



# Innovative global cities

– how places attract knowledge-intensive industries

**This report provides a picture** of what other countries are doing to create attractive cities. Examples in Japan, South Korea, China, India, Germany, the Netherlands, Brazil, USA and Canada are highlighted as inspiration for how this work is organised and implemented.

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## Foreword

The Swedish Agency for Growth Policy Analysis (Growth Analysis) has been commissioned to assist the government with its work to develop and implement a Swedish Export Strategy. This report is part of that assignment and focuses on the Export Strategy's objective of increasing Sweden's attractiveness for investments and skills. The aim of the study is to analyse what relevant cities are doing in order to attract knowledge-intensive industries and innovation and thereby be able to draw lessons on how attractiveness can be promoted.

The report provides a picture of what other countries are doing to create attractive cities. Examples in Japan, South Korea, China, India, Germany, the Netherlands, Brazil, USA and Canada are highlighted as inspiration for how this work is organised and implemented.

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# Content

<b>Sammanfattning .....</b>	<b>6</b>
<b>Summary .....</b>	<b>10</b>
<b>1 Introduction .....</b>	<b>14</b>
1.1 Focus .....	14
1.2 Attractiveness.....	14
<b>2 USA – the Seattle region .....</b>	<b>18</b>
2.1 Regions and advanced industries in the USA .....	18
2.2 The Seattle region – strengths and areas of improvement.....	18
2.3 Greater Seattle Region Global Trade & Investment Plan .....	19
2.4 Discussion.....	22
<b>3 Canada – the Montreal region .....</b>	<b>24</b>
3.1 Raw material-based economy trying to diversify trade and industry.....	24
3.2 Federal policy and the city of Montreal – actors, focus and cooperation .....	24
3.3 Activities – the example of Montreal International .....	27
3.4 Discussion.....	29
<b>4 Brazil – Porto Alegre – local attractiveness in global clusters.....</b>	<b>31</b>
4.1 The regions’ role in the Brazilian crisis .....	31
4.2 Rio Grande do Sul and Porto Alegre .....	31
4.3 The Medical Valley Initiative .....	32
4.4 Central components in the process .....	33
4.5 Discussion.....	36
<b>5 The Netherlands – Amsterdam –top sectors and head offices .....</b>	<b>38</b>
5.1 National top sectors and regional dialogue .....	38
5.2 Focus, prioritisation and cooperation in Amsterdam.....	39
5.3 Discussion.....	44
<b>6 Germany – Munich – Industry 4.0 in practice .....</b>	<b>45</b>
6.1 National policy: High Tech Strategy and Industry 4.0.....	45
6.2 Urban policy: focus on high knowledge content .....	46
6.3 Attraction factors .....	47
6.4 Start-ups and vocational training .....	49
6.5 Regional cooperation? .....	49
6.6 Discussion.....	50
<b>7 India – Hyderabad.....</b>	<b>51</b>
7.1 Hyderabad.....	51
7.2 Focus, prioritisation and cooperation in Hyderabad .....	52
7.3 Activities .....	53
7.4 Discussion.....	55
<b>8 China – Chongqing and Shenzhen .....</b>	<b>57</b>
8.1 The Chinese context .....	57
8.2 Urban development, industrial upgrading and attractiveness .....	58
8.3 Chongqing – gateway to the west .....	58
8.4 Shenzhen – focus on the outside world.....	63
8.5 Discussion.....	67
<b>9 South Korea – Incheon and Busan .....</b>	<b>70</b>
9.1 Incheon City .....	71
9.2 Busan City.....	75
9.3 Discussion.....	78
<b>10 Japan – Fukuoka and Okinawa/Naha .....</b>	<b>81</b>
10.1 Fukuoka City .....	81
10.2 Naha city .....	85
10.3 Discussion.....	89
<b>11 Overall discussion.....</b>	<b>91</b>

## Sammanfattning

Tillväxtanalys har i sitt regleringsbrev för 2016 i uppdrag att bistå regeringen i arbetet med Exportstrategin. Rapporten utgör en del av detta uppdrag, och fokuserar på Exportstrategins mål om att öka Sveriges attraktionskraft för investeringar och kompetens, genom att undersöka vad några av Sveriges konkurrentländer gör inom området. Urvalet av städer baseras på deras inriktning på attraktion av kunskapsintensiva näringar.

Då regioner och städer blir alltmer specialiserade är konkurrensen om investeringar och kompetens allt oftare gentemot andra regioner/städer med liknande specialisering, snarare än mellan nationer. Nya data visar att 600 städer står för 60 procent av världens totala bruttonationalprodukt – varav flertalet finns i Asien.<sup>1</sup> Att skapa attraktiva platser för individer och näringsliv ligger därför högt upp på agendan i många regioner och städer. Det som eftertraktas är verksamhet med högt kunskapsinnehåll då det driver innovation och produktivitet. I studien beskrivs vilka strategier och specifika instrument som används för att skapa attraktionskraft.

### Resultat

I Tabell 1 nedan listas målsättningar och strategier som exemplifieras med ett urval av städer/regioner.

Tabell 1 Målsättningar och strategier

Målsättning	Strategi	Stad
Talang	Rekryteringsresor	Montréal
	Attraktiv stadsmiljö	Busan, Hyderabad, Fukuoka
	Migrationsregler	Montréal
	Infrastruktur	Busan, München
Startups	Offentligt riskkapital	München
	Subventionerade kontor	Fukuoka, München, Hyderabad
	Regelförenklingar/startup-visa	Fukuoka
	Stärka ekosystem	Fukuoka
Bygga kluster	Mobilitet och utbyte med internationella kluster	Porto Alegre
	Sektorspecifika skatteincitament	Naha, Hyderabad, Montréal
	Företagsparker	Naha, Hyderabad
Stärka FoU	Skapa universitet och institut	Amsterdam, Shenzhen
	Skatteincitament	Incheon, Chongqing
	Konsortiebyggande	Amsterdam, Porto Alegre
Investeringar	Skatteincitament	Shenzhen, Incheon, Fukuoka, Chongqing, Hyderabad
	Effektiv byråkrati	Hyderabad, Shenzhen, Amsterdam
	Handelspartners blir investerare	Seattle, Amsterdam
	Logistik	Chongqing, Shenzhen, Naha, Incheon

<sup>1</sup> <http://www.mckinsey.com/global-themes/urbanization/urban-world-mapping-the-economic-power-of-cities>

I *Seattle* i USA arbetar man utefter en plan kallad “*Greater Seattle Region Global Trade & Investment Plan*” för att stärka position inom avancerade industrier genom att ta ett helhetsgrepp om främjandet av utländska direktinvesteringar och export. Bland annat satsar *Seattle* på att skapa förtutsättningar för att få bättre utväxling på sina goda relationer med Asien, inte minst Kina, som är en stor exportmarknad men saknas ur ett investerarperspektiv.

I Kanadas *Montréal* vävs det lokala ekosystemet ihop internt och externt – detta ökar regionens förmåga att i tid och med faktabaserade analyser ta tillvara på möjligheter och nyckelhändelser. Attraktion av kunskapsintensiva industrier drivs av organisationen *Montréal International*. Lokala, tematiska rundabordssamtal anordnas löpande för att korta ner tiden mellan lokala förbättringsidéer och provinsialt och federalt beslutsfattande. Detta medför en ökad förmåga att snabbt agera för att dra nytta av nyckelhändelser – exempelvis omlokaliseringsoverväganden inom strategiskt viktiga industrier och företagskoncerner.

*Porto Alegre* i Brasilien har ett nära samarbete med *Medical Valley* i Tyskland som genom partnerskap vill skapa globala kluster som ger access till ett flertal marknader. Den tyska noden har inlett ett samarbete med nordamerikanska och kinesiska partners. Samarbetsavtalet har 250 partners från såväl privat och offentlig sektor som akademien. I den delstatliga politiken har skapats en konsensus och organisatoriska förutsättningar genom att kombinera olika politiska målsättningar som fångar upp tre prioriterade politikområden – digitalisering, stadsplanering, och hälsofrågor.

*Amsterdam* i Nederländerna är en innovativ stad med bra infrastruktur, goda logistiska möjligheter och fördelaktiga skatter. Det tillsammans med tillgång till bostäder, internationella skolor och andra mjuka komponenter som bidrar till god livskvalitet gör att såväl talang som huvudkontor lockas till regionen. *Amsterdam in Business* arbetar med prioriterade fokusländer och genom marknadsföring och kartläggning av näringslivet styrs främjandet till att matcha ekosystemet av företag. En svaghet som uppmärksammats är en låg etablering av FoU-intensiva företag och institutioner.

*München* i Tyskland har en stark bas inom tillverkningsindustrin som satsar alltmer på att digitaliserar sin verksamhet vilket utgör en viktig attraktionsfaktor för innovation och talang inom IT. Tillgången på starka universitet och forskningsmiljöer är viktiga attraktionsfaktorer. För att främja stadens attraktionskraft förbättras förutsättningarna för nystartade företag, utveckla samverkan mellan forskning och näringsliv samt att stötta tillgången på kompetens genom universiteten och yrkesutbildningarna. De kanske viktigaste åtgärderna handlar dock om mer generella frågor som bostäder, lokaler och infrastruktur.

Efter att ha brutit sig loss från *Andhra Pradesh* har den nya delstaten *Telangana*, med huvudstaden *Hyderabad* i spetsen, lanserat flertalet nya investeringsfrämjande policyer och lockat till sig nya investeringar i mångmiljardklassen inom bland annat IT- och läkemedelssektorn. Ett för Indien ovanligt tydligt politiskt ledarskap genomsyrar hela byråkratin och gör ansökningsprocesser enklare än på de flesta andra städer i landet vilket gör staden attraktiv. Företagen lyfte även fram att det är lätt att locka anställda från andra delar av landet, då staden kan erbjuda en god livskvalitet (med till exempel bra skolor och sjukhus) till ett lägre pris än i jämförbara städer.

I Kina studeras två städer, *Chongqing* och *Shenzhen*. Städerna har förändrats mycket de senaste 15–20 åren och är i viss mån varandras motpoler. *Chongqing* vänder sig första hand mot den inhemska marknaden samtidigt som *Shenzhen* försöker bygga ett globalt

varumärke. *Chongqing* är västra Kinas industriella och ekonomiska bas. Regionen stöds av några av de mest förmånliga investeringsprogrammen i landet och här byggs västra Kinas största logistikcentra och kluster inom fordonstillverkning växer fort. *Shenzhen* är redan idag en av Kinas modernaste och mest utvecklade städer, med avancerad tillverkning och landets mest betydelsefulla logistikcentra. Staden var den första ekonomiska frizonen. Det goda företagsklimatet och den öppna kulturen ses som de största fördelarna med att bedriva näringsverksamhet i staden. Attraktionen och tillväxten i dessa städer baseras till stor del av de statliga stöden såsom skattelättnader och finansiering, och i Shenzhens fall även i kombination med att staten tagit ett steg tillbaka i styrningen av staden.

*Incheon* och *Busan* i Sydkorea är två diametralt olika städer, som uppvisar förvånansvärt liknande utmaningar, strategier och aktiviteter för attraktion av kunskapsintensiva näringar. Båda jobbar med uppkoppling om det så är närheten till flygplats och hamnar, eller en väl utbyggd IT-infrastruktur. De utgår från lokala befintliga styrkor och kompletterar dessa för att skapa helt nya affärsområden. De hjälper investerare och företag igenom snåriga nationella regler vad gäller visering och annat pappersarbete. Städerna ansvarar för sin egen marknadsföring, men nyttjar även statliga satsningar som förstärkning. *Incheon* arbetar löpande med fokusgrupper med stadens utländska invånare som får ge feedback på vad som kan förbättras. Det finns genomgående ett fokus på fysisk infrastruktur. Den fysiska platsen används för att snabbt försöka skapa agglomeration och kritisk massa som i nya staden *Second Centum City* i *Busan* där man vill samlokalisera aktörer från IKT- fordons- och varvsindustri och hoppas på positiva konvergens effekter när dessa industrier möts.

De japanska städerna *Fukuoka* och *Naha* ligger relativt långt från Japans industriella och politiska centra, men har lyckats med sin uppkoppling med hjälp av flygplatser och IT-infrastruktur. De har båda en ambition som en port till Asien för japanska företag, och omvänt till Japan från grannländer. Båda städerna/regionerna har framgångsrikt lyckats attrahera ett betydande inflöde av företagande inom den kunskapsintensiva IKT-industrin genom bland annat satsningar på företagsparker, regelförenklingar, skattelättnader och samhällstjänster för utlänningar i form av skolor och sjukhus. Städerna har även valt att främst inrikta sig mot ett snabbväxande Asien, därifrån man attraherar talang, företag och exporterar.

### *Slutsatser och generella iakttagelser*

Olika typer av offentliga och platsspecifika program för regional utveckling omsätter stora summor pengar. De federala stöden för regional utveckling i USA uppgår till 15 miljarder dollar per år, räknar man även in de delstatliga och lokala stöden för att attrahera FDI och för regional utveckling är man uppe i 95 miljarder dollar. Genom EUs regionalfond fördelas närmare 49 miljarder euro.<sup>2</sup> Vad som fungerar eller inte fungerar är emellertid oklart eftersom städers attraktivitet beror på ett flertal sammanvävda faktorer. Fallstudier ovan ger därför en ögonblicksbild av vissa specifika trender som etablerats de senaste åren.

En generell trend, oavsett om det är i Europa eller andra delar av världen, är att attraktionskraften ofta underbyggs med ekonomiska incitament för att öka attraktionen gentemot andra nationella städer men även att framstå som en fördelaktig plats internationellt. Balansen mellan generella och specifika instrument varierar dock. Ett flertal länder använder sig av särskilda ekonomiska zoner för att möjliggöra en skattesättning som

<sup>2</sup> Moretti, E, (2014), "People, Places and Public Policy: Some Simple Welfare Economics of Local Economic Development Programs" (with P. Kline), Annual Review of Economics, Vol. 6: 629-662



avviker från den nationella. I dessa zoner testas även andra typer av regelförändringar, exempelvis särskilda visumregler för entreprenörer. Forskning visar att små men förbättrande regelförändringar kan ha stora och långsiktigt positiva effekter, något som exempelvis kan leda till väsentlig bättre tillgång på bostäder.<sup>3</sup>

Det finns en trend i att skapa helt nya städer/stadsdelar, eller satsa på att omskapa befintliga stadsdelar, som ska byggas på ett sätt som möjliggöra effektivare agglomerationer av olika näringar och som kan skapa nya oväntade synergier och innovation. Fallstudierna visar att det ofta finns en samsyn över politikområden om prioriteringar av vilka utvecklingsområden som är viktiga och vilka länder man ska bearbeta. Detta ger ett fokus i insatserna och möjlighet till att specialisera främjandet. En generell iakttagelse är att tilltron på IKT och annan infrastruktur som möjliggörare är stor.

Dessa iakttagelser utgör en del av de strukturella faktorer som skapar attraktivitet i de studerade städerna. Men den allt högre specialiseringen i näringslivet medför att talang, kompetens och kunskap ökar i betydelse. Många platsorienterade program har haft fokus på strukturer men trenden går mot ett allt större fokus på att utveckla den specifika och specialiserade kompetensen hos individer och företag. Utbildningens innehåll och mekanismer för livslångt lärande parat med ökad kvalitet på de platsbundna institutionerna utgör den framtida utmaningen i såväl Hyderabad som i Stockholm.

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<sup>3</sup> Moretti, E, (2015) "Why Do Cities Matter? Local Growth and Aggregate Growth" (with C. Hsieh), 2015.

## Summary

Growth Analysis has been commissioned in its letter of appropriation for 2016 to assist the government with its work on the Export Strategy. This report is part of that assignment and it focuses on the Export Strategy’s goal to increase Sweden’s ability to attract investments and competence by investigating what some of Sweden’s rival countries are doing in this field. The cities have been selected on the basis of their focus on attracting knowledge-intensive industries.

Because regions and cities are becoming increasingly specialised, it is becoming more common that the competition for investments and competence is between regions/cities rather than between countries. New data show that 600 cities stand for 60 percent of the world’s total gross domestic product and most of these cities are located in Asia.<sup>4</sup> Creating attractive places for people, trade and industry is therefore high on the agenda in many regions and cities. What is sought after are activities with a high knowledge content since that generates innovation and productivity. This report describes what strategies and specific instruments are used to make places attractive.

### Results

Tabell 1 The table lists objectives and strategies which are exemplified by some selected cities/regions.

Table 2 Objectives and strategies

Objective	Strategy	City
Talent	Recruitment trips	Montréal
	Attractive urban environment	Busan, Hyderabad, Fukuoka
	Migration rules	Montréal
	Infrastructure	Busan, Munich
Startups	Public venture capital	Munich
	Subsidised offices	Fukuoka, Munich, Hyderabad
	Rules simplifications/startup visa	Fukuoka
	Strengthen the ecosystem	Fukuoka
Building clusters	Mobility and exchanges with international clusters	Porto Alegre
	Sector-specific tax incentives	Naha, Hyderabad, Montréal
	Business parks	Naha, Hyderabad
Strengthening R & D	Create universities and institutes	Amsterdam, Shenzhen
	Tax incentives	Incheon, Chongqing
	Building up consortia	Amsterdam, Porto Alegre
Investments	Tax incentives	Shenzhen, Incheon, Fukuoka, Chongqing, Hyderabad
	Efficient bureaucracy	Hyderabad, Shenzhen, Amsterdam
	Business partners become investors	Seattle, Amsterdam
	Logistics	Chongqing, Shenzhen, Naha, Incheon

<sup>4</sup> <http://www.mckinsey.com/global-themes/urbanization/urban-world-mapping-the-economic-power-of-cities>.

*Seattle* in the USA is following a plan called “*Greater Seattle Region Global Trade & Investment Plan*” to strengthen its position within advanced industries by taking a holistic approach towards the promotion of direct foreign investments and exports. Seattle’s initiatives include creating preconditions to bring about a better return on their good relations with Asia, not least China, which is a huge export market but which is absent from an investor perspective.

In *Montréal* in Canada, the local ecosystem is interwoven internally and externally. This increases the region’s ability to utilise opportunities and key events in time and with fact-based analyses. The task of attracting knowledge-intensive industries is managed by the organisation Montréal International. Local, themed round-table discussions are organised regularly to shorten the time between local ideas for improvement and provincial and federal decision-making. This means the city is better able to take fast action to utilise key events, for example, decisions about possible relocation within strategically important industries and business groups.

*Porto Alegre* in Brazil collaborates closely with Medical Valley in Germany which wants to use partnerships to create global clusters that give access to several markets. The German node has begun to collaborate with partners in North America and China. The collaboration agreement in Porto Alegre has 250 partners from the private and public sectors and the academic community. Consensus has been reached and organisational preconditions established for policy at state level through a combination of different policy objectives for three prioritised policy areas: digitalisation, urban planning and health issues.

*Amsterdam* in the Netherlands is an innovative city with efficient infrastructure, good logistical opportunities and advantageous taxes. These factors coupled with good availability of housing, international schools and other soft components that enhance quality of life contribute to that both talent and head offices are attracted to the region. Amsterdam in Business works with prioritised focus countries and through marketing and the mapping of trade and industry, promotion initiatives are steered to match the ecosystem of companies. One weakness that has been identified is the low degree of establishment for R & D intensive companies and institutions.

*Munich* in Germany has a strong base within the manufacturing industry which is investing more and more in digitalising its operations. This constitutes an important attractiveness factor for innovation and talent within the IT sector. Access to strong universities and research environments is an important attractiveness factor. To promote the city’s attractiveness, the prerequisites for startup companies are being improved, collaboration between research and trade and industry is being developed, and the supply of competence is being supported through the universities and vocational study programmes. However, the most important measures are perhaps those linked to more general issues such as housing, premises and infrastructure.

After breaking out from Andhra Pradesh, the new state of Telangana, led by its capital city of *Hyderabad*, has introduced several new investment-promoting policies and has attracted new multi-billion investments in, for example, the IT and pharmaceutical sectors. All bureaucratic processes are permeated by clearly defined political leadership - a rare phenomenon in India - and this makes application processes simpler than in most other cities in the country, thereby making the city attractive. The companies also highlighted that it is easy to attract employees from other parts of the country since the city can offer

good quality of life (for example, good schools and hospitals) at a lower price than in comparable cities.

Two cities in China have been studied: *Chongqing* and *Shenzhen*. These cities have changed considerably over the last 15-20 years and to some extent they are each other's opposites. Chongqing focuses primarily on the domestic market while Shenzhen is striving to establish itself as a global name. *Chongqing* is western China's industrial and economic base. The region is supported by some of the most advantageous investment programmes in the country. This is where the largest logistics centre in western China is being built and clusters are growing fast within the vehicle manufacturing industry. *Shenzhen* is already one of China's most modern and developed cities with advanced manufacturing and the most important logistics centres in the country. This city was the first economic free zone. The positive business climate and the open culture are seen as the biggest advantages of engaging in business activities in this city. The attractiveness and growth of these cities is largely based on government aid such as tax benefits and funding, and in the case of Shenzhen, the fact that the state has taken a step back as regards the governance of the city.

*Incheon* and *Busan* in South Korea are two diametrically different cities which display surprisingly similar challenges, strategies and activities for attracting knowledge-intensive industries. Both cities focus on connections, whether it is closeness to airports and ports or a well-developed IT infrastructure. They build on local strengths that already exist and then supplement them to create completely new business areas. They help investors and businesses to navigate through tricky national rules as regards visas and other paperwork. The cities are responsible for their own marketing but they also utilise government initiatives as reinforcement. Incheon works continually with focus groups with the city's foreign residents who are asked to give feedback on what can be improved. There is a general focus on physical infrastructure in both cities. Physical planning is used to create agglomerations and critical mass like in the new city Second Centum City in Busan where efforts are being made to bring together players from the ICT, vehicle and ship-building industries and it is hoped there will be convergence effects when these industries come together.

The Japanese cities *Fukuoka* and *Naha* are relatively far away from Japan's industrial and political centres but they have succeeded with connection thanks to airports and IT infrastructure. They both aspire to be a gateway to Asia for Japanese companies and vice versa to Japan from neighbouring countries. Both cities/regions have succeeded in attracting a significant inflow of businesses within the knowledge-intensive ICT industry, for instance, through investments in business parks, the simplifying of regulations, tax benefits and social services for foreigners in the form of schools and hospitals. The cities have also chosen to focus primarily on fast-growth Asia from where they can attract talent and businesses. Asia is also seen a promising exports market.

### *Conclusions and general observations*

Different types of public and place-specific programmes for regional development turn over large amounts of money. Federal aid for regional development in the USA amounts to USD 15 billion per year. If state and local aid programmes to attract FDI and stimulate regional development are included, the sum rises to USD 95 billion. Almost EUR 49 billion are paid out through the EU's regional fund.<sup>5</sup> However, it is unclear what

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<sup>5</sup> Moretti, E, (2014), "People, Places and Public Policy: Some Simple Welfare Economics of Local Economic Development Programs" (with P. Kline), Annual Review of Economics, Vol. 6: 629-662

interventions work or do not work since the attractiveness of cities depends on a number of intertwined factors. The case studies above give a snapshot picture of some specific trends that have become apparent in recent years.

A general trend that is apparent in both Europe and other parts of the world is that attractiveness is often built up with economic incentives to make a city more attractive than other cities in the same country and also make it stand out internationally as an attractive place. However, the balance between general and specific instruments varies. Several countries use special economic zones so they can employ tax benefits that deviate from the national norm. In these zones, other types of rules simplifications are also tested, for example, special visa regulations for entrepreneurs. Research shows that small changes in rules that constitute an improvement can have major and long-term positive effects, something that can lead, for example, to much better availability of housing.<sup>6</sup>

There is a trend of creating completely new towns/town districts or taking measures to recreate existing districts by building a city to facilitate more efficient agglomerations of different industries which can thereby generate unexpected synergies and innovation. The case studies show that there is often consensus as regards policy areas and prioritising which development areas are important and which countries one wants to work on. This results in initiatives being focused and facilitates specialisation. One common observation is that there is great faith in the positive potential of ICT and other infrastructure.

These are part of the structural factors that create attractiveness in the investigated cities. However, the increasing specialisation of trade and industry means that talent, competence and knowledge are becoming increasingly important. Many place-orientated programmes have focused on structures but the trend is heading more towards a focus on the development of the specific and specialist competences of persons and companies. The content of education and mechanisms for lifelong learning together with higher quality at the geographically-bound institutions constitute the challenge of the future in both Hyderabad and Stockholm.

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<sup>6</sup> Moretti, E, (2015) "Why Do Cities Matter? Local Growth and Aggregate Growth" (with C. Hsieh), 2015.

# 1 Introduction

Growth Analysis has been commissioned in its letter of appropriation for 2016 to assist the government with its work on Export Strategy. This report is part of that assignment and it focuses on the Export Strategy's goal to increase Sweden's ability to attract investments and skills through investigating what some of Sweden's rival countries are doing in this field.

The report analyses what relevant, dynamic regions and cities are doing to attract knowledge-intensive enterprises and innovation and thereby enable lessons to be drawn from other countries' work to enhance their attractiveness for certain industries. The study will contribute to the policy development in the field in Sweden.

Growth Analysis has also previously described attractiveness primarily from a Swedish perspective, including in the reports *Facts and examples regarding local attractiveness (2014:14)* which also contains examples from abroad, *Why are some locations more attractive for residents than others? – a research overview of the factors which create attractiveness for living (2014:13)*, *Growth facts 2012 Regional attractiveness – growth engines in a global reality and Cities and their growth conditions (2011:08)* (these reports are written in Swedish, with English abstracts).

The report starts with a brief summary, followed by an introductory chapter with background, aim and an outline of the concept of attraction. The subsequent chapters present the cases studies in foreign regions and cities with each chapter concluding with a brief discussion. The final chapter presents an overall discussion of the case studies.

## 1.1 Focus

In this study, Growth Analysis focuses on initiatives in strong regions or cities in other countries to attract knowledge-intensive industries and innovation through strategies and activities. The countries included in the study are Japan, South Korea, China, India, the Netherlands, Germany, Brazil, Canada and USA. The cities have been selected on the basis of their focus on attracting knowledge-intensive industries.

The study is focused on the endeavour of regions and cities to attract knowledge-intensive enterprises, technology and innovation, for example through high-tech companies, entrepreneurs, start-ups, talents or similar, with the aim of strengthening their competitiveness and position in the value chain.

The object of study is regions/cities that have a strategy for knowledge-intensive industries and innovation in promoting investment, the report discusses what they want to achieve with the strategies, how they have set their priorities and which activities and offers this has led to both locally/nationally and abroad.

## 1.2 Attractiveness

In the hunt for competitive advantages in a world with ever lower transaction costs and faster redistribution/levelling out of resources between countries, it is becoming increasingly clear that economic policy, education policy, research policy, trade policy and labour market policy are becoming increasingly intertwined. Many countries have chosen to bring these challenges together under the umbrella term of innovation policy in an

attempt to manage issues which encompass all the aforementioned policy areas. Globalisation entails skills, companies and investments moving across national borders to an ever greater extent, increasingly exposing Sweden to international competition. It influences the conditions for growth and welfare in a small, open economy like Sweden. Demands on the Swedish economy's capacity to restructure are increasing.

One of the objectives of innovation policy is therefore to strengthen economic activity in the short and long term, and get companies, capital and people to choose, stay and grow in the country and in its regions/cities. *Embeddedness and anchoring* are two terms used to describe this. Geographic locations' characteristics become increasingly important when competition for mobile resources is global. Regions and cities are consequently important actors in the context, in part through offering that which makes companies, capital and people want to establish themselves in the locality and in part because specialisation enables sectors and talents to be prioritised.

Interest in global value chains is constantly increasing, not least because facts are now available concerning how internationalisation affects the Swedish economy. Studies of aggregated data from Sweden as a whole, which have been conducted by Growth Analysis and other organisations, show that there are major regional differences in how internationalisation of the value chain affects trade and industry.<sup>7</sup> Growth Analysis has demonstrated that regions' specialisation and agglomeration are having an increasing impact on the country's economic activity.<sup>8,9</sup> This report indicates that this is a global trend, with regions becoming increasingly specialised and with competition between regions rather than between nations. Regions and cities in a number of other countries have created strategies and activities to attract, for example, high-tech start-ups, head offices or entrepreneurs.<sup>10</sup>

The research distinguishes three types of attractiveness:

- Attractiveness for living – a place where people want to move or stay.
- Attractiveness for business – a place where companies want to be located.
- Attractiveness for tourism – a place that people want to visit.

Put simply, trade and industry locates where companies find it most advantageous to conduct their operations. Companies thus look for places where they have the most benefits, can produce the highest revenues and have the lowest costs.

According to Krugman (1991), the location for trade and industry's is principally determined by two facts: economies of scale and transportation costs. Economies of scale in production mean that companies only choose to locate themselves in a small number of places. Transport costs dictate that companies are located in close proximity to their customers. In this theory, transportation costs are the key that gets the location process started, with the initial conditions, where people live, largely determining the location.

