed on an urban, rather than national level.

2 BACKGROUND AND LITERATURE REVIEW

2.1 Changes on a European Level

In the following chapter, the researcher will outline the broader subject area and the relevant literature which form the overall context of the study. Attention will first be given to the geographical focus, to form a concise overview of the wider economic landscape of the European Union (EU) and the implementation of economic recovery through the Europe 2020 strategy. Consideration will also be given to the economic development of Finland, and the specific challenges facing the Finnish economy. This is to be done with reference to key external factors which have shaped developments on an urban level. The researcher will then move on to review the relevant secondary research which has contributed to recent theoretical debate on urban resilience and economic recovery. In line with the research aims of the present study, attention will be focused on the academic arguments which support the application of an ecological framework within resilience theory, and how the example of the adaptive cycle model can be utilised as a scale to assess economic progress and decline in an urban environment, with reference to specific international case studies. The final part of the evaluation will look to the future, concentrating on the triple helix model, and how this can be used to support economic resilience in the planning process, with consideration of the key strengths and challenges associated with its practical application.

Changes Affecting the European Economy

To begin to understand how the local economies of small towns and cities in Finland have been shaped by external factors, it is important to first understand the present situation in Europe, and the changes which are affecting the economies of the EU member states. Since the summer of 2007, the global economy has been facing the worst recession since the Great Depression of the 1930's. In the February 2017 Economic Forecast, the European Commission finds the European economy at a juncture, simultaneously displaying signs of growing resilience, as well as high uncertainty. Retrospectively, the 2016 financial year displayed encouraging signs of moderate economic growth and the creation of new jobs, while the European GDP recovered to the level prior to the 2008 global economic crisis. However, the Economic Forecast also points out that this growth has been aided by factors including low commodity prices and the low exchange rate of the Euro, and the European Commission go on to question the long-term sustainability of present economic recovery, so long as investment continues to remain low within the European economy. Among other factors, the economic, political and security landscapes of Europe in 2016

were also marked by uncertainty surrounding the outcomes of elections in a number of European countries, a series of terrorist attacks in major European cities, potential changes in US economic policy, and the decision of the UK to leave the EU.

The Europe 2020 Strategy

The EU itself, is presently in the process of implementing the 10-year Europe 2020 strategy as a means of securing economic growth across all member states and combating the structural constraints which are hindering the development of competitive skills, well-being, and social inclusion among EU citizens (European Commission, 2010). The specific goals for 2020 include ensuring that 75% of all 20- to 65-year-olds across all EU member nations are in employment, and 20 million less EU citizens are experiencing or facing poverty or other forms of social exclusion. Additionally, the strategy is seeking to ensure that a target level of 3% of the total GDP of the EU is invested towards research and development (R&D), and at least 40% of all 30- to 34-year-olds will have completed higher education degrees. Europe 2020 is defined by the European Commission as a reference framework, with which to coordinate the responses that will further economic recovery, as well as EU decision-making regarding budget and regulation. The framework exists not only to guide EU level decision-making, but also acts as a reference for national- and regional-level activity, further illustrating the importance and connectedness of each level in meeting the set targets. The 2016 Eurostat Report was compiled as part of a series of tools to assess the progress being made across the EU member states, and to provide statistical support for pursuing the present strategy.

Addressing Unemployment Across the EU

While the strategy includes 8 targets, the researcher will pay closer attention to those specific Europe 2020 targets already mentioned, for the purpose of conciseness and their relevance to this particular study. The first progress assessment in the Eurostat Report relates to employment, which continues to be a significant challenge across EU member states, despite signs of positive change over the recent years. Significantly, the employment rate for 20-to 65-year-olds was growing steadily prior to the global economic crisis and reached the record level of 70.3% across EU member states in 2008. The impacts of the global economic crisis resulted in a shrinking labour market and the employment rate fell rapidly up until 2013. The report figures would suggest a change in this pattern, as the employment rate rose consecutively for 2 years, to 69.2% in 2014 and on to 70.1% in 2015. While the employment rate is close to the 2008 level, and 4.9 percentage points away from the 2020 target, the Eurostat report maintains caution, citing demographic factors which continue to pose challenges. These factors include unequal access to jobs

across the EU, particularly affecting vulnerable social groups such as 55- to 65-year-olds, those without educational qualifications, and those citizens who are of non-EU origin. Equally significant is the long-term challenge posed by a steadily shrinking labour force across the EU, the result of ageing populations coupled with low birth rates. The report emphasises the importance of resolving these employment challenges as a key part of EU decision-making and ultimately reinforcing the living standards for all citizens of member states. The solution is also seen as a sum of parts, with employment sustainability reinforced through social inclusion, education and successful R&D.

Addressing Social Inclusion, Education and R&D Across the EU

The Eurostat 2016 report figures for social inclusion, education and R&D display encouraging developments in each area. Between 2008 and 2014, the respective percentage of GDP spent on R&D rose from 1.85% to 2.03%. In the further analysis of this growth, Eurostat concludes that the slight rise reflects a wider EU initiative to support economic growth across the union by increasing public investment in new innovations, while the level of growth is also partially distorted by the shrinkage of the EU GDP during the financial crisis. Other positively contributing factors have been the rapid growth of 25.5% in the number of tertiary-level science and technology graduates between 2008 and 2014, and increasing internet coverage across member states, which reached 95% of all businesses and 80% of households by 2015. Despite the positive developments, the Eurostat analysis remains critical of the insufficient level of digital skills within society, and the under-representation of women in the science and technology sectors, as well as increasing international competition from outside of Europe. The report stresses the necessity for further combined public and private investment in order to reach the 2020 target of 3% of GDP expenditure allocated towards R&D.

The Eurostat report concludes that good progress has occurred in educational attainment, where the overall percentage of both male and female 18- to 24-year-olds who have not proceeded academically beyond lower secondary education has decreased from 14.7% in 2008 to 11.0% in 2015. Coupled with this trend is an increase in the overall percentage of male and female 30- to 34-year-olds who have completed tertiary-level education, rising from 31.1% in 2008 to 38.7% in 2015, in keeping with the target level of 40% by 2020. While favourable overall trends have occurred, Eurostat also highlight areas of concern, specifically growing disparity in educational attainment between men and women, and between native citizens and migrants. Considering this with reference to the 2020 target, female 30- to 34-year-olds across EU member states already achieved the tertiary-level education target of 40% in 2012, while the equivalent percentage of male students with

tertiary level education remained 34% in 2015. Among migrants, the respective share of students who have not proceeded with their studies beyond lower secondary education was 19% in 2015, compared with 11% among native citizens.

Disparities in education tie in closely with the issue of social exclusion, where the Eurostat findings closely reflect the impact of the wider global economic crisis and consequent economic recessions within EU member states. The report figures illustrate a rapid increase in the number of EU citizens living at risk of poverty or social exclusion from 118 million in 2010 to 124 million in 2012, and then steadily falling to 122 million by 2014. Eurostat expands on the criteria used for assessment in 2014, with the risk of monetary poverty affecting approximately 17% of all EU citizens, severe material deprivation affecting 9% of all EU citizens, and 11% of all EU citizens living in households with very low work intensity. When highlighting the societal groups at most risk of any of the above-mentioned aspects of poverty, Eurostat lists young citizens, those unemployed and inactive, single-person households, single parents, citizens living in rural locations, migrants from outside the EU, and those with low educational attainment. According to the report, developments within each aspect of poverty remain inconsistent, and in 2014 there remained a gap of 25 million to achieving to the 2020 target.

2.2 Changes in the ICT Sector

In the Harvard University analysis (2014) on the economic crisis facing Europe, the point is raised, that knowledge-based specialisation, which represents a key economic focus area for northern European countries, in sectors including product design, finance and specialised manufacturing, generally acts as a safeguard to make these countries more resilient to economic downturns. Knowledge-based specialisation, however, is vulnerable to the effects of an ongoing “digital recession”, defined by Chakravorti and Chaturvedi as a growing disparity between countries in their respective levels of high-technology innovation and evolution (Harvard Business Review, 2015). Harvard University compiled a Digital Evolution Index to assess levels of digital advancement in 50 countries globally between 2008 and 2013, and 8 of the 9 lowest positions were occupied by EU members, including northern member states Finland, Germany, the Netherlands, the United Kingdom and Sweden. According to the Index measurements, the low placings indicate a distinct lack of momentum in technological development, which in turn compromises the overall suitability of the local digital economy for fostering new start-up companies attempting to compete globally. Chakravorti and Chaturvedi attribute this technological stalling to the concept of globalisation in the internet era, with both China and the USA overtaking European countries in recent years.

Changes Affecting the Finnish Economy

The low position of Finland, an early forerunner in mobile phone technology, within the Digital Evolution Index is remarkable, as noted by Chakravorti and Chaturvedi, and partially reflects the wider economic challenges currently facing the country. The Finnish economy has been equally affected by the global recession, but this represents just part of the problem. Finland has experienced a series of setbacks over the past 10 years, resulting in what the OECD, in their January 2016 Economic Survey, classifies as a “weak economy” with rising public debt. Looking back to the causal factors, The Economist magazine ran an article in February 2016 on the stalled Finnish economy, in which Governor of the Finnish Central Bank, Erkki Liikanen, attributed the present economic state to 4 key factors. Firstly, the role of Nokia as once market-leader in the mobile phone industry was instrumental in driving the Finnish economy, but internal problems faced by the company, and a declining market position in the smartphone era have had a resultant effect on the entire country. The second factor relates back to overall competitiveness, as rising salaries amidst declining economic output has resulted in labour costs which Liikanen estimates to be 10-15% above those of Finland’s trading partners. The third factor is societal, as Finland has a rapidly ageing population, with the number of 15-64-year-olds shrinking by approximately 0.5% annually. The Economist refers to Markku Kotilainen of economic think-tank Research Institute of the Finnish Economy (ETLA), who estimates that the declining younger population has halved potential growth from 3% before the global economic recession to just 1.5% in 2016. The final factor relates to the economic and political circumstances surrounding Russia, traditionally one of Finland’s most significant trading partners. The combination of trade sanctions and Russia’s own domestic economic crisis have seen Finnish exports to Russia drop rapidly from 10% in 2012 to 5.8% in 2016.

OECD Economic Survey Results

The OECD Economic Survey expands on Liikanen’s points, to also mention the significance of the overall decline of Finnish exports of electronics and paper, traditionally strong industrial sectors in the export-dependent Finnish economy. This is coupled with a low level of start-up creation and growth of new, emerging companies, as well as limited cooperation between businesses and knowledge institutions, such as universities. The OECD go on to address the social dimensions of the problem, which are not limited to the ageing population. Finland has been able to maintain a high level of personal wellbeing for its citizens in the face of the declining economy, thanks to a comprehensive social welfare system, which incorporates education, healthcare, environmental quality and personal security. Housing conditions are above the OECD average, and income inequality is among

the lowest in the OECD. The system has offset the short-term social effects of the weak economy, and rising unemployment among Finns, but maintaining the current level of welfare in the face of a shrinking workforce and economic decline, is proving increasingly challenging for the Finnish Government. The OECD highlights that in 2015, the general government deficit was already above 3% of the Finnish GDP, while gross debt was 60% of the GDP, which is the highest among the OECD members. The lack of economic growth is undermining the long-term sustainability of maintaining the costly benefit system.

The OECD also raise the issue of necessary structural reform within the existing benefit system, criticising the current model for discouraging labour market flexibility and consequently reinforcing societal barriers against economic growth. Among the key issues highlighted in the survey, are firstly the existing parental leave and homecare allowances granted by the Finnish government, which the OECD argues discourages participation in the labour force among women with children, affecting their career prospects and reinforcing a gender-based difference in salaries. Secondly, present unemployment benefits are deemed by the OECD as too generous, to the point where they discourage active job searches, and ultimately prolong periods of unemployment. This in turn reinforces social and income inequality among citizens. Closely tied to the unemployment benefits, is the option for early retirement, which the OECD argues, is granted too easily to citizens following periods of prolonged unemployment. The final point raised by the OECD relates back to the standard of education, which although regarded to be among the top 20% of OECD members, currently favours qualifications with a narrow academic focus. This, combined with a lack of certain fundamental skills within vocational education, can reduce mobility within the work force in the face of industrial change and reform, particularly among low-skilled workers, who can be left without access to employment.

Early Economic Specialisation in Finland

Referring back to Harvard University's Digital Evolution Index, it is important to also understand the significance of Finland's strong economic development prior to the global economic crisis, to fully recognise how the country's advanced technological specialisation has lost momentum. During the 1990's, Finland was still experiencing what Hirvonen calls the "ICT Miracle", as a prime example of an internationally advanced digital economy (ECFIN Country Focus, 2004). This was the result, Hirvonen argues, of multiple factors, through a lengthy, combined institutional, organisational and societal development process which began back in the 1980's. While there was no wider master plan to coordinate development, public sector authorities and decision making generally favoured the

advancement of the ICT sector. The shift of focus to information technology happened early in the 1980's, and the Science and Technology Planning Council was founded in 1986, with the aim of co-ordinating innovation and policy-making between government, industry, science and labour stakeholders. Equally significant, was the founding of Tekes, the National Technology Agent, to provide support and create networks for new emerging ICT companies.

While the focus of the Finnish economy fostered growing technological expertise and supported R&D investment and private and public-sector networking to levels that were internationally competitive, Hirvonen goes on to underline the key turning point that was the early liberalisation of the Finnish telecom markets in 1994. Without the confines of the state monopoly, the telecommunication markets became highly competitive, which in turn drove down prices and created new mass markets for telecommunications. This proved highly advantageous for technology sector innovation, as the growing market became a living laboratory in which new products could be tested. Hirvonen points out the significance, that the liberalisation of the telecommunication market came at the same year that Finland joined the EU, for the liberalisation of capital markets resulted in a rapid increase in access to risk finance in Finland. The access to risk capital was instrumental in providing small and medium-sized companies in the ICT sector with the necessary means to grow beyond the Finnish market and expand their operations on an international scale.

In his 2013 autobiography, former managing director of Nokia, Jorma Ollila, raises points which support Hirvonen's argument, stressing the importance of the decision of the Bank of Finland to allow foreign capital investment from 1984, both for Nokia, and for the wider Finnish economy. Prior to this, Ollila describes Finland as a highly regulated, and closed, economy, where access to foreign capital was strictly limited by the Bank of Finland, and the devaluation of the Finnish Mark, the currency at the time, was used as a means of supporting the economy in times of crisis. The Finnish Mark was indeed devalued on no less than 7 occasions in the post-war years, in 1949, 1957, 1967, 1977, 1978, 1982 and 1991. Ollila goes on to point out that while devaluation benefitted Finnish exports, which were long dominated by forestry, the consequences were felt by industry sectors dependent on imported materials, and particularly Finnish citizens, who were forced to pay higher prices for foreign products. The sudden influx of foreign capital transformed the Finnish economy, creating a foundation for corporate investment and consumer spending.

The Role of Nokia within the Finnish Economy

Finland experienced an economic recession in the early 1990's, which significantly affected employment figures in the country. Despite this, Hirvonen points out relatively high

employment growth in the overall ICT sector in Finland over the period of the recession, and particularly in telecommunications. Telecommunications operators were forced to restructure their operations in the face of newly liberalised market conditions, which brought on an advent of new digital, automated systems, ultimately translating into job losses. Nokia, conversely, was rapidly shifting their corporate focus to telecommunications over the same period, and were in need of qualified personnel, which created steady employment growth to offset the job losses experienced by operators. Citing statistics compiled by ETLA, Hirvonen further quantifies the significance of Nokia's role in the Finnish economy between 1992 and 2000 by also considering the parameters of export growth, relative percentage of GDP, and R&D expenditure. The average growth of Finnish exports of radio, television and communication equipment, of which Nokia was a major manufacturer, was above 37% annually up to the year 2000, when these represented 22.6% of the total value of Finnish exports. At its peak in 2000, Nokia alone represented 3.1% of the total Finnish GDP, and constituted 1.6 percentage points of the total GDP growth of 5.1%. Significantly, Nokia maintained a close commitment to the Finnish labour market between 1992 and 2000, despite rapid market growth internationally. ETLA, cited by Hirvonen, estimated that in 2001, approximately 54% of Nokia's total R&D was still being conducted in Finland. Similarly, when considering R&D expenditure, ETLA estimated that Nokia accounted for 50% of business sector R&D expenditure, and 35% of total R&D expenditure in Finland in 2003.

Changing ICT Market Conditions

Hirvonen makes his final point by addressing changing market conditions between the years 2000 and 2004, and specifically a shift in the fortunes of Nokia, and the resulting effect on the entire ICT sector in Finland. Attributing this change to both to a global economic downturn, and market saturation in western countries, Finnish exports of consumer electronics fell by 8% between 2000 and 2003. The shift is also reflected in the relative percentage share of consumer electronics of the total value of exports, which fell from 22.6% in 2000 to 18.6% in 2003. Nokia's own contribution to overall GDP growth in Finland was down to -0.1 percentage points in 2003 (ETLA, cited by Hirvonen). Nokia's own network of partners and sub-contractors had approximately 15 000 employees in 2003, while R&D expenditure in Finland was reduced to 45% in 2003, as the company expanded increasingly outside of Finland.

The researcher recognises, that while Hirvonen's points are from 2004, they remain relevant to the point of the present study, as they provide an important understanding of the direction of economic growth in Finland well into the early 2000's, and offer further

consideration of the early signs of economic transition, which have later come to mark a change in the country's economic fortunes. Specifically, Hirvonen already makes references to the effects of increasing global competition within the ICT sector back in 2004. While underlining the importance of early decision-making and the overall business climate in creating optimal conditions for a successful ICT sector in Finland up to the year 2000, Hirvonen also addresses the price sensitivity of the industry, with countries such as Estonia and China being able to offer lower labour and production costs. As ICT companies shift their production outside of Finland to lower their costs, Finland has been left with increasing challenges to maintain domestic R&D and ICT production in the face of more aggressive competition. Hirvonen argued in 2004, that it is essential that the Finnish government continues to ensure that future economic and industrial decision-making supports R&D and growth, as Finland's competitive advantage lies in its knowledge base and use of the newest technology.

2.3 Structural Reforms in Finland

In light of the present economic situation in Finland, 14 years later, it is important to consider the necessary responses to ensuring economic recovery. The OECD Economic Survey underlines the necessity for structural reforms in Finland, which need to target 3 key areas; specifically, competitiveness, productivity and employment. In May 2015, the Finnish Government released its Strategic Programme as a guideline for economic development up to 2025, which builds on many of the same arguments presented by the OECD. The Strategic Programme pays close attention to the current crisis, highlighting stalled economic growth, and weakening exports and overall competitiveness, in relation to Finland's competing economies. Specifically, the OECD survey cites increasing international competition, as well as the rise of digital media, which has reduced international demand for paper. Simultaneously Nokia has fallen behind in what the OECD refer to as the "smartphone revolution". The Strategic Programme also recognises the effects of the ongoing "digital recession", as addressed in Chakravorti and Chaturvedi's article, maintaining that the country's knowledge base is not being channelled effectively into new ideas, or adequately capitalising on innovations.

Tax Reform in Finland

With regards to causal factors, the Strategic Programme makes allowances for external geopolitical factors which have impacted on the Finnish economy, including the ongoing armed crisis in Ukraine, and the deteriorating relationship between the EU and Russia, but stresses the significance of internal bureaucracy in hindering economic progress and

creativity. The OECD Economic Survey highlights that Finland maintains one of the highest taxation rates within the OECD, which is essential for maintaining the existing benefit system, but raises the question of whether the tax rates are disadvantageous for businesses, particularly in relation to labour costs. This point is addressed within the Strategic Programme, and the outlined Tax Programme specifies a cap on earned income tax for the duration of the government term, as well as the overall lowering of labour taxes, to foster both employment and entrepreneurship. To support the latter, and the creation of new businesses, further improvements will include controls to keep corporate income tax at a level that is competitive, as well as entrepreneur deductions and settlement initiatives for value added tax on small, non-limited companies. The changes specified in the programme follow an ongoing revision of the Finnish tax system, and the OECD also note that the overall direction of tax reform over recent years has been conducive for supporting economic growth.

Raising the Employment Rate in Finland

Following taxation, the OECD Economic Survey moves on to discuss the issue of employment, referring to an earlier target set by the Finnish Government in 2015, to raise the employment rate in the country from 68% to 72% by 2019. The OECD is critical of the proposition, deeming the goal of 2019 as unobtainable with a nationwide unemployment rate of 9% in 2015 and a steadily ageing population. According to the OECD, the necessary foundation for securing long-term employment growth can be achieved, if existing labour policies are reformed to encourage the faster entry of young citizens into the labour market, coupled with extended working careers for older citizens. In addition, the OECD specifies the need for promoting work-based immigration, improving work incentives, and particularly activating the unemployed, and female citizens who are in a child-bearing age. Within the Strategic Programme, the factors outlined by the OECD are addressed in relation to the proposed reforms being introduced to the benefit system. A significant example of this is the removal of so-called benefit traps, by reducing periods of unemployment, and ensuring more cost-efficient public spending. This will require the enforcement of more stringent measures to ensure that those presently unemployed accept available job positions, while further amendments will be made to synchronise wages and social security contributions, as well as unemployment benefit payment, to ensure necessary savings for the government.

Educational Reform in Finland

The OECD Economic Survey raises two significant arguments, that existing vocational education degrees need to be more varied to provide students with the necessary tools to

adapt to a changing labour market, while steps also need to be taken to speed up both course entry and graduation within higher education degrees, as present degree completion rate is below the OECD average. As part of this latter argument, the survey stresses that shorter graduation times will provide more efficient use of available study places, and to support this, the survey makes references to two proposed initiatives presented by the Finnish Prime Minister's Office in 2015. The first initiative would address vocational education, by giving students more flexibility to change their educational paths, as well as working to lessen financial pressures associated with apprenticeship schemes. Secondly, the completion of tertiary-level education degrees could be aided with the proposed introduction of a national joint application process and improving existing student support. The government also proposes to support a gradual shift in qualification requirements in the public sector, which would lower existing requirements in many jobs which traditionally require a Master's-level degree, to enable job entry for candidates with the equivalent of a Bachelor's-level degree.

Reforms to vocational, and tertiary-level education form a central part of the 10-year education goals set in the Strategic Programme for 2025, and the Finnish Government underlines the importance of active cooperation between education institutions and employers, as well as methods to make existing degree courses more efficient and flexible. These amendments constitute an immediate response to many of the education-related concerns highlighted in the OECD survey, but the objectives set by the Finnish Government also give considerable attention to the reform and modernisation of the actual learning environments. According to the programme, this new approach is taken with the future knowledge base of the nation in mind, and specifically entails the introduction of digital study environments and pedagogical teaching techniques, which can accommodate variations in learning styles, to improve overall academic success and tackle disparities among learning outcomes in individuals.

Bureaucratic Reform in Finland

The OECD survey also raises the issue of excessive regulations as a barrier against entrepreneurship, arguing that this ultimately compromises long-term productivity, competitive advantage and standards of living in Finland. While agreeing that significant improvements were made to regulations concerning merger control, damage compensation and corporate whistle-blowing procedures as part of the 2011 Competition Act, the OECD survey points to specific industry sectors which remain heavily regulated, including retail, construction, road and rail transport, and land-use planning as notable examples. The survey points out that the overall low population density in Finland contributes to the absence

of industrial competition in many of the regions. The initial steps towards the long-term solution can be seen, according to the OECD, in the revisions made as part of the 2011 Competition Act, and the extension of the powers granted to the Competition Authority. The 2012 Economic Survey, however, already found land-use constraints to be a factor affecting planning in retail, presenting the case that further efforts are still required to amend existing regulations within the industries highlighted in the survey. As another significant example of this, the OECD refer to the failed 2014 proposal made to the Finnish Parliament, which called for the revision of the existing land-use and building act. The proposal was rejected by the Competition Authority, on grounds that suggested amendments did not sufficiently allow for competition objectives.

Returning to the subject of technical innovation and entrepreneurship within the ongoing digital recession in Finland, Chakravorti and Chaturvedi argue that part of the solution lies in encouraging active entrepreneurship and supporting new technology start-ups, as well as public and private sector investment in R&D. Chakravorti and Chaturvedi cite expenditure figures from the June 2015 McKinsey Global Institute report, which illustrate that 2% of the European GDP was spent on R&D, compared with 2.8% in the USA, while European private sector investment was only 1.3%, in comparison with 1.8% in the USA, 2.6% in Japan, and 2.7% in South Korea. Chakravorti and Chaturvedi also refer to bureaucratic boundaries as a major barrier for developing successful e-commerce but present this as a European-level problem. The electronic flow of goods and content are subject to differing languages and fragmented national telecommunications, logistics and payment solutions, while content is overseen by up to 250 different collective management organisations. According to Chakravorti and Chaturvedi, the current organisational structures would require adjustment and simplification on the regulatory level, to support a more streamlined, and unified approach to digital commerce, more equivalent to that of the USA.

Finnish Government and EU Responses

On the national level, the Finnish Government Strategic Programme outlines the response to concerns raised by the OECD and authors Chakravorti and Chaturvedi, in which it seeks to make strategic changes to the conditions for both current businesses and new entrepreneurs. Looking beyond the changes being made to government tax policy, the government also proposes to amend existing legislation and open up formerly regulated sectors to competition. Among the specific examples given within the programme, are the strategically important liberalisation of business hours for the retail industry, new rapid processing of licensing applications for larger industrial projects, and notification procedures to speed up processing within routine licensing issues. Additionally, the government

seeks to strengthen the Team Finland network, to further extend the degree of cooperation between different stakeholders and adopt an approach that fosters new development initiatives, in an attempt to secure investment. Where Chakravorti and Chaturvedi stress the importance of financial support, the Finnish Government also outlines their commitment to improve available financing for businesses. This strategy is targeted towards the shifting requirements of the market and will involve the active promotion of capital investment in financing business. This will make use of the new growth fund instruments provided by the EU by supporting the creation of new business development funds, and specifically the government will start a new FoF Growth III Fund together with pension institutions in Finland. Government returns on the new fund will be surrendered and channelled towards fellow investors.

Returning to the overall Europe 2020 targets outlined earlier within the chapter, the EU is presently implementing its own “Sustainable growth and jobs 2014-2020 – Finland's structural funds programme” to support the EU-level target initiatives on a national level, as well as those initiatives outlined in the Strategic Programme of the Finnish Government. The programme outlines specific national goals, the first being to raise the respective percentage share of research and innovation (R&I) investment of total GDP from 3.73% to 4% by 2020. Secondly, the programme aims to provide support for up to 5 600 small- to medium-sized enterprises, in an attempt to foster new business ventures built on regional strengths and knowledge. The programme also proposes to help create up to 12 700 new jobs and renewed skills for the workforce, increase the percentage of renewable energy usage from 33% to 38% by 2020, and foster youth employment and social inclusion. Funding for the initiative is being provided through the European Regional Development Funds (ERDF) and European Social Fund, worth approximately 1.3 billion euros, under the investment package for domestic growth and jobs.

2.4 The Urban Dimension and Resilience Theory Approach

Having developed an understanding of the key problems affecting the wider EU economy and the Finnish economy specifically, along with national-level responses currently in progress, it is important to draw attention to a significant shift in attitudes occurring on the EU level with regard to economic transition. Authors van Winden and de Carvalho (2015) use their article for the Urban Development Network Programme (URBACT), to demonstrate an increasing recognition of the importance of the urban level in decision making regarding the strengthening of the national and regional economies. Authors van Winden and de Carvalho make references to the Europe 2020 targets, which, they argue, entail decisions and investments which impact directly on urban economies, but the policies behind these

decisions are made with regions or sectors in mind, rather than towns and cities. This reflects what van Winden and de Carvalho describe as a wider ambiguity traditionally surrounding the urban dimension of EU policy, and the allocation of EU funds. A failure to take specific urban economic dynamics and stakeholders into account, they continue, will result in inefficient use of resources, and undermines the success of overall recovery strategies.

With regard to funding, van Winden and de Carvalho argue that traditionally the management of financial assets occurs at the higher administration levels, with limited direct allocation towards urban development. A revision of article 7 surrounding the ERDF has presently set the allocation level of funds towards urban development at 5%. This criticism stems from a new understanding of how wider economic, political, social, technological and environmental trends are shaping individual towns and cities, specifically in areas affecting growth potential, funding, economic prosperity and creation of value, and re-thinking established business organisation to access new opportunities and adapt to the decline occurring in traditional industry sectors. The authors van Winden and de Carvalho describe this as an “indigenous approach”, which builds on the strengths and opportunities unique to each town and activates the key stakeholders to engage in specialisation processes.

The growing recognition of this indigenous approach on the EU level, is increasingly evident in new European and urban decision-making (McCann, 2015, cited by van Winden and de Carvalho). The European Commission already requires regions to develop their own Smart Specialisation Strategy (S3) to be eligible for the ERDF. The S3 model is based on what van Winden and de Carvalho describe as “entrepreneurial discovery”, aimed at linking traditional areas of strength within each region, with new opportunities for economic growth. The model requires both active cooperation between the major stakeholders, including authorities, businesses and knowledge institutions to find the most suitable options for local specialisation, and the active reviewing of urban policy. Breaking away from traditional models of fixed industrial sectors, the S3 strategy also encourages flexible interaction between stakeholders, grouped around economic “themes”, such as urban green solutions or health and wellbeing. The authors van Winden and de Carvalho stress that the full potential of S3 strategies within urban economic renewal is still to be fully realised, with many present S3 strategies still coordinated between national and regional-level authorities and individual businesses and universities, without active involvement from local authorities. Referring to the outcome of the 2013 European Commission study into 50 ERDF-funded good practices within European cities, van Winden and de Carvalho cite specific examples that demonstrate that local economic development

schemes, when executed successfully, can positively reinforce the wider economy. They emphasise that the foundation for including local authorities in this strategic cooperation already exists within the triple helix model, a theoretical model which the researcher will address later in this chapter.

Defining Urban Resilience

Authors van Winden and de Carvalho go on to highlight the key challenges which face urban environments, in linking the specific strengths and assets found within individual cities to the right opportunities for development, as well as building effective networks between stakeholders. This entails a capacity to not only cope with the decline and closure of traditional industry, but also harness the potential for adapting traditions and creative thought. This idea of towns, cities and regions reacting and adapting to the adverse pressures of external disturbances ties into the concept of resilience, for which there is no universally accepted definition within an economic, social or urban framework (Simmie and Martin, 2009). According to Simmie and Martin, the problem with definition lies partly in the scientific disagreement regarding the mechanics of resilience. The authors cite multiple interpretations (Foster, 2007, and Hill, 2008), which support the common argument, that resilience in an urban framework entails the successful response and recovery of an urban environment to an external shock or disturbance. The scientific disagreement lies partially in determining to what degree resilience incorporates actual resistance to shocks in the first place. Simmie and Martin go on to also question whether resilience within the urban environment is evident in the ability of the urban economy to maintain its structure when faced with external pressures, as opposed to its ability to adapt and change its structure.

Economic Development Within Ecological Resilience Theory

Simmie and Martin go on to place this difference of interpretation within the literary context of engineering resilience as opposed to ecological resilience. While the former advocates a theory of an equilibrium path, to which an economy would eventually restore itself following a shock, the ecological approach assesses whether a shock will eventually push an economy into a new direction. With a fixed equilibrium point as a reference, the engineering approach uses time as a variable to measure when an urban economy has reverted to its state prior to a disturbance. However, without allowance for change and evolution within the urban environment, Simmie and Martin argue that the engineering approach contradicts the notion of economic development. Further supporting this argument is the evolutionary interpretation by Batty et al. (2004, cited by Drobniak, 2012) of the city as a complex network of adaptive systems, where evolution is a continuous state brought on by both external factors and the indigenous interactions between internal parties.

Citing authors Holling (1973) and McGlade et al. (2006), Simmie and Martin propose that the idea of ecological resilience measures the level of disturbance required to alter the structure of a system, and therefore is consistent with the notion of an environmental adaption. This does not, however, mean to suggest that the more disturbances a system can withstand would make the system more resilient. To truly differentiate the scientific approaches to both ecological and engineering resilience, Simmie and Martin draw attention to the importance of interpretation. The ecological approach entails not only that resilience is measured in terms of how successfully a system changes its structure, but also supports the idea of multiple equilibrium points, where a system can find balance through a variety of new economic paths. Simmie and Martin go on to explain that the ecological argument commonly used in a biological context equally supports an idea of “punctured equilibrium” in the economic development of regions, where periods of growth and prosperity are intermittently disrupted by external pressures and shocks.

Adaption, Re-organisation and Resilience Building

In accordance with the definition by Batty et al., of the city as a network of adaptive systems, Simmie and Martin emphasise that economic evolution significantly differs from biological evolution in that regions are constantly subject to the learning, creative processes, and behaviour of individual economic agents. For this very reason, Simmie and Martin raise the question of whether it would be more appropriate to consider balance and prosperity within economic regions in terms of stability and self-organisation, rather than a fixed equilibrium point, or points. Successful adaption within an economic region is a complex process which places specific requirements on the capacity for change within the work force, institutions, and industries of any given region, but this also equally requires a capacity to respond. Simmie and Martin propose that the answer to how regional economies respond to abrupt shocks and disturbances can be found in their capability to evolve, through a long-term process known as “resilience building”. The external pressures and shocks faced by regions are represented by creative destruction or mutation, which can be either constant or sporadic.

Simmie and Martin draw further attention to the complexity surrounding theoretical evolutionary frameworks which attempt to reconcile economic resilience with the capacity for a region to adapt to change. Building on the argument made by Batty et al., that the very characteristics of a regional economy constitute a complex adaptive system, which is in a constant state of re-organisation as the direct result of both external pressures and the ongoing interaction of internal networks, Simmie and Martin emphasise the key internal conflict within adaptive systems. Specifically, the internal network components of complex

adaptive systems will display a predisposition to form increasingly connected models, while the increased connectedness simultaneously makes the overall system more rigid and less flexible to external environmental pressures. While this conflict would imply that connectedness and adaptability are simply incompatible within the definition of complex adaptive systems, Simmie and Martin argue that the solution can be found in ecological panarchy theory, in the form of the adaptive cycle model.

