

# **TechTown Baseline Study**

## **A Digital City Future - Adapt or Die**

**Alison Partridge, March 2016**



## Table of Contents

### Contents

1.	Background and Introduction .....	1
1.1.	TechTown .....	1
1.2.	Baseline Study .....	3
2.	State of the art .....	4
2.1.	The Digital Economy - an introduction .....	4
2.2.	Policy responses .....	10
2.3.	Role of cities .....	21
3.	TechTown Partners .....	24
3.1.	Barnsley Partner Profile .....	25
3.2.	Basingstoke Partner profile .....	31
3.3.	Cēsis Partner Profile .....	38
3.4.	Clermont Ferrand Partner Profile .....	44
3.5.	Dubrovnik Partner Profile .....	51
3.6.	Gävle Partner Profile .....	57
3.7.	Limerick Partner Profile .....	63
3.8.	Loop City Partner Profile .....	70
3.9.	Nyíregyháza Partner Profile .....	75
3.10.	San Sebastian Partner Profile .....	82
3.11.	Siracusa Partner Profile .....	88
4.	TechTown - Analysis and recommendations .....	95
4.1.	The digital economy opportunity .....	95
4.2.	TechTown Cities .....	96
4.2.	Recommended thematic focus for transnational exchange .....	101
4.3.	Recommended transnational exchange activities .....	104
4.5.	Recording, sharing and capitalising upon the learning .....	106
4.6.	Conclusion .....	106
	Annex 1 - Methodology and structure .....	108

# 1. BACKGROUND AND INTRODUCTION

## 1.1. TechTown

TechTown is an URBACT III Action Planning Network of 11 cities which aims to explore how small and medium sized cities can maximise the job creation potential of the digital economy. During the period from September 2015 to May 2018 it will examine whether there is potential for spillover from stronger city and regional level digital economies, explore the role of the city in growing a digital economy, examine how clusters can work at city level and look collaboratively at what cities can do to support businesses to access the digital skills and innovations they need in order to start, grow and compete.

More specifically it will focus on the following themes:

### **Better understanding the digital economy**

In order to address the questions set out above, and in recognition of the fact that 'if you can't measure it, you can't improve it', TechTown will need to better understand the digital economy and its potential value. Cities will explore together how to do this in such a fast moving context. How can cities identify their digital community? How do others define 'digital jobs' and is it helpful to pin down a precise definition? What tools already exist which can help to measure existing and future growth potential? What new metrics will be needed to measure city interventions? Is there scope to develop a tool for TechTown cities to help with this?

### **Growing Digital Jobs**

TechTown will look into how cities can grow digital jobs. This will be covered through the following 4 sub themes:

- **Growing new digital jobs through start ups:** What can cities do to support digital start ups? How can they better position themselves to optimise the conditions for competitiveness? What sort of business support do digital start ups want and need? How can cities help start ups to survive and to grow?
- **Growing jobs through the digital transformation of traditional industry:** What can cities do to support digital transformation of traditional industry and existing businesses? What is the role of cluster policy? (How can cities help small family (retail) businesses?)
- **Growing digital jobs through the smart city agenda:** How can cities ensure that they

maximise the local jobs creation potential linked to delivering smart city agendas? How can they avoid larger multinationals reaping all the rewards? What role could local city challenges, hackathons play? What role could public procurement play?

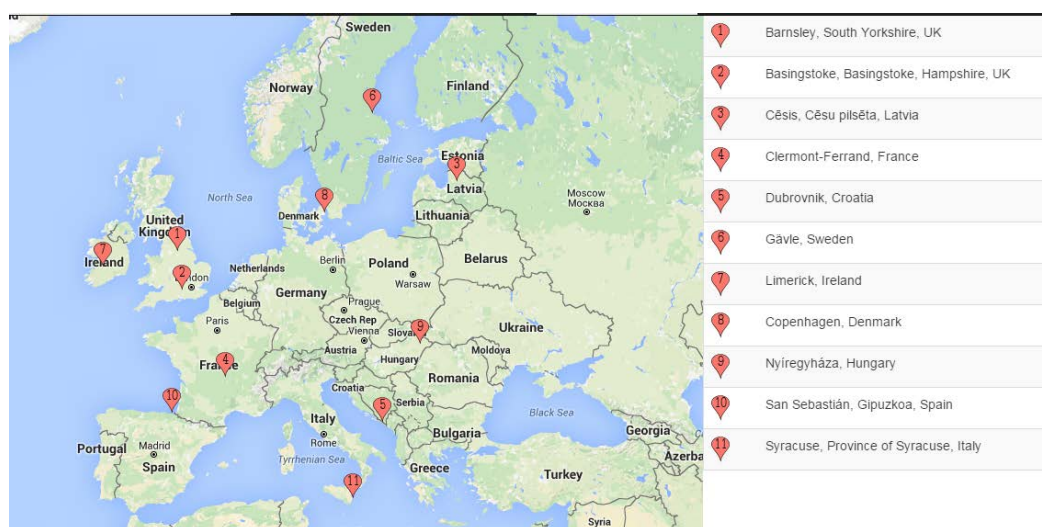
- **Providing spaces and places for connections:** How important is it to have a physical space for the digital community? What does this space look like? What is the accompanying 'offer' in terms of business support, incubator or accelerator support? What is the unique position of medium sized cities?

**Finding, growing, retaining and returning talent:** How can medium sized cities attract and retain (young) skilled people? How can they position themselves so that people want to live and work there? What can cities do to better match education and training provision with the needs of the digital economy (now and in the future)? How can they avoid losing out to larger regional and national 'hubs'?

**Governance:** One cross cutting key issue to be addressed will be the capacity of cities and their stakeholders to rise to the new challenges of the digital economy. Do they have the right skills and attributes to maximise its potential? Are they the best people to do so for the city? Could others do it better? How can they better engage with other stakeholders? What new governance arrangements should be considered? How can cities be as responsive and nimble as the digital economy whilst maintaining resilience?

The partners will use the learning generated through transnational activities to inform their local actions.

**Figure 1 - Map of TechTown cities**



## 1.2. Baseline Study

In the URBACT programme each network is expected to produce a baseline study. This provides an opportunity for networks to start their work with a sound underpinning of knowledge and understanding of its partners, as well as the state of play in other European cities.

Each baseline study includes:

- A 'State of the Art' paper, at European level, on the topic being addressed by the project.
- A profile of each partner city focusing on the existing needs and expertise relating to the specific issue that the project addresses. This work will feed into the synthesis report (see next point) and enable the detailed definition of the research questions that the partnership will work on.
- A synthesis bringing together the issues arising from analysis of the situation in the partner cities including needs and expertise, the European State of the Art, and drawing out and focusing on the issues or sub-themes that the project will address.

An outline on the methodology used to create this baseline study is included as Annex 1.

This final report is structured as follows:

1. Background and introduction
2. State of the art
3. Partner profiles
4. Analysis, conclusions and recommendations

## 2. STATE OF THE ART

### 2.1. The Digital Economy - an introduction

"The digital economy is everywhere; it has transformed and will continue to transform the economy, in terms of productivity and connectivity, especially for SMEs". (Expert Group on Taxation of the Digital Economy, European Commission, 2013).

The digital economy is the 'single most important driver of innovation, competitiveness and growth'. 1.5m additional jobs could be created in the EU digital economy if it mirrored the performance of the US. It already contributes around 8% of the GDP in the G-20 economies and yet only 2% of EU businesses are said to be taking full advantage of digital opportunities (European Commission, 2015).

Recent developments in ICT including the rapid growth of smart devices, social media and the internet-of-things allow for a new type and level of connectedness and digitally mediated interaction between people. New technologies hold massive potential for manufacturing industries, offering potential (good and bad) to transform entire sectors. These new digital trends are not just about technological innovation. They are radically shifting the business landscape, reshaping the world of work, introducing innovations in business models, developing new networking and knowledge transfer mechanisms, reducing the time to market and widening access to international markets. They are also relevant to the management of cities themselves and in the delivery of public services, which benefit the economy, citizens and the environment.

This section explores the many facets of the digital economy. Drawing on an extensive literature review, it looks at:

- Definitions and characteristics of the digital economy
- Size and growth potential
- Challenges and barriers
- Policy responses at international, national and local levels
- The role of cities

The power to connect digital size, scale and outcome lies with businesses, industry sectors and governments. With smarter investments, digital resources, technologies and assets can have a positive influence on competitiveness and help economies and industries drive greater, more sustainable value. (Accenture, 2016 (for World Economic Forum, Davos, January 2016))

### 2.1.1. The Digital Economy - definitions and characteristics

The digital economy is a constantly evolving landscape. Defining what it includes is not straightforward. Indeed, because of the widespread diffusion of the digital economy across the wider economy, perhaps it is unhelpful to describe it as a separate entity.

The term 'Digital Economy' was first used in the book ['The Digital Economy: Promise and Peril in the Age of Networked Intelligence'](#) (Tapscott, 1996). This was one of the first books to explore how the Internet would change the way we did business. In the same year, Nicholas Negroponte (1995) used a metaphor of shifting from 'processing atoms to processing bits'. Later, in ['Measuring the Digital Economy'](#) Mesenbourg, (2001) identified the three main components of the 'Digital Economy' concept as:

- supporting infrastructure (hardware, software, telecoms, networks, etc.),
- e-business (how business is conducted, any process that an organisation conducts over computer-mediated networks),
- e-commerce (transfer of goods, for example when a book is sold online).

However, new applications are blurring these boundaries and adding complexity and, according to the [OECD Digital Economy Outlook \(2015\)](#), the digital economy 'now permeates countless aspects of the world economy, impacting sectors as varied as banking, retail, energy, transportation, education, publishing, media or health'.

The [European Commission's \(2015\)](#) work asserts that 'digital enterprises are characterised by a high intensity of utilisation of novel digital technologies (particularly social, big data, mobile and cloud solutions) to improve business operations, invent new business models, sharpen business intelligence, and engage with customers and stakeholders. They create the jobs and growth opportunities of the future'.

A report prepared by Accenture (2016) for the World Economic Forum in Davos in January 2016 stated that 'The digital economy is the share of total economic output derived from a number of broad "digital" inputs. These digital inputs include digital skills, digital equipment (hardware, software and communications equipment) and the intermediate digital goods and services used in production. Such broad measures reflect the foundations of the digital economy'.

Alongside these somewhat broad definitions, the UK's TechNation (2015) report ['Powering the digital economy'](#) helpfully identifies the following 11 key sectors:

1. Advertising and marketing
2. Data management and analytics

3. E-commerce
4. EdTech
5. FinTech
6. Games development and publishing
7. HealthTech
8. Marketplace and lead generation
9. Media and entertainment
10. Software development
11. Telecommunications and networking

All of this demonstrates the enormous diversity of the digital economy and reinforces the case that it is a constantly changing world and one in which it is difficult to differentiate the 'digital economy' from the wider economy. The reality is that the digital economy has spread into every sector, from architecture firms whose activities have become almost entirely digital to machine tool manufacturers who now use huge online data-processing facilities to monitor every aspect of their processes and right through to city halls themselves, which are increasingly using digital tools across public services and their city infrastructure.

Digital innovation has also reached into the heart of design and manufacture with rapid prototyping, personalisation and 3D printing becoming affordable and necessary for competitiveness. The sharing economy, predicated on digital tools and the reach of the social web, has transformed everything from city level transport (via Uber) through to how we holiday (AirBnB).

So whilst an absolute definition may not be possible or useful, what is crystal clear is that the digital economy is here to stay and has unprecedented potential for economic growth across the EU.

### **2.1.2. The Digital Economy - size and growth potential**

Over the last 5 years the development of mobile applications alone has created nearly half a million new jobs in the USA. The digital economy now contributes up to 8% of the GDP of the G20 major economies (€3.2 trillion) (EC, 2014). It is estimated that 1.5m additional jobs could be created in the EU digital economy, if it mirrored the performance of the US. European small businesses grow two to three times faster, and create new jobs, when they embrace digital technologies. New technologies can help small businesses go global from day 1, reaching international markets and accessing talent from overseas.

The report '[Doing business in the digital age](#)' (Deloitte, 2013) states that 'digital technologies are one of the most important sources of growth for national economies. They enable

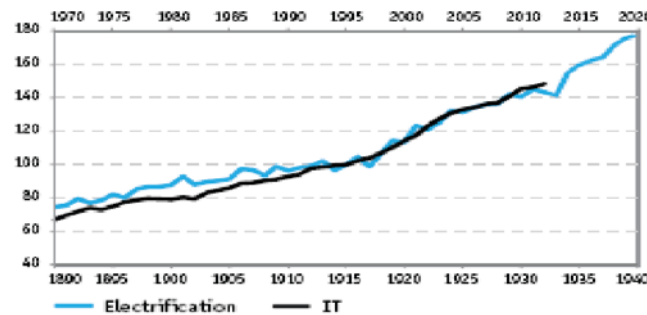
economies to create more jobs, improve people's lives and build better and greener societies. Citizens, enterprises, universities and governments become increasingly connected in the digital world. Digital is changing people's lives: the way they work, shop, socialise, communicate and educate'.

And it is not just about 'new' companies. Digital is also reshaping traditional industries, environments and business models. It speeds up the way new products and services are conceived, developed, produced and accessed.

It is estimated by McKinsey in its report ['Internet Matters: the net's sweeping impact on growth, jobs and prosperity'](#) (McKinsey, 2011) that for every job destroyed by the adoption and use of new technologies, 2.6 new jobs have been created. The same report states that more than 75% of the value created by the internet is found in traditional industries. 'Digital Technologies have become a key driver for economic modernisation and prosperity, eventually leading to higher productivity and growth in all industries and all sectors, both private and public'. McKinsey argues that the internet has accounted for 21% of GDP growth in the past 5 years in developed countries and is a powerful catalyst for job creation. Within the EU, the EU and Sweden are leading the way. In the UK, for example, the recent [Small Business Outlook](#) (Centre for Cities, 2015) showed that employment in SMEs in professional services, digital and creative industries increased at over four times the average between 2009 and 2013. Output from the digital sector increased by 657% from 1990 to 2013. These companies are overwhelmingly city based and their presence has been shown to have a knock on effect on the wider economy. Indeed in the US, Moretti (2010) found that for every job created in high tech industries, 5 jobs are created in other industries. So cities with high concentrations of these firms tend to be more productive, more innovative and entrepreneurial and thus have higher job growth. The report prepared for the World Economic Forum in Davos in January 2016 ['Digital disruption: The growth multiplier Optimizing digital investments to realize higher productivity and growth'](#) (Accenture, 2016) estimated that 'the digital economy, involving some form of digital skills and digital capital, represents 22.5 percent of the world economy' and went on to state that 'digital's ability to unlock value is far from being fully exploited'.

Syverson (2013) made an interesting analysis of labour productivity growth during the electrification era and the IT era (Figure 2), which showed a bizarrely similar trajectory. If framework conditions are met, this suggests that digitalisation could lead to increases in productivity and innovation and contribute to GDP growth in much the same way as electrification in the 19th and 20th centuries.

**Figure 2: Labour productivity Growth during the Electrification Era (1890-1940) and the IT Era (1970-2012) in the United States (1915=100 and 1995=100)**



Source: Kendrick (1961); Byrne, Oliner, and Sichel (2013).

Digitalisation also has a massive impact on the way new companies are developed - and thus on entrepreneurship and start up opportunities. These collaboration technologies enable any entrepreneur to access a much larger and diverse talent pool. People can work together across continents and time zones. So individuals can thrive in these new digital business models - giving rise to the growing phenomenon of the 'micro-multinationals'. In a period where large companies and public sector organisations are often shrinking, many people are opting to work for themselves or as part of smaller, more flexible and less hierarchical organisations. In this new world, people will have many careers in different areas. The traditional notion of a 'job' is changing.

The 'App economy' is one example: the report ['The European App Economy: Creating Jobs and Driving Growth'](#) (Vision Mobile, 2013) estimates that the European App economy contributes:

- 794,000 jobs across the whole economy;
- 529,000 direct App Economy jobs, 60% of which are developers;
- Revenues of more than 10bn euros per annum;

and that

- 22% of the global production of app-related products and services comes from the EU;

At a more local level, 'The Digital Skin of Cities' (Rabari and Storper, 2013) suggests that the 'smart cities' technology market may be worth anywhere from \$100billion to \$1 trillion over the next 10 years. The article places cities at the centre of the digital revolution and concludes that city governance and management structures will experience major changes as technologies are predicted to make it possible to manage the physical city in ways not previously possible. Cities can also generate unprecedented quantities of data (big data),

which opens up all sorts of urban governance discussions - and unparalleled job creation opportunities.