<sup>7</sup> <http://www.tillvaxtanalys.se/publications/reports/reports/2014-12-16-Sweden-in-global-value-chains-----changing-roles-of-firms-in-an-increasingly-globalized-economy.html>

<sup>8</sup> <http://www.tillvaxtanalys.se/publications/growth-facts/growth-facts/2012-04-18-regional-attractiveness---growth-engine-in-a-global-reality.html>

<sup>9</sup> <http://www.tillvaxtanalys.se/publications/reports/reports/2014-12-17-facts-and-examples-regarding-local-attractiveness.html>

<sup>10</sup> [http://www.tillvaxtanalys.se/download/18.5d9caa4d14d0347533bbb436/1430849589172/directresponse\\_2014\\_06.pdf](http://www.tillvaxtanalys.se/download/18.5d9caa4d14d0347533bbb436/1430849589172/directresponse_2014_06.pdf)

Using transport costs as a determining factor for where companies locate has been common in the literature (see for example McCann, 2001; Glaeser and Kohlhase, 2003). Transport costs have also been used to describe where cities have been founded. Many cities have been established close to water or in other strategic locations, as it has facilitated transport and reduced transport costs (Glaeser and Kohlhase, 2003). However, the significance of transport costs has changed. Glaeser and Kohlhase (2003) show that transport costs for goods have decreased and are now so low that they should not play a decisive role in where a company is located. The costs to transport people are however significant, and thus important for the company's location. However, employment in the service sector is increasing, which means that an ever greater number of companies want to be located where other companies are, as services are often provided in interaction with other companies and individuals.

Another way to describe where trade and industry is located is the production cycle theory. The fact that companies are located due to their position in the production cycle means that different areas become focused on different types of production. Capello and Lenzi (2011) have used this to identify three types of regions: (1) Regions focused on research and development (particularly basic research that can be applied within several fields), (2) applying regions (which use existing research to produce new products), and (3) imitative regions (which imitate and refine the products and services that others have developed).

Not all regions have the opportunity to be focused on research and development, but instead can be applying or imitative regions. However, it is important to emphasise that no valuation is made in such a classification. Whether concentrating on research and development, application or imitation, they all constitute innovative activities. This consequently means that all regions can be innovative, but that they are probably innovative in different ways.

The capacity to attract companies requires access to expertise, infrastructure, entrepreneurship, public service and governance. For the individual, the attractiveness is determined by access to work, development opportunities, living environment, culture and so forth. This means that an attractive environment for individuals and companies is becoming an increasingly important factor for policy to take into account. The attractiveness of regions and cities is thus created by a large range of factors.

Globalisation is changing the conditions for regions to influence their own development. Growth Analysis believes that this change has different consequences for the municipalities' or regions' own room for manoeuvre and what they are able to influence. One way to manage this change is to focus more on areas that can be influenced. Attractiveness is about trying in various ways to make the location more attractive to residents and for trade and industry. Globalisation entails increased competition for companies, increased competition for labour and skills, increased mobility, new commuting patterns and increased focus on creating attractive environments.<sup>11</sup>

The term attractiveness extends over a large number of issues, for example physical planning, place marketing, tourism, service issues, education, research, infrastructure, residents and living environment, cultural output and the conditions for enterprise. It is consequently difficult to measure attractiveness. The report contains examples of how

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<sup>11</sup> <http://www.tillvaxtanalys.se/publications/reports/reports/2014-12-17-facts-and-examples-regarding-local-attractiveness.html>



some innovative urban regions have responded to concrete challenges and objectives and the hope is that these can provide inspiration and lessons for cities and regions in Sweden that are facing similar challenges.

## 2 USA – the Seattle region

### 2.1 Regions and advanced industries in the USA

In the wake of the financial crisis, it is apparent that the majority of well-paid American jobs are to be found in export-oriented sectors with high value added, an insight which has led American politicians and academics to try to gain a better understand of this group of companies and the question is being asked; Which companies actually are they? Where are they located geographically? What support do these companies need now and in the future?

As an element in this, the well-reputed analysis institution Brookings has identified a group of companies that it has chosen to call "advanced industries"<sup>12</sup> which seem to be driving large parts of the American economy.<sup>13</sup> Advanced industries constitute just 9 per cent of American jobs, but account for 17 per cent of GNP, 60 per cent of the country's exports, 90 per cent of private research and development expenditure, 85 per cent of the country's patents, and employ 80 per cent of the country's engineers. However, somewhat alarmingly, Brookings finds that the majority of the USA's metropolitan areas are rapidly losing their exposure to and specialisation in relation to these advanced industries.<sup>14</sup> In 1980, 59 of the country's 100 largest metropolitan areas had more than 10 per cent of employees within advanced industries, in 2013, only 23 of the metropolitan areas achieved the same criterion. This development is worrying for the USA as advanced industries, directly and indirectly, account for a quarter of the country's almost 39 million jobs. Moreover, in 2013 the average American salary within advanced industries was 89,300 dollars, compared with the average American salary in the same year of 50,130 dollars, which makes the negative development even more problematic for American public decision makers as major tax revenues are at stake.

The Seattle region<sup>15</sup> with 3.6 million inhabitants is one of only a small number of positive exceptions in this negative development.

### 2.2 The Seattle region – strengths and areas of improvement

In Brookings' study, the Seattle region has the second highest exposure to advanced industries of all American metropolitan areas after the San Jose region in Silicon Valley.<sup>16</sup> In 2013, 16.0 per cent of the Seattle region's employees, or 295,010 people, worked in advanced industries, with 44.8 per cent in manufacturing industry-related sectors (132,210 employees), 54.8 per cent in service-based sectors (161,620) and 0.4 per cent in energy-related sectors (1,170). In addition to these nearly three hundred thousand jobs in advanced industries, a further 236,010 indirect jobs were created in the Seattle region.

<sup>12</sup> Selection criteria to qualify as an advanced industry are that the company must have R&D expenditure per employee of over 450 US dollars (about SEK 4,000) and at least 20 per cent of employees with some form of further education with a STEM specialisation.

<sup>13</sup> Science, Technology, Engineering and Math

<sup>14</sup> [http://www.brookings.edu/~media/Research/Files/Reports/2015/02/03-advanced-industries/final/AdvancedIndustry\\_FinalFeb2lores.pdf?la=en](http://www.brookings.edu/~media/Research/Files/Reports/2015/02/03-advanced-industries/final/AdvancedIndustry_FinalFeb2lores.pdf?la=en)

<sup>15</sup> Seattle-Tacoma-Bellevue – known as the Seattle metropolitan area

<sup>16</sup> San Jose-Sunnyvale-Santa Clara, which is a part of Silicon Valley.

Table 3 the five largest advanced industries in the Seattle region in 2013 are set out below.

Table 3 The five largest advanced industries in Seattle-Tacoma-Bellevue

<b>Five largest "NAICS Industry Components of Advanced Industries", number of jobs in 2013</b>	<b>Number of jobs</b>
Aerospace Product and Parts Manufacturing	93,780
Software Products	52,580
Computer Systems Design	35,350
Architecture and Engineering	22,410
Management, Scientific, and Technical Consulting Services	15,130 (70%)

Just outside the top-five list are "R&D services" (11,760 jobs), "Wireless Telecom Carriers" (8,880), "Web Search and Portals and Internet publishing" (8,300) and "Precision Instruments" (7,970). Smaller categories thereafter are, for example, various equipment manufacturers within heavy industry, electronics, medicine, vehicle components etc.

The Seattle region has a strong industrial and commercial base consisting of high-tech companies in a number of different sectors. Companies such as Microsoft, Starbucks, Costco and Amazon have head offices in the locality, and several other large companies have extensive operations in the region. Trade and industry is extraordinarily diversified with stable and well-balanced growth throughout the economic cycle. The Seattle region is especially well connected internationally, with over 40 per cent of jobs based on international trade. In addition, the region has a highly educated population, a rich cultural life and proximity to nature and outdoor life.

Not surprisingly, the Seattle region is a real heavyweight when it comes to exports to other countries, 12,677 companies export goods and services to a value of 81.9 billion dollars per annum (SEK 700 billion). However, despite export successes that are way above average, the Seattle region is only an average performer when it comes to attracting foreign direct investments/FDI. FDI only account for 4.5 per cent<sup>17</sup> of the region's jobs compared with the country's average of 5 per cent.

Consequently, representatives for the Seattle region view the relatively low proportion of FDI as a problem as, on average, foreign-owned companies in the USA pay higher wages, invest more in R&D (account for 19 per cent of American R&D) and export to other countries (account for 20 per cent of American exports) to a higher extent than domestically owned companies.

Advanced industries, exports and foreign direct investments are therefore a high priority for public decision makers in the region.

### **2.3 Greater Seattle Region Global Trade & Investment Plan**

Representatives for the Seattle region have decided that cultivating a profile in relation to advanced industries with a high added value and export focus must be supported by working more proactively than previously to attract FDI. Public and private actors have therefore come together to produce a joint plan for Seattle metropolitan area. In producing

<sup>17</sup> Foreign-owned companies account for 66,341 jobs in the Seattle region.

this plan, the region’s representatives have affiliated to the Global Cities Initiative<sup>18</sup>, a joint programme between Brookings and the JPMorgan Chase bank, which offers a methodology for cities/regions to draw up plans to promote exports and foreign direct investments.

The results of the work, “*Greater Seattle Region Global Trade & Investment Plan*” were published in January 2015 and have been produced by a number of local, regional and federal actors, public as well as private.<sup>19</sup> The plan has a five year perspective and is focussed on attracting FDI, increasing the number of exporting companies in the region and raising export capacity in companies that already export.

In Table 4 below is a brief account of the content of the “*Greater Seattle Region Global Trade & Investment Plan*” in table form;

Table 4 the Seattle region’s plan for promotion of foreign direct investments and export

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**Three areas of strength, called Attractive Assets**

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- Highly educated workforce (37 per cent have a minimum of a bachelor’s degree),
- Proximity to geographic markets (not least Asia)
- First-class infrastructure (third largest port in North America and international airport).

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**Position foreign direct investments**

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- Five largest investors in the Seattle region in order of magnitude are Canada, Japan, Germany, UK and France.
- Most goods exported in order of magnitude to China, Canada, Japan, United Arab Emirates and South Korea.
- Most service exports in order of magnitude to Japan, Canada, Ireland, UK and Switzerland.
- Current largest sectors for foreign direct investments are; manufacturing, wholesaling, information services, professional services and construction industry.

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**Four measurable goals to achieve within five years**

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- Increase foreign direct investments in advanced industries measured in the number of employees, number of companies and the number of investments.
- 25 per cent increase in number of foreign investments from established FDI countries (Canada, Japan, Germany, UK, France) – see example below.
- 25 per cent increase in investments from non-traditional FDI-countries (for example growth countries in Asia)
- 10 per cent increase in the number of exporting companies in the Seattle region.

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**Measures to achieve the goals**

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- Widen public/private collaboration in the region, involve more actors, from more municipalities
  - Convert export contacts/foreign customers into investors in the region
  - Help the region’s small- and medium-sized companies to gain access to capital and export markets
  - Convert international/foreign students and their families into investors
  - Derive benefit from the Seattle region’s strong links to China
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<sup>18</sup> <http://www.brookings.edu/~media/multimedia/interactives/2013/GCXMedia/Guides/Market%20Assessment%20Guide%20for%20a%20Global%20Trade%20and%20Investment%20Plan.pdf>

<sup>19</sup> Development Alliance of Greater Seattle, Economic Development Council of Seattle, King County Council in partnership with U.S. Department of Commerce, Washington State Department of Commerce, Puget Sound Regional Council and Kitsap Economic Development Alliance, Economic Alliance Snohomish County, King, Pierce and Snohomish local representatives. Besides these actors, other local decision makers, trade organisations, universities and representatives from trade and industry also participated in the task.

### 2.3.1 Exemplification of goals

The four measurable goals in the "*Greater Seattle Region Global Trade & Investment Plan*" are subsequently broken down individually into a number of activities to achieve the goal. Below is an example of how the "25 per cent increase in the number of foreign investments from established FDI countries (Canada, Japan, Germany, UK, France)" goal is to be achieved;

- Increase the number of delegations travelling to these countries, set clearer goals for these trips and follow up and evaluate them more effectively.
- More diverse composition of the delegation with more actors for these countries.
- Increase the internet traffic from these countries to Invest Washington's website; <http://www.investwashington.org/>
- Increase the number of incoming delegations from these countries.
- Increase the number of companies locating in the Seattle region from these countries.
- Actively work to ensure that foreign-owned companies from these countries expand their operations in the Seattle region (measured in the number of jobs).
- Implement a follow-up system for customer care of contacts initiated.

### 2.3.2 The Seattle region's standpoint in federal/national policy

The "*Greater Seattle Region Global Trade & Investment Plan*" also presents joint standpoints regarding a desirable focus for national/federal policy development in the future, some examples;

- *Federal FDI investment and Legislation*; Support federal bills such as H.R. 2052, "Global Investment in American Jobs Act of 2013,"
- *Global Investment & Trade Data*; support and influence federal and state initiatives such as gaining access to and sharing statistics surrounding foreign direct investments. Bureau of Economic Analysis should report on an annual basis in relation to both employment and investment volumes for foreign direct investments.
- *Ex-Im Bank*; work to ensure that the Export-Import Bank of the United States can continue operating in its current form. Ex-Im Bank has been under severe political pressure in recent years.
- *Trade Policy Agreements*; work to ensure that the USA makes progress in various free trade agreement negotiations through lobbying federal decision makers as well as members of Congress.
- *Harbor Maintenance Tax*; a federal tax on port operations that the region's representatives feel could be used more effectively.
- *China and India – Increase US competitiveness in trade with China and India*; work to ensure constructive dialogues between USA and India and China surrounding trade and in particular protection of intellectual property.
- *Transportation Infrastructure*; influence both state and federal decisions concerning transport infrastructure.

- *Education and Talent*; work to ensure increased investments in the school system from day nursery/preschool to upper secondary school, in particular initiatives for STEM education to guarantee the region's skills provision for advanced industries in the future. Support the commercialisation of universities' research results.

The plan also specifies actors such as Washington Council on International Trade and the federal foreign investment promotion programme, Select USA, as important collaborative partners.

There is consequently a clear connection between how the Seattle region is planning to work locally, what the region intends to do internationally on its own initiative, and what the region recommends as national/federal priorities.

## 2.4 Discussion

It is possible to draw a number of lessons from the Seattle region's work on integrated export and investment promotion, with the most relevance for Sweden probably being;

- Advanced industries as a basis for analysis
- Global Cities Initiative as working method

Below is a short presentation of these two areas.

### *The city/region as a unit of analysis – advanced industries*

A strong trend in the USA is for the region/city to constitute an increasingly important entity in attracting talents, capital and business enterprises. One reason for this increased interest in the role of regions/cities as economic locomotives, is that a study concerning advanced industries shows that, following the financial crisis, the American recovery has been primarily concentrated on a small number of localities, at the same time as several other places have slipped even further behind. Brookings' study concerning advanced industries and regions has shaped the US policy debate on how innovation-, economic-, trade-, regional-, education- and research policy should be formulated in the future.

Sweden would be well served by a similar study which would establish; Which industries/-sectors are actually advanced? (In the American study it transpired that it was a somewhat different group of companies than the normal convention) Where are these advanced industries located?

A Swedish study such as this would elucidate regional differences and thereby contribute to linking together disparate regional needs with formulation of national policies in relation to research, education, the economy and innovation. A study surrounding advanced industries would create an interesting basis for discussion of regions' different needs and how national policy can/should meet them. A study of advanced industries would contribute to moving away from traditional industry paradigm and make it easier to include service-oriented activities and industries.

### *The city/region and export and investment promotion*

In parallel with, or as a consequence of, this work surrounding advanced industries, a methodology has emerged to produce "Global trade and investment plans" in the USA – a number of cities have completed the Global Cities Initiative programme, also under Brookings' supervision. The programme entails cities/regions undergoing two planning

processes; one with the focus on exports and one with the focus on attracting FDI. The Seattle region, in distinction from other participants, performed both processes in parallel.

The following cities/regions have completed both phases: Columbus, San Diego, Portland, San Antonio and Seattle. A dozen or so cities have produced export plans and ten or so cities are in the process of conducting their analysis work.

Here too, Sweden would also probably be well served by requesting/encouraging Swedish regions/cities to perform the same analysis of the respective entity's competitive situation including strengths, weaknesses and improvement measures. This methodology would probably help to move from a regional perspective to linking this to a national and international level, for example, linking regions' export- and investment promotion activities to the Swedish export strategy.<sup>20</sup> It should be possible to conduct this work efficiently in terms of resources – Sweden could provisionally follow the American model with a national organisation producing the methodology (possibly borrowed from Brookings) to subsequently hand over the implementation to a local body. The respective region could prospectively put together (or use) an existing steering group representing the academic world, trade and industry and public decision makers, an academic partner (for example, a degree project or a postgraduate student) would then be appointed to undertake the empirical work.

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<sup>20</sup> <http://www.regeringen.se/informationmaterial/2015/09/sveriges-exportstrategi/>

### **3 Canada – the Montreal region**

#### **3.1 Raw material-based economy trying to diversify trade and industry**

The best way to describe Canada's economy in brief is that it comprises a strong natural resources base in combination with certain key industries with a significant technology and knowledge content. Overall, the country has a solid knowledge base and considerable access to a highly qualified labour force. The proximity to the US market (in both the physical sense and in terms of free trade and integration), and the relationship between the Canadian and the US currency, constitute significant driving forces for the Canadian economy's dynamic.

For the purposes of this report, two underlying forces should be noted that are not appreciably influenced by changes in the part of the policy arsenal targeted at attraction of knowledge-intensive industries and talents. Firstly, the Canadian dollar creates a significant discount which is more or less constant in the trade exchange with the USA. This naturally generates attraction benefits, but also an inherently lower pressure to restructure. The incentive to invest in knowledge-based competitiveness is quite simply lower in Canada than in an economy such as Sweden's, as there are greater opportunities to compete with low operating costs. This fundamental state of affairs constitutes a constant counterbalance to political intentions to increase the focus on higher knowledge content and investments in research and development. This in turn leads to a lower knowledge content overall in Canadian trade and industry, which means that the multinational companies that locate in Canada in order to derive benefit from the lower running costs and tax incentives do not enjoy the same capacity at suppliers and service firms as they do in a country such as Sweden.

Secondly, Canadian policy at both federal and provincial level is to a high degree driven by increasing employment. From a Swedish perspective, this creates a protectionist approach that constitutes a counterbalancing force on foreign establishment in general and establishments of foreign knowledge intensive companies with a high degree of automation in particular. Several reports also note that Canada has greater restrictions on incoming foreign direct investments/FDI than the majority of OECD countries.<sup>21</sup>

The city of Montreal in the province of Quebec is often highlighted as a successful example in relation to regional strategies surrounding attractiveness.

#### **3.2 Federal policy and the city of Montreal – actors, focus and cooperation**

At federal Canadian level, an economic policy and an industrial policy is pursued that is principally based on financial means of control, regulation, investment in human capital, investment in infrastructure and external connections with a general focus on exports and attracting FDI. There are however also limited elements of a more specific character, above all in the form of targeted programmes to support innovation in selected key industries of federal interest, for example the forestry industry, the vehicle industry and the

<sup>21</sup> Audet & Gagné. 2010. Openness to Foreign Direct Investment and Productivity in Canada. HEC, Montréal. OECD. 2010. Economic Policy Reforms: Going for Growth. Structural Policy Indicators, Priorities and Analysis.

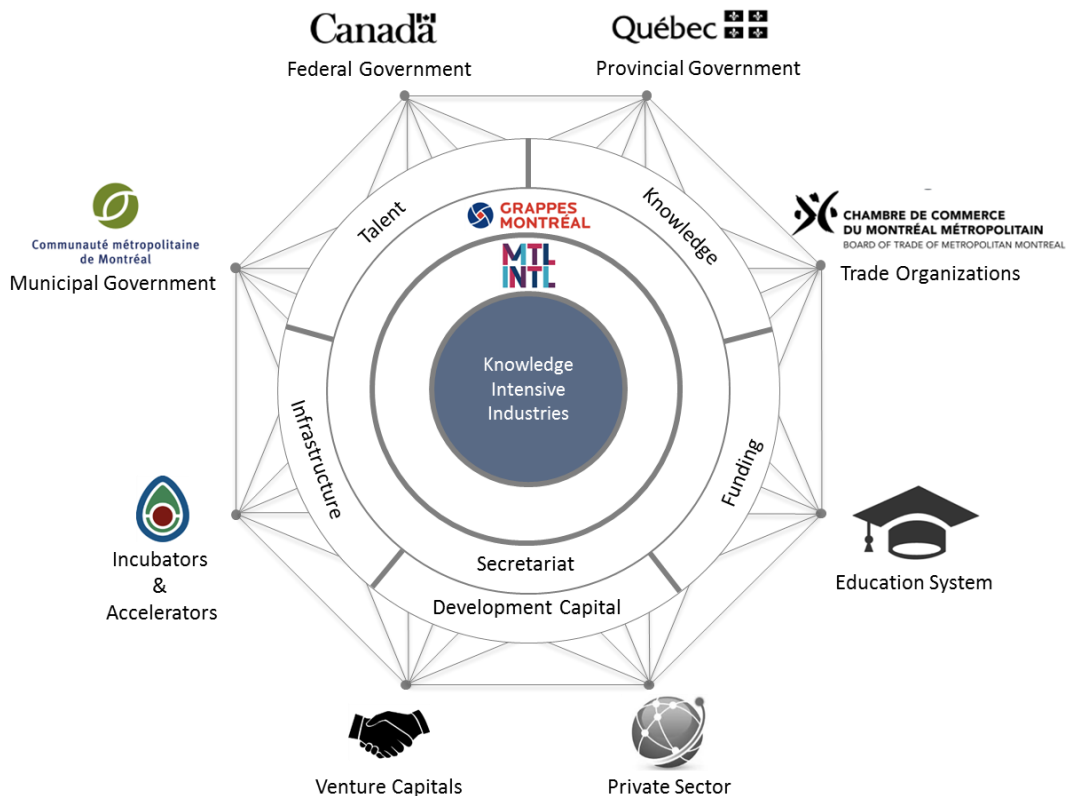


strategic aviation, space and defence industries. However, in distinction from Swedish national policy, the bulk of federal Canadian policy measures comprise indirect support, primarily in the form of tax incentives, rather than direct support of various kinds. The Canadian support constitutes almost twice the proportion of GNP compared with Sweden, but the yield in terms of different innovations is generally higher in Sweden. The newly appointed federal government has expressed a clear willingness to move the Canadian economy from being largely raw materials-based to becoming more knowledge-based. In the early proposals that have been presented so far, a greater focus emerges on increased investments as well as focused programmes, and, at best, neutral development of the indirect control measures.

The city of Montreal in Quebec, Canada’s largest province, was originally founded as a transshipment point at the rapids which constitute the first natural obstacle between the Atlantic and the large North American lakes, and was long a central node in North America’s economic geography. During the 1970s, political turbulence in connection with the French-speaking province’s independence movement led to a major exodus of capital to Toronto, which since then has taken over the role as Canada’s economic capital. With 4 million inhabitants in its metropolitan area (just under 2 million in the city), Montreal is still the country’s second largest city and has a strong high-tech cluster, not least within the aviation industry, life science, finance and IT.

In Quebec, public sector work to attract FDI is regulated in law, which means that all work in Montreal is undertaken within the mandate of the “Montreal International” organisation. However, Montreal International is part of an extensive ecosystem, as illustrated in Figure 1 **Error! Reference source not found.**

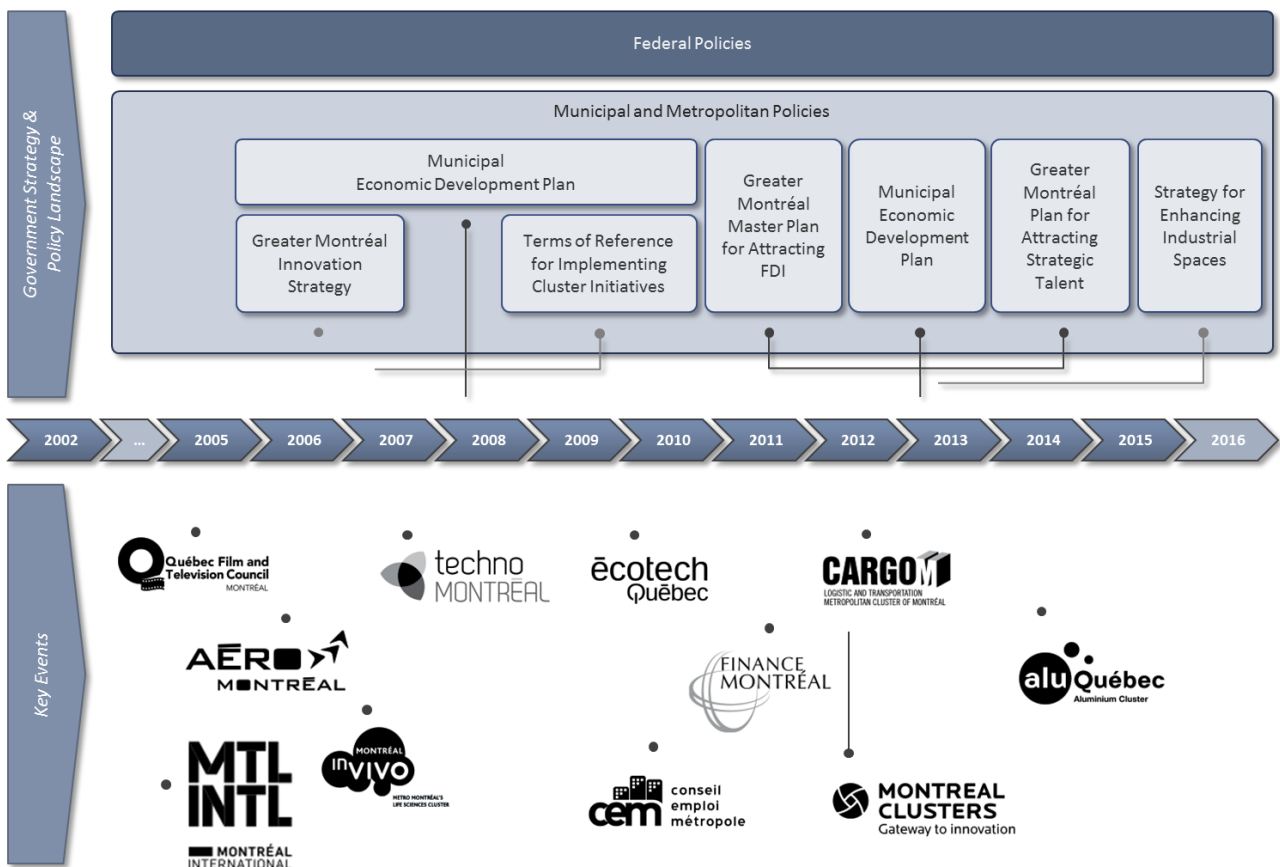
Figure 1 The ecosystem for knowledge-intensive industries and attraction of FDI



The ecosystem has two main spheres: one which involves the external, for example, incoming FDI and talent attraction (the inner circle in the figure, with MTL INTL), and one which involves strategy work in relation to the internal environment (the second circle from the inside), in other words, interventions in local knowledge and clusters. Naturally, for a foreign company considering locating in Montreal, factors in both these spheres appear important in the decision-making process. The external sphere cannot attract foreign investments if the local environment is not fundamentally attractive, and the internally focused policy actors cannot develop a well-functioning local knowledge environment without international connections. Thirdly, there are obviously factors which lie outside the direct interventions, but which affect the city’s ability to attract and retain foreign investments and talents. These can be categorised as: (i) talents, (ii) knowledge and abilities, (iii) basic financing, (iv) development capital, and (v) infrastructure. These factors are affected by a wide range of actors from all sectors of society.

The current landscape has developed over time in an alternating process between public policy at different levels, fundamental commercial and industrial processes and local initiatives, as illustrated in Figure 2 below.

Figure 2 The development of strategies, initiatives and support structures over time



As set out in Figure 2, the dynamic that has created the present situation in Montreal has been ongoing for a long time. Outside the time scale there are also a number of central events of an almost accidental character that are still impacting on the work today, not least the work of attracting the international gaming giant Ubisoft to Montreal should be mentioned. However, Montreal International was founded prior to many of the central events relating to attracting FDI. As the landscape was enriched with strategies and organisations, cooperation naturally also increased between the externally focussed and internally focussed spheres. At present the latter sphere is primarily organised through the secretariat for Montreal's cluster organisations, "Grappes Montreal". The secretariat was formally created as an element in an increasingly formalised organisation of the city's overall public offerings. The previous organisations were created out of the city's key industries, the aviation industry, life science and IT, and were the impetus for other, more specialised groups.