2.5 The Adaptive Cycle Model

Citing authors Petersen (2000), Holling and Gunderson (2002) and Pendall et al. (2008), the adaptive cycle model, according to Simmie and Martin, proposes an ongoing 4-stage process of continuous re-organisation within ecological, social and environmental frameworks, which can be applied equally to economic regions. Each of the 4 stages of the cycle is shaped by the resources available within the framework, the level of connectedness found between individual mechanisms and thirdly the overall susceptibility of each framework to the effects of external shocks and disturbances. Within the context of economic regions, Simmie and Martin explain that attention should be focused on the skills and capabilities of both individual workers and companies, taking institutional organisation and work cultures into consideration when assessing available resources. The notion of connectedness within economic regions can be interpreted through such variables as the chains of labour movement between companies, associations between businesses, and production labour divisions, all of which are subject to the specific economic history of any given region. The capacity of an economic region to withstand shock and disturbances, Simmie and Martin add, is dependent on both overall flexibility and creative processes, which translate into innovation, entrepreneurship, access to investment, and specifically a will to learn new skills among the work force.

Citing Pendall et al., Simmie and Martin offer a definition of each of the 4 stages of the adaptive cycle model within the context of economic regions.

The Exploitation Phase

The definition begins with the exploitation phase, which is explained as a period of economic growth and capitalising on new opportunities. This is a period marked by limited available resources, where the overall connectedness between major actors within the region is low, but steadily increasing as growth starts to occur. The region will build on their economic strengths and utilise the full potential of their workforce, which simultaneously builds the overall resource base and level of resilience.

The Conservation Phase

The continued growth will eventually push the region into the conservation stage, a period of economic stability in which the level of connectedness within a region becomes stronger, and simultaneously more rigid. The increase in connectedness begins to affect adaptability and has an adverse effect on the overall resilience of the region.

The Release Phase

A major external shock or disturbance faced in the advanced conservation stage, Simmie and Martin argue, will activate the release stage, characterised as a period of economic decline in the region. This can mark a sudden or gradual change in the overall economic performance of the region, where connectedness falls as former networks and structures are dismantled and existing resources are rendered obsolete. Businesses will scale down or close their operations and previously established business models cease to be a factor. Staff become unemployed and offices and factories are left vacant. These adverse factors simultaneously result in the release of existing resources back into the economy.

The Reorganisation Phase

The cyclical nature of the model maintains that the declining economy of a region has the potential to see a rise in the level of resilience and trigger a second release-reorganisation loop, which pushes the region into a reorganisation phase. The reorganisation phase marks a period of critically rethinking formerly established business practices and harnessing the potential of the newly available resources in the region, all with the aim of developing new economic specialisations. The model supports the idea that a region that is able to successfully restructure and match their creative potential with new economic opportunities will move once again into the exploitation phase.

2.6 Practical Application of the Adaptive Cycle Model

In their critical analysis Simmie and Martin draw attention to what they perceive as the practical limitations regarding the applicability of the adaptive cycle model to economic regions. As a model primarily used within an ecological framework, where case study environments are characterised by long steady conditions interrupted by infrequent external shocks, they question the ability of the model to account for learning and innovative behaviour. Simmie and Martin emphasise that the very nature of economic regions differs significantly from ecological regions in their ability to be shaped from within, by the internal interactions between various entities. Citing Swanstrom (2008), Simmie and Martin suggest the value of the adaptive cycle model is not as a hypothesis in itself, but rather a

case study framework with which to further understand the functions of regional economic resilience.

In their practical application of the adaptive cycle model, Simmie and Martin conducted a critical comparison between the contrasting economic histories of British cities Cambridge and Swansea. The purpose of the study was an attempt to match each of the 4 stages of the adaptive cycle to respective periods of economic development and decline in the 2 cities between 1960 to 2005. The extended timeframe for economic developments was adopted to allow for a more accurate display of economic adaptation, which as Simmie and Martin explain, may occur slowly over a series of years in the case of city economies. The external disturbances and pressures over the chosen period varied in magnitude and duration, covering the two national economic recessions in the United Kingdom in the early 1980s and 1990s, as well as what Simmie and Martin describe as less abrupt “slow-burn” stresses, in the forms of new available technology and changes to markets and policies.

Through their breakdown and categorisation of key individual events within the chosen timescale, Simmie and Martin argue that the economic history of Cambridge between 1960 and 2005 can be interpreted as a sequential transition through 3 out of the 4 stages of the adaptive cycle. The sequence begins with the reorganisation of the Cambridge economy to pursue opportunities in the high-tech R&D sector, the growth of which leads onto a period of exploitation and eventually conservation. For Swansea, Simmie and Martin suggest that, as the result of a more turbulent progression of the local economy, the city could have witnessed a faster transition of 6 separate adaptive cycle stages by 2005. Significantly Swansea differs from Cambridge in that the city has suffered the economic collapse associated with the release phase on 2 separate occasions, firstly with the decline of the mining industry sector prior to 1960, and a second time through decreasing competitiveness and significant cuts to foreign investment in local electronic manufacturing in the early 1990's. With a primary focus of the Simmie and Martins study being the extent to which the adaptive cycle model within panarchy theory can help to assess levels of resilience within city-regional economies, their analysis of the results suggests that comparison studies over an extended time scale can provide a descriptive measure of the level of resilience of a city at any moment.

While the adaptive cycle does not, by their account, provide theoretical explanations on its own for causal factors which drive adaptability within a city economy, it can be used to contrast case study economies against common variables. In the case of their study, Simmie and Martin considered individual decision-making in Cambridge and Swansea, as well as their responses to common external factors, such as the British economic recessions.

With their differing economic histories, the selected case study towns allowed the researchers to attempt to find explanations for why the Cambridge economy was able to maintain a higher level of resilience and avoid repeated economic decline over the chosen timescale, while Swansea was not.

The Triple Helix (3H) Model

In their study of Cambridge and Swansea, Simmie and Martin draw attention to the significance of the relationship between internal knowledge and market-led decision-making within a city-regional economy, and the direct cooperation between economic and knowledge institutions. Based on the differing economic performance and adaptability of the two cities, their analysis of the results suggests that the ability of a city to successfully harness local skills and knowledge bases and make the entrepreneurial decisions to utilise these resources in new areas, contributes directly to the level of economic resilience. In the case study of Cambridge, Simmie and Martin attribute the slower adaptive cycle framework to what they describe as conscious efforts on behalf of local entrepreneurs to utilise new internally created knowledge, facilitated through increasing cooperation with Cambridge University.

The importance of the relationship between internal knowledge bases and decision-making within city economies, as well as available facilities and institutional cooperation are similarly addressed by van Winden & Carvalho in their URBACT article. Specifically, they advocate the use of the triple helix (3H) model in coordinating interactions between local authorities, businesses and knowledge institutions within the context of urban innovation. The model not only allows for the varied nature and complexity of network interactions between the above-mentioned parties, but also supports the notion of continuous strategic cooperation, as opposed to parties only cooperating irregularly in individual cases. According to van Winden & Carvalho, the primary theoretical assumption behind the triple helix is that the 3 sectors in question all continue to fulfil their respective key functions in governing, business and education, while simultaneously adopting new opportunities for hybrid functions. A practical example of these hybrid functions would include individual businesses which organise training programmes and workshops in association with colleges and universities, thereby adopting a flexible secondary role of a knowledge institution.

With the flexibility and coordinated exchange of knowledge that underline the triple helix model in mind, van Winden & Carvalho argue that well-organised city-specific triple helices have the potential to reinforce a more resilient urban economy. This in turn should translate into job creation, increased wellbeing and growth of the city tax base. On a

practical level, the continuous cooperation between individual businesses and knowledge institutions helps to develop a city-specific economic profile, by facilitating the exchange of knowledge and reinforcing a more consistent and resource-efficient R&D process. With a more coordinated economic focus and understanding of the needs of each party within the helix, knowledge institutions can tailor curriculums to suit the requirements of local businesses and foster stronger start-up creation. Citing the earlier research of van Winden et al. (2014), van Winden and Carvalho argue that a key element of the triple helix is its ability to support the progression of scientific research into commercial markets.

Building a Successful Triple Helix

The benefits of the triple helix mentioned above, are, according to van Winden and de Carvalho, already recognised by several cities and regions. Specific evidence of the triple helix within the EU, they continue, can be witnessed in the optimisation of Smart Specialisation Strategies, for the purpose of attracting ERDF support. Despite this, van Winden and de Carvalho go on to address particular questions and concerns which could potentially undermine the suitability of the model for cities. Looking beyond the benefits to the entire city or region, the first question addresses the relationship between the parties within the helix, and whether all individual parties concerned benefit equally from their cooperation. A particular area of concern is the role of large companies within the helix. The concerns are that these companies may benefit disproportionately from having their own R&D outsourced to universities, which in the case of public-funded institutions, are funded directly by the local taxpayers, as well as how much influence larger companies could have on the research carried out by universities.

When considering this issue, van Winden and de Carvalho cite Leydesdorf to emphasise, that while the risk of disproportionate influence from larger companies exists, the parties within the helix must be mindful to ensure that the fundamental role and purpose of each business, organisation or authority remains at the core of all cooperation, and to not lose their original identity. With regard to research Leydesdorf stresses that knowledge accumulation should remain the focus of research initiatives, rather than external market requirements, otherwise it is turned into a business procedure. Later on, van Winden and de Carvalho also make reference to the case example of San Sebastian in Spain, representing a cluster model where cooperation is focused around the central theme, in this case surfing, rather than a particular business sector. The cluster model not only establishes new connections between otherwise unrelated businesses in the area, but also helps to develop new business opportunities that harness varied local strengths with lesser risk of benefitting any business sector disproportionately. This is possible, because the common

theme makes the cluster open to parties from all sectors, and not just those for which the theme represents a core area of expertise.

Practical Application of the Triple Helix Model

Authors van Winden and de Carvalho move on to consider the issue of practical application of the triple helix to towns and cities across the EU, in relation to vastly differing economic landscapes and available resources. They make reference to Heidelberg in Germany, as an example of a successful triple helix in action, where the “InnovationLab” was created in 2011 by the metropolitan region of Rhein-Neckar, as a joint initiative between 100 scientists from both companies and universities to foster new research and development in the fields of printed and organic electronics. The benefits of the combined effort are intended to not only secure a competitive advantage for the companies involved, but also help the electronic industry of the whole region. The case of Heidelberg, van Winden and de Carvalho explain, represents a location highly conducive for the triple helix. The city has an established tradition of scientific research and is host to a number of large international companies which can afford to invest significantly in research and development. Heidelberg also has its own university and the InnovationLab also incorporates the University of Mannheim. The arguments van Winden and de Carvalho present in favour of the use of the triple helix in towns and cities which lack these competitive advantages allow for the implementation of the helix on a smaller scale. Essentially, they maintain that the purpose of the triple helix is to bridge the knowledge created in local knowledge institutions with the needs of local businesses, and this can be applied equally to small companies. Changes can be made to degree programmes to favour a more practical approach and small companies can form business clusters that will create a more unified economic focus.

According to van Winden and de Carvalho, changes like these can enable universities and colleges to better address the combined requirements of small businesses in the area. The triple helix will also offer valuable R&D support for businesses that lack the financial resources or technical knowledge to carry out their own, simultaneously giving them a greater competitive advantage. Practical examples of the triple helix implemented on a smaller scale like this, van Winden and de Carvalho continue, can be found within the URBACT EUniverCities partnership network, from which they draw attention to the specific case examples of Aachen in Germany and Tampere in Finland. Both cities have ongoing initiatives to facilitate easier communication between universities and businesses. Aachen has adopted a model in which professors from the local university will actively tour local small businesses to promote their research and find opportunities for future

cooperation. The Technical University of Tampere has opted to organise regular drop-in sessions for local businesses, where issues faced by individual businesses can be addressed by university specialists, creating the foundation for future partnerships.

Another solution for facilitating triple helices mentioned by van Winden and de Carvalho, is the possibility of opening up the city as a test environment for new technological solutions or creating knowledge hubs for researchers and businesses to work together, such as science parks. The former example would involve researchers or companies implementing new trial products or services as a joint effort with local citizens, but van Winden and de Carvalho caution that the practical implementation of such schemes can be constrained by government or local regulations. Their suggestion on how to overcome these possible limitations concerns the creation of protected environments in which new innovations can be safely tested within existing regulations, such as in the case of urban innovation labs. While van Winden and de Carvalho stress that effective cooperation does not stem directly from cohabitation in the same building, this solution can prove effective when it is supported by an effective management agency and founded around a clear research framework (van Winden et al., 2012, cited by van Winden and de Carvalho).

The Role of Urban Authorities Within the Triple Helix

Authors van Winden and de Carvalho conclude, that the town or city can play a significant role in creating a triple helix by engaging the relevant parties, creating channels of communication, and by providing necessary infrastructure, including facilities, land and licences. The final point they raise relates to the criteria used to critically evaluate how well positioned a town or city is to provide the above-mentioned support and its practical execution. This involves understanding and perception. Firstly, van Winden and de Carvalho stress the importance that city authorities comprehend the factors and trends shaping the wider business market, which in turn may produce challenges or opportunities for the local economy. Similarly, an understanding of the curriculums and research conducted by local knowledge institutions is required, in order to target the knowledge bases best equipped to resolve specific local issues. Their second point relates to trust and perception, which also requires an understanding of how the city authorities are viewed externally. Excessive bureaucracy can make the city less attractive as a business partner. The foundation for future cooperation stems from the city being viewed by knowledge institutions and businesses as adaptable and trustworthy, and willing to adopt secondary functions traditionally associated with education and business. For the purpose of building and maintaining effective partnerships, towns and cities need to remain aware of how they are perceived, and constantly review and develop their internal structures.

Effective triple helices also require an entrepreneurial focus from all parties, including the town or city (van Winden and de Carvalho, 2015). This entails a capacity to identify those students, researchers or employees best qualified to implement entrepreneurial ambitions and act as the agents for creating new business opportunities, as well as providing them with the necessary tools to do so. This ties in closely with the final criteria listed, specifically the role of the civil officers in charge of the town or city, and their motivation and ability to build successful triple helix initiatives with other parties.

2.7 Summary of Key Points

In conclusion, within this chapter the researcher has reviewed key economic, social and political dimensions which have affected economic development within the EU and Finland over recent decades, as well as considering the responses currently being implemented on an EU- and national level. This is to provide the necessary context with which to understand the external pressures and opportunities which have impacted directly on the chosen case study towns, and to further understand the connectedness between the global, national and urban levels in economic development. Attention was given to the shifting attitudes surrounding the urban dimension within economic development, in support of the scientific application of the present research aims. The chapter also introduces the two theoretical frameworks selected by the researcher for the present study, the adaptive cycle and the triple helix, which respectively will provide the foundation for assessing past changes and future economic resilience building on an urban level.

3 METHODOLOGY

3.1 Chosen Research Methods

As explained in chapter 1, the researcher proposes to conduct the present study with the objective of furthering the existing research on economic resilience on an urban level. Having chosen the wider context of the global economic recession, ongoing economic recovery in Finland, and implementation of the Europe 2020 goals on the EU level, the researcher has chosen to conduct the study through the chosen research method of case study examples. Using 3 different case study examples, the researcher will address the issue of regional economic disparity between towns and cities and consider how different recovery methods can be implemented in the worst-hit towns and cities. The researcher is also supporting the practical application of ecological panarchy theory within urban economic resilience, by attempting to categorise stages of economic change within each of the selected case study towns, using the adaptive cycle model.

3.2 Case Study Selection

For the purpose of the present study the researcher has selected 3 case study municipalities in Finland; Heinola, Kotka and Salo. Heinola, is a small inland town located in the Päijät-Häme region of Finland. Kotka is a small city in the Kymenlaakso region, located on the southern coast of Finland, at the mouth to the Kymi river. Salo is a small town located in the Varsinais-Suomi region of south-western Finland.

As examples of small Finnish towns and cities, each of the 3 case study municipalities have respective populations of 19 111 (Heinola), 53 380 (Kotka) and 52 866 (Salo) as of February 2018 (Statistics Finland). Additionally, each of the three case study towns had an unemployment rate above the 2016 national average of 13.6% of the total work force (Statistics Finland), with the respective 2016 unemployment rate for each town being 17.4% (Heinola), 21.7% (Kotka) and 17.8% (Salo). The researcher is referring to the statistical definition of the total work force from Statistics Finland, which is the respective percentage of all 18- to 75-year-olds who were either employed or unemployed for the last calendar week of 2016.

3.3 Case Study Background: Areas of Abrupt Structural Change

The issue of high unemployment rates stems from adverse economic change in the form of complete or partial loss of major employers in each case study town. The common reference framework, which links each of the three case study towns, is their past

designation by the Finnish Government, as an area of abrupt structural change. Kotka was designated as an area of abrupt structural change from 2008 to 2015, Heinola from 2008 to 2011, and Salo from 2009 to 2017. The Ministry of Economic Affairs and Employment in Finland (2018) defines abrupt structural change in terms of the consequences or impacts which may arise from globalisation or changes to production structures, and how they may affect the employment situation, industrial operations and business structure of a particular region.

The criteria used by the government for this designation can vary according to the circumstances in question, but the factors taken into consideration include sudden changes to business structures, job losses, which amount to several hundreds, from a single company, or entire business cluster, and the impact of the job losses on the employment rate of the entire region. For the designation to be granted, the region must also be able to demonstrate that the sudden changes are permanent, and the region has the potential for renewing their economic structure. This also entails that the region in question is committed to cooperation, has a contingency plan in place for how to overcome the situation, and is able to demonstrate how additional funding could positively affect business development and result in job creation. Based on the criteria, and the state budget regulations, the government will assess each case individually. Those regions, which are successful in their application, will prepare a development plan to manage the structural change between the relevant parties, which can include the town or city authorities, regional business development companies, centres for economic development, transport and the environment, and regional councils.

3.4 Reference Frameworks: The Adaptive Cycle and Triple Helix

By using the adaptive cycle model as a background reference framework, the researcher proposes to trace significant economic events, including openings and closures of major businesses, and attempt to match these events to stages within the cycle. Understanding the respective stage of the cycle which each case study town is presently experiencing, or transitioning to, will enable the researcher to better interpret levels of resilience within each urban economy. This will further expand on the research previously conducted by Simmie and Martin regarding the adaptive cycle model, and its application as a descriptive vehicle for interpreting urban resilience. By selecting 3 case study towns, the researcher is not intending to conduct a critical comparison between these case study examples. As mentioned earlier in the literature review, the interpretation of ecological resilience suggests an idea of multiple equilibrium points, in which a system can potentially restore balance through a variety of economic paths. With this in mind, the researcher is not

attempting to critically evaluate the choices made in managing structural change in each town, or trying to identify one clear strategy for recovery, as this contradicts the theoretical foundation of the study.

When studying the three case study towns, the researcher will also allow for the differences in the respective sizes and locations of Heinola, Kotka and Salo, as well as differences in their economic structure and focus industries. With these considerations, the researcher will attempt to identify key patterns and variables, as well as differences, in the approaches used by each town, to manage structural change and further their economic recovery. Where possible, the researcher will consider the changing economic structure within each case study town in terms of wider economic changes occurring on a national, or EU level. Through the use of the adaptive cycle, and matching changes to individual stages within the cycle, the researcher will also consider whether the economic focus areas of each case study town can be linked to the stages of the cycle they are currently experiencing.

The adaptive cycle is being used by the researcher not only to identify and categorise the causal factors behind the structural change and unemployment in Heinola, Kotka and Salo, but also to further understand what has been accomplished since the structural change began, what are the strengths of each town, and what factors continue to be challenges. This provides a necessary context for considering the respective economic recovery of Heinola, Kotka and Salo, and their future strategies for growth. Using the triple helix model as a secondary reference framework for identifying the models of cooperation between the major actors and stakeholders in each case study town, the researcher will attempt to outline what is presently being done on the urban level to secure future growth, and how each town is managing their recovery on a practical level. This involves identifying the key actors responsible for managing structural change and economic development in each town, how their responsibilities are allocated, and how each town cooperates with other internal and external parties.

3.5 Selecting Further Research Methods

The chosen research objective involves the categorisation of past, present and potential future economic developments in each case study town. In order to trace development patterns to stages of the adaptive cycle, the research must take a retrospective view of what has already taken place in each town, in the form of events such as major town employers opening, expanding and closing, periods of growth and decline and urban economic strategies and specialisations. These events represent factual records which the researcher will then interpret through the chosen framework of the adaptive cycle model.

The researcher has chosen to conduct this section of the present study using a combination of primary research, further supported by the use of relevant secondary research materials.

3.6 Primary Research Methods

The outlines of the economic situations of Heinola, Kotka and Salo will be compiled using primary research in the form of a series of interviews with representatives from each town. The researcher reached out to the respective department, organisation or company responsible for development in each town, to obtain a specialist view of the past and present situations, and direction of future economic development. In the interview process, the researcher had allowed for variations between each case study town, in terms of how the management of structural change and economic development is organised and carried out on a practical level, as well as how particular roles and responsibilities are allocated. This variation could be reflected in the research interviews, as the individual role and experience of the prospective interviewee may reflect their interpretation of the interview questions, and the information they can provide. The researcher has tried to ensure that the respective position of each interviewee is as closely aligned as possible, for the purpose of consistency, and getting a balanced view from each town.

The researcher is attempting to ensure neutrality when addressing the individual case study examples, and also provide the context for relating the information obtained from the interviews back to the wider issue of economic recovery in Finland. It is for this purpose, that in addition to the research interviews with representatives from the 3 case study towns and cities, the researcher has also approached Invest in Finland, a national investment promotion organisation, which actively works with towns, cities and regions across Finland, for a separate research interview. Invest in Finland could provide the researcher with a specialist, non-partisan view from the perspective of a prospective foreign investor, of the criteria they are looking for in locations for new investment. This can provide the researcher with a reference point for considering the present strengths each case study town has to offer, and their future focus areas, by cross-referencing the information gathered from the case study interviews.

3.7 Interview Design

The reference framework for the interview design used in the 3 case study towns is the abrupt structural change designation. A separate variation of the design, based on the broader economic challenges facing Finland, is used as reference framework for the research interview with Invest in Finland. The researcher has selected a semi-structured

interview format to gather the necessary specialist views and comments from each town and the investment promotion organisation, which will contribute to the research aims and related discussion. The researcher compiled a list of research questions, which were made available to each interviewee by e-mail, a few days before each interview. The interviewee would have the right to decline to answer any of the research questions, and also be free to ask their own questions during the interview.

The semi-structured nature of the interview allows for case-specific variations between each individual interview, which may relate to the specific role and experience of the interviewee, which may affect their interpretation of the question or the information they can provide in response. Additionally, other variations may relate to the present circumstances of each town, recovery solutions, future strategies, and internal division of labour, regarding the management of structural change and economic development. Depending on the level of detail given in response to each question, the researcher is also able to follow new lines of enquiry by asking new or supporting questions which may expand on points raised by each interviewee.

In each interview situation, the researcher provided the interviewee in question with a concise description of the objective of the research. An audio recording of each interview was made with the permission of each interviewee. The researcher compiled a written transcript of each interview afterwards, which was sent to, and approved for use by each interviewee. The research interview with Invest in Finland was conducted in English, while the research interviews in each of the 3 case study towns were conducted in Finnish. The transcripts from the 3 case study interviews were freely translated into English by the researcher. At the wishes of specific interviewees who took part in the research interviews, the researcher has paraphrased all interview responses in each of the interview transcripts.

3.8 Interview Questions

In the case of the 3 case study towns, the pre-determined interview questions, selected by the researcher before each interview, were specific to the town and circumstances in question, but followed a general framework connected to the common variable of the area of abrupt structural change designation, as well as the aims of the present research. In each case, the researcher began by asking the interviewee to explain the role of the development department, or organisation, they represented, or explain how responsibilities are shared and coordinated, in cases where there are multiple responsible parties. The interviewees were then asked about the structural change designation granted to their town, and where possible, to explain the criteria upon which it was granted, and the

support the town received. This was used to gather further information regarding the factors which first led to abrupt structural change in each case.

The researcher compiled additional questions relating to the structural change plans that were developed in each town, as well as their delivery and timeframe, to ascertain what measures were taken to address the situation and implement a recovery strategy. The researcher also attempted to find out how the economic structure had changed in terms of focus areas and new business sectors, over the course of the structural change period, and afterwards. With reference to the adaptive cycle, the researcher also tried to establish the relationships of connectedness between industries, services and infrastructure, with questions relating to the possible consequential effects witnessed from changes to the economic structure of each town.

Similarly, the researcher also asked each interviewee about examples of cooperation models and networks with other internal and external parties in each case study town, using the triple helix model as a reference, to identify instances of the model being developed, or used in practice. The significance of maintaining and developing the local knowledge base is a recurring topic in the supporting secondary literature for the present research, highlighted in different examples by Chakravorti and Chaturvedi, Hirvonen and Simmie and Martin, and the researcher asked each interviewee about how each case study town was working with the local education institutions and students. To help to further establish the key points relating the future economic strategies in each of the 3 case study towns, the researcher also asked each interviewee about priorities for future investment and economic development going forward, and to outline what they considered to presently be the greatest challenges still facing their towns, and their key long-term strengths.

In the case of the fourth research interview with Invest in Finland, a separate design was used by the researcher, with a different set of questions from those used in the case study examples of Heinola, Kotka and Salo. While it can be argued, that Invest in Finland does represent a fourth case study example within the present study, it is different in structure from the other examples, as it is not tied to a specific urban location, nor a specific urban case of abrupt structural change. The scope of the interview with Invest in Finland is wider, addressing the topics of investment promotion and economic development on a national scale in Finland. The researcher has designed the interview questions used in Heinola, Kotka and Salo to gather information relating to circumstances and managing development on an urban, or regional level. The researcher has, in turn, designed the questions used in the case of Invest in Finland to provide a national-level context with which to

view the sum of individual developments occurring within individual urban economies in Finland, and consider these developments in relation to the requirements of a prospective new investor.

When selecting the questions used for the interview with Invest in Finland, the researcher similarly began with a background-related question, asking the interviewee to explain the practical role of the organisation in attracting foreign investment. The next questions were developed to further establish the perspective of the prospective investor when considering a location for investment, outline which factors are priorities, and how these priorities may have shifted in the context of the global economic crisis and economic challenges facing Finland. While different in focus from the case study research interviews, the researcher developed research questions to outline the nature of cooperation between Invest in Finland, and individual towns and regions, and how the investment offering of a town or region is presented and assessed by the prospective investor. With reference to the wider context of the changing Finnish economy, the researcher also developed questions to identify the key strengths of Finland in attracting new business, and the challenges which are still facing the country from the perspective of foreign investment.

3.9 Interview Timeframe

In conducting the primary research section of the study, the researcher was able to arrange the necessary research interviews with representatives from Heinola, Kotka, Salo and Invest in Finland. The 4 research interviews were conducted in the following order, over the following time period:

1. In Helsinki on 29.5.2018 with Hanna Lankinen, Head of Business Development at Invest in Finland.
2. In Heinola on 13.6.2018 with Heikki Mäkilä, Business Director at Business Heinola.
3. In Salo on 14.6.2018 with Jouko Urmas, Business Advisor at Yrityssalo Ltd, and Tommi Virtanen, Project Manager at Yrityssalo Ltd.
4. In Kotka on 4.7.2018 with Terhi Lindholm, Development Director at the City of Kotka.

3.10 Secondary Research Methods

To support the information gathered through the 4 research interviews, the researcher will also use relevant secondary research to help to compile a respective timeline of major business openings, expansions and closures in each case study town over the selected timeframe. This will be done by using secondary records such as newspaper articles and

respective town records. To provide the necessary context for analysing individual events and their impact on the local economy of each town, the researcher will cross-reference the timeline events with the figures detailing respective unemployment and population statistics of each town from the corresponding period, which the researcher will obtain from the Statistics Finland database. Additional context for analysis is also provided by the accounts of the global economic recession and the economic performance and challenges of Finland given in the background literature review, which the researcher will attempt to link to clusters of events occurring on the urban levels of each of the 3 case study towns.

4 FINDINGS OF THE STUDY

4.1 Preliminary Circumstances in Case Studies

In the following chapter, the researcher will present the results of the respective research interviews and relevant secondary research as a sequence of key events and decisions made in each of the three case study towns from 1.1.2008 onwards. Where relevant, the researcher will use figures from the Statistics Finland database, and relevant news articles, to provide further context to those events and decisions in each case study town. When selecting the relevant statistics, the researcher set out to identify parameters with which to assess the relative stability of the town prior to, during, and after the structural changes. The parameters chosen by the researcher are the overall population of each case study town and city, the number of people who are registered as unemployed and looking for work, and the relative percentage of the total workforce they represent. As addressed by the researcher in chapters 2 and 3, unemployment represents a significant social impact of the global economic crisis and changing business structures, as well as one of the criteria used by the Finnish government to designate an area of abrupt structural change.

To begin to outline the changes which have occurred over the focus timeframe and match these to the stages of the adaptive cycle, it is first necessary to establish an overview of the respective circumstances in Heinola, Kotka and Salo prior to 1.1.2008, as this will represent a fixed reference point on the adaptive cycle and give context to later changes.

Preliminary Circumstances in Heinola

Looking first at the circumstances in Heinola, with reference to the Ministry of Economic Affairs and Employment statistics available from the Statistics Finland database, there were 1 014 unemployed people in the town in January 2008, while the proportion of registered unemployed people looking for work was 10.4% of the workforce. Prior to this, the unemployment situation in Heinola had been relatively stable for the previous 12 months, without abrupt fluctuations between consecutive months. At its highest, there had been 1 185 unemployed people in January 2007, with a registered unemployment rate of 12.1% of the total workforce, decreasing to 914 unemployed people in November 2007, which corresponded to an unemployment rate of 9.3%. Cross-referencing the unemployment statistics with the population figures from the Statistics Finland database, the 2007 population of Heinola was 20 612, with no change from the previous year.

Preliminary Circumstances in Kotka

In the case of Kotka, the equivalent figures from the Statistics Finland database demonstrate that there were 3 037 unemployed people in Kotka in January 2008, while the percentage of the workforce who were registered as unemployed people looking for work was 11.9%. As in the case of Heinola, the previous 12 months were a period of relative stability in the unemployment situation in the city, with marginal fluctuations. The unemployment rate was at its highest in January 2007, when the number of unemployed people in Kotka was 3 201, with a percentage of registered unemployed people of 12.5%. At its lowest, the figure decreased to a total of 2 635 registered unemployed people in September 2007, or 10.3% of the total workforce, rising to 2 951 unemployed in December 2007, and a percentage of registered unemployed people looking for work of 11.5%. The total population of Kotka in 2007 was 54 679 people, representing a 0.1% increase over the previous year.

Preliminary Circumstances in Salo

Looking at the case of Salo, the Statistics Finland database displays a total of 1 797 unemployed people in January 2008, while the percentage of the total workforce who were registered as unemployed and looking for work was 6.8%. Over the period of the previous 12 months, the unemployment figures display a similar pattern of marginal positive and negative fluctuations. In January 2007, the number of unemployed people in the town had been 1 987, corresponding to a proportion of the workforce who were registered as unemployed, of 7.6%. As in the cases of Heinola and Kotka, the January 2007 figures represent the peak in unemployment. The total number of unemployed people in Salo in 2007 decreased to 1 667 in May 2007, before rising to 1 996 in July, and decreasing again to 1 600 people in September. Over the same period, the corresponding percentage of the total workforce who were registered as unemployed and looking for work fell to 6.4%, before rising to 7.6% and falling again to 6.1%. By December 2007, the number of unemployed people in the town had risen to 1 869, with a relative unemployment rate of the total workforce of 7.1%. The total population of the town in 2007 was 54 469, representing a 0.7% increase over the previous year.

4.2 Managing Development in Case Studies

As discussed in the previous chapter, when designing the questions for the research interviews, and approaching representatives from the three case study towns and cities to arrange the respective meetings, the researcher was looking for the respective department, organisation or company responsible for development and managing structural change.

The aim was to secure interviews with parties that would enable the researcher to gather an equivalent representative view for each case study town and city, as closely as possible. When researching the respective parties to contact for each case study example, the researcher was able to provisionally identify variations in the practical approaches to development and structural change, and their management, between Heinola, Kotka and Salo. The researcher began each research interview by asking the respective interviewee to further outline and explain the approach used in their town or city. It is essential that these differences in approach are outlined before addressing the interview results, as they influence factors such as the respective role and experience of the interviewee, and their interpretation of, or ability to answer, research questions. Different organisational solutions in managing development in Heinola, Kotka and Salo may potentially also influence, or be influenced by, structural change and other key events, so this background information provides an essential part of the context for each case study timeline and the specific methods used for achieving economic recovery.

Business Heinola

Of the three case studies, the first research interview was conducted on 13.6.2018 with Heikki Mäkilä, who is the Business Director at Business Heinola. During the interview, Mäkilä explained that Business Heinola is a relatively new business organisation unit set up by the Heinola town administration in 2015, to reinforce the overall brand renewal of Heinola and pursue economic development through a more structured approach. This structural organisation represents part of a new broader economic development strategy for the town. Mäkilä clarified that the practical responsibilities of Business Heinola concern employment and business development in the town. The latter area of responsibility can be further subdivided into two distinct functions: those processes concerning existing businesses in the town and creating new business opportunities, and those processes concerning methods to attract outside companies to invest in Heinola. This second process group involves both investment promotion and more traditional location management activity, involving cases where an existing company may look to transfer their operations to a new location, such as Heinola.

Yrityssalo Ltd

The second research interview was conducted on 14.6.2018 at Yrityssalo Ltd, with Business Advisor Jouko Urmas, and Project Manager Tommi Virtanen. The role of Yrityssalo Ltd was further clarified during the interview, by Urmas and Virtanen. Yrityssalo Ltd is a company fully owned by the town of Salo, which was set up to handle matters concerning business development across the Salo region. The company was established in

19.11.2008 and began operations in 2009. Urmas and Virtanen explained that while the town administration maintains its own development-, business- and employment services in addition to Yrityssalo Ltd, the areas of responsibility are coordinated in practice, so that matters concerning regional development, as well as zoning, are primarily handled directly by the town, while matters concerning business development, including the process of advising new entrepreneurs and businesses, is primarily handled by Yrityssalo Ltd. The interviewees emphasised that this is a rough division, and the exact responsibilities can vary by case and function. This practical variation is managed and coordinated in close cooperation with the town, which ultimately controls the activity of Yrityssalo Ltd, while the overall direction stems from the town strategy of Salo, and its economic development programme.