### 2.1.3. The Digital Economy - some challenges and barriers

Despite all of this potential, the growth experienced in some countries - particularly the US - is not mirrored in Europe. According to the European Commission businesses that fail to get digitally connected will become excluded from the global market and yet it is estimated that only 2% of European companies are currently taking full advantage of new digital opportunities.

So what are the challenges and barriers? What is preventing Europe from keeping pace with its global competitors?

The current skills mismatch is a major barrier to growth. It is vital to better integrate digital skills into education from early years to higher education, through vocational training and lifelong learning. As Herman Van Rompuy said in his article Boosting Digital Europe<sup>i</sup> ([Digital Minds, European Digital Forum, 2015](#)), 'Unemployment today is about poor skills, not necessarily about poor education'. As more and more 'traditional' jobs are becoming 'digitalised' in some way, so more and more digital skills - from basic ICT skills to more sophisticated coding or programming skills - are needed. Indeed by 2020 it is estimated that 85-90% of all job vacancies in Europe will require digital skills.

"Digital natives" may be intimately familiar with digital technologies, but Europe must go further: it needs people across all generations to have digital skills. A deep understanding of coding principles and knowledge of a number of programming languages may well become the most important dialect for Europeans of all ages in the digital era'.

'Embracing the digital era to ensure Europe's competitiveness' (European Digital Forum, 2015), Klaus Schwab (Founder and Executive Chairman of the World Economic Forum)

It is ironic that the forces that create a dynamic and entrepreneurial culture are also the ones that create skills shortages, especially as innovation accelerates.

So, Europe also needs to stimulate a more innovative, risk taking and an entrepreneurial mindset and to accelerate the use of digital technologies across old and new businesses. Unless this happens, digital companies will experience difficulties accessing finance and, as they also have often have low levels of working capital, this affects their resilience and ability to build the relationships they need to break into this complex and competitive international market.

At the same time, the cost and speed of protecting intellectual property does not match the speed of technological change. This means that some companies don't put in place the long-term strategies required to survive (such as patent registrations or diversification) but rather focus on short-term gain born out of agility and know-how. Tech companies have a tendency to scale up very rapidly - often before sustainable business structures are in place. But the platforms, systems and supply chains that form the framework within which the digital economy operates need a longer-term approach to investment and innovation, based on broad cross-sectoral collaboration.

Clearly there is no digital economy without digital infrastructure so investment in digital connectivity is required in a market where future revenues are linked to a complex - and often unclear - commercial market. The availability of such infrastructure varies enormously in Europe – and indeed even within individual countries.

Linked to this, there is often unequal access to digital technologies - and digital skills - between affluent (often young, urban) people and more excluded (often older, rural) people - who subsequently become part of the digitally disadvantaged. The counter argument is that digital can help to democratise society, giving many greater access.

Funding - and the regulatory environment in which companies are operating - need to be as agile as the companies themselves. Existing models are often designed around a more 'traditional' innovation context with linear production development processes.

The UK's [digital economy strategy](#) (Innovate UK, 2014) also describes barriers linked to what it calls 'tribal boundaries' stating that 'successful digital businesses fuse technical expertise with creative flair and an understanding of their customers. This fusion means erasing the tribal boundaries between 'geeks' and 'luvvies'.

## 2.2. Policy responses

### 2.2.1. EU level response

At EU level, the European Digital Agenda is one of the 'flagship initiatives' developed to achieve the EU2020 targets. It concentrates on the digitalisation of business, e-inclusion, start-up support, and help for SMEs that want to digitalise, etc.

The Commission's ambitions in this area are widespread and ultimately aim to ensure that the digital economy delivers sustainable economic and social benefits. The ['Grand Coalition for Digital Jobs'](#) (2015) is particularly relevant in that it aims to help ensure that training is matched to digital jobs by supporting the co-design of training programmes with the ICT industry so that the skills that people get are the skills that business needs. The Coalition's

agenda also includes a drive to help people with the right skills to go to the places where they are most needed so as to avoid shortages - or indeed surpluses - in different places. In its communication ['The Digital Agenda for Europe - Driving European growth digitally'](#) (EC, 2012), the Commission stresses that 'digital skills should be the indispensable component of all professional training, business education and lifelong education programmes to ensure new generations as well as those currently in the workplace are able to acquire the skills they need'.

It also aims to simulate digital entrepreneurship and with [Startup Europe](#) is developing a platform of tools and programmes which will support people who want to set up and grow digital companies. The Commission recognises that these start-ups need a more business-friendly environment (a 'license to fail') with 'easier access to finance, markets, networks and skills; which must be encouraged through risk-sharing schemes, venture capital, favourable fiscal treatment and networking events'.

**Figure 3 - broad ambitions of the Commission's 'Grand Coalition for Digital Jobs'**



Ultimately the Commission's vision is for the EU's economy and society to transform into a digital Europe - where digital technologies, media and content are embraced and exploited by the whole population. 'The explosive growth of the utilisation of ICT in our daily life is contributing more than any other technological innovation to a radical change in the

economy and the society as a whole. In the next decade ICT can contribute to a paradigm shift in society and in production systems, enabling higher growth and welfare through more efficiency, new products, new services and smarter public services'.

Three priorities have been defined to help achieve this vision:

- 'To become a magnet for highly skilled talent and a distinctive place for doing business, built upon Europe's unique identity.
- To foster a truly entrepreneurial culture to maximise the digital potential of Europe's SME-driven economy.
- To actively support and promote the connection between traditional industries and the digital economy'.

...and these have led to the establishment of 5 complementary objectives:

1. Increase industry digital transformation. Increase the take-up and use of digital technologies by industries and SMEs in order to transform existing business and operating models thus fostering productivity and competitiveness.
2. Create a digital entrepreneurial culture. Improve the image of digital entrepreneurs and promote their role in society.
3. Attract, develop and retain high-end digital skills and talent. Increase the quantity and quality of digital entrepreneurial skills and talent; boost the development of a unique blend of creative, technology and entrepreneurial skills.
4. Ease the access to finance and enhance investments. Improve access to finance for each stage of enterprise development and support the growth of digital entrepreneurial ventures.
5. Boost the digitally powered single market. Improve the ease of doing digital business in and across Member States, by equally stimulating the demand and supply of digital technologies and creating economies of scale.

**Figure 4 - Objectives of EU Digital Agenda**

VISION				
1. Increase industry digital transformation	2. Create a digital entrepreneurial culture	3. Attract, develop & retain digital entrepreneurial skills & talent	4. Ease the access to finance and enhance investments	5. Boost digitally powered Single Market
Increase the take-up and use of digital technologies by industries and SMEs in order to transform existing business and operating models thus fostering productivity and competitiveness	Create a digital entrepreneurial culture by improving the image of digital entrepreneurs and promoting their role in society	Increase the quantity and quality of digital entrepreneurial skills and talent; boost the development of a unique blend of creative, technology and entrepreneurial skills	Improve access to finance for each stage of enterprise development and support the growth of digital entrepreneurial ventures	Improve the ease of doing digital business in and across Member States, in order to equally stimulate demand and supply of digital technologies and creating opportunities for scale

Finally, a [Digital Agenda Toolbox](#) has been developed to provide support to regional and national authorities to develop a thorough understanding of the digital growth potential stemming from the Digital Agenda for Europe. It highlights the opportunities Information and Communication Technology (ICT) offer as a key element in their national or regional research and innovation strategies for smart specialisation and related Operational Programmes. The toolbox is a useful point of reference for cities and regions interested in using European Regional Development Funds (ERDF) for ICT investments. It also provides hands-on assistance for developing a strategic policy framework for digital growth by discussing the do's and don'ts of the process and giving examples of good practices.

### 2.2.2. National level responses

According to the OECD's Digital Economy Outlook (OECD 2015), most OECD countries have established or are close to adopting some sort of national strategy addressing digital economy policy priorities.

These strategies are cross sectoral and in most cases aim to boost competitiveness, growth and social wellbeing. Denmark's 'ICT Growth Plan' for example, aims to support 'growth in the ICT sector as well as in ICT based growth in the private sector more generally'. In Germany the 'Digital Agenda 2014-2017 highlights 'the increased exploitation of innovation in order to achieve further growth and employment. The Italian Strategy for the Digital Agenda 2014-2020 aims to 'ensure economic and social growth, through the development of skills in business and the dissemination of digital culture among citizens'. In France the 'Plan Numerique' aims to build a more competitive digital economy in addition to targeting

youth and preserving and reinforcing social values. In the UK, the Information Economy Strategy plans to 'help the UK accelerate in the global race, focusing on its strengths'. The UK's digital economy strategy then has 5 complementary objectives as set out in the table below.

**Table 1 - 5 objectives of UK digital economy strategy**

<b>Objective</b>	
<b>Encouraging digital innovators</b>	We will help digital innovators in early-stage companies to articulate and develop their ideas, establish their businesses and make connections to potential partners and lead customers in industry and government. We will also help innovators in established companies across the economy to adopt digital solutions, and to learn from other sectors
<b>Focus on the user</b>	We will champion digital innovation approaches that centre on users' needs, to ensure that solutions are well fitted to the markets they address. These needs centre on trust, access and convenience of use, so we will help businesses to inject this thinking throughout their design processes.
<b>Equipping the digital innovator</b>	We will equip individual innovators with technical and business expertise and resources, and help them to develop new capability if necessary. Of particular importance are the technical toolkits to manage transactions and move data safely and smoothly, and to link the physical and virtual worlds.
<b>Growing infrastructure, platforms and ecosystems</b>	We will work across industries to develop and consolidate structural foundations for the digital economy, to encourage investment and guide innovators as they enter the market. We will support interoperable infrastructure and software platforms, build digital ecosystems and help them to scale.
<b>Ensuring sustainability</b>	We must ensure that innovations in technology are used well and can succeed sustainably. We need to understand social impact and the commercial, legal and regulatory context of innovation. This requires far more than innovation support, so we will partner with other organisations to link technical capabilities with skills, trade, infrastructure and investment, all within the context of the government's Information Economy Strategy.

Interestingly, the Digital Agenda 2020 for Estonia does not cover the use of ICT in various areas of life and policy, such as ICT in health care or business. The focus is instead on creating an environment that facilitates the use of ICT and the development of smart

solutions in Estonia in general. The ultimate goal is to increase the economic competitiveness, the well-being of people and the efficiency of public administration.

Through its analysis, the OECD has identified the following 8 key pillars of national digital economy strategies:

1. Further develop telecommunications infrastructure (e.g. access to broadband and telecommunications services) and preserve the open internet
2. Promote the ICT sector including its internationalisation
3. Strengthen e-government services including enhanced access to public sector information and data
4. Strengthen trust (digital identities, privacy and security)
5. Encourage the adoption of ICTs by businesses and SMEs in particular with a focus on key sectors such as healthcare, transportation and education
6. Advance e-inclusion with a focus on the aging population and disadvantaged social groups
7. Promote ICT-related skills and competencies including basic ICT skills and ICT specialist skills
8. Tackle global challenges such as internet governance, climate change and development cooperation

The Accenture Report 'Digital Disruption' highlighted 3 sets of key actions that business leaders and policy makers should consider when seeking to maximise the 'multiplier' effects of digital:

**Table 2 - Key actions for business leaders and policy makers**

<b>Prioritise digital investments based on value opportunities</b>	Balance digital investments so that an optimal combination of improvements in areas such as skills or technology helps you to deliver the best returns.
<b>Compete using an industry-specific digital strategy</b>	Be clear on which platform, what roles, and which data are fundamental to compete successfully in your industry
<b>Create the right environment for digital transformation</b>	Improve your “digital IQ,” teaming with government to open up cross-industry relationships and change the rules of competition.

### 2.2.3. Local level responses

The digital economy flourishes in cities, which have a good supply of skilled workers and strong technical and operational infrastructure.

According to the UK's TechNation report, companies are also more affected by core operational factors (broadband, skills, market opportunity) and lifestyle factors for employees (quality of life, community, personal reasons) than they are by access to finance, support from universities and sector expertise. A third of survey respondents carried out as part of the TechNation work considered a lack of local talent to be one of their biggest barriers to growth.

The Small Business outlook (Centre for Cities, 2015) concludes that digital SME's are not randomly or evenly distributed but are concentrated in some cities more than in others as they 'benefit from access to wide pools of talent and specialised expertise and from being in close proximity to other highly innovative businesses'. It goes on to state that 'successful clusters' (such as London's TechCity or Cambridge's Silicon Fen) 'grow organically through the decisions of firms and individuals and the interactions between them'. Cities need to be open to new residents and businesses - providing new housing, good transport and infrastructure as well as a supply of appropriate and affordable (co) working space.

Eurocities, in its [statement on the Digital Single Market Strategy](#), includes the following areas of potential activity and influence for cities: broadband, the data economy, interoperability and open standards, cyber security, inclusive e-society, e-government, online platforms and smarter cities.

But, are there good examples of city-led initiatives or strategies to promote the digital economy?

The answer is that there are lots but most are in large, thriving (often capital) cities such as Barcelona, London, Stockholm, Tallinn and Berlin. These cities are buzzing with people creating new digital businesses and companies developing exciting new technologies. The new [European Digital City Index](#) (2015) maps the factors which attract and drive digital entrepreneurs. It scores EU capital cities (and 7 'hub cities') against a range of themes<sup>1</sup> to rank the cities in terms of their 'start up' and 'scale up' capacity and performance. Perhaps not surprisingly, London in '1st place' for both start ups and scale ups (followed by Amsterdam, Stockholm, Helsinki and Copenhagen).

However, cities of this nature don't necessarily offer useful lessons for TechTown partner cities, which are smaller, less well connected and often have access to fewer resources. On the whole smaller cities like these have less developed digital economy strategies – or indeed (as is the case with the majority of TechTown partners) none at all. This is the very reason that TechTown was developed.

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<sup>1</sup> Access to Capital, Business Environment, Digital Infrastructure, Skills, Entrepreneurial Culture, Knowledge Spillovers, Lifestyle, Market, Mentoring & Managerial Assistance and Non-Digital Infrastructure

There are of course some examples of city-led initiatives, which provide a useful point of reference and a few examples of initiatives from which it is hoped lessons can be learnt are presented here.

The first is Dublin, Ireland and its [Digital Dublin](#) (2013) initiative which aims to identify, map, benchmark and set targets for the development of a 'Dublin that is innovative, and uses digital tools and solutions effectively, efficiently and assists to drive the economy of the city'.

Digital Dublin is an alliance of Government, Business, Higher Education and Citizens. Known as the Leadership Forum, this group provides the collaborative and co creating leadership for Digital Dublin bringing together key players from across the digital ecosystem. This structure is said to enable the group to capture ground-level opinion and representation from citizens, civil society, academia and enterprise.

**Digital Dublin has recently developed a [Digital Masterplan](#)** for the City. This provides a guide for the city in terms of adaption, creation and adoption of digital technologies and processes. It aims to lead to more efficient overall management of the city, its resources and everyday activities. This masterplan encompasses the following principles:

1. That digital technologies are a facilitator of a more sustainable, cohesive and competitive city region
2. That digital technologies are used to realise net job creation across the entire economy
3. That 'Available As Digital' will be the norm for all Public Services
4. That as a progressive open city, welcoming of everybody, all citizens should have opportunities for access to digital technologies
5. That we will live by and act through open innovation, embracing a governance model which shares ideas, information and data between sectors, organisations, citizens and with other collaborating cities
6. That we will embrace digital governance and technologies to increase democratic participation and to stay connected with citizens
7. That the city and its stakeholders will use digital technologies, processes and design to continually improve its own performance in the delivery of services for the citizens and business
8. That Data(Open and Big) is a key element in developing Dublin as a Digital City.
9. That Dublin will be a virtual and physical testbed for innovation and will integrate digital technologies into spaces and places of the city
10. That Dublin will consistently future proof the infrastructure (e.g. broadband, power

etc) required to keep it ahead of the global competition and attractive to inward investment.

Manchester, UK's [Smarter City initiative](#) is another example of a city which seems to be embracing the potential of digital tools and business models. In this case its agenda is embedded within a 'smart cities' initiative which aim to use new technologies and new ways of working to understand and optimise city systems and change how the city functions to improve how people live, work, play, move, learn and organise.