The development has naturally taken place within the parameters of the federal strategies, but rarely in direct cooperation with them, which is natural considering Canada's federal structure, which draws clear dividing lines between federal and provincial jurisdiction and which gives the provinces a high degree of autonomy. Instead the strategy work is for the most part embedded locally, in part in the municipal development plans, in part in the metropolitan region's/ Montreal's strategy work. The latter is in turn provincially regulated and financed. As set out in the following section, in recent times the work has been coordinated to a greater degree between all political levels, on the initiative of the local actors, and not least Montreal international.

The higher degree of coordination has its basis in what is viewed at local level as the principal challenge, namely to bring about a continuous, but at the same time rapidly adaptable, structure to support, attract and retain knowledge-intensive companies and talents in the region and the city. This is described in further detail below.

### **3.3 Activities – the example of Montreal International**

This section is limited to activities under Montreal International's remit that have the aim of attracting and retaining knowledge-intensive companies and talents. The activities can be divided into three types: (i) recruitment of strategic talents, (ii) initiatives which maintain relationships with foreign companies, and (iii) cooperation with the rest of the innovation support system.

Talent/skills provision is one of the most important issues for Montreal's ecosystem. As described above, there are a number of components in the local environment that do not concern attraction of talent, but are more about producing talent locally. However, Montreal International's contribution is to attract foreign talent to the city and to get those that come to stay. The latter applies in part to individuals who are actively attracted to the city, in part to individuals who have come in order to educate themselves at one of Montreal's many universities and colleges.

Two principal tools are used to this end. Firstly, recruitment trips are arranged overseas, which means that about two times a year companies (most recently 32) and authorities assemble and travel to a foreign city (most recently Paris). There they meet local talent, who, if there is a good match, receive help with the move from both companies and authorities. So far eleven such trips have been arranged, resulting in about 700 strategic recruitments of foreign talents. Judging by the average annual salary (442,000 Swedish kronor) it involves a lower income group than the cutting-edge talents that are entitled to

expert taxation in the Nordic countries.<sup>22</sup> The following specific tools are used on the actual trips:

1. Local advertising of job offers at the companies involved
2. First selection of invited candidates based on companies involved
3. Matching on site
4. Authorities involved, for example corresponding Migration Agency, give seminars for companies involved

Secondly, Montreal International arranges the migration process. This takes place in cooperation with relevant authorities, targeted at both individuals and companies, and comprising a large number of information and facilitation processes in the magnitude of attracting a thousand qualified employees, five hundred visa applications and one hundred information meetings a year.

About half of Montreal International's staff (a total of 40 persons) works exclusively on maintaining good relationships with the companies that have established themselves in Montreal, with the ultimate goal of getting them to reinvest in the city. Some 300 meetings with this aim are held annually, with Montreal International's staff visiting companies to obtain information about their needs and plans. On the basis of these meetings, numerous activities are subsequently set up to cater for needs and encourage investments. According to the metropolitan region (Communauté métropolitaine de Montreal) this activity contributes annual investments worth about 3.9 billion Swedish kronor.<sup>23</sup>

In this context, a large part of the offer to foreign companies involves different types of tax incentives. Montreal already has a naturally low level of costs which has principally been the case since the exodus of capital to Toronto in the 1970s, after which land prices in particular never recovered, but which also stems from the surplus of cheap energy from Quebec's well-developed hydro power. In addition to this, the tax incentives are designed so that certain key industries within high technology enjoy a tax burden that is only some 20 per cent of that for equivalent regions in North America, which can be compared with the local tax burden for non-strategic industries, which is 70 per cent of the average (KPMG 2014). There is thus a clear and significant cost benefit for the companies that are regarded as strategic for the region's development. Those which gain access to this benefit are regulated at province level, but here Montreal International's representatives can play an important role for foreign companies in the application and negotiation process.

The other major assistance that Montreal International can offer in the relationship with foreign companies is talent provision. Montreal is one of North America's largest university cities (in number of students) and therefore has good basic access to highly educated labour. However, knowledge-intensive companies often have higher requirements for specialisation than the university programmes are generally able to meet. In Montreal, this has led to the emergence of a number of specialised programmes, particularly within the aviation industry. As a result of its mandate and its central position in the ecosystem, Montreal International can contribute by matching companies' needs with the design of special programmes. However, this is mainly performed via the local cluster organisations.

<sup>22</sup> ITPS. 2006. Evaluation of the expert tax.

<sup>23</sup> Exchange rate 1 CAD = 6.5 SEK.

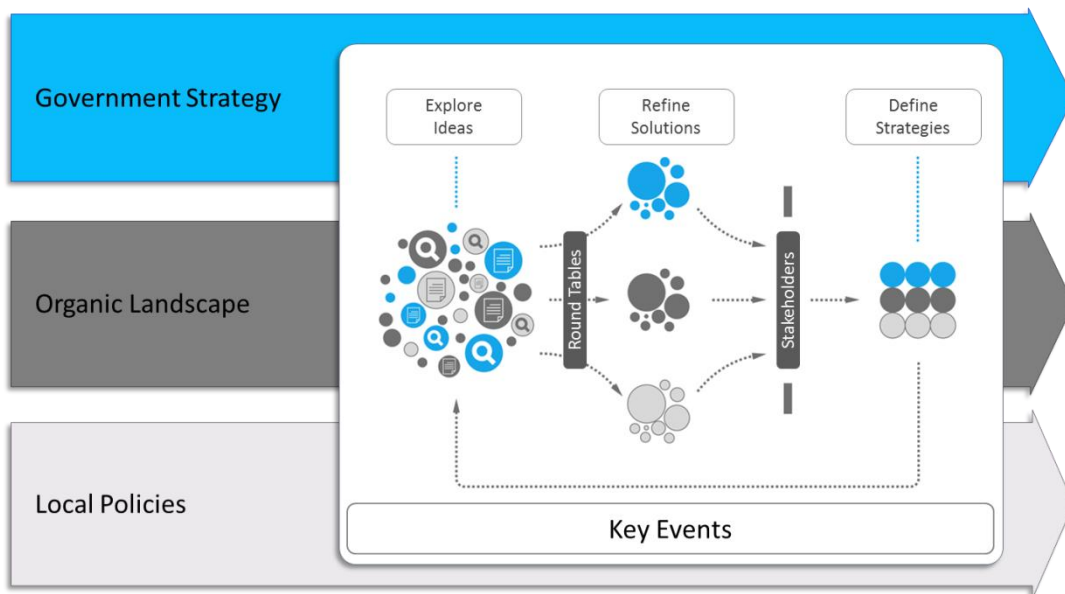
The third and final type of activity comprises different forms of cooperation between Montreal International and the rest of the ecosystem of actors according to Figure 3. Locally the focus is primarily on different studies to produce data together with specific industries and clusters. At province level, measures are actively supported that are perceived as necessary and prioritised based on local cooperation. The same applies at federal level though to a lesser extent. For example, it can concern initiatives in conjunction with the airport and other relevant actors to increase the number of flights to and from Montreal. In recent years, the collaboration has gained increased significance as many actors regard this as one of the single largest challenges.

### 3.4 Discussion

In the interviews, discussions and reports<sup>24</sup> that constitute the basis for this analysis, a clear principal lesson emerges from different actors' experiences in the local ecosystem that supports different aspects of the work to attract and retain knowledge-intensive companies and talents, namely the importance that the support system simultaneously succeeds in: (i) cooperating locally, (ii) having access at provincial and federal level, and (iii) foreseeing and adapting to rapid changes in needs and best practices/good examples.

In recent years, this lesson has led to a formalisation of, and a greater focus on, Montreal International as a platform and a driving force for structured adaptation and cooperation. This new strategy is illustrated in Figure 3.

Figure 3 An overview of the process to ensure structured, adaptable cooperation between different strategy levels and the local ecosystem



<sup>24</sup> Including Christine Frechette – Montréal International, Elie Farah – Montréal International, Deputy Minister of Innovation, Science and Economic Development and his team (Government of Canada), Bilan des activités de Montréal International 2014 <http://cmm.qc.ca/intervention-areas/economic-development/files-in-economic-development/montreal-international/?L=1>

As discussed in connection with Figure 2, the landscape in Montreal has become increasingly complex over time, with newly added actors and increased specialisation and division of labour. The many new interfaces that this has created have also produced fertile ground for generation of ideas. As a consequence of this, many actors felt that they gained a better overview of bottlenecks and systemic faults, but at the same time also realised that most diagnoses and ideas for improvements did not reach relevant decision makers or for some other reason were never translated into action and change. The main problem that has been identified is that it takes too long before local solutions are transformed into action. Improvement requirements are identified early, and the solutions formulated shortly thereafter, but there is subsequently a delay in transferring solutions to higher levels. The scenario often changes during the period that goes by between diagnosis and solution, and the solutions therefore often arrive too late. In turn, this is partly due to the fact that there is a lack of established interfaces, and partly due to lack of confidence in the communication between industry and political actors. Decision-makers work on the basis (often correctly) that industrial actors speak for themselves and devote themselves to lobbying. All in all, this means that the most is not made of key events in the local economy, for example that a large, strategically important company is considering relocating.

In order to better exploit key events, Montreal International has therefore been mandated to collect the ideas for improvement that are formulated and convey them to relevant decision-makers. The process proceeds as follows: First local ideas are collected at thematic round table discussions to which key actors from the ecosystem are invited at regular intervals. The procedure creates a kind of innovation hub with the members around the table together having an almost total overview of both problems and possible solutions. Hypotheses are formulated around the table concerning where the problems are located and which potential solutions could most effectively improve the situation. When these are ready, Montreal International is commissioned to conduct an independent study that can be used for a facts-driven process with relevant actors. The result is increased political confidence in the proposals that the local environment generates, at the same time as the structured process speeds up the route from idea to initiative.

## 4 Brazil – Porto Alegre – local attractiveness in global clusters

### 4.1 The regions' role in the Brazilian crisis

After having been highlighted for a number of years as one of the most promising growth markets, Brazil is now facing its worst economic recession in almost 100 years. GNP fell by 3.5 per cent in 2015 and the projection for 2016 is for similar levels. In parallel with this, the country is also grappling with a political crisis which is making it even more difficult to implement constructive solutions at federal level.

In this context, the role of the regions and the federal states is also changing. As the crisis is deepening, it is increasingly clear that in the absence of federal initiatives and support, the regions are now being forced to find their own solutions to the problems. The situation is interesting in many ways. On one level, it means that the expectations placed on centralised control, which have long been a legacy of the military dictatorship (1964–1985), are now rapidly collapsing. Instead a more traditional federal dynamic is emerging, with the federal states increasingly exploiting the more independent role that the Brazilian constitution actually gave them from 1988. A concrete expression of this is the trend among some of the country's more progressive regions and federal states to seek out international collaborations.

These initiatives, which ultimately involve increasing the attractiveness of individual regions, have far-reaching practical implications. More generally, they often generate a focus on innovation, both as an explicit objective and an underlying driving force for the policy. In the Brazilian context it can justifiably be stated that the regional initiatives are often test beds for policy innovation which in the long term can have great significance for the country as a whole. Further, this overall trend is creating new local markets for foreign (not least Swedish) interests which are particularly important to explore.

### 4.2 Rio Grande do Sul and Porto Alegre

The regions that has perhaps been worst affected by the crisis is the southern parts of Brazil, consisting of the federal states of Paraná (PR), Santa Catarina (SC), and Rio Grande do Sul (RS). At first sight this might seem contradictory, as these states are generally considered to be better organised than the rest of the country, and should therefore be better equipped to meet new challenges.

One of the states which was early to start looking for new models for its development policy, and which ultimately also laid its cards on the table in terms of the actual economic situation, was RS. As early as 2011, with financing from the World Bank, the state government commissioned a North American think-tank, *Global Urban Development* (GUD), to define a new economic development strategy for the state. The final report stated that RS should have the vision to establish itself as 'the most sustainable and innovative region in South America by 2030'. The key to this development was to set up so-called 'sustainable innovation zones' in a number of strategically selected cities, and subsequently to make a concentrated effort within a couple of established industries, primarily agriculture and its value chain as a whole.

The above mentioned report is far from the only proposal that was produced in recent years. However, what makes it particularly interesting is its explicit link between economic growth, innovation, sustainable development, urban development and city planning.

Figure 1 Brazil's federal states



This message has also gained a foothold in the capital of RS, Porto Alegre, where a lively debate has been conducted over many years regarding the urban environment. At the centre of these discussions is a former industrial estate, the 4th District (4<sup>o</sup> Distrito), which in recent years has fallen into decay, and instead become a haunt for the socially excluded and various criminal activities. Many people now want to see public investments to retake the area, which actually has a privileged location beside the river. The questions are, however, what focus the area will have (housing or a business district), and how it will be paid for.

### 4.3 The Medical Valley Initiative

It was in this context that the current administration of Porto Alegre started to look for international examples and models. Interest quickly focused on the city of Erlangen in southern Germany, which was facing a similar situation to Porto Alegre in the late 1990s. In Erlangen, public institutions (Bavaria's federal state and Erlangen's administration), joined together with private actors and regional universities in a joint initiative with the aim of establishing a regional innovation hub for medical equipment and pharmaceuticals production. The physical construction of this initiative, Medical Valley, started in 2001, and it has subsequently expanded to today including more than 500 companies, 43 hospitals, and some 80 universities and research institutions. In the process, the operation has also expanded to encompass research, education, treatment, production, and bringing research results to market. In line with the operation increasing, the cluster has also been forced to expand in physical terms. However, 75 per cent of the operation is still located within a 15 km radius of Erlangen. In 2010 the German Federal Ministry of Education and Research designated Medical Valley a national cluster for medical technology.



What makes Medical Valley of particular interest in the context is its ambitions to create a global cluster through different partnerships. More concretely, in recent years attempts have also been made from the German side to establish local Medical Valleys in both China (Hong Kong and Shanghai) and the USA (Boston). The expectation is that these local nodes can be used to create a larger global network with further synergy effects for its individual participants.

It was on the basis of this vision that the governor of RS, José Ivo Sartori, made his first visit to Erlangen in May 2015, where, together with Porto Alegre's mayor Jose Fortunati, he initiated discussions surrounding a possible collaboration with Erlangen and the German Medical Valley. This meeting resulted in an initial memorandum of understanding, with both parties expressing their shared ambition for continued collaboration. The visit was subsequently followed up by a corresponding German visit to Porto Alegre three months later. On that occasion the negotiations were sufficiently advanced to sign a cooperation agreement specifying continuing activities for three years ahead.

In simple terms, the Brazilian proposal for a Medical Valley in RS consists of three components. The starting point is to build on the research and practical expertise that exists in Porto Alegre in the form of first-class classical universities and hospitals. As already indicated, the idea in physical terms is to assemble the bulk of the network's actors within the 4th District, which will then take a first step towards becoming a 'sustainable innovation zone'. The second component will subsequently comprise the city of São Leopoldo, about 35 km from Porto Alegre, which, aside from a first-class university hospital (Unisinos), is the site for one of Brazil's absolutely best technology parks, Tecnosinos. In turn, halfway between the two cities is the city of Canoas, which is already home to a large number of small companies closely affiliated with the healthcare sector. The intention is now to build a large multifunctional health centre in direct connection with the Medical Valley initiative. Together, these three cities form a physical 'health innovation route', equivalent to the classic Route 128 in the Boston area.

Based on the federal government's perspective, and the local expertise within the health sector, the ambition is to attract foreign companies and research institutions to establish themselves in the region. A first step is to bring these actors together within a single area in a purely physical sense. To this end, the intention is now to provide tax relief for both domestic and foreign actors to purchase sites and carry out the construction work within the aforementioned 4th District. The hope is that the initial companies will establish themselves during 2016 and 2017.

#### **4.4 Central components in the process**

The process surrounding Medical Valley in Porto Alegre is interesting in many ways. On the one hand, it represents an increasing trend among Brazilian subnational units to increase the attractiveness of their own city or region. On the other hand, the further ambition to establish a global network also constitutes a new phenomenon. To conclude, it can be observed that these initiatives require a number of new political-administrative manoeuvres to bring the project together as a whole. To understand the overall dynamic in similar processes, it is also important to distinguish these central components.

#### 4.4.1 Promotion environments

An initial theme for the arguments that are often produced in the discussions surrounding Medical Valley is the presence of various promotion environments, which act at different levels.

One factor, which is often considered to be central in the context, is the *structural, socio-economic conditions in the region*. In brief, RS has a considerably higher level of development than other parts of Brazil, which is also revealed in a number of different socio-economic indicators – for example; expected lifespan, level of education, proportion of production industry. Similarly, the physical environment, in the form of transportation and housing for example, is generally better than in the rest of the country. Naturally this has consequences for the willingness of foreign actors to invest in the region. Of particular importance in the context is the comparatively high level of education and strong academic environment.

Another factor that is often emphasised as a promotion factor is the region's *strong tradition of entrepreneurship*. It is widely considered that the relatively late colonisation of the southern parts of the country, which – in distinction from the earlier large-scale slave economies in the north-eastern and south-eastern parts of Brazil – primarily consisted of European smallholders, also gave rise to a specific local entrepreneurial culture. This group of wage earners, who came to Brazil on their own initiative in the hope of a new future, were not only skilled within their respective field, but were also constituted in a considerably more market-oriented context. Essentially they were therefore proto-entrepreneurs who also introduced a more recognised approach to 'trial and error'. These invisible structures are still present today in various ways. For example, there is a comparatively greater number of small businesses in the region than in other places in the country. In the same way, through its many social movements and grassroots organisations, Rio Grande do Sul has also developed a political entrepreneurship that has no equivalent in the country. These more invisible structures are clearly central to an initiative such as Medical Valley.

In practice, *the quality within the care sector* is also higher than in other parts of the country, which is illustrated not least by the fact that 60 per cent of all patients within the public healthcare system (SUS) comprise people from other states. When these conditions within the sector are matched with the previously mentioned entrepreneurial culture, along with an equivalent expansion and national position within the IT sector, it is naturally an even more interest to establish a Medical Valley in the region.

Another aspect in favour of RS in the context is *the region's geographic location*. This has, based not least on the overall idea to create a global cluster, major strategic significance now that the German Medical Valley is about to choose a Brazilian partner. More tangibly, a physical establishment in RS will not only give the network a strong local presence, but also access to one of the most promising health and medical care markets in the world. Despite the on-going crisis, with national GNP falling by 3.5 per cent during 2015, the Brazilian healthcare sector experienced an equivalent growth during the same period. However, an establishment in RS opens up an even larger perspective. As a member of Mercosul, and with borders with both Argentina and Uruguay, the state is effectively also an entrance to the larger expanded South American health- and medical care market.

A concluding argument which also supports the establishment of Medical Valley in Porto Alegre, is *the physical environment in terms of transportation and proximity to nature*.

According to the German representatives, one of the central factors for the success in Erlangen has been the physical concentration of activities, with 75 per cent of all participants located within a radius of 15 km. This does not just represent substantial time-savings in terms of transportation, but also raises the quality of life among individuals who often choose to cycle between their various assignments. This was also a decisive factor in why the Germans rejected an establishment in São Paulo.

#### 4.4.2 Policy integration

A second major theme to emerge in the discussions surrounding Medical Valley in Porto Alegre is the way in which consensus and organisational momentum were created through combining different political objectives (policy integration). Here too the dynamic works on different levels.

On a more overall political level, it is ultimately about creating opinion in favour of the initiative. It is important that as many people as possible feel involved. In particular it can be noted here how the political leadership is now using the concrete proposal concerning Medical Valley to address three priority policy areas – digitalisation, urban development, and health issues – which individually had little impact. Thus far, the strategy has been successful. From the Brazilian side, 44 different actors from both the private and the public sectors, as well as from the academic world, participated in the signing of the aforementioned cooperation agreement in August 2015. By February 2016 the number had increased to almost 250 different Brazilian partners.

With the local alliances as a base, the expectation is that it will also be easier to create financing for the project. An important point in the context is the active participation of the regional development bank, *Banco de Desenvolvimento do Estado do Rio Grande do Sul* (BADESUL), which promised to contribute both financing and formulation of various development programmes. In the wake of this, the federal government and Porto Alegre's administration is continuing to work on more concrete measures. For example, in December 2015 the law was amended to give special tax concessions to domestic and foreign actors that intend to purchase sites and undertake construction work within the 4th District. Similarly, in late February, Porto Alegre signed a cooperation agreement with three different universities – Universidade Federal do Rio Grande do Sul (UFRGS), Pontifícia Universidade Católica do Rio Grande do Sul (PUC-RS), and Funitec La Salle – Universitat Ramon Llull (URL) from Barcelona for the continued development of the 4th District.

The strategy of making the Medical Valley project an operational issue that integrates a number of different political objectives also serves other purposes. On the one hand, it is clear that it strengthens the opinion about the actual project, thereby paving the way for its implementation. However, of perhaps even greater importance is its function as a lever for the more overarching ambition to generate regional growth. In this case, indicating concrete challenges, and simultaneously addressing several different actors, has created a number of new synergies. For example, in the regional context it provides the opportunity to create a joint development policy for Porto Alegre, São Leopoldo and Canoas. Similarly, the idea of 'sustainable innovation zones' and the project surrounding Medical Valley creates openings for further international collaboration – for example, the parallel discussions with Barcelona concerning an exchange of experience about urban development and city planning.

### 4.4.3 Global clusters

A concluding theme in the discussion surrounding Medical Valley is the ambition to create global clusters. At first sight, the latter term may seem contradictory, as it suggests that a cluster no longer needs to be geographically determined. In practice, however, the idea of global clusters is an adaptation to fundamental changes in the international economy, where not least new information technology is to an ever increasing degree enabling close collaboration without needing to be in the same place. More tangibly, it entails establishing networks of local clusters which, in a world of increasingly far-reaching global value chains, can increase individual regions' competitiveness through: 1) creating access to new markets; and 2) facilitating the flow of services, information and goods. In this respect, the initiative around Medical Valley is unique, as up to now it has no international equivalents within the health sector. The project is thereby a learning process in itself, and a concrete example of policy innovation, with the next major challenge being to establish mechanisms which guarantee positive economies of scale for all participants.

In practice, the idea of clusters in this case operates on a number of different levels. In the local context, it is a way of creating synergies between complementary actors. Through creating physical meeting places for cooperation and exchange of experiences, the hope is for innovation and development of new products. From the political side, the fact that an official cluster is being established also sends a clear signal about what it wants to achieve and create – hopefully – a dynamic process. This is precisely what is happening right now in the region around Porto Alegre – Canoas – São Leopoldo.

A further task for a local cluster is to assist individual members that want to access new markets. For some time, the organisation around the German Medical Valley has therefore had a specific department tasked with assisting companies in their international expansion. In practice, this entails helping to; identify potential partners, apply for external financing, provide legal assistance and organise delegation trips.

Linking together a number of local clusters in a global network now entails creating not just a larger common market with increased opportunities for collaboration, but – and perhaps even more importantly – also reducing the transaction costs through guaranteeing an equivalent administrative function on the receiving side. The forms of interaction in the global cluster remain to be defined in detail. However, what makes the latter particularly attractive for the participants, is that they immediately gain access to several different markets. The dynamic is already a fact in the case of Medical Valley, where a short time ago the German node facilitated collaboration between North American and Chinese partners. These multiple flows are obviously of particular interest for RS, which is currently looking to expand its international collaborations. Conversely, it also opens up opportunities for foreign actors to work directly in relation to dynamic new regions and markets. Here there is without doubt also a role for Swedish actors.

## 4.5 Discussion

To sum up, the initiative surrounding Medical Valley in Rio Grande do Sul illustrates a development on several levels. On the one hand, it reflects a clear trend, with Brazilian states and regions being increasingly compelled to forge independent development policies, and with some now seeking their own international collaborations. In turn, this is taking place in the context of an increasingly internationalised economy, where networks and global clusters are emerging as a new form of competitiveness.

The development is not unproblematic. The question is what will happen now to the federal states within Brazil that does not keep up with this development. There is an imminent risk that it will lead to an increased diversification within Brazil in the next few years.

From a Swedish perspective, however, it opens up a number of possibilities, not least in the form of the appearance of a number of new markets which, in the shadow of the federal crisis, will be particularly receptive to international collaborations. In that context, there are also a number of concrete lessons to be learned from the initiative surrounding Medical Valley. Sweden can be involved here too. It was emphasised in our conversations with the German management for the project that cooperation based on open innovation is the overall philosophy for the project, and they would therefore be willing to also discuss concrete Swedish participation in the project.

## 5 The Netherlands – Amsterdam –top sectors and head offices

### 5.1 National top sectors and regional dialogue

The Netherlands been a successful trading nation throughout history and it is an attractive location for foreign investments and corporate establishments. In 2011 the top sector initiative was launched in order to retain the country's strong international position, and maintain a sustainable economic growth. The strategy enables government, science and industry to cooperate in order to promote innovation, attract talents, and contribute to ensuring a strong position for the nine selected sectors globally.

These nine sectors were selected because the Netherlands is a global leader within each of them, and because they meet four requirements; they are knowledge-intensive, export-focused, often with specific legislation, and have potential to contribute to solving social problems. To implement the strategy, so called top teams were appointed, consisting of entrepreneurs, researchers and authorities providing recommendations to the government. The teams also initiate and contribute to different measures (such as simplifying regulations, guarantees and different types of investments).<sup>25</sup> There are top sector strategies for: agriculture and food; chemicals; creative enterprises; energy; high-tech systems and materials; horticulture; life sciences and health; logistics and water (water supply, water purification and maritime construction). Alongside the nine top sectors, three so-called cross-cutting themes with separate action plans have been produced for ICT, nanotechnology, and bio-based economy. The top sectors have also agreed on which broad challenges the country is facing, and how they can cooperate to resolve them. This has led to specific plans for innovation, human capital, financing and internationalisation within all top sectors.<sup>26</sup>

Head offices were originally a tenth top sector, but were soon moved to become a horizontal theme when it became clear that attracting head offices is dependent on there being consistently beneficial business conditions and that the needs of head offices differ between different sectors. The government's aim is to ensure that more companies locate their head offices in the Netherlands, as they contribute to maintaining the Dutch economic profile, as well as creating more qualified jobs, which makes them important to all top sectors.

#### 5.1.1 Collaborations and actors at national level

In principle, all policy areas are affected by the top sector-strategy and the purpose of the strategy is that they will be able to cooperate in order to improve conditions for the different sectors. However, all top sectors are ultimately managed by the Ministry of Economic Affairs.

As regions and cities are becoming increasingly important, a so-called City Agenda<sup>27</sup> has been produced, describing the national government's cooperation with local actors. In addition, there is a specific unit within the Ministry of Economic Affairs which works with regional collaborations in order to build networks in the different regions with local

<sup>25</sup> <http://topsectoren.nl/english>

<sup>26</sup> <http://www.hcatopsectoren.nl/>

<sup>27</sup> <http://agendastad.nl/about-us/>

governments, companies and NGOs. The aim is to coordinate work on the top sector strategies through negotiations, but the ministry cannot force local decision makers to apply the top sector strategy.<sup>28</sup>

The government views an attractive business climate as a key component in attracting foreign investors to the Netherlands, and it is working closely with regional decision-makers as well as the private sector to attract foreign companies and investments. One aspect of this is that Dutch embassies and consulates actively approach foreign companies (particularly in China, India, Brazil, and Russia). The focus of investment promotion activities are strong Dutch sectors, and particularly head offices and R&D.<sup>29</sup>

A number of actors are involved in the work of attracting companies from abroad to the Netherlands. One of the most important is NFIA (Invest in Holland), an executive part of the Ministry of Economic Affairs which assists companies in the establishment and expansion of their operations in the country through arranging meetings, providing tailored advice regarding tax, regulations and permit procedures, etc. NFIA is a satellite organisation with its head office in Haag and a presence in various key regions outside the country.<sup>30</sup> NFIA cooperates with embassies, consulates, NBSO (Netherlands Business Support Offices), innovation attachés and local partners. On top of this, the Invest in Holland Network was set up in 2015 in order to further market the Netherlands as an attractive location for investments and business development. The network helps companies to expand their international operations in the country. The focus is primarily on key sectors such as life sciences, IT and high-tech systems which largely correspond to the top sectors.<sup>31</sup> Besides these actors, there are regional promoters who cooperate with the national promoters in various ways.