The City of Kotka and Cursor Oy

The final case study research interview was conducted on 4.7.2018 with Terhi Lindholm, Development Director at the City of Kotka. In contrast with Heinola and Salo, which have a distinct internal unit or company designated for business development within the town, the structural organisation concerning economic development and managing structural change in the case of Kotka is handled jointly with neighbouring towns in the region. During the interview, Lindholm explained the division of responsibilities between the two parties, which are the city administration, and the development company Cursor Oy. The former handles matters concerning urban development, cultural activities and services, and public relations and communications within the city of Kotka, while the latter is responsible for matters concerning economic development across the wider region of Kotka, Hamina, Pyhtää, Virolahti and Miehikkälä, working to improve competitiveness and make the region more attractive for business activity.

Unlike Heinola and Salo, the structural arrangement of having a regional development company began much earlier in Kotka, commencing in the 1980's. Lindholm added that the development company has been operating under the present name of Cursor Oy for approximately the last 10 years, and there have been changes over the years, regarding the practical division of roles and resources between the city administration and the development company. One example includes the outsourcing of travel and tourism sector development in Kotka to Cursor Oy approximately 5 years ago. From the Cursor Oy website, the researcher was able to ascertain that the development company is jointly owned by Kotka, Hamina, Virolahti, Pyhtää and Miehikkälä, as well as certain regional industrial companies and financial institutions, which include Saimaa Capital Oy, Stora Enso Oyj, DuPont Inc., Ahlström Capital Oy, Kymenlaakson Osuuspankki, Sampo Oyj and Steveco

Oy. Lindholm clarified, that the city administration works closely with the development company, and the exact division of responsibilities can vary by case and function. In certain areas, the city administration may also handle certain activities relating to the local economy. The operations of the development company are directed by the regional economic strategy, and Lindholm added that Kotka, as the largest city in the region, has a significant role in developing this strategy.

Considering the distinction between the organisational solutions used in Heinola, Kotka and Salo in relation to the original research aims of the study, the different approach to economic development and managing structural change used in the case of Kotka raises two important considerations regarding the results obtained from the case study. Firstly, as a result of the regional approach used, the significant events and changes which have occurred within the city of Kotka need to be considered in the context of the region and cannot be viewed in complete isolation from the neighbouring towns. Secondly, the role of the interviewee as a representative of the city administration, rather than the development company, and the practical division of responsibilities between the two parties meant that the interviewee did not have direct experience of certain individual aspects relating to the structural change process in Kotka, equivalent to those of the interviewees in Heinola and Salo. In the later discussion of the results, the researcher will make allowances in the relevant cases where it is not possible to gather an equivalent representative view for each of the three case study examples.

4.3 Outlining Abrupt Structural Change in Heinola, Kotka and Salo

In each of the 3 case study interviews, the researcher proceeded by asking the respective interviewees about the origins of the structural change designation, the support received through the designation, and the specific events and factors which influenced the decision-making process at the time. The key events which resulted in the structural change process, and the respective durations of the designation periods in each case study, are listed in the Finnish version of the Ministry of Economic Affairs and Employment in Finland website concerning areas of abrupt structural change. From these, the researcher was able to outline the general framework of the abrupt structural change period for the interview question design.

Beginning of Abrupt Structural Change in Heinola

In the case of Heinola, Mäkilä confirmed during the interview, that the key economic factors which had influenced the sudden structural change designation were the closures of the Karelia-Upofloor parquet factory in 2008, and the Rheumatism Hospital and UPM

plywood factory and sawmill in 2010. While Mäkilä explained that he had not been in his current position at the time of the designation and was not able to confirm the exact list of attached criteria in the case of Heinola, he did confirm that the large number of job losses had been a significant factor.

Referring to the Statistics Finland database, the variables of population, number of unemployed people, and unemployment rate of the workforce for the beginning of the focus timeframe in Heinola, the period of January to October 2008, continue to reflect the same relative stability as witnessed during 2007. The number of unemployed people decreased to 846 by May 2008, equivalent to 8.7% of the workforce. The most significant change occurred at the end of the year, between November and December, when the number of unemployed people rose from 935 to 1 128, and the unemployment rate increased from 9.6% to 11.6%. The overall population of Heinola was 20 545 in 2008, with a decline of 0.32% compared to 2007.

Sequence of Changes in the Heinola Sub-region

On 29.10.2008, parquet floor manufacturer Karelia Upofloor announced the closure of their Heinola factory, which had been operating since 1986. From the respective media reports on the announcement, Finnish state broadcaster YLE reported that the factory closure would result in the loss of 140 jobs. In their report, Finnish commercial broadcaster MTV cited the chief executive officer of Karelia-Upofloor at the time, Mikko Kilpeläinen, who attributed the decision to declining profitability, the result of rising production costs and the effects of the global economic crisis. According to the news article, the recession surrounding the construction industry in North America and Western Europe had further reduced the demand for parquet floors.

In response to the sudden change in the unemployment rate, the Finnish Government granted the designation of an area of abrupt structural change to the Heinola sub-region, on 18.12.2008. At the time, the newspaper *Etelä-Suomen Sanomat* reported on the new designation, referring to the sudden decline in the number of jobs, but also cited the ageing population of Heinola, as an additional area of concern affecting the sub-region.

Following the closure of the parquet factory and designation as an area of abrupt structural change in late 2008, Heinola witnessed a steady increase in the number of unemployed people, between December 2008 and June 2009. From the Statistics Finland database, in January 2009, the number of unemployed people in Heinola was 1 265, and the percentage of the workforce who were unemployed was 13.2%, and during the first 6 months of the year, this had increased to 1 342 unemployed people, and an unemployment rate of 14.0%. In July 2009, the number of unemployed rose suddenly to 1 558, and

the unemployment rate increased to 16.2%. The figures display not only the rising unemployment affecting Heinola but also increasing fluctuation. Between July and November, the figures showed slight signs of improvement, with the number of unemployed people decreasing to 1 491 in November 2009, with an unemployment rate of 15.5%, but this was followed by another sudden rise in the number of unemployed people, to 1 680 in December 2009, corresponding to an unemployment rate of 17.5%. The 2009 overall population of Heinola was 20 374, representing a 0.82% decrease from 2008.

On 3.11.2009, forestry company UPM announced the closure of their plywood factory and sawmill in Heinola. At the time, YLE reported on the announcement, highlighting that the closures would result in nearly 300 job losses, comprised of 212 positions at the plywood factory, and another 77 at the sawmill. At the time, UPM was the second largest employer in Heinola after the town itself. According to the news report, the plywood factory had been inoperative since the beginning of 2009, and the sawmill operations had been limited. While the news article does not address the reasons for the closures in Heinola, it does mention that UPM would be investing 25 million euros to expand its plywood factory in Savonlinna, and for development of its Kaukas sawmill in Lappeenranta, and Aureskoski wood processing plant in Parkano, in an effort to improve overall competitiveness.

Within 4 months of the announcement of the UPM closures, on 18.3.2010 Heinola was faced with another announcement, that the Rheumatism Hospital had entered bankruptcy, and would be closing. The YLE report on the announcement explained that the closure would affect the entire workforce of the hospital, resulting in the loss of just under 300 jobs. The news report also highlighted that the hospital had been struggling financially for years, and only months before entering bankruptcy, had requested urgent financial support from Heinola and cooperation with the Orton Foundation, but the town was not able to provide the necessary financial aid, and the board of the Orton Foundation had rejected the request from the hospital. Citing the rheumatism foundation in charge of running the hospital, the YLE report attributed the decision to insufficient patient numbers, reinforced by a growing trend for health care districts in Finland to internally handle all specialist care and rehabilitation.

The respective unemployment figures from 2010 show a slight decrease over the period of January to March, when the number of unemployed people in Heinola decreased from 1414 to 1290 (Statistics Finland). This change was equivalent to a decrease from 14.9% to 13.6% of the workforce who were registered as unemployed. In April, the number of unemployed people rose to 1348, or 14.2% of the workforce, which corresponds with the announcement of the closure of the Rheumatism Hospital. The figures continue to fluctuate

over the remaining 8 months of 2010, reaching a peak in July, when the number of unemployed people was 1451, or 15.3% of the total workforce. The figure decreased to 1346 in September, or 14.2% of the workforce, before rising to 1427 unemployed people in December, equivalent to 15.1% of the workforce. The total population of Heinola was 20 258 in 2010, representing a 0.6% decrease over the previous year.

Beginning of Abrupt Structural Change in Kotka

In the case of Kotka, the Ministry of Economic Affairs and Employment in Finland has outlined the key economic factors which influenced the designation of the Kotka-Hamina sub-region as an area of abrupt structural change between 2008 and 2011 on their website, specifically listing the closure of the Stora Enso paper mill in Summa, and the threat of closure concerning the Stora Enso pulp mill in Sunila. When addressing these closures in the researcher interview, Lindholm confirmed that the city has experienced a number of changes, particularly in industry, and there has been a resulting significant decline in the number of jobs across the entire region. Lindholm explained that the wood industry has been experiencing structural change, and jobs have also disappeared from those factories and plants which remained. Surrounding economic conditions have also affected the port in Kotka.

Sequence of Changes in the Kotka-Hamina Sub-region

The Summa paper mill closed on 30.1.2008 (YLE) with a total number of resulting job losses close to 450. Summa is in the neighbouring town of Hamina, where the mill had been the second largest employer after the town itself. Stora Enso had originally announced the closure of the factory on 25.10.2007. From the YLE news report concerning the initial announcement, Stora Enso's decision to close the Summa mill had been made as part of a broader strategic measure, which would simultaneously result in the closure of the Kemijärvi pulp mill, and the magazine press in Anjalankoski. The news report cited the statement made by Stora Enso, in which the company had explained that the decisions had been made in response to significantly rising costs, and to ensure long-term profitability. In a later YLE news report from 17.10.2008, Stora Enso confirmed that the total number of jobs to be reduced nationwide would be 985.

On the 5.12.2007, the Kotka-Hamina sub-region was designated as an area of abrupt structural change by the Finnish government for a period of 2 years, on account of the significant job losses (YLE). The closure of the Summa mill was part of a larger chain of events that would continue to affect the region. Although not mentioned in the news article covering the initial announcement of the factory closure on 25.10.2007, Stora Enso had

issued a profit warning for the third quarter of 2007 only days earlier, on 18.10.2007 (YLE). At the time, Stora Enso attributed the warning to the negative effects of the weakening US dollar and high price of raw materials. In response to the warning, YLE cited analyst Teemu Salonen from investment bank Evli, who had stated that the situation was expected, linking the case of Stora Enso to the profit warning given by UPM earlier the same week. UPM had also referred to the weakening US dollar and cost of raw materials. In July of 2007, the chief executive officer of the Stora Enso, Jouko Karvinen, had commented on the growing challenges facing the paper industry and the effects on the large forestry companies (YLE). Karvinen referred to the key issues of the high cost of wood, and the low price of the paper produced by the large companies. In addition to the high cost of raw materials, the availability of wood had presented challenges, with wood imports from Russia declining around 30 – 40% compared with 2006. Karvinen warned, that the issues could lead to factory closures and the scaling-down of production in Finland.

The unemployment rate in Kotka in 2008 initially displays a pattern of relative stability. From January 2008, the number of unemployed people in the city decreased to 2 693 by May, with a relative percentage of 10.6% of the workforce registered as unemployed. The number of unemployed people in the city fluctuated slightly between June and November 2008, peaking at 2 976 unemployed people in July, before decreasing to 2 700 unemployed people in September. The corresponding percentages of the workforce registered as unemployed in July and September of 2008 were 11.7% and 10.6% respectively. The corresponding period is marked by a series of significant changes in the city, which began on 11.7.2008, when Kotka celebrated the opening of the Maritime Centre Vellamo on 11.7.2008. The MTV news report on the opening highlighted that during the opening day, there were 1 200 visitors at the new complex, which hosts both the Finnish maritime museum and the Kymenlaakso museum.

The opening of the museum complex was followed almost immediately by the profit warning issued by Stora Enso on 24.7.2008, for the second quarter of 2008, along with the news that further reductions would need to be made (YLE). The statement issued by Stora Enso at the time attributed the profit warning to rising costs for both energy and raw materials, and signs of declining demand for certain products. On 10.9.2008 Stora Enso announced cuts that were to be made to specific production lines across Finland, resulting in approximately 550 job losses nationwide (YLE). The cuts included the closure of the plastic lamination line in Karhula, and the scaling down of production in the pulp mill in Sunila.

Following the news of the cuts to be made in Karhula and Sunila, it was announced on 11.9.2008, that the city of Kotka would be incorporated into the structural change programme which had already commenced in nearby Hamina and Anjalankoski (YLE). The Karhula factory would be closed by 2010 and result in the loss of 75 jobs. In response to these additional job losses, the regional development company Cursor Oy had met with representatives from the employment office to discuss the measures to be taken. The manager of the employment office, Jarmo Pirhonen, stated that the same support would be provided to those laid off from Karhula, as for those laid off earlier from the mill in Summa. In addition to supporting the search for new job opportunities for those laid off, the programme also supported options for retraining and entrepreneurship. The relevant figures from the Statistics Finland database display that the number of unemployed people in Kotka rose suddenly between November and December 2008, to 3159, or 12.4% of the total workforce. The total population in Kotka in 2008 was 54 694, representing no percentage change over the previous year.

Stora Enso made the announcement to close their pulp mill in Sunila on 19.8.2009 and sell their factories in Kotka (YLE). The closure of Sunila would affect all the 250 people employed at the mill at the time, although the news report did state that 70 of the employees would be eligible for retirement. Stora Enso attributed the decision to a significant decline in demand and the resulting losses. In the news report on the announcement, the mayor of Kotka at the time, Henry Lindelöf, stated that a task group would be set up as soon as possible by representatives from the city, Cursor Oy and Stora Enso, to address the issue of job losses. Lindelöf had also estimated that new job opportunities could potentially be found within the traditional areas of strength for the region, including logistics, specialist knowledge of Russian markets, as well as energy- and forestry-related industry. The experience which had been gained from looking for new jobs for those laid off from the Summa mill would also be applied in the case of Sunila.

Although subject to fluctuations, the unemployment statistics for Kotka over the period of 2009 to 2010 display a steady increase in the overall unemployment rate in the city (Statistics Finland). In January 2009, there were 3329 unemployed people, representing 13% of the workforce. By June, the number of unemployed people had risen to 3733, or 14.6% of the workforce, before reaching 3963 in July, or 15.5% of the workforce. A decrease occurs over the following 2 months, when the number of unemployed people fell to 3625 in September of 2009, or 14.2% of the workforce. The figure rose once again towards the end of 2009, to 4061 in December, equivalent to 15.9% of the workforce. The fluctuations continue into 2010, when the monthly unemployment rate decreases consecutively over the period of January to May, to 3519 people, or 13.8% of the workforce. As in 2009, a

similar peak in the unemployment rate can be witnessed in July 2010, when the figure rises to 3978, or 15.5% of the workforce. Another decrease occurs after this, with the figure falling to 3459 unemployed people in September 2010, or 13.5% of the workforce. By December, the figure had risen to 3857, or 15.1% of the workforce. Over the equivalent period, the overall population of Kotka rose consecutively during both years, to 54 775 in 2009 and 54 824 in 2010, each representing a 0.1% increase over the previous year.

Early Structural Changes in the Salo Sub-region

On their website, the Ministry of Economic Affairs and Employment in Finland outlines the closures of the Nokia mobile phone production line, and related network of sub-contractors as the key economic factors which influenced the designation of the Salo sub-region as an area of abrupt structural change between 2009 and 2015. These causal factors were similarly confirmed to the researcher by interviewees Urmas and Virtanen, from Yrityssalo Ltd. The sequence of abrupt structural change which would affect the entire sub-region of Salo began with the combined adverse changes affecting individual sub-contractors for Nokia. News records from 2006 to 2009 detail several different closures and cuts implemented by the various individual companies. Among the earlier examples was the closure of the Nypro CMS factory in September 2006 (YLE), which resulted in 140 job losses. Nypro CMS had been a manufacturer of plastic components for mobile phones, acting primarily as a sub-contractor for Nokia.

On 25.11.2008 electronics contract manufacturer Elcoteq announced the closure of their Personal Communications unit, which would result in 36 job losses in Salo (YLE), while their Product Development Services in the town would continue. Prior to the announcement, an earlier YLE news article from 7.2.2007 had highlighted challenges facing Elcoteq and reported that the company was considering closing all production in Finland and reducing its 700 Finnish-based staff at the time to approximately 200. The article cites the chief executive officer of Elcoteq at the time, Jouni Hartikainen, who linked the possible need for cuts to a need to strengthen overall profitability and competitiveness at the company. The article goes on to emphasise the effects of increasing competition and significant production level fluctuations in both Europe and America on Elcoteq, as well as a decrease in sales to Nokia and other customers. The latter cause is mentioned also when printing house Hansaprint announced the closure of their Salo operations on 24.6.2009 (YLE). The closure was a result of Nokia's decision to print their mobile phone user guides elsewhere. The resulting closure would affect 75 Hansaprint employees in Salo.

On 26.3.2009, YLE reported on Nokia's decision to temporarily suspend the use of all sub-contractors in their mobile phone production, on account of the global financial crisis. The reduced market demand for Nokia's mobile phones could be sufficiently covered by the capacity of Nokia's own factories, and the company would once again resume their orders for mobile phones and circuit boards from sub-contractors, once overall demand exceeded the production capacity of its factories. The article refers to figures from 2008, when Nokia purchased 80 million circuit boards from its sub-contractors, with Elcoteq being one of the 3 most significant companies, along with Foxconn and Jabil. Nokia's decision to temporarily suspend the use of sub-contractors also came only a month after their previous announcement on 18.2.2009, that it would be commencing staff negotiations with 2500 of their Salo employees. The negotiations concerned the implementation of alternating staff furloughs for fixed periods of 3 months at a time (YLE).

On 23.1.2009 YLE had reported on the growing concern within the Salo town organisation about the changes in Nokia's economic performance and the possible implications the changes might have on Salo. The article cited Head of Economic Development for Salo, Seppo Juntti, who emphasised the significance of Nokia to the area, as a major employer and corporate taxpayer. At the time, Nokia accounted for 90% of corporate tax revenue for Salo and employed 5000 people, representing nearly a third of the total number of jobs in the town. While the town had budgeted for a possible decline in performance and lay-offs, Juntti had stated that any job losses at Nokia in Salo would affect not just the town, but also the wider region.

Abrupt Structural Change Designation in the Salo Sub-region

The Finnish Government designated the Salo sub-region as an area of abrupt structural change on 17.9.2009, for the period of 2009 to 2011 (YLE). According to the news report made at the time, the decision to grant the designation made allowance for the adverse effects of the global recession on the economy of the sub-region, with the number of unemployed people approximately doubling in one year, and a sharp decline in the number of available jobs. When addressing the cause for the rise in unemployment, the news report highlights the significant difference between the Salo sub-region and other designated areas of abrupt structural change at the time. Other equivalent designations were often granted in response to the sudden closure of a major local employer, but Salo had been experiencing a slower, steady decline in its employment rate, particularly within the export-dependent industry sectors, most vulnerable to the effects of the global economic recession. The YLE report also cited the mayor at the time, Antti Rantakokko, who confirmed that by the time of the designation, Salo had already named a project group which

would manage the structural change process and work to create new jobs. New employment opportunities would be sought by developing local business and pursuing infrastructure-related projects.

The steady rise in unemployment can be witnessed in the relevant statistics for Salo, from 1.1.2008 leading up to the official designation granted on 17.9.2009 (Statistics Finland). In January of 2008, there were 1797 unemployed people in Salo, while the corresponding percentage of people registered as unemployed jobseekers was 6.8% of the total workforce. The figures remain relatively stable over the course of 2008, steadily decreasing over the course of the first 5 months, to a total of 1528 unemployed people in May, equivalent to 5.8% of the workforce. The unemployment figures suddenly increased over the summer of 2008, to 1699 in June and 1852 in July, equivalent to 6.4% and 7.0% of the total workforce respectively, before decreasing to 1563 in August, equivalent to 5.9% of the workforce. Another rise occurs at the end of the year, when the number of unemployed people increases to 1807 in November and 2241 in December, equivalent to 6.8% and 8.4% of the workforce respectively. The overall population for Salo in 2008 was 54 777, representing a 0.6% increase over 2007.

The rise in the unemployment rate continued into 2009, with a total of 2433 unemployed people in Salo in January, representing 9.1% of the total workforce (Statistics Finland). By July 2009, the number of unemployed people in Salo had reached 3079, equivalent to 11.5% of the total workforce, falling slightly to 2874 people, or 10.8% of the total workforce, by September 2009, when the designation of an area of abrupt structural change was granted to the sub-region. Another increase can be witnessed towards the end of 2009, when the unemployed figure rose to 3046 in November and 3366 in December, representing 11.4% and 12.6% of the total workforce respectively. The overall population of Salo in 2009 had similarly risen by 0.2% over 2008, to a total of 54 889.

Following the series of economic changes in the sub-region over the corresponding period, Nokia announced on 13.12.2009, that it would be commencing negotiations to outline employee furloughs for 2010 (YLE). The negotiations involved 2000 employees at the Nokia factory in Salo. Citing a need to re-align the factory manufacturing capacity with the market demand at the time, Nokia announced a cyclical arrangement concerning the furloughs, where 20% of the factory employees would be laid off at a given time. The announcement was soon followed on 8.2.2010, with the company's decision to completely lay off 285 employees from the Salo factory (YLE), as it focused its production on the growing smart phone market.

Adaptive Measures to Nokia's Changing Market Position

The progression of structural changes specific to the Salo sub-region occurred over multiple years. On 5.10.2011, Salo confirmed it would be applying for an extension to the period of abrupt structural change granted in 2009, in response to the ongoing challenges facing the employment situation in the sub-region, and further lay-offs being announced by Nokia (YLE). Over the course of the first designation period, initially scheduled to continue until the end of 2011, the sub-region had been granted a total of 10 million euros in structural change funds, with approximately half of the available funds being allocated towards investments in local businesses, and the rest directed to different town projects. The news article cites the mayor of Salo, Antti Rantakokko, who emphasised the importance of the structural change funds previously granted to the sub-region, enabling the creation of approximately 300 new jobs. The Finnish Government later granted the extension to the sub-region on 17.11.2011 (YLE), with their decision influenced by the growing concerns that Nokia would continue to lay off employees from Salo in 2012.

The application to extend the designation period for the Salo sub-region had followed Nokia's announcement from 29.9.2011, in which the company outlined the need to improve overall efficiency and cut a total of 3500 jobs internationally (Taloussanomat). The measures detailed in the announcement included the closure of the Nokia mobile phone factory in Cluj, Romania, and the reassessment of the roles of the Nokia factories in Hungary, Mexico and Salo. Nokia's statement emphasised the benefits brought by the greater economies of scale provided by their larger factories in Asia, and their closer proximity to the company's key markets. The Taloussanomat news article on the announcement cited analyst Michael Schröder from asset manager company FIM, who attributed Nokia's response to their shrinking share of the smart phone market, and the need to re-align production capacity to match the decrease in demand. The decisions were made to prepare for a possible slow recovery of market position in future. According to Schröder, the overall market trend in production processes involves concentrating activities in larger units, and the measures taken by Nokia represent a growing risk for the future of the Salo factory. In comparison with other Nokia production lines, Schröder explained that the Salo factory is at a disadvantage due to location and a higher cost base.

Later Structural Changes in the Salo Sub-Region

Nokia continued their series of adaptive measures with the announcement to lay off nearly 1000 employees from their Salo production line on 8.2.2012, with the job cuts to be implemented over the course of the year (YLE). The decision was made as part of a larger strategic move internationally, in which Nokia would cut a total of approximately 4000 jobs

from Salo, and their plants in Hungary and Mexico, and concentrate product assembly to the Nokia plants in Asia. In their announcement, Nokia emphasised that they would work with the town of Salo to provide support for those employees being laid off, in finding alternative job positions or training. Following the lay-offs, 600 employees would remain at the Salo plant, which would focus on smart phone product customisation. The YLE news article concerning the Salo announcement also drew attention to the extent of Nokia's cut-backs in Finland, which had been implemented over the course of 2 years. According to figures presented in the article, the number of Nokia's own employees in Finland, excluding Nokia Siemens Networks, had fallen from 13 900 in 2010 to 10 100 in 2012, prior to the latest announcement.

During the first quarter of 2012, Nokia mobile phone sales worldwide fell by approximately a quarter, compared to 2011, and the company responded with an announcement on 14.6.2012, that it would be cutting approximately 10 000 jobs worldwide by the end of 2013 (YLE). Approximately 3 700 jobs would be cut from Finland, and the company stated it would close its plant in Salo, leaving only Nokia product development in the town. The closure would result in 850 job losses in Salo, from both production and support functions. The announced job cuts in Salo would be implemented rapidly, and YLE reported that the closure of the production line would be completed by the end of September 2012.

With reference to the statistics from the period of 2010 to 2012, the sharpest increase in the number of unemployed people in Salo can be witnessed over the second half of 2012 (Statistics Finland), corresponding with Nokia's 14.6.2012 announcement to close their Salo plant by September of the same year. During 2010 and 2011, the variations in the number of unemployed people are more moderate, and the overall population of Salo increased consecutively over both years. In 2010, the Salo population was 55 235, representing a 0.6% increase over 2009, and in 2011 the population reached 55 283, equivalent to a 0.1% increase over 2010. The unemployment rates follow a similar pattern over both years, first decreasing monthly over the period of January to May, and then steadily increasing towards December. In January 2010, the number of unemployed people in the town was 3 319, or 12.4% of the total workforce, falling to 2 893 in May, or 10.8% of the workforce, and then rising to 3 009, or 11.3% of the workforce, by December. Over 2011, the January figures show 3 077 unemployed people, or 11.7% of the workforce, decreasing to 2 675 unemployed people, or 10.2% of the workforce, in May, before rising to 3 028 in December, equivalent to 11.5% of the workforce. The period of 2012 displays a similar overall pattern of change, but the overall rate of increase witnessed towards the end of the year is more pronounced. In January of 2012, the number of unemployed people in the town was 3 090, equivalent to 11.8% of the total workforce. This number first decreased

monthly, to a minimum of 2 776 in May, or 10.6% of the workforce. Following the Nokia announcement on 14.6.2012, the July 2012 unemployment rate had risen to 3 705 people, or 14.2% of the workforce. Following the closure of the plant in September, the unemployment rate rose suddenly to 3 816 in October, 3 911 in November, and 4 229 in December of 2012, equivalent to 14.6%, 15.0% and 16.2% of the total workforce respectively.

4.4 Response Measures and Economic Focus in Case Studies

During each of the 3 case study interviews, the researcher proceeded to establish the respective support received as part of the abrupt structural change designations, and the measures taken by each town and city to address the structural changes and resulting unemployment. In the case of Heinola, Mäkilä confirmed during the interview that the designation granted in 2008 enabled the town to receive funds for different development projects, which at the time, were willingly accepted. Mäkilä explained that the funds were first seen as the tools for change, and the project initiatives set up with the available funds were directed towards finding new businesses to occupy the facilities which had been left vacant by the respective business closures. This emphasis on vacant facilities closely reflects the initial focus of the structural change plan for Heinola. Mäkilä clarified that during this period, Heinola did not yet have its own business development organisation, and the projects at the time were mostly led by consultants. At the time, the Heinola town organisation worked closely with the regional development company LAKES, which is now known as LADEC.

Close attention was paid by the town organisation to the number of new businesses which were successfully attracted to Heinola, and the number of people they employed, as these parameters determined the overall performance of the consultants being used. Mäkilä pointed out that the responsibility of the consultants was to also identify prospective opportunities in businesses that were looking to relocate their operations and to attract these businesses to Heinola. The industrial scope for these potential opportunities covered multiple sectors at the time, including battery technology, food production and wind power. Mäkilä explained that the consultants at the time did use relevant measures to search for new business opportunities and there was a genuine effort being made to attract businesses to relocate to Heinola. In retrospect, the measures that were used did not lead to fast, or significant results for Heinola, but Mäkilä emphasised that the market conditions at the time made it challenging to find new businesses willing to invest. Some of the market opportunities in question had ended, as a result of the specific sectors being unprofitable. Some new businesses were found, which re-occupied specific locations left vacant following the original structural changes, and some of these were found through the work of the

consultants, while others were not. While the success rate of these initial measures was varied, Mäkilä emphasised the importance that different measures were being actively used.

Mäkilä explained that from the structural changes of 2008 to 2010, through to 2014, the focus of economic development activity remained project-based and concentrated on finding businesses to re-occupy vacant facilities across the town. Mäkilä pointed out that around 2014, the approach to economic development in Heinola changed significantly, with the establishment of an economic committee, which began to map an economic strategy for the town and identify how economic development could be pursued in a more structured way. This led to the creation of a dedicated economic development unit in early 2015, which would be responsible for assembling and implementing the economic development strategy for Heinola. Mäkilä explained that the work being done to pursue economic development has moved far beyond the initial focus area of finding businesses to occupy empty spaces. As part of a broader economic focus, consideration has been increasingly given to the needs of individual businesses, the specific driving factors of Heinola, the respective business environments for different types of companies, and what the town can do to support these kinds of environments.

When asked by the researcher, Mäkilä agreed that the founding of the economic development unit around 2015, could be interpreted as a strategic shift within the structural change plan for Heinola, from the primary response stage to the second, medium-term stage. The new broader approach to economic development is more systematic, and less operational, Mäkilä explained, paying close attention to the specific strengths Heinola has to offer. As the economic development unit, the focus of Business Heinola is on the business ecosystem of the whole town, and the specific business model of the client. The functions of Business Heinola in turn, are sub-divided according to the respective size and industrial sector of the prospective client.

Mäkilä explained that the focus on the specific business model and related requirements of the client together represent an area where significant development has occurred in Heinola. Business Heinola considers matters from the perspective of the prospective customer and works to ensure that the town meets their criteria. While the traditional approach to economic development was based on an assumption that the town would have to construct or assign a location for a prospective business which had expressed interest, Mäkilä explained, this is not the approach taken by Business Heinola. The ability to provide locations to a client remains important, but this is part of a larger process, rather than

a focus area. By ensuring that the whole town meets the criteria of the prospective customer, the customer can invest in any specific facilities it may require for business.

Economic Focus in Heinola

Mäkilä explained that there are two key economic entities which form the foundation of the economic strategy for Heinola. The first entity is comprised of the wood industry, wood-based biotechnology and its related activities, which are related to the strong wood-based industry in and around Heinola, and the rich forestry resources in the surrounding Päijät-Häme region. Combined, the entity represents approximately 1000 jobs for Heinola. This sector incorporates a diverse mix of businesses for the town, represented by large companies such as Stora Enso and Verso Wood, as well as smaller businesses, including Suomen Kuitulevy, Koskinen Oy and VVR Wood, which specialise in sectors including fibreboards, construction materials and furniture production. Mäkilä pointed out that Heinola also currently hosts primary production and wood-based supplementary industries, including the production of saw machinery, and what can be considered the circular economy cluster. The latter sector includes initiatives to reprocess materials such as silts and ashes into fertilizers and fuels.

A second key entity for the town is made up of the combined travel, recreation and wellbeing sectors. Mäkilä pointed out that the Vierumäki Resort and its related functions represent a significant part of this entity, incorporating varied educational functions, accommodation and sport facilities and services, as well as specialist staff. The resort represents a significant employer for the town, employing up to 700 people during the peak season. The concept of the resort, and its potential for bringing future investments and new jobs to the area, is being developed further as a joint initiative between the town, Vierumäki, and neighbouring UPM, which is a significant landowner in Heinola. In addition to Vierumäki, Mäkilä pointed out that the wider economic entity includes accommodation-, restaurant-, and programme services in Heinola, and retail. The various activities and their supplementary businesses within these sectors account for approximately 1000 jobs in Heinola.

The care industry ties closely into this second economic entity, Mäkilä explained, as part of the wellbeing sector. Heinola is host to a significant number of private care-related businesses, as well as the Jyränkölä Settlement, which is a multifunctional organisation incorporating different care-related functions. The settlement employs approximately 200 people. In addition to the two key industrial entities, the town also hosts a diverse mix of smaller businesses. Mäkilä explained that there currently is a combined total of approximately 1000 different businesses in and around Heinola. The wood-based, or -related industries, as well as the travel-, recreation- and wellbeing-based industries represent the

primary focus areas for economic development activity in Heinola, Mäkilä explained, and the success of these industrial sectors will, in turn, be beneficial for the variety of other local businesses.

When asked by the researcher how the economic mix within Heinola had changed over the period of the previous 10 years, Mäkilä explained that substantial, and rapid, growth has been witnessed in the travel, recreation and wellbeing sectors, which are now witnessing the cumulative results of many hundreds of millions of euros worth of investments. From the perspective of the care industry, Mäkilä pointed out that the ageing population of Heinola has resulted in new investments, in the form of new care homes and assisted living residences, and the creation of tens of new jobs. There are ageing residents who want services, and are willing to pay to use these services, which has presented new opportunities for Heinola. Similarly, the Vierumäki resort has sustained continued growth, with new operators and the construction of new holiday cabins and apartments.

Response Measures in Kotka

During the respective research interview in Kotka, Lindholm emphasised the need to address the sudden rise in unemployment in the city following the structural changes. The unemployment rate was over 20% at its peak, and its effects could be seen through the rise in the city's social- and health-related public expenditure, as well on the city streets, the lives of local business owners and the general mood of local residents. This point is further supported by the statement referred to by the researcher earlier in this chapter, from the mayor of Kotka, Henry Lindelöf, who had confirmed the setting up of a task group to address the issue of unemployment in the city, in the YLE news article concerning the 19.8.2009 Stora Enso announcement. This task group would be made up of representatives from the city, Cursor Oy and Stora Enso. The article made reference to Lindelöf's statement, that new job opportunities could potentially be found in traditional areas of expertise for the region, such as logistics, specialist knowledge of Russian markets, or the energy- or forestry-based industries. Having outlined the respective areas of responsibility of the city administration and the regional development company, Lindholm confirmed the close cooperation that is maintained between both parties. A specific area of responsibility for Cursor Oy is regional marketing, which includes travel and tourism- and industry-based marketing activities, and also increasingly those marketing activities concerning the attraction of new residents. As a practical example of the cooperation arrangements between the city and Cursor Oy, Lindholm pointed out event management and production. This represents a function handled by the city administration, not the regional development

company, but the latter company will provide communication, marketing and tourism-related functions which support the events.

Lindholm confirmed during the interview that the regional development company Cursor Oy adopted an active role in working to attract new business in the case of closures resulting from the structural changes. This work was in close cooperation with the relevant city and town organisations in the area. In the case of the Summa mill, located in Hamina, the Hamina town organisation adopted a more prominent role. Lindholm explained that Cursor Oy also worked closely with the former occupant, Stora Enso, in the specific case of the Summa Mill, to find alternative use for the vacated paper mill.