It tackles jobs and growth (Work) alongside 5 other key themes as outlined in the table below:

**Table 3 - Summary of Manchester's Smarter City Initiative**

Theme	Explanation
<b>Live</b>	How and where we live; our houses, communities, neighbourhoods and districts; inter-generational living; quality of life and place; retrofit, regeneration and expansion.
<b>Work</b>	How work changes, what jobs we do, how we do them and where we do them; what new skills we have; what new industries and startups; social innovators and entrepreneurs.
<b>Play</b>	Access to amenities, a better environment and richer cultural life; how we keep fit; a healthy built environment; a child-friendly city; activity throughout life; sport; our rich cultural life; Manchester for tourists.
<b>Move</b>	Getting around in a seamless, low-carbon and healthy way; a connected city, a walkable city, a city of bikes; trams, trains and buses; international connectivity; transit futures.
<b>Learn</b>	How we continue learning throughout our various life stages; the univer-city; schools, colleges and apprenticeships; libraries and community learning; the self-learning city.
<b>Organise</b>	How our neighbourhoods shape their future; citizen engagement in policy; an open city government, Metropolitan Mayor and new decision-making; 21st century public services.

Manchester was also one of the founder members of the European Network of Living Labs and has used user-centred practices in developing innovative new digital services and products for citizens over the last 10 years. It is also Lead Partner of SmartImpact which is a network of larger cities deploying smart city technologies and solutions at a district level as a mechanism to help secure the opportunities and remain competitive.

There are many other examples of cities which are starting their digital journey and seeking to maximise the growth potential of this rapidly evolving sector. However, it is absolutely

clear that there is no 'blueprint' for success. There is a clear need for more work at medium sized city level in particular to better understand the role of government and to explore 'enabling' or 'transformative' public sector interventions.

#### 2.2.4. Some lessons from previous URBACT Networks

Below is a summary of some of the URBACT networks which have now finished from which useful lessons can be learnt:

##### Creative Clusters

Creative Clusters was an URBACT II network, which explored the economic value of the creative sector in small urban centres. One of the most relevant findings was the importance of an integrated approach to the local creative eco-system - see diagram below. Many of the features of this ecosystem will also be relevant to the digital and technological sector.

**Figure 5 - Features of a local creative ecosystem**



It is clear that there are a number of common features including the importance of incubating, attracting and retaining talent, better understanding the challenges and considering space and governance issues within integrated plans.

##### Creative SpIN

Creative "Spillovers" for Innovation aimed to address the challenges of how best to connect cultural and creative industries, including sectors such as audiovisual, design, advertising, architecture and video games, with other sectors, to stimulate the effects of "spill over". Its conclusions, as set out in the 'Smart Guide to Creative Spillovers' provide a useful starting

point for developing a better understanding the digital economy as set out in the following table:

**Table 4 - Conclusions from Creative SpIN**

Step	Message for cities
<b>1 &amp; 8</b>	Capture and understand your local cultural and creative resources Set up monitoring and evaluation mechanisms to understand the impact of policy measures
<b>2</b>	Raise awareness on the potential of creative spill-over and its benefit to the culture and creative sector
<b>3</b>	Raise awareness on the creative skills and competences of the CCIIs to other sectors
<b>4</b>	Identify local “creative mediators” able to bridge the gaps between culture and creative sectors and other sectors of the economy
<b>5.</b>	Encourage accidental encounters
<b>6 &amp; 7</b>	Establish a light structure responsible for overseeing the implementation of creative spill-overs Appoint a champion

### [ESIMeC](#)

ESIMeC explored how demand-led workforce development strategies can be used as instruments of sustainable economic recovery in medium sized cities. Whilst it was sector agnostic as a whole, a number of its transnational events and 'recipes' are relevant to TechTown, in particular those focusing on:

- Partnership working and the relevance of the triple helix to workforce development in knowledge-based industries
- Integrated approaches to economic development and employment

### [Genius:Open](#)

Genius: Open aimed to create innovative solutions to city challenges via an online collaboration platform and through a defined process showing how to use open innovation to engage residents, communities, companies and academics in co-creation

### [URBACT - Capitalisation](#)

As well as building on some of the previously funded networks, the findings of URBACT's capitalisation workstreams are also relevant and in particular:

- [More Jobs Better Cities](#) (URBACT, 2013) - TechTown's proposed approach to the digital economy is very much in line with the framework for city action on jobs developed through this workstream. It aims to address the job creation potential of the digital economy from the economic and labour market perspective and consider the importance of cross cutting issues such as intelligence, governance and connections. As well as looking at digital jobs per se it will also explore how existing (manufacturing or industrial) jobs can be transformed through digitalisation.
- [Job Generation for a Jobless Generation](#) (URBACT, 2015a)- whilst TechTown does not directly target young people, one of the challenges to be addressed in partner cities is how to better match the digital skills of the workforce with those needed by businesses now and in the future. This, along with the planned work on growing and retaining talent is very much in line with the 7 habits and youth-proofing recommendations which came out of the job generation work.
- [New Urban Economies](#) (URBACT, 2015b)- one of the main conclusions of URBACT's work on new urban economies was the importance of the digital economy to Europe's cities. The final publication highlights this sector as a 'cradle of new entrepreneurship', at the same time as explaining how digitalisation is also helping to revive urban manufacturing in some places. It also states that medium sized cities also stand to benefit - particularly where they have a technical university to help them attract and retain talent.

### 2.3. Role of cities

*'We are not only just users and consumers, we are also becoming inventors, creators, artists and producers. We can share data, experiences, networks and ideas to co-create, to co-share, to co-invent, to co-produce. We crowdsource, crowdfund. We like to experiment because that is what makes us thrive. We develop the sharing economy on the basis of existing concepts, but from a totally different angle and we are open to change. We don't aim to buy, own or possess. We rent or lease services and share them to become more innovative and efficient. We don't want to own knowledge and keep it to ourselves. We provide it to others and try to evolve and spiral upwards together. We put trust in the digital economy and invest in it and in the necessary skills to exploit it to the fullest. We don't develop linear production lines. We develop circular ones, so we can reuse materials and rely much less on our scarce resources. These are the new societal and business models'.*

Neelie Kroes and Sigrid Johannisse 'Digital minds for a new Europe' (European Digital Forum, 2015)

So, what does all of this mean for TechTown partners? What can small and medium sized cities realistically do to grow jobs through a digital economy? What margins of manoeuvre

do they actually have when so many pieces of the macroeconomic and policy jigsaw are outside of their control?

It is clear that cities are in the process of experiencing a digital transformation, one which brings the citizen closer to the city and, if optimised, creates jobs and develops human capital. 'Digitalisation is changing the way people live their lives, giving them a voice and an opportunity to participate in the delivery of public services' (Busch, Digital Minds, 2015<sup>ii</sup>)

The literature review suggests that there is much that cities can do on both the demand and the supply side of the economy. This includes:

- Facilitating open access to data for developers, e.g. mapping, meteorological and real time public transport data as well as information on community level services.
- Enhancing connectivity and making wifi more widely available in public, business and education spaces.
- Leading by example by e.g. embracing app-driven / digital innovations across all sectors, and services, e.g. health, education, enterprise, lifestyle, wellbeing.
- Ensuring a flexible and supportive business environment for start-ups and entrepreneurs – providing affordable spaces, co-working spaces, networking opportunities, flexible business support and access to finance programmes – so as to make it as easy as possible for people to start and grow digital companies
- Linked to the above, creating living labs for start ups and scale ups with a lighter regulation load and where expertise, talent and investment can co-exist to promote the new European digital entrepreneur
- Facilitating labour market flexibility and promoting STEM skills development in local schools and training providers (Science, Technology, Engineering and Mathematics) to meet demand
- Encouraging a risk taking, entrepreneurial culture where failure is not frowned upon but rather embraced
- Brokering relationships and networking opportunities – e.g. between large and small companies, between 'luvvies and geeks', along supply chain, between digital companies and others needing digital transformation, between research institutes / education providers and SMEs

Perhaps the biggest challenge of all is the need to accept and embrace disruption. Traditional methods and models will be threatened and transformed through innovation and digitalisation. Some cities may not feel comfortable in this new space. They may not understand it or their role within it. However the message is clear: 'Adapt or Die'....

*'The future of the smart European digital economy is not five, ten or fifteen years away - it is right now. Therefore the message much be: Adapt, or get left behind'* (Joanna Shields, Digital Advisor to the UK Prime Minister in Digital Minds, 2015).

### 3. TECHTOWN PARTNERS

This part of the baseline provides some brief information on each of the TechTown partner cities. Each profile follows a similar structure and includes:

- City Factfile - key data on the economy and labour market
- Qualitative comments about the city, its economy and its labour market
- An introduction to the city's digital economy - existing strategies and challenges
- A Digital Economy SWOT
- Summary information on experience relevant to TechTown
- An introduction to the Local URBACT Group - role and composition and to the initial focus of the TechTown Integrated Action Plan to be developed
- Brief commentary on learning hopes for TechTown

The information included in the profiles has been gathered through extensive research and consultation with partners. This included detailed partner questionnaires, in depth discussions with the cities and their key stakeholders / initial ULGs during city visits, extensive follow up email and numerous telephone discussions. Clearly a huge amount of information was gathered through this process. In order to make the report easy to use locally and at project and programme level, the partner profiles presented here synthesise this information and have been designed to be concise, comparable and easy to read.

It is important to thank all the partners and their URBACT Local Group members who have contributed to the content of these profiles.

### 3.1. Barnsley Partner Profile

#### *Barnsley FactFile*

Population: 237,800

#### **Business Structure by Sector**

		Employees	Share (%)
1	Agriculture, forestry and fishing	0	0
2	Manufacturing, mining and quarrying and other industry	11,700	15.2
2a	Of which Manufacturing	11,600	15.2
3	Construction	4,700	6.1
4	Wholesale and retail trade, transportation and storage, accommodation and food service activities	20,900	27.3
5	Information and communication	1,100	1.5
6	Financial and insurance activities	1,600	2.0
7	Real estate activities	1,100	1.5
8	Professional, scientific, technical, administration and support service activities	10,000	13.0
9	Public administration, defence, education, human health and social work activities	22,500	29.4
10	Other services	2,500	1.4
			112.6

#### **Business Structure by Size**

Micro-businesses <10 employees	Small businesses 11-49 employees	Medium-sized businesses 50-249 employees	Large businesses (250+ employees)
<b>81.7</b>	<b>14.9</b>	<b>2.9</b>	<b>0.5</b>

#### **Some major employers**

Name	Sector	No. employees
ASOS	Private (wholesale / Distribution)	4,000
Barnsley MBC	Public	3,500
Barnsley Hospital NHS Foundation Trust	Public	2,800
Cranswick Convenience Foods	Private (Manufacturing Food)	800

Kostal (UK) Ltd	Private (Manufacturing Electrical Equipment)	750
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### About the City

Ex mining town, seeking to diversify its economy

Medium sized town located between Leeds and Sheffield to the North of the UK

### About the Economy

Largest employment sectors are public sector (29% and wholesale, retail, transportation and storage, accommodation and food service activities (27%

Private sector employment is increasing but there is still heavy reliance on the public sector for employment (29% of employment)

### About the Labour Market

Unemployment rate (6.1%) is decreasing

Employment rate (73.3%) is higher than regional and national rates and increasing

Self employment rates are decreasing and lower than the national and regional rates

### About the Digital Economy

The digital economy has been identified by both the municipality and at regional and national level as a key sector which maximises productivity gains and job creation. It will be essential in helping areas like Barnsley to rebalance their economy away from a predominately low wage and low skilled growth with reliance on the public sector to a higher skilled, and more economically diverse sectoral base with quality jobs.

The UK is one of the world's leading digital economies with digital technology businesses contributing over £105bn in GVA in 2011 (latest figures available) and accounting for 15% of all new companies formed in 2013/14.

### Existing Strategies relevant to the Digital Economy

Whilst it does not have an strategy dedicated to the Digital Economy per se, the Jobs and Growth Plan 2014-2017 cites Creative and Digital as a sector with potential to be transformative in terms of competitiveness. The municipality wishes to maximise the opportunities from current and future initiatives like the UK Government's TechNorth programme as well as from the ever changing technological advances. Only by doing this will the town be able to maximise the opportunities available and continue to grow and develop

through high value jobs, increased turnover and facilitate new investment into the local economy.

At the same time Barnsley will focus upon addressing the low start-up and self employment rates within the borough and particularly the low rate of digital starts into the local economy. A key part of this support will be looking at how this sector is helping traditional companies (both sector and non sector based) to adopt digital technologies. Helping to facilitate an innovation led approach will increase the amount of digital jobs in non-digital sectors of the local economy.

At a national level the digital strategy is led by Tech City who's report 'TechNation: Powering the Digital Economy' (2015) outlined the country's tech capabilities.

### **Barriers and challenges to growing the digital economy**

- Lack of understanding of the potential economic impact both in terms of how the sector integrates with other traditional industries, and how it can contribute to a rebalancing of the local business base.
- Lack of digital skills leading to difficulties with recruitment
- Sector dominated by micro-/home-based businesses
- Lack of entrepreneurial culture and low rate of enterprise activity
- Negative perception of Barnsley within the region and within the UK

### **Experience relevant to TechTown**

**'Enterprising Barnsley'** is an initiative which, funded through ERDF and the Council, has run since 2010. It provides an intensive and integrated package of intensive support focused on local (start up and established) business needs in order to create and accelerate economic growth. The portfolio of projects focuses upon business start up support, business incubation, enterprise coaching, networks and workshops and enterprise hubs. It included a Connected Business Conference which helped to drive digital skills and knowledge in wider Business Base. Enterprising Barnsley has also helped to develop a pilot ecommerce incubator model for– both start-ups and existing companies who are looking to take products online (CLICK).

In the past 5 years, the project has created more than 1000 jobs, with 53% of businesses supported seeing an increase in their workforce sizes. These new jobs have been spread across all occupation levels, with 27% of the new jobs being in higher order managerial and professional occupations and 39% being in lower order process, plant and elementary occupations. A further 7% of the new jobs have been in apprenticeships;

Every £1 invested by Enterprising Barnsley helps to secure an additional £12 in private sector investment into the local economy; and, every £1 of investment secures an extra £1.76 in business rates for the Council.

**CLICK South Yorkshire** supports a cohort of women to develop, build and deliver an ecommerce business idea to the point of live trading. The aim is to embed entrepreneurial and digital skills within communities, giving women the valuable tools to build a business that fits their interests and lifestyle that has the capacity to be scaled where appropriate. The programme is delivered:

- Digitally – via an online learning and collaboration platform restricted to use by women in superfast rollout communities
- Face to face – via drop in sessions in accessible local venues with adequate broadband as well as via a central hub at the Digital Media Centre (close to transport links to all of South Yorkshire)
- Through one to many workshops, seminars and networks led by female business owners and ecommerce specialists

**SmartStart** is a free business start-up programme which supports potential entrepreneurs who are looking to start their own business. It offers emerging businesses one-to-one advice in those initial start-up stages, as well as providing ongoing business coaching in areas including sales, marketing and finance.

The programme also includes a series of workshops throughout the year, which are run as informal group sessions focussing on particular aspects of operating a business. Workshops include 'Business Essentials'; 'Creating a Successful Business'; 'Promoting Your Business'; 'Money Matters', and 'Effective Selling'.

**Genesis** is a long-running business incubation project that seeks to accelerate the development and growth of innovative technology and/or knowledge-based businesses. The programme offers intensive support to businesses for up to 12 months, which includes:

- A dedicated business coach and access to specialist coaching;
- Participation in business development workshops and networking events;
- Management accounting and technical support services; and,
- A range of accommodation for start-up and early stage businesses, available on various easy in, easy out terms and at various locations across Barnsley borough.