## 5.2 Focus, prioritisation and cooperation in Amsterdam

Amsterdam has been successful in attracting foreign companies. About 2.3 million inhabitants live in Greater Amsterdam (Amsterdam Metropolitan Area) but no less than 2,700 international companies are located in the area, including about 450 international head offices. Amsterdam's investment promoter itself accredits this to the access to qualified labour in the region as well as low corporate tax, good living conditions, the city and the country's strategic location in Europe, excellent logistics conditions (thanks to a nearby airport, ports and fast trains), and the fact that Amsterdam is something of a digital hub with a high proportion of ICT companies, which is further facilitated by the fact that there is access to good infrastructure such as fast broadband.<sup>32</sup>

Amsterdam has an ambition to strengthen its position as a European business region and economic engine. Another explicit goal is to be one of the five best knowledge regions in Europe. This too will be achieved through cooperation between trade and industry, authorities and the education sector, along with coordination with EU initiatives such as Innovation Union, Horizon 2020 and the Digital Agenda. Amsterdam is marketed as a destination for these types of knowledge-intensive sectors through an emphasis on their access to a highly educated labour force with widespread language skills as well as the two universities and the many research institutes located in the city, strong and flexible

<sup>28</sup> Telephone interview Paul Tops, MINEZ, 2016-01-28

<sup>29</sup> <https://www.government.nl/topics/enterprise-and-innovation/contents/foreign-company-investment>

<sup>30</sup> <http://www.hollandtradeandinvest.com/business-information/foreign-investment>

<sup>31</sup> [http://investinholland.com/nfia\\_media/2016/01/appendix\\_NFIA\\_results2015\\_EN.pdf](http://investinholland.com/nfia_media/2016/01/appendix_NFIA_results2015_EN.pdf)

<sup>32</sup> <https://www.amsterdam.nl/gemeente/organisatie/ruimte-economie/economie/economie/doet-economie/amsterdam-and-europe/policy-framework/>

research infrastructure, and an innovative service sector which is particularly valuable in start-ups and other new companies.

Amsterdam municipality has joined together with other nearby municipalities in order to increase its size and influence. They cooperate in part through the strategically important Amsterdam Economic Board and the investment promoter, Invest in Amsterdam. In addition, Amsterdam enjoys a close collaboration with the national investment promoter, NFIA, which can be described as the regional promoters' international office. At the same time, there is regular contact with the national ministries, particularly the Ministry of Economic Affairs, to enable priorities at different levels to be linked.

Despite the fact that actors in the region do a lot to improve the business climate, some factors related to Amsterdam's attractiveness are national and lie outside the region's control. The promotional initiatives described in the section above are one, the tax regulation is another. The Netherlands does not have the lowest company taxation in Europe, but is nevertheless attractive from a tax perspective, partly because the tax authorities are well disposed to make arrangements with foreign companies making their tax burden predictable. The Netherlands also has international tax agreements with most other countries to facilitate these arrangements. However, this has led to quite a few establishments of so called letterbox companies, which in practice have very few activities in Amsterdam but register there for tax purposes. Nevertheless, this can be a way of attracting multinational companies which subsequently scale up their activities in the region. Huawei is one such example, which started out as a letterbox company but which today has over 2,000 employees.<sup>33</sup>

### 5.2.1 Wide-ranging strategies and initiatives to promote head offices and other creative enterprises

A central actor in enhancing Amsterdam's attractiveness is the Amsterdam Economic Board (AEB). AEB is a foundation promoting economic development in the Amsterdam Metropolitan Area. The initiative for the foundation was taken in 2010 after an OECD report showed that cooperation between research and the business was not reaching its full potential. The foundation's board consists of representatives from authorities, research institutes, as well as business, with the aim of stimulating and supporting sustainable collaboration, innovation and growth in the region. Amsterdam's mayor leads the group and surrounding municipalities are included on the board. The board meets four times a year, but has a group of advisers linked to it. Hitherto, the board has agreed on issues including a knowledge and innovation strategy, as well as a strategy for human capital.<sup>34</sup>

Up until the summer of 2015, eight strong economic clusters<sup>35</sup>, which more or less correspond to the top sector strategy's sectors, had been selected as the foundation's focus areas.<sup>36</sup> However, the clusters have been replaced with challenges within health, digital connectivity, jobs of the future and the circular economy, and AEB is now engaged in mobilising its various partners. The new, challenge-driven work mainly consists of AEB analysing what other actors in the region are doing and trends within, for example,

<sup>33</sup> Interview Peter de Kruijk, Amsterdam in Business 2016-02-23

<sup>34</sup> Interview Edwin Oskam, Amsterdam Economic Board 2016-02-23

<sup>35</sup> Creative enterprises, provisions and food, ICT/e-science, logistics, life science, tourism and conferences, as well as finance and business services. What these three have in common is the three themes: sustainability, Europe and talents

<sup>36</sup> <http://www.iamsterdam.com/en/business/amsterdam-economic-board>



technical development. AEB's aim is to connect different political objectives and specify the role for universities and companies, whilst presenting different types of financing. The increased focus on challenges does not mean that the clusters will be completely abandoned as they are still important for economic development in the region. Moreover, a good insight into Amsterdam's development is a prerequisite for AEB's role as a network creator.

AEB cooperates with the trade promoter organisation Amsterdam in Business (AiB) and it even shares an office with them. The collaboration includes AEB connecting AiB with relevant actors as well as providing proposals for development. This is done through AEB investigating what is missing in terms of the region's ecosystem and solutions to various social challenges, and then suggesting what sort of incentives can contribute to resolving them. One aspect of this is AEB's work to make research more of an attractiveness factor, through promoting research that is more relevant to business and a higher level of education, amongst other things. For the last few years, AEB has been trying to get AiB to act more strategically in its promotion and focus more on what sort of companies Amsterdam needs, rather than which companies are interested in moving there. Despite the fact that AiB is in the process of moving from being entirely reactive to more proactive in its promotion, it is not particularly selective in its choice of companies. Albeit good for statistics, that might not be optimal for the region in general.

### 5.2.2 Amsterdam in Business – a pragmatic promoter

Amsterdam in Business (AiB) helps foreign companies establish and expand in the Amsterdam Metropolitan Area by providing free, confidential, as well as practical advice and information. AiB conducts market analyses and assists with data of different markets, industries, and sectors. It also provides companies with information about the investment climate (tax incentives, laws, and the labour market), and arranges free introduction meetings for companies. AiB arranges tailor-made programmes to enable companies to obtain information about, for example, access to talent and the business climate, and also puts companies in touch with recruiters and networks to increase companies' access to talents. It connects companies with partner networks, local companies, knowledge institutions, taxation agencies, authorities, and potential customers. In addition, it offers relocation support, i.e. assistance in looking for temporary, flexible or permanent offices. There is also a so-called expat centre, which is a one stop shop for international companies and which helps them move employees and their families to Amsterdam by assisting with residence and work permits and tax refunds for expats. It also helps companies and key personnel to find apartments, international schools, expat-associations, and everything from private doctors to lawyers.<sup>37</sup>

Long-term engagement with selected countries is characteristic of how Amsterdam in Business operates, and this is particularly clear in terms of its work with Japanese companies. AiB has a close collaboration with a number of Japanese banks and it visits Japan twice a year to meet these banks' customers and present the benefits of locating to Amsterdam. Such initiatives also include building up knowledge about what is important for Japanese companies in Amsterdam, and ensuring that it matches Amsterdam's offer. Japanese expats, for example, are not used to using health centres for primary care, but usually go straight to the hospital. AiB has therefore worked with a hospital in one of the

<sup>37</sup> <http://www.iamsterdam.com/en/business/invest/our-services/about-us>

areas in Amsterdam where a lot of Japanese live, and arranged for it to set up a special reception to help these patients.

Amsterdam in Business has a close collaboration with public actors in the region in order to strengthen and improve Amsterdam's international climate. For example, it works together with Amsterdam City to increase access to international schools, as the major influx of foreigners has led to an increasing shortage of school places. Housing issues and visa management are other areas where Amsterdam in Business feels it has a remit to push other public actors to make the region more attractive for international companies.

Amsterdam in Business focuses its activities on various local clusters and a few selected countries. At present the focus is on clusters within creative enterprises, life sciences and health, corporate and financial services, logistics, food and flowers, as well as tourism and conferences, along with the more general categories of start-ups and head offices. The countries and clusters which are targeted change over time, depending on their potential. For example, AiB has relatively recently terminated its specific focus on the pharmaceuticals industry cluster, as it has generated a relatively small influx of companies. Likewise, it has concluded its efforts to attract computer game companies. Equivalently, it has also scaled down its promotion measures in relation to Taiwan. The clusters it works with correspond fairly closely to the national top sectors, which is due to the fact that they were created at approximately the same time and that there was a dialogue between regional and national actors.<sup>38</sup>

Amsterdam's focus on start-ups is a relatively new focal point which has been strongly prioritised for about a year. The initiative is in part a way of marketing what is already happening in relation to start-ups in Amsterdam, but it is also a way of building a strong local ecosystem of companies and financiers. Amsterdam has also had collaboration with the city of New York, resulting, amongst other things in it hosting an Amsterdam version of New York's famous Northside festival.

### 5.2.3 Focus: head offices

As previously mentioned, Amsterdam is very successful in attracting head offices and almost 60 per cent of foreign companies establishing there consist of head offices, or marketing and sales functions. Despite this, Amsterdam does not have a specific strategy for attracting head offices, since "they come anyway". In the same way attraction of head offices was originally a separate top sector in the national strategy, such a prioritisation was in place at local level from the outset. However, just as at national level, it became clear that this was not the most effective way to organise the work, as companies' need expertise within the industry/cluster or country where they have originated. A company which is looking for a new location for its head office is generally interested in finding out what the conditions for, for example the life science industry are in the area, combined with conditions for head offices (for example, in the form of supporting services such as lawyers or access to qualified personnel). However, both country and cluster managers at AiB work actively to bring head offices to the region.<sup>39</sup>

The head offices (which are international, European, and national) primarily come to Amsterdam for its good connections and infrastructure. Amsterdam is centrally located in

<sup>38</sup> Read more about this in the Growth Analysis report: <http://www.tillvaxtanalys.se/publikationer/svar-direkt/svar-direkt/2016-03-07-hant-i-varlden-varen-2016----born-globals-internationellt-snabb-vaxande-foretag.html>

<sup>39</sup> Interview Peter de Kruijk, Amsterdam in Business 2016-02-23

Europe and has access to one of the world's largest airports (Schiphol) and ports (Rotterdam). In addition, there is an ecosystem of international service companies that can support the head offices. This influences how Amsterdam in Business priorities which companies it will work with. The operations are largely reactive; AiB presents its offers to all companies that indicate any interest in locating their operations in the area. It does, however, work more proactively in some cases, for example, when it has identified a gap in the ecosystem where it judges that establishment of a certain type of company would be able to deliver positive spill over effects and strengthen the Amsterdam region's attractiveness. An example of this is that AiB is currently focusing its efforts on attracting a large Indian bank, preferably a federal state bank. In attracting Indian companies and their regional head offices in Europe, it has proved to be a disadvantage to not have a large Indian bank in place. Attracting one to Amsterdam would make the city as a whole more attractive to other Indian companies as well. Another example is that AiB is working to strengthen the local ecosystem for technology-based electronics companies with the aim of becoming more attractive as a region for other similar companies as well.

At least as important as Amsterdam's good communications, is its "soft" infrastructure. There is a high quality of life in Amsterdam. It is a relatively small city by international standards, and it is possible for a lot of people to acquire attractive accommodation a reasonable distance from their workplace, and there are excellent museums and a broad cultural scene. Amsterdam is also an international city where it is easy to be a foreigner: almost everybody speaks good English, there are international schools and, as previously mentioned, active efforts are made to make it easier for expats to find their feet in the city.

In the work of attracting head offices, a good dialogue with companies is particularly important, partly in order to develop the ecosystem, but also in order to ascertain what companies in the region need or are missing. This is particularly important for AEB, which keeps local politicians informed of potential improvements. At the same time, collaborations with the national promotion organisations and embassies are important as they play a major role in the everyday work.

#### 5.2.4 R&D and talents – Amsterdam's challenge

A majority of the companies that come to the Amsterdam region are head offices or marketing and sales functions. Thus can be partially viewed as a weakness as these functions are not particularly research-intensive or innovative. There is a discussion within the region about the fact that companies do not regard Amsterdam as knowledge-oriented despite the region's good university rankings, and that it therefore needs to boost its profile within R&D and top class international higher education. This has become an increasingly important issue since that the economic crisis hit the financial sector hard.

Attracting talent is thus an area in which specific efforts are being made. Many of the companies that establish themselves in the Amsterdam region consider that the other attraction factors for Amsterdam (the international environment, housing, quality of life) mean that international talents can easily be recruited to the company's Amsterdam office. However, Amsterdam itself would like to ensure that its own provision of talents was greater. Amsterdam in Business works together with the local university to help them strengthen their contacts with other foreign top universities. It also arranges intermediary meetings to connect foreign companies established in the region with international talents

who are already on site. An example of such an event is ITEA – International Talent Event Amsterdam.<sup>40</sup>

In order to market, and increase, the region's R&D capacity, Amsterdam in Business has recently set up a new position with specific responsibility for precisely this. The R&D manager's duties include attracting schools, research institutes and international talents to the area. In addition, 50 million euros have been invested in a competition to invite a top university to establish a centre in Amsterdam. One result of the initiative is AMS – Amsterdam Institute for Advanced Metropolitan Solutions – a research institute run in cooperation between two Dutch universities (TU Delft, University of Wageningen) and one American university (MIT).<sup>41</sup>

Amsterdam Economic Board also assists in putting together consortia of different actors in order to gain access to research calls from the European Union in order to promote research in the region. This was previously an important part of the operation, but since autumn 2015 this has got a less significant role, and AEB will no longer lead the consortia. This is because purely on grounds of principle, the board feels that the responsibility to manage consortia lies with companies.<sup>42</sup>

### 5.3 Discussion

A large number of international companies as well as their head offices, and marketing and sales functions are attracted to Amsterdam. They come partially because the region has a good infrastructure, a favourable geographic location, good access to skilled personnel, beneficial taxes and a well-functioning ecosystem of support companies such as lawyers and auditors. However, companies are also attracted by the fact that Amsterdam has good conditions for a pleasant life; good housing, international schools, and an international environment. This in turn makes it easier for companies to attract the talents and skills that might be missing in the region – which is yet another reason for companies to move to Amsterdam.

Amsterdam's investment promotion is targeting a number of challenges and countries, but within this framework they are also working to attract head offices to the region. They are emphasising both "hard" attractiveness factors such as infrastructure, and "soft" factors such as quality of life. Amsterdam in Business joins delegation trips, represents the region at trade fairs, and markets Amsterdam via its website. At the same time it monitors ecosystems of companies in the city and helps to strengthen them. If AiB discovers a type of company is missing, it makes increasingly extensive efforts to attract precisely that type of company or function. One shortcoming is that there are not a particularly great number of R&D functions moving to the region, despite the suggestion that there are beneficial conditions for them. To remedy this, AiB has now appointed a person to work solely on attracting research-intensive functions, at the same time as Amsterdam City is implementing concrete initiatives such as setting up a new technical university.

<sup>40</sup> <http://www.iamsterdam.com/en/local/study/itea>

<sup>41</sup> Interview Peter de Kruijk, Amsterdam in Business 2016-02-23

<sup>42</sup> Interview Edwin Oskam, Amsterdam Economic Board 2016-02-23

## 6 Germany – Munich – Industry 4.0 in practice

Munich is the capital of the federal state of Bavaria. The city is growing rapidly and has a population of about 1.5 million, making it Germany's third largest city. Bavaria's gross regional product is 488 billion euros, which means that if it was an independent state then its economy would be the seventh largest in the EU.

The area has a very strong manufacturing industry tradition, but also a strong financial sector. Head offices in Munich include Siemens, BMW and MAN, as well as the global insurance giants Allianz and Munich Re. It is a strong and dynamic economy with unemployment at about 3 per cent (and youth unemployment at about 4 per cent). Bavaria's population corresponds to about 15 per cent of Germany's population, but accounts for 31 per cent of German patents.

For the last 5–10 years, much of the driving force in the local economy has derived from the IT sector, in part from establishments of IT companies in the area and in part from modernisation of the traditionally strong manufacturing industry through digitalisation. A study from 2014 commissioned by the European Commission identifies Munich as Europe's leading centre for development and innovation within the IT sector<sup>43</sup>, and IBM is now expanding its global centre for development surrounding the Internet of Things in Munich.

### 6.1 National policy: High Tech Strategy and Industry 4.0<sup>44</sup>

The development of industrial and service production into smarter and more automated, digital and autonomous systems in Germany has been identified as central to the country's industrial policy. The different initiatives and measures that are driving this development have been given the overall designation of *Industry 4.0* and have aroused a lot of attention internationally. The name refers to what is usually called the fourth industrial revolution, where the central parts are precisely that automation, robotisation and extensive use of IT systems will make the production system a smart and self-governing "cyber-physical system".

Industry 4.0 is based on the High tech Strategy from 2006 which had the aim of bringing together central actors within research and innovation and provided a high level of economic support for development of world leading technology within a number of selected priority areas that were deemed to be important for jobs and growth in Germany.

The work on this strategy has been developed in order to strengthen the links between innovative actors within all areas, perhaps above all between research and industry, and to promote the national innovation capacity through providing support, particularly to small and medium-sized technology-oriented companies, to create better framework conditions for education and recruitment of qualified specialists, and to strengthen the dialogue

<sup>43</sup> De Prato, G. and Nepelski, D. (2014) 'Mapping the European ICT Poles of Excellence.

The Atlas of ICT Activity in Europe', <http://ftp.jrc.es/EURdoc/JRC85353.pdf> ; Stockholm is ranked as number 6 in the same survey.

<sup>44</sup> For an overview of Germany's industrial and innovation policy under Industry 4.0, see Growth Analysis' Direct Response 2015:13, Industrial policy initiatives to strengthen competitiveness, [http://www.tillvaxtanalys.se/download/18.34a8811514fb0271dec721c/1441790873728/direct-response\\_2015\\_13\\_Industrial-policy-initiatives-to-strengthen-competitiveness.pdf](http://www.tillvaxtanalys.se/download/18.34a8811514fb0271dec721c/1441790873728/direct-response_2015_13_Industrial-policy-initiatives-to-strengthen-competitiveness.pdf)

between policy and society in order to produce a better set of rules and regulations that promote innovation.

The federal government has provided 200 million euros (around two billion kronor) for Industry 4.0. The focus of the initiative is on further strengthening areas of strength in the German economy. In the decision from 2013, the then newly appointed coalition government observes that the programme constitutes a significant part of consolidating Germany's technological leadership within the manufacturing industry. Further, it suggests that in the future the initiative will be extended from the traditional industrial sector to encompass smart services and green IT as well.<sup>45</sup>

## 6.2 Urban policy: focus on high knowledge content

Munich has a long history of industrial companies, but until the Second World War it was a provincial middle class city, still dominated by agriculture. Siemens moving its head office from Berlin to Munich in 1949 represented the start of an industrialisation process that accelerated in the late 1960s and early 1970s. At the same time, the city centre, 70 per cent of which was destroyed during the war, was restored, largely in its old form, which is said to have recreated pride in the city and contributes to its "soft" values of attractiveness and quality of life. The infrastructure was substantially developed in connection with the Olympic Games of 1972, which has benefited the city's further development.

The political powers in Bavaria and Munich were in favour of development and made a major investment in strengthening the two prestige universities in Munich (Technische Universität Munich and Ludwig-Maximilians-Universität respectively) as well as attracting and strengthening a cluster surrounding the aviation industry.

Munich City Council seems to have played a committed and successful role in developing the city's innovation capacity, but there has not been a "master plan" for development. Instead, the respective sectors or clusters that have developed have done so based on their own conditions, to which the city has reacted and tried to support. The automobile industry in Munich received a major boost when BMW decided to focus exclusively on making cars, and the city has subsequently been able to help in facilitating development, through planning and making land ready for development available to companies within the automobile sector. In the biotechnology field, it was the federal government that announced a national competition to establish biotechnology clusters. Munich won the competition with its proposal, thereby receiving economic support which it used to establish a company with the task of developing the biotechnology sector in Bavaria. The company devotes a lot of its activities to supporting start-ups and facilitating transfer of technology from the universities and the research institutions.

The most clearly targeted initiative that the city of Munich makes to attract innovative activities is to strengthen the city's start-up-culture and entrepreneurship. There seems to be a particularly strong focus within the creative industries, driven by a perception that there is undeveloped potential in that field. The city has a dedicated team of 6–7 persons working to promote newly-started companies within the creative industries through networking opportunities, business advice and, not least, cheap, shared workplaces.

<sup>45</sup> Germany Trade and Invest: Industry 4.0 – Smart Manufacturing for the Future, [http://www.gtai.de/GTAI/Content/EN/Invest/\\_SharedDocs/Downloads/GTAI/Brochures/Industries/industrie4.0-smart-manufacturing-for-the-future-en.pdf](http://www.gtai.de/GTAI/Content/EN/Invest/_SharedDocs/Downloads/GTAI/Brochures/Industries/industrie4.0-smart-manufacturing-for-the-future-en.pdf)

It is precisely the costs, for office premises and housing for example, that the city has identified as one of the obstacles for small and newly-started companies. The city of Munich is growing substantially and is experiencing a large influx of companies that are doing well. Of course, this is positive, but is also reflected in very high rents as construction is not keeping pace with the increase in population. Public transport is also experiencing growing pains in that investment in infrastructure slowed down after the 1972 Olympics.

Against this background, the city of Munich is primarily working with broadly-based, general initiatives to strengthen its attractiveness. Access to housing and premises, public transport and other infrastructure is not what are normally regarded as measures to promote innovation, but they are crucial if the city is going to continue to be attractive to innovative businesses. A well-developed IT infrastructure is important, particularly considering that much of the innovative driving force in the region comes from digitalisation of operations. There is already a well-developed IT infrastructure in Munich, but the Bavarian government is investing relatively heavily in strengthening the infrastructure in other parts of Bavaria where many of the small and medium-sized companies and suppliers (*Mittelstand*) which constitute the base of the Bavarian industrial structure can be found.

One interesting thing to note is that, in its planning and licensing of companies that want to establish themselves in Munich, the city makes an assessment of the degree of priority based partially on expected tax revenues and number of jobs, but also on the operation's knowledge content, with priority given to knowledge-intensive services and production, research and development centres etc.<sup>46</sup>

### **6.3 Attraction factors**

A large proportion of the concrete investment promotion is handled by the national organisation, Germany Trade and Invest, as well as by the federal organisation, Invest in Bavaria. To some extent, Invest in Bavaria claims that Munich "sells itself" to potential investors as a location. The attraction factors indicated by the companies that have established themselves there include a high quality of life (with an attractive urban environment, proximity to the countryside and the Alps), a central location in Europe with good communications, good access to well-educated labour and relative ease in attracting talents from outside.

However, from an IT- and digitalisation perspective, the primary attraction factor is that there is a strong array of industries within the areas that are important engines in the industrial restructuring that *Industry 4.0* entails. There are a number of clusters in Munich and the surrounding area where there are major, world-leading companies, for example:

- The vehicle industry
- The engineering industry
- Financial services
- The aviation industry
- Medical technology

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<sup>46</sup> Interview with Rita Roider, Managing Director Marketing and Communication, City of Munich Dep. Of Labor and Economic Development, 2016-03-01

These are all sectors where digitalisation is expected to have a revolutionary impact on production, development and business models. Typically, they are organised as local ecosystems surrounding a large leading company. IBM's establishment of its global centre for development of the Internet of Things is positive for the region by virtue of the fact that it entails an influx of investments and skills through 1,000 new jobs, but perhaps even more through offering a "proof of concept" for the area. What attracts IBM is precisely the proximity to customers that can constitute collaborative partners in development of services and solutions for a digitalised economy.<sup>47</sup>

Invest in Bavaria does not set any priorities to specifically attract knowledge-intensive businesses like the City of Munich does, but rather welcomes all potential investors. However, to some extent self-selection takes place – the high level of costs for premises and wages means that it is above all high productivity businesses that come here. For these companies, access to skills, research and the existing ecosystem of companies and business services are the important factors that determine the location.

### **Example: Netlight**

Netlight is an example of a knowledge-intensive service company that has chosen to establish itself in Munich. The company is a Swedish IT and management consultancy. When it wanted to establish itself in the German market, it studied the conditions in Munich, Frankfurt, Düsseldorf and Zurich. The fact that it selected Munich was primarily down to two factors: access to talents and skills, and the established corporate structure with potential clients.

What Netlight principally offers its clients is support and expertise in digitalising business processes. The manufacturing industry did not constitute a significant proportion of its revenue base when it established itself in Munich, but rather media companies, gaming companies and companies in the finance and telecom sectors. However, the manufacturing industry has gradually become more important. The company started to work with Siemens and has gradually acquired more and more customers that are medium-sized companies in the industrial ecosystem. Netlight describes these customers as "hidden champions" – subcontractors that are often world-leading within very well defined niches.

At the start of the process of establishing itself in Munich, Netlight was assisted by the German-Swedish chamber of commerce (which is part of the German international Chambers of Commerce and Industry – IHK). Somewhat further into the process, it also engaged Invest in Bavaria for some legal advice in relation to corporate establishment. However, it was basically a "trial and error process" utilizing existing personal networks.<sup>48</sup>

Access to skilled labour is a prerequisite for the company's operations. The two universities (TUM and LMU), and the presence of publicly financed (Fraunhofer, Helmholtz, Max Planck, Leibniz) and private research institutions means that there are plenty of qualified people. Both the universities run elite and cutting-edge programmes, and their students are much sought-after, and the same goes for those who have completed their graduate studies.

Netlight describes the labour market as "a war for talents" and 6 of their 106 employees in Munich are exclusively involved with recruitment. It also recruits people from outside, and shares the general impression that it is relatively easy to attract people to move to Munich from outside. Over time, Munich has gained an increasingly international character, and it is now the city in Germany that has the highest proportion of foreign citizens.

<sup>47</sup> Interview with Dr Wolfgang Hübschle, CEO, Invest in Bavaria, 2016-03-02

<sup>48</sup> Interview with Moritz Tränkner, Head of Sales, Netlight, 2016-03-02



## 6.4 Start-ups and vocational training

Alongside the City of Munich and Invest in Bavaria the international chambers of commerce is also an important player in promoting Munich's powers of attraction. IHK Bavaria (BIHK) has 970,000 members, which includes all companies in Bavaria as membership is compulsory.

In order to promote start-up companies, part of BIHK's work comprises lobbying and collecting opinions from members. It arranges start-up competitions which it feels have gone well, and there is a start-up advisory board that is tasked with compiling what is needed for start-ups to flourish in the region. The information is then channelled to the Bavarian government. The challenges it perceives include those concerning internationalisation, law, networks between actors, venture capital and crowdfunding. The banking system is very traditional, and the local banks are not particularly willing to lend money to start-ups, as they are usually not sufficiently developed. The start-up department also links start-ups with larger companies and research institutions with the aim of building stronger ecosystems. IHK also offers free advice to help companies with issues such as selection of financing solution. Furthermore, it tries to facilitate technology transfer and to contribute by building networks of various kinds.<sup>49</sup>

The German system of vocational training often receives international attention, and is a part of skills provision in the Munich area as well as for Germany as a whole. The framework for the programme was established in the Vocational Training Act of 1969 and it is IHK that draws up the rules for apprenticeships and training that apply throughout Germany. IHK reviews both apprenticeship programmes and workplaces to ensure that they meet all requirements for safety.

The training programmes are very broad and between 55-60 per cent of young people in the region attend one. IHK promotes children's interest in the STEM subjects as early as preschool level. The fact that the programmes follow the same standard throughout Germany is viewed as a strength. This standard is drawn up by trade unions, employers, federal states and the national government, as well as the employment office.

The motivation for companies to participate in the programme is that it enables them to shape the employees to their own corporate culture, and moreover, it is a good way to recruit new personal. Around 70 per cent of apprentices stay on at the companies where they did their training at the end of the programme. There is stiff competition for this type of skilled labour and it can be difficult for companies to attract the right expertise, and this can be an obstacle for new companies that want to establish themselves in Germany. The vocational training can also be a tool for integration, with programmes to enable persons who have recently arrived to supplement their qualifications so that they can obtain a vocational training certificate.

## 6.5 Regional cooperation?

As widely observed, the bottlenecks for Munich's further development of knowledge-intensive businesses are not primarily those that are normally regarded as innovation policy, but rather "growing pains" in the form of a lack of housing and an inadequate infrastructure. The City of Munich is not able to tackle these types of planning and construction issues on its own, it is rather a question of regional interest.

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<sup>49</sup> Interview with IHK, Munich, 2016-03-01

Munich Metropolitan Region is a voluntary member organisation in which many of the surrounding municipalities, universities and some large Munich-based companies are members. Six people work full-time in the organisation, which is led by a board of directors with Munich's mayor as chair. The operation is entirely funded by membership fees.

Munich Metropolitan Region works to bring actors in different parts of the region together by means of networks and competitions within, for example, sustainability. Together with the city's university students, it also conducts studies within some of the clusters in the region. One such study was conducted in the field of cultural competence in order to survey the industry and to provide advice in relation to what can be done to attract more similar companies to the locality.