Lindholm explained that broader industry-specific structural changes have resulted in situations, where there have been entire sections of the laid-off workforce in the region, for whom there have not been any equivalent job positions to offer in replacement. Stemming from the challenges posed by structural change in traditional key economic sectors and the response methods used to manage these changes, Kotka is pursuing further economic diversification, Lindholm explained, a theme which now forms part of the broader economic strategy. Kotka is actively seeking additions to the existing economic mix of the city, and there is an ongoing effort to look for viable new business sectors. Through this process of diversification, Kotka is working to develop the game industry and related business cluster and is also pursuing new opportunities in the travel and tourism sector. The city is actively involved in promoting start-up business activity, for which there is also a dedicated start-up festival. Lindholm pointed out that different economic opportunities have been actively pursued by Kotka, and while some, like wind power, did not prove successful, the city is now witnessing a rise of new business sectors. The scale of these new industries is still small within the overall economic structure of the city, but examples like the game industry represent operational cases which have been successfully attracted to Kotka.

Lindholm clarified that Kotka has witnessed changes to its economic structure over a long period of time, and over the years the city has pursued a systematic long-term approach of building a foundation for future expansion and further diversification of business activity. Lindholm explained that this has entailed the ability to make major decisions over the years and invest consistently in the key draw factors of the city, even when economic circumstances have made it challenging. The foundation for this approach to economic development has been the port area, which has been constructed and developed over the years, and this work has started to draw in new business activity. Among the key investments made to the local infrastructure, environment and services, a new underground car

park was constructed under the Market Square of the city, the Kotka Maretarium aquarium was completed in 2001, and the Maritime Centre Vellamo was completed in 2008. The city has also invested in its parks, which have earned Kotka increasingly positive recognition, and the city was host to the Finnish housing fair of 2002.

Economic Focus in Kotka

Lindholm explained that the next revision to the regional economic strategy would be made over the autumn and winter of 2018. As the largest town in the region, Kotka plays a key role in the revision process. The port, logistics, travel and tourism, forestry-based renewable industries, digitalisation, the game industry and all related activities all represent significant focus areas for the future economic development of Kotka. The port is the long-term foundation for economic development, around which other business activity develops. The long-term potential of the port has been understood for a long time, Lindholm pointed out, referring to the significant investments made in the 1980's, when the new port was constructed in Mussalo. Prior to these investments, the port infrastructure and activity had been focused on the city centre of Kotkansaari and adjacent Hietanen, which left no room for future expansion or development. Other businesses, in turn, have benefitted from the development of the port and the good logistical connections it offers.

Among the work being done to support future economic diversification in the long-term, Lindholm explained that the Kantasatama port redevelopment project entity has progressed over the years, and the city has decided to construct a new 20-million-euro event centre on the site, which will enable the city to host congresses and concerts for audiences of up to 3 000 people, opening up this form of event management as a future business sector for Kotka. The schedule, at the time of the interview, proposes that the new centre will open in 2021 at the earliest and would later be accompanied by the new campus for South-Eastern Finland University of Applied Sciences, to be completed by 2024. The project has subsequently progressed following the research interview, with representatives from the city administration in Kotka, South-Eastern Finland University of Applied Sciences, and Cursor Oy meeting on 5.3.2019 to sign a joint agreement to commence construction of the new event centre and campus, as well as an enterprise hub, to be completed over the course of the next 4 years (YLE).

Lindholm pointed out that the individual investments made by the city over the years to key infrastructure and services are all ultimately linked to one another and have reinforced the long-term economic development of the city. As an example, Lindholm pointed out that the decision to construct the Maritime Centre Vellamo years earlier was essential for the decision to construct the new event centre and campus. Similarly, following the

decision of Kotka to construct the underground car park under the Market Square, the owner of the neighbouring Pasaati Shopping Centre decided to refurbish and expand the facility, which has brought dozens of new jobs to the city.

Among the new initiatives being pursued for further economic diversification, Lindholm explained that the city is working to attract film productions and has been host to the South East Finland Film Commission for the past 2 to 3 years. Another focus area for future growth within the travel and tourism sector is cruise ship-related business activity. Following preliminary work and research into other international cases of towns and cities which have managed to develop cruise ship-related tourism, Kotka made the decision in 2012 to actively pursue this as a new business sector. Lindholm explained that in 2017 the first 4 cruise ships stopped at Kotka as part of their cruise itineraries, bringing approximately 10 000 cruise passengers. Another 4 or 5 cruise ships are due to visit Kotka during 2018. The future target would be to attract a few tens of thousands of cruise passengers to Kotka every summer from 2020 onwards, and it is possible to develop tourism activity of this kind even further in the future. The cruise-ship tourism initiative is also linked to the port, as a foundation onto which travel and tourism, and other related business activity can be developed.

The traditional industries in Kotka also remain an important part of the economic strategy, Lindholm continued, and these sectors have also witnessed significant changes in the form of new renewable industry innovations and product development. Within the paper, pulp and wood-based production industry sectors in the region, Sunila is now conducting lignin production, Kotka Mills is producing non-plastic cardboard, and UPM is planning a biorefinery.

Response Measures in Salo

For the case of Salo, Urmas and Virtanen confirmed in the respective research interview, that a 3-stage structural change plan was developed by the town organisation to address the immediate consequences of the changes the town had experienced and plan economic renewal and development on the medium- and long-term. The first stage of the plan had an intended timeframe of approximately 1 to 2 years and Virtanen confirmed that the key focus areas at the beginning were the local workforce, businesses and the future of Salo. Together, these represented a larger project entity, within which there were specific project initiatives with set targets. The plan coordinated the different activities being implemented. There was a designated project group responsible for the practical dimension of project delivery, and a steering group comprised of representatives from key investors and local parties, which ensured that the adequate number of steps were being used to

address the focus areas, in both the short- and long-term. The overall picture was considered between these two groups, as well as the specific nature of project investment that Salo was seeking.

Virtanen explained that at the very beginning, the most immediate concern was determining the specific procedures to start to respond to the problems at hand. Urmas explained that the early project initiatives responded to the immediate effects of the unemployment and sudden life changes on the personal wellbeing of local residents. The recurring message which formed part of each stage of the delivery of the plan was the idea of taking care of people. Among the early initiatives used, accessible drop-in points were set up for those people affected by the closure of the Nokia plant in 2012. Urmas emphasised that a significant realisation occurred very early on in the implementation of the structural change plan, that there would not be another Nokia, or an equivalent large company that would step in to take its place in Salo. Understanding this, there was an immediate need to address the knowledge and level of skills of the local workforce and take measures to develop these skills and retrain those left unemployed. Virtanen explained that the drop-in point was in place 2 weeks after the announcement of the closure of the Nokia plant, and it represented a joint project between the town, Yrityssalo Ltd and the Employment Office. For those under threat of being laid off, the service point was designed to enable people to handle their matters simultaneously.

Virtanen pointed out that the drop-in point initiative was subsidised by the Centre for Economic Development, Transport and the Environment, via the European Social Fund. Regarding the funds received through the abrupt structural change designation, Salo had a close relationship with the different investing parties right from the beginning. On a regional level, the main investors were the Centre for Economic Development, Transport and the Environment, and the Regional Council of Southwest Finland, and on the national level these included the Ministry of Economic Affairs and Employment for Finland. The steering group for the structural change plan included a representative from the Ministry, so they were always kept up to date regarding the scale of the plan, the overall progress being made, and on details concerning individual project initiatives being applied for, that were in progress, or which had already been completed.

Virtanen confirmed that the financial support received by Salo over the years from the designation was mostly directed towards retraining initiatives for the local workforce, followed by support for new investments and the development of local businesses. Urmas explained that among the different retraining initiatives that were arranged for those who had been laid off, several individuals made the decision to transfer into an entirely new

sector of employment and trained to become practical nurses or other health-related professionals. The retraining statistics for those laid off reflected a general preference for the health sector. The retraining efforts later proved beneficial for the region, as it enabled gaps in the workforce to be filled in Salo and neighbouring towns and villages, when there was an urgent need for qualified medical professionals.

Urmás pointed out that the funds granted to Salo at the time represented an entirely new situation for the town, which had been a “blank slate” with regards to receiving financial support prior to the abrupt structural changes. The specific support models that were provided included state- and urban-level public-sector employment-based grants to support infrastructure construction and maintenance. While Urmás pointed out that the direct effects on employment are harder to measure through these kinds of initiatives, significant improvements were made to the local infrastructure and services. Virtanen pointed out the significant example of the eastern bypass road, which had been on the Salo agenda for decades, and was completed as a result of the financial grants.

Some models of support were subject to external changes, and Urmás referred to a specific example of a grant model directed towards supporting one-man businesses. In the case of Salo, this grant model proved to be a relatively economical way of supporting new job creation, as Virtanen confirmed that there were 30 cases of one-man businesses where the grant enabled the creation of one new job position each. However, this became a matter of scale. Other towns had not been able to make this specific support model work in practice, and even in the case of Salo, the Ministry of Economic Affairs and Employment for Finland deemed the number of new jobs created to be small in relation to the overall number of layoffs, so this specific grant model was discontinued nationally in Finland.

Virtanen explained that two of the significant sources of financial support were the European Social Fund, supporting jobs and skill development, and the European Regional Development Fund, concerning the development of the work environment. There were specific parts of certain business investments financed this way. The Finnish Government contributed a significant share through the different structural funds, in the form of different development projects. A major effort was made in Salo, Virtanen continued, to ensure that new business investments could be supported throughout the period of structural change. For the town, this involved lobbying for the funds to be put to use towards investments, as well as activating businesses to make use of the funds available. The latter process could involve persuading businesses to bring forward investment decisions, while there were the funds available to support the investments.

Sustainable Growth Through Economic Diversification

Virtanen explained that Yrityssalo Ltd has estimated that many local businesses did bring forward investments that would have otherwise been cancelled under difficult financial circumstances. In retrospect, the decisions to invest at the time are now paying off in the improved economic climate. Approximately 20 million euros were directed towards new business investments in the Salo region. The support fund percentage was between 10% and 30%, so the businesses of Salo together invested a combined total of approximately 100 million euros in new machinery and equipment over the period of 10 years. Local businesses have estimated the resulting effects of these investments on local employment to have also been significant.

Urmas explained that Salo was different from many of the other towns in Finland experiencing structural change, in that the financial support received was divided between a broader number of different businesses. With the region being host to a variety of small to medium-sized businesses, approximately 100 local businesses received financial support over the abrupt structural change period. This differed from many other towns, where the support received was directed towards a small number of major businesses. The approach in Salo, Urmas continued, stemmed from an understanding that a return to the original economic structure was not seen as desirable, and further economic diversification should be pursued instead. Virtanen pointed out that this approach was criticised at the time by the Government, which had expressed concern that the support of development initiatives among small businesses would not result in significant changes for the overall economic development of Salo. The approach has, however, remained a focus point, and became a strength for Salo in the long run, demonstrating that sustainable growth can be achieved through businesses that are willing to make investments in their operations, evolve and prepare for their future.

Economic Focus in Salo

Regarding the development of the economic structure of Salo in the long-term, Urmas explained that economic renewal has been a focus point right from the beginning, when the structural change funds became available. Within the broader theme of economic renewal, Virtanen continued, the economic development programme for Salo outlined the focus areas for specific activities. Future industry sectors which have played a key role in this process include the health- and wellbeing-related industries, the game industry, and LED-technology, and these new sectors have been developed during the implementation of the structural change plan. A key challenge in this process has been the sequence of economic setbacks which Salo experienced during the structural change period, where

new issues would continue to arise. In practice, whenever the situation displayed signs of improving, there would be another structural change and more immediate concerns which needed to be addressed. The focus areas of the economic development programme have changed over the years, with 2 or 3 separate revisions made to the programme, and the latest revision due soon after the time of the research interview.

Virtanen pointed out that the traditional industrial strengths for Salo, including machinery, metal and wood, were focus areas for the actual investment- and development funds granted as part of the structural change designation, and the town made the medium-term strategic decision to support these sectors financially. In addition, there has been a variety of project initiatives to support new technology companies, with the town witnessing new start-ups, and the development of business activities within these new technology sectors, including health-related technology and LED-lighting. The latter sector has grown into a LED-based business cluster in the town. Among the different initiatives used, Salo has actively supported the creation of business networks for new companies, and organised promotional activities and product development activities for start-ups. Urmas pointed out a specific economic renewal initiative that was supported by Nokia, who opened their innovation portfolio for specific projects they no longer wished to pursue themselves. New business opportunities were created in Salo through these projects, for both existing companies in the region, and start-ups.

Virtanen explained that the IT sector continues to represent a significant focus area for Salo, and a central part of the economic development programme following the revisions made over the years. The emphasis is on working to create new businesses in the technology sector, without forgetting the economic foundation which has brought the present stability to the region. The commitment to the IT sector on the long-term is also supported, Virtanen pointed out, by the establishment of the IoT campus, which represents a significant investment from the town. The IoT campus, Urmas continued, can be seen as an end result of the original structural change plan, and the sequence of economic renewal which has occurred over the years.

Another important sector to the Salo economy, is agriculture and its related industries, with approximately 1000 farms and related businesses in the region. The future potential of this economic sector is being explored further, Virtanen explained, including possible new applications of technology in agriculture. Urmas pointed out that within agriculture, food production has always been an important part of the economic structure of Salo, and Yrityssalo Ltd set up the Salo Food project around agriculture-based production and related activities, to support the position of local food produce, and its promotion in the retail

chains. The fixed-term project ended, but this created the foundation for a cooperation network which has continued independently. Travel and tourism are also seen as potential foundations for future growth, with the region host to areas like Teijo and Mathildedal, as well as approximately 7000 summer cabins, and Yrityssalo Ltd similarly set up the fixed-term Visit Salo project to develop the tourism offering. Following the end of the project, related businesses have set up a joint committee responsible for marketing and developing tourism-related packages in the region.

4.5 Later Changes in Unemployment, Population and Business Development in Heinola, Kotka and Salo

When discussing the later economic development of Heinola, Mäkilä pointed out that the town has witnessed examples of successful redevelopment initiatives within the business sectors affected by the structural changes. Specific case examples of this redevelopment, Mäkilä explained, include the new business clusters formed at the former Rheumatism Hospital and at the former parquet factory at Vanerinranta. In the case of the former hospital, Mäkilä explained that approximately 300 jobs were originally lost as a result of the closure, but there are approximately 150 new jobs on the campus which now occupies the site of the hospital. Following a search for new occupants for the vacant hospital facilities, it was announced that the property would be sold to Carelogi Oy on 19.6.2012, who had stated their intention to develop the site into a new centre for health and wellbeing, with related services (YLE). Once the sale was completed on 12.7.2012, spokespersons Jaana and Juha Kukkonen from Carelogi Oy outlined the comprehensive medical facilities that were already available at the hospital, and the future potential these offered for attracting different private-sector medical- and care-related service providers, and the development of health-related tourism activity through the creation of a patient hotel (YLE). Following the first few years of operation, a local news article from 16.1.2017 (Itä-Häme) reported on the positive rise in the business occupancy rate, with 10 businesses operating at the former hospital property, which had adopted the new name of Valolinna. The same article cites Juha Kukkonen from Carelogi Oy, who explained that following a period of slower initial development, the complex hosted 365 residents and employed 135 people, and is witnessing encouraging signs of further growth in the future.

The former parquet factory at Vanerinranta has benefitted from a growing construction industry in Heinola, Mäkilä explained, and is now host to 20 businesses, which together employ approximately 200 people. An YLE news article from 1.4.2015 reported on the progress which had been made in finding new business activity to occupy different sections of the factory complex, following its original closure by UPM in 2009. At the time of the

article, over 50% of the approximately 16 000 square meters of the factory had been successfully occupied by new businesses. Among the new occupants at the time of the article were ski manufacturer Peltonen Ski, and sofa manufacturer Interface. The article pointed out that the new occupants were found after years of perseverance, and this effort to fill the remaining spaces was still ongoing. The article cited head of economic development for Heinola, Timo Kaatari, who stated that each business successfully attracted to Vaneriranta also supports the future search for other new businesses. Kaatari explained that location represents the most important factor for new businesses when selecting a new site, closely followed by the other business activity already present in the town.

The development of the Rheumatism Hospital site and Vaneriranta both represent cases which began from the early project initiatives to find new occupants for the vacated facilities, Mäkilä explained. Over time, their success has demonstrated that economic growth can stem from a combination of different factors, and not only through the efforts of the town itself. On behalf of Business Heinola, Mäkilä pointed out that new business attracted to the Rheumatism Hospital and Vaneriranta does confirm that progress is being made from the continued effort to develop communications and increase the visibility of the renewed Heinola brand.

End of the Abrupt Structural Change Designation in Heinola

On 15.8.2011, YLE reported on the status of Heinola following the abrupt structural change designation, citing head of the Ministry of Economic Development and Employment of Finland at the time, Anssi Paasivirta, who was optimistic that the economic situation in the town would improve in the near future. Paasivirta referred to the challenges faced by the town, including the job losses from UPM and the Rheumatism Hospital, which had taken more time to address than had originally been expected, but also positive developments in the form of new investments. The article also cited Hannu Savolainen, head of the Centre for Economic Development, Transport and the Environment for the Häme region at the time, who stated that approximately 5 million euros was granted to the Heinola sub-region through different means of financial support over the duration of the abrupt structural change designation, and the town was presently negotiating over whether to extend the duration of the designation. The designation was not extended beyond 2011, nor was another application made for the designation in 2017, when Stora Enso closed its packaging plant in Heinola. The latter event occurred as part of a strategic measure from Stora Enso, to invest 19 million euros into its packaging plant in Lahti during 2017 and 2018, simultaneously concentrating packaging to one plant (YLE), and leaving the fluting mill open in Heinola. In the news article from 28.7.2017 on the ongoing

rearrangements, it was reported that 80 of the 130 employees from the Heinola packaging plant would transfer to Lahti, and others would move to new positions in the fluting mill. According to the article, Stora Enso plans to invest 28 million euros in the Heinola mill over the next few years.

Mäkilä explained that while it is uncertain if Heinola would have ultimately been granted an abrupt structural change designation in 2017, the decision not to make an application is significant, as it demonstrates the development which has occurred since 2008. Heinola is a developing town with the necessary foundation for success and a sound course of development, Mäkilä pointed out. This is the message which Heinola wants to send, and the town prefers to secure the funding for future economic development through its own initiative and hard work. A new abrupt structural change designation is not required by the town.

Unemployment and Population Changes in Heinola Between 2011 and 2018

The monthly unemployment statistics for Heinola between 2008 and 2010 demonstrate rises in the unemployment level, which occur in July and December of each year (Statistics Finland). From this data, the researcher has used July and December as reference points to concisely overview the broader changes in the unemployment level for Heinola over the subsequent period of 2011 to 2018. The figures from the Statistics Finland database state that in July 2011, there were 1286 unemployed people in the town, corresponding to 13.9% of the total workforce. A slight decrease occurs over the following 12 months, with the number of unemployed people falling to 1248 in December 2011 and then on to 1222 in July 2012, equivalent to 13.5% and 13.6% of the workforce respectively. While all changes are subject to individual fluctuations, this decrease is followed by a steady rise in unemployment in Heinola over the period of the next 4 years. In December of 2012 and July of 2013, the number of unemployed people were 1349 and 1344 respectively, each representing 15% of the total workforce. By December 2013, unemployment had risen to 16.7% of the workforce, equivalent to 1498 people, before decreasing slightly to 16.4% in July 2014, equivalent to 1441 people. A significant rise occurs towards the end of the year, when the number of unemployed people increases rapidly to 1661 by December 2014, representing a peak of 18.9% of the workforce.

The unemployment level in Heinola remained high in 2015, with 1470 unemployed people in July, and 1623 people in December, or 17% and 18.7% of the workforce respectively. A slight improvement can be witnessed in 2016, with the subsequent number of unemployed people decreasing to 1319 in July, or 15.4% of the workforce, before rising again to 1434 people, or 16.8% of the workforce, in December. The positive change is more evident in

2017, with the number of unemployed people decreasing to 1220 in July, and 1179 in December, representing 14.4% and 13.9% of the workforce respectively. By July 2018, the unemployment rate was 13.1% of the workforce, equivalent to 1083 people, rising slightly towards the end of the year to 14% in December, equivalent to 1158 people. The available population figures for Heinola from the corresponding period of 2011 to 2017 display a simultaneous pattern of overall population decline (Statistics Finland). In 2011, the population of Heinola was 20 164, representing a 0.5% decrease over 2010. The population continued to decrease annually, with the most significant change occurring in 2014, when the population decreased by 1.4% over 2013, to 19 695. By 2017, the population of the town was 19 128 people, having decreased by 1.1% over 2016.

Later Changes in the Kotka-Hamina Sub-region: Summa, Karhula and Sunila

During the research interview, Lindholm raised the point that the pursuit of further economic diversification in the region has, in part, originated from the actions taken over the years to address the structural changes. Having mentioned that Cursor Oy worked actively to find new business to occupy facilities which had been left vacant, Lindholm explained that these efforts did lead to results, and the example of the Google data centre in Summa represents a significant development within the economic structure of the region.

The announcement of the sale of the former factory and most of the site of the former Summa Mill to Google for approximately 40 million euros was made on 12.2.2009 (YLE). Stora Enso worked closely with Cursor Oy on the case of Summa, and the news article on the announcement cites Chief Financial Officer of Stora Enso at the time, Markus Rauramo, who stated that negotiations were conducted with a number of potential buyers. The intention was to find the best possible result for the town of Hamina and the former employees of the mill, and financially sound companies like Google can provide the best prospects for everyone concerned. Google confirmed on 4.3.2009, that the site of the mill would be turned into a server centre, from which the company plans to run search engine, maps and e-mail functions (YLE). The company estimated that the renovations of the site would employ approximately 200 people, and once open, the server centre would provide 50 new jobs. Following a renovation process of roughly 1.5 years, the new centre opened on 10.9.2011, and the YLE news article from the time stated that the new centre would employ approximately 90 people.

Lindholm explained that the presence of the Google centre in Hamina is a significant asset for the entire region, and this is utilised when marketing the region for future investments. Kotka is currently working to attract equivalent data centre investments in the future, and the presence of a large international company in the region reinforces the

message that the region is suitable for these kinds of investments. Lindholm pointed out that the targeted search for additional companies to accompany the large international company which is already established at Summa will, in turn, reinforce additional economic diversification for the entire region.

Kotka has also witnessed other case examples of factories which have managed to successfully overcome structural change and achieve new growth. The Karhula foundry represents one of these case examples. On 7.10.2015, it was announced that owner Sulzer Pumps Finland Oy was considering closing the facility and its related activities (YLE). The company statement cited in the news article pointed out that the foundry had been unprofitable for several years, despite various development initiatives. The closure would potentially affect all 175 employees working at the foundry at the time. The intention to close the foundry by September 2016 was later confirmed by Sulzer Pumps Finland Oy on 16.12.2015, along with the announcement that up to 160 jobs would be cut (YLE).

Contrary to the December 2015 announcement, on 6.7.2016, it was reported that the foundry would remain open and continue under new ownership, with Sulzer Pumps Finland Oy selling the facility to new company Karhulan Valimo Oy (YLE). According to the news article, the new company would take over operations at the foundry from September 2016, with the intention to employ 30 to 50 people. At the time of the sale, the Karhula foundry still employed 140 people. Following the announcement of the transfer of ownership, YLE followed up with a report on the new ownership of the foundry under Karhulan Valimo Oy and their future strategy, on 23.9.2016. Citing the chief executive officer for Karhulan Valimo Oy, Pekka Kemppainen, the article points out that the foundry was actively negotiating prospective orders with new clients, across a variety of different industrial sectors. Following the strategic decision of Sulzer Pumps Oy to concentrate foundry operations at Karhula a few years earlier, Karhula has benefitted as a centre for the specialised knowledge in the field, which the new owners were now utilising to target the industrial niche of larger casts adapted for exceptionally demanding conditions. These products could only be made by selected specialist foundries, enabling Karhula to compete with facilities in countries offering lower production costs. The foundry employed approximately 50 people at the time of the report, and the company estimated that they would need to recruit more by the end of 2016, with a target of 100 employees by the third year of operations.

After the first year under new ownership YLE reported again on the progress made at the foundry, on 13.9.2017. The foundry had successfully attracted new clients and was able to employ 30 new employees within its first year under new ownership and had already

confirmed the further addition of 10 more employees before the end of 2017. The article pointed out that among the significant clients for the foundry was former owner Sulzer Pumps Oy, which had brought many orders back to Kotka, on account of overall improved market conditions and delivery problems encountered with external foundries. Other new clients included rolling-stock manufacturer Transtech and several Russian export companies. The new owners had made the strategic decision to invest in developing overall production efficiency, which had enabled Karhula to compete more effectively with foundries in countries offering lower production costs. The foundry turnover had increased from 5 million euros in the autumn of 2016 to 10 million euros by spring 2017 and increased again by another 5 million euros over the following 6 months.

As witnessed in the case of the Summa mill, Stora Enso was also closely involved in the negotiations for finding new business activity for their pulp mill in Sunila, following their announcement on 19.8.2009 of their intention to close the facility. On 15.10.2009, YLE reported on a new form of project initiative being undertaken to manage the structural change concerning Sunila, as a joint initiative between the management of the Stora Enso mill in Sunila, the Ministry of Economic Affairs and Employment of Finland, Cursor Oy, the Finnish Forest Industries Federation, and the city administration in Kotka, coordinated by consultants Vision Hunters Ltd Oy. According to the article, the initiative was being developed to find alternative use for the Sunila facility, with a focus on, but not limited to, opportunities within the fields of bioproducts, bioenergy, automation, wood-based products and logistics. The initiative would outline possible alternatives to address different possible outcomes, in the events that new business activity could, or could not be found. Stora Enso emphasised the key benefits the mill facility could offer for new business activity, being in a logistically good location, in good condition and having a skilled workforce.

The importance of the facility and its workforce were further emphasised by the announcement made by Stora Enso on 30.11.2009, that they would temporarily resume operations at Sunila by the end of the year. The decision was made in response to a sudden rise in the price of pulp (YLE). In their statement, Stora Enso referred to the challenges which continued to face the forestry industry overall, and the long-term future of the Sunila mill would be determined in the spring of 2010. By 8.4.2010, YLE reported on a rapid rise in the global demand for pulp, to which the Sunila mill was responding by once again operating at full capacity. The news article cited manager of the Sunila mill at the time, Jouni Kostama, who attributed the growing market to signs of global economic recovery following the financial crisis, as well as the effects of earthquake-inflicted damage on pulp mills in Chile, which had resulted in greater demand on the mills in Finland. Following the temporary extension of operations at Sunila, Stora Enso issued a statement on 22.4.2010,

that the prospects of the mill had improved with the increased global demand for pulp, and it would remain operational until further notice (YLE).

New Growth Opportunities in Renewable Industries

In a strategic move that would develop the infrastructure at Sunila, Stora Enso announced on 19.7.2013, that it would be constructing a new 32-million-euro biorefinery at the pulp mill (YLE). The new refinery would be focused on lignin production, part of the increased focus of Stora Enso on renewable industries. In the news article on the biorefinery announcement, Stora Enso estimated that lignin, which can be chemically separated from black liquor, the waste product formed in paper pulp production, could potentially replace 90% of natural gases used at the mill, ultimately reducing future carbon dioxide emissions. The production process, estimated to commence in 2015, would be the first key step towards lignin business activity directed towards external customers.

Within the broader context of abrupt structural changes within the Finnish paper industry, the Sunila mill and its development since 2009 was seen as a unique case example, as outlined in the YLE news report from 4.3.2017. The article points out that the Sunila mill was the first factory in Finland where the announced closure and job losses were withdrawn, and which had been able to successfully recommence operations and subsequently improve overall profitability. The initial temporary extension of operations had been the result of the sudden rises in the price of pulp internationally and the value of the US dollar, but the long-term uncertainty remained, concerning the overall recovery of the market and the price of raw materials. By the beginning of 2010, when production was resumed, the price of pulp had risen to a record level of over 1 000.00 US dollars per ton, and the mill was able to make a record profit. YLE cited Olli-Pekka Reunanen, factory manager at Sunila at the time, who explained that while 2012 was a challenging year for the mill, the decision by Stora Enso to invest in lignin production at Sunila has brought new growth, and new opportunities to the facility. The decision to construct the biorefinery at Sunila was made on account of the mill having the highest quality of black liquor product. The YLE report points out that the mill produced the record amount of over 370 000 tons of pulp in 2016, and simultaneously made the second highest profit in nearly 80 years of operation. At the time of the article, about 200 people were working at the mill, approximately the same amount as prior to closure announcement in 2009.

On 31.8.2018, the announcement was made that BioA would be opening a new 30-million-euro renewable fertiliser plant near to Sunila (YLE). The intention is to commence production from early 2019 onwards, with an initial forecasted production rate of 40 000 tons per year, increasing to 400 000 tons from 2020 onwards. Citing chief executive

officer for BioA, Jari Järvinen, the plant will employ under 10 people initially, but this will be increased incrementally as production grows. The BioA company behind the new plant originated as a Cursor Oy-led renewable industry project and proposes to develop fertilisers from paper industry by-products and refined ash from power plants, reducing the energy required for production and phosphates released into surrounding water systems. Cursor Oy remains the largest single owner of BioA. It is planned that in future, raw materials for production can be obtained directly from the neighbouring Sunila mill.

Closure of the Kotka Coastal Battalion and Extension of the Abrupt Structural Change Designation

The original abrupt structural change designation granted to the Kotka-Hamina sub-region was granted to the end of 2011, but YLE reported on 31.8.2011, that the Regional Council of Kymenlaakso was calling for an extension to the initial term, until 2015, for the Kotka-Hamina sub-region, as well as Kouvola, on account of continued high unemployment in the region. The Kotka-Hamina sub-region experienced a further setback when the Finnish Armed Forces announced on 8.2.2012, that the Kotka Coastal Battalion would be closed by the end of 2013 (YLE). The facility employed 70 people at the time of the announcement. The news article cited the statement from the Armed Forces, which attributed the decision to close the battalion to defence budget cuts and a declining need for training facilities resulting from the ageing Finnish population. Following the news of the upcoming closure, the Finnish Government granted the designation of an area of abrupt structural change to the Kotka-Hamina sub-region on 13.9.2012, to continue until the end of 2015 (YLE).

Unemployment and Population Changes in Kotka Between 2011 and 2018

As in the case of Heinola, the unemployment figure in Kotka also rises in July and December of each year, over the period of 2007 to 2010 (Statistics Finland). The researcher has used July and December as reference points to concisely overview the changes to the unemployment rate over the period of 2011 to 2018. In July 2011, the number of unemployed people in Kotka was 3996, or 16% of the total workforce, and by December 2011 this had increased slightly to 4035 people, equivalent to 16.2%. In July of 2012, the unemployment rate had risen to 4355 people, or 17.4%, decreasing to 4270 people in December, equivalent to 17.1%, but by July of 2013, the figure had risen to 17.7% of the workforce, corresponding to 4440 people. From the end of 2013, the increase becomes more pronounced, with the number of unemployed people rising to 4825, representing 19.3% of the workforce. In July 2014, 4777 people were registered as unemployed in the city, equivalent to 19.2% of the workforce, and the figure rose again to 5157 people in

December, or 20.7%. During 2015, there were already 5243 unemployed people in July and 5525 unemployed people in December, representing 21.1% and 22.2% of the workforce respectively.

During 2016, there is no significant change to the number of registered unemployed people, which was 5275 in July and 5242 in December, or 21.4% and 21.3% of the workforce respectively. Signs of positive change can be seen in 2017, when the number of unemployed people decreased to 4525 in July, or 18.6% of the workforce, and then on to 4106 people in December, equivalent to 16.8% of the workforce. The positive change continued in 2018, when the number of unemployed people decreased to 3861 in July and 3649 in December, representing 16.1% and 15.2% of the workforce respectively. Over the same period, the available figures for 2011 to 2017 demonstrate that the city has witnessed overall population decline (Statistics Finland). In 2011, the population of Kotka was 54 831, with no percentage change from the previous year. This figure increased slightly over the following year to 54 873 in 2012, before a sequence of continued population decline. In 2013 the population was 54 771, marking a 0.2% decrease from 2012. Over the course of 2014 and 2015, the decrease was more pronounced. The overall population of the city was 54 518 in 2014, and 54 319 in 2015, representing a 0.5% and 0.4% decrease over the previous year respectively. In 2016, the population of Kotka was 54 187, marking a 0.2% decrease over 2015. A more significant change can be witnessed in 2017, when the overall population decreased to 53 539, representing a negative 1.2% change from the previous year.

Later Changes in the Salo Sub-Region: Orion and Microsoft

On 14.1.2013, it was reported that pharmaceutical company Orion had purchased a section of the former Nokia factory in Salo with the intention of setting up a new packaging- and logistics centre, for which it would be commencing recruitment (YLE). The new centre would initially employ 100 people, partially transferred from existing personnel in the Orion units in Espoo and Turku, but tens of new jobs would also be created in Salo. The new centre was officially opened on 21.3.2014 (YLE). By 23.2.2017 newspaper Turun Sanomat reported that Orion has been considering the possibility of expanding the new packaging- and logistics centre. The article cites chief executive officer of Orion at the time, Timo Lappalainen, who confirmed that the company has continued to increase its operations at Salo, and the expansion of the unit is a possibility in the future. At the time of the article, the Salo unit was reported to be employing 150 people.

During the research interview at Yrityssalo Ltd, interviewees Urmas and Virtanen both raised the point that addressing structural change in the region has been complicated, as

new economic setbacks continued to occur whenever the overall economic situation showed signs of improvement. Each setback brought a new series of immediate concerns which needed to be addressed, but Urmas pointed out that the nature of these immediate concerns did vary over the years. On 8.7.2015, Microsoft, to which Nokia had sold its mobile phone division some years earlier, announced the closure of its entire product development unit in Salo (YLE), resulting in approximately 2000 job losses. YLE reported separately on the response statement issued by the Salo town administration later the same day following the Microsoft announcement. In responding to the job losses, the Mayor of Salo at the time, Antti Rantakokko, stated that Salo would adapt a proven active model used before in addressing earlier structural changes, to work to find new employment for those affected by the closure. The model uses 3 approaches, which are specifically re-training, entrepreneurship and direct recruitment. Rantakokko also pointed out in the statement that close attention would be directed to the highly specialist knowledge of those left without work following the closure, including entire product development teams, which present an opportunity for Salo for developing new business activity in other emerging technology sectors. This knowledge, Rantakokko pointed out, is further supported by the network of ICT-related subcontractors in place in Salo, as well as location management services.