### Digital Economy SWOT for Barnsley

Strengths	Weaknesses
<p>Cohesive tailored (evolving) business support programme. (Enterprising Barnsley) Annual Sector Business Event (Connected Business)</p> <p>Dedicated Digital Media Centre Project Manager / Creative and Digital Sector specialist</p> <p>Dedicated workspace (Digital Media Centre)</p> <p>Growing Economy / Growing Digital Sector</p> <p>Location/ affordability</p> <p>Connections with Tech North</p>	<p>Lack of strong Further and Higher Education Institution with links to develop routes to employment (internships, apprenticeships and work experience)</p> <p>Physical Infrastructure (Internet Connectivity, broadband speeds ,grow on space etc)</p> <p>Lack of a Skilled Digital Workforce</p> <p>Low Start-up levels</p>
Opportunities	Threats
<p>Digital Media Centre (Physical asset), flexible , informal co-working meeting spaces</p> <p>Local Procurement</p> <p>More bespoke and flexible sector based support model (Hack events, Business support / incubation/ acceleration/ 1-2-1 with specialist advisors)</p> <p>High % of traditional manufactures (embrace future digital job growth / Smart economy adaptation)</p> <p>Prospects driven Inward Investment Strategy / Knowledge spillovers</p> <p>Ecommerce Centre of Excellence</p> <p>Private Sector collaboration (Enterprise Nation)/ Events with non Sector Businesses (Healthcare)</p> <p>Town centre infrastructure transformation and the opportunity to embed digital technology, knowledge and data led intelligence into this environment.</p>	<p>Negative external perceptions of Barnsley</p> <p>Lack of a Skilled Digital Workforce</p> <p>Supply led skills provision rather than business led provision</p> <p>Lack of connectivity to other digital clusters (Sheffield / Leeds)</p> <p>Lack of Political Awareness of the Creative and Digital Sector, its physical assets and the economic potential that this sector can bring.</p>

## **Ambitions and aspirations for TechTown**

### **Integrated Action Plan**

Barnsley's plan is likely to focus on:

- addressing the skills mismatch between what employers want and what is available locally - both now and in the future (i.e. focus on young people and education)
- addressing the low level of start ups and low enterprise rate
- strengthening relationships with regional and national digital strategies and initiatives
- improving the scalability of local businesses
- future proofing the local business base to maximise economic resilience
- positioning Barnsley as a place where digital businesses want to locate themselves by providing the advice, funding, space, infrastructure needed

### **URBACT Local Group**

The URBACT Local Group will act as a formal working group that can actively support the growth of the town's digital sector. It will:

- Establish, review and monitor existing and future strategies of support (local and national ) and to establish a timetable of deliverable actions, strategies and projects to help grow the digital economy in Barnsley.
- Develop and deliver the local action plan, to test new initiatives and to develop strategic public private educational partnerships to address the issues faced by the sector.
- Explore how to embed digital technology, knowledge and data led intelligence into other flagship projects in the borough including the transformation of the town centre infrastructure

### **Membership**

Name	Organisation	Role
Andrew Ainsworth	Barnsley MBC	Business Growth Team Leader
Cllr Miller	Barnsley MBC	Elected Member / Political
Nikki Jones	Barnsley College	Skills
Adrian Waite	Barnsley Business Innovation Centre (BBIC)	Business Incubation
Tracey Johnson	Creative and Digital Industries Sector Specialist Digital Media Centre Project	Project Lead

	Manager	
Phil Atkinson	Target Information Systems	Local Business
John Goodyear	Egress	Local Business
?	Mamsoft	Local Business
Joada Allen Booth	Visualised-IT	Local Business
Matt Watson or Kimb Jones	MakeDo	Local Business
Craig Burgess	Genius Division	Local Business
Ceri Batchelder	HMA	Local Business
James Sheriff	Genius / DMSQD	Local Business
	Tech North	
Ben Hawley / Emma Jones	Enterprise Nation	Digital Community
Judy Sidebottom	Barnsley MBC	HR / Workforce / Skills
Heather Lord	National Apprenticeship Service	HR / Workforce / Skills
	Leeds City Region / Sheffield City Region	Sector Reps
	Sheffield Hallam University	HE / Skills / Buisness

### Learning hopes

In a rapidly changing landscape Barnsley's key hope is to use TechTown to learn what other medium sized cities are doing to maximise the growth of digital jobs. It is particularly interested in understanding better how to ensure it does not lose out to nearby tech hubs and how to build upon its physical assets (particularly the Digital Media Centre) to grow its digital community both through start ups and through digital jobs in other existing companies. Talent attraction and retention is a key part of this.

## 3.2. Basingstoke Partner profile

### *Basingstoke FactFile*

Population: 172 900

#### **Business Structure by Sector**

	Employees	Share (%)
Agriculture, forestry and fishing	100	0.13%
Manufacturing, mining and quarrying and other industry	7400	9.04%
Of which Manufacturing	6400	7.82%
Construction	4300	5.25%

Wholesale and retail trade, transportation and storage, accommodation and food service activities	21200	25.88%
Information and communication	6800	8.3%
Financial and insurance activities	3500	4.27%
Real estate activities	1100	1.34%
Professional, scientific, technical, administration and support service activities	12200	14.89%
Public administration, defence, education, human health and social work activities	17800	21.74%
Other services	7500	9.16%

### Business Structure by Size

Micro-businesses <10 employees	Small businesses 10-49 employees	Medium-sized businesses 50-249 employees	Large businesses (250+ employees)
90.1%	7.9%	1.5%	0.5%

### Some major employers

Name	Sector	No. employees
Basingstoke and North Hants Hospital	Health/Public	2,800
AWE	Defence	2,000
Sainsbury's Distribution Centre	Logistics	900
De La Rue	Financial Services/Advanced manufacturing	800
Thales	Defence and cybersecurity	700
Blatchfords & Sons	Life science and healthcare	550

### About the City

A medium sized city located 80km west of London in the UK

Developed rapidly after World War II to accommodate part of the 'London Overspill'

Home to a range of UK headquarters of large corporates (particularly business and financial services)

Sometimes perceived as a 'commuter town' due to its proximity to London but 66% of residents work in Basingstoke and in-commuting and out-commuting numbers are balanced.

## About the Economy

Most employment is in the private sector (86%)

Job creation forecast are estimated to be around 600 jobs per year up to 2029

Several large regeneration and redevelopment projects underway including 8000 new homes being built in the next 30 years

## About the Labour Market

Employment stable over the past 10 years and is high - 82.1% employment rate.

Low unemployment (3.7%) is starting to create skills shortages particularly in lower skilled jobs. Skills shortage in highly qualified jobs particularly in STEM sectors.

Working age population is highly qualified with 39.5% having a degree level qualification or above. Only 3.2% have no qualifications at all.

## About the Digital Economy

Basingstoke itself is home to 341 digital businesses and has a security and telecommunications specialism. Key players include GAME Digital, Hammer and Cyntergy. More generally the UK is one of the world's leading digital economies with digital technology businesses contributing over £105bn in GVA in 2011 (latest figures available) and accounting for 15% of all new companies formed in 2013/14. The ten largest digital clusters in the UK are either in the Enterprise M3 area (in which Basingstoke is located) or in close proximity to it. The Enterprise M3 economy ranks as one of the UK's leading digital economies. It is home to 8,500 digital businesses, employing 50,270 individuals and accounting for 7.4% of all Enterprise M3 employment. Basingstoke has the highest concentration of digital businesses compared to overall businesses in the whole of the UK (location quotient).

## Existing Strategies relevant to the Digital Economy

Basingstoke itself does not have a strategy specifically related to the digital economy. As part of its wider town centre programme and regeneration, however, the town is exploring digital opportunities/smart city technologies. It will commission a feasibility study during 2016.

At a (sub) regional level the Local Enterprise Partnership recently published a Digital Technologies report (November 2015) entitled 'Seizing the opportunities of the digital age'. This sets out a clear definition of the digital economy and demonstrates its size and potential value both at sub regional level and more locally. It highlights links with the Smart

City Agenda as offering potential for further growth and cites basic digital skills and hard and soft infrastructure as key enablers for the sector. It recommends further collaboration between the digital community and economic development stakeholders as well as outlining proposals for further research to pinpoint barriers to growth.

At a national level the digital strategy is led by TechCity who's report 'Powering the Digital Economy' (2015) outlined the country's tech capabilities.

### **Barriers and challenges to growing the digital economy**

- Limited understanding and knowledge of local digital sector
- Lack of digital skills particularly in SMEs
- Cost of housing compared to earnings
- No formal cluster
- Limited networking opportunities
- Access to finance
- Very limited higher education provision locally
- Knowledge gaps around specific issues such as intellectual property or business management

### **Experience relevant to TechTown**

**SETSquared** is an example of a key business support partnership which represents a collaboration between five leading research-intensive universities. Its main goal is to help turn any innovative spark into a thriving, commercial business that will be able to provide economic growth in Britain. SETSquared has expanded beyond university campuses and opened a world class innovation hub for hi-tech firms in Basingstoke, with strong support and investment from the Borough Council. The incubation hub provides networking space and connects local entrepreneurs with multinationals, sources of finance, support organisations, experts and academics in the hi-tech field. At a group level, between 2002-14 SETSquared supported 1,041 SMEs that have contributed £3.8 billion GVA to the economy and forecast to contribute a further £7.4 billion GVA by 2025. Employment due to these businesses is estimated at 8900 jobs in 2014, projected to rise to 14200 by 2025.

**TeenTech** is a highly interactive annual event run by Basingstoke Consortium (an Education and Business Partnership). It brings together over 300 teenagers and aims to inspire them to consider careers in Science, Technology, Maths and Engineering. Leading scientists, engineers and technologists from global, regional and start-up companies bring leading edge technology to show young people how they can be part of this world. From robotics to broadcast technology, precision engineering to world class scientific research, the event showcases the range of opportunities in a fast changing career landscape.

As part of the **Digital High Street** work, Basingstoke recently ran a series of workshops on digital marketing, social media and e-commerce for local retailers. Demand for the training was high and take up was good. It has also appointed **digital champions** to help local residents improve their digital skills so as to access public services which are being delivered online.

Further afield, the **5G Innovation Centre** (5GIC) at the University of Surrey is now the largest UK academic research centre dedicated to the development of the next generation of mobile and wireless communications. Bringing together leading academic expertise and key industry partners in a shared vision, the 5GIC helps to define and develop the 5G infrastructure that will underpin the way we communicate, work and live our everyday lives in the future. 5GIC houses 170 researchers in a purpose-built building. At the heart of the 5GIC is a state-of-the-art testbed – the world’s leading independent testbed for trialling emerging 5G ideas, proving concepts, validating standards and vendor inter-operability testing.

### **Digital Economy SWOT for Basingstoke**

<b>Strengths</b>	<b>Weaknesses</b>
Diversity of digital businesses (sector and size) Informal clustering of digital businesses SETSquared Partnership Incubation Hub Active Education and Business Partnership (Basingstoke Consortium) Proximity to research-intensive universities (Surrey, Royal Holloway and Southampton) Location: good transport connections Availability of low cost office and R&D accommodation Basingstoke identified as one of Enterprise M3 Local Enterprise Partnership’s four growth towns Basingstoke ranked as no 1 location for digital businesses (location quotient) Access to highly qualified workforce pool	Limited overall understanding and knowledge of local digital sector No comprehensive digital sector strategy Lack of networking opportunities (especially 'tech' networking) Lack of modern office space, particularly grade A Cost of housing compared to earnings Some areas lack high speed broadband Difficulties retaining talent Lack of funding for start ups Council data can be hard to access Negative image
<b>Opportunities</b>	<b>Threats</b>
Proximity to Reading (digital cluster) and	Proximity to Reading and London

<p>London</p> <p>Proximity to research-intensive universities (Surrey, Royal Holloway and Southampton) and linked assets (e.g. 5GIC and SetSquared)</p> <p>Emerging higher education provision and planned worked-based higher education centre</p> <p>Access to funding through Enterprise M3 Local Enterprise Partnership</p> <p>Inward investment marketing strategy and campaign</p> <p>Enterprise Zone status in Basing View</p> <p>Superfast broadband roll out programme</p> <p>Smarter working</p> <p>TechTown!</p>	<p>Very limited local higher education provision</p> <p>Lack of formal clustering</p> <p>Lack of digital skills both in SMEs and workforce</p> <p>Public sector budgetary constraints</p> <p>Competition from other locations</p> <p>Global competition</p> <p>Some apathy amongst local employers</p> <p>Pace of change of digital landscape</p>
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### **Ambitions and aspirations for TechTown**

### **Integrated Action Plan**

Basingstoke's plan is likely to focus on:

- Understanding and “knowing” local digital sector and businesses
- Understanding which interventions achieve greatest impact (so as to prioritise)
- Developing a comprehensive and overarching digital economy strategy to cover:
  - Formal clustering and networking within the Tech and Digital community
  - Skills development and addressing skills mismatch issues
  - Talent retention and attraction
  - Business support and access to finance
  - Fostering innovation and entrepreneurship

### **URBACT Local Group**

The URBACT Local Group will act a networking and information sharing forum. It will identify key challenges, opportunities and priorities and use learning from other TechTown cities to inform the co-production of a comprehensive plan which clearly articulate the roles of different stakeholders.

### **Membership**

Name	Organisation	Role
Adrian Braine	SETSquared Partnership	Entrepreneur in residence
Mahesh Harikharan	Xscalo (digital start up)	
Robert Sharpe	Evergreen Consulting (tech start up)	
Alex	Razorsecure (digital start up)	
James Godfrey	Queen Mary's College	Director of Information and Learning Technology
Anthony Bravo	Basingstoke College of Technology	Principal
Mark Baulch	Hampshire Chamber of Commerce	Business Development Manager
Sarah Carter	Enterprise M3 Local Enterprise Partnership	Skills Project Manager
Diane Hayward	Basingstoke and Deane Borough Council	Policy Manager
Carol Johnston	Basingstoke Consortium (Education and Business Partnership)	Project Manager
Susan George	Basingstoke and Deane Borough Council	Economic Projects Officer
Daniel Garnier	Basingstoke and Deane Borough Council	Economic Development Manager
Tbc	Visa	

### **Learning hopes**

Basingstoke has quite a large digital community and great potential (through local and regional initiatives) to grow this. The precise role that different stakeholders (and particularly the council) should play is not fully clear and participation in TechTown will help to better define this. Part of this will be to better understand the digital community and its specific needs vis a vis other sectors. There is also an appetite to address local skills mismatch issues and to grow and retain digital talent. Ultimately it wishes to be home to a thriving tech and digital community and have a reputation for being a 'can-do' place where digital companies can start and grow.

### 3.3. Cēsis Partner Profile

#### *Cēsis FactFile*

Population: 18 964

#### Business Structure by Sector

		Employees	Share (%)
1	Agriculture, forestry and fishing	205	3.3
2	Manufacturing , mining and quarrying and other industry	787	12.8
2a	Of which Manufacturing		
3	Construction	608	9.9
4	Wholesale and retail trade, transportation and storage, accommodation and food service activities	2132	34.7
5	Information and communication	57	0.9
6	Financial and insurance activities	1	0.00
7	Real estate activities	244	4.0
8	Professional, scientific, technical, administration and support service activities	371	6.0
9	Public administration, defence, education, human health and social work activities	1504	24.5
10	Other services	227	3.7

#### Business Structure by Size

Micro-businesses <10 employees	Small businesses 11-49 employees	Medium-sized businesses 50-249 employees	Large businesses (250+ employees)
<b>86.8</b>	<b>11.1</b>	<b>1.8</b>	<b>0.3</b>

#### Some major employers

Name	NACE	Sector	No. employees
AS "CATA"	49.31	Urban and suburban passenger land transport	409
SIA "Cēsu Klīnika"	86.10	Hospital activities	284
AS "Cēsu Alus"	11.05	Beer manufacturing	217

<b>SIA “Beatus”</b>	<b>47.11</b>	Retail sale in non-specialised stores with food, beverages or tobacco predominating	<b>176</b>
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### About the City

Small city about 90k East of Riga in the Centre of Latvia

Population stabilising (and starting to grow) following period of decline

Cultural capital of Latvia

### About the Economy

Public sector accounts for approximately 40% of employed people

Main sectors are food, transport, retail and construction

Trying to attract creative and digital talent (back) from Riga

8% growth in number of jobs in 2013/14

### About the Labour Market

Very low unemployment rate of 5.3% (compared to national rate of 9.7%)

Low employment rate of 59.7% and high economic inactivity rate of 35%

Unemployment higher amongst women

Higher than national average number of people with higher education

### About the Digital Economy

There are currently just 30 digital companies in the town and the majority of other companies do not yet seem recognise the need for digital services or the potential of spill over from the digital and creative sectors for their businesses.

### Existing Strategies relevant to the Digital Economy

Cēsis municipality has included Digital industries among the most important economic sectors in its **“Strategy for long term development 2015-2030”**.