The collaboration process is not without obstacles. In other German regions there seems to be a higher degree of cooperation between adjacent cities in issues such as housing and transport. This is more difficult in the Munich region because the smaller towns and municipalities are so keen to preserve their independence, which makes it difficult for them to come together under one flag.<sup>50</sup>

## **6.6 Discussion**

The engine for Munich's capacity to attract knowledge-intensive businesses is, completely in line with the German national innovation policy in Industry 4.0, the impetus to make innovations that derives from digitalising more traditional industries. Munich occupies a strong position in this respect by virtue of its strong base within the manufacturing industry. The national initiatives and programmes that are aimed at supporting digitalisation of industrial companies thereby benefit Munich and the surrounding region. The city is ranked as the EU's leading centre for IT innovation, but the largest employers within the IT field are not IT companies, but rather traditional industrial companies: For example, Siemens employs 60,000 software developers.

The city's and the federal state's investment promotions are doing the same things as their counterparts in other cities: exhibiting at trade fairs, cultivating networks of potential investors and their customers etc. However, to some extent the impression is that the city is selling itself. Measures that are more specifically targeted at strengthening Munich's attractiveness are in part to do with promoting start-ups (where the conditions are not as well-developed as in Berlin for example), strengthening cooperation between research and industry and supporting access to skills through the universities and the vocational training programmes.

The obstacles or bottlenecks in the attraction process involve an overheated jobs and housing market, and "growing pains" for infrastructure and public transport. In line with rising rents, lower wage levels further out from the centre are putting pressure on companies and employees, without there being satisfactory conditions for commuting within the region. In this respect, the city is working to catch up with demand for premises and housing, and has a system to prioritise companies on the basis of economic impact on the local economy: in part issues of jobs and tax revenues but also factors such as knowledge spill-overs. The region consists of relatively small municipalities, which means that the solution to these problems requires cooperation between them. Up until now this has proven to be difficult.

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<sup>50</sup> Interview with Wolfgang Wittmann, Managing Director, Europäische Metropolregion München, 2016-03-02

## 7 India – Hyderabad

The question of attracting investments and how to do it is high on the agenda in India. As is well known, India has the world's second largest population, however, in distinction from China, where population growth is set to fall, India's young population is expected to overtake China as early as 2022. India will need to create one million new jobs every month for ten years, which is why this demographic advantage is also sometimes called a demographic bomb. The current Indian government was elected on a growth- and business-friendly mandate almost two years ago and has since launched a range of industrial initiatives on a regular basis. Examples of these are *Make in India*<sup>51</sup> and *Digital India*<sup>52</sup> on which Growth Analysis has previously reported. The central government has also increased grants for the promotional organisation *Invest India*, which can report substantially increased investment volumes. The organisation offers foreign companies cost-free assistance to establish themselves in India. Most federal states also have their own investment promotion organisations. The government also promotes federal competition more clearly than previously governments did.<sup>53</sup> The main reason for this is the difficulties the government has had in pushing through promised reforms in parliament as it does not have a majority in the upper house. Among these, it is above all the *Goods and Services Tax Bill* and the *Land Acquisition Act* that stand out. Plans for more flexible labour market legislation have also had to be shelved for the moment.

### 7.1 Hyderabad

In the light of this, Hyderabad is very interesting to look into. Hyderabad, capital of the recently established federal state of Telangana has some eight million inhabitants in its metropolitan area and is an Indian centre for both IT and the pharmaceutical preparations sector, in competition with cities including Bengaluru, Chennai and Pune. Despite Hyderabad being many times larger than a city such as Stockholm, a comparison is relevant if you look at the city's conditions. In a country like India it is obvious that a large proportion of the city's inhabitants have entirely different circumstances than we see in Sweden. At the same time, there is, for example, a relatively large pool of people working in knowledge-intensive sectors such as the IT and pharmaceuticals industries, and it has comparable levels of education and economic conditions.

Telangana broke away from Andhra Pradesh in 2014 and Hyderabad is going to be a shared capital for both states until 2024, after which Hyderabad will be Telangana's capital alone. Andhra Pradesh has consequently started to build a completely new federal capital, Amaravati, in which companies will be offered a number of incentives to establish themselves. Following the partition, Telangana's government has taken a new approach to what Hyderabad is going to be and what it can offer. A new policy for industry and innovation has been produced (which in a number of areas also includes local application of national policy measures) and the city is actively engaged in attracting new companies.

Hyderabad's main competitor is Bengaluru, India's centre of both the IT and pharmaceutical industries. In comparison with Bengaluru, the pharmaceutical industry in Hyderabad is

<sup>51</sup> See Growth Analysis report "Make in India – one year later"

<sup>52</sup> See Growth Analysis report *Hänt i Världen* autumn 2014 – information and communication technology

<sup>53</sup> Even though some analysts that Growth Analysis has been in contact with would prefer a focus on federal cooperation instead (compare *competitive federalism* with *cooperative federalism*)

more dispersed. In this respect, Bengaluru has an advantage in that an ecosystem has been created within biotechnology in the northern parts of the city, where companies, incubators, investors and the university are collected in a relatively well defined area, which facilitates frequent contacts between the different parts of the cluster.

## 7.2 Focus, prioritisation and cooperation in Hyderabad

### 7.2.1 Pharmaceuticals

The focus in Hyderabad has primarily been on attracting pharmaceutical- and IT companies. Following the establishment of the state-owned pharmaceuticals company Indian Drugs and Pharmaceuticals Limited (IDPL), in the city in the 1960s, a number of domestic and foreign companies in the sector arrived, opening factories and R&D centres in the city, primarily in the 1980s. Hyderabad is mainly focused on attracting companies that produce generic drugs, in distinction from Bengaluru, which is more known for its biotechnology companies. In total, one third of India's generic medicines are produced in Telangana and Andhra Pradesh. The pharmaceuticals companies' growth in Hyderabad has been a major economic success, but it has also put a great strain on the environment, resulting in polluted drinking water etc.<sup>54</sup>

In order to reduce India's dependence on imported *active pharmaceutical ingredients* (APIs) from China (which alone account for 85 per cent of overall imports of APIs into India), the central government is planning to present an investment in specific industrial parks for the purpose, and also that Indian pharmaceutical manufacturers will receive increased support. Telangana will also participate in this national programme, at the same time as it will continue to develop other types of industrial parks as well.

### 7.2.2 Cyberabad

In distinction from the pharmaceutical industry's more organic growth, in the late 1990s, the Andhra Pradesh's then chief minister, Chandrababu Naidu, succeeded in attracting a number of multinational IT companies to Hyderabad by offering cheap land and tax subsidies. Some parts of Hyderabad have therefore also come to be known as Cyberabad. Naidu's personal interest and leadership in relation to attracting IT companies simplified their establishment. In Hyderabad companies were also offered good access to university-educated and English-speaking labour.

Most of the companies were based in *HITEC* (Hyderabad Information Technology and Engineering Consultancy) *City*, which was set up in 1998. Over 1300 companies operate from here. They include multinational giants such as Microsoft (which has established its largest R&D facility outside the USA here), Google, IBM, Dell, Facebook and Indian IT companies such as Tech Mahindra, Infosys, Tata Consultancy Services (TCS) and Wipro. Infosys opened its largest campus in India (and thus in the world) in Hyderabad in February 2016 and subsequently doubled its number of employees in the city to 25,000.

HITEC City is located in the western part of the city, outside Hyderabad's old city centre, with fast access to the city's international airport. Hyderabad currently accounts for around 12 per cent of India's total exports from the IT industry. However, this is clearly less than Bengaluru, which accounts for just under one third of IT exports.

<sup>54</sup> See SvD "High price for cheap medicines"

Amazon has recently said that the company is going to establish its second largest logistics centre outside the USA in Hyderabad, as part of the 2 billion US dollar (SEK 17 billion) that the company is going to invest in India. Apple has also chosen to establish its largest centre for technology development outside the USA in Hyderabad. Google's CEO, Sundar Pichai, visited Hyderabad in December 2015, officially presenting plans for the company to build a gigantic new campus in the city, which will be completed in 2019. By then it will then have doubled its number of employees to 6,000. Google is investing a total of 10 billion rupees (SEK 1.3 billion) in Hyderabad.

### 7.2.3 Attractiveness

At federal level, Bengaluru has been identified as its major Indian rival for investment. The federal government is trying to attract investors through claiming that Telangana's government is much better coordinated than Karnataka's (where Bengaluru is capital). This is linked to the clear focus Telangana's chief minister, Chandrasekhar Rao, has placed on investments. It is also suggesting that Hyderabad is much less encumbered with traffic. In order to prevent any further traffic problems, the city's ring road is being extended and a metropolitan rail system is being established. Another reason for investing in Hyderabad is that the cost of land is said to be much lower than in other Indian cities.

Companies that Growth Analysis has been in contact with to write this report (Swedish, European, American and Indian) agree with most of what the government is communicating. Above all, it emphasises clear political leadership as the most important factor, as this permeates the bureaucracy as a whole, and makes the application processes simpler than in most other cities in the country. IKEA is going to open its first store in India in 2017 in Hyderabad, and it has been clear that the government's willingness to cooperate and its proactive attitude have been an important reason that it has chosen to establish itself in the state, even though it maintains that land prices in Hyderabad are not significantly different from other Indian cities. The company also highlighted the fact that it is easy to attract employees from other parts of the country to Hyderabad since the city can offer a good quality of life at a lower price than in comparable cities. Hyderabad has good hospitals as well as international schools. However, one difficulty, which is a problem throughout the country, is finding qualified people for executive positions.

Hyderabad is also home to some of India's leading universities. Among these, Indian School of Business (ISB), International Institute of Information Technology (IIIT Hyderabad) and National Academy of Legal Studies and Research (NALSAR) stand out. None of these universities are funded by the central government and they have all been established within the last 20 years after active lobbying by the state's politicians. Hyderabad has long been known for the importance its inhabitants place on education. The University of Hyderabad and the Indian Institute of Technology Hyderabad are two federal universities that are also very highly ranked. As a consequence of this, a large proportion of the Indian diaspora in the USA that is involved in IT come from areas around Hyderabad and many of them are interested in moving back.

## 7.3 Activities

### 7.3.1 New government – new plans

The region has previously attracted investors to establish themselves in the numerous special economic zones (SEZs) that there are in the state (both in and outside Hyderabad),

with more beneficial construction and labour market rules than the rest of the state. It is now also offering investors substantial tax subsidies, including up to 100 per cent VAT refunds during the first years.<sup>55</sup> In the summer of 2015, Telangana's government presented its new industrial policy, singling out 14 areas where it wants to attract investments. Among these, life sciences, pharmaceuticals and IT sectors are placed highest. Other areas include aviation, automotive, textiles, minerals and transport sectors. The vision of the industrial policy is for Telangana to be able to move from "research to innovation; innovation to industry; and industry to welfare". Another slogan is that the state will "innovate, incubate and incorporate".

The federal government also presented rules for the maximum permissible turnaround time for investment applications (depending on size). Megaprojects, classified as investments worth more than 2 billion rupees (equivalent to SEK 250 million), will receive a permit within a fortnight. Hyderabad is doing things differently than the rest of India, where bureaucracy is often seen to have a negative impact on investments. Telangana's industrial policy makes it a criminal offence for government employees to have inappropriately long turnaround times.

### 7.3.2 T-Hub

Bengaluru is widely regarded as India's current centre for start-up companies and, according to some surveys, it has 60 per cent of the country's active start-ups within the technology sector.<sup>56</sup> Telangana's government wants to change this. The objective is that Hyderabad should become India's start-up capital. It has therefore established the private, but non-profit-making, organisation T-Hub (Telangana Hub) to coordinate the overall work of attracting entrepreneurs and newly-started innovation-driven companies to the state. Besides from practical help with applications, T-Hub also offers incubation and accelerator programmes for promising companies, in which it also invests. T-Hub also offers mentorship programmes with successful entrepreneurs from all over India.

Telangana's government commissioned a five storey building to be constructed for T-Hub only a few days after taking over. The building will also house other accelerators and incubation programmes (including the industry association, NASSCOM's "Startup Warehouse" and Microsoft Ventures). When it was set up, T-Hub was given the equivalent of SEK 60 million for the construction of T-Hub's premises and for running and personnel costs. Besides this, T-Hub operates completely independently from the federal government. Only one out of the nine members of T-Hub's board of directors is from the government (in the form of Telangana's IT secretary). The hope is that T-Hub's own investments in successful start-ups will lead to the operation becoming self-funding. At the same time, it will act as the spider in the web as T-Hub's operations are divided into a number of different areas. The building that T-Hub occupies is already full, and there are plans for building a new building in a few years that will be five times larger. T-Hub is managed by Indians with long overseas experience and is also called India's largest incubator. The hope is that the initiative will generate up to 200,000 jobs in the long term.

### 7.3.3 The future

In its industrial policy, Telangana's federal government also points out that, just as in the rest of India, there are few companies owned by women. It wants this to change, and it has

<sup>55</sup> In India companies are not usually able to deduct VAT.

<sup>56</sup> BBC feature "Bangalore: City of Choice"

invited external organisations, such as the Confederation of Women Entrepreneurs of India (COWE), to work together with the state with the issue. At the same time, it is going to offer industrial parks throughout the state exclusively for women. The federal government is also going to provide specific support to low caste entrepreneurs, who are also under-represented in the statistics.

Hyderabad wants to continue attracting more investments in the future within both the pharmaceutical- and IT industry. It also wants to establish Hyderabad as a centre for mobile phone manufacturing. The federal government has offered mobile phone manufacturers land where they can set up factories. It has asked companies to prepare a list of requirements for what the government can contribute, for example, in terms of infrastructure and other support. Hyderabad also wants to attract other types of hardware manufacturers.

In April 2016 the state launched its new ICT policy<sup>57</sup> with the goal that Telangana will be the preferred location for all IT companies that are planning to expand globally and that the state should be viewed as a leader within new technologies. In the long-term, Telangana wants to become India's leading IT exporter. The aim is for both exports and employment to double in the IT sector within five years. The policy also highlights electronics production as a priority area, as mentioned earlier. In the policy, the federal government also identifies India's problem of graduated engineers having no practical experience of working life, with companies often having to put time and money into educating their new employees. An organisation called TASK (Telangana Academy of Skill and Knowledge) has therefore been set up to coordinate improvement measures between industry, the academic world and the state government.

Within the framework of the ICT policy, the government also reiterates previous investments in the establishment of "Photonic Valley" and the computer games industry designated GAME (Gaming, Animation, Media and Entertainment) City.<sup>58</sup>

Another ambitious project is based on developing Hyderabad into a global finance centre. There are already large banks located in Hyderabad, including Wells Fargo, HSBC, UBS, Bank of America, RBS and HDFC. Hyderabad also wants to develop its position as an aviation and defence centre and Boeing has recently stated that it is going to build and develop military helicopters in the city together with Tata.

## 7.4 Discussion

It should be immediately established that Hyderabad and Swedish metropolitan regions are quite different on the surface. At the same time, there are similarities in the form of large IT- and pharmaceuticals sectors, even though the complexity of the work performed within these sectors differs. Establishing themselves or investing in Hyderabad gives companies access to the large Indian market. Naturally this is not something that Swedish regions can match. Hyderabad also has a large, highly educated workforce, which is also considerably cheaper than in Sweden.

Hyderabad also has some of India's leading universities, providing companies with skilled staff. With the T-Hub investment, the federal government is trying to create better conditions for collaboration between industry and universities, at the same time as strengthening the innovation climate.

<sup>57</sup> Telangana ICT Policy Framework 2016

<sup>58</sup> Growth Analysis has previously reported on this in the ICT section of *Hänt i Världen*, spring 2015

Lessons that Sweden can learn from Hyderabad's attractiveness should therefore primarily be the emphasis the political leadership in Telangana – over a long period – has placed on attracting major investments. This is primarily through offering a range of incentives such as cheap land, but perhaps above all in its efforts to be as accommodating and available as possible in comparison with other Indian cities that also want to see increased investments. Hyderabad has also been good at making the city attractive for people to move to, for example through the numerous strong universities and excellent access to good schools and housing.



## 8 China – Chongqing and Shenzhen

### 8.1 The Chinese context<sup>59</sup>

In many ways, the discussion surrounding attraction of knowledge industries is different in China compared with Sweden and other well-developed countries. Terms such as 'attracting knowledge-intensive enterprises' and 'attractive cities' are not used in any real sense, however, equivalent work does nevertheless take place under other names. One concept that has emerged is 'strategic regions' and 'strategic cities', which will constitute the basis in modern China through a range of support mechanisms and prioritisations. In China it is the central government administration which formulates and decides on the direction of policy, which in turn is implemented at lower administrative levels, provincial level for example, under pertinent governing bodies. The objectives from central level are thus broken down in order to meet the specific challenges that China's different regions encounter. The link between the national and local development strategies is evident. At the same time, it should be emphasised that the public administration in China is one of the most decentralised in the world, with a high degree of autonomy.<sup>60</sup> This gives regions major opportunities to draw up local action plans to meet the specific conditions that prevail, naturally adapted according to the priorities articulated from the centre. The focus of policies is to establish beneficial conditions for the development of trade and industry, for example through improved infrastructure and support targeted directly at companies, but also to improve urban functions and general living conditions for the population etc.

China is an authoritarian one-party state, with China's Communist Party governing the country through a party structure in parallel with the civic administration. There is stiff competition within the Party, and if party representatives are to pursue a career, they are required to deliver results and achieve set targets. Party officials are evaluated annually, constituting the basis for future career prospects. This creates a strong incentive structure, which drives the work of reform. In turn, this spills over to cities and regions which compete with each other in being attractive for investments, companies, talents and people in general.<sup>61</sup> The high pressure on performing has led to a number of initiatives to develop regions and cities. Cities try to specialise within areas indicated as strategically important, and concomitantly this brings with it measures aimed at creating particularly good conditions for industry and commerce and for the populace. At provincial level and lower there is quite a lot of scope to develop individual measures. These measures must however relate to the restrictions that are determined centrally, and several of them must also be approved by the central government. At the same time, some regions are permitted to experiment with different types of measures which, if they are successful, often become

<sup>59</sup> The report is based on interviews with representatives of the political administration and companies in Chongqing and Shenzhen, Invest Shenzhen, researchers at Peking University, Shenzhen University of Science and Technology, Unirule Institute of Economics and Stockholm University. In addition to this, there is a series of reports downloaded via the internet and miscellaneous literature. Reference material and names of interviewees are available on request.

<sup>60</sup> Feng, Ljungwall, Guo, and Wu. Fiscal Federalism: a refined theory and its application in the Chinese context. *Journal of Contemporary China*, 2013, Vol. 22, No. 82, 573–593.

<sup>61</sup> A less desirable result is that this risks leading to duplication of successful concepts, greater competition between provinces and in the worst case, impaired economic integration 'The Political Economy of China's Great Transformation', Routledge Studies in the Modern World Economy, Taylor & Francis Group, 2016. ISBN 1138944009, 9781138944008

national policy. In Chinese this process is usually summarised as "crossing the river by feeling the stones".

A particular case of this is the special economic zones (SEZ) which have played a crucial role in China's development. The first zones were established in the early 1980s, shortly after the central government decided to open up the economy to the outside world. Various forms of liberalisation of the economy were tested here, after which they were gradually implemented at national level. Over time, these zones have grown in number and the variation between them has increased. Alongside the original SEZs, a number of zones have been set up under different programmes with different forms of policy support, and these are usually designated Economic and Technology Development Zones (ETDZ). These are to be found within all areas, from tourism to heavy industry and are playing an increasingly important role in development of new branches of trade and industry in China.

## **8.2 Urban development, industrial upgrading and attractiveness**

The priorities in the Chinese development model have gradually changed in line with development of the country's economy. When the work of reform commenced in the late 1970s, a lot of resources were put into rapidly developing the labour-intensive manufacturing industry, often with a low-value content. The objective was expansion and high production volumes. Latterly, the focus has shifted towards R&D, innovations, high-tech industry and advanced services. Today the long-term objectives are quality, knowledge-intensive enterprises and putting the individual at centre stage. At the same time, there are substantial differences in the level of development between coast and inland and between city and countryside, which mean that the capacity to rapidly change the existing structure is different from one region to the next. This has a major effect on the work of '*attracting knowledge-intensive enterprises*' and establishing '*attractive cities*'. In China there is consequently a strong connection between urban development projects and attracting and developing specific branches of trade and industry. In prioritised areas, new urban areas are constructed from scratch, offering unique opportunities to design an effective social and economic infrastructure. These areas rapidly take a leading role in development of new industrial and commercial sectors and provide new opportunities for the individual, for example, new housing environments and more resources for higher education. In less prioritised parts of the country, existing urban areas are being reshaped and added to, which makes it considerably more difficult to rapidly create new environments that meet companies' needs. Here it is more the case that specific benefits are linked to a less well defined area, with the aim of creating attractive clusters. However, it has proven to be very difficult for fourth and fifth rank cities to attract advanced industry as well as talents.

## **8.3 Chongqing – gateway to the west**

### **8.3.1 Overview**

Together with Chengdu, Chongqing is the largest industrial and commercial centre in western China. The city has a long history as a trading centre with a strategic location on the Yangtze River. The city gained increased political influence during the Second World War as it served as China's [wartime] capital in the fight against Japan. The city was previously a part of the Sichuan province, but in 1997 Chongqing became its "own province" within which the eponymous city is located. Like Tianjin, Shanghai and Peking, Chongqing reports directly to the central government. The change in administrative status

was the start of a rapid economic development. Chongqing covers an area almost as large as Austria, with a population of around 30 million. About one third of the total population lives in the area around the capital, Chongqing (the city), another third in other metropolitan areas, and the remaining third in the countryside. The region is undergoing rapid urbanisation and every year around half a million people move from the countryside into urban areas. All in all, urbanisation was around 60 per cent in 2014, with a target of 70 per cent for 2020. The region was hit by a political scandal in 2012 when its political leader, Bo Xilai, was dismissed after accusations of corruption and abuse of power. This had major consequences for the region, which had to a large extent based its development on Bo Xilai as a strong leader.

### 8.3.2 Expansion westwards

Chongqing's development in recent years has been closely associated with the so-called *Go West* strategy, through which the central government has produced a specific programme for development of China's inland regions. The reason for the initiative is that China's inland has fallen behind compared with the coastal provinces. Targeted investments and a beneficial policy from the central government are an attempt to even out these differences. Together with Chengdu, Chongqing is the largest city in western China and to some extent the two cities are in competition over the role as economic and industrial centre for the country's western parts.

Infrastructure is an area that has been singled out as crucial for western China's development and not least in Chongqing. For a long time the inadequate infrastructure was an obstacle to more advanced manufacturing industry establishing itself in the city. As a part of the *Go West* strategy, extensive efforts are being made to link the city eastwards through expansion of road and rail. Construction of the three gorges dam made the Yangtze River navigable for ocean-going ships all the way up to Chongqing. The city has also become an important hub for aviation through investments in the airport and associated logistics facilities. A further attempt to utilize the city's geographic location has been through the railway link which since 2010 has connected Chongqing with the German city of Duisburg. The initiatives have achieved results, even though Chongqing's geographic location makes it difficult to make comparisons with cities along the coast. The city is alone in western China in having well-developed rail, shipping and aviation. This is often emphasised as a competitive advantage and the improved communications have been important for the rapid industrialisation that has taken place in recent years.

Beneficial terms have been given to companies that have elected to invest in the region, and the city's industrial zones have grown substantially. Today Chongqing is China's third largest vehicle manufacturer, and electronics companies produce 25 per cent of all the laptop computers in the world. Chongqing's industrial sector grew by 13.5 per cent during 2013, today constituting over 50 per cent of the city's gross national product (GNP). The growth within advanced manufacturing is fundamentally based on wide-ranging policy support from the central government. Along with beneficial tax conditions, the business climate has improved markedly. Typically for China, indirect support is given to companies that act in accordance with the guidelines drawn up by the authorities. Companies which do so can count on positive treatment from the authorities. This type of support has been an important factor in the rapid industrialisation of western China.

### 8.3.3 The Chongqing model

The development in Chongqing differed from that in other Chinese cities for a long period. Under the then party chief in the city, Bo Xilai, the public economy was given more room. The model was often contrasted with the so-called Guangdong model, which prioritised the private sector. Another side of the Chongqing model was its focus on the local community and the living conditions of the citizens. Under Bo Xilai, major initiatives were implemented to create jobs for the masses, at the same time as state companies built housing available for less well-off inhabitants. Targeted efforts were also made to distribute the revenues from the urban areas to less privileged areas in the countryside. All in all, this policy was popular among many groups in society. Alongside the purely egalitarian motive, there was a conception that rapid, state-directed, urbanisation could speed up the remodelling of the economy.

The Chongqing model is also associated with a campaign against organised crime. In order to achieve its goal, the local government went further than anywhere else in China, on several occasions using methods that were outside the legal system to fight crime. The mode of working had a major impact on Chongqing's development and was regarded as successful. What many of the activities had in common was that they were implemented with neo-socialist undertones. For example, Bo Xilai reused symbols from the Mao era and in a number of areas opposed the liberalisation that was taking place in other parts of China.

The policy pursued under Bo Xilai largely coincided with the guidelines for the *Go West* strategy and the resulting benefits for the region were used assiduously. An overwhelming proportion of the investments were financed through the public purse at local level, which in a short period produced a large deficit for the local government. This was dealt with through redistributing resources from the central government, with Chongqing receiving a disproportionately large share compared with other regions or cities. At the same time, the region's own indebtedness increased at a very high pace. It was quickly noted that state-directed developments created inefficiency, leading to less productive investments. The model received widespread criticism, not least from political rivals including Xi Jinping (the party's current General Secretary), that the rapid growth was artificial. With Bo Xilai losing his political position in 2012 the Chongqing model came to an end. Today the rate of development has slowed sharply and Chongqing has been hit comparatively hard by the general downturn in the economy. At the same time, the region is a priority area for mega-projects such as One Belt, One Road (OBOR), which constitutes a guarantee for continued publicly financed investments.

### 8.3.4 Overall strategies

The rapid development of Chongqing has made the region/city an actor to be reckoned with both nationally and internationally. Major resources are being invested in continuing to develop the industrial capacity, at the same time as the city is taking a leading position in the development of the economy in western China. This includes investing in more advanced manufacturing, better infrastructure, new forms of business support, and not least making the city and the region a more attractive place in which to live. The city's strategic location makes Chongqing an important player in several Chinese development projects at national level. Western China is a priority area for the Chinese central government and in recent years several strategies have been produced which include Chongqing in various ways, for example OBOR, which coincides with 'The Silk Road Initiative'. These will

have a major impact on the city's future prospects to attract investments, companies and talents etc. These initiatives also mean that Chongqing will have a stronger position at international level. In conjunction with Chengdu and Xian, the city is the starting point for the infrastructural investment that China wants to make going west. An important part of the strategy is to turn the geographic disadvantage that the inland has into an advantage through strengthening westward trade connections. The investments in the new Silk Road include major infrastructure initiatives as well as initiatives for increased trade with Central Asia and ultimately Europe.

Together with Wuhan and Shanghai, Chongqing is also a leading actor in the national strategy to boost economic development along the Yangtze River, a strategy that has been named the Yangtze River Economic Belt. The focus of the initiative is to develop the region so that it is a leader within industry, innovation and domestic trade. In order to achieve this, investments will be made to strengthen the infrastructure for innovation along the river, speed up the development of strategically important industries, develop the service sector and modernise agriculture. The strategy takes a long-term perspective and extends until 2030. The initiative is relatively new, and there are many uncertainties surrounding which measures will be included in the strategy. What is clear, however, is that the initiative has a high priority at national level.<sup>62</sup>

#### *One-Hour Economic Circle.*

At the local level, Chongqing has launched a strategy under the name of *One-Hour Economic Circle*. The strategy encompasses 23 of Chongqing's 40 districts which are situated within one hour's driving distance from the city. GNP is set to treble within the area by 2020, by which time the urban population is expected to have increased to 22 million. The rate of urbanisation will then be around 80 per cent. The focus is on industrial development and speeding up the development of industrial bases and clusters. Priority industries are modern manufacturing, service and agriculture. The link is clear to earlier ideas regarding a balanced development between city and country, combined with rapid urbanisation. It is thought that the initiative will enable Chongqing to strengthen its position and increase its influence in western China.<sup>63</sup>

#### *Third collaborative project between China and Singapore*

It was announced in November 2015 that Chongqing had been selected as a partner city in the 'third collaborative project between China's and Singapore's governments.' The programme is targeted at cities in western China, and Chongqing was assigned the programme in competition with Chengdu and Xian. The initiative follows two previous projects; Suzhou Industrial park (1994) and Tianjin Eco City (2008). The focus of the project will be modern IT infrastructure and modern services, which it is considered will be able to create a better business climate and make it cheaper to run companies in central and western China. Four strategic sectors have been specified in the project; financial services, aviation, transport and logistics, as well as communication technology. In the earlier proposals for the project that have been presented, the city has set aside an area of around 20 km<sup>2</sup>. The initiative is expected to include an integrated logistics centre for aviation and shipping. Singaporean companies will have greater opportunities to work together with Chinese companies in the zone and will contribute themselves through legal

<sup>62</sup> <http://english.cntv.cn/2016/03/09/ARTI6m36aEzbqv4fiptsuUoY160309.shtml>

<sup>63</sup> Balancing urban and rural development, UN Habitat

and financial advice etc. Singapore will also be part of the expansion of a smart city which will contain a special administrative zone for development of large-scale data storage and cloud data. The first Singaporean companies to join the initiative include the property company Capita Land and the banks DBS and UOB. The collaboration is being implemented through partnership agreements between Chinese and Singaporean companies. DSB has signed four strategic partnerships with Chinese state authorities to contribute financial services. Capital Land has signed a partnership agreement with the local government of Yuzhong to create a Chinese-Singaporean centre for collaboration on a major property development project in the region.