The YLE news article on the statement issued by the Salo town administration also pointed out that Salo had already been in contact with the Ministry of Economic Affairs and Employment in Finland, as well as the Centre for Economic Development, Transport and the Environment and Employment Office for the Varsinais-Suomi region following the Microsoft announcement, and the town administration saw it necessary to extend the designation of the Salo sub-region as an area of abrupt structural change. The news article pointed out that Microsoft would be issuing support packages for those employees affected by the closure, and the support measures issued by Microsoft, the Finnish government and the Salo town administration would be coordinated with immediate effect. The following day, YLE reported that a dedicated task group had been established, including representatives from Microsoft, the town administration of Salo, the Centre for Economic Development, Transport and the Environment, and the Employment Office for the Varsinais-Suomi region. The job losses from Microsoft added to an unemployment situation in the region, which was already challenging, with a growing share of the approximately 4000 unemployed people being unemployed for a prolonged period of time. The news article also pointed out that up to 2000 unemployed people were estimated to be in the category for whom it would be difficult to find new alternative employment.

During the research interview, Urmas confirmed that the nature of the immediate problems which needed to be addressed regarding the personal consequences of those laid off from the product development unit differed from those who lost their jobs following the running down of the main Nokia factory. In the latter case the challenge had been to re-train and find new employment opportunities for people who had been on relatively low salaries, and who had comparatively lower qualifications. The employment prospects, Urmas continued, were different in the case of those laid off from product development unit, who held higher educational qualifications.

The latter view is supported by the statement from director-general of the Centre for Economic Development, Transport and the Environment for the Varsinais-Suomi Region at the time, Kimmo Puolitaival, from 9.7.2015 (YLE), where it is pointed out that the initiatives for finding new employment opportunities would begin with personnel analysis, to outline the specialist skills available, and identify opportunities for team building, new business creation, and work-based commuting. The electronics sector would represent a focus area for searching for new employment opportunities, Puolitaival continued, as those affected by the Microsoft announcement are already specialists in this field. Puolitaival also pointed out that around 60% of those affected by the Microsoft announcement were existing residents of Salo, who would not necessarily be able to easily move elsewhere in search of employment. Puolitaival stated that response measures need to take into consideration the wider region of Salo, looking at improving opportunities for work-based commuting from Salo, and that the Centre for Economic Development, Transport and the Environment for the Varsinais-Suomi Region, along with the town administration and Yrityssalo Ltd, would actively search for companies outside the region, who would be interested in utilising the available specialist knowledge and relocating their operations to Salo. On 18.11.2015 it was subsequently confirmed in a statement from the Ministry of Economic Affairs and Employment in Finland (YLE), that the Finnish Government had allocated an additional 22 million euros to support economic recovery in the Salo sub-region during 2016. The funds would be directed to supporting the growth of existing viable companies in the region, as well as attracting new investments to the region and supporting new business creation. By the time of the statement, the Salo sub-region was estimated to have lost up to 6000 jobs since 2008, of which 4500 jobs were from industrial sectors.

The IoT Campus and New Economic Growth Opportunities

During the research interview, Urmas and Virtanen both raised the case example of the Salo IoT campus, as a long-term investment in economic renewal. Virtanen explained that the development of the campus has been a project initiative which is hoped to build on the

IT sector as a focus area for future growth and support the creation of multiple new technological start-ups. The planning process behind the campus, located in the former Microsoft building, began in 2015, as part of the long-term response to the structural changes affecting Salo. An YLE news article from 29.11.2016 reported on the upcoming town council vote concerning the proposed 4.5-million-euro investment the campus would require from the Salo town administration. The article cited Mayor of Salo at the time, Antti Rantakokko, who explained that establishing the campus is a necessary measure for the future of Salo, to present new work opportunities for hundreds of former Microsoft employees still unemployed and discourage members of the workforce from leaving Salo to work in other towns. Approximately 80 new tenants and start-ups were ready to move into the facility, pending the final funding decision.

On 20.12.2016 YLE reported that the majority of the town council in Salo had voted in favour of investment in the new campus initiative, confirming that the town administration would contribute 4.5 million euros of the total of 6.5 million euros used to establish a new property company, which would purchase the former Microsoft offices and production unit. The remaining 2 million euros had been secured from local investors and businesses. The facilities would be used to set up a knowledge centre built around the internet of things and ICT-related businesses, with the purpose of creating new job opportunities in the region. The purchase of the former Microsoft facilities was subsequently confirmed on 2.3.2017 (YLE). As part of the establishment of a new knowledge centre, it was later reported on 26.4.2017, that Turku University of Applied Sciences had expressed its interest in moving its entire Salo unit, comprised of approximately 50 employees and between 800 and 900 students, to the new IoT campus (YLE). This move to the IoT campus was confirmed soon afterwards, on 12.6.2017 (Turun Sanomat)

In a news report from 24.4.2018, YLE pointed out the number of new software industry start-ups based at the new IoT campus, with 50 already operating at the time of the article. The article cited the new Mayor of Salo, Lauri Inna, who explained that these growing software businesses would employ more specialists, but there is a shortage of available qualified professionals. Among those from the established Salo ICT sector, specialists are in high demand, and Inna pointed out that many do commute to Espoo or Turku. Inna also pointed out that unemployment has decreased overall in Salo, with signs of economic growth in the form of 2 new apartment buildings being constructed, but the decrease in unemployment has been uneven. There is a high demand for software specialists, but there are still people who were laid off from factories, who have not found work. Inna explained that this latter group will be a focus for an upcoming project initiative.

Unemployment and Population Changes in Salo Between 2013 and 2018

Using the rises in unemployment figures in July and December, demonstrated annually in Salo between 2007 and 2012 (Statistics Finland) as reference points, the researcher will concisely overview the later changes to unemployment levels in Salo for the period of 2013 to 2018. In 2013, the number of unemployed people in Salo was 4381 in July and 4382 in December, each equivalent to 16.8% of the total workforce. The figure decreases slightly to 4193 unemployed people in July 2014, or 16.4% of the workforce, before rising to 4437 people in December, equivalent to 17.4% of the total workforce. The figure decreases slightly to 4400 unemployed people in July 2015, which represented 17.5% of the total workforce, owing to the simultaneous decrease occurring in the total population of Salo. The number rises to 4585 people in December, equivalent to 18.3% of the total workforce, which corresponds with the timeframe of the closure of the Microsoft product development unit.

The unemployment level fluctuates in 2016, first decreasing to 4222 people in July, or 16.9% of the total workforce, and then rising to 4387 people in December, representing 17.5% of the workforce. In 2017, there are signs of positive change, with the number of unemployed people in Salo decreasing to 3689 in July, and to 3505 people in December, representing 15% and 14.2% of the workforce respectively. The change is more pronounced in 2018, with the unemployment figure decreasing to 3086 people in July, equivalent to 12.7% of the total workforce. By December 2018, the number of unemployed people had decreased to 2836, which is equivalent to 11.7% of the total workforce. The changes in unemployment have occurred over the same period in which the town has experienced consecutive population decline each year between 2013 and 2017. In 2013, the total population in Salo was 54 478, marking a 0.7% decrease from 2012. By 2014, the population decreased by 0.4% to 54 238 people, and by 2015, the figure decreased by 0.6% to 53 890 people. In 2016, the population in Salo was 53 546, representing a 0.6% decrease from the previous year, and the figure decreased again by 1% to 52 984 people in 2017.

4.6 Cooperation Models and Challenges for the Future

During the research interview, the researcher asked about possible cooperation initiatives used by Heinola, both internally and externally. Mäkilä explained that the broader concept of cooperation can be subdivided by function. With regard to external cooperation between Heinola and other towns, Mäkilä explained that it can vary according to which parties Heinola works with, and in what capacity. Mäkilä referred to the case example of the

Kimkala canal project, an ongoing travel- and tourism-based initiative between Heinola, Iitti and Kouvola and involving two regions and regional unions, as an example of strong cooperation continued over multiple years. At the time of the research interview, Mäkilä explained that this initiative, which began a few years earlier, would likely continue in 2019. The travel- and tourism sector, Mäkilä continued, represents an area where Heinola actively engages in cooperation initiatives with other parties, and this cooperation is coordinated by different committees. An example of this is the committee for lake- and waterway-based tourism in the Etelä-Päijänne area, which leads various projects, in which Heinola is participating. Mäkilä also pointed out that Heinola will participate in the Lahti Region initiative from 2019, which is aimed at developing the local tourism infrastructure and offering, with the purpose of attracting foreign tourists.

Mäkilä emphasised the importance of active cooperation with the broader Päijät-Häme region for Heinola. As part of this regional cooperation, there are ongoing processes involved with the definition and revision of sections of the regional economic strategy. Heinola also works closely with the Centre for Economic Development, Transport and the Environment for the Päijät-Häme region, which is closely involved in negotiations concerning the funding of joint initiatives in the region. In addition to projects within the travel- and tourism sector, Heinola is also part of a broader biotechnological group set up by the towns and villages of the Päijät-Häme region, the regional development company LADEC, Lahti University of Applied Sciences and other parties. With regard to future project initiatives, this group evaluates prospective opportunities in the region, available resources, and necessary steps which should be taken.

Among the other cooperation initiatives, Mäkilä pointed out that there are different education-based development projects which tie-in to the broader, ecosystem-based approach to economic development in the town. Through these projects, Heinola cooperates with knowledge institutions, such as Lahti University of Applied Sciences, Lappeenranta University of Technology, and Aalto University, as well as individual companies. Heinola also belongs to a network of 50 sub-regional towns across Finland, which engage in different kinds of economic- and other cooperation. Mäkilä pointed out that the initiatives within this network are small in scale, but Heinola does actively take part in these and keeps up to date with development. In relation to the different forms of external cooperation used, Mäkilä emphasised that it is important that Heinola maintains solid, continuous relationships with a variety of different parties, as part of a project portfolio with which to accomplish objectives. Business Heinola has limited resources on its own, and it is necessary to have external support.

Mäkilä pointed out that the role of Business Heinola involves acting as a trustee for the benefit of developing the town, a comprehensive role which is an important part of the active cooperation with the region and beyond. This cooperation is connected, but not limited to, the economic development of Heinola, involving such varied functions as maintaining and developing transport connections, education facilities and other services. In supporting new business growth in the town, Business Heinola also runs project initiatives promoting local entrepreneurship and related matters and provides open multi-functional workspaces for this purpose.

When asked about cooperation with local knowledge institutions within Heinola, Mäkilä pointed out that the town works proactively to strengthen the connection between local students and work life by ensuring the availability of summer jobs to as many students as possible, both with the town and with local businesses. There are also days when representatives from local businesses will visit local knowledge institutions to talk to students about entrepreneurship and working at the businesses in question, and students are also taken to visit local businesses.

Mäkilä explained that the cooperation between the town and local educational institutions is important, in working to present a joint offering of the selection of educational options available in Heinola. There are initiatives already in place, but this area of cooperation is something which needs to be developed further in the future.

Cooperation Models in Kotka

During the research interview, Lindholm raised a similar point as was mentioned by Mäkilä in the respective research interview with Business Heinola, pointing out that the different partners with which Kotka works, as well as the nature of cooperation, can vary by case. The regional development company Cursor Oy, which is already under the joint ownership of neighbouring Kotka, Hamina, Virolahti, Pyhtää and Miehikkälä, as well as selected regional industrial companies and financial institutions, acts as a vehicle for all cooperation on a regional level, Lindholm explained. In addition, Kotka will also work together with different external parties on individual projects. These parties can include other towns and knowledge institutions from a wider area. The regional-level cooperation within the Etelä-Kymenlaakso area is continuous, Lindholm clarified, but in many of the other cases, the cooperation between Kotka and other parties is tied to fixed-term initiatives, although these can be very long in duration.

The arrangements concerning cooperation possibilities stem from the guidelines of the city strategy, Lindholm explained, which are approved by the city council, and which direct all other activity. Examples such as event management and port-related business-activity

are outlined as starting points, as focus areas in the strategy, and the city organisation and the development company will work to further the development of these sectors, individually, or in cooperation with each other. The city organisation and development company do cooperate extensively, but in sector-specific issues which are the responsibility of the development company, the city has a lesser role and will follow what is happening from the side. In these cases, Cursor Oy will make independent decisions regarding which processes to implement and which cooperation networks to build. Regarding different partnership networks and cooperation, there are usually representatives involved from both the city and Cursor Oy, but this can also vary by case, depending on the business sector in question.

Lindholm also pointed out that there has been a significant effort made to develop connections between Kotka and different knowledge institutions in Finland, including Aalto University and Lappeenranta University of Technology, and internationally, with institutions in Russia and the United Kingdom. The city benefits from partnerships with different universities, and the pursuit of future cooperation opportunities represents a specific focus area of the newest city strategy, Kotka 2025, which was approved in May 2018. Lindholm explained that in 2017 Kotka had been in the running as a prospective location for the new Northvolt battery factory, with an offering for this investment that had been developed in cooperation with other parties including Lappeenranta University of Technology. Kotka has also worked closely with the Porvoo region in the travel- and tourism sector, including coastal—and boating- tourism-related projects, and is jointly exploring future growth possibilities for attracting Chinese tourists to the area. Lindholm pointed out that a large part of the different cooperation initiatives between Kotka and other towns and cities occurs through different networks, such as the Northern Growth Belt, which starts from Pori, and incorporates different towns and cities across Southern Finland.

Lindholm also pointed out that at the time of the research interview, Kotka would be implementing a new city bicycle initiative within the following weeks, making Kotka one of the first medium-sized towns and cities in Finland to have an equivalent city bicycle scheme. The project initiative has been developed in cooperation with Kouvola, and it is representative of the kind of practical joint projects that Kotka has with other towns and cities. Lindholm explained that Kotka is also continuously looking for these kinds of opportunities for future cooperation.

When asked by the researcher about cooperation between the city organisation and knowledge institutions within Kotka, Lindholm explained that this represents one of the primary focus points for future development within the new city strategy. The city is aware

that the level of education and skills is relatively low in Kotka, in comparison with other towns and cities in Finland. This is attributed to the history of Kotka as an industrial city, without higher education students or a generally high level of qualifications. Kotka is working to put more effort in education in the future and is working closely with local education institutions to develop this sector. There are also initiatives which support the active participation of students in developing business activity in the city. Lindholm explained that as an example, the local vocational college has been actively involved in developing the cruise ship-tourism business in Kotka. The visiting cruise ships have served as a training case study for students on the travel- and tourism, and service sector-related programmes at the college. These students and their teachers have, in turn, been involved in handling the service sector offering for the cruise ships visiting Kotka.

Lindholm also raised the point that in constructing the new campus area for the South-Eastern Finland University of Applied Sciences at the Kantasatama site in the vicinity of the city centre, the university of applied sciences and the development company will be able to work closely together in future, to attract new business and cooperation opportunities for the campus area. This point is also supported by the YLE news article from 5.3.2019, concerning the signing of the agreement for the upcoming construction of the event centre and campus, where it is reported that the new facility will also incorporate a business centre and increased laboratory facilities to support future research initiatives.

Cooperation Models in Salo

During the research interview with Yrityssalo Ltd, the researcher asked about the possible cooperation models used in Salo, and also whether these possible initiatives are typically led by the town or Yrityssalo Ltd. Urmas explained that the practical arrangements concerning different cooperation models can vary by case, in terms of who leads the initiative on behalf of Salo. A close relationship is maintained with Somero, and the Salo region and Somero work together as a single entity in issues concerning the wider Varsinais-Suomi region. Somero will also procure services from Yrityssalo Ltd to support their own dedicated economic- and regional development staff. On the regional level, Urmas pointed out that Yrityssalo Ltd actively works together with other sub-regional towns on issues relating to regional development, renewal and business development services, which all represent natural areas for cooperation.

The town actively participates in different cooperation networks, such as the network for sub-regional towns. Urmas pointed out that the Alderman, and former Mayor of Salo, Antti Rantakokko, was the chairman for the sub-regional town network, and has been closely involved in the related common issues concerning economic development across the

different member towns. As well as being a sub-regional town, Salo is also the 20th largest town in Finland, which qualifies Salo for the Helsinki-led C21 network of the largest cities and towns in Finland. Urmas explained that the nature of cooperation within this latter network is grouped around multiple different functions, and Salo is involved in many of these. Cooperation within the C21 network occurs generally on an administration-level, Urmas clarified, and this represents an example where the cooperation is led by the town.

Within the sub-regional town network, there are projects linked to specific areas such as maritime industries or industrial estates, where cooperation is led by Yrityssalo Ltd. Urmas explained that there is no fixed definition regarding which cooperation initiatives are led by the town or Yrityssalo Ltd, but rather this is determined on a case-by-case basis, depending on whether the issue relates more closely to business development or regional development. Similarly, the nature of cooperation can also vary by case. Urmas pointed out that national-level cooperation is often conducted through specific project initiatives, with a fixed end date. It is hoped, that these kinds of fixed-term projects will support the creation of new cooperation networks among the different sub-regional towns, which will continue to work together for a shared goal in the future. This represents a cooperation model where a fixed-term project serves as a foundation for continuous cooperation in the future. Examples of this kind of progression can be seen in the sector-specific fixed-term projects once led by Yrityssalo Ltd for local businesses within the sub-region, which later developed into the independent Salo Food and Visit Salo networks, as mentioned earlier in the chapter.

Urmas also pointed out that Salo cooperates in different networks internationally, including the friendship town initiative. In the case of Salo, the international friendship networks are based primarily on economic cooperation. As an example, Salo engages in business development cooperation with its two friendship towns in China.

Urmas and Virtanen both emphasised the importance of the IoT campus, as a cooperation initiative to support a technological community, which is hoped to lead to the creation of multiple new start-ups. Virtanen explained that ultimately, the intention is to create an ecosystem of different parties which would together form a greater entity. This would include IoT solutions, service providers and other processes within the service chain, ranging from measurement and sensor products to programming. Virtanen also pointed out the importance of the presence of Turku University of Applied Sciences at the campus, which helps the campus develop into an attractive hub for specialist knowledge. Urmas pointed out that Yrityssalo Ltd already works actively with the university of applied sciences on

different projects relating to the overall technological concept of the campus, and the support of new emerging technological sectors.

Virtanen also explained that cooperation with Turku University of Applied Sciences is important, as Salo currently has no higher education institution of its own. The education offering in the town is a focus area for the future, to ensure that knowledge and skills are maintained in Salo on the long-term, and also for attracting more students and related activity. The presence of higher education students, Virtanen continued, represents a key draw factor for business activity. This is an area which can be resolved, if cooperation with different higher education institutions can be developed to a degree, that would benefit the region and local businesses. The possible methods to make the Salo region more attractive to higher education institutions and how cooperation could be developed between these institutions and local businesses are presently being considered carefully.

Overcoming Structural Change and Future Outlook in Heinola

To conclude the research interview, the researcher asked the interviewee about the key changes which had occurred to the economic structure in Heinola following the abrupt structural change designation of 2008, and the future economic focus and outlook for the town. Mäkilä explained that Heinola has seen a significant change in its approach to economic renewal in the years following the original designation. From a starting point that was primarily operational, the idea of economic renewal had not been a focus area for activity, but Heinola has since been moving towards a broader way of thinking and planning. Heinola is now giving much consideration to economic renewal, and the changing nature of work life in general. The latter point relates to the separation between the idea of a place of work and a place of residence, and the increasing possibilities for working remotely from home or other locations.

Mäkilä pointed out that Heinola, as a pleasant, functional place to live, with good services, location and accessibility, can benefit as a base from which it is possible to work remotely. Heinola is working to attract new residents, in cooperation with the focus industries and other parties, and new residents can potentially bring new kinds of specialist knowledge and networks to the town, which, in turn, can stimulate a dynamic environment and entrepreneurship. Heinola is systematically building a brand for the town, which is attractive to specific industries, as well as for individual people as a place to live and visit, and this brand, Mäkilä continued, reinforces the strategic focus of the town.

Mäkilä explained that there are ongoing efforts to further development within the focus industry sectors, and there is also a new process beginning, in which Heinola will be placing a future emphasis also on anticipatory development. This represents a proactive search

for new pockets of growth, targeting those growth areas which could be a natural fit for Heinola. Mäkilä also pointed out that Heinola is paying careful attention to global economic changes, and market conditions which could have a direct impact on the town. When compared to the circumstances of 2008, much has been learned, and there is a much stronger understanding of which industries should be targeted for bringing continued economic renewal to the town. Mäkilä emphasised that from the perspective of Business Heinola, when working to attract prospective new investments, the process involves recognising where potential new investments may come from, and the theme of investment.

Mäkilä explained that Business Heinola can influence the securing of new investments within the two greater industrial entities which are at the centre of the economic structure of the town, and for Heinola, the central theme is an interest in specialised initiatives within the size bracket of tens of millions to hundreds of millions of euros, which represent a more suitable fit within the existing ecosystem of the town. Business Heinola works to secure new investments with careful consideration of the existing business mix in the town, which entails an understanding of what other businesses see as positive in Heinola, and to avoid competition between businesses for the same resources and commodities. The origin location of the investment is not at the centre of the decision-making process, and the opportunities can vary by sector. Mäkilä pointed out that Chinese investors play a significant role in new biotechnological investments in Finland. In the travel, recreation and wellbeing sectors, investors will often directly reach out to large organisations like Vierumäki, and so the practical role of Business Heinola is more limited. Mäkilä explained that Business Heinola works to support the smooth operations for these companies, in facilitating processes such as land use planning, zoning, infrastructure and environmental permits, building permits, and jointly developing public relations materials and campaigns.

Measuring Progress, Challenges and Strengths Going Forward

The researcher asked about measurement techniques used by Business Heinola, to quantify the success rate of new investments attracted. Mäkilä explained that there are practical challenges linked to determining and measuring specific targets. Statistics can take time to assemble and may be available sometime after actual events. In the case of figures detailing the creation of new jobs and other changes relating to employment, the figures may even be some years out of date. Mäkilä also emphasised that statistics can be subject to interpretation, and employment figures do not accurately record the number of Heinola residents who commute elsewhere for work, or residents from other towns who commute to Heinola.

Mäkilä explained that it is important to have an accurate understanding of what variable is being measured, but there is no single measurement tool which the town can use to continuously monitor how a given variable, like employment, has changed. Consideration needs to be also given to factors including work-based commuting, retirement and other behavioural phenomena, and, the challenge is not only how to measure changes, but how to set any kind of specific target. The practical division of responsibility across different parties also complicates the setting of targets. Individual companies will make the final decisions regarding whether or not to invest, and how many people they employ, so Business Heinola, as a contributing player in a larger process, would have limited influence on the eventual outcome, if it were to set a specific target for the creation of a set number of new jobs in Heinola.

Mäkilä pointed out that some variables are easier to follow, such as the number of new businesses, which is monitored closely. This is an example of a variable which does give some indication of economic progress that is being made, but Mäkilä emphasised it is important to recognise that the number of new businesses does not accurately portray how many people each business is employing. Business Heinola strives to set relevant targets where its proactive efforts in investment promotion, location management and support for new start-ups and existing businesses can make a difference, even without exact target figures or specific measurement tools. Mäkilä explained that the town administration in Heinola considers the current measures and focus of Business Heinola as sufficient at the present time, but it is always possible that new methods and tools will be adopted in the future.

Mäkilä pointed out that going forward, there are still certain challenges and areas for development in Heinola. While the town is host to many businesses, a practical challenge relates to the ageing entrepreneurial community in Heinola. To ensure the long-term continuity and development of these businesses, there will be a need for new people to run these establishments in the future, and to challenge established business patterns, if these businesses are to grow. Mäkilä explained that this latter point relates to maintaining economic diversity in the town, which can require taking bold steps to change fixed ways of thinking, by analysing present circumstances, and taking measures to modernise.

Mäkilä also pointed out that there are still some remnants of a mentality stuck in the idea that Heinola is struggling, which the town as a community needs to correct. There have been many positive developments regarding public outlook and attitudes, but there is still work to be done in this area, as maintaining the old mentality prevents people from seeing the extensive positive development which has occurred over the years and looking to the future with optimism.

While there is work to be done in certain areas, Mäkilä pointed out that the outlook for the future in Heinola is good, and there is a growing trust in future growth within the town and the business community. The town has been able to build a strong profile in its focus industrial sectors and as an attractive place to live, as well as developing comprehensive cooperation networks. From the perspective of Business Heinola, the future industrial focus of Heinola is based on sectors which are growing internationally, and where Heinola hosts strong driving businesses.

Overcoming Structural Change and Future Outlook in Kotka

When asked by the researcher how the economic structure of Kotka has changed in the years following the original abrupt structural change designation in 2008, Lindholm explained that the designation period occurred at the same time as the global economic recession, which made the timeframe of 2008 to 2015 particularly challenging in terms of furthering economic development in the city. When considering the broader economic conditions affecting the region at the time, the economic structure of the city did not see significant renewal during the designation period, but there is now a rise of new business sectors occurring in Kotka, which includes the game industry, new breakthroughs in renewable industries, event management and travel- and tourism initiatives.

A key challenge for developing the economic structure of Kotka has been the speed of the structural changes affecting the major industries in the city, and how rapidly jobs have disappeared as a result. Lindholm pointed out that the structural changes affecting Kotka did not begin with the events of 2008, and the city has responded over the years by continuing to pursue a systematic long-term approach of investing in key infrastructure and services to further develop and diversify the economic structure. The focus of the development work that has been done has been on the long-term, with consideration of the future potential. There has been a lot of work done behind the scenes to develop new business opportunities, and while this has been a slow process, the results are starting to show, in the forms of new businesses and investment.

Building on Key Strengths

In terms of attracting future investment to Kotka, Lindholm pointed out the city does not impose barriers regarding the origin of investment and there are no strategical guidelines that would prioritise efforts to attract potential investments from abroad or within Finland. This can often vary by sector. In the case of prospective data centre initiatives, the companies behind these investments are international. The approach used by Kotka starts with the port as a key asset, Lindholm explained. Different industries and business

sectors, such as battery technology and food production, are carefully evaluated to find the best fit for the city, as well as the suitable locations or facilities Kotka has to offer for these sectors. The proximity to a major port for the delivery of finished products is an important consideration for manufacturers searching for prospective new locations. There are negotiations with different companies and site reservations occurring all the time for prospective new investments. As mentioned earlier, in 2017 Kotka had been in the running as a possible location for the Northvolt battery factory, for which the port had been an important requirement. Although this particular investment did not come to the city, Kotka is continuing to closely follow developments within battery-related industries to identify other future opportunities within this sector.

Lindholm explained that the port has seen continued investment, and it represents an area where the city sees significant future potential for economic development. An example of this future potential can be seen in the proposed UPM biorefinery initiative. The decisions regarding the construction of the facility have not yet been made, Lindholm pointed out, and the initiative is currently undergoing environmental impact assessment, but it is representative of how new industrial opportunities can be attracted through the investments made by the city to develop the port and its related infrastructure. Kotka has been chosen as a prospective location for the biorefinery on account of its ability to provide close proximity to a major port and provide transport for raw materials and end products. The development of the port itself is the responsibility of HaminaKotka Satama Oy, a joint company owned by Kotka and Hamina, while the city primarily handles issues relating to the port environment, surroundings and land use, and this work is usually done in close cooperation with the port operator. The city has purchased land from areas surrounding the port, which provides potential locations for large business initiatives in the future.

While Kotka does not limit the potential sources of new investment, Lindholm pointed out that decisions do have to be made regarding marketing, and how marketing initiatives are directed. In this sense, there is a targeted approach, which focuses on the most appropriate business sectors, where the offering in Kotka is strong. These selected business sectors include battery technology, data centres, and travel and tourism-related investments. The forestry industry also continues to form a significant part of the future economic structure of the city, which continues to employ a large number of people, despite the layoffs which have been made. It represents an industrial sector where there is a natural transition of labour, where new jobs are created as workers retire.

In terms of monitoring progress which has been made, Lindholm pointed out that the city does closely follow figures detailing the numbers of new investments, new businesses,

new jobs, visits and overnight stays, and uses its own calculation methods to identify changes. The city also follows changes to the number of residents, which has decreased more rapidly in recent years, as this variable ties in closely with other economic changes. The interviewee emphasised that monitoring and quantifying changes can be difficult processes.

Challenges Going Forward

Going forward, Lindholm pointed out that the biggest challenges for Kotka continue to be linked to overcoming the rapid structural changes which have occurred over the past few years and addressing the related long-term unemployment which is still a significant issue in the city. In addition to developing new employment opportunities for those without work, the city has also simultaneously faced challenges in finding skilled workers for certain fields in recent years, which is a growing problem all over Finland, and not limited to Kotka. Without skilled workers, a bottleneck is created which limits industrial growth.

Another challenge relates to the changing population structure in the city, where the number of children is continuously decreasing, and the overall population is ageing. Lindholm explained that this affects many aspects including the planning of different services in the city. With the ageing population structure, an increasing number of residents are also retiring, so tax revenue is not increasing at the same rate as unemployment has been decreasing. Lindholm pointed out that while the city does have a university of applied sciences and a vocational college, there is no university, so there has been a trend for young people to move elsewhere for their studies. The structural changes in key industries and the effects of the global economic crisis have also had an effect, where the job market for young people has been limited, especially in the last few years. There have not been the kind of local jobs in industry available where young people could once readily find work, and no job opportunities for those young people studying elsewhere to return to. The changing population structure is a focus area for Kotka, and in addition to working to develop new employment opportunities, the city is also making an effort to attract new residents.

Overcoming Structural Change and Future Outlook in Salo

When asked by the researcher, how the economic structure in Salo has changed over the course of the abrupt structural change designation, Urmas explained that economic foundation in the town is now much wider, and more diverse than when the structural changes originally began. Virtanen added that Salo now has the most businesses per resident of any town or city outside the capital region in Finland, and the second highest percentage

of private sector jobs after Helsinki. There is a natural cycle of economic renewal occurring in Salo, where there are new businesses being created all the time, and simultaneously older businesses which are shutting down.

Virtanen also pointed out that the town has also witnessed the growth of new technology companies from the foundation of the former Microsoft product development unit, which draw from the industrial tradition and specialist knowledge which has been an area of strength for Salo. While not all of the new start-ups will succeed on the long-term, Salo is now witnessing an exciting development stage for these companies and is closely following which of these start-ups will grow into significant companies in the future. With the rise of small businesses in the town, the employment rate in Salo has improved significantly over the past 1.5 years, with many smaller businesses hiring 1, 2, 3 or even 10 people at a time. Virtanen explained that while these kinds of changes are not always directly visible in the overall picture, a combination of these small steps can rapidly amount to 1000 more employed people than the year before.

Another point relating to economic renewal in Salo over the past few years, Urmas explained, has been the specialist knowledge from the Nokia years which has found its way into traditional industries and their processes, including manufacturing and supply chain management. Many traditional industries did not previously have this kind of knowledge or skills available, but now this has strengthened their overall competitive advantage for the future.

Challenges Going Forward and Measuring Progress

Both interviewees agreed that the decreasing population in Salo represents an ongoing challenge for the town, which is caused by residents moving away, and an ageing population. Virtanen explained that the fact that there are more Salo residents dying than being born accounts for approximately half of the negative population growth, but another key element is a trend for young families to leave Salo, while the new residents moving to the town are people of age 65 and over, who are returning to the area of their childhood. Virtanen pointed out that this is an issue which has potential to improve, if new jobs are created. There are already signs that the population decline is levelling out, and the population level is no longer decreasing as much as it has been. At the same time, there are a number of businesses which are now steadily growing in Salo.

Virtanen pointed out that overall economic recovery is likely to be a key driver behind the present situation of the business community in Salo, and why businesses are now doing much better than, for example, 2 years ago. Urmas added that this can be linked to the issue of measurement, as measurement tools do not recognise causal factors behind

changes. This means that changes cannot be directly attributed to specific measures that were implemented as part of the structural change plan, or the overall effect of the recovering economy. Urmas also pointed out that certain measurement tools which were introduced as part of the structural change plan are still actively used, such as monitoring the number of new job positions reported by individual companies, but the number of new jobs and overall employment level have continued to rise following the end of the abrupt structural change designation, so the causes cannot be totally isolated from each other.

Urmas clarified that in terms of attracting new business to Salo, the town and Yrityssalo Ltd act as a single entity, and jointly handle all monitoring and measurement processes. This similarly applies to targets which have not been specified by Yrityssalo Ltd. Urmas also pointed out that the issue of measurement can be challenging. Yrityssalo Ltd does monitor certain variables, such as meetings with new companies, corporate visits, fact finding visits, new investments and the number of jobs created through these, but specific project targets are no longer used. The decision for any given company to invest in Salo will be the result of multiple different factors, and many of these can be more important than the specific measures taken by the town itself. The actions of the town and Yrityssalo Ltd alone, do not secure the new investment, so the use of specific numeric targets for this purpose is difficult and unfair. Instead, quality targets can be applied to ensure that prospective investors are offered the very best investment location management and support. From the perspective of Yrityssalo Ltd, the belief is that this approach can lead to good results, and there have been a significant number of new investments which have been attracted to Salo over the years. Yrityssalo Ltd has calculated that approximately 2000 new jobs have been created in Salo over the period of roughly 10 years when investment promotion activities have been provided.

Urmas pointed out that the Orion logistics and packaging centre and the Nordea service centre are among the more well-known companies which have invested in Salo over the last 10 years, and there have also been investments in different product development units for various American companies. Some of the new units which have been established in Salo are directly linked to the availability of workers from both production lines and product development following the structural changes, and this has resulted in new job opportunities in both production and high-tech research and development in a variety of fields.

Virtanen pointed out that another possible challenge for Salo going forward, is that there are no driving, flagship companies. Urmas added that Salo has witnessed a kind of natural corporate evolution which is also occurring everywhere else. The closures relating to

Nokia have received more attention, but there have also been job losses from other companies, Urmas explained, with Sanmina closing approximately 1.5 years earlier with the loss of 200 jobs, and Hella Lighting running down its operations in Salo at the time of the research interview. At the same time, other businesses have been actively searching for skilled workers, and the challenge is to match the businesses searching for skilled workers, with those skilled workers who are unemployed. Virtanen pointed out that the limited availability of skilled workers in certain industry sectors is an issue affecting Salo and also the rest of the country. In Salo, the machinery-, metal- and programming sectors are all examples of industries which are having trouble in finding enough skilled workers, and if this shortage cannot be resolved, the risk is that performance will decline on the long-term. All across Finland there is a need for qualified people for positions in machinery, metal and programming, and filling this labour gap nationally could represent prospective employment for 10 000 people.