At regional level, Vidzeme region has recently recently approved its **“Vidzeme Planning region Sustainable Long term development strategy until 2030”** which outline the key sectors for economic specialisation and includes ICT. Areas such as computer programming for manufacturing needs, data analyses, app and game development are seen to have the most potential for development in the region.

At national level, the digital economy is seen as an important part of business development in Latvia, although there is no national digital strategy. The sector is however cited in a number of important national documents including 'Development of Smart Specialisation Strategy', the 'Guidelines for supporting scientific and technology development and innovation 2014-2020' and the 'Sustainable Long Term Strategy for Latvia to 2030'.

### **Barriers and challenges to growing the digital economy**

- Young people leaving the town for Valmiera, Riga and beyond - brain drain
- Lack of business support - needs long term development in this area e.g. pre-incubation and incubation services, start up grants, affordable space
- Lack of coherent and integrated strategy for digital jobs
- Lack of interest in (or knowledge of) or need for digital services from other sectors
- Lack of digital skills leading to difficulties attracting and retaining talent
- Lack of 'hype' around the digital sector – no critical mass compared to Riga which is home to a mature ICT cluster

### **Experience relevant to TechTown**

Cesis has only recently started to consider the potential of the digital economy and therefore does not have significant amounts of sector-specific practices which have been tried and tested. However there are a number of linked initiatives which may offer learning for other TechTown Partners. The city also has free wifi in all public spaces.

The planning region of Vidzeme in which Cesis is located was involved in Med@Tech (funded through INTERREG IVC and led by San Sebastian). The Med@Tech Policy Toolkit highlights the '**EMIC' Knowledge Triangle** which aimed to improve graduate employability in the region. It brought together education, research and innovation stakeholders using a wide range of audio visual tools to strengthen relationships and thereby grow knowledge-based graduate jobs.

Cesis has recently developed a new **Creative and digital industries centre** «Skola6» , which is based in an old school house in the town centre. Whilst the doors only opened in the Autumn of 2015, the ambition is to establish a digital/creative start-up centre, and co-working space with a complementary programme of pre-incubation, incubation and business support services for local entrepreneurs.

The Technical University of Latvia's local branch has developed a unique **IT college level study programme** to help develop digital skills among young people. This includes a course of digital technologies for teachers.

### **Digital Economy SWOT for Cēsis**

<b>Strengths</b>	<b>Weaknesses</b>
<p>Existing sector of cultural and creative industries create a drive for more advanced digital solutions</p> <p>The creation of a creative and digital media centre in the old town of Cēsis, which will serve as an open co-working and event place</p> <p>Riga Technical University branch – its development can greatly influence the overall development of the industry</p> <p>Small scale of the city makes it easier to create change</p> <p>Different local stakeholders are equally interested in development of the digital economy and have shown the willingness to work together</p> <p>The Vidzeme region has the highest internet speed rate in the country – this creates an advantage for development of digital businesses in Cēsis</p>	<p>The lack of demand for digital services from other businesses in Cēsis and the region</p> <p>Very limited financial support opportunities for start-ups to develop their products and services</p> <p>Weak existent digital community with almost no initiatives and</p> <p>No existent large digital enterprises and a 'sleepy' start-up environment</p>
<b>Opportunities</b>	<b>Threats</b>
<p>The image of the city on the national scale – Cēsis is considered to be one of the good examples in cultural city regeneration and this attracts a lot of attention. This is an opportunity to attract more digital businesses and freelancers, as well as to also raise the question on the digital economy on the national scale.</p> <p>Establishment of a national government managed incubator program in the regions of Latvia would be a connection point between universities and entrepreneurial environment</p>	<p>National and international regulations makes it more difficult for SMEs to exist and for digital markets to expand ( e.g., a need of united EU regulations on customer rights and content availability)</p> <p>Lack of young individuals willing to enrol in IT university programs in Cēsis, which would continue to create the lack of talent</p>

## **Ambitions and aspirations for TechTown**

### **Integrated Action Plan**

Cesis's plan is likely to focus on:

- Co creating a long term vision to define the potential for growing digital jobs
- Improving the digital skills across all generations - to build a model for involvement in the Digital economy for all citizens
- Creating the perfect start-up environment for digital innovators and support the with a workplace (creative and digital centre) and associated pre-incubation, incubation and business support services.
- Exploring the opportunities of clustering Digital Economy businesses in the region by creating a common platform for digital growth.
- Exploring how to support digital transformation of traditional businesses.

The town plans to lead by example and introduce more digital services in the way the municipality works.

### **URBACT Local Group**

The main function of the group is to raise the discussion on the digital industry among existing companies. The group will develop strategy and create an integrated action plan for the growth of digital economy in Cēsis. It will:

- Create successful networks among local schools, universities, NGOs and entrepreneurs;
- Bring together (create events, ensure communication) and develop the local digital community;
- Explore and create potential for cooperation with other digital sector initiatives (technology and creative incubators, research institutions, co-working spaces, programs, young professionals etc.) existing elsewhere in Latvia (Riga, Liepāja, Ventspils etc.);

### **Membership**

Name	Organisation	Role
Alvis Sokolovs	Riga Technical University	Branch director
Elīna Baranovska	University of Applied Sciences	Project manager in the Centre for Knowledge and Technology
Pauls Irbins	Science centre "Zinoo" –	Director

	Foundation on Innovation and Entrepreneurship  Green technology incubator in Riga	Member of the board
Ingus Rūķis	Draugiem group (group of ICT enterprises)	Development Team Lead
Dita Trapenciere	Creative and Digital industries centre in Cēsis	Manager
Kristaps Ročāns	Vidzeme Planning region	Business development specialist and project manager
Gatis Liepiņš	Institute of Environmental Sciences	Project Director
Laine Madelāne	Cēsis municipality	Head of Development department
Inese Suija Markova	Cēsis council	Politician
Valdis Nītiņš	Cēsis municipality	Business development specialist
Ģirts Užāns	Freelancer	-
Kitija Egle	JCI Cēsis	Manager of the branch
Māris Balčiņš	Independent programmer, app developer	-
Iveta Jermolajeva	Youth Council	Leader

### Learning hopes

Cēsis seems to have many of the components necessary to grow the digital economy. It would like to see how other cities have brought them together successfully. It is particularly interested in helping existing companies to be 'smarter' through use of new digital technologies and in creating a cultural and digital offer for the city's people and businesses.

### 3.4. Clermont Ferrand Partner Profile

#### *Clermont Ferrand FactFile*

Population: 282 675

#### Business Structure by Sector

		Employees	Share (%)
1	Agriculture, forestry and fishing	369	0.3
2	Manufacturing, mining and quarrying and other industry	19 924	13.7
3	Construction	8035	5.5
4	Wholesale and retail trade, transportation and storage, accommodation and food service activities	33173	22.8
5	Information and communication	4260	2.9
6	Financial and insurance activities	4905	3.4
7	Real estate activities	1484	1.0
8	Professional, scientific, technical, administration and support service activities	17261	11.9
9	Public administration, defence, education, human health and social work activities	50 996	35.00
10	Other services	3351	2.3

#### Business Structure by Size

Micro-businesses <10 employees	Small businesses 11-49 employees	Medium-sized businesses 50-249 employees	Large businesses 250+
91,5%	6,6%	1,6%	0.3%

#### Some major employers

Name	Sector	No. employees
MICHELIN	Private - Industry	Circa. 12 000
HOSPITAL	Public	7 000
BANQUE DE FRANCE		950
INRA	Public research	812
LIMAGRAIN	Private – Agro-food industry	798
ALMERYS	Private – Digital / ICT	315

IBM	Private – Digital / ICT	430
La Montagne	Private – local news	633

### About the City

Located within the (new) region of Auvergne-Rhone Alpes (home to Lyon, St Etienne and Grenoble) in a mountainous area of France.

Previously the largest city in Auvergne; Now smaller than other regional centres.

Not on the high speed rail or rail network – which has an impact on accessibility and means the city is quite isolated

Home to 40 000 students (16% of the population)

Applying to be European Capital of Culture 2028

### About the Economy

Employment dominated by public sector (35%) and services (more than 60%)

Institutional change threatens public sector employment

Positioning itself as a smart specialisation leader with a focus on 5 areas of excellence: precision agriculture, healthcare prevention, innovative factory, sustainable living spaces and physical and digital traceability (with a focus on digital trust

Home to Michelin headquarters - employing around 12 000 people

### About the Labour Market

Unemployment rate of 13.1%; youth unemployment rate of 26% and employment rate of 60.2% – all slightly better than national averages

Mismatch between the education and training on offer and the skills needed by existing and future employers

A lot of students come to university and then leave the city when they have graduated.

### About the Digital Economy

Clermond Ferrand is home to 428 digital companies, which employ 3659 people. Michelin is an important player in the city's digital future with its emphasis on open innovation and 'swarming'.

### Existing Strategies relevant to the Digital Economy

The city is developing a Digital Hub which will be a space dedicated to digital creation and innovation, and development of a structured and efficient digital ecosystem. Ultimately the plan is to extend this into a digital neighbourhood with 8000m<sup>2</sup> of space and the target is to

contribute to the regional Smart Specialisation Strategy which aims to grow more than 2500 digital jobs by 2025.

At a regional level the Smart Specialisation Strategy includes a commitment to specialise in digital traceability and supports the launching of the Digital Hub. The regional ICT cluster has also helped the sector to grow. 2016 will see the merger of Auvergne's ICT cluster and St Etienne ICT cluster into a single cluster - Numerlink - which will have a membership of more than 300 companies.

At a national level the draft law for a "Digital Republic" aims to develop digital uses while regulating the internet and data's security. This will facilitate access to internet in everyday life and protect individuals' lives on the web. The French Tech label is awarded to cities which have developed and structured a digital ecosystem and aims to make the digital sector in France visible to European and international counterparts, to create enterprises and jobs and to stimulate innovation and competitiveness. The initiative includes €215 million in support to accelerate the growth of digital start-ups and policies to make the digital economy a key part of France's investment attractiveness.

### **Barriers and challenges to growing the digital economy**

- Insufficient 'critical mass' to be fully attractive to external investors and workers - coupled with lack of visibility and attractiveness
- Lack of cross sectoral relationships
- Lack of entrepreneurial culture
- Relatively poor transport links to 'business' destinations by train and air
- Traditional working methods dominate meaning there are some barriers to change and towards less formal working methods of the digital economy
- Mismatch between the skills and education available locally and the needs (current and future) of digital jobs

### **Experiences relevant to TechTown**

The **Auvergne TIC (regional digital cluster)** has had its head quarters in Clermond Ferrand since 2008. It has a membership of 65 SMEs, 6 training centres, 3 research labs, 7 larger companies and 4 public sector partners. During 2016 it will be merging with the St Etienne cluster to become Numelink and will then have more than 300 members. It runs a range of research and training activities and has helped the sector to grow to one which employs more than 3000 people across the region and has generated over €130m turnover.

One of the main achievements has been the creation of a **Digital Hub** in Clermond Ferrand itself. This is a partnership between public and private organisations (including Michelin, Limagrain, Orange, Engie, utilities companies and the local press). It has developed a new

space in which it plans to incubate and grow new digital businesses. It provides a collaborative space, incubation, acceleration and coaching services alongside a high spec and flexible co working environment and has identified an opportunity to contribute to the regional Smart Specialisation Strategy which aims to grow 2500 jobs by 2025. The hub was only launched in 2015 but there are plans to grow it into a larger digital neighbourhood. Whilst this is not a tried and tested practice, it is highly likely that it will generate useful learning during the course of the TechTown project.

Similarly the '**Platform for Digital Trust**' is going to be launched in 2016, picking up one of the key sectors in the region's smart specialisation strategy. It aims to develop a 'confidence chain' based on solutions from different partners so that developers and innovators feel 'safe' testing their ideas in local living labs and the city is able to share open data without compromising data security.

**Prev@Pass** is an information system which allowing individuals to share information on their behavioural and environmental state, in order to adapt and improve healthcare. Individuals become fully responsible for their health data, which they may choose to share, or not. There are 3 main tools:

- Prev@Liss - software dedicated to prevention, for prevention professionals
- Dom@Pass, a toolbox aiming improve patients' healthcare, at home or in an in-patient facility
- Educ@Pass, a toolbox for a coordinated therapeutic follow-up, between a patient and their healthcare practitioner

### **Digital Economy SWOT for Clermond Ferrand**

<b>Strengths</b>	<b>Weaknesses</b>
Urban area (growing population, migratory balance) Quality of life (cost, metropolitan services-equipment, environment) Proximity/cohesion Digital access and coverage (broadband, fibre) Economic dynamism (big firms) Higher education, Research and Innovation Human capital : employment opportunities (employment area, Academic center : INRA., medium-high skills formations Support to business settlement and growth (Maison Innovergne, incubators) and good enterprises creation dynamic (94	Density- critical mass (population, employment, GDP, Higher education and research, ..) Insufficient size of the digital ecosystem Young workers population's demographic deficit Negative and clichéd territorial image (mono-industry) Lack of physical accessibility (train and plane – to Paris and Lyon) International opening –foreign investment Human resources/Recruitment : lack of higher skills Scientific resources: critical mass / public research/ International Competitive cluster

enterprises created bet. 2001-2013) Strong digital dynamic with the cluster Auvergne ICT, Maison Innovergne, local start ups , project holders and political support(Epicentre/Almerys) Datacenters of significant sizes (Ecodatacenter Cébazat ; Bunker Almérys)	shortage / low R&D expenditure Lack of stakeholder's mutual acknowledgment Lack of communication and territorial marketing about the digital economy
<b>Opportunities</b>	<b>Threats</b>
Digital Hub Industrial sectors mutation (open innovation, sharing economy, innovating agro-food sector, sustainable mobility) East-West flows' accessibility – growth (regional fusion) / Highspeed train Big firm's participation to local life (investments : urbalad / R&D Michelin, Limagrain,...) and local business growth (open innovation/swarming) Extra-territorial ambition e.g. Michelin Cities network... Higher education : I-SITE application, multidisciplinary academic offer Innovation : development of new networks with Lyon/St Etienne / Grenoble European Capital of Culture S3 (Smart Specialisation Strategy), with a Strategic Innovation Domain about digital trust, (security and privacy) and high level security infrastructures (datacenter) with La Fabrique French Tech St-Etienne, Lyon, Grenoble Increased and strengthened young population's professional skills Smart city initiatives	Difficulty to exist as a medium-size agglomeration close to big economic hubs (Lyon, Grenoble) Competition with other territories in attracting innovating projects Develop only technical and technological innovation which can be not adapted to market needs and to a long-term enterprise strategy

### **Ambitions and aspirations for TechTown**

### **Integrated Action Plan**

Clermond Ferrand's plan is likely to focus on:

- Growing the digital economy as a major employer and positioning Clermont as a major digital actor (visibility/attractiveness) both nationally and internationally
- Facilitating access to digital services and ICTs (make services' demand and offer match and acknowledge each other)

- Developing synergies with other regional clusters (St Etienne, Grenoble, Grand Lyon). This has already started with a merger between Auvergne TIC and St Etienne's digital cluster, Numelink.
- Fostering open innovation and swarming from big firms
- Developing a French Tech mentality and gaining recognition under the digital thematic ecosystem call for proposals (published early in 2016)
- Using the Digital Neighbourhood to grow jobs and as a catalyst for urban regeneration

### **URBACT Local Group**

It is likely that the OSE (Observatoire Strategie Economique) will form the basis from which the URBACT Local Group will grow. It is an existing structure and provides a permanent platform for public and private stakeholders to come together and discuss economic challenges and opportunities. The digital economy is a core area of interest to all stakeholders so it makes sense for participation in TechTown to facilitate the formation of a group within this permanent structure.