Another example of how Chongqing works with foreign companies is an agreement that has recently been signed with LinkedIn, the American networking site for professionals. According to the agreement, LinkedIn will support Chongqing in its work of recruiting talents to the city. Particular focus is placed on industry and the city's strategic sectors. Among other things, LinkedIn will develop a strategic talent database for Chongqing, which is the second city in China after Shanghai to have such an agreement.<sup>64</sup>

### *Liangjiang New Area*

Liangjiang New Area was established in 2010 and is situated in the urban parts of Chongqing. The location is strategic, with access to the port in Guoyuan, the largest in the Yangtze River, the railway station in Longtu Temple, the largest junction in western China, and Jiangbei's international airport, the largest airport complex in China. As the only city in western China with access to both land, water and air routes, Chongqing is exploiting its strategic location. The authorities want to use the project to provide further support for Chongqing's development through creating a site where new reforms can be tested.<sup>65</sup> The plan for the area is focused on extensive industrialisation and development of trade and industry. Nine strategic sectors have been identified, including the vehicle industry, electronic information, manufacturing industry, instrumentation, bio-pharmaceuticals, financial services, robotics, equipment for shale gas, the aviation industry and modern logistics. The objective is that the area will contribute to the larger vision of making Chongqing an industrial base for western China. Alongside investments in trade and industry, this also affects the local community. Around 40 per cent of the area is dedicated to housing, which relates to the *One-Hour Economic Circle* initiative and the development of city and countryside.

Policy support in the area is among the most far-reaching in China. As a so-called *New Area*, Liangjiang has the same beneficial policies as, for example, Pudong and Binhai, which are supported directly by the central government. Companies that invest in the zone can also profit from the benefits that are provided under the *Go West* strategy. The low tax rate of 15 per cent for companies in the area is important, a benefit that will remain in place until 2020. Qualified companies that invest in the area are also entitled to the so-called 2+3 rebate on income tax, which means that there is no tax for the first two years and a 50 per cent rebate for the next three years. The conditions for advanced manufacturing will also be strengthened in that administrative charges that are paid in the zone are reinvested, for example in IT infrastructure. Liangjiang also has priority for funds from regional and national infrastructure funds. Support for companies is also provided through administrative relief, simpler allocation of land and support from the authorities for

<sup>64</sup> <http://www.ft.cq.cn/english/ne/25079.htm>

<sup>65</sup> [http://www.chinadaily.com.cn/regional/chongqing/liangjiang/2015-08/13/content\\_21566703.htm](http://www.chinadaily.com.cn/regional/chongqing/liangjiang/2015-08/13/content_21566703.htm)

financing, technological development and access to land.<sup>66</sup> The many benefits are designed to compensate companies for the additional cost and risk of investing in western China compared with the coastal areas. However, there are commercial advantages to locating in the inland regions. For example, the cost of water, electricity, gas and labour is about 30 per cent lower in Liangjiang compared with the coastal areas. In 2014 the local GNP in Liangjiang amounted to 186 billion renminbi yuan (200 billion Swedish kronor), more than twice as much as five years previously. In the same year, foreign investments amounted to around 4.47 billion US dollars (36 billion Swedish kronor). Thus far, more than 200 of the so-called *Fortune Five Hundred* companies have established offices in the area. The area has also attracted IT companies, particularly within cloud data. Tencent, China's largest internet company, has invested the equivalent of three billion Swedish kronor in a cloud data centre – the first in western China.<sup>67</sup>

## 8.4 Shenzhen – focus on the outside world

### 8.4.1 Overview

Shenzhen is situated in Kanton province (Guangdong) in southern China and is a part of the metropolitan region around the Pearl River delta, with some 60 million inhabitants. The city borders onto Hong Kong and has expanded in close interaction with its more well-known neighbour. In many respects, Shenzhen has become the symbol of China's reform policy. China's first special economic zone (SEZ) was opened in Shenzhen in 1979 following the introduction of the reform policy. At that time, some 35 years ago, Shenzhen was a small border town with some 30,000 inhabitants. The reforms that were implemented enabled capital from outside to flow in, along with technical know-how, leading to rapid development, particularly of the manufacturing industry. People from throughout the country moved to Shenzhen to be part of the rapid economic development. The immigration can largely be divided into two groups; the highly-educated and migrant workers from the countryside who have taken jobs in factories. The extensive migration has led to the city growing exponentially, and by late 2014 the resident population was 10.8 million, only 3.3 million of whom had a permanent residence permit (*hukou*).<sup>68</sup>

Shenzhen has become the hub for manufacture of high-tech products in southern China and a centre for trade, with the world's third busiest container port. Over time the city has developed and taken large steps upwards in the value chain. There are significant and well-developed enterprises within information and communication technology, financial services, modern logistics and culture. The city has also taken a leading role in China's efforts to become more innovative. Despite the city only having a small number of universities, it is estimated that as many as one fifth of all China's professionals with a PhD work in the city. In addition, Shenzhen has a high proportion of patent applications and has become a hub for start-ups within high-tech industries. Today companies travel from throughout the world to take part in the city's unique ecosystem for manufacturing smart new connected products. In 2014 Shenzhen was ranked as the most innovative city on the Chinese mainland by Forbes.

<sup>66</sup> Introduction of Liangjiang New Area, MOFCOM

<sup>67</sup> [english.liangjiang.gov.cn](http://english.liangjiang.gov.cn)

<sup>68</sup> China's system of national registration, which links citizens' social rights to the place where they are registered.

Today Shenzhen is one of China's most modern cities with a well-developed infrastructure and public services. A property boom has transformed the city into a metropolis, with skyscrapers and an efficient infrastructure. The local culture, shaped by the rapid economic development and the large-scale migration is often emphasised as one of Shenzhen's major benefits. The city is open and tolerant, and politics are less in evidence than in other Chinese cities. Not least the proximity to Hong Kong means that Shenzhen has greater openness to the outside world. Investments in new free trade areas, such as Qianhai, are further developing this openness.

#### 8.4.2 Shenzhen will lead China's continued modernisation

The strong manufacturing industry has served Shenzhen well and still constitutes a substantial engine for growth. At the same time there is a major need to develop new sectors in order to further upgrade the economy. The strategies that are now being highlighted are to further develop the already strong manufacturing industry and to simultaneously substantially expand the service-sector's role. This is regarded at central level as particularly important for China's continued economic development. At national level this involves a radical strategy that affects all parts of trade and industry. The investments in innovation and science are clear examples of this. The priorities in Shenzhen have a lot in common with the priorities at central level and many strategic, forward-looking industries are familiar from the national level.

The aim of the political leadership in Shenzhen is for the area to lead China's continued modernisation. Policy documents present it as the natural continuation of the role the city has had from when the first economic zone was opened. In its strategy for the future, Shenzhen is aiming to strengthen already established technology and logistics clusters, at the same time as diversifying the economy and moving towards more service-based enterprises. Four pillar industries have been identified; high-tech, modern logistics, the culture industry and financial services.<sup>69</sup> For its next step, Shenzhen perceives a role where the city becomes a test site for an integrated modern economy with high-tech companies and a modern service sector. An example of this is that Shenzhen is the pilot area for a large number of reforms to the Chinese economy. The city was part of the first group of cities designated as *National Intellectual Property Rights Pilot Cities* and was the first city appointed as a *National Self-Innovation Demonstration Zone*, which refers to China's endeavour to be self-sufficient in innovations.

The special business climate in Shenzhen is emphasised in communications with prospective investors. The city is said to have a welcoming atmosphere and a dynamic that is lacking in other locations in China. The city also has a considerably higher level of market economy with fewer elements of direct state control than other cities in China. At the same time it is often emphasised that relationships, so-called *guanxi*, do not have the same significance in doing business in Shenzhen as in other parts of the country. One effect of Shenzhen already having come a long way in its development is that state development projects in the city are limited (the Qianhai development area is an exception). Policy support and state directives targeted at specific industries are not as evident here as in other places in the country. Instead, the local government is trying to find other methods to stimulate development of strategic sectors, existing and new. The high tax revenues (above all VAT) facilitate financing of various initiatives to support innovation and commercial and industrial development.

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<sup>69</sup> <http://english.sz.gov.cn/iis/>



### 8.4.3 The four pillar industries

#### *High-tech and significant investments in research*

The investments within research and development – high-tech – in Shenzhen are distinguished from those in many other parts of China through their close collaboration with industry. In distinction from cities such as Beijing and Shanghai, Shenzhen does not have an academic tradition. Despite this, R&D constitutes an important pillar for the city's economy. Expenditure for R&D in 2014 amounted to 4.02 per cent of GNP, with around 95 per cent coming from companies. The absence of well-developed universities and research institutions has led to R&D being close linked to industry. 11,600 international patents were applied for in Shenzhen in 2014, an increase of 15 per cent over 2013. This comprised 48.9 per cent of China's total number of international patent applications and meant that Shenzhen topped the list for the 11th year in succession.

Today extensive investments are being made to improve the prerequisites for research. In 2011 the Southern University of Science and Technology was set up in the city with the objective of leading the reforms of China's research-oriented universities. The university has a clear international character and its aim is to be a leading institution within research and innovation. Several national research institutes have been established in the city during the last decade. This demonstrates how R&D has become an increasingly prominent part of Shenzhen's economy.

#### *Modern logistics*

Shenzhen's strategic location adjacent to the large manufacturing clusters in southern China has made it a hub for advanced logistics services. The industry accounted for around 10 per cent of the city's GNP in 2014. In many respects, the sector is the leader in China. Not least the proximity to Hong Kong has played an important role in its upgrading. The trend is towards third party logistics and more effective supply chain management, an area where the city is leading the way in the country. Many of the country's leading actors have their head offices in Shenzhen. The excellent access to modern logistics services are highlighted as a competitive advantage for all investments, but also as a development area where investments are encouraged. To support the industry's development there are six large logistics parks in Shenzhen. Every year a large trade fair is also held in the city with the focus on the logistics sector and with major international participation and close to 100,000 visitors.

#### *The financial industry*

Shenzhen is a financial centre in China. The city is the headquarters for one of China's two exchanges. The financial industry accounted for around 14 per cent of the country's GNP in 2014, which is the highest proportion of all cities on the Chinese mainland. The city already plays a major role in the development of online financing and China's first private internet bank WeBank, which is a part of the large internet company, Tencent, has its base in the city.

#### *The culture industry*

Up to now the culture industry has played a limited role in Shenzhen's development, however, the local government is now making efforts to improve the conditions for it. It has plans to integrate the creative industries with technology products. The city also has a number of culture industry clusters. Overall, however, the development is at a low level.

### *Qianhai*

As a part of China's on-going reforms, the central government has launched new pilot areas to enhance China's integration with the rest of the world. This is not taking place simultaneously throughout the country, but rather gradually through special zones that can trade more freely with the surrounding world. One of the most extensive zones is Qianhai in Shenzhen. The focus in Qianhai is on a modern service sector with a lot of inspiration coming from Hong Kong. Cooperation and increased economic integration with its more well-known neighbour is a priority, as set out in the full name of the zone, the Qianhai Shenzhen – Hong Kong Modern Service Industry Cooperation Zone.<sup>70</sup>

The zone comprises an area in western Shenzhen strategically situated close to Shenzhen's airport. The zone has a total area of 14.92 square kilometres. Communications to and from Qianhai will be excellent with proximity to airports and a wide network of fast trains. The area itself will be divided into three areas; Guiwan (central business district with the focus on advanced services), Qianwan (IT and culture) and Mawan (logistics centres). The idea of building a smart and sustainable city has been prominent in the planning. The area will be attractive for companies as well as for people. When the expansion is completed, Qianhai will have a resident population of 150,000 and workplaces for 650,000.<sup>71</sup>

The first policy document for Qianhai published by the State Council, China's government, in 2012 specifies 22 measures to develop the area.<sup>72</sup> It includes reforms within six specific areas; finance, tax, law, talents, education, medical care and telecommunications. In total 112 sectors have been designated as target groups for the reforms in Qianhai, 23 of which are within finance and banking. The explicit objective is to develop Qianhai into a pilot city and a representative for China's economic reforms. In the area of tax, Qianhai will offer lower tax rates in order to attract companies. Corporation tax in China is currently 25%, while income tax varies between 5 and 45%. According to the plan, the tax rate will as far as possible imitate Hong Kong, which would limit both corporation tax and income tax to below 20 per cent.<sup>73</sup>

Four sectors have been specifically indicated as strategically important; economy, logistics, information and communication technology, and other professional services. Particular emphasis is placed on the financial sector, for which Qianhai has been designated an experimental zone which will promote financial innovations and further openness towards the outside world. For example, cooperation with Hong Kong will increase and the zone will contribute to the internationalisation of the Chinese currency, the renminbi yuan. Financial institutions which establish themselves in Qianhai will be given increased powers to do business with the outside world.

The plan explicitly indicates that Qianhai will endeavour to be welcoming to talents. This includes the creation of an environment and support functions which are suitable for future leaders within the modern service sector. In addition, the zone will work actively to create mechanisms to attract talents to the area. The task of attracting talents from outside has been given the overall name of "Qianhai Shenzhen-Hong Kong Special Talent Zone". A first step in the initiative has been to establish a talent centre for the work, which, among other things, will act as a *one-stop-shop* for companies and employees in their contacts

<sup>70</sup> <http://amcham.org.hk/events/eventdetail/1239/-/shenzhen-and-qianhai-threat-or-opportunity-for-hong-kong>

<sup>71</sup> [https://www.google.se/?gws\\_rd=ssl#q=Qianhai:+the+big+picture%2C+Daiwa+capital+invest](https://www.google.se/?gws_rd=ssl#q=Qianhai:+the+big+picture%2C+Daiwa+capital+invest)

<sup>72</sup> Approved by the State Council in 2010

<sup>73</sup> The Rise of Qianhai: an Opportunity or a Challenge?, Colliers International

with authorities.<sup>74</sup> A clear policy support is lower tax rates for talents. According to current policy, employees classified as talents will only pay 15 per cent in income tax. In 2014 this covered 70 individuals, but will grow substantially when the zone expands further.

#### 8.4.4 E-hub – an innovation hub

A clear example of how the government wants to support development of innovative start-up companies in Shenzhen and Qianhai is the *E-hub* initiative, an innovation hub aimed at young entrepreneurs. The initiative is the result of collaboration between Qianhai and Shenzhen Youth Federation and Hong Kong Federation of Youth Groups. The hub comprises a cluster of buildings housing offices and incubators for start-up companies. Around 200 companies will be accommodated in the premises, and the focus is on innovations within sectors prioritised in Qianhai as a whole; modern logistics, information services, technology, culture and creative enterprises. The aim of the hub is to develop forms of support for companies in a number of areas, including early stage financing, training, consultancy services and networking. Support is also available in the form of subsidised rents. Companies can also qualify for the general support and beneficial rules that Qianhai offers.<sup>75</sup>

#### 8.4.5 Invest Shenzhen – a tool for investment promotion

Shenzhen works proactively to attract companies from other parts of the country and abroad to establish them in the region. An important actor in this respect is Invest Shenzhen, which is a part of the local government. Shenzhen is described to foreign investors as a strong candidate for establishment through its well-developed economy and good contacts with the outside world. The city's location in close proximity to Hong Kong is highlighted, along with its airport and financial market. The local government is keen to present the city as international and an integrated part of the global economy. The integration with Hong Kong remains a priority and tens of thousands of people cross the border every day. There are a total of 15 checkpoints between the cities and the procedure for passing through is facilitated by electronic systems for those who cross the border frequently. The fact that the government plays a relatively minor role in the economy is emphasised as one of Shenzhen's strengths. The dynamic market is attractive for foreign companies, which might feel more at home in Shenzhen than in other places in the country. The modern administration is also highlighted as a benefit.

### 8.5 Discussion

Phrases such as '*attraction of knowledge-intensive enterprises*' and '*attractive cities*' are not explicitly used in China. However, work does take place that corresponds to this, though under other names and to some extent other forms. One concept that has emerged is '*strategic regions*' and '*strategic cities*', which will constitute the basis in modern China through a range of support mechanisms and prioritisations. The discussion in China is conducted differently in comparison with more developed countries, Sweden and the USA for example, due to differences in social challenges and political structure. At the same time, it is important for Sweden's political decision makers and Swedish companies to understand what is happening as China continues to develop and integrate with the outside world. China is experiencing a high, and very evident, pace of change. At the same time,

<sup>74</sup> [http://www.szqh.com.cn/Why\\_Qianhai/Talent\\_Trial\\_Zone/](http://www.szqh.com.cn/Why_Qianhai/Talent_Trial_Zone/)

<sup>75</sup> <http://ehub.hkfyg.org.hk/facilities.php?language=eng>

the level of development varies sharply between coast and inland, and between city and countryside, which makes the task of modernising China as a whole tremendously complex.

When the work of reform commenced in the late 1970s, a lot of resources were put into rapidly developing the labour-intensive manufacturing industry, often with a low-value content. The objective was expansion and high production volumes. Today the long-term objectives are quality, knowledge-intensive enterprises and putting the individual at centre stage for the country as a whole. The state plays a crucial role in this. The central government formulates and decides on the direction of policy, which is in turn implemented at lower administrative levels. The objectives from central level are thus broken down in order to meet the specific challenges that China's different regions encounter. There is a high degree of local self-determination in China, which gives regions the opportunity to draw up their own local action plans. In China implementing the changes often entails building completely new urban districts with all social functions and economic infrastructure. In turn this provides the space to create unique solutions in terms of investments in various industrial sectors, logistic functions and other infrastructure, and also to create new urban functions and favourable living conditions.

This report has selected two cities – regions – of particular interest for the central government, Chongqing and Shenzhen. The cities are among those which have undergone the greatest changes during the last 15–20 years and are to some extent at opposite poles. Chongqing focuses primarily on the domestic market while Shenzhen is striving to establish itself as a global name. Chongqing's geographic location is an important element in China's long-term development strategies such as One Belt, One Road and the Silk Road Initiative. The locally developed initiative, 'One-Hour Economic Circle', is of particular interest. This comprises 23 of Chongqing's 40 districts, all of which are located within a one hour drive from the city. GNP is set to treble within the area by 2020, by which time the urban population is expected to have increased to 22 million. Another local initiative is Liangjiang New Area. The area is strategically located with access to the port in Guoyuan, the largest in the Yangtze River, the railway station in Longtu Temple, the largest junction in western China, and Jiangbei's international airport, the largest airport complex in China. Policy support in the area is among the most far-reaching in China. Extensive administrative relief and simpler allocation of land are offered alongside significant tax rebates, as well as support from the authorities for financing, technological development and access to land. Thus far, more than 200 of the so-called *Fortune Five Hundred* companies have established offices in the area.

Shenzhen has become the hub for manufacture of high-tech products in southern China and a centre for trade, with the world's third busiest container port. Today companies travel from throughout the world to take part in the city's unique ecosystem for manufacturing smart new connected products. The city has a well-developed infrastructure and public services. The city was part of the first group of cities designated as National Intellectual Property Rights Pilot Cities and was the first city appointed as a National Self-Innovation Demonstration Zone, which refers to China's endeavour to be self-sufficient in innovations. Invest Shenzhen is a state actor with the remit to attract domestic and foreign companies to Shenzhen. It describes Shenzhen as a strong candidate for establishment through its well-developed economy and good contacts with the outside world. The city's location in close proximity to Hong Kong is highlighted, along with its airport and financial market.

The challenges surrounding China's massive changes cannot be underestimated. At the same time as the central government, including at provincial and lower administrative levels, is investing gigantic resources in developing dynamic new growth areas, an increasingly intense discussion is taking place on how effective these investments actually are. New issues under discussion are how long state support can continue at the current high levels and what will happen when the support decreases or perhaps disappears altogether. The role of private companies is indicated as crucial for the economy and thus for the country's development as a whole.<sup>76</sup> To this end, powerful incentives are provided, in parallel with the introduction of discriminatory laws and rules that restrict companies' opportunities in the market. This also has a major effect on foreign companies. Other discussions take the view that future digital and knowledge-intensive production of goods and services will be considerably more volatile than the traditional manufacturing industry and can quickly change its geographic basis if conditions were to deteriorate.

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<sup>76</sup> Feng, Ljungwall, He. 2015. *The Ecology of Chinese Private Enterprises*. World Scientific, Series on Chinese Economics Research: Volume 11. ISBN: 978-981-4596-89-3

## 9 South Korea – Incheon and Busan

With its 50 million inhabitants, South Korea enjoys a central location in northeast Asia. The region's 1.5 billion people account for 21 per cent of the world's population and generate 21 per cent of the global gross national product.<sup>77</sup> 147 cities with a population of more than one million can be reached within three hours flight from Incheon International Airport, which serves Seoul and its surrounding area. In recent decades, South Korea has expanded its global market share within a number of different sectors. The country is global market leader within semiconductors (68 per cent of the world market), screens (44 per cent), mobile phones (29 per cent) and ships (41 per cent).<sup>78</sup> As the only Asian economy to have free-trade agreements with all three of the world's largest markets (EU, USA and China), South Korea has international free-trade agreements covering 73 per cent of total global gross national product. According to the World Bank's Doing Business Report 2015, South Korea is fourth in the world in terms of how simple it is to do business.<sup>79</sup> South Korea is also ranked as the world's most innovative country according to Bloomberg Global Innovation Index 2015.<sup>80</sup>

South Korea is a centralised country in many respects, with municipalities and cities having highly restricted independence. This is despite the fact that the country's government has been stressing increased regional autonomy as a prerequisite for national competitiveness since the mid-1990s when the Balanced National Development Act entered into force.<sup>81</sup> For example, the government has progressively given each region more responsibility and independence to draft regional plans for economic growth and specialisation. This political trend has been further reinforced since 2003 when the then government produced the 'Balanced Regional Development' national strategy in order to speed up the decentralisation of the country.<sup>82,83</sup> Since then, entire departments and authorities have increasingly been moved to the regions to try to reduce the gap in terms of population numbers, welfare and the economic dynamic between cities and countryside, and to promote cooperation between trade and industry, the academic world/research institutions and the state, as well as between different geographic parts of the country. The proportion of central administrative agencies in the capital region is expected to fall from 85 per cent to 35 per cent when all the relocation is completed. By February 2016, 100 of the 115 government administrative authorities that were planned to be moved had been relocated outside the capital.

The central government also has the ambition to relocate activities other than public administration out to the regions to a greater extent. For example, technology parks have been developed all over the country under a nationally financed project. In 2015 there were a total of 18 technology parks in 16 different regions. Since 2005, the government has

<sup>77</sup> Invest Korea 2016 Available: <http://www.investkorea.org/en/invest/asianhub.do>

<sup>78</sup> Invest Korea 2016 Industries Available: <http://www.investkorea.org/en/world/all.do>

<sup>79</sup> The World Bank 2015 Doing Business available: <http://www.doingbusiness.org/reports>

<sup>80</sup> Bloomberg 2016 Global Innovation Index available: <http://www.bloomberg.com/graphics/2015-innovative-countries/>

<sup>81</sup> Balanced Regional Development And Support For Local Small And Medium Enterprises Act, Enforcement Date 01. Christmas, 1995.

<sup>82</sup> Andy Pike, Andrés Rodríguez Pose, and John Tomaney 2006 Local and Regional Development Routledge

<sup>83</sup> There are a number of strategies for this purpose. Another example is the 4th Comprehensive Plans for Advancing Local Science and Technology (2013-2017).

decided to categorise ten cities including Busan and Jeju as "innovation cities", with a specific potential to boost the country's innovative capacity.

A more concrete initiative interconnecting national and regional growth policies is the establishment of free economic zones (FEZ). Today there are six free zones.<sup>84</sup> These zones are used as tools to attract domestic and international companies, and to promote industries that are high up in the value chains. Individuals and/or companies in the zones can benefit from a range of incentives, including tax benefits, establishment support, and a number of grants, including for renting premises. A trend in recent years in relation to policy surrounding the free economic zones is to try to bring about increased specialisation based on the zones' development, hopefully resulting in a reduced overlap between the zone's activities.

The current government under President Park is using the national strategy "Creative Economy" – as a development paradigm for economic development and creation of jobs throughout the country. With the starting point in an online platform called "Creative Town" launched in 2013, 17 physical innovation centres have now been set up around the country to promote the "Creative Economy" strategy. Based on each region's existing strengths, each of these centres collaborates with one of the South Korean industrial conglomerates in order to provide small and newly-started businesses with both tangible (office space, for example) and intangible (advice, for example) support.

## 9.1 Incheon City

Incheon is situated north west of Seoul where the country's west coast begins, and it has functioned historically as a gateway to Seoul and its surrounding area. With 24 million inhabitants, the Seoul-Incheon-Gyeonggi region has about half of South Korea's population. Based on Incheon's geographic advantages, good connections via its international airport and port, and ample land for new construction, in August 2003 the government decided to make parts of Incheon into the Incheon Free Economic Zone (IFEZ).

IFEZ overlaps the areas of Songdo, Yeongjong and Cheongna, including Incheon International Airport and a major port. Situated eight kilometres from the centre of Incheon City and 50 kilometres from central Seoul, IFEZ can benefit from these cities' human capital and other resources. In August 2014, 73 multinational companies from 16 countries, including Celltrion, Boeing, BMW and GM, had operations in IFEZ.

As mentioned in the introduction, the central administration, including the presidency, occupies an extremely powerful position in South Korea, and generally over local strategies as well, which means that Incheon has to take the governments' policies and priorities strictly into account. However, in terms of regional strategies to attract investment, local leaders feel they have a relatively great capacity to at least influence how policies are implemented. Regardless of changes of government every five years, Incheon has been able to maintain its own stable strategy for attractiveness for the last ten years. Strategies for the city of Incheon and IFEZ are interwoven, and there is close cooperation, despite IFEZ and Incheon city having separate budgets.

IFEZ also enjoys close collaborations with many national organisations in the country that, for example, promote investment, including the Korea Trade Investment Promotion

<sup>84</sup> Free Economic Zone 2016 Available: <http://terms.naver.com/entry.nhn?docId=571910&cid=46618&categoryId=46618>

Agency (KOTRA). As a measure of IFEZ's international ambitions, representatives from IFEZ organised or participated in a total of 19 exhibitions (4 domestic and 15 international) during 2015. Participation in international contexts such as these exhibitions and trade fairs is determined by IFEZ rather than the initiative or coordination coming from national level. KOTRA usually provides support when a city such as Incheon asks if it can use KOTRA's knowledge, experience and resources, for example in the form of offices inside and outside the country. Incheon has sister cities in Japan and China and operates exchange programmes for its officials together with them.

The newest part of Incheon is called Songdo International Business District and is the most characteristic example when it comes to attracting knowledge-intensive industries to Incheon. Songdo is located on land reclaimed from the sea, and was built as a smart city and a model for green growth and new solutions regarding urban planning, transportation, and digital communication technology. Songdo is home to the new Green Climate Fund as well as offices for ten other international organisations, including the UN and the World Bank. The district is close to Incheon International Airport, ranked highest in the world by passengers for each of the last ten years. South Korea's longest bridge, Incheon Bridge, extends 21 km over a bay and connects Songdo directly to the airport with a travelling time of just under 20 minutes. Many manufacturing companies in Songdo have also started to use a new deep water port in Songdo with the cost benefits and better accessibility that it offers.

### 9.1.1 Focus, priorities and cooperation in the city/region

Incheon's eight strategic focus areas are logistics, advanced cars, aviation, tourism, biotechnology, robotics, green financing, and beauty products. Within these eight areas there are further priorities, and since 2013 advanced cars, biotechnology, and the associated area of cleantech have been designated the three most important strategic areas in the city's local version of the "4th Comprehensive Plan for Advancing Local Science and Technology" – a collection of strategies from South Korea's various regions and cities. Incheon's plan also specifies two overarching goals:

- Remodel the local economy for higher added value and create completely new industries that can act as growth engines through expanding the city's R&D capacity.
- Create better local control of research and development through cooperation between the academic world and industry, and through expansion of their networks.