Future Opportunities and Strengths

Urmas explained that Salo is also focused on the opportunities provided by work-based commuting. A clear phenomenon related to the last stage of structural change in Salo has been the work-based commuting of Salo residents to the capital region or Turku. There is a need for qualified workers in the larger cities, but due to the higher cost of living expenses and other factors, many people would rather live in Salo. Salo has made significant investments in its infrastructure for a town of its size, and the current array of services is comprehensive and of a high standard. The public funds earned from Nokia over the years were similarly invested in the upkeep of the town. Virtanen added that the living environment which a town offers is also an important consideration for businesses, when considering a prospective location for investment.

As in the cases of Heinola and Kotka, Salo does not use specifications as to which sources of future investment it is focusing on. Urmas pointed out the scope for attracting new investment is rather defined by how it supports the existing knowledge base in the town, so the approach is led by the skills which Salo can offer. This is an area in which Yrityssalo Ltd works closely with Business Finland and Invest in Finland. Urmas explained that Salo participates in the focus group model used by Invest in Finland to look for sector-specific businesses globally. Individual groups, such as the ICT-group, will follow targets specified by Invest in Finland, but in international marketing Salo can focus on natural areas of strength, including ICT, IoT, and mobile communications-based knowledge. Urmas pointed out that Salo, as a former Nokia town, falls into a similar category as Espoo, Tampere and Oulu, and in the context of investment promotion engages in similar activities to

these cities. Direct investments and new companies from within Finland and from abroad are equally important opportunities going forward, Urmas explained, and the recent activities of Yrityssalo Ltd, coupled with the draw factor of the IoT campus, are directed at attracting future growth in high-tech businesses.

Urmas emphasised that going forward, Salo benefits significantly from its location and excellent transport links, being situated in Southern Finland, within the busiest, and most densely populated part of the country. The town has also made significant progress in furthering entrepreneurship following the structural changes and is now perceived as being an entrepreneur-friendly location for business, with a future target of becoming Finland's most entrepreneur-friendly town by 2023. A letter of intent for this target has been signed by the town administration, the entrepreneur committees, the Chamber of Commerce, the Youth Chamber of Commerce, the committee for women's entrepreneurship and other relevant parties. Urmas also emphasised that the years when Salo was experiencing structural changes have created a culture of working together for the common good. Residents in Salo take pride in the town, and this mentality has prevailed when it comes to getting matters done, and it is still getting stronger.

4.7 Invest in Finland: Investment Promotion on a National Level

The researcher began the interview stage of the present study with the case example of the national-level investment promotion agency Invest in Finland, to gather further context to the different processes involved in attracting prospective new foreign investment to Finland, and investigate how the external foreign investor may view the offering provided by a given location. The information obtained from this interview will help to provide further understanding of how the responses and actions of individual urban economies are connected, and how their decisions and actions reinforce the investment offering of Finland as a country.

The researcher met with Hanna Lankinen, Head of Business Development at Invest in Finland, who explained that the practical role of the national investment promotion agency begins with the detailed mapping of the driving factors with which Finland can compete internationally, and these factors are outlined on a national, regional and urban level. Within the broader context of investment promotion, Lankinen pointed out that there is extensive competition internationally between thousands of different agencies which can represent countries, regions and cities, and it is important to carefully consider how an individual location, in this case Finland, can stand out from the competition. Prospective investors will be looking for specific opportunities, rather than countries. The competitive advantage can

come from driving factors like the specific investment opportunities available, and specialist knowledge and skills.

Lankinen explained that Invest in Finland uses a model comprised of 4 stages, when working to attract new investment. Stage 1 is offering development, stage 2 is marketing, stage 3 is finding customers, and stage 4 is sales and aftercare. Invest in Finland will first work to identify the available investment opportunities. This is followed by the marketing phase, which is tailored specifically to each investment opportunity in question. Invest in Finland will then identify prospective customers who may be interested in the specific offering in question and will proactively contact them. The sales process can go on for some time. Once a foreign company has made the decision to invest, they will visit Finland, sometimes on multiple occasions, and these investing companies may also bring partners with them on these visits. The aftercare stage is conducted with existing investors and is intended to secure continued investment on the long-term.

When asked by the researcher how the success of new investments is monitored, Lankinen explained that Invest in Finland keeps track of all the companies with whom it works, to know which companies it has helped through its measures. Interviews are conducted with each company, to ascertain their future plans for employing more people and how many euros they are planning to invest. The system takes into consideration the development of each company, the number of people they have been employing over time, and how their turnover is developing, and this process determines whether a particular investment is regarded as a success. Invest in Finland also has a national responsibility to follow up on all foreign companies which have set up in Finland. A national registry of companies is maintained, and this also includes those clients which Invest in Finland has helped to attract to Finland.

Understanding the Needs of the Prospective Investor

Lankinen pointed out that there will be sector-specific variations in the needs of prospective investors, who may be looking for new markets, sources of raw materials, or specific competences, and, in simplified terms, a shared goal for all is to make a profit from the investment. These variations in driving factors can sometimes be linked to the priorities and origins of foreign investors. For example, individual businesses from certain countries may be interested in market-driven investment opportunities in Finland, while others may consider the Finnish population to be too small for that kind of investment to be attractive and will instead be interested in the competences that Finland can offer. In order to meet the needs of a given investor, Finland, as a country, must be able to provide the foundation of a good business environment, and be able to provide a specific solution for what they are

looking for. The role of Invest in Finland is to work to continue to provide a good, secure environment for foreign investment on the long-term.

When relating the topics of investment promotion and the needs of the investor to the structural changes which have affected the Finnish economy, Lankinen pointed out that the changes have created entirely new opportunities to be marketed. The large-scale layoffs which have been experienced in certain business sectors in Finland resulted in the ready availability of competences, which have become some of the strongest selling points of Finland to prospective investors. There have been many foreign companies which have been investing, and sometimes simultaneously employing entire teams which had been laid-off. Lankinen explained that within the last 5 years, a significant share of the new jobs created in Finland through foreign investment have been in the ICT sector, where Finland has had an available skilled workforce. On account of this knowledge base being a significant asset, the marketing activities at Invest in Finland were focused on finding investors who would be interested in this opportunity, and there are presently few left from those specialists laid-off by Nokia or Microsoft, who have not yet been employed by new investing companies.

Another sector in which Finland has been attracting foreign investment, Lankinen added, is biotechnology, where there is interest from China. Following the structural changes there has also been a surplus of pulp and paper expertise in Finland, which has been successfully marketed for use in different Chinese-led bio plant initiatives. In these previous examples, it was recognised that while Finland did not have the necessary companies available at the particular time who would have provided employment for a certain group of specialists, or which would have utilised a particular resource, Finland could use these specialists and materials as assets which can be offered to somebody else, and a marketing strategy was developed around this offering. Lankinen pointed out that as investors have employed those skilled workers, there is currently no longer a ready availability which could be used for attracting investment. The challenge has become how to attract more skilled workers.

Regional-level Cooperation and Developing a Targeted Approach

Lankinen explained that Invest in Finland has launched a new model for its cooperation with individual towns and regions in Finland, which represents a targeted, industry-specific approach to investment promotion. Invest in Finland has set up specific teams for their cooperation with towns and regions, which at the time of the research interview, are dedicated to ICT, biotechnology, cleantech, health, and travel and tourism. The 5 groups represent the key areas of strength for the country, and the focus sectors in which Invest in

Finland actively promotes Finland to foreign investors but Invest in Finland also works with clients from outside these 5 sectors. On a practical level, the group model ties into the process of mapping out the present offerings for prospective investors, from the national- to local-levels, and matching these to the needs of specific clients. The partners who take part in these national industry teams are usually the regional development- or economic agencies. Each team is led by a respective head of industry, and the representatives from each regional partner agency are invited to take part in team meetings, where matters ranging from present opportunities and cases to sales and marketing activities, are discussed.

The new structure of the team model encourages regions and towns to adopt an industrial focus and present their offerings in a manner that is internationally competitive. The presentation of a valid case for investment is important, in order to compete successfully with other locations internationally, Lankinen emphasised. As an example, a town aspiring to construct a new bio plant must be able to present a strong case for prospective investors, regarding their ability to provide a suitable location, readily available raw materials, logistical support and a skilled workforce. The necessary driving factors and supporting infrastructure required for a particular investment can vary by sector, Lankinen explained, and in some sectors, such as the health sector, an existing industrial foundation, such as research infrastructure or the presence of large existing companies, will be more important.

Lankinen pointed out that it can be hard to persuade a foreign company to invest in a given location, if that location does not offer existing assets in their given industry sector. The new model for regional cooperation is an approach which provides support for the regions and towns involved, to help develop their profile and establish which key industries they are focusing on for future investment. Lankinen emphasised that few towns and cities in Finland can support multiple industry sectors to a degree that would represent internationally competitive business ecosystems when attracting investors. Even within those towns and cities which have a more varied economic focus, there are strong industrial niches. By working together to help establish the respective strengths of individual towns and cities, it is possible to align the investment promotion activities of the specific location with those of the Invest in Finland industry team, to present a coordinated international case for investing in Finland.

A solid case for future investment opportunities can be presented when the right locations have been established first. A town may, for example, have a surplus of skilled workers available in a specific industry, which represents an opportunity. Within the industry team,

representatives can outline which trade events the town should be actively attending, Lankinen explained. Further cooperation can also take place at trade events between Invest in Finland and the representatives of towns in the form of joint stands.

Cooperation Based on Shared Interests

Lankinen explained that Invest in Finland has cooperated with different towns and regions on different project initiatives where there is a special shared interest with the town or region in question. An example of this kind of cooperation was the KAATO project conducted with Yrityssalo Ltd as a means of finding new employment possibilities for people laid off from the ICT sector in Salo, and there have been other similar projects conducted in cooperation with Helsinki, Tampere and Oulu. The new industry group model is intended to build on these previous examples, by continuing to work with these towns and regions with the same interests. This kind of cooperation is focused on specific industries and provides a foundation for working together to consider such issues as where Finland and its towns and regions should be within a particular business sector, prospective industrial niches to target, what kind of investors should be targeted, and what kinds of sales activities should be used. The region usually makes the first move by approaching Invest in Finland regarding possible cooperation, and to gain a broader, national perspective to their own activities. Lankinen emphasised that Invest in Finland actively encourages this kind of cooperation with towns and regions.

Adjusting Economic Focus Within Towns and Cities

The researcher asked about possible scenarios where a town or city may not find foreign investment opportunities in their key industry sectors, and whether this may shift the economic focus to possible opportunities in entirely new business sectors. Lankinen explained that this kind of scenario is not so uncommon among regions and town and cities, and emphasised that they are resourceful, and can propose new ideas. When it is necessary, Invest in Finland does have conversations with individual locations regarding different alternatives, and these discussions were common some years ago, when many regions and towns were experiencing significant layoffs. A town or city wants to maintain its residents and ensure that sources for their employment can be sustained. Towns and cities may think about different possibilities, and how they can utilise their key strengths in new areas. Lankinen used the theoretical example of a town which has a skilled workforce with a specialised knowledge base. The town may consider different alternatives regarding who else could be interested in the knowledge and skills of the workforce.

Towns and cities develop their own economic strategies, and the better a given town or city knows its core strengths, Lankinen explained, the easier it will be for them to present their strengths to investors in new business sectors. A town or city can develop new ambition outside their traditional economic focus, and this is not a trend, nor is it connected to specific events within the last decade. These kinds of changes in economic focus have always been present, Lankinen pointed out. A town may recognise, for example, the potential for pursuing travel and tourism-related activity and may make allowances for developing this potential in the future, when drafting their long-term master plan. From the perspective of Invest in Finland, it is hoped that future discussion regarding these kinds of new economic focuses could be coordinated between the towns and cities and Invest in Finland as part of the new industry group approach. Many towns and cities could also benefit, Lankinen continued, from cooperation among themselves, by looking at what their neighbouring towns may have done in the same field.

On a practical level, the importance of existing assets or infrastructure ties closely into this. Invest in Finland conducts extensive benchmarking to identify those industry sectors where Finland can offer a competitive advantage internationally. Within each sector, Invest in Finland must carefully evaluate whether the present offerings in regions, towns and cities, and the skills offered by their workforce are competitive on an international scale, Lankinen explained, and this perspective is expected of Invest in Finland in turn, by the individual regions and towns and cities. To do this, Invest in Finland needs an accurate picture of the existing offerings of a given location, otherwise it will be more difficult to present a case to the prospective investor, that the location in question would meet their requirements. When the prospective investor visits Finland, it is the role of Invest in Finland to motivate them, regarding which locations to view more closely. Most often this is achieved through the industry-specific offerings which are most relevant to the needs of the client. In the case of a sector-specific offering that is not yet clearly formulated by the city or region, it will be difficult for Invest in Finland to be able to identify the city or region as an interesting place for the client to visit.

Minimising Risk in Investment Promotion

Lankinen emphasised that very nature of investing abroad contains some level of risk, so by clearly identifying the strongest ecosystems within a particular industry sector, Invest in Finland can help prospective investors by tailoring the existing opportunities to meet their requirements. This is an approach which always needs to be specifically tailor-made for each investor, and it involves finding the best matches. Invest in Finland likes to provide the prospective investor with a few alternatives from the different matches, Lankinen

explained, offering, for example, 3 separate locations for them to consider. From these alternatives, the investor will make their final decision regarding the location which best meets their requirements. It is essential, Lankinen explained, that there is effective communication between Invest in Finland and towns, cities and regions, in order to establish the best matches for a customer at the present time, in terms of key assets like skills, available workforce or available infrastructure. Invest in Finland can provide prospective investors with a wider perspective for the future visions of specific locations, but the present specific offerings are what secure the decision to invest.

Importance of Cooperation Between Towns and Cities

Lankinen pointed out that it can be beneficial for neighbouring towns to work together to develop a coherent business opportunity for the prospective investor. Considering the overall picture within investment promotion, a prospective investor from a larger country like China may not view the distances between many Finnish towns as too great. Taking this into consideration, a specific town working to attract investment may be able to reinforce their offering by attracting additional support from a neighbouring town. The national investment offering in Finland is strengthened by coherent regional offerings, Lankinen explained. The offerings of different towns and cities working together, can offer a more extensive product to the prospective investor than each town and city could individually, and further attention needs to be given to these kinds of joint initiatives in the future.

Challenges and Strengths Within Investment Promotion

When asked by the researcher about the challenges which have affected investment promotion activities in Finland over the previous 10 years, Lankinen explained that from the perspective of Invest in Finland, there are limitations in the availability of skilled workers in certain business sectors in Finland, which is presently creating bottlenecks for the future development of these sectors. There are many companies which would like to invest more, and employ more people, but are not able to find the skilled workers they need.

Additionally, an ongoing challenge relating to the overall picture of investment promotion internationally, Lankinen pointed out, is the issue of investors being ready to consider Finland as a prospective location. Once an investor regards Finland as a location, there is an opportunity to present what the country can offer, and past experiences have shown that the outcome has been positive. Even with a coordinated approach, where national-level organisations and towns and regions work together, Finland is a small country, and the resources for investment promotion are limited. Among the competing countries, some have larger budgets for marketing, which helps to reinforce awareness of their national brand.

Lankinen emphasised that it cannot be taken for granted that Finland will even be considered as a prospective location, when an international company is looking to outsource certain research and development units, and there is no automatic assumption among companies internationally, that they would need to view what Finland would have to offer. The challenge is to ensure that Finland is considered by a prospective investor.

Lankinen explained that there has been positive development regarding the brand awareness of Finland among prospective investors, and this is supported by the new broader approach of Invest in Finland, which uses the industry groups to target specific markets for prospective clients. The new approach model also makes more efficient use of limited available resources, to increase brand visibility and encourage potential investors to consider Finland. This is further supported by a coordinated use of common messages, brands and joint events and close cooperation with the Finnish Foreign Ministry, who help to raise awareness. When towns and cities and regions work together with Invest in Finland, it reinforces a stronger national message which helps to promote Finland as a location for future investment.

Finland has benefitted from being able to provide a knowledge base and a skilled workforce, which is an area where Finland can be considered to offer a competitive package internationally, and this has resulted in many international investors setting up substantial research and development units. Another key strength, Lankinen pointed out, is the good business environment which Finland provides for companies. The local workforce is cost-effective and usually quite loyal to their employers, and being a small country, companies have easily found the necessary support and decision-makers from the government and local administration to set up and run their businesses. Invest in Finland has received positive feedback from investors regarding these factors.

5 DISCUSSION AND CONCLUSIONS

5.1 Practical Application of the Adaptive Cycle Model

In the present study, the researcher set out to further investigate the role of urban-level economic development within the broader subject area of national-level economic recovery, following structural changes and the global economic crisis. The study focuses on the specific case of economic recovery in Finland, through the lenses of 3 case study towns and cities which have experienced abrupt structural changes in key industry sectors, and the measures taken to overcome these challenges and build their resilience to future changes. The researcher has proposed to support the application of panarchy theory within the study of urban economic resilience by using the adaptive cycle model to attempt to categorise the series of economic changes and responses witnessed in each of the 3 case study towns and cities within the chosen reference timeframe beginning on 1.1.2008.

As cited by the researcher in Chapter 2, Simmie and Martin suggest that the adaptive cycle model can provide a descriptive measure of the levels of resilience of an urban economy at a given moment, when applied to comparison studies over an extended time scale. Their account questions the ability of the model to provide theoretical explanations for the causal factors which may drive adaptability within an urban economy, but instead supports the application of the adaptive cycle as a descriptive tool to compare and contrast effects and responses within individual case studies based on common external variables. The researcher is using this latter interpretation of the model within the present study and has not set out to propose other theoretical applications of the adaptive cycle, beyond that of a descriptive tool. The external variable, upon which the present comparison is based, is the Finnish Government designation of an area of abrupt structural change, which each of the case study urban economies has previously received for fixed periods. The specific timeframes of each designation varied by case, but each designation was either granted since 1.1.2008, or was already in place. The designations are linked to economic changes and resulting job losses, closely following the beginning of the global economic crisis. The selected time frame for each case study extends from the shared start date of 1.1.2008 to the present, covering the durations of each abrupt structural change designation, and circumstances following the end of each designation period.

Based on the findings from the individual research interviews conducted with Business Heinola, the city of Kotka, and Yrityssalo Ltd, as well as relevant news reports, the researcher presented a timeline of economic changes over the selected time frame in Heinola, Kotka and Salo in Chapter 4. The timeline outlines the specific events which

resulted in the abrupt structural change designation being granted, or extended, in each case. The researcher has also attempted to outline the specific response measures and the timeframe of their practical implementation within the timeline, in as much detail as possible from the information gathered through the research interviews and relevant news reports. The researcher has also highlighted selected examples of later economic changes and economic developments which have occurred in each case study urban economy, including business closures, sales, announcements of lay-offs, and new business openings. The timelines do not represent a complete list of all the economic changes which have occurred over the selected timeframe, but, for the purpose of conciseness, present summaries of significant changes. The examples selected for the timeline are either highlighted by the respective interviewees or selected by the researcher on account of their scale, or relevance to broader structural changes, the focus industries, or the future economic strategies within each case study.

While the Ministry of Economic Affairs and Employment in Finland do use different criteria for granting the area of abrupt structural change designation depending on case-specific circumstances, the significant job losses from a single company or business cluster do represent a key part of the evaluation process. Similarly, their own definition of abrupt structural change includes the impacts of globalisation and changes to production structures on the employment situation on the given region. The researcher has used the unemployment figures for each case study to demonstrate periods of relative change and stability which have occurred over the duration of the selected timeframe from 1.1.2008 to the present, to provide further context on how individual events and responses may have impacted on the employment situations, both positively and negatively. The available figures for the total population of each case study are also used to highlight the relative share of their registered unemployed workforces in relation to their number of residents. The figures also demonstrate annual changes in the respective number of residents in Heinola, Kotka and Salo from 1.1.2008 onwards. As mentioned in Chapter 2, raising the national employment rate in Finland is a target of the Finnish Government, and raising the employment rate on the EU level is also a specific target of the Europe 2020 strategy, and the measures taken to raise employment in each case study, which correspond with decreasing unemployment figures, contribute towards achieving these broader targets.

Theoretical Definitions

In Chapter 2, the researcher explained that Simmie and Martin had cited Petersen (2000), Holling and Gunderson (2002) and Pendall et al. (2008) to propose that the adaptive cycle is an ongoing process of continuous re-organisation, where each stage can be defined by

the levels of available resources, the level of connectedness between individual mechanisms, and the level of overall susceptibility of the system to external shocks. Within an economic context, Simmie and Martin propose that resources should be evaluated with consideration for the knowledge and skills of the workforce and companies, as well as institutional organisation and work cultures. Connectedness within economic systems can be evaluated in terms of chains of labour movement between companies, divisions in production processes between companies and other associations between different businesses. Simmie and Martin also argue that resilience against external shocks and disturbances would, for economic regions, include their relative capacity for innovation and flexibility, which includes entrepreneurship, a willingness to learn new skills among the workforce, and overall access to investment.

5.2 Comparing Characteristics of the Case Studies

To match the sequence of events within each case study timeline to stages of the adaptive cycle, the researcher has begun by establishing a relative starting point within the cycle. To do this, the Ministry of Economic Affairs and Employment in Finland previously mentioned definition of abrupt structural change by the impacts of globalisation and changes in production structures and the granting of designations on account of the resulting significant job losses, is significant. When considering the 4 stages of the cycle, the latter definition of abrupt structural change corresponds with the explanation offered by Simmie and Martin concerning the release stage, previously discussed in Chapter 2, where a major shock or disturbance, experienced in the advanced conservation stage, triggers a sudden or gradual economic decline in the region. Within the release stage, businesses will scale down, and former networks and business structures are dismantled, which reduce connectedness. Further characteristics are job losses and vacant business premises and factories, which result from the economic decline, representing a release of available resources back into the economy.

Considering the circumstances outlined for each case study over the first 12 months of 2008, at the beginning of the selected timeframe, the Heinola sub-region and the Kotka-Hamina sub-region both experienced sudden economic changes, that are associated with a specific business or businesses. In the case of Heinola, the closure of the Karelia Upofloor parquet factory was announced in October 2008, and the sub-region was subsequently designated as an area of abrupt structural change in December 2008. In the Kotka-Hamina sub-region, the abrupt structural change designation had already been granted in December 2007, following the announcement that the Summa paper mill would close. Kotka was subsequently added to the structural change programme that was

already being implemented in Hamina, once it was announced by Stora Enso in August 2008, that it would be closing its factory in Karhula and scaling down production in Sunila. These changes resulted in large job losses for both sub-regions. The parquet factory closure resulted in 140 job losses in the Heinola sub-region, and the closure of the Sunila mill resulted in approximately 450 job losses for the Kotka-Hamina sub-region.

As mentioned in Chapter 4, prior to, and at the time of the closures specified above, the unemployment figures for Heinola and Kotka obtained from Statistics Finland indicate a period of relative stability. There are continued fluctuations, and no consecutive trends of rising unemployment over multiple months. The abrupt rises in unemployment are witnessed from December 2008 in both Heinola and Kotka. These increases are significant, as in both cases they mark the beginning of a pronounced steady rise in the unemployment figures over the 12 months of 2009.

On the basis of the closure of the Karelia Upofloor parquet factory and Summa paper mill and their resulting job losses, which were subsequently closely followed by the abrupt structural change designations for their respective sub-regions, and the pronounced rise in unemployment witnessed from the end of 2008 onwards, the researcher proposes that this sequence of events meets the characteristics of the beginning of the release stage of the adaptive cycle, given by Simmie and Martin. On this basis, the researcher proposes that the release stage began in Heinola in October 2008 with the announcement of the closure of the parquet factory, and in December 2007 in Kotka, following the announcement of the closure of the Summa mill in neighbouring Hamina.

Starting Points Within the Adaptive Cycle: Salo

The case study of Salo differs from Heinola and Kotka, in that the origin of abrupt structural change is connected to a slower, steady sequence of decline in employment, following cuts in export-dependent industry sectors. On the website of the Ministry of Economic Affairs and Employment in Finland for abrupt structural change, it is stated that the broader structural change process in Salo began with the cuts being made by different sub-contractors for Nokia at the time. This starting point was also confirmed by interviewees Urmas and Virtanen from Yrityssalo Ltd. When gathering information of the cuts that were being made among the different sub-contractors for Nokia in Salo, the researcher could find case examples from the years prior to 1.1.2008, and the official designation of the sub-region as an area of abrupt structural change. Already in 2006, the closure of plastic component manufacturer Nypro CMS had resulted in 140 job losses, and this was followed by other examples, as presented in Chapter 4.

The Finnish Government designated the Salo sub-region as an area of abrupt structural change on 17.9.2009, The initial designation was issued prior to the decision by Nokia to close the production line, or the announcement by Microsoft to close the product development unit. Although the town administration had already expressed concern regarding the changes in the economic performance of Nokia, the designation was granted on account of the slow, steady decrease in the number of available jobs and the simultaneous rise in unemployment, both attributed to the effects of the global economic crisis. As the preliminary designation granted to the Salo sub-region cannot be attributed to the sudden closure of a specific major local employer, the process of outlining the early sequence of economic changes is more complex.

The steady, gradual rise in unemployment in the sub-region is supported by the respective Statistics Finland unemployment figures for Salo, from the 12 months prior to the beginning of the reference timeframe, to the time of the designation. The unemployment statistics are significant, as they display the key similarities and differences between the case examples Heinola, Kotka and Salo, regarding the timeframes of their respective designations as areas of abrupt structural change, as well as how rapidly the overall employment situation changed. A similar pattern can be witnessed in the statistics for Heinola and Kotka, where a pronounced rise occurs in their unemployment rates from December 2008 onwards. In both cases the abrupt structural designation had already been granted, and there were specific large business closures which had occurred prior to the rise in unemployment. In Salo, the steady rise in unemployment occurs through a sequence of smaller job cuts, or business closures within the network of sub-contractors for Nokia, and the rise in unemployment figures leads up to the designation in September 2009. Considering the early sequence of events in the Salo sub-region in relation to the characteristics of the release stage described by Simmie and Martin, the businesses which are scaling down their operations are sub-contractors for Nokia, a network linked to a single larger business within the region. The strategic decisions made by Nokia regarding their use of specific sub-contractors have determined, or significantly influenced the need for these smaller businesses to cut jobs or even close down, which displays a high level of connectedness within the network. As demonstrated by the decision made by Nokia to temporarily suspend the use of sub-contractors in Finland from March 2009, the strategic decisions made by Nokia are also affected by external market conditions which affect their own sales, such as the global economic crisis. Where Nokia has responded to the changes in external market conditions and a decrease in its mobile phone sales by reducing its use of external sub-contractors, the network of its sub-contractors in Salo is gradually dismantled,

as individual sub-contractors scale down, or cease their operations, which reduces the level of connectedness between Nokia and these smaller businesses.

The Salo Sub-region: Limitations of the Available Data

Given that some case examples of sub-contractors for Nokia closing down in the Salo sub-region pre-date the beginning of the global economic crisis, such as the example of Nypro CMS, the initial shock or disturbance, the origin of the sequence of job cuts and closures among the different sub-contractors cannot be solely attributed to the effects of the economic crisis. The level of data obtained by the researcher surrounding this early sequence of events is also insufficient to link the sequence of events to any specific starting point. This would require a more comprehensive study into the complete list of accounts from those sub-contractors that were affected. Also, further research into the internal strategies of Nokia, as a private company within the Salo sub-region, would be required over a longer period of time, beyond the reference timeframe of the present study, to develop a more in-depth understanding of the causal factors and motives which influenced individual decisions to decrease their use of external sub-contractors.

While the level of data on these early economic changes within the Salo sub-region can be considered to be insufficient to establish their specific starting point, the job cuts and rise in the unemployment rate for Salo, along with the dismantling of a business network between Nokia and its different sub-contractors in the region, do support the description offered by Simmie and Martin, of an ongoing release stage within the adaptive cycle. Within the framework of the present study, the sequence of gradual economic changes affecting the sub-contractors for Nokia has been already ongoing at the beginning of the reference timeframe of 1.1.2008, but the rise in the unemployment rate is more pronounced over 2009, when the official designation was also granted to the sub-region, as an area of abrupt structural change. Based on these factors, the researcher is presenting the argument that, the release stage can be interpreted to be in full effect in the Salo sub-region by the beginning of 2009, even though a specific start date for the release stage has not been established.

Characterising Transitions Between Stages of the Adaptive Cycle

When describing the further characteristics of the release stage, Simmie and Martin point out that these can include vacant business premises and factories, resulting from the economic decline. When coupled with the resulting job losses, these are examples of available resources being released back into the economy. The interviews conducted by the researcher at Business Heinola, Yrityssalo Ltd and the City of Kotka each demonstrated

specific examples of the resources suddenly made available during the release stage in Heinola, Salo and Kotka, and how these available resources played a role in their initial responses and later strategic planning to manage structural change. In the case of the Heinola sub-region, Mäkilä had confirmed that finding new businesses to occupy the vacant premises had been a significant focus point of the initial response measures which had been used. There were also examples where this focus led to significant results, with the establishment of new business clusters at the site of the former Vanerinranta factory, and the former Rheumatism Hospital. Also, within the Kotka-Hamina sub-region, Lindholm confirmed that the regional development company had worked to find new occupants for the different empty business premises across the region. Significantly, these efforts resulted in the establishment of the Google data centre within the former Summa paper mill. In the case of the Salo sub-region, the IoT campus was established in the former Nokia factory, as part of a long-term project initiative to support the creation of new jobs and start-up business activity within the technology sector.

In each of the 3 case study examples, the release of available resources into the local economy does not occur at once but is rather a continued process tied to a sequence of economic events, occurring over multiple years. In the case of the Heinola sub-region, the original structural change designation granted in 2008 was followed by the closure of the UPM plywood factory and sawmill in November 2009, and the closure of the Rheumatism Hospital in March 2010. Within the Kotka-Hamina sub-region, the abrupt structural change designation was continued until 2015 on account of continued high unemployment in the region and the closure of the Kotka Coastal Battalion by the end of 2013. In Salo, the sequence of significant job losses linked to specific large business closures began after the initial designation was granted, which included the closure of the Nokia mobile phone production line in September 2012, and the closure of the Microsoft product development unit in July 2015, and the abrupt structural change period was extended to the end of 2017.

Considering the abrupt structural change designation periods in each case study in relation to the characteristics of the release stage, the unemployment figures presented in Chapter 4 demonstrate that the significant decreases in the numbers of unemployed people have occurred over a relatively recent timeframe in each case, with the most pronounced changes witnessed from July 2017 onwards. While the research data from the interviews and news articles demonstrates that Heinola, Kotka and Salo all began responding immediately to the structural changes affecting their respective economies, the positive changes to their overall employment situations are only witnessed years later. Simmie and Martin describe the reorganisation stage, the next phase of the adaptive cycle, as a period where former established business practices are critically rethought, and

new opportunities for economic specialisation are developed utilising the potential offered by the available resources which had been released into the economy. The response measures in each case study do place an immediate focus on finding new employment for members of the workforce who had lost their jobs and finding new occupants for facilities left vacant, consequently working to utilise the potential of these resources. These response measures alone, however, do not mark an immediate transition from the release stage to the reorganisation stage.

Understanding Further Complexities

During the research interview at Yrityssalo Ltd, Urmas pointed out that the priority for Salo when managing abrupt structural change was economic renewal, right from the beginning, when the structural change funds became available. At the same time, the immediate factors which needed to be addressed related to the effects of the job losses and sudden changes on the personal wellbeing of residents, and Virtanen also explained that a key challenge for Salo was the continuation of abrupt changes within the economy. Whenever the overall situation had shown signs of improving, there would be another economic setback and new immediate concerns which needed to be addressed. For the case example of Salo, this latter point suggests that a response process compatible with Simmie and Martin's description of the reorganisation stage did commence with the initial designation and the introduction of the structural change plan, but this overlaps with the simultaneous sequence of continued economic decline, and release of further resources into the economy. Significantly, Urmas pointed out that the implementation of different stages of the structural change plan occurred through different projects being executed simultaneously, rather than a fixed transition from one stage onto the next.

The complexity surrounding the potential simultaneous overlap between specific processes linked to the release stage and reorganisation stage raises the question of whether it is possible to establish a fixed transition point from one stage to another, which would mark a clear end to the release stage within an urban economy experiencing abrupt structural change. Considering this question from the perspective of response measures and economic development, in the research interview conducted with Business Heinola, Mäkilä pointed out that the approach to economic development within Heinola has experienced a significant change with the establishment of the economic committee in 2014, followed by the establishment of Business Heinola in 2015. This new broader approach to economic development, Mäkilä explained, moved away from old thought processes and the early structural change responses from 2008, which focused on finding new businesses to occupy empty facilities. The ability to provide locations for businesses became

part of a larger process, rather than the focus. The new method, which considers the needs of the business as well as the role and strengths of the town and local business environment, is characteristic of a process of rethinking established business practices, matching the description of the reorganisation stage of the adaptive cycle.

Comparing Characteristics of Heinola, Kotka and Salo

The Heinola sub-region experienced the shortest designation period as an area of abrupt structural change out of the 3 case studies. Ending in 2011, the designation had finished before the establishment of the economic committee and the new strategic approach to economic development. Within the research interview, Mäkilä confirmed that the project-based emphasis on finding new businesses to occupy facilities in the sub-region lasted until approximately 2014, and agreed when asked by the researcher, that the new approach could be considered to mark the end of the primary stage of the structural change plan for the Heinola sub-region, concerning the immediate responses. Although not supported by an immediate decrease in unemployment figures at the time, the period from 2015 onwards does mark a clear transition in established practices and the introduction of an economic strategy which places more emphasis on local strengths beyond available premises. In addition, this transition in established practices occurred at a time when the Heinola sub-region was no longer designated as an area of abrupt structural change. The researcher proposes that, within the context of urban-level responses and addressing structural change, these characteristics do provide support for the notion of a clearer transition between two separate stages of the adaptive cycle. The argument could be made, that in the case of Heinola, the release stage ended in 2014, and the reorganisation stage began from 2015.