### **Membership**

<b>Name</b>	<b>Organisation</b>	<b>Role</b>
Jean-François Masselot	Clermont Communauté	Cabinet - Adviser
Nathalie Guichard	Clermont Communauté	General Director in charge of economic development
Christine Fournioux	Clermont Communauté	Deputy Director in charge of contractual policies and urban planning
Estelle Tournier	Clermont Communauté	Project officer in charge of innovation
Jean-François Collin	Clermont Ferrand	Director in charge of Higher Education and International Relations
Cécile Finot	Clermont Ferrand	Project officer - European Capital of Culture
Jean-Marc Morvan	Clermont Communauté	Vice-President in charge of Universities, Research, Innovation and Attractivity
Jérôme Auslender	Clermont Ferrand	Deputy in charge of Higher Education, Research, Student life and International Relations
Franck Alcaraz	Region	Deputy Director in charge of Economic Development and Attractivity
Sophie Rognon	Region	Director in charge of digital development
Nathalie Prugnit	DIRECCTE	Project officer in charge of economic development
Marc Ferrand	DIRECCTE	
Géraldine Derozier	CGET	Commissary
Jean-Marc	Grand Clermont	Development Board President

Monteile		
Tbc	Michelin	
Tbc	Limagrain	
Tbc	Orange	
Tbc	La Montagne	
Tbc	Engie	
Tbc	Trade and Industry Chamber	
Benoît Membre	Digital Hub	Director
Franck Raynaud	Auvergne TIC	President
Tbc	Cofreo	
Caroline Poinson	Almerys	
Tbc	Sopra	
Tbc	Start-Ups	
Claire Faure	PRATIC	Regional officer
Jean-François Mongeau	OverScan	
Damien Lebre	Maceo	Director
Pierre-Charles Romond	Auvergne University	Vice-President in charge of Valorisation and Technology Transfer
Frédéric Poignant	Maison Innovergne	Director

### Learning hopes

Clermont Ferrand's ecosystem has impressive ambitions to grow its digital economy. It has invested heavily in the Digital Hub and Digital Neighbourhood initiatives, which are at the heart of turning this vision into a reality. The new regional government structure in France provides both opportunities and challenges. Participating in TechTown will help the city to look beyond this: to benchmark its work against others in the EU, to learn more about how to work alongside such large regional centres (in order to maximise local potential), to understand how to 'sweat' its physical digital assets to the help start ups to grow and ultimately to grow more jobs both through start ups and through the digital transformation of existing industry. The partner is also interested in exchanging with other relevant partners about the articulations and synergies which can be developed and created between the digital economy and the application for European Capital of Culture.

### 3.5. Dubrovnik Partner Profile

#### *Dubrovnik FactFile*

Population: 42 615

#### Business Structure by Sector

	Employees	Share (%)
Agriculture, forestry and fishing	1.047	2.5
Manufacturing, mining and quarrying and other industry	3.862	9.1
Of which Manufacturing	2.414	
Construction	2.442	5.8
Wholesale and retail trade, transportation and storage, accommodation and food service activities	16.968	40.0
Information and communication	567	1.3
Financial and insurance activities	1.231	2.9
Real estate activities	270	0.6
Professional, scientific, technical, administration and support service activities	4.065	9.6
Public administration, defence, education, human health and social work activities	10.867	25.6
Other services	1.092	2.6

#### Business Structure by Size

Micro-businesses <10 employees	Small businesses 11-49 employees	Medium-sized businesses 50-249 employees	Large businesses (250+ employees)
<b>1.* 1.942 businesses</b>		<b>23 businesses</b>	<b>4 businesses</b>
<b>98.6%</b>		<b>1.2%</b>	<b>0.2%</b>

#### Some major employers

Name	Sector	No. employees
JADRANSKI LUKSUZNI HOTELI D.D.	Hotel complex	858
OPĆA BOLNICA DUBROVNIK	Public - hospital	849
RIVIERA ADRIA D.D.	Hotel complex	678
PEMOI D.D.	Wholesale & retail	366
LIBERTAS-DUBROVNIK D.O.O.	Public transport	322

## About the City

Beautiful historical walled city on the Adriatic Coast to the South of Croatia

City boundaries also include immediate surrounds

Ambitions (and tangible plans) to be a highly successful 3<sup>rd</sup> generation smart city

## About the Economy

Dominated by tourism and related industries

A quarter of employment is in public sector

ICT only accounts for 1.3% of employment

National average monthly net pay is 783 Euros (or 1031 euros in ICT sector)

## About the Labour Market

Unemployment rate of 9.9% and employment rate of 47%

High rates of youth unemployment - 1 in 3 unemployed is between 15 and 29 years old - many of the young unemployed are highly qualified

Large amount of seasonal employment

Major issues with out migration of young people

Highly education workforce with 81% having high school or higher education level qualification

## About the Digital Economy

At a national level ICT is focused around telecommunications and computer programming / consultancy. There are 105 registered ICT companies in Dubrovnik-Neretva County (of which 38 are programming companies).

As things stand the city's digital economy is reasonably under developed. There is however recognition that growing the digital economy will help to create new jobs for the city's young people. The city is particularly keen to ensure that it maximises the job creation potential of its smart city strategy.

## Existing Strategies relevant to the Digital Economy

At a city level the Smart City Strategy (July 2015) sets out a set of planned activities falling within 4 key areas - mobility and infrastructure; quality of life; management and institutions (including digitalisation of activities and services) and economic development (including employment, entrepreneurship and innovation).

At a regional level the Dubrovnik-Neretva ICT strategy emphasises the importance of entrepreneurship and includes a strategy priority to connect ICT with traditional industries (tourism, agriculture and transport) in order to increase competitiveness.

At a national level 'Digital Croatia' defines the country's objectives and priorities for economic transformation through digital technologies.

### **Barriers and challenges to growing the digital economy**

- High levels of outmigration of young people – particularly to leave Dubrovnik to go to university elsewhere – and linked to higher salary offers elsewhere for people with digital skills
- Mismatch between the skills available – and taught – and those needed to develop a successful digital economy
- Entrepreneurs and business owners aged over 45 lack technological education and skills
- Lack of entrepreneurial / digital culture
- Businesses focus on short term goals and lack long term vision or strategy – difficulties engaging SMEs in training and capacity building activities within the city

### **Experience relevant to TechTown**

Dubrovnik has a significant amount of experience working in the start up scene with events like "**Start-up weekend Dubrovnik**", "**Hackathon Dubrovnik**".

It has a recognised **business incubation centre** and has also recently created a **smart city lab** in which it plans to grow the new generation of young entrepreneurs and engineers who will develop innovative solutions to complex city challenges.

The whole concept is focused on having local people solving local problems and is empowered by networking with regional digital hubs, like Zagreb and other cities in Croatia and Sarajevo, Bosnia and Herzegovina in particular. Connections between tech hubs are a great resource and facilitate the transfer of knowledge, technology, complete solutions and project results between cities.

In 2015 the Hackathon brought together around 30 people to explore a range of city challenges. The winners were then supported by the city's Development Team and Smart City Lab to develop their ideas into real products and services. These are being launched during 2016 and include:

- A **smart parking app** linked to sensors on 140 parking spaces which will report whether

space is available and then make that information available to drivers through their smart phone

- Digitalisation of the **Dubrovnik Tourist card** so that the information that was previously only available on paper is now accessible through a smart phone and linked to i-beacons across the city which will provide live notifications containing useful information about different sites of interest;
- A new **smart sprinkler system** that measures temperature and humidity of the ground and uses that information to either turn on or turn off the sprinklers

For TechTown, the end products are less interesting than the process used and the potential for local jobs and companies to be born out of this way of working.

The city has also participated in national schemes around e-business, e-schools, e-citizenship and e-government, which may provide useful lessons for other TechTown cities.

### **Digital Economy SWOT for Dubrovnik**

<b>Strengths</b>	<b>Weaknesses</b>
<p>Relatively high IT literacy, high educational level/percentage (2 out of 3) Universities in Dubrovnik are of IT sector Good broadband access within the region Greatest ICT demand from tourism sector (the dominant local business sector)</p>	<p>Tendency of declining number of ICT companies within the region Lack of knowledgeable sector professionals Lack of ICT companies that can satisfy high local/regional demand for technology and job opportunity in this sector Lack of current 'good local examples' within digital economy Lack of entrepreneurship among youth (self-employment, SME's) Average salaries within SME's/digital economy not competitive enough (compared to bigger cities in Croatia)</p>
<b>Opportunities</b>	<b>Threats</b>
<p>Sector growth is encouraged by various national and EU funding programmes (e.g. Horizon2020) E-learning as an answer to geographical isolation of Dubrovnik Digitalization of most frequently used City public services</p>	<p>'Brain drain' – tendency of professionals leaving the region / high demand of IT professionals within EU Not enough youth is interested in education within ICT sectors Competition of digital economy from bigger cities in the area is too strong for</p>

<p>Sufficient sources of national funding for SME's to develop and/or become more competitive -(develop the ICT sector within the business)</p> <p>Further development of digital economy within tourism sector</p>	<p>the local SME's</p> <p>ICT infrastructure is developing too slowly to meet the demands</p>
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### **Ambitions and aspirations for TechTown**

#### **Integrated Action Plan**

Dubrovnik's plan is likely to focus on:

- Increasing local companies using digital tools
- Increasing of students staying in Dubrovnik or coming to Dubrovnik to study ICT and digital-linked courses
- Developing Dubrovnik has a great example of a 3<sup>rd</sup> generation smart city which grows local jobs and companies whilst at the same time solving local challenges
- Better matching the supply and demand in the labour market by improving ICT skills training

#### **URBACT Local Group**

The URBACT Local Group will group all the relevant stakeholders and start to define of this subject on a local level. This will help the different stakeholders to view and further develop it together but through different sectors and levels. By having people working on both the supply and the demand side of the labour market ,and indeed on the city's smart city strategy, it plans to:

- Use transnational exchange and learning with other cities to better define the local digital economy and understand its growth potential now and in the future
- Use the URBACT method to enable members to co-create actions which will help it to grow a digital economy, digital skills, digital entrepreneurs and more generally a digital culture, where appropriate linked to the smart city strategy.

## Membership

Alisa Aliti Vlašić	DURA City of Dubrovnik Development Agency	Professional associate
Nikša Vlahušić	DURA City of Dubrovnik Development Agency	Professional associate
Marijana Puljas	DURA City of Dubrovnik Development Agency	Professional associate
Vlaho Margaretić	City of Dubrovnik Department of Entrepreneurship, Tourism and Sea	The manager of the Department of Entrepreneurship, Tourism and Sea
Marko Grgurević	City of Dubrovnik Department of Education and Social Care	Senior advisor in Department of education and social care
Baldo Franić	City of Dubrovnik	Council officer
Ljubo Nikolić	City of Dubrovnik	Council officer
	Laus CC – ltd // <i>ICT sector</i>	Director
Dasen Jasprica	Director of the regional center in Dubrovnik	Croatian Employment Service, Regional center in Dubrovnik
Vedran Kastrapeli	Senior Adviser for Analytics and Statistics	Croatian Employment Service, Regional center in Dubrovnik
Mirna Jokić	Advisor for Project Implementation	Croatian Employment Service, Regional center in Dubrovnik
Terezina Orlić	Croatian Chamber of Economy, Dubrovnik County Chamber	President of County Chamber
Nikolina Trojić	Croatian Chamber of Economy, Dubrovnik County Chamber	Senior Associate
Ivana Palunko	University of Dubrovnik	Professor in Department of Economics and Business
Christina Petrović	Rochester Institute of Technology Croatia	Events Manager & Assistant to the President
Vedran Vukas Džaić	IntuIT ltd // <i>ICT sector</i>	Director
Petar Matuško	Universal industries	Director
Jelena Vlahovic	Croatian Association of Technical Culture CATC	
Željko Prce	Local Technical and Crafts College	Professor

### Learning hopes

Dubrovnik is a small city with large ambitions. Through TechTown it wishes to learn how to grow a new digital economy, linked where appropriate to its smart city strategy, so that it can encourage more young people to live and work locally. It also wishes to better understand the digital economy so that it can quantify its size and growth potential locally and ensure that local education provision is better matched to the needs of business – both now and in the future.

## 3.6. Gävle Partner Profile

### *Gävle FactFile*

Population: 99 000

#### **Business Structure by Sector**

(2013)	Employees	Share (%)
Agriculture, forestry and fishing	473	1.0
Manufacturing, mining and quarrying and other industry	4365	9.5
Of which Manufacturing	3483	
Construction	4064	8.8
Wholesale and retail trade, transportation and storage, accommodation and food service activities	9621	20.9
Information and communication	1204	2.6
Financial and insurance activities	513	1.1
Real estate activities	970	2.1
Professional, scientific, technical, administration and support service activities	4931	10.7
Public administration, defence, education, human health and social work activities	17439	37.9
Other services	46013	100.0

#### **Business Structure by Size**

Micro-businesses <10 employees	Small businesses 10-49 employees	Medium-sized businesses 50-249 employees	Large businesses (250+ employees)
Total: 8170 (90,7%)	682 (7,6%)	147 (1,6%)	10 (0,1%)

## Some major employers

Name	Sector	No. employees
Gävle kommun	Public (Municipality)	8475
Gävleborgs läns landsting	Public (County council)	3575
Korsnäs AB	Private (Paper packaging)	975
Lantmäteriet	Public (National landsurvey)	775
University of Gävle	Public (University)	675

## About the City

Green and sustainable medium sized city on the Baltic Sea about 160 km north of Stockholm in Sweden, in the North-Central Sweden region

Growing population (positive birth numbers and growing numbers of migrants).

Logistics centre of Central Sweden; Port of Gävle - largest container port on the east coast of Sweden, central junction of road and rail links, national airport Arlanda, 60 minutes away.

Diversified offer of leisure-, sports- and cultural activities.

9000 persons commuting in/out of the city each day (each direction), majority towards/from the Uppsala/Stockholm region but a third towards/from the neighbouring city Sandviken.

## About the Economy

Important industrial tradition in the paper, pulp and steel industries. Economic downturn led to major job losses at local factories and firms.

Large international businesses in Gävle/region (Billerud Korsnäs, Stora Enso, Sandvik, Ovako) have strong research and development units.

Growing service industry, strong retail sector and developing tourism sector.

Administrative centre of the region, large public sector.

The University of Gävle has 15 000 students, in three faculties: Engineering & Sustainable Development, Education & Business Studies and Health & Occupational Studies.

## About the Labour Market

Unemployment stands at 10.4% and employment rate is 71.1%.

Low skilled population (22.5% compared to national average 2.1% with minimum 3 years university education, age 18-64 years). This is in part due to the strong industrial tradition, where it was possible to go straight into work (relatively well paid) without the need for further education. This has changed and the demands of the industry today is much tougher, the attitude to education – as an investment – has not followed.

Number of self employed (4.8%) is lower than the national average (6.7%).

Skilled workforce is seen as a key priority for the development of the knowledge based economy.

### **About the Digital Economy**

The Gävle region is home to a wide range of individual initiatives which aim to develop knowledge based jobs including a national GIS cluster – Future Position X (FPX), a Forum for Industrial IT solutions (FindIT) and a fiber optic cluster - Fiber Optic Valley. Their member companies represent an important part of the digital economy. The city is also doing some innovative work in developing digital skills amongst young people

### **Existing Strategies relevant to the Digital Economy**

A digital strategy for the city does not exist but there are many different strategies and plans that are linked to digitalisation / digital economy including: e-strategy; GIS strategy; web strategy; communication strategy; business development programme and the ICT plan for education which aims to prepare young people for the digital jobs of the future. However the municipality considers many of these to be outdated and is keen to develop a new plan to address the challenges of the Digital Economy.

The regional Digital Agenda is still under development and, at national level, in 2015 the Swedish government and the Swedish Association of Local Authorities and Regions published an agreement on “The Digitalisation of the Public Sector in Sweden”, focusing on:

- digitisation of the planning and building processes (work led by the Swedish National Land Survey in Gävle)
- growth and greater opportunity for informed choices in the food chain
- increased availability of environmental information
- making business easier, for example, by reduced bureaucracy and the opportunity for self service
- streamlined information management in healthcare
- deepening student learning and facilitating the work of teachers

To supplement this a new strategic document is under development and will be published in 2016 with the goal that 'Sweden is the best in the world in using digitalisation opportunities'. In 2015 the Swedish Association of Local Authorities published its agreement on 'the digitalisation of the public sector in Sweden'.

### **Barriers and challenges to growing the digital economy**

- Skills shortages (both in knowledge and numbers)

- Generation issue/tradition. There are still two camps: analogue and digital
- Lack of ICT competence, skills and application in business - particularly in SMEs
- Legislation (not adapted to the digital information society, i.e. procurement)
- Lack of standards (national and international levels)
- Lack of coordination (national and regional)
- Lack of clear city wide approach to the digital economy

### **Experience relevant to TechTown**

Gävle is home to **Future Position X** which is a European centre of excellence and an independent arena for research and development in the Geographic Information Technology (GIT) Industry. It works in the field of Geographic Information Technology, Spatial data and solutions for the future green society and the smart city. FPX helps companies and organisations to research and develop new products and solutions and expand to new markets. It comprises over 200 companies and organisations working together in a cluster. Its headquarters, labs and incubator are based in Gävle region it also has project offices in Beijing and Wuhan and a market office and incubator in Zhuhai City in China. Today there are over 2000 experts and in total over 6000 people working for the Geographic information Industry in the Gävle region.