IFEZ also set two specific ten year goals in 2013 in connection with the strategy work:

- Achieve 100 per cent occupancy/utilization of the land within the free economic zone.
- Attract foreign investments of 84 billion kronor (10 billion US dollars)

The biotechnology field in particular has been included at an early stage in the development of Incheon, and is embedded in local areas of strength in terms of expertise. IFEZ is particularly focused on the combination of biotechnology and ICT in line with the South Korean national growth and innovation strategy, with ICT viewed as a starting point and subsequently used to transform and refine other industries via industrial convergence. Even prior to the setting up of Songdo International Business District there were a number of strong biotechnology companies established in the area, with more than a hundred factories in operation. Local officials maintain that the combination of ICT and biotechnology has been ideal in introducing new companies to existing industry in the city.



However, Songdo International Business District is simultaneously promoting a number of other sectors, and offers the same opportunities and benefits for establishment, regardless of industrial sector. The ambition for a so-called "multi-function" city, where housing, companies, culture, business and leisure time environments coexist, demands that the district has fairly high requirements for new establishment, and a rigorous selection process is used for candidates. To establish itself in Songdo, the company must fulfil certain criteria, with its environmental impact subject to particular scrutiny. After the company/organisation has passed this first process, a final decision is taken by a local committee. The entire process takes about two years from submitting the application to a licence for establishment.

Not just the composition of companies in the area, but also a high level of "livability" is regarded as one of the most important attributes in a "multi-functional city". Many schools and hospitals have been invited to set up in the area and more facilities, including an international hospital, are in the pipeline and will be built in the next few years. Representatives from Songdo International Business District hold regular meetings with workers (for example at South Korean research centres and international companies) and residents in the area to assess their living and working conditions, and to obtain suggestions for improvements. For example, the international atmosphere in Songdo is often praised in these meetings, but it is simultaneously pointed out that language barriers still constitute a problem for foreign workers.

Even though Songdo has good accessibility to many large cities and has an excellent living and working environment, the perceived psychological distance between Seoul and Incheon is a factor that has a negative effect on access to talents. Many employees prefer to commute from Seoul rather than live in the area. Despite the 700 ICT and biotechnology companies that have established themselves locally, the fact remains that the bulk of their employees commute from Seoul. Officials responsible for IFEZ's strategy feel that a lot can be learned from a city like Singapore, which should also be viewed as a significant international competitor. For example, Singapore has become a hub for regional head offices, which thus far has been difficult for Incheon to achieve. Another challenge discussed in the city is the possibility of combining advanced industries with the creation of new jobs. Officials in Songdo/IFEZ are trying to find and prioritise industries that can manage this combination, and perceive potential within, for example, the aviation industry, which also has certain naturally beneficial conditions through the proximity to Incheon International Airport.

### 9.1.2 Activities

To attract new companies to the region, Incheon is marketing the advanced features of Songdo as a smart new city in the country, and its potential to construct new properties in a strategic location in close proximity to the country's largest airport and the capital Seoul. In addition, emphasis is placed on financial incentives linked to the free economic zone IFEZ, and the large number of investments in specific business clusters, which are together deemed to have a positive impact on companies' location decisions.

In South Korea, Songdo is classified as a "smart city" based on its original design features with, for example, a network of sensors and services in relation to the internet of things built into just about all infrastructure, and a number of active "Smart City" projects in which Songdo participates. One example is the "U-City Infrastructure project" (U stands for ubiquitous) which was initiated in 2013. ICT solutions (both hard- and software) are

used within six areas, including transport, security, disaster prevention, environment, property management and convergence services.

For example, the ICT infrastructure in the area gives Songdo's citizens access to traffic and road information from their mobile phones, and enables the city's officials to control traffic more flexibly depending on the flow of traffic in real time. Analysis of big data from the sensor network will contribute to creating a safer and more energy-efficient urban environment. The U-city Management Center function was created to manage these new opportunities. One interesting aspect is that the city itself may function as a living laboratory for companies when producing services for inclusion in various smart cities throughout the world. Around 25 South Korean cities have commenced similar U-city investments, but among them, Songdo has been selected as the national flagship based on best implementation, leading to plans for export of solutions and technologies to countries including Thailand.

As described above, IFEZ places great importance on attracting high-tech industries in particular, and over the years has tried to deliver densification and critical mass through offering premises and services that are tailor-made for a specific industry. Examples of this are the Knowledge and Information Business Complex, Science Village, IT Union Valley and New and Renewable Energy Complex (2009–20). Incheon continues to support projects in these clusters of companies with foreign companies as participants within a number of specialisations including advanced manufacturing (Hunee Technologies Project) and the establishment of data storage/server halls (Kyobo Data Center Project). In the projects that Incheon/IFEZ supports, the importance of creating synergy effects between industrial and academic research is always emphasised.

Based on IFEZ's classification as a national economic free zone, Incheon works with a number of intricate financial incentive programmes to support investors, including tax relief (national and regional taxes), land and property grants, subsidies for productive activities such as training, and relocation support.<sup>85 86</sup>

Under the overall name of "One-Stop Service" IFEZ tries to lower administrative barriers for foreign entrepreneurs to a minimum. Staff working on the "One-Stop Service" are responsible for ensuring that foreign companies and investors are quickly put in contact with appropriate authorities, depending on what the matter or enquiry concerns. Consultations can be conducted in a number of languages over the phone or directly on site in Songdo.<sup>87</sup>

As Incheon particularly wants to attract foreign investors needing to build new offices and facilities in Songdo, granting visas with the assistance of Real Estate Investment Immigration System fits well in the local plans. This visa system enables investors who invest about five million kronor (700 million South Korean won) in purchase of buildings and/or undeveloped land to stay in South Korea to look after their business transactions and subsequently to obtain a permanent residence permit after five years.

Officials engaged in implementing the attraction strategies in Incheon point out that actively supporting local South Korean companies that have joint ventures with foreign companies can be a fast track to attract foreign capital and talents. One successful recent

<sup>85</sup> IFEZ 2016 Investment Benefit Available: <http://www.ifez.go.kr/eng/en/m1/benefit1/screen.do>

<sup>86</sup> As mentioned in general overview, IFEZ was designated over Songdo, Yeongjong, and Cheongna International Cities including Incheon International Airport and Ports.

<sup>87</sup> IFEZ One-Stop Services 2016 Available: <http://www.ifez.go.kr/eng/en/m4/onestop/screen.do>

example is a joint venture between the South Korean company Mando and the German vehicle component manufacturer Brose. The Mandobrose joint venture now manufactures advanced vehicle components in Songdo, including motors for electrical power steering. The company was previously based in the Daegu province in the south-eastern part of the country, but has now moved to Songdo after having considered the benefits that the area offers companies with foreign owners.

As usual with the South Korean administration, there is both a large range of quantitative targets set for IFEZ, and meticulous follow-up of results, for example the number of research centres established, foreign direct investments, and international organisations (the UN for example) that have opened offices in Incheon.

## 9.2 Busan City

In the late 1990s, the government granted increased autonomy to five cities which were designated "metropolitan cities". Busan, Daegu, Incheon, Daejeon, and Gwangju became "metropolitan cities" in 1995, followed by Ulsan in 1997. Busan is South Korea's second largest city with 3.6 million inhabitants and is often identified as a port city as it has the world's fifth largest port, and is the gateway to all of Asia's markets for many companies' products.

Since 2005 Busan has been one of the ten 'Innovation Cities' in South Korea.<sup>88</sup> The government has tried to match the existing strategies and strengths of these selected cities with the relocation of official functions that are related to these areas. Each innovation city has a theme linked with the regional industry and is thus developed as a place with unique regional features. In Busan's case, the city is regarded as the country's hub for maritime issues, including know-how within the shipbuilding industry, the shipping economy, fishing, as well as the film industry. Authorities and state financed research institutes related to shipping, fishing, and film have consequently gradually been relocated to Busan. Every year the city holds one of the world's four largest film festivals – Busan International Film Festival. In addition, Busan has become increasingly known as a destination for international conferences with a range of specialisations. Every year around 50 large conferences are held in the city, which puts Busan at fourth place in Asia and tenth in the world for major conferences.

Busan was an important centre for manufacturing and exports during the country's rapid development and industrialisation in the 1960s and 70s. In 1970 around 30 per cent of the country's total turnover within the manufacturing industry was attributable to Busan. By 2009 the figure had fallen to just 2.9 per cent. Even though its light manufacturing industry and, not least, its port made Busan one of the most important hubs in South Korea, and played a crucial role in the country's industrialisation and economic growth, only one of the country's 100 largest companies currently has any significant manufacturing or head office in the city. Busan's gross regional product (GRP)<sup>89</sup> is in eighth place among the country's cities/regions, and its GRP per capita is ranked as one of the lowest in the country. This can be compared with the seaport and neighbouring city of Ulsan, which has enjoyed an entirely different development since the 1970s and is now ranked in first place in the country for GRP per capita. This significant reduction is primarily due to relocation of manufacturing companies to other regions, a general trend with parts of the

<sup>88</sup> Busan Innovation City 2016 Available: <http://english.busan.go.kr/SubPage.do?pageid=sub020505>

<sup>89</sup> GRDP – Gross Regional Domestic Product

manufacturing industry seeing increased competition from low-income countries in Asia, and an outflow of talents, primarily to the capital Seoul.

It is the latter point in particular that is regarded as the most central challenge for the city. Today the city considers itself to be grappling with a significant shortage of human capital (talent) with skills within Busan's future strategic growth areas such as logistics, film and IT. A striking statistic is that only 53 per cent of academics who graduated in 2012 stayed in Busan.<sup>90</sup> The degree of employment in Busan is also lower than the national average, 56 per cent compared with 60 per cent in South Korea as a whole.<sup>91</sup>

### 9.2.1 Focus, priorities and cooperation in the city/region

In 2014 the city of Busan produced a new five-part strategy to improve the city's competitiveness and job creation. 1) Expansion of public support to create jobs, 2) "TNT 2030 Execution Plan", which stresses the city's competitiveness and job creation through focusing on innovation and R&D capacity, 3) Promotion of global companies and future strategic industries, 4) Promotion of the city's existing knowledge-intensive industries, and 5) Activation of more inhabitants contributing to the local economy. After two strategic reprioritisations ("Core Growth Industry Reorganization") in 2004 and 2009, of which industries should be particularly emphasised, the current focus on five key industries was completed in January 2014: Marine, Convergence Components & Materials, Creative Culture, Bio-health, and Knowledge Infrastructure Services.<sup>92</sup>

The "TNT 2030 Execution Plan" substrategy has a particular bearing on understanding the city's work to increase regional attractiveness. "TNT 2030 Execution Plan" was developed in close cooperation between Busan Institute of S&T Evaluation and Planning (BISTEP)<sup>93</sup>, Busan Development Institute (BDI)<sup>94</sup>, and Busan Techno Park (BTP)<sup>95</sup>. BISTEP was set up in connection with this strategy work in 2014, with the aim of functioning as the control tower for the city's efforts within research and development. It is something of a unique case in that other similar regional institutes have a considerably wider remit to act as consultancies to the local municipality, while BISTEP focuses exclusively on R&D and can be likened to the Korea Institute of S&T Evaluation and Planning (KISTEP), which functions at national level. Busan Techno Park was established in 1999 as one of the country's 18 technology parks, and has subsequently grown in stages. Today the technology park contains several different business clusters, for example within component manufacture and marine technology.

The name TNT2030 refers to retaining, developing and attracting more talents (TN) and technical know-how (T) to Busan with targets through to 2030, and this ambition constitutes the actual core of the strategy. A number of activities are in progress, though several are still at an early stage and not public, which can be categorised as follows<sup>96</sup>:

<sup>90</sup> Busan City TNT 2030: 2015 Development Planning and Strategy (only Korean)

<sup>91</sup> KOSIS 2016 available: [http://kosis.kr/statHtml/statHtml.do?orgId=101&tblId=DT\\_1DA7014&conn\\_path=I2](http://kosis.kr/statHtml/statHtml.do?orgId=101&tblId=DT_1DA7014&conn_path=I2)

<sup>92</sup> Busan City 2014 Busan's Key Growth Industries. Available:

<http://english.busan.go.kr/SubPage.do?pageid=sub0503>

<sup>93</sup> BISTEP 2016 Available: [http://www.bistep.re.kr/sub\\_01/sub\\_03.do](http://www.bistep.re.kr/sub_01/sub_03.do)

<sup>94</sup> BDI 2016 Available: <http://eng.bdi.re.kr/main/>

<sup>95</sup> BTP 2016 Available: <http://eng.btp.or.kr/>

<sup>96</sup> Busan City 2015 TNT2030 Execution Plan. Available:

[http://www.busan.go.kr/Page.bs?parcode=MNU\\_00000000064&prgcode=CMS\\_00000019156](http://www.busan.go.kr/Page.bs?parcode=MNU_00000000064&prgcode=CMS_00000019156)

1. Create a baseline for the current situation. Analysis is performed of the actual situation for existing technically advanced actors in the city within trade and industry and research, which needs and challenges they have, and how they have derived benefit from national and local support options within innovation.
2. Create concrete action plans to increase the pool of talent in Busan. The measures should specifically increase R&D capacity in both public and private actors, and particularly in relation to international industrial trends.
3. Create projections for how different initiatives within strategy will influence the city's future workforce and economic position.

The city of Busan has also announced a number of quantitative objectives linked to this strategy with milestones for 2018 and 2030. One objective is for the city to be ranked in at least eighth place within technological/scientific capacity in South Korea by 2018 and fourth by 2030. As a point of reference, Busan was ranked as the 13th city in 2013. Another objective is to increase R&D investments to ten billion kronor (1.5 billion South Korean won) by 2018 and 20 billion kronor (3 billion South Korean won) by 2030 from the current level of about seven billion kronor. Objectives have also been put in place in terms of the number of masters and doctoral degrees awarded, and to increase the number of technology-based start-up companies from 500 in 2012 to 2,000 in 2018 and 10,000 in 2030.<sup>97</sup>

### 9.2.2 Activities

One concrete activity to enhance the city's attractiveness is the project to renew the cityscape. One example is the so-called Second Centum City, a refurbishment and development of the city's port area. The ambition for the industrial part of the area is to promote convergence between the ICT, vehicle, and shipbuilding industries through locating these types of companies together in one area and linking the entire area together using new information technology. Modern solutions such as smart street lighting, smart electricity grids and advanced coordination of transportation in and out of the area are currently being introduced. The old factories in the area have not been demolished, but have rather as far as possible been converted into housing and office premises, these too are being connected with new ICT solutions. There is also room in the area for a large shopping district, including the world's largest department store – Shinsegae. The plan is for the new part of the city to accommodate about 1,400 businesses. In total some three billion kronor is expected to be invested in the project from the city and the private sector.

Busan is also investing in a substantial amount of new research infrastructure in order to attract highly skilled human capital and hopefully to agglomerate companies that can derive benefit from advanced research.<sup>98</sup> The city has provided support for expansion of cloud services and data storage infrastructure, which has led to the construction of one of South Korea's largest data centres in Busan and to the city also actively marketing itself as an attractive location for large server halls for data storage. Since 2015, the city has also been involved in the construction of several ICT test beds and demonstrator facilities for the internet of things and other purposes. Cluster activities include a "Convergence Industry Cluster" that was set up in 2011. The city is in final negotiations with the national

<sup>97</sup> Ibid.

<sup>98</sup> Invest Korea Future Strategic Industry and New Growth Industry Busan Available: [http://www.investkorea.org/busan\\_en/industry/rnd.do](http://www.investkorea.org/busan_en/industry/rnd.do)

Electronics and Telecommunications Research Institute (ETRI) to commence construction of a branch in Busan. A research nuclear reactor has been built in order to attract research within radiation medicine, and a research centre for radioactive isotopes is expected to be completed in 2019. Other examples of research facilities that are planned are within robotics, bioenergy and marine technology.

As with other cities in the country, there is often potential to offer tax relief and other financial incentives for companies and organisations that move in, particularly if they can be directed towards the local economic free zone of Busan-Jinhae Free Economic Zone (BJFEZ).<sup>99</sup> The city's marketing of these opportunities, which has been conducted since 2004, has been intensified in recent years. Examples of incentives are 30 per cent subsidies for land/property purchases and 14 per cent for investments in machinery and other equipment for selected knowledge-intensive industries.<sup>100</sup>

Finally, Busan would like to use its international networks with twinned cities and other contacts in the public sector to a greater extent than previously to help in connecting its clusters initiatives with the rest of the world. As South Korea's second city, and traditionally known as an important port city and industrial centre, it is relatively easy for Busan to make contact with other large cities in Asia. For example, during 2015 Busan initiated discussions with Shanghai regarding promotion of the robotics industry. If these discussions go well, these two cities will start promoting exchanges and collaboration within robotics research and technological development. Busan City Council regards these local initiatives as important as the central government does not always think along the lines of linking regions/cities in South Korea with regions/cities in other countries. To this end, Busan has also opened offices to represent it in other major Asian cities. An international exchange programme for the city's officials with other Asian cities also constitutes a channel for exchange of information and increased understanding of other markets which might lead to business and foreign direct investments for Busan in the future.

### 9.3 Discussion

In some ways, Incheon and Busan are diametrically opposed examples. While Incheon is home to some of South Korea's newest and most advanced urban development projects in direct connection with the country's dynamic capital, Busan is the country's second largest city, which, after its heyday as the country's industrial heart in the 1970s, is now grappling with shortages of the right labour and a stagnant economy. Despite this, both cities are displaying similar challenges when it comes to attraction of knowledge-intensive enterprises, and also acting resolutely to tackle these challenges. There are more similarities than differences in the strategies and activities that the cities are displaying, and possibly also generalizable conclusions for Swedish cities and regions.

Both cities/regions emphasise the importance of *connectivity*, whether it is the proximity to airports and ports, or a well-developed ICT infrastructure. Incheon is the extreme case as entire districts such as Songdo have developed around one of the world's largest airports and not vice versa. The phenomenon has been called 'aerotropolis'. Incheon, with one of the world's largest airports, and Busan, with one of the world's largest ports, consistently

<sup>99</sup> Invest Korea Tax Support Busan 2016 Available: [http://www.investkorea.org/busan\\_en/guide/incentive01.do](http://www.investkorea.org/busan_en/guide/incentive01.do)

<sup>100</sup> Invest Korea 2016 Busan to Provide Various Incentives to Newly Established, Expanded or Relocated Companies Available: [http://www.investkorea.org/busan\\_en/archives/news.do?mode=view&articleNo=463607&article.offset=0&articleLimit=10](http://www.investkorea.org/busan_en/archives/news.do?mode=view&articleNo=463607&article.offset=0&articleLimit=10)

make reference to the possibility of accessing international markets quickly and effectively. Incheon shows that proximity to a big city entails both opportunities and problems in the long term. The proximity enables the city to derive benefit from the larger city's resources in the form of qualified labour. At the same time, it is more difficult to create an individual identity, and also to retain people after the working day is over and the commuter trains have stopped running.

Both the cities/regions *base themselves on local existing strengths* (path dependency) and take these as starting points for future growth industries. Incheon chose to prioritise its existing industrial base within biotechnology, but simultaneously to try to introduce new ICT companies that can complement them and create completely new business areas. Busan is conducting a similar manoeuvre with its existing know-how within transportation and logistics.

*Economic incentives* are deemed to be an important component in attracting knowledge-intensive industry. Both cities are trying to maximally utilize the economic incentives at a local level that national policy often makes available in relation to economic free zones. Even though administration of these programmes takes place at national level, resources are allocated locally to inform interested companies and investors of them, and also to help them throughout the application process. From the entrepreneur's perspective, these services, hands-on help to disentangle the complicated national rules in relation to visas and other paper work for example, give the impression that the cities really are on the entrepreneur's side.

The cities have high ambitions when it comes to *internationalisation*, but this is primarily directed at a fast growing Asia rather than the EU or North America. Incheon has again used its strategic location in close proximity to one of the world's largest airports to attract a number of heavyweight international organisations such as the UN, Green Climate Fund, and the World Bank, and to thereby create visibility and legitimacy. As a large city in Asia, Busan has more effectively started to use its existing contacts with officials in other cities in the region to help its industry and promote new collaborations.

Incheon and Busan are responsible for marketing their own cities, and are not reliant on national organisations to do it. At the same time, both cities are good at enlisting help from, for example, the Korea Trade-Investment Promotion Agency (KOTRA) when the opportunity arises. Representatives from Incheon and Busan often accompany KOTRA to trade fairs throughout the world, but have simultaneously invested in their own offices to represent them in strategic markets throughout Asia.

*Urban planning and livability* are consistently central concepts which go hand in hand, whether in the form of smart urban projects with new infrastructure for the internet of things, or massive investments in refurbishment of old industrial and dock districts. There seems to be a trend to create multifunctional cities with no single group having too much space and thus creating an imbalance. Songdo in Incheon works continually with focus groups with the city's foreign residents who are asked to give feedback on what can be improved.

*Strategies and follow-up.* Work on strategy takes place locally on a continuous and proactive basis, with strategy documents published, and concrete quantifiable targets set and subsequently followed up. This work has clear connections to the national political five-year cycle, but nevertheless displays both a more long-term approach and independence. Local strategies in both cities to increase attractiveness have proceeded with a fair

degree of stability even during changes of government. For example, Busan has a planning horizon all the way to 2030.

There is a consistent focus on *physical infrastructure*, whether it concerns a new port (Incheon), nuclear reactors for research purposes (Busan), or business parks (both cities). These investments are often combined with service functions in order to maximise results (business parks with incubators and accelerators), but the physical location is used in order to try to quickly create agglomerations and critical mass. In some cases this is used to "force" together industries in a single location, such as the new Second Centum City district in Busan, where efforts are being made to bring together players from the ICT, vehicle and ship-building industries and it is hoped there will be convergence effects when these industries come together.



## 10 Japan – Fukuoka and Okinawa/Naha

With a population of 126 million, Japan's economy is the third largest in the world measured in nominal GNP. During the last two decades, economic growth has been low, particularly in relation to the emergence of several other strong economies in Asia. In order to get the economy moving again, the government launched a strategy (subsequently labelled Abenomics) in early 2013 with an expansive monetary policy, a large stimulus package, and the promise of deregulation and structural reforms to increase innovation. Within the framework of Abenomic's structural reforms, the importance of revitalising the country's local economies, and particularly cities, is stressed through promoting the influx of financial and human resources to the benefit of knowledge-intensive sectors.

The Japanese government is prioritising the influx of foreign direct investments (FDI) in Japan. For example, the "Program for Promoting Japan as an Asian Business Center and Direct Investment into Japan" strategy observes that: "Increasing FDI into Japan will help Japan boost its productivity and create employment through the inflow of management resources such as expertise in business management as well as technologies and human resources. The inflow of such funds over the mid to long term is expected to boost the growth potential of Japan, whose population is shrinking and contribute to sustainable economic growth and increasing job opportunities."<sup>101</sup> Under prime minister Abe, the government has initiated an active hunt for free-trade agreements. Examples are the Trans-Pacific Partnership (TPP), Japan-EU EPA, and Japan-China-South Korea FTA. Japan External Trade Organization (JETRO)<sup>102</sup> part of the Ministry of Economy, Trade and Industry (METI) plays a central role both in supporting Japanese companies to increase overseas business, and in attracting foreign capital and know-how to Japan. Several national governmental organisations, such as Japan National Tourism Organization (JNTO), are actors in the "Cool Japan" strategy to promote tourism to Japan through creating the image of Japan as a place with a large cultural offering and attractive social values.<sup>103</sup>

As a part of Abenomics, since 2013 the Japanese government has introduced so-called National Strategic Special Zones (NSSZ) with a direct bearing on regional attractiveness.<sup>104</sup> Six cities and/or areas have been selected: Tokyo Metropolitan Area, Kansai Area, Niigata City, Yabu City, Fukuoka City, and Okinawa/Naha City. In each strategic zone the local municipality(-ies) is/are expected to institute vigorous initiatives themselves in order to optimally exploit their benefits in the form of tax relief etc. as an individual strategic zone. This has thereby paved the way for a certain amount of flexibility in terms of local initiatives, particularly with regard to attractiveness in these zones. Successful initiatives are subsequently expected to spread to other zones and Japan as a whole.

### 10.1 Fukuoka City

With 1.5 million inhabitants, Fukuoka City is the largest city on Kyushu, which is one of Japan's four large islands.

<sup>101</sup> Cabinet Office 2011 Program for Promoting Japan as an Asian Business Center and Direct Investment into Japan Available: <http://www.invest-japan.go.jp/pdf/en/program/program.pdf>

<sup>102</sup> JETRO 2016 Available: <https://www.jetro.go.jp/en/>

<sup>103</sup> JNTO 2016 Available: <http://www.jnto.go.jp/jpn/>

<sup>104</sup> Prime Minister's Office 2015 Council on National Strategic Special Zones Available: [http://japan.kantei.go.jp/97\\_abe/actions/201510/20article1.html](http://japan.kantei.go.jp/97_abe/actions/201510/20article1.html)

Fukuoka City has succeeded in creating a large-scale industrial cluster within information and communication technology (ICT). Over 2,000 companies operating within software development or digital content have now been set up or have moved into the city and its surroundings. The number of ICT companies moving to Fukuoka is still increasing every year. A total of 114 ICT companies relocated to the city between 2008 and 2014. Among these companies are regional offices for several large ICT companies including Yahoo, LINE Corporation and the successful Japanese gaming company Gumi. A similar inward migration can be seen in other industries, with the entire island of Kyushu becoming a popular choice for foreign companies to establish themselves in Japan. About 150 foreign companies have established themselves on Kyushu with about 40 per cent of these from Europe and 40 per cent from North America, with increasing numbers for China and South Korea. The proportion of start-up companies in relation to all companies was some seven per cent in 2013, with an upward trend. The city has set a target of raising the figure to 13 per cent before 2018. Another target is to increase the number of individual start-ups that relocate to Fukuoka every year from 43 new companies in 2012 to 55 by 2018.

As a nation, Japan has an ageing and declining population, however, together with Tokyo and Okinawa, Fukuoka stands out in this respect as its population is expected to continue growing until at least 2035. Compared with most other cities in Japan, Fukuoka's workforce is well-educated. With a total of eleven universities located within the city's boundaries, the city of Fukuoka has the third largest number of universities relative to the population among the large cities in Japan. A total of about 30,000 students read science and technology, with about 7,000 graduating each year. The number of university students constitutes 5.3 per cent of the total population of 1.5 million inhabitants in the city, the second highest of Japan's large cities. While companies in many other parts of Japan are struggling to find sufficient talented young people, companies in Fukuoka regard recruitment as considerably less problematic.

The city is perceived as one of the most international in Japan. One way to exemplify this is the preparedness to deal with non-Japanese speaking foreigners in relation to schooling and healthcare. Fukuoka City International Association, with funding from the city, provides multilingual support and services so that foreign inhabitants can communicate with authorities and otherwise cope with everyday life.<sup>105</sup> Around 200 medical institutions in Fukuoka City offer medical services in foreign languages, and patients can otherwise obtain help over the phone from Fukuoka Medical Interpretation Service.<sup>106</sup> There are two international schools in Fukuoka where foreign children are taught in English, with programmes to learn Japanese.

Another example is language support via the city's Foreign Investment Promotion Center, specifically formulated for foreign entrepreneurs and investors and offering a range of consultancy services in English and Chinese in connection with setting up companies in Fukuoka City.<sup>107</sup> Partially funded by the city, the Fukuoka International Business Association (FIBA) provides foreign business people with opportunities for networking.

<sup>105</sup> Fukuoka City International Foundation 2016 Available: <http://www.rainbowfia.or.jp/en/>

<sup>106</sup> Fukuoka Medical Interpretation Service 2016 Available: [http://asian-msc.jp/translation\\_en.htm](http://asian-msc.jp/translation_en.htm)

<sup>107</sup> Foreign Investment Promotion Center 2016 Available: <http://asiabiz.city.fukuoka.lg.jp/advance/?type=consult&lang=en>

### 10.1.1 Focus, priorities and cooperation in the city/region

Even though a cluster of ICT companies started to take shape in the city as far back as the early 2000s, it was only after the current mayor, Takashima, was appointed in 2010 that the city put the current high priority on activities to increase the city's attractiveness for both foreign and domestic companies. Since then, Mayor Takashima's vision for the city – "Startup City Fukuoka" - has led to a wealth of activities and plans to enhance the city's attractiveness.

The strategy work, which is not actually compiled or documented in a coherent plan, culminated when Fukuoka was designated one of Japan's National Strategic Special Zones in March 2014. The official title of the zone in Fukuoka is "National Strategic Special Zone for Global Start-ups and Job Creation". As the name suggests, the aim of the strategic zone is to increase globalisation as support for local entrepreneurship, which in reality in Fukuoka entails a focus on companies within knowledge-intensive industries that create jobs and open up new markets.