Applying this latter argument for the transition of the adaptive cycle based on urban-level response measures to the case study of Salo, the argument could also be made that the release stage in Salo has not lasted beyond the end of the abrupt structural change designation, which finished by the end of 2017, setting a maximum limit for the duration of the release stage. This interpretation is supported by the decrease in the unemployment rate in Salo, which can be noticed from July 2017 onwards. The length of the designation period and unemployment figures do not, however, provide enough support on their own, to establish a specific transition point between the release and reorganisation stages within the Salo sub-region. While a fully comprehensive report of the different project initiatives being implemented to address structural changes, including their focus and outcomes, could provide further context with which to establish a transition between stages, the case

study of Salo differs significantly from that of Heinola, in that the characteristics of the release and reorganisation stages overlap with each other, and cannot be easily separated.

During the research interview conducted at the City of Kotka, Lindholm raised the point that the structural changes affecting the economic structure of Kotka are linked to structural changes affecting specific industries, and these changes have been occurring over a longer period of time, not limited to the designation period as an area of abrupt structural change. When considering the response measures implemented in Kotka, there are examples of project initiatives targeted specifically at those structural changes which occurred from the beginning of the reference timeframe, with the search for new business activity to occupy premises, including the Summa mill, and later the Sunila mill, but the city began pursuing a strategy of further economic diversification and infrastructure development much earlier. The new port area was constructed already in the 1980's, and within the past 20 years, the investments from the city have included the Kotka Maretarium, the new maritime museum, and the underground car park under the Market Square.

5.3 Different Approaches to Multiple Adaptive Cycles

In attempting to match specific economic changes occurring in Kotka from 1.1.2008 onwards to stages of the adaptive cycle, the notion of more than one sequence of structural changes occurring simultaneously, over different timeframes, could account for the same complexity which can be also witnessed in the case example of Salo. By investing in new city infrastructure and supporting the development of new business sectors, there has been an ongoing process in Kotka, where established business practices are being rethought, and it can be argued that there has been an ongoing reorganisation stage of the adaptive cycle in Kotka for the past few decades, years before the closure of the Summa mill and abrupt structural change designation. The closure of the Summa mill, and initial response measures taken as part of the designation process do present characteristics of new release- and reorganisation stages. However, the broader sequence of changes and strategic development to the economic structure of Kotka raises the question of whether the adaptive cycle should be viewed as an industry-, or process-specific, rather than economy-specific model, where multiple cycles can potentially be occurring simultaneously.

The idea, that an urban economy may simultaneously be experiencing multiple ongoing adaptive cycles within different sectors could account for situations, where new abrupt changes may occur during the reorganisation stage. In the case of Salo, the implementation of the structural change plan was focused on economic renewal right from its introduction, and different individual project initiatives were implemented simultaneously. This is characteristic of the reorganisation stage, but the process in Salo was interrupted more

than once by later abrupt changes which triggered the new release of resources into the economy. Despite the later release stages, and new immediate concerns which further challenged the implementation of the structural change plan, Salo has simultaneously supported the development of new business sectors and networks. As pointed out by Urmas during the research interview at Yrityssalo Ltd, following the closure of the Nokia factory, there was a realisation in Salo very early on, that there would not be another Nokia, or equivalent large company to take its place. Consequently, Salo actively pursued a strategy of further economic diversification right from the beginning of the designation period, supporting the development of local small to medium-sized businesses in the region with financial support allocated to approximately 100 local businesses.

Reorganisation Through Long-term Investment in Kotka

In the case of Kotka, it could be argued that the release stage has not continued beyond the end of 2015, when the area of abrupt structural change designation ended. This argument does, however, view the area of abrupt structural change designation, as a variable, in isolation of the broader structural changes and response measures occurring over decades, far beyond the beginning of the reference timeframe on 1.1.2008. As in the case of Salo, the argument is supported, on a simplified level, by the facts that the designation has not been renewed in Kotka, and the decrease in unemployment figures witnessed in the city from July 2017 onwards. In terms of reorganisation processes, Lindholm pointed out in the research interview that Kotka is continuing to closely follow new business opportunities in sectors that would be a suitable fit for the city, and is developing new business opportunities on the foundation offered by the port as a key strength, including event management as part of the new Kantasatama port redevelopment. While these steps are currently ongoing, to present the argument that they form part of a reorganisation stage in Kotka which began following the end of the release stage, would be misleading. Lindholm pointed out that the investments made in the city are connected, as in the case of the Kantasatama project, which is linked to the earlier investment in the maritime centre Vellamo in 2008. The decision to construct the new port at Mussalo in the 1980's, in turn, provided the land required for expansion and development, and demonstrates the understanding of the long-term economic potential offered by the port. These events are characteristic of a broader, connected sequence of reorganisation which is continuing over many years, while the city is also simultaneously experiencing a release of resources from specific industries undergoing structural changes, such as the wood-related industries.

Adaptive Responses at the Karhula Foundry and Sunila Mill

The case examples of factories in Kotka which were first marked for closure and have then managed to continue operating and achieve new growth, either under new ownership, in the case of the Karhula foundry, or under the same ownership, in the case of the Sunila mill, also support the argument for industry-specific adaptive cycles occurring simultaneously. In both cases, the initial decisions to close the factories were linked to the changing market conditions which challenged the overall profitability of the facilities for Sulzer Pumps Finland Oy and Stora Enso respectively and resulted in the release of a qualified workforce into the local economy, as jobs were cut. Both facilities were, however, able to then respond to sudden positive changes in market conditions, which enabled them to remain open. While the improved global market conditions are significant, in both cases, the continuation of the factory operations have also involved processes linked to the reorganisation phase of the adaptive cycle, with the Karhula foundry now focusing on specialist products, and Stora Enso diversifying operations at Sunila to include lignin production, with the construction of the new biorefinery.

The Exploitation Stage and Industry-Specific Labour Shortages

As discussed in Chapter 2, Simmie and Martin define the next stage of the adaptive cycle, the exploitation stage, as a period characterised by economic growth and capitalising on new opportunities. A region will build on their economic strengths and also utilise the full potential offered by their workforce. In the respective research interviews in Heinola, Kotka and Salo, it was pointed out in each case that there are signs of new economic growth occurring and a rise of new business sectors, and in each case, there are also specific case examples of new business and investment which has been successfully attracted. This stage is also characterised by limited available resources; a further point raised in each of the research interviews.

In the case of Heinola, Mäkilä pointed out that the wood-based and pulp industries, as well as the sawmills in the region are currently doing well, with new investments and innovations being made and new jobs being created, but the growth within this sector is being constrained locally, as well as in other locations, by a shortage in the availability of skilled workers. Lindholm raised the same point during the research interview in Kotka, explaining that the challenges in finding skilled workers in certain industrial fields over the past few years is creating bottlenecks for the future growth and development of these specific industries, and is becoming an increasingly common issue all over Finland. Similarly, for the case of Salo, interviewees Urmas and Virtanen also explained that the region faces the challenges of matching those businesses in need of skilled workers with those skilled

workers currently unemployed. Both interviewees pointed out that while Salo still has high unemployment figures, the machinery-, metal-, and programming sectors are all examples of industries currently struggling to find skilled workers. Virtanen also pointed out that this challenge is not limited to Salo but is being encountered all around Finland. In the Invest in Finland research interview Lankinen also raised the similar point relating to the availability of unemployed skilled workers within the ICT sector, who, following the structural changes and lay-offs within their business sector, offered a significant selling point for attracting foreign investment. As foreign investors have invested in the competences and hired these workers in recent years, they no longer represent an available resource for attracting future investment, and the challenge is to find new skilled workers.

Together, these points raised in the research interviews demonstrate that the same challenges are linked to the availability of skilled workers within specific industry sectors on a national level and are not specific to any given region. This supports the argument for an industry-specific adaptive cycle model, where an urban economy may simultaneously be experiencing different stages of the adaptive cycle within different business sectors, which, in turn, can be tied to broader changes affecting the industry on a national or international level. The sectors mentioned in the research interviews, which are witnessing the limited availability of skilled workers, have received investment, and the shortage of workers, as a resource, represents a key challenge for their growth in the future. This would suggest that the business sectors in question are experiencing the exploitation phase of the adaptive cycle, but this interpretation cannot be applied to the entire urban economy, when other business sectors in the region may simultaneously be experiencing the release-, reorganisation- or conservation-stages, depending on ongoing circumstances within their broader business environments.

Reconciling Contradictory Processes and Adopting a Model of Multiple Adaptive Cycles

The notion of multiple industry-specific adaptive cycles within an urban economy helps to understand and reconcile the complexity and possible contradictions surrounding case examples like Kotka, where the city has pursued a long-term reorganisation strategy for decades while new abrupt structural changes have arisen in major industries, or Salo, where the structural change plan simultaneously maintained a focus on reorganisation, while the region also experienced multiple new release stages. While overall unemployment figures have decreased in each of the 3 case study examples, each region continues to have an unemployed percentage of their respective workforce, which represent a resource released into their economies. Regarding the point raised by Urmas in the research

interview for Salo, the challenge is to match those skilled workers currently unemployed in the region, with the local businesses in need of skilled workers, which demonstrates the importance of sector-specific knowledge and specialisation when looking for new job opportunities. The level of demand, or lack of demand, for workers with particular skills at any given time can reflect the broader circumstances within the particular business sector, which reinforces the idea of the sector experiencing different stages of the adaptive cycle.

To attempt to link the changes within the urban economies of Heinola, Kotka and Salo from 1.1.2008 onwards to specific stages of the adaptive cycle on the basis of the designation period granted to each region from the data obtained within the present study, the researcher argues, would appear to provide an over-simplified description. A fully comprehensive account of all business closures and new business development, as well as figures of jobs being cut and created, may help to provide a more accurate picture of characteristics specific to a given stage of the adaptive cycle. These characteristics could then be cross-referenced with the implementation of the respective structural change plans, to help to establish some limits to the length of any given stage. This approach would, however, still need to address the case-specific complexities witnessed when trying to link the economic structural changes in Kotka and Salo to the adaptive cycle. To establish a fixed end point to one stage of the cycle, and a fixed starting point for the following stage without overlap would be misleading on the basis of the data obtained in the present study, within the context of managing abrupt structural change, as it would fail to account for processes characteristic to different stages occurring simultaneously, over different timeframes. To view the duration of the designation period granted to each region as part of the adaptive cycle in isolation of other economic changes experienced over the same period would also be misleading. The designation is not tied to a single starting point and single response process, because each respective case study experienced multiple economic events over the course of their designation period, as well as positive economic developments, which in turn are all linked to the total duration of the designation, and influenced the use of different response methods.

The Reference Timeframe and Future Recommendations

The researcher emphasises that the intention is not to contest the overall argument presented by Simmie and Martin for an adaptive cycle as a descriptive tool for change within an urban economy and proposes that the idea of multiple adaptive cycles could, instead, compliment their interpretation of the model. The researcher recognises that the context of abrupt structural change for the present comparative study between urban economies presents an additional layer of complexity within the relatively short reference timeframe

from 1.1.2008 onwards. The timeframe in question occurs against the background of the global economic crisis and other economic challenges affecting Finland nationally, and there have been changes involved across multiple industry sectors and multiple projects in the 3 case studies in question. The adaptive cycle model, does, provide a framework with which to link specific characteristics of these changes and projects, grouping events and processes around 4 distinct adaptive stages, but the economic circumstances witnessed within the 3 case study examples from 1.1.2008 onwards also suggest that these stages may overlap. The research comparison conducted by Simmie and Martin on Cambridge and Swansea covered a reference timeframe of 45 years, which covered 2 national recessions within the British economy, as well as successive periods of economic growth and decline. In comparison, the reference timeframe of the present study may be too short, and economically complex, to properly ascertain stages of the cycle which could be applied on an urban level. Future research on the application of the adaptive cycle to Heinola, Kotka and Salo could benefit from an extended reference timeframe, which could help to outline longer periods of growth, stability and decline across the urban economy, beyond individual business sectors.

Response Methods Used in Heinola, Kotka and Salo

Previously in the discussion, the researcher has mentioned the differences relating to the interpretation of timeframes for the reorganisation stage of the adaptive cycle in each case study, which could suggest underlying differences between the methods used in Heinola, Kotka and Salo to overcome structural change and support economic development. The methods used within each case study all share, on a general level, the common end goals of economic recovery and growth, but in practice, also adopt dynamics specific to each urban economy, which, as argued by van Winden and de Carvalho, is essential for the success of recovery strategies on a broader, EU level.

It is necessary to point out that the researcher has not reviewed the structural change plan documents of each urban economy within the present study, and the interpretation of the response methods used, are based on the accounts obtained from the research interviews and related news articles. For this purpose, the response methods are considered in terms of characteristics and themes, rather than specific processes. As already pointed out, in each case study example, a structural change plan was compiled as part of the area of abrupt structural change designation, and on a general level, each plan placed an immediate focus on the consequences of the economic changes which resulted in large scale job losses. During the research interviews in Heinola and Kotka, interviewees Mäkilä and Lindholm respectively explained that the effort was made to look for new business to

occupy facilities left vacant following business closures, and case examples including the Vanerinranta business cluster in Heinola and the Google data centre near Kotka demonstrate that successful results were obtained, over time, through this process.

5.4 Economic Development and Diversification

As Mäkilä pointed out in the interview with Business Heinola, despite the efforts being made, not all the initial measures involving external consultants were successful for attracting new business, but it was important that different methods were being actively used. While these different methods were initially directed towards the common goal of finding new occupants for vacant business premises, the approach to economic development in Heinola has developed significantly since 2014, with a more varied focus. In the case of Salo, interviewees Urmas and Virtanen pointed out the use of retraining initiatives for those members of the workforce who had lost their jobs, and also the financial support of small- to medium-sized local businesses, as early focus areas, linked to the early realisation that, going forward, there would not be an equivalent large company as Nokia in Salo.

The latter point of there not being “a new Nokia” is closely related to what, the researcher proposes, can be perceived as shared focus in Heinola, Kotka and Salo, of achieving economic renewal through ongoing economic diversification. In the research interview with Yrityssalo Ltd, Urmas pointed out that Salo differed from other towns and cities experiencing abrupt structural change at the time, in its approach to the use of structural change funds to support the development of a wide range of small businesses in the region. Rather than, so to speak, placing all their eggs in one basket by investing in a limited number of major businesses, for Salo, it was believed that the more diverse the economic structure, the better.

Characteristics of this approach were similarly pointed out in the research interviews in Kotka and Heinola, but in each case, specific local dynamics may be perceived to influence the degree of economic diversification and the implementation period. As discussed earlier, Lindholm pointed out that Kotka has been experiencing structural changes over an extended period not limited to the abrupt structural change designation, and the city has been steadily pursuing a strategy of economic diversification and investment in key infrastructure over decades, pointing out how individual investments have, in turn, supported further related investments over the years. Kotka and Salo represent larger urban economies than Heinola by population, but also Heinola has witnessed the continued growth of new business sectors which have capitalised on business opportunities specific to the area. Examples include the ageing population, which has brought new business

opportunities for services in the health and wellbeing sector, while the wood-based industries, a traditional area of strength, are witnessing new renewable product innovations and the development of a related business cluster.

Diversification Matched to Local Strengths and Specialisations

While the broader approaches to economic development in Heinola, Kotka and Salo all suggest a shared focus on economic diversification, the practical implementation of this approach is further reinforced, in each case, by processes and strategic decisions which build on specific local strengths and specialisations. In the case of Salo, interviewees Urmas and Virtanen explained that the primary focus for the investment- and development funds received through the abrupt structural change designation were the traditional, strong industrial sectors for the region, which include machinery, metal and wood. Salo made a medium-term strategic decision to support these sectors financially, but the town has also actively pursued new business opportunities in ICT and the internet of things (IoT), using the specialist knowledge made available within the local workforce.

The importance of local strengths and specialisations to pursuing economic diversification is similarly supported by the point raised by Lindholm during the research interview in Kotka, explaining that the approach to looking for new investment begins with the port as an asset. Kotka has concluded that there cannot be barriers to where the city is looking for prospective investment opportunities, and different business sectors are evaluated with the port as the starting point, to outline those business opportunities which are the best fit for the city. With the port as the driving factor for future development, many of the focus areas for economic development in Kotka are similarly built on the foundation of traditional areas of strength and available infrastructure. Within traditional industries these focus areas include renewable product innovations such as lignin production in the wood-based industry sector, while new business activity being pursued through infrastructure-led opportunities includes the search for future data centre initiatives following the redevelopment of the Summa mill, and cruise ship-based tourism and event-management-projects linked to the port.

In the case of Heinola, the scope of the economic strategy is less varied, led by 2 broader business entities, the wood-based and related industries, and the travel-, recreation- and wellbeing-sectors, but this should be viewed in relation to the smaller population size of Heinola when compared to the case study examples of Kotka and Salo. As pointed out, the strategic approach in Heinola also demonstrates characteristics of new business opportunities being incorporated into sectors which are local areas of strength. This relates closely to the transition witnessed in the approach to economic development from 2014

onwards, which places a broader focus on the driving factors for Heinola, the local business environment, and what the town can do to foster this environment. As pointed out by Mäkilä, the town maintains a strong industrial tradition in the wood industry and is in a region of the country with extensive forestry resources. The existing companies have been continuously investing more, but there are also a growing number of new businesses, and the investment promotion activities of Business Heinola in the wood-based industries has been systematic over the past few years, stemming from the broader approach to the economic development of the town. The external interest from investors has been growing, supported by the innovations in the development of new wood-based renewable products.

Understanding the Best Fit in Prospective Investments

Mäkilä pointed out that the origin of the prospective investment is not the focus of the decision-making process, but rather the 2 broader business entities represent those areas where Business Heinola can influence the process of securing new investments. This relates closely to the notion of investments which are the best fit for the local business environment, as pointed out in the case of Kotka. For Business Heinola, the theme of investment is central to recognising where future investment opportunities may originate, and which opportunities would represent a suitable fit for the economic ecosystem of the town. New business opportunities for Heinola have been found in renewable products and the wellbeing sector, which are both growing industries internationally, but careful attention is now also given to changes in global economic market conditions and how these may affect focus business sectors within Heinola. This, as explained by Mäkilä, relates to the greater understanding in the town of the industry sectors which should be targeted for furthering economic renewal.

The understanding of prospective investment opportunities which represent a best fit for a specific economic ecosystem helps to connect the pursuit of economic diversification with a recognition of key local strengths and specialisations. The accounts obtained from the three case study research interviews suggest that this understanding represents a key part of the economic development strategies and related activities in Heinola, Kotka and Salo going forward. Further economic diversification is being actively pursued within each urban economy, and new opportunities are being followed closely, but this approach is upheld with an understanding of the local business environment. A careful balance is maintained, where certain established structures and practices are challenged to a degree, by finding new opportunities to match existing strengths, while not losing sight of the industrial foundation and the needs of existing businesses.

Practical Differences Within a Shared Framework

With the notion of economic diversification through opportunities which represent a best fit as a common approach to economic development, shared by each of the 3 case study examples, the main differences would appear to be linked to specific practical arrangements and timeframes. Heinola, Kotka and Salo each maintain different arrangements surrounding the use of economic development companies and partnership networks, as well as the key allocation of responsibilities between parties. Linked back to the stages of the adaptive cycle, the argument could also be made that the key difference between the case studies relates to how long each case study urban economy has been pursuing a strategy of diversification. As discussed earlier in this chapter, Kotka has displayed characteristics of this approach to economic development over decades, while in the cases of Heinola and Salo, characteristics of a shift in overall approach can be more clearly witnessed within the abrupt structural changes experienced over the past decade.

5.5 Changes and Opportunities in Resilience Building in Case Studies

The latter point of pursuing economic growth through diversification relates closely to the notion of urban resilience, and how changes in the level of resilience could be interpreted in each case study. As previously discussed in Chapter 2, the ecological argument proposed by Simmie and Martin for resilience building within an urban economy relates to a complex adaptive system where balance is not connected to a fixed equilibrium point, but it is rather achieved through a continued process of long-term adaptation and self-organisation. The responses from the research interviews demonstrate that Heinola, Kotka and Salo are not attempting to return to their original starting point prior to the sudden adverse shocks, but are instead managing the abrupt structural changes which have affected key industrial sectors by developing new business opportunities that will make their economic structure more varied in the future.

Simmie and Martin propose that the answer to how well an economy may respond to abrupt shocks and disturbances can be found in their capability to evolve. The notion of economic development through diversification supports the argument presented by the researcher, of multiple sector-specific adaptive cycle changes occurring within an economy simultaneously, as a more varied economic structure may balance the effects of sectors experiencing a release stage, with other business sectors potentially experiencing an exploitation- or conservation stage of the cycle. This could potentially reduce the reliance of the overall urban economy on a specific sector and make the economy more resilient to possible changes in a given sector in the future. Economic diversification should,

however, be understood as a process of continuous evolution, rather than a fixed end goal, for overall resilience to increase. The case study example of Kotka demonstrates that the foundation for economic diversification was created with the construction of the new port in the 1980's, and this strategy has been subsequently pursued, but the economy of the city was still significantly affected by the abrupt structural changes in the region from 2007 onwards. As pointed out by Lindholm in the research interview, the changes to economic structure can be traced back over a long period of time, and work is being done continuously to further economic development, but the process of developing new opportunities is slow. This is further challenged by the speed in which job positions may disappear following abrupt structural changes.

Resilience Building Through Long-Term Change

The relatively recent decrease in unemployment figures, witnessed in each case study from July 2017 onwards, further display how slow overall economic recovery and development can be following abrupt structural changes, despite response measures being implemented years earlier. While economic diversification does reduce reliance on a specific sector, it represents a slow, long-term process, where the resilience of the economy is built steadily over time. When simplified, the future strategic approaches of each case study economy demonstrate characteristics of this steady process of resilience building. Kotka is pursuing a strategy which originates from the port and is reinforced by significant infrastructure investments made over decades, steadily creating a broader foundation for business activity. Following the closure of the Nokia factory, Salo has pursued a strategy of supporting new business creation and the development of small- to medium-sized businesses in the area, attempting to minimise future reliance of the economy on a limited number of large businesses. Heinola has experienced a significant transition within the strategic approach to economic development, with a greater understanding of its strengths and prospective new business opportunities which renew its core industrial focus areas.

Applying the argument presented by the researcher, of sector-specific adaptive cycles, specific business sectors may undergo changes relating to broader market conditions in the future, creating new abrupt shocks or disturbances which may trigger further release cycles within the respective economies of Heinola, Kotka and Salo. Considering the slow speed of economic development processes, and the emphasis placed by Simmie and Martin on long-term adaption and self-organisation within urban economies, the potential for building or maintaining future resilience in Heinola, Kotka and Salo should be viewed through a broader lens of urban development. Attention needs to be given to the different

possibilities and challenges perceived in each case study example, beyond the present economic diversification initiatives.

Further Dimensions to Resilience Building: Changes to Population Structures and Education

As discussed earlier, Heinola, Kotka and Salo are continuously monitoring prospective opportunities for future investment, using the notion of a best fit, to pursue opportunities which will support sustainable economic growth and diversification. Beyond this direct approach to economic development through investment promotion, the respective interviewees also drew attention to other structural changes being addressed. One recurring theme witnessed in each case study relates to population change. The figures obtained by the researcher from Statistics Finland demonstrate that the respective populations of Heinola, Kotka and Salo have decreased over the period of 2007 to 2017. In each of the case study research interviews, the interviewees also pointed out that the respective populations of Heinola, Kotka and Salo are ageing, as young residents have moved elsewhere, and the efforts are being made to attract new residents. In terms of the causes behind the ageing populations, interviewee Virtanen from Yrityssalo Ltd pointed out that young families moving elsewhere account for approximately half of the negative population change in Salo, but the speed of this change has levelled out to an extent, as local business have grown and new jobs have been created, and the situation has the potential to improve further if new job creation continues in the future. In the research interview in Kotka, Lindholm pointed out the challenges which can be posed by an ageing population structure. With an ageing population, an increasing number of the workforce are retiring, which limits the increase of tax revenue for the city, despite an increasing employment rate.

The data obtained from the interviews demonstrates a shared recognition of the importance of attracting new residents, for each of the three case studies. Interviewees Mäkilä and Urmas from Business Heinola and Yrityssalo Ltd both addressed the topic in more detail, pointing out the potential opportunities for attracting residents which are linked to broader changes in the nature of work life, including new possibilities for work-based commuting and working remotely from home. Urmas related this back to existing behavioural patterns witnessed in Salo, where some local residents already commute for work to the capital region, where there is a need for qualified workers, but prefer to remain living in Salo. Differences in living costs, as pointed out by Urmas, may influence this preference, but another important consideration, mentioned by both Urmas and Mäkilä, relates to the importance of maintaining a pleasant living environment for residents. As discussed in Chapter 4, Heinola, Kotka and Salo have all demonstrated examples of

investments made to their local infrastructure, draw factors, and services, which strengthen their positions as attractive and functional places to live.

In the research interview at Business Heinola, Mäkilä pointed out that attracting new residents can potentially benefit the local economy by bringing in new skills, ideas and specialisations to the existing knowledge base, which can ultimately help to stimulate new entrepreneurship in the region. This notion of developing the local knowledge base relates closely to the significance of knowledge institutions and education options in reinforcing the overall level of urban resilience through economic diversification and population growth. In the case example of Kotka, Lindholm pointed out that many young residents move away to study, and do not return, partly due to a lack of available jobs for young people to return to in recent years, but also the absence of a university in the city. Lindholm emphasised that the trend of young people moving away from the city is not such a recent change, but rather there is no longer the ready availability of jobs in traditional industries where young people could once find work. In Kotka, this issue has been recognised, and education represents a focus area for the future. From the perspective of resilience building, interviewees Urmas and Virtanen from Yrityssalo Ltd also discussed the importance of developing the local education provision in future, linking this to maintaining the local knowledge base and skills. Virtanen pointed out that the presence of local higher education students is a draw factor for business activity.

Heinola, Kotka and Salo represent similar case examples, in that none presently have their own university, but they share a recognition of the importance of developing their local knowledge base in the future and are taking measures to address this through cooperation with the existing knowledge institutions in the area. The examples of cooperation, outlined in Chapter 4, described by the interviewees include the development of national and international partnership networks with outside universities and universities of applied sciences. Within these cooperation networks are specific project initiatives linked to the development of local business activity, as demonstrated in the development of cruise ship tourism in Kotka, but the Kantasatama port redevelopment initiative in Kotka and the IoT Campus in Salo are examples of infrastructure-based links between education institutions, business development companies and the local business community. The issue of education overall represents a focus area for further development in Heinola, Kotka and Salo, and its significance for the future economic development and addressing population change is recognised. The researcher proposes that this recognition and future focus support the simultaneous pursuit of economic diversification and suggests that long-term adaptation and self-organisation will continue to take place in Heinola, Kotka and Salo, positively contributing towards overall resilience to future shocks and disturbances.

Further Dimensions to Resilience Building: Anticipatory Development and Cooperation Networks

The latter point of adaption and self-organisation described by the researcher is further supported by specific details obtained from the research interviews. The approaches used to manage structural change within local industry in Heinola, Kotka and Salo display characteristics of adaption, further reinforced by the common recognition of external investments which represent a best fit for developing the local economy. The case example of Heinola, the researcher argues, presents the clearest characteristics of evolution within the management of structural change and economic development, with a planned transition to a broader strategic approach and the formation of a dedicated business development company following the end of the abrupt structural change designation. Heinola has already witnessed economic diversification with the rise of new areas of business activity in the health and wellbeing sector, and wood-based renewable industries, but Mäkilä also pointed out a new process which is only beginning now, anticipatory development. Continuing to apply the notion of a best fit, the new process can be interpreted as a further adaptive change within economic development, by placing an emphasis on the proactive search for new potential sectors for growth.

The common recognition in Heinola, Kotka and Salo, of the significance of maintaining cooperation initiatives with different parties, also supports the interpretation of a continued process of adaption and self-organisation within each case study example, which contributes towards overall resilience building. Interviewee Mäkilä from Business Heinola, pointed out the benefit of greater influence provided through cooperation networks. Such initiatives pool together the combined resources of multiple involved parties and help to accomplish matters in projects involving strategic planning, research, promotion and infrastructure development. Each case study demonstrated varied examples of continuous and fixed-term cooperation initiatives, but interviewee Urmas from Yrityssalo Ltd also discussed the possibility for evolution within cooperation networks. Fixed-term projects between parties can encourage continuous cooperation in the future, and it is hoped that individual projects based on a common goal, such as those involving other sub-regional towns in Finland, can develop into a continued model in the future.

Regional Cooperation and Resilience building Through National Investment Promotion

The latter points of greater influence through shared resources, and the potential for continuous cooperation are both themes which relate closely to the new approach to regional collaboration used by Invest in Finland for the national investment promotion of Finland to

foreign investors. As discussed in the previous chapter, Invest in Finland has adopted a model for continuous regional collaboration which is based around industry-specific teams, representing a transition to a broader approach to national investment promotion, which is targeted on the specific markets of prospective clients. The market sectors in question represent areas of expertise for Invest in Finland and are the focus for active investment promotion activities. Within the wider context of investment promotion internationally, Lankinen pointed out in the research interview that active cooperation between Invest in Finland and towns and regions across the country through the industry groups helps to make more effective use of limited resources, to reinforce a stronger brand image and raise awareness of Finland among prospective investors. Combined, the offerings of towns and regions together present a more extensive opportunity to investors, than would be possible by them individually.

Lankinen also pointed out that the industry team model has been partially developed and refined using results obtained from previous fixed-term collaboration projects, such as the KAATO project conducted with Yrityssalo Ltd, for the purpose of finding new employment for those left unemployed in the ICT sector in Salo. Taking these earlier inputs into consideration, the new model is intended to provide a foundation for cooperating with all parties in a manner that is fair and transparent, not limited by focus to any specific region of the country. The researcher proposes that the development of the new industry-specific model also demonstrates characteristics of an adaptive process, shaped by the understanding of the changing needs of the prospective investor, the international competition within investment promotion, and the understanding of the changing investment opportunities available, and matching them to the needs of investors.

Lankinen pointed out that for the prospective investor, Finland must be able to answer a need, or provide a solution to a problem, as well as providing a good, secure environment for foreign investment on the long-term. With the further point raised by Lankinen in the interview, that the national investment offering of Finland is strengthened by coherent regional offerings, the researcher proposes that the industry-led regional collaboration model does contribute towards economic resilience building on a national level in Finland, reinforcing a more unified approach to investment promotion that can make more efficient use of available resources and better respond to the needs of prospective investors. Equally, this model recognises the importance of urban-level economic focus and development measures, as well as cooperation, and helps to relate these measures back to the national economic development in Finland through investment promotion.

Urban Economic Focus Within National Investment Promotion

As discussed in the previous chapter, Invest in Finland works closely with different business development companies and towns and cities across the country as part of the new industry-specific regional collaboration model, helping individual towns and cities to develop their profile, identify their focus industry sectors, and adopt an international focus when presenting their investment opportunities. Within the framework of international investment promotion, Invest in Finland can be viewed as a coordinator between an urban economy seeking new investment and the overseas investor considering prospective opportunities. Within this capacity as a coordinator, Invest in Finland has specialist knowledge of the common requirements set by foreign investors for an investment opportunity. These requirements provide a means of interpreting the strategic focus for economic development demonstrated within the case study examples from the external perspective of the investor. This provides further context to understanding how successfully the respective case study economies may continue to build resilience and potentially overcome future economic transition and structural changes.

In the research interview, Lankinen pointed out the significance of presenting a strong case for prospective investors, and for a location to be considered, it must be able to provide existing assets specific to the investment in question, which may include the availability of raw materials, infrastructure, logistical support and skilled workers. The researcher proposes that this significance of existing assets within international investment promotion should not be seen as being incompatible with the process of adaptive change within urban economic development, on account of the underlying evolutionary interpretation of the city (Batty et al., 2004, cited by Drobniak, 2012) discussed in Chapter 2, as a complex network of adaptive systems, where evolution is a continuous state. Equally, in Chapter 2 the researcher also refers to the argument made by Simmie and Martin, that resilience to shocks among economic regions includes a relative capacity for innovation and flexibility. This theoretical foundation is also supported by the point raised by Lankinen during the research interview, that towns and cities are resourceful, and they have always developed new ambitions and ideas regarding how to use their core strengths in new areas. Significantly, the better a town or city knows its core strengths, the easier it will be for them to present these strengths for entirely new business opportunities.

5.6 Attracting New Investment Amidst a Process of Adaptive Change

It is important to point out, that is not possible to begin to critically discuss the long-term economic viability of specific business sectors being pursued in Heinola, Kotka and Salo

without more detailed information relating to the development of specific businesses and the history, and forecasts, of market conditions within the specific sector in question, nor is this the intention of the researcher within the present study. Additionally, the specific requirements associated with an individual investment opportunity will vary by sector, and the business focus areas of Heinola, Kotka and Salo may continue to change in future as a result of their own internal organisation and external market conditions. Instead, a broader perspective on economic diversification is required, which is not focused on any specific business sector. Within the pursuit of overall economic diversification, an urban economy needs to demonstrate the understanding of a central theme to successfully attracting new investment while simultaneously adapting to structural change.

From the responses obtained from the Invest in Finland research interview, the researcher proposes that the importance of existing assets for prospective investors, and the resourcefulness of towns and cities, represent key characteristics of the central theme for successfully attracting new investment while adapting to structural change. This central theme requires the ability of a given location to understand its core strengths, and continue finding new applications for its existing assets, specific to a given investment opportunity. On the broader level, the researcher presents the argument that the strategic approaches to economic development in Heinola, Kotka and Salo should demonstrate characteristics of their understanding of their core strengths, and having existing raw materials, infrastructure, logistical support or skilled workers to provide a valid case for investment in new business sectors. Otherwise, the process of attracting new foreign investment can become more difficult, and the potential for overcoming future structural changes, and building resilience through economic diversification, are undermined.

This argument relates back to the point discussed earlier, of a notion of a best fit, used in the respective urban-level investment promotion activities. The idea of a best fit for prospective new investment can be seen as being compatible with a greater understanding of the core strengths of each case study example. When describing the broader outlook to furthering economic development adopted in Heinola, Mäkilä addressed the topic of core strengths, pointing out the attention that is now given to the driving factors for the town, the needs of businesses and local business environment. Mäkilä also added the significant point, that within the capacity of a business development company, Business Heinola works to ensure that the town, as a whole, meets the requirements of the investor, with the best fit representing those opportunities which are the right scale for the existing economic ecosystem, with careful consideration of the existing business community.