**FindIT** - located in the neighbouring municipality of Sandviken - is a Forum for Industrial IT Solutions and brings together people and industries in the region including steel, paper and pulp businesses, small and medium sized producing companies, ICT-suppliers, academia and research. It aims to make small and medium sized companies in the region more competitive, while supporting the emergence of new companies, products and methods. It has 400 members and aims to bring together traditional process industries with problems to solve with local ICT providers who are problem solvers.

**Fiber Optic Valley** is another cluster which aims to help entrepreneurs and companies to commercialise their ideas and grow their businesses. They initiate new collaborations between businesses, universities and the public sector in the areas of Broadband and Sensor Technology. Whilst not physically located in Gävle, they operate locally and influence sector development.

The city's education department has developed a wide range of initiatives which aim to strengthen Science Technology, Engineering and Mathematics **(STEM) skills** in young people and also to **promote entrepreneurship**. The new ICT plan for education aims to ensure that all young people will have an ipad from grade 7 and has introduced a new **web based educational platform** which is open for all as well as digital skills training for teachers.

Gävleborg (the region in which Gävle is located) featured in a publication entitled '**Tools and**

**Strategies for Innovative Talent Attraction and Retention'** (2014) which discusses what talent attraction is and highlights different approaches and models.

### **Digital Economy SWOT for Gävle**

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>- strong process industry (continuous development and demanding towards suppliers - specific IT requirements i.e. e-billing...)</li> <li>- strong clusters (Find-IT, Future Position X (FPX), Fiber Optic Valley)</li> <li>- strong public authorities (Swedish National Land Survey, Swedish Transport Authorities, municipalities..)</li> <li>- University of Gävle</li> <li>- Young Entrepreneurs (UF)</li> <li>- good infrastructure (in general, some weak spots in the country side, 100 megabyte - 2020)</li> </ul>	<ul style="list-style-type: none"> <li>- Shortage of skills and lack of competencies IT/digital sector</li> <li>- lack of awareness, motivation and role models linked to traditional industrial society</li> <li>- low level of IT- skills and use in SMEs</li> <li>- lack of knowledge, common vision and goals regarding the digital economy (ad hoc)</li> <li>- weak governance (including lack of standards, although not a local problem per se)</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>- growing cities (Gävle and Sandviken)</li> <li>- innovation climate (number of patents Sandvik, innovation system)</li> <li>- ageing population (increasing need for digital solutions for older people)</li> <li>- immigrants (new skills - make them and let them contribute)</li> <li>- closeness to fast growing regions of Stockholm/Mälardalen</li> <li>- open data (National Land Survey, municipality...)</li> </ul>	<ul style="list-style-type: none"> <li>- lack of overall governance (including lack of standards, comparing to i.e. Germany industry 4.0)</li> <li>- global situation - financial crisis leading to strained public finances</li> <li>- lack of competence is a barrier to growth and economic development</li> <li>- main industries closing down, moving production elsewhere</li> </ul>

### **Ambitions and aspirations for TechTown**

### **Integrated Action Plan**

Gävle's plan is likely to focus on:

- Addressing the skills mismatch and develop a highly skilled digital workforce which meets the needs to employers (digital and traditional) now and in the future
- Brokering links between the city's digital entrepreneurs and traditional processing industries in the surrounding area so as to identify and grow the digital community - building upon the work already done by Find-IT and FPX
- Supporting digital entrepreneurs and start ups
- Joining up the plethora of existing initiatives which are relevant to the digital economy into a strategic approach
- Better understanding the role of the city in supporting and developing the digital economy including how to lead by example and become an active user of digital technologies in service provision.

### **URBACT Local Group**

The main function and objective of the local group is to develop and deliver the Integrated Action Plan. The involvement of stakeholders of the digital economy will ensure that all relevant aspects are taken into consideration. It will focus on:

- Mapping, analysing and diagnosing the challenges (needs)
- Making an inventory of and coordinating existing initiatives (resources)
- Creating more knowledge in our region (platform of exchange – internally/externally)
- Creating a common view among stakeholders (goal and strategy)
- Identifying priority actions to achieve goal and strategy
- Exploring tools to deliver actions
- Developing a framework to ensure the sustainability of the platform

### **Membership**

Name	Organisation	Role
Jaana Kiiskinen	Municipality of Gävle – Education department	Math and Science coordinator
Mikael Nyman	Municipality of Gävle – Business development and Labour market department	Business development officer
Peter Westby	Municipality of Gävle	Business Development Officer
Marie Nilsson	Municipality of Gävle	GIS strategist
Anders Olsson	Municipality of Gävle – IT department	IT director
Joakim Helmbrant	University of Gävle	specialist
Anna Näsman	University of Gävle – faculty for Engineering and Sustainable	Collaboration Manager

	development	
Therese Öhman	Future Position X	Cluster Innovation Manager
Peter Nordqvist/Britta Haag	Find-IT	Project leader
Matilda Olsson/Rickard Petres	Drivhuset	Project leader
Per Brykt	Teknikcollege	Chairman

### Learning hopes

Gävle has made significant progress in transforming its economy from one that is based on paper, pulp and steel to one comprising knowledge based jobs. There are lots of individual initiatives and actions which have sprung up as part of this transformation but no overall strategy for the digital economy. It hopes to develop this strategic approach through TechTown and to better understand the role of the city in growing new digital skills and jobs.

## 3.7. Limerick Partner Profile

### *Limerick FactFile*

Population: 91 454

#### Business Structure by Sector

	Employees	Share (%)
Agriculture, forestry and fishing	52	0.25%
Manufacturing, mining and quarrying and other industry	2198	10.66%
Construction	626	3%
Wholesale and retail trade, transportation and storage, accommodation and food service activities	5886	28.57%
Information and communication	571	2.77%
Financial and insurance activities	520	2.52%
Real estate activities	75	0.36%
Professional, scientific, technical, administration and support service activities	1713	8.31%
Public administration, defence, education, human health and social work activities	4409	21.4%
Other services	2369	11.5%

		99.92%
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### Business Structure by Size

Micro-businesses <10 employees	Small businesses 11-49 employees	Medium-sized businesses 50-249 employees	Large businesses (250+ employees)
91.4%	7.4%	1.0%	0.2%

### Some major employers

Health Service Executive	Public	2605
University of Limerick (UL)	Public	1438
Limerick City & County Council	Public	1174
Analog Devices	Private	1200
Northern Trust	Private	980
Dell	Private	900
Aughinish Alumina	Private	900

### About the City

Located at the estuary of the river Shannon to the South West of Ireland

3rd largest city in the Republic of Ireland

Steeped in history with the earliest settlement dated 812

Governed by the Limerick City and County Council since the Local Government Reform Act of 2014

Home to two major third level educational institutions

University of Limerick (including Mary Immaculate College) and Limerick Institute of Technology (LIT) which includes Limerick School of Art and Design.

- Together they have an aggregate student population of c. 18,000.
- The university has over 11,000 full-time students and approximately 2,000 part-time.
- LIT has 3,900 full-time and 900 part-time.

### About the Economy

Very badly hit by global economic downturn, particularly in construction and manufacturing, with a shift from an employing to a contracting culture

Majority of the workforce is employed in the service sector (70%) and the city's economic strategy is to grow the knowledge economy

Gross Value Added (GVA), as a percentage of the national average, declined from 94.4 per cent in 2010 to 81 per cent 2011 (still has the 4th highest GVA across all Irish regions)

### **About the Labour Market**

Unemployment rate of 9.8% and relatively low employment rate (59.5%)

High levels of out migration

Higher than national average disposable income (€19,247)

### **About the Digital Economy**

Ireland has an overall score of 0.53 and ranks 8th out of the 28 EU Member States on the digital and economy society index (DESI). There are many digital businesses in Limerick including Regeneron, Dell, Uber, Stryker, Analog and Johnson & Johnson. These Foreign Direct Investment (FDI) companies have chosen to locate in Limerick due to the strong 3<sup>rd</sup> level supply of skilled graduates and a number of specialist research centres.

### **Existing Strategies relevant to the Digital Economy**

The emerging Digital Limerick 2020 Strategy includes the following objectives:

- Enable communities to participate in the digital development of Limerick;
- Build Limerick's reputation locally, nationally and internationally as a digital ecosystem;
- Create an environment for innovation and digital transformation;
- Develop world-class digital services and infrastructure for a Smart City and a Smart Community;
- Digitally enable and transform key public services in Limerick.

At present there is no regional plan although it is under development and will be published in 2016.

At National Level 'Doing more with Digital' (2013-2015) includes a suite of complementary measures including a National Broadband Plan, the National Payments Plan and the Action Plan for Jobs. It includes the following 3 strands:

- Strand 1- Trading online & entrepreneurship for indigenous businesses (get 10,000 Irish businesses trading online)
- Strand 2- More citizen engagement (half the number of 'non-liners' by 2016)
- Strand 3 – Utilise ICT to its full potential across the education system.

## **Barriers and challenges to growing the digital economy**

- Digital inequality is a major barrier of the digital economy. This divide includes imbalances in terms of access to internet infrastructure, information and knowledge, and equality of opportunity depending on income, race, ethnicity, gender or other similar criteria;
- Many businesses do not fully appreciate the relevance of the internet to them – and its potential to help them become more efficient, or to access new markets. For others it is a problem of not knowing how to go about it, what they need to do, or where they can get help;
- It is difficult to compete with Dublin, which has national level technology clusters;
- Access to the digital economy is conditioned by priority standards. For example if a company uses a particular outdated technology moving to a newer platform that proves more beneficial can be made difficult by the lack of tools and knowledge for data transfer;
- There is a need for more open digital platforms to enable businesses to operate.

### **Experience relevant to TechTown**

The **Limerick for IT** initiative has brought together major industries in the region, including General Motors, Johnson & Johnson and Kerry Group, together with the University of Limerick (UL), the Limerick Institute of Technology (LIT), Limerick City & County Council and IDA Ireland to form a unique IT skills partnership ‘Limerick for IT’. This employer-led skills project linked to Limerick 2030 assesses future skills needs to help multinationals. The key role of the partnership was to develop a pipeline of job-ready IT graduates to meet global and national needs. Critical skills were identified that could expand operation mandates. The multinational partners identified Enterprise Solutions Development and Middleware (IBM Systems Integration Bus), as critical skills for emerging corporate opportunities. As a result, bespoke Springboard courses were developed and delivered through UL and LIT. This has resulted in two major expansions in Limerick with the creation of over 200 jobs since January 2014.

Limerick City and County Council have established a new public-private partnership company ‘**Innovate Limerick Ltd**’, to integrate the innovation activities of both the Limerick 2030 Economic Strategy (2013) and the Limerick Regeneration Framework Implementation Plan (2013). The company seeks to accelerate innovation in Limerick by providing a supportive environment that facilitates and encourages higher levels of innovation across the various stakeholders and sectors in Limerick.

In order to support the goal of increasing online business sales the Department of Communications, Energy & Natural Resources have teamed up with the Local Enterprise

Offices to provide **Online Trading Vouchers**. These vouchers set out to support small businesses and to enhance their online trading presence.

The University of Limerick has established a **Fab Lab** which is a creative digital hub in the city centre which benefits the region culturally, economically and technologically through the integration of digital media activities. This hub also has specialist facilities and training resources to grow new creative digital industries. Troy Studios plan to establish a significant media hub for film and television production in Limerick, thereby adding to the city's digital economy.

### **Digital Economy SWOT for Limerick**

<b>Strengths</b>	<b>Weaknesses</b>
<p>Established high-tech sectors in ICT</p> <p>Strong education assets (UL/LIT/MIC) and associated research capacity including SFI centres (e.g. LERO)</p> <p>Limerick is acknowledged for its ability and confidence to adapt and compete in a global digital economy</p> <p>A new Local Government structure with an ambitious digital vision</p> <p>Higher and further education providers collaborate with industry to develop study programmes that will provide 'job ready' graduates for the digital economy within the region (Limerick for IT)</p> <p>Collaborative actions to strengthen the capacity of the region to sustain and grow FDI and attract new inward investment</p> <p>European Commission data shows that 40% of fixed broadband subscriptions in Ireland are at speeds greater than 30 Mbps. This is significantly ahead of the euro area average of 48</p>	<p>Insufficient / weak broadband infrastructure</p> <p>Numbers of home-grown digital start-ups are low</p> <p>National shortage of ICT professionals</p> <p>SME's often cannot afford the IT platforms necessary to sell online</p> <p>The lack of a regional plan specifically focused on the digital economy</p>
<b>Opportunities</b>	<b>Threats</b>
<p>IDA will provide an advanced technology building in Limerick in 2017</p> <p>Innovation opportunities to build on the region's significant research assets</p> <p>The Limerick Royal/Digital Quarter &amp; City</p>	<p>Globalisation and the use of ecommerce has given the consumer the opportunity to buy internationally which can have an adverse affect on local businesses</p>

<p>Centre Innovation Centre(Ireland's first combined cinema and digital media training facility will deliver jobs, economic, social and cultural benefits)</p> <p>Stimulate the indigenous economy by helping small Limerick businesses to expand on-line (trading online voucher Scheme through the LEO)</p> <p>Increase online engagement through learning programmes</p> <p>Encourage the use of digital in education following the successful rollout of 100mbps broadband to every second level school in Ireland</p> <p>The potential of the public services is unlocked by the use of digital technologies</p>	<p>Technology is always evolving and SME's can find it difficult to keep up</p> <p>Digital inequality</p> <p>Emigration of IT graduates</p>
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### **Ambitions and aspirations for TechTown**

#### **Integrated Action Plan**

Limerick has started to consider what it plans to achieve through its Digital Strategy and the integrated action plan is likely to focus on **HOW** this can be done and particularly how the city can:

- Fully understand the size and growth potential of its digital economy
- Enable communities to participate in the digital development of Limerick
- Build Limerick's reputation for its digital ecosystem - locally, nationally and internationally
- Create an environment for innovation and digital transformation;
- Develop world-class digital services and infrastructure for a Smart City and a Smart Community
- Digitally enable and transform key public services in Limerick.

#### **URBACT Local Group**

At the moment the private sector and digital community more generally are not efficiently engaged in the city's digital economy collaboration space. The URBACT Local Group will take the city's recently developed vision of a digital future as its starting point and will bring together a wide range of key digital economy stakeholders to better understand existing

assets and then co create a set of integrated objectives and actions to grow new digital jobs, particularly linked to smart city activities.

### **Membership**

<b>Name</b>	<b>Organisation</b>	<b>Role</b>
Dr Pat Daly	Limerick City & County Council	Director of Services and Planning
Liam Conneally	Limerick City & County Council	Senior Planner
Kieran Reeves	Limerick City & County Council	Senior Executive Planner
Dr Mihai Bilauca	Limerick City & County Council	Head of Digital Strategy
Jillian Robinson	Limerick City & County Council	Economic Development Graduate
Beatrice Heneghan	Limerick City & County Council	IS Project Leader
Kieran Dore	Limerick City & County Council	Agresso9mk Project Team
Mike Cantwell	Innovate Limerick	CEO
Dr Siobhan Moane	Limerick Institute of Technology	Department of Applied Science
Paschal Meehan	Limerick Institute of Technology	Head of Faculty (ASET)
Dr Liam Brown	Enterprise Ireland	Technology Centres Programme Manager
Dr James Ring	Limerick Chamber	CEO
Eamonn Moran	University of Limerick	Office of Vice President Academic & Registrar
Eamon Ryan	Limerick Enterprise Office	Head of LEO
Tom O Sullivan	Dell	IT Director
Dave Griffin	Dell	Director of Campus Business Development
Ann Ledwith	University of Limerick	Enterprise Research Centre
Others TBC		

### **Learning hopes**

Limerick is the first local authority in Ireland to appoint a designated 'Head of Digital Strategy' who sits on the Council's Senior Management Team. This is indicative of the city's commitment to growing this economic sector as part of its smart city and smart communities work. Through TechTown it aims to learn more about how others are defining and measuring their digital economies and how they are then linking the Smart City and Digital Economy agendas to grow jobs. This is a rapidly changing landscape and TechTown provides the city with a unique opportunity to exchange lessons with peers as they further develop and start to deliver their digital strategy. Ultimately, Limerick would like TechTown to be a sharing platform for partner city knowledge, expertise and learning.