Today the city's strategic work is characterised by the fact that the city maximises the local benefits of being designated a National Strategic Special Zone (NSSZ). The focus is on lowering thresholds for entrepreneurs to invest in an establishment. Besides driving through a number of special cases to simplify rules in relation to national institutions such as Japan's tax and migration agencies, the city has simultaneously developed a number of peripheral services that will simplify establishment and everyday life for foreign companies too, above all to minimise the language barrier in contacts with authorities. The city has not been afraid to be in the forefront in Japan in easing rules on both migration and taxes. It seems to be in the government's interest to allow Fukuoka to be a sandbox where partially new policies can be tested to subsequently proceed with changes on a national level as well.

The term 'livability' is central to just about all the city's strategies, and definitely when it comes to its thinking concerning the city's attractiveness. In Japan, Fukuoka is known as a compact and functional city. In distinction from the larger metropolitan areas in Tokyo and Osaka, shops, recreational areas, restaurants, sports and cultural facilities and the sea are a short distance from each other in Fukuoka's housing areas. The most important areas in the city of Fukuoka are linked with each other through networks of public transport including underground railway and buses. The cost-of-living is relatively low, as are office rents. The average office rent in Fukuoka is less than half that of the Tokyo area. This is a benefit when it comes to not just attracting Japanese start-up companies to Fukuoka, but foreign ones as well. In addition, there are several state-run business incubators in Fukuoka City that can offer offices free of charge or at a low price, at any rate for a limited period. The British magazine *Monocle* listed Fukuoka city as number ten in its 2014 survey of the world's most habitable cities.<sup>108</sup>

Fukuoka Airport is located just five kilometres from the central parts of Fukuoka City (10 minutes by underground), and the city centre is nine km from Hakata Port.<sup>109</sup> The airport has numerous international flights, and the Finnish airline Finnair is starting direct flights from Helsinki this year. Fukuoka Airport is ranked as Japan's fourth largest airport and connects the city with 27 cities in Japan and 22 cities abroad (primarily in China,

<sup>108</sup> Highsnobiety 2015 Available: <http://www.highsnobiety.com/2014/08/22/monocles-2014-quality-of-life-survey-lists-the-top-25-most-liveable-cities/>

<sup>109</sup> Hakata Port 2016 Available: <http://port-of-hakata.city.fukuoka.lg.jp/english/index.php>

South Korea and the Southeast Asian capital cities). There are several flights a day to larger cities such as Seoul, Shanghai and Taipei. The airport makes a significant contribution to the image of Fukuoka as a location to expand companies that want to reach the Asian market as a whole.

Plans are well advanced to use smart urban planning to increase the city's population density, and achieve a critical mass of commercial properties in the city centre. The most important principle is to build upwards and increase the commercial areas without losing the benefits of a compact city centre and the pleasant impression of low buildings that is viewed positively by many visitors and residents. In this context, the city's otherwise dynamic centrally located airport, sets certain obstacles in the form of restrictions on higher buildings underneath the approach route.

### 10.1.2 Activities

Assisted by its status as a national strategic special zone, the city of Fukuoka has engaged in a number of initiatives to make the city more attractive for knowledge-intensive sectors. Five examples stand out in our interviews with the city's officials and business owners.

Firstly, with the aim of promoting an influx of competitive foreign businesses within knowledge-intensive activities, since December 2015 the city has been permitted to use a special visa procedure that has been given the name of "Startup Visa". Foreign entrepreneurs who want to establish themselves in Japan must usually meet a strict set of conditions before the establishment can take place. Under "Startup Visa", for six months, Fukuoka city and the national Migration Bureau can permit a foreign business owner to start establishing a company within certain specific knowledge-intensive sectors including ICT, solely with a visa as "Business Manager", without all these criteria having to be met. After six months, a check is made of what progress has been made and whether a permit to continue running the company can be granted. This makes it easier for foreigners to set up companies in Fukuoka than elsewhere in Japan.

Secondly, in 2014 the city established the so-called Startup Café in a large book/record shop in the centre of the city. Startup Café acts as a physical meeting place between business owners and investors, a place to exchange experiences with other entrepreneurs, and to ask experts for advice. At least one multilingual 'concierge' staffs the Startup Café and can provide information and consultation on business plans and opportunities during ordinary opening hours. Lawyers and tax accountants are on site on Thursdays for consultations on legal issues surrounding setting up companies, intellectual property rights etc. Startup Café also organises seminars, matching, pitching ideas, and social events where entrepreneurs can meet venture capital companies, major established companies, and future business associates. If necessary, officials from Fukuoka city can provide individual support to foreign business owners who want to apply for, or renew, their Business Manager visa. All these services are free for users.

Thirdly, a new urban planning initiative called "Tenjin Big Bang" is under way in the city to benefit new enterprise. There is a rapidly growing need for new office premises in Fukuoka, particularly in the central district of Tenjin, which is already the largest commercial area in the city. One solution is to refurbish and extend existing buildings and construct new stories, but thus far this has been difficult due to legislation on the height of buildings close to approach routes to airports. As stated, Fukuoka Airport is very centrally located. To circumvent this problem, the city is now trying to gain exemption from national legislation, which it considers has too great a safety margin. It looks like the

initiative will be successful, and will mean that a large proportion of centrally located buildings can be developed, including with the addition of two stories that will be earmarked for office premises. According to calculations by Fukuoka Asian Urban Research Center, the result will be an increase in total floor space in the Tenjin district of 1.7 times, the creation of 57,200 new jobs, and that direct investment in construction will contribute 21 billion kronor (290 billion JPY) to the economy. When the reconstruction is completed and the buildings are occupied, the same calculations indicate that the estimated annual positive effects on the city's economy will amount to 63 billion kronor (850 billion JPY).<sup>110</sup>

Fourthly, after strong lobbying from Fukuoka in particular, in December 2015 the Japanese government decided to introduce tax cuts for all start-up companies within the country's national strategic special zones. The tax relief applies to certain specific industries such as the internet of things and medical technology, and gives companies the opportunity to deduct 20 per cent of taxable income for five years, resulting in a rate of effective corporation tax of around 24 per cent. This should be put in relation to total (national and regional) corporation tax in Japan of about 32 per cent, one of the highest within the OECD and considerably higher than several Asian neighbours (China and South Korea have about 25 per cent and Singapore 17 per cent). Even though this now applies to all the country's zones, the initiative came from Fukuoka City first. In addition to this, there are a number of different grants for companies within knowledge-intensive sectors to establish a new office in Fukuoka, including for land purchase and construction (in certain areas such as Fukuoka Island City<sup>111</sup> the city can contribute up to 30 per cent of the land price and 10 per cent of buildings/equipment up to a level of 220 million kronor (3 billion JPY).

Fifthly, and with particular emphasis on the IT industry, together with Fukuoka City's Content Business Promotion Committee<sup>112</sup>, Fukuoka's Prefectural Government has undertaken to support the ecosystem around the Ruby programming language that has been developed in Japan. The initiative is considered to have contributed positively to boosting the image of Fukuoka as one of Japan's leading ICT clusters.<sup>113</sup>

## 10.2 Naha city

The Prefecture of Okinawa, with its largest city of Naha, is an island located in the most south westerly part of Japan with a population of 1.4 million inhabitants.

Okinawa, with a history and culture that is distinctly different from Japan, has been notorious for having Japan's highest employment rate (5 per cent in December 2015), a limited internal market, and a geographic location that is remote from the bulk of Japan. The average individual annual income on Okinawa is just 70 per cent of the national average. However, in the last five years, Okinawa's economy has expanded faster than the rest of Japan. The independent think tank, Japan Center for Economic Research, has projected that Okinawa's real economic growth between 2007 and 2020 will be the highest of all Japan's prefectures.<sup>114</sup>

<sup>110</sup> Fukuoka Asian Urban Research Center 2016 Available: <http://urc.or.jp/about-urc?lang=en>

<sup>111</sup> Fukuoka Island City 2016 Introduction Available: <http://island-city.city.fukuoka.lg.jp/> (Japanese only)

<sup>112</sup> Digital Fukuoka 2016 Available: <http://www.digitalfukuoka.jp/>

<sup>113</sup> Interview with Mr Kotaro Imi, Planning Counsellor, New Industries Promotion Division, Fukuoka Prefectural Government on January 20<sup>th</sup>, 2016.

<sup>114</sup> Japan Center for Economic Research 2016 Available: <http://www.jcer.or.jp/eng/index.html>

The major reason for the positive change is that the tourist trade, the principal driving force for Okinawa's economy, is growing. A record of 7.2 million tourists, one million of whom were foreigners, visited Okinawa in 2014, contributing 40 billion kronor (JPY 540 billion) to the local economy. The number of tourists has more than tripled in the last three decades.

Okinawa has long been an attractive place for Japanese people from all over the country to move to on retiring. Naha airport mainly has direct flights to other Japanese cities and cities in Southeast Asia, for example Taipei, Seoul, Shanghai, and Peking. There are no direct flights to Europe or the USA. Okinawa is home to the largest American military base in Asia with over 50,000 American citizens (including civilians employed by the military). This means that there is a large amount of housing for American soldiers on the island, as well as an American school, a hospital where patients can get help in English, and other institutions that are accustomed to communicating with foreigners.

Okinawa's population has the youngest average age in Japan, and also the highest birth-rate, which is helping to ensure the workforce for the future. Companies in many other parts of Japan are struggling to find enough young employees, while it is relatively easy for companies in Okinawa. Labour costs in Okinawa are 30 per cent lower than in Tokyo.

It is now high on the political agenda to furnish this growing local labour force with skills, particularly within ICT, to be better able to attract business owners and investors. Despite Okinawa not having any of Japan's top universities, there are currently six universities on the island that have programmes within ICT. The largest is the University of Ryukyu with about 1,400 students within information and communication technology, with a further 13 vocational colleges with ICT programmes totalling about 1,000 students.<sup>115</sup>

### 10.2.1 Focus, priorities and cooperation in the city/region

Okinawa and Naha city have primarily chosen to build further on their existing strengths and additionally promote the tourist industry. This prioritisation is strengthened by the fact that the island has been classified as a National Special Strategic Zone with a specific focus on international tourism. Focusing on the term "livability" is natural for Okinawa with its subtropical climate and its unique culture and history. In parallel with promotion of tourism, Okinawa has prioritised promotion of logistics, biotechnology, and ICT in its strategies. In terms of logistics, together with the airline All Nippon Airways, in 2009, Naha Airport invested in a new international freight hub, with 120 freight services a week to eight cities in Asia including Hong Kong and Shanghai. Of these three strategic priorities, the logistics area has the least characteristics of a knowledge-intensive sector, while the initiatives within biotechnology on Okinawa are still in an early phase of development and have not yet produced any clear results. Okinawa Institute of Science and Technology (OIST) was founded in 2011, primarily to pursue basic research within life sciences, but also with the ambition of helping put Okinawa on the map within biotechnology. The hope that the basic research findings will contribute to a cluster of companies within biotechnology has not yet been fulfilled.

The investment in the ICT sector has been more successful. ICT is a priority for Okinawa as this industry can help to overcome barriers in the form of geographic distance to Japan's main islands and other economic centres in Asia. This is based on the assumption that a successful ICT industry need not necessarily be located in close proximity to its customers.

<sup>115</sup> University of Ryukyu 2016 Available: <http://www.u-ryukyu.ac.jp/en/index.html>

The ICT sector in Okinawa has experienced strong growth in recent years, and many ICT companies have relocated to Okinawa from other parts of Japan. Between 2000 and 2015, 346 ICT companies moved to Okinawa. These companies employ about 26,000 people, which is three times as many as were employed in 2000. The increase is even more interesting in that during the period Okinawa has also ascended in the value chains within ICT, prior to 2000 the lion's share of ICT companies operated as support centres, while today's companies have considerably more varied operations, including advanced software development.

This development must be partially attributed to Okinawa's active local policy and promotion to develop the ICT industry in particular. With advice and support from the government, since the late 1990s, the prefecture and the city of Naha have formulated a clear policy to attract ICT companies to the island. In 1998, the local governors produced a strategy "Okinawa Multimedia Island Concept" to develop a cluster of ICT companies as a supplement to the revenues from the tourist industry. The plan included an infrastructure project where the island was linked with the Asian mainland via underwater optic fibre cable. Before this, companies on Okinawa needed to switch traffic over the Japanese mainland to send data to Asia. The underwater fibre (Okinawa Global Internet Exchange) made direct communication possible with a faster speed and less delay.

In 2002 Okinawa presented a ten-year strategy called "Okinawa ICT Industry Promotion Plan" to establish an ICT industry cluster with the objective of making Okinawa an international ICT hub in the Asia-Pacific region. This was to take place through upgrading existing companies and attracting new companies to Okinawa, developing and ensuring advanced human resources, and strategically developing a better ICT infrastructure. In 2010 the strategy was subsumed in the new strategy "Okinawa 21st Century Vision", at which time it had had a total budget of some three billion kronor (42 billion JPY). The ten-year plan commenced in 2012 and the ICT industry is represented in "Okinawa Smart Hub Concept" as a leading new industry to create employment and strengthen local companies on the island.

### 10.2.2 Activities

A consistent track in implementing the strategies has been to create financial and fiscal incentives to attract companies, enterprising individuals and investments, both from Japan's major cities and from abroad. It has also entailed concentrating knowledge, and creating beneficial conditions for businesses to establish themselves, through building business parks and other physical facilities. There is a clear focus on ICT in these activities.

For some selected sectors, including ICT, several alternatives to tax concessions are offered, depending on type of investments, but with the focus on reducing the effective rate of corporation tax. For example, 40 per cent of a company's revenues may be recognised as a deductible cost over a ten-year period after establishment. In addition, there are a number of grants relating to purchase of land and/or new construction of properties.<sup>116</sup>

One example of an infrastructural investment to increase agglomeration is the Future International City of Finance park which was opened in 2007 in Nago City after the city was designated by the government as a "Special Financial Zone" in 2002. The aim of this

<sup>116</sup> Okinawa Prefecture 2016 ICT Industry Business Establishment Guide Available: [http://www.pref.okinawa.lg.jp/site/shoko/johosangyo/documents/2015guide\\_en\\_1.pdf](http://www.pref.okinawa.lg.jp/site/shoko/johosangyo/documents/2015guide_en_1.pdf)

park is to function as a platform for start-ups within the areas of finance, IT and Fintech (financial technology). The park offers a mixture of financial incentives for establishment together with subsidised consultancy. By 2015, 41 ICT companies had established themselves in the park and created around 1,000 jobs.<sup>117</sup>

In terms of attracting knowledge-intensive foreign companies, another example stands out. "Okinawa IT Shinryo Park" was established in 2008 as a project where Okinawa wanted to create a stronger anchor for its IT industry, and simultaneously a bridgehead to expand contacts, primarily with other Asian countries (the word "Shinryo" alludes to "bridge to Asia"). In Okinawa IT Shinryo Park a number of support functions (The Core Function Support Facilities, the Corporation Location Promotion Center, the Asia IT Training Center, the ICT Equipment Testing Facility and, the Corporation Concentration Facility) serve the companies that are established in the park. These functions are there in order to meet companies' needs such as further training of personnel and facilities and know-how in relation to testing hard- and software. Thus far, 30 ICT companies have moved to IT Shinryo Park from other parts of Japan, and the long-term objective is to concentrate about 8,000 jobs in the park.

Having developed these services and achieved a certain critical mass of companies on site, the park is now increasing its activities to make better international links in Asia. There are plans in place to expand the IT training operation, with companies from throughout Asia able to send their employees on courses. The park has also intensified its relations with the university on Okinawa and in several neighbouring Asian countries, in order to start attracting more talents within the ICT field.

The concept of "near shore development" has been found to be particularly suitable for several ICT companies in the park. One example is Okinawa Software Center (OSC), which was set up on the initiative of the Okinawa Prefectural Government in connection with the park being established in 2008.<sup>118</sup> OSC is a collaboration between 44 ICT companies from Okinawa, chiefly with large Japanese companies in the country's major cities as customer base, and it can be viewed as a pilot scheme for how IT Shinryo Park might be developed. OSC offers Okinawa as a base for advanced software development with entire teams moving down to the island to collaborate with local ICT companies and renting premises in the park during the course of the project. The idea is that Okinawa's still relatively small ICT companies will be able to benefit from larger economies of scale, as well as visibility, through cooperating in a virtual organisation. OSC is also planning to invite Asian ICT entrepreneurs and foreign start-up companies to affiliate themselves and use this model or platform within the near future.<sup>119</sup>

In line with the strategies previously mentioned, 21st Century Vision and the Okinawa Smart Hub Concept, Okinawa has placed particular focus on promoting the island as a base for data storage in order to manage increasing demand within cloud computing. One example is the prefecture's investment in a server hall/data storage centre called Okinawa Data Center in the vicinity of Shinryo Park.<sup>120</sup> It is interesting that in the marketing of this (and other) data centres, Okinawa points out that the islands have the lowest risk in Japan of major earthquakes, and that Okinawa has one of the most stable situations for electricity

<sup>117</sup> Nago Development Authority 2016 Available: <http://nda.city.nago.okinawa.jp/public/>

<sup>118</sup> Okinawa Software Center 2016 Available: <http://www.osc-corp.co.jp/modules/pico/> (only in Japanese)

<sup>119</sup> Interview Mr Yoshihito Miyagi, Managing Director, Okinawa Software Center 21 January 2016.

<sup>120</sup> Okinawa Data Center 2016 Available: <http://www.okinawa-dc.co.jp/en/about-oci/>



supply of all of Japan's prefectures. Okinawa is the only region in Japan that is completely free of legal restrictions on energy consumption.

The prefecture has also succeeded in getting three major Japanese ICT companies (NEC, IIGA, and NTT Communications) to invest together in the so-called Okinawa Open Laboratory which opened in Shinryo Park in 2013. This development centre is specifically engaged in developing programmes for 'software defined networks' and cloud services. The development is based on open innovation, with the results published openly for the general public and other companies to utilize. Developers from a number of companies, including foreign ones, have been invited to participate in the work, and Okinawa views this centre as an additional platform in enabling it to attract talented foreign software developers and entrepreneurs to the island in the long term.

### 10.3 Discussion

Fukuoka and Okinawa/Naha share a number of positive features. They are cautiously anticipating continued growth in population and that it will also be possible to provide the relatively young workforce with the right education to drive the economy in the future. They both have the ambition to be able to strengthen their function as both gateway to Asia for Japanese companies, and the reverse to Japan from the island state's neighbouring countries. Both cities/regions have also already been successful in attracting a significant influx of enterprises within the knowledge-intensive ICT industry, which can serve as a source of inspiration for Swedish cities and regions too.

Both cities/regions are located a relatively long way from Japan's industrial and political centres, but have succeeded in their *connectivity* through airports and IT infrastructure. Both Fukuoka and Okinawa have international airports with a large number of routes to the rest of Asia, which contributes to the cities' attractiveness when it comes to proximity to the rest of the world. The major expectations that Fukuoka is exhibiting in relation to its first direct route to Helsinki illustrates how important this form of connectivity is. Okinawa would not have succeeded in developing an industry within data centres and financial technology without the underwater fibre that connects the island with the rest of Asia.

*Economic incentives* are deemed to be an important component in attracting knowledge-intensive industry. Both cities/regions are trying to maximally utilize the economic incentives at a local level that national policy often makes available in relation to economic free zones. Both cities are also skillfully lobbying the national administration. Fukuoka has gone for simplifying the rule and making tax concessions, which started as a special case for the city, but which have subsequently also had an impact at national level. Okinawa continues to enjoy a special position in relation to the central government, which compensates the island in various ways for the large American military presence.

The cities/regions have high ambitions when it comes to *internationalisation*, but this is primarily directed at a fast growing Asia rather than the EU or North America. It does not just concern excellent social services for foreigners relative to the rest of Japan in the form of schools and hospitals. It also due to the fact that they have been successful in deriving benefit from their long history as two of Japan's traditional contact points with the rest of the world, with influences and people from neighbouring countries having helped to create the diversification that is now a strength in relation to the wider attraction.

Both cities/regions are working actively to build their own networks and with their *own marketing*, often, but not always, with the assistance of national support organisations such

as Japan External Trade Organization (JETRO). The cities have invested in their own offices in several of the neighbouring countries. It is illustrative that the cities also have active offices to represent them in the capital Tokyo, which can act on behalf of the cities.

*Livability* is a consistent thread throughout all of Fukuoka's and Okinawa's strategies. Even though lower land prices and office rents are used as arguments, it is the overall picture of good transport systems, accessibility, and the chance for a good balance between work and leisure time that is regarded as creating the most powerful force of attraction. Fukuoka is implementing a major project to make the city centre more compact and dynamic through building upwards. With its subtropical climate and unique culture, Okinawa has attractive natural conditions.

The cities/regions are continuing to use *physical infrastructure*, in part to create meeting places for exchange of ideas, and in part to create agglomeration and critical mass in an industry. Okinawa has several business parks with various specialisations, facilities, and service functions, depending on which industries they house. The island's investments in modern data centres are used as a focus point to attract new types of ICT companies. Fukuoka has joined together with actors from the private sector to create a physical meeting place in the form of a centrally located café which acts as an interface between city, business owners and investors.

Besides direct industrial support, both cities are engaged more indirectly in *developing innovation ecosystems*. Functioning ecosystems presumably reduce the sensitivity of an industry to temporary setbacks, help to put cities on the map within a particular area of expertise, and contribute to companies and people choosing to stay in the city/region. For many years, Fukuoka has supported the development of the programming language Ruby, which was developed in Japan and has given the city international visibility. Okinawa has contributed to creating ICT centres focussed on open innovation, and a virtual commercial platform where small local ICT companies can come together and cooperate to resolve large commissions for clients.

## 11 Overall discussion

A discussion is taking place in Sweden regarding what creates attractiveness and what the challenges for Swedish cities and regions are. At national level there is *The national strategy for sustainable regional growth and attractiveness 2015–2020*, which provides guidance for initiatives with the aim of creating opportunities for everyone to live, develop and run companies throughout the country. In the strategy the government presents four priority areas for work on regional growth: (1) innovation and enterprise (2) attractive environments and accessibility, (3) skills provision and (4) international cooperation.<sup>121</sup> The strategy aims to use a forum to develop and strengthen the tools available within regional growth policy and develop the dialogue between the national and regional level.

IVA's project, "Attractiveness for sustainable development", is based on seven areas that are regarded as important for Sweden's future attractiveness and competitiveness: education, research, infrastructure, housing and living environment, cultural output and conditions for enterprise. The seventh area, public sector, cuts across all these areas.<sup>122</sup> The project's conclusion is that there are four areas that are of particular importance to increase regional competitiveness and attractiveness; specialist fields that are internationally competitive and where a region or a country has cutting-edge academic expertise and critical mass combined with a good commercial capacity; the support system of public initiatives is expanded to stimulate innovation and corporate development; the strategic business analysis is improved; and new collaborative models and creative leadership.

A study of Stockholm by Brookings in 2015 was based on five themes: trade, innovation, talents, infrastructure and governance.<sup>123</sup> Recommendations to develop the city were presented for each of these themes. The recommendations are based on an analysis of the prerequisites for successful trade and industry and an attractive city. For the theme of trade, the recommendation is to focus on getting more companies to export. For the second theme of innovation, it is recommended that the innovation ecosystem is expanded to include more small and medium-sized companies. The third theme, talents, indicates the opportunities that immigration entails, with integration, education and employment being important to meet the challenge of an increasingly aging population. Within the theme of infrastructure, the emphasis is on the shortage of housing as an obstacle in retaining and attracting talents, in that it impedes the development of start-ups and can impair Stockholm's global competitiveness in the long term. For the final theme, governance, taxes and rules for venture capital are highlighted as an area of improvement.

The international case studies presented in the previous sections reveal that these challenges are shared with several other cities throughout the world. We highlight a number of trends and observations that cities and regions are trying to influence in their work to create attractiveness and an innovative environment for knowledge-intensive enterprises.

A general trend, regardless of whether it is in Europe or other parts of the world, is that attractiveness is often supported by economic incentives to increase attraction in relation to other cities both nationally and internationally. However, the balance between general and

<sup>121</sup> <http://www.regeringen.se/contentassets/98919a0ca0f1427491a3eef22a7d177c/a-national-strategy-for-sustainable-regional-growth-and-attractiveness-20152020.pdf>

<sup>122</sup> <http://www.iva.se/projekt/attractiveness-for-sustainable-growth/>

<sup>123</sup> <http://www.brookings.edu/research/reports/2015/11/16-global-stockholm-parilla-trujillo-marchio-kho>

specific instruments varies. Several countries/regions use special economic zones so they can employ tax benefits that deviate from the national norm. There are also sector specific tax incentives to attract specific industries or sectors. Other types of rule changes are also being tested in these zones, for example special visa regulations. Research shows that small but enhanced rule changes can have major effects that are positive in the long-term, which, for example, can lead to better access to housing.<sup>124</sup>

There is a trend of creating completely new towns/town districts or taking measures to recreate existing districts by building a city so as to facilitate more efficient agglomerations of different industries which can thereby generate unexpected synergies and innovation. In planning new districts or restoring old ones, the physical environment can strengthen the agglomeration benefits that are gained from having operations of similar and different characters in close proximity to each other. This is noticeable not least in South Korea, China and Brazil. In *Busan*, South Korea, there is a consistent focus on physical infrastructure. The physical location is used to try to quickly create an agglomeration and critical mass like in the new Second Centum City district in Busan where efforts are being made to bring together players from the ICT, vehicle and ship-building industries and it is hoped there will be positive effects when these industries converge. A new city, Qianhai, is under construction in China, close to *Shenzhen* and with proximity to airports and a wide network of fast trains. The area itself will be divided into three areas, a central business district specialising in advanced services, an area focused on IT and culture and logistics centres, a total of 650,000 workplaces are planned. An old district in *Porto Alegre*, Brazil, is being refurbished, and the plan is for a well-functioning and diverse district where Medical Valley is going to be established. Tax concessions are being used to speed up the process.

The case studies show that there is often consensus as regards policy areas and prioritising which development areas are important and which countries one wants to work on. It is not unusual for the work on attraction to extend over several policy areas that have to act in conjunction in order to produce an effect. On the initiative of the local actors, *Montreal* coordinates all political levels through Montreal international. Montreal International collects ideas for improvement that are formulated and convey them to the relevant decision makers. Ideas are gathered at thematic round table talks which formulate hypotheses on where problems lie and potential solutions. The result is increased political confidence in the proposals that the local environment generates, at the same time as the structured process speeds up the route from idea to initiative. *Porto Alegre* has created a political consensus through combining different political objectives. Medical Valley involves three priority policy areas – digitalisation, urban planning, and health issues – which individually have had difficulties in making an impact. The cooperation agreement surrounding Medical Valley has 250 Brazilian partners to ensure participation and involvement. In *Munich*, with a strong base within the manufacturing industry, the local strategies correspond well with the national policy within Industry 4.0, which facilitates the prioritisation and implementation of initiatives.

What we can observe on the basis of the case studies is that the majority of cities have a clear strategy for what they want to achieve and with whom. This results in initiatives being focused and facilitates specialisation. In *Munich*, the city makes a priority based partially on expected tax revenues and number of jobs, but also on the operation's knowledge content, with priority given to knowledge-intensive services and production,

<sup>124</sup> Moretti, E, (2015) "Why Do Cities Matter? Local Growth and Aggregate Growth" (with C. Hsieh), 2015

research and development centres. *Seattle* is working strategically on obtaining a better return on its relationships with Asia both from an investment perspective and from a market perspective. *Amsterdam* is working with a number of focus countries, at the same time attracting head office functions, city marketing, surveying and promoting successful ecosystems of companies. The Japanese cities of *Fukuoka* and *Naha* have chosen to focus primarily on a fast growing Asia, from where it is attracting talents, companies and exports, rather than the EU or North America.

One common observation is that there is great faith in the positive potential of ICT and other infrastructure. Cities are making major investments in being at the forefront of development and are basing their efforts in areas with proximity to communication options.

Several of these factors are structural aiming to create attractiveness in the cities studied. However, the increasing specialisation of trade and industry means that talent, competence and knowledge are becoming increasingly important. This emerges in the cases studied as an important aspect in developing attractive and innovative environments. In *Seattle*, for example, there is increased focus on STEM (science, technology, engineering, math) education in order to ensure access to skilled labour as an element in strengthening existing trade and industry and to enable new companies to expand. To facilitate establishment of companies and talents, focus groups consisting of foreign inhabitants and business owners are engaged on a regular basis to provide feedback on what can be improved in *Incheon*, South Korea. The focus in *Amsterdam*, *Naha* and *Hyderabad* is on, among other things, access to housing, international schools and other soft components that contribute to a good quality of life. In *Montreal* the migration agency is included on trips that the city makes to look for talents abroad.

Many place-orientated programmes have focused on structures, but the trend is heading more towards an ever-greater focus on the development of the specific and specialist competences of persons and companies. The content of education and mechanisms for lifelong learning together with higher quality at the geographically-bound institutions constitute the challenge of the future in both *Hyderabad* and *Stockholm*.

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