Application of the Central Theme in Heinola, Kotka and Salo

Compatible with the understanding of the importance of existing assets, as well as the understanding of their present economic ecosystems, the case studies of Heinola, Kotka and Salo also demonstrate economic development and investment promotion activities which are based on available material and non-material assets, and the pursuit of new growth from product innovations within already established industrial sectors which continue to represent an important part of their economic structures. The argument can be made that the prospective value associated with available material assets for attracting investment has been understood already in the early response measures to the abrupt structural changes of 2007 and 2008, where efforts were made to find new occupants for vacant business premises.

In specific case examples including the former Rheumatism Hospital in Heinola, the available business premises in question represented a specialised investment opportunity, by offering facilities and equipment suitable for business activity in the health sector. The ongoing process of pursuing economic diversification is also supported by examples of investments made to develop new material assets, including available land and facilities to support future investments. These case examples include the creation of the IoT campus in Salo, utilising the material asset of the premises of the former Nokia factory and non-material asset of the local knowledge base, to create a centre for new ICT- and IoT-related entrepreneurship and research activity. In Kotka, the pursuit of specific new business activity, including new tourism- and event management initiatives, are linked to the core asset of the port and the development of its surrounding areas. The city has purchased land areas surrounding the port to be able to locate prospective new large investments which may require close proximity to a port and related logistical support, and will invest in the construction of a new material asset, the event centre, as part of the Kantasatama redevelopment, to provide a foundation for future diversification through hosting larger indoor events. These case examples are all characteristic of applying core areas of local strength and available assets, in this case the specialised health and wellbeing-related facilities in Heinola, the port environment and infrastructure in Kotka, and specialist ICT-and IoT-based knowledge in Salo, to support new economic growth.

While the present study only addresses the respective economic development strategies of the case studies on a general level, it provides some indication of continued future resilience building in Heinola, Kotka and Salo by demonstrating key transitions which have occurred within underlying thought processes. Significantly characteristics of a greater understanding of the central theme to successfully attracting new investment while adapting

to structural change are present in the individual measures taken to further economic diversification, their use of existing assets, and the notion of a best fit for new investment opportunities. The presence of this core understanding of the central theme, and its practical application on the urban level among the 3 case studies, also helps to reinforce the competitive advantage of their respective investment opportunities, presenting valid cases which meet the key requirements of international investors, and contributing to the overall economic development of Finland. The attention that is being increasingly given to attracting new residents and developing education offerings in each case study is equally significant, demonstrating an understanding of maintaining and developing the skills of the local knowledge base as a core strength, as well as a foundation for future urban innovation and continued adaption.

5.7 Application of the Triple Helix Model in Case Studies

The latter point of future adaption relates closely to the final research aim of the study, concerning the use of the 3H model within the three case study examples. As previously mentioned, the present study has adopted a broader focus to the issues of overcoming abrupt structural changes and furthering economic development on account of the scale of the subject and does not include a fully comprehensive list of all the development initiatives which have been used. As a result, the researcher is addressing the practical use of the 3H model through selected case examples that were highlighted in the research interviews or news articles.

As discussed in Chapter 2, van Winden & de Carvalho present the argument for the practical application of the 3H model as a means of coordinating the continued, strategic interaction between local authorities, businesses and knowledge institutions, supporting knowledge exchange and the more effective use of resources between the three parties, which have the potential to reinforce a more resilient urban economy. The model also supports the theoretical assumption of the respective parties involved adopting secondary, hybrid functions in addition to their primary roles in administration, business, or education and research. Allowing for variations in the scale of the practical applications of the triple helix, to account for differences in the economies and resources available in different towns and cities across the EU, van Winden & de Carvalho point out the effective use of the model requires an entrepreneurial focus from all parties involved. Significantly, this entails the ability to identify the prospective people, including students, researchers and employees, best qualified to create new business opportunities and providing them with the necessary tools to realise these ambitions.

Considering the case study examples of the present study, it can be argued that the development of the IoT campus in Salo demonstrates all the key components of the 3H model, as a combined knowledge hub involving the town, Yrityssalo Ltd, Turku University of Applied Sciences and local ICT- and IoT-related businesses. In the case of the IoT campus, the town of Salo adopted a significant practical role, by contributing financially, and engaging with other parties, to provide the necessary investment to develop an infrastructure- and knowledge-based triple helix. This example of a triple helix builds on the specialist knowledge from the local ICT sector and helps to provide tools to support new start-up creation. Authors van Winden and de Carvalho point out the significant role which town authorities can have in creating a triple helix, by providing facilities and infrastructure, but their capacity to successfully implement the model relates to their critical understanding of the needs of different parties within the helix. Important factors include an understanding of broader market conditions affecting local businesses, the specialist research being conducted in local knowledge institutions, and being open to new forms of cooperation and practical functions.

Practical Examples of Hybrid Functions

Considering the factors in relation to the case studies, the question arises, of whether the practical applications of the triple helix model will increase over time, with the development of a broader economic outlook. Specifically, does a broader approach to economic development also result in increased understanding and flexibility, which would support the relative ability of an urban administration to support the successful development of triple helices? This interpretation is supported by the presence of specific individual characteristics of the triple helix in the case studies. Specifically, the notion of hybrid functions between key parties can be witnessed in the measures used to address abrupt structural change in Salo, when Yrityssalo Ltd adopted practical responsibilities typically handled by the Employment Office. Interviewee Virtanen from Yrityssalo Ltd attributed the example to the creative solutions which were used at the time to overcome specific challenges relating to personnel and funding, following the abrupt structural changes. Additionally, each case study has, over time, developed their own practical arrangements surrounding economic development activities, and their use of directly- or jointly owned business development companies. As demonstrated in Heinola, Kotka and Salo, the division of practical responsibilities between the town administration and the business development company can be flexible, varying sometimes between individual cases. The coordinated interaction between the town administration and the business development company can also demonstrate characteristics of hybrid functions which complement each other. A practical example of this was described by interviewee Lindholm for the case of Kotka, where the

city adopts event management functions, which are supported by the marketing activities of the regional development company. The adoption of hybrid functions can also be witnessed in the case of regional development company Cursor Oy moving into renewable industries and becoming the largest single owner of the future BioA renewable fertilizer plant near to Sunila, in Kotka.

Adaptive Change to Continuous Cooperation Models

The respective interviewees also mentioned various cooperation initiatives which have involved other towns, local businesses and knowledge institutions from a broader area, and these initiatives include both fixed-term and continuous examples. The development of specific new models, such as the Invest in Finland industry-specific teams for regional collaboration within international investment promotion, suggests that a process of adaptive change can occur within cooperation models. Building on positive results obtained from earlier fixed-term projects, the industry-specific team model represents a model of coordinated, continuous cooperation, similar in characteristics to the triple helix. Similar characteristics were also demonstrated in the Visit Salo and Salo Food networks, where specific projects have evolved, developing independently into specialised networks for continued cooperation.

While these latter cases are not triple helices, they indicate a relative capacity for adaptive change which can take place within cooperation models. Equally significant, is the importance attributed to the different models of cooperation used by Heinola, Kotka and Salo, by the respective interviewees from Business Heinola, the city of Kotka and Yrityssalo Ltd. From Business Heinola, Mäkilä pointed out the importance for Heinola, of maintaining continuous, solid relationships with different parties. From the City of Kotka, Lindholm addressed the benefits of education-based cooperation with different universities to the city, as well as different joint initiatives with other towns, and the city is constantly looking for new opportunities to develop these forms of cooperation in the future. As mentioned earlier, interviewee Urmas from Yrityssalo Ltd also raised the significant point regarding adaptive change within cooperation models, where it is hoped that fixed-term projects can encourage continued cooperation between parties in the future, towards a common goal. These points demonstrate a shared understanding among the 3 case study economies, of the importance of cooperation, and also a shared will to actively participate in different initiatives.

Limitations of the Present Research and Recommendations

From the data obtained from the interviews and news articles, there are a limited number of specific case examples and events which are highlighted, and on this basis, the researcher recognises that there may be examples of triple helix models being used in Heinola, Kotka and Salo which were not addressed in this study. The practical implementation of this model represents a broad subject on its own, and future research into the extent of its use would require a more extensive account of specific case examples. The researcher also recognises that the necessary account may require balance in representation, with primary research involving representatives from local business and knowledge institutions, the two other key sectors within the triple helix.

Potential for Future Application of the Triple Helix

While the researcher cannot draw a conclusion regarding the full extent of the present use of the triple helix in Heinola, Kotka and Salo beyond selected case examples and characteristics, these individual examples, along with the common recognition of the importance of cooperation, suggest that the triple helix model may be used more extensively in future. As previously discussed, the respective case examples are demonstrating adaptive change through their pursuit of new economic development opportunities, and they are also giving further consideration towards addressing other structural changes, including attracting new residents and the education opportunities which can be provided. The further practical adoption of the triple helix model would be compatible with this process of adaptive change, reinforcing the understanding of a best fit by linking the existing knowledge bases with urban decision-making and available facilities, to develop a common entrepreneurial focus and profile.

Taking into consideration the relative capacity for adaptive change that may occur within cooperation models, the present means of cooperation, involving local businesses and education institutions, has the potential to develop further into continuous triple helices in the future. As witnessed in the case example of the IoT campus in Salo, the town administration, along with local businesses, took the initiative of establishing the facility, and were later able to successfully attract Turku University of Applied Sciences, a knowledge institution, to complete the triple helix and reinforce the function of the campus, as a hub for specialist knowledge. In the case of Kotka, it can be argued that the Kantasatama redevelopment project will also provide a foundation for a future triple helix, with the new campus for the South-Eastern Finland University of Applied Sciences being constructed with a business centre and increased research facilities, in the vicinity of the city centre. The significance of this move has been recognised in Kotka, and interviewee Lindholm pointed

out the potential for the university of applied sciences to work closely with the regional development company in future, to develop new business opportunities around the campus area. Business Heinola has also displayed foundations for the development of future triple helices to support local entrepreneurship. The town is already engaging in cooperation with external knowledge institutions to develop the corporate environment in Heinola, and is promoting interaction between local schools and businesses, to strengthen the connection between the local knowledge base and work life. Business Heinola also supports local entrepreneurship through project initiatives which involve providing open multi-purpose workspaces. Significantly, Business Heinola recognises the need to continue developing the joint initiatives between local knowledge institutions and the focus industry sectors in future. By demonstrating the necessary flexibility in their approach, the researcher proposes that the initiatives already in use have the potential to be further refined and developed into a combined triple helix.

5.8 Summary of Key Points and Future Recommendations

In the present study, the researcher set out to address the broader subject of national economic recovery in Finland through the lens of economic development on the urban level, using 3 small towns and cities affected by abrupt structural changes as case studies. The researcher also set out to support the theoretical application of panarchy theory within urban economic resilience, by linking the sequence of economic events in each of the 3 selected case study urban economies to stages of the adaptive cycle model, as described by Simmie and Martin (2009). The results of the present study demonstrate the value of the adaptive cycle model in characterising individual events, supporting its use as a descriptive tool within the context of urban economic change. The relatively limited timeframe of the present study and the background of the global economic crisis and the area of abrupt structural change designation, do, however, present an additional level of complexity when characterising the sequence of economic events and applying the adaptive cycle model on an urban level. The results obtained for Heinola, Kotka and Salo for the selected timeframe suggest the model may be more accurately used to describe sector- or process-specific changes, raising the question of whether the urban economy should be viewed in terms of multiple sector-specific adaptive cycles occurring simultaneously.

While there were differences in the representative accounts obtained from each of the 3 research interviewees, which can be attributed to the differences in the respective role and experiences of each interviewee, as well as the extent of supporting information obtained from secondary news reports, the research interviews provided comprehensive

accounts relating to the economic development approaches used in each case study. Significantly, the researcher was able to identify central themes and processes behind the different responses to abrupt structural change, and the transitions to pursuing economic development through further diversification. Key differences can be seen in the timeframe of this transition, which precedes and overlaps with the immediate consequences of abrupt structural change in Kotka, occurs simultaneously with the abrupt structural changes in Salo, and follows the end of the abrupt structural change designation in Heinola.

From the representative accounts that were obtained, there are also common characteristics of a greater understanding behind the economic development activities used in each case, which support the theoretical argument for resilience building as an ongoing process of continued evolution rather than maintaining a fixed equilibrium point. By demonstrating this understanding, each case study is sustainably pursuing ongoing diversification by means of new investment opportunities which are a suitable fit for their existing economic ecosystems. This is further complemented by the increasing attention being given by each case study to attracting more residents and developing the local education options, which will reinforce their knowledge bases in future. The present study does not address the resilience of individual industry sectors which are present or future focus areas in Heinola, Kotka and Salo, and this subject would benefit from more comprehensive future research. Instead, the present study presents an indication, that the greater understanding that is demonstrated within the 3 case studies will make their respective economies more resilient in future, by continuing to minimise their dependency on any given industry and working to anticipate possible industry-specific changes. The central theme for attracting new investment within a process of adaptive change provides further support for this indication, by reconciling the strategic approach to economic diversification used in Heinola, Kotka and Salo, to the key requirements set by prospective foreign investors. The context of international investment promotion also relates the subject area back to supporting economic recovery in Finland, by highlighting the importance of coherent local investment opportunities in reinforcing the national investment offering.

The broader focus used in the present study and the complexity of the chosen timeframe made it difficult to address the final research aim, relating to the practical use of the triple helix, in more detail. Further research into the subject would require a more comprehensive account of specific instances of cooperation, as well as supporting accounts from all representative parties within the triple helix. Those characteristics of the triple helix which could be identified provide some indication that the model has the potential to be used more in the future and may be linked to processes of adaptive change occurring within economic development and the chosen cooperation models already being used.

The unemployment statistics that were used in the study provide some means of quantifying the effects of economic events and response methods, as well as providing some indication of how rapidly each urban economy has managed to overcome their abrupt structural changes. These statistics do not, however, provide a complete representation of overall economic change, and should be considered only as general indications. The population and unemployment statistics are given specifically for Heinola, Kotka and Salo, while the abrupt structural changes, related designations, and new economic developments apply to their greater sub-regions. There are also underlying complexities in numeric parameters such as unemployment, which need to be considered. Work-based commuting from other nearby towns, for example, may fill local job positions without raising the local employment rate. The respective interviewees also addressed the potential complexities surrounding numeric targets and the use of measurement techniques to accurately follow economic development in the research interviews.

In conclusion, within the present study the researcher has been able to develop a preliminary overview of the economic transition occurring in Heinola, Kotka and Salo, but the broader subject of the present study still warrants future research, building on the results from the 5 research aims. Given the added complexity of the global economic crisis and the area of abrupt structural change designations, future research may benefit from an extended reference timeframe, and also limiting the focus to a single case study, or research aim, at a time.

SOURCES

ELECTRONIC

Cursor Oy, 2018. Cursor [Accessed 28.10.2018]. Available:

<https://www.cursor.fi/node/3769>

Drobniak, A. 2012. The Urban Resilience – Economic Perspective. University of Economics in Katowice: Journal of Economics and Management, 2012, Volume 10

[Accessed 17.4.2017]. Available:

http://www.ue.katowice.pl/fileadmin/_migrated/content_uploads/1_Drobniak_The_Urban_Resilience_%E2%80%93_Economic_Perspective.pdf

The Economist, 2016. Finland's Economic Winter: Permafrost. February 6th 2016

[Accessed 31.10.2017]. Available: <https://www.economist.com/news/business-and-finance/21689751-nordic-laggard-can-forge-ahead-reforms>

Etelä-Suomen Sanomat, 2008. Valtio nimesi Heinolan poikkeusalueeksi [Accessed 13.10.2018]. Available:

<https://www.ess.fi/arkisto/2008/12/18/valtio-nimesi-heinolan-poikkeusalueeksi>

European Commission, 2017. European Economic Forecast Winter 2017 [Accessed 31.10.2017]. Luxembourg: Publications Office of the European Union. Available:

https://ec.europa.eu/info/sites/info/files/ip048_en_3.pdf

European Commission. 2010. Europe 2020 strategy [Accessed 26.2.2018]. Available:

https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/european-semester/framework/europe-2020-strategy_en

EU, 2014. Sustainable growth and jobs 2014-2020 - Structural Funds Programme of Finland [Accessed 3.5.2017]. Available:

http://ec.europa.eu/regional_policy/EN/atlas/programmes/2014-2020/finland/2014fi16m2op001

Eurostat, 2017. Unemployment Statistics [Accessed 27.11.2017]. Available:

http://ec.europa.eu/eurostat/statistics-explained/index.php/Unemployment_statistics

Eurostat, 2016. Smarter, greener, more inclusive? Indicators to support the Europe 2020 Strategy. 2016 Edition [Accessed 26.2.2018]. Available:

<http://ec.europa.eu/eurostat/documents/3217494/7566774/KS-EZ-16-001-EN-N.pdf/ac04885c-cfff-4f9c-9f30-c9337ba929aa>

Harvard Business Review, 2015. Europe's Other Crisis: A Digital Recession [Accessed 31.10.2017]. Available: <https://hbr.org/2015/10/europes-other-crisis-a-digital-recession>

Harvard University, 2014. The European Financial Crisis: Analysis and a Novel Intervention [Accessed 13.11.2017]. Available: <https://scholar.harvard.edu/files/markesposito/files/eurocrisis.pdf>

Hirvonen, T. 2004. From Wood to Nokia: The Impact of the ICT Sector in the Finnish Economy. ECFIN Country Focus. Volume 1 – Issue 11 [Accessed 31.10.2017]. Available: http://ec.europa.eu/economy_finance/publications/pages/publication1417_en.pdf

Itä-Häme, 2017. Valolinna täyttynyt hyvin yrityksistä [Accessed 28.2.2019]. Available: <https://www.itahame.fi/Uutiset/art2336677>

Ministry of Economic Affairs and Employment in Finland, 2018. Abrupt structural change (ÄRM) [Accessed 10.10.2018]. Available: <https://tem.fi/en/abrupt-structural-change-arm->

MTV, 2008. Karelia-Upofloor lopettaa Heinolan-tehtaan [Accessed 13.10.2018]. Available: <https://www.mtv.fi/uutiset/talous/artikkeli/karelia-upofloor-lopettaa-heinolan-tehtaan/2105072#gs.QTxJQkg>

MTV, 2008. Vellamo veti ensimmäisenä päivänä 1200 kävijää [Accessed 23.10.2018]. Available: <https://www.mtv.fi/uutiset/kulttuuri/artikkeli/vellamo-veti-ensimmaisena-paivana-1200-kavijaa/2027344#gs.nVbar4w>

OECD, 2016. OECD Economic Surveys Finland January 2016 Overview [Accessed 3.5.2017]. Available: <http://www.oecd.org/eco/surveys/Overview-OECD-Finland-2016.pdf>

Simmie, J., Martin R., 2010. The economic resilience of regions: towards an evolutionary approach. Cambridge Journal of Regions, Economy, and Society, 2010, 3, 27-43. [Accessed 17.4.2017]. Available: <https://academic.oup.com/cjres/article/3/1/27/339274/The-economic-resilience-of-regions-towards-an>

Taloussanommat, 2011. "Tämä voi olla Nokian Salon tehtaan loppu" [Accessed 4.2.2019]. Available: <https://www.is.fi/taloussanommat/art-2000001726551.html>

Tilastokeskus, 2019. Työttömien työnhakijoiden osuus työvoimasta kk:n lopussa, 2006m01-2019m01. Tilastokeskuksen PX-Web-tietokannat [Accessed 4.3.2019].

Available:

http://pxnet2.stat.fi/PXWeb/pxweb/fi/StatFin/StatFin__tym__tyonv__kk/statfin_tyonv_pxt_1260.px/?rxid=923b3efc-89ee-4891-a269-c283ec47eb85

Tilastokeskus, 2018. Ennakkoväkiluku sukupuolen mukaan alueittain 2018.

Tilastokeskuksen PX-Web-tietokannat [Accessed 19.4.2017]. Available:

http://pxnet2.stat.fi/PXWeb/pxweb/fi/StatFin/StatFin__vrm__vamu/statfin_vamu_pxt_001.px/?rxid=6c2b3d86-5c9d-4be3-8fc3-6008576380c4

Tilastokeskus, 2018. Kuntien avainluvut 1987-2014. Tilastokeskuksen PX-Web-tietokannat [Accessed 13.10.2018]. Available:

https://pxnet2.stat.fi/PXWeb/pxweb/fi/Kuntien_avainluvut/Kuntien_avainluvut__2015/kuntien_avainluvut_2015_aikasarja.px/?rxid=444223df-f91c-4479-891f-5dcd50b983d2

Tilastokeskus, 2017. Kuntien avainluvut 1987-2017. Tilastokeskuksen PX-Web-tietokannat [Accessed 5.3.2019]. Available:

https://pxnet2.stat.fi/PXWeb/pxweb/fi/Kuntien_avainluvut/Kuntien_avainluvut__2018/kuntien_avainluvut_2018_aikasarja.px/?rxid=444223df-f91c-4479-891f-5dcd50b983d2

Tilastokeskus, 2016. Työttömien työnhakijoiden osuus työvoimasta kunnittain muuttujina Kunta, Kuukausi ja Muuttajat. Tilastokeskuksen PX-Web-tietokannat [Accessed 13.10.2018]. Available:

http://pxnet2.stat.fi/PXWeb/pxweb/fi/StatFin_Passiivi/StatFin_Passiivi__tym__tyonv/statfin_pas_tyonv_pxt_904_201604_fi.px/?rxid=54282fc5-1f28-46c7-b11f-9df746a62de4

Turun Sanomat, 2017. Orion harkitsee laajennusta Salossa [Accessed 18.3.2019].

Available:

<https://www.ts.fi/uutiset/paikalliset/3409968/Orion+harkitsee+laajennusta+Salossa>

Turun Sanomat, 2017. Turun AMK siirtyy Salossa lot Parkiin [Accessed 18.3.2019].

Available:

<https://www.ts.fi/uutiset/paikalliset/3546817/Turun+AMK+siirtyy+Salossa+lot+Parkiin>

Työ- ja elinkeinoministeriö, 2018. Äkillinen rakennemuutos (ÄRM) [Accessed 3.6.2018].

Available: <https://tem.fi/akillinen-rakennemuutos-arm>

URBACT II, 2015. New urban economies How can cities foster economic development and develop 'new urban economies'. URBACT [Accessed 17.4.2017]. Available: http://urbact.eu/sites/default/files/01_newurb-web.pdf

Valtioneuvosto, 2015. Finland, a land of solutions: Strategic Programme of the Finnish Government [Accessed 31.10.2017]. Available: http://valtioneuvosto.fi/documents/10184/1427398/Hallitusohjelma_27052015_final_EN.pdf/f1071fae-a933-4871-bb38-97bdfd324ee6

YLE, 2019. Kotka haluaa vanhan sataman uuteen loistoon – sopimus tapahtumakeskuksesta ja kampuksesta runnottiin kasaan, vaikka takaraja ehti umpeutua [Accessed 13.3.2019]. Available: <https://yle.fi/uutiset/3-10674251>

YLE, 2018. Salo toipuu kännykkäbisneksen romahduksesta – Uusi kaupunginjohtaja toivoo koodarien palaavan takaisin kotiin [Accessed 18.3.2019]. Available: <https://yle.fi/uutiset/3-10175450>

YLE, 2018. Uusi lannoitetehdas Kotkaan – tuotanto tarkoitus kymmenkertaistaa parissa vuodessa [Accessed 11.3.2019]. Available: <https://yle.fi/uutiset/3-10378116>

YLE, 2017. Microsoftin kiinteistökaupalle sinetti Salossa [Accessed 18.3.2019]. Available: <https://yle.fi/uutiset/3-9488294>

YLE, 2017. Sitkeän tehtaan ihme: Suljettiin ja käynnistettiin uudestaan – nyt liki 200 työntekijää rikkoo ennätyksiä [Accessed 11.3.2019]. Available: <https://yle.fi/uutiset/3-9484213>

YLE, 2017. Stora Enso järjestee palikoita uudelleen Päijät-Hämeessä – Lahden-
tehtaalla tuplasti väkeä tavalliseen verrattuna [Accessed 4.3.2019]. Available: <https://yle.fi/uutiset/3-9744884>

YLE, 2017. Sulkemiselta pelastettu valimo tuplasi työntekijöidensä määrän ja iskee nyt kovaa tulosta – "Meillä on osaava porukka" [Accessed 17.3.2019]. Available: <https://yle.fi/uutiset/3-9830475>

YLE, 2017. Turun AMK:n Salon-toimipiste suunnittelee muuttoa Nokian tiloihin [Accessed 18.3.2019]. Available: <https://yle.fi/uutiset/3-9582612>

YLE, 2016. Salo lähtee mukaan kiinteistöbisnekseen [Accessed 18.3.2019]. Available: <https://yle.fi/uutiset/3-9362671>

YLE, 2016. Salon elektroniikkaosajille uutta työtä osaamiskeskuksen avulla [Accessed 18.3.2019]. Available: <https://yle.fi/uutiset/3-9322675>

YLE, 2016. Sulzer Pumpsin yllätys: Ei suljekaan valimoaan – kymmeniä työpaikkoja pelastuu [Accessed 17.3.2019]. Available: <https://yle.fi/uutiset/3-9005928>

YLE, 2016. Valimon väki vietti jo hautajaisia – sitten tuli kolme miestä ja pelasti: "Pian aletaan soitella lisää ihmisiä töihin" [Accessed 13.3.2019]. Available: <https://yle.fi/uutiset/3-9179291>

YLE, 2015. "Ei hirveästi naurata" – lakkautettavan valimon väelle tylyin mahdollinen joululahja [Accessed 17.3.2019]. Available: <https://yle.fi/uutiset/3-8533618>

YLE, 2015. Kaupunginjohtaja Rantakokko: Microsoftin päätös on Salon kannalta erittäin dramaattinen [Accessed 17.3.2019]. Available: <https://yle.fi/uutiset/3-8140472>

YLE, 2015. Microsoft lopettaa toimintansa Salossa [Accessed 17.3.2019]. Available: <https://yle.fi/uutiset/3-8139761>

YLE, 2015. Saloon 22 miljoonan potti – valtion lisäbudjetti varmistui [Accessed 18.3.2019]. Available: <https://yle.fi/uutiset/3-8464576>

YLE, 2015. Salo syvenevässä syöksykierteessä – "Uutta rahaa pitää saada syksyn aikana" [Accessed 17.3.2019]. Available: <https://yle.fi/uutiset/3-8142931>

YLE, 2015. Sulzer Pumps harkitsee Karhulan valimon sulkemista [Accessed 13.3.2019]. Available: <https://yle.fi/uutiset/3-8361508>

YLE, 2015. Vanhan vaneritehtaan uusi elämä – yli puolet ison tehtaan tiloista täytetty [Accessed 28.2.2019]. Available: <https://yle.fi/uutiset/3-7904017>

YLE, 2014. Kännykät vaihtuivat tableteiksi Salossa [Accessed 18.3.2019]. Available: <https://yle.fi/uutiset/3-7146043>

YLE, 2013. Orion rekrytoi Salossa [Accessed 18.3.2019]. Available: <https://yle.fi/uutiset/3-6449422>

YLE, 2013. Stora Enso investoi 32 miljoonaa biojalostamoon Sunilassa [Accessed 11.3.2019]. Available: <https://yle.fi/uutiset/3-6740568>

YLE, 2012. Kotkan-Haminan seutu tukialueiden piiriin [Accessed 12.3.2019]. Available: <https://yle.fi/uutiset/3-6293616>

YLE, 2012. Kotkan rannikkopataljoona lakkautetaan [Accessed 12.3.2019]. Available: <https://yle.fi/uutiset/3-5063040>

YLE, 2012. Nokia to cut 3700 jobs in Finland [Accessed 5.2.2019]. Available: https://yle.fi/uutiset/osasto/news/nokia_to_cut_3700_jobs_in_finland/6180989

- YLE, 2012. Nokia to halt assembly at Salo plant [Accessed 4.2.2019]. Available: https://yle.fi/uutiset/osasto/news/nokia_to_halt_assembly_at_salo_plant/5297558
- YLE, 2012. Reumasairaan alue heräämässä henkiin Heinolassa [Accessed 27.2.2019]. Available: <https://yle.fi/uutiset/3-6214466>
- YLE, 2012. Reumasairaan kiinteistö vaihtoi omistajaa [Accessed 27.2.2019]. Available: <https://yle.fi/uutiset/3-6188137>
- YLE, 2012. Työt loppuvat Salossa nopealla aikataululla [Accessed 5.2.2019]. Available: <https://yle.fi/uutiset/3-6180926>
- YLE, 2011. Google opens data centre in Hamina [Accessed 9.3.2019]. Available: https://yle.fi/uutiset/osasto/news/google_opens_data_centre_in_hamina/5421764
- YLE, 2011. Kymenlaakson Liitto vaatii jatkoa rakennemuutostuelle [Accessed 12.3.2019]. Available: <https://yle.fi/uutiset/3-5415524>
- YLE, 2011. Paasivirta: Heinolan rakennemuutos on ollut työläs [Accessed 4.3.2019]. Available: <https://yle.fi/uutiset/3-5406834>
- YLE, 2011. Salo anoo jatkoaikaa rakennetukeen [Accessed 3.2.2019]. Available: <https://yle.fi/uutiset/3-5432821>
- YLE, 2011. Salon seudun tukeminen jatkuu [Accessed 4.2.2019]. Available: <https://yle.fi/uutiset/3-5454465>
- YLE, 2010. Nokia Slashes Nearly 300 Jobs in Salo [Accessed 3.2.2019]. Available: https://yle.fi/uutiset/osasto/news/nokia_slashes_nearly_300_jobs_in_salo/5506375
- YLE, 2010. Reumasairaan toiminta loppuu [Accessed 13.10.2018]. Available: <https://yle.fi/uutiset/3-5529695>
- YLE, 2010. Sellun kysyntä on kasvanut [Accessed 11.3.2019]. Available: <https://yle.fi/uutiset/3-5540831>
- YLE, 2010. Sunilan tehdas saa jatkaa [Accessed 11.3.2019]. Available: <https://yle.fi/uutiset/3-5549383>
- YLE, 2009. Google perustaa datakeskuksen Stora Enson vanhalle Summan tehtaalle [Accessed 9.3.2019]. Available: <https://yle.fi/uutiset/3-5723260>
- YLE, 2009. Google to Turn Paper Mill into Server Centre [Accessed 9.3.2019]. Available: https://yle.fi/uutiset/osasto/news/google_to_turn_paper_mill_into_server_centre/5729620

- YLE, 2009. Hansaprint lopettaa Salossa [Accessed 22.1.2019]. Available: <https://yle.fi/uutiset/3-5272154>
- YLE, 2009. Nokia keskeytti alihankinnan käytön kännyköiden valmistuksessa [Accessed 28.1.2019]. Available: <https://yle.fi/uutiset/3-5737021>
- YLE, 2009. Nokia Launches Layoff Talks at Salo Plant [Accessed 28.1.2019]. Available: https://yle.fi/uutiset/osasto/news/nokia_launches_layoff_talks_at_salo_plant/5999391
- YLE, 2009. Nokian tulos huolestuttaa Salossa [Accessed 29.1.2019]. Available: <https://yle.fi/uutiset/3-5716450>
- YLE, 2009. Salo pääsee rakennetukialueeksi [Accessed 23.1.2019]. Available: <https://yle.fi/uutiset/3-5883288>
- YLE, 2009. Salon Nokian yt-neuvottelut alkoivat [Accessed 28.1.2019]. Available: <https://yle.fi/uutiset/3-5724560>
- YLE, 2009. Stora Enso turvaa Sunilaa [Accessed 9.3.2019]. Available: <https://yle.fi/uutiset/3-5900863>
- YLE, 2009. Sunila kiinni keväällä [Accessed 11.11.2018]. Available: <https://yle.fi/uutiset/3-5865785>
- YLE, 2009. Sunilan sellutehdas sai jatkoajan [Accessed 10.3.2019]. Available: <https://yle.fi/uutiset/3-5964351>
- YLE, 2009. UPM sulkemassa Heinolan sahan ja vaneritehtaan [Accessed 10.1.2017]. Available: <https://yle.fi/uutiset/3-5911836>
- YLE, 2008. Elcoteq irtisanoo 36 Salossa [Accessed 23.1.2019]. Available: <https://yle.fi/uutiset/3-6122469>
- YLE, 2008. Heinolan parkettitehdas suljetaan [Accessed 11.1.2017]. Available: <https://yle.fi/uutiset/3-6117022>
- YLE, 2008. Kotka mukaan rakennemuutosohjelmaan [Accessed 11.11.2017]. Available: <https://yle.fi/uutiset/3-5851682>
- YLE, 2008. Stora Enson Summan-tehdas hiljeni [Accessed 11.11.2018]. Available: <https://yle.fi/uutiset/3-5820811>
- YLE, 2008. Stora Enson tulos romahti - supistukset jatkuvat [Accessed 11.11.2018]. Available: <https://yle.fi/uutiset/3-5845014>

YLE, 2008. Stora Enso vähentää satoja työntekijöitä Suomessa [Accessed 11.11.2018]. Available: <https://yle.fi/uutiset/3-5851557>

YLE, 2008. Stora Enso vähentää väkeä hieman ennakoitua vähemmän [Accessed 11.11.2018]. Available: <https://yle.fi/uutiset/3-5818700>

YLE, 2007. Elcoteq harkitsee tuotannon lopettamista Suomessa [Accessed 23.1.2019]. Available: <https://yle.fi/uutiset/3-5760290>

YLE, 2007. Itä-Lapin, Forssan, Kotkan ja Haminan seuduille erillisrahoitusta työpaikkojen katoamisen vuoksi [Accessed 11.11.2018]. Available: <https://yle.fi/uutiset/3-5811843>

YLE, 2007. Metsäteollisuudella edessään vaikeat ajat [Accessed 11.11.2018]. Available: <https://yle.fi/uutiset/3-5796625>

YLE, 2007. Metsäyhtiöiden näkymät heikkenevät [Accessed 11.11.2018]. Available: <https://yle.fi/uutiset/3-5805941>

YLE, 2007. Stora Enso vähentää ainakin 1 100 Suomessa [Accessed 11.11.2018]. Available: <https://yle.fi/uutiset/3-5807614>

YLE, 2006. Nypro lopettaa Salossa - 140 ulos [Accessed 22.1.2019]. Available: <https://yle.fi/uutiset/3-5750286>

WRITTEN

Ollila, J. & Saukkomaa, H. 2013. Mahdoton menestys: Kasvun paikkana Nokia. Keuruu: Otava.