### 3.8. Loop City Partner Profile

#### *Loop City FactFile*

Population: 360 000

#### **Business Structure by Sector**

	Employees	Share (%)
Agriculture, forestry and fishing	239	0%
Manufacturing, mining and quarrying and other industry	18.235	8%
Construction	20.364	9%
Wholesale and retail trade, transportation and storage, accommodation and food service activities	66.235	28%
Information and communication	12.813	5%
Financial and insurance activities	9.917	4%
Real estate activities	4.294	2%
Professional, scientific, technical, administration and support service activities	30.364	13%
Public administration, defence, education, human health and social work activities	72.452	31%
Other services	8.939	4%

#### **Business Structure by Size**

Micro-businesses <10 employees	Small businesses 11-49 employees	Medium-sized businesses 50-249 employees	Large businesses (250+ employees)
89.1%	8.5%	1.8%	0.6%

### Some major employers

Name	Sector	No. employees
Glostrup/Herlev Hospital	Public, health	7000+
Novo Nordisk	Private, digital health	1000+
Sweco Denmark	Private, digital science	1000+
Microsoft Denmark	Private, digital	500+
Dako Denmark	Private, digital health	500+
Denmarks Technical University	Public, science	1000+

### About the City

A group of 10 small cities spanning 27 km from North to South to the West of Copenhagen, each with different challenges and priorities but with many in common.

Loop City initially created 2007 as a mechanism to develop a light railway which will better link the area with the Copenhagen capital region

Small secretariat develops and manages projects which address common priorities (since 2014)

### About the Economy

Large public sector with 2 hospitals and many public offices

Large wholesale and retail, transportation and food services sector

Said to have the biggest urban development potential in Denmark

### About the Labour Market

Employment rate meets EU2020 target of 75% and unemployment stands at just 6%

Well educated workforce

High per capital average income of 40 798 euros (2.8%) higher than national average

### About the Digital Economy

Denmark has a tradition for producing advanced hardware and physical products and is home to many large digital businesses like Novo Nordisk and Dako Denmark that produce digital health solutions. There is also a lot of public sector innovation in this field with a commitment to delivery of public services digitally. It is ranked 1<sup>st</sup> in EU Member States in the digital economy and society index.

## Existing Strategies relevant to the Digital Economy

Each of the 10 cities in Loop City has their own growth strategy and many include digital as a key priority sector. Loop City's own strategy focuses on the Smart City and Big Data agendas for all 10 cities. As part of this it has started a Digital Infrastructure project through which digital solutions will be introduced along the new light railway, which is being developed in the area.

At regional level the Strategy for Growth and Development (2015) focuses on health, cleantech, creative industries and ICT. Within the ICT theme Structural Fund Investment will be available to improve broadband and mobile network capacity, big data in hospitals, smart city solutions, the use of the sharing economy as a driver for growth and helping SME's to improve their productivity through digitalisation.

At national level, Denmark is ranked top of the EU member states in the Digital Economy and Society Index. The 2015 plan for Digital Growth aims to boost development and includes 17 initiatives including support for companies to better use ICT and data to increase growth and productivity (especially in the field of E-Commerce), support for broadband and mobile infrastructure, support for companies in IT security and data management and support for digital skills.

## **Barriers and challenges to growing the digital economy**

- Mismatch between the skills that employers need and the skills in the labour market
- Lack of branding / positioning of Loop City and Denmark's capital region more generally
- Lack of meaningful and effective collaboration between the public and private sectors
- Lack of digitalisation within local SMEs which is a threat to their survival and growth potential.
- Need for public sector to be the 'first mover' and provide a test bed for new solutions.

## **Experience relevant to TechTown**

Before considering experience directly relevant to other TechTown cities, it is worth noting that Denmark, and the Copenhagen capital region in which Loop City is located, is very advanced generally in terms of digitalisation of public service provision and e-government, both of which are areas relevant to TechTown. It is also common practice to work in a participative way to co-create solutions to common problems and this experience is also useful within the TechTown network.

Within this general landscape, **Gate 21** is a partnership between local authorities, private companies and research institutions which come together to co create a sustainable society

and green business development. In innovative partnerships Gate 21 and the partners innovate ambitious solutions to local authorities' climate and energy challenges through public-private projects and using digital technologies. The partnership offers interesting experience in terms of public private alliances and the development and use of living labs in real urban environments and innovative digital solutions. In June 2016 it organizes a high level conference focusing on intelligent lighting and smart city solutions.

During the course of the TechTown project, Loop City will start to develop its **digital infrastructure project** through which it will install a range of wifi and data gathering equipment along the new light railway. The plan is to use this flagship project to strengthen the transformation towards a digital economy and create test beds in which organisations can demonstrate with new intelligent solutions thereby creating jobs. Whilst this is a project which has not yet been delivered it is anticipated that the learning – both good and bad – generated will be of interest to other TechTown partners.

Alongside the digital infrastructure project Loop City is developing a **White Book** on data security which aims to help the public sector better understand how to make open data accessible to developers (and others) whilst protecting data security. Again, it is likely that the outcomes will be of interest to other cities in TechTown and beyond.

Some of the municipalities within Loop City have offered **training courses on social media and use of web-based products and services** to local SMES. All of these have been very well received within the business community.

### **Digital Economy SWOT for Loop City**

<b>Strengths</b>	<b>Weaknesses</b>
Technical University as a driver. A large public sector with demands that can spur innovations within the digital economy. Public organisations that works with green agendas and digital transformation. Non-bureaucratic authorities and a professional public sector	Not enough publicity / branding of success stories. A gap between the need for qualified workers and what the labour market in Loop City can offer. Not enough experience with implementing digital ideas as the digital revolution still is in its beginning.
<b>Opportunities</b>	<b>Threats</b>
Strengthening of existing clusters. A stronger collaboration between the public and private sector and the courage from the public sectors to be first movers.	Loop City are the suburbs of Denmark's Capital City Copenhagen. A lack of collaboration between the capital city and Loop City will create an unneeded

Creating a more dynamic suburb that can implement many test beds because the areas needed therefore exists.	competition instead of the much needed spillover effect.
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### **Ambitions and aspirations for TechTown**

#### **Integrated Action Plan**

Loop city's plan is likely to focus on:

- Shaping and developing the future Digital Loop City
- Developing governance structures which can effectively address digital economy challenges and grow new jobs
- Support local entrepreneurship and spur job growth (particularly amongst SMEs)
- Positioning and branding Loop City's digital businesses
- Activities which maximise spill-over effects from other cities in Denmark
- Better integrating the Technical University in the overall process of driving the digital economy forward in LOOP CITY

#### **URBACT Local Group**

The URBACT Local Group will bring together the key digital economy stakeholders in and around the 10 municipalities which make up Loop City. It will help these actors to:

- Better understand what the digital economy means for the city, how to measure its size and potential and how to grow it
- Exploring where best to focus Loop City and municipality efforts so as to maximise job creation potential

#### **Initial Membership**

Name	Organisation	Role
Albertslund	Municipality	Partner in Loop City
Brøndby	Municipality	Partner in Loop City
Gladsaxe	Municipality	Lead and partner in Loop City
Glostrup	Municipality	Partner in Loop City
Herlev	Municipality	Partner in Loop City
Hvidovre	Municipality	Partner in Loop City
Ishøj	Municipality	Partner in Loop City

Lyngby-Taarbæk	Municipality	Partner in Loop City
Rødovre	Municipality	Partner in Loop City
Vallensbæk	Municipality	Partner in Loop City
The Capital Region	Regional authority	Partner in Loop City
The Danish Business Authority	State authority	Partner in Loop City
Gate 21	Public organisation	Knowledge institution
Denmark's Technical University	University	Knowledge institution
Greater Copenhagen Light rail	Public organization	Partner in Loop City
Dong Energy	Private company	Partner in the project Loop City Digital Infrastructure
GE Lighting	Private company	Partner in the project Loop City Digital Infrastructure

### Learning hopes

Loop City would like to use TechTown to improve collaboration between the public and private sector so as to ensure that the 10 individual cities can maximise the job creation potential offered by the test beds / living labs which will be part of the digital infrastructure project. It is also particularly interested in better understanding the digital economy and in being able to measure its size and potential growth so as to be able to support digital transformation. Finally it would like to understand how to maximise spillover benefits from Copenhagen and beyond – through collaboration rather than competition.

## 3.9. Nyíregyháza Partner Profile

### *Nyíregyháza FactFile*

Population: 118,164

#### **Business Structure by Sector**

	Employees	Share (%)
Agriculture, forestry and fishing	1,162	2.4
Manufacturing, mining and quarrying and other industry	8,388	17.3

Construction	2,466	5.1
Wholesale and retail trade, transportation and storage, accommodation and food service activities	12,703	26.2
Information and communication	353	0.7
Financial and insurance activities	963	2.0
Real estate activities	3,722	7.7
Professional, scientific, technical, administration and support service activities	1,079	2.2
Public administration, defence, education, human health and social work activities	12,771	26.3
Other services	4,941	10.2

### Business Structure by Size

Micro-businesses <10 employees	Small businesses 11-49 employees	Medium-sized businesses 50-249 employees	Large businesses (250+ employees)
<b>96% (9,965)</b>	<b>3.2% (337)</b>	<b>0.6% (65)</b>	<b>0.1% (10)</b>

### Some major employers

Name	Sector	No. employees
MICHELIN Hungária Abroncsgyártó Kft.	Rubber tires and tubes manufacturing	1,645
LEGO Manufacturing Kft.	Toy manufacturing	1,120 (25% of worldwide capacity)
NYÍRERDŐ Nyírségi Erdészeti Zrt.	Forestry	927
SZABOLCS VOLÁN Közlekedési Zrt.	Urban and suburban passenger transport services	891
NYÍRVV Nyíregyházi Városüzemeltető és Vagyongazdálkodási Nonprofit Kft.	Property management	736

### About the City

Medium sized city in North Eastern Hungary and county capital of Szabolcs-Szatmár-Bereg. Seventh-largest city in Hungary and one of only 2 county capitals with a growing population. Home to an award winning zoo, exhibiting more than 300 species including rare species.

## About the Economy

Largest employment sectors are Public Sector (26.3%) and Wholesale and retail trade, transportation and storage, accommodation and food service activities (26.2%)

Very high number of sole traders - 47.7% of all companies are individuals (many of these are actually on long term contracts)

## About the Labour Market

Slow increase in employment rate (currently 53.2%) and slow reduction in unemployment rate (4.85%)

Youth unemployment currently 12.9%

Low average annual income

Selective outmigration reduces labour market potential

## About the Digital Economy

Nyíregyháza has only recently began to consider the potential of the digital economy and during 2015 was selected by the Hungarian Government to be the pilot city for its Digital Cities Programme.

## Existing Strategies relevant to the Digital Economy

The city is committed to delivering the *Digital Nyíregyháza Programme.*, which has the following 4 main pillars:

1. Development of broadband infrastructure – by the end of 2015 the possibility to use 30 Mbit/s internet service will be available for every households in the city and the surrounding area.
2. Digital community and economy pillar:
  - a) availability of reimbursable and non-reimbursable financial support for the IT development of local SMEs Széchenyi 2020 programme (Economic Development Operational Programme);
  - b) Introduction of Smart City services (multifunctional city card, public safety system);
  - c) 100% wireless internet coverage at the entire area of the College of Nyíregyháza;
  - d) IT development in the in-patient and out-patient healthcare institutions in order to join the national e-health network;
3. Improving digital skills

- a) launching special educational programmes for disadvantaged children, based on the active integration of IT equipment;
  - b) Development of IT infrastructure in the schools with high proportion of disadvantaged students
  - c) Launching adult education courses providing practical IT knowledge and skills;
4. Improving the efficiency of public services
- a) increasing the number of cases that can be arranged online;
  - b) development of mobile apps enabling online use of public services

### **Barriers and challenges to growing the digital economy**

- ICT infrastructure is still a barrier although is considered better than other similar cities in Hungary;
- The county of which Nyíregyháza is the county seat is still the worst-performing in Hungary in terms of the economy. County level GDP is only 54,7% of the national average;
- The economic sectors with high added value (information and communication, scientific and engineering activities) are still concentrated in Budapest and in the Western part of Hungary.
- High proportion of SME's with low level of capital, financing constraints, low innovation potential.
- Internet use and the use of online, digital services (e.g. enterprise resource planning software, cloud computing services, e-commerce, online banking) of these businesses is very limited.
- R&D indicators of the county show a negative picture & R&D activities are very limited as compared to the economic performance of Nyíregyháza, nor are they embedded in the daily operation of most businesses. In 2013 the per capita R&D spending in the county was less than 20% of the national average.
- Outmigration of the most talented and educated people is also a barrier; a major part of talented young people leave the city to learn elsewhere in higher education and then do not return after graduation;
- There are no established mechanisms of regular dialogue between the city and businesses – especially SMEs

### **Experience relevant to TechTown**

The delivery of Digital Nyíregyháza - part of the National Digital Development Programme - started during 2015. Whilst it will not be possible to determine good practice in terms of

change on the ground during the lifetime of TechTown, the city believes that there will be many lessons from implementation.

As part of the project, the city will introduce intelligent city services. The IT and infrastructure systems of educational institutions will be developed and IT facilities will be made available to 6000 local residents. An adult education programme teaching practical IT skills will be provided to those in need and disadvantaged students will be offered catch-up training. As a result of the developments in Nyíregyháza, the range of e-administration services for the population is to further grow and three new government windows with up-to-date ICT facilities are to open.

A multifunctional city card will be introduced and systems enhancing security in public areas will be established. One of the government's partners, Hungarian Telekom will implement network development at its own expense, which will bring high quality cable broadband to over 7,000 households and by the middle of 2016, every household in the city will have access to 30 Mbps Internet services. In addition, the company is to continue constructing the high-speed 4G/LTE mobile network in Nyíregyháza and surroundings and is also to go on with its educational programme Telekom Smart Digital, within the framework of which almost 3,000 students in the city have been taught about the safe and conscious use of the Internet in the past two years.

The sub-program will introduce new services in several fields, which gives a pioneering role to Nyíregyháza in the national context.

### **Digital Economy SWOT for Nyíregyháza**

<b>Strengths</b>	<b>Weaknesses</b>
<p>Close cooperation between the Municipality of Nyíregyháza and the College of Nyíregyháza regarding digital economy</p> <p>Commitment of the Municipality and the College to using digital and smart technologies</p> <p>Detailed Smart City concept and strategy</p> <p>Designated research and innovation areas of the College to improve the offer of smart services</p> <p>Responsible organisation to implement Smart City strategy</p> <p>Good practice database with</p>	<p>Low values of RTDI indicators (expenditure, staff, research institutes etc.)</p> <p>Relatively low internet usage and digital competence among different group of the population (e.g. disadvantaged people, elder generation)</p> <p>Dominance of micro-enterprises with low capital strength and limited innovation capacity</p> <p>Budgetary constraints of the Municipality and the College for implementing the proposed actions the of Smart City concept</p>

internationally tried and tested smart city solutions	
<b>Opportunities</b>	<b>Threats</b>
<p>Country-level digital strategies to define development trends (e.g. National Information and Communication Strategy, Digital Hungary Programme)</p> <p>Digital Nyíregyháza subprogramme – pilot project with dedicated resources (5.5 mEUR)</p> <p>Other available resources to create the basis of digital economy (National R&amp;D&amp;I Fund, European Structural and Investment Funds, Horizon 2020, Interreg and ENPI programs, URBACT)</p> <p>Increasing role of the ICT in the local governance and urban development</p> <p>Availability of complex digital methods and solutions (e.g. big data analysis, IBM MAXIMO, “House Wall” virtual space)</p> <p>Stronger academic background and RTDI capacity to provide a good foundation for better utilizing research results</p> <p>Rapid proliferation of mobile internet devices (and mobile internet)</p> <p>More intensive cooperation of local stakeholders to improve digital economy</p>	<p>Widening gap between social groups regarding digital skills</p> <p>Inadequate digital developments (e.g. rapid technological obsolescence, ignoring or misinterpreting the needs of target groups)</p> <p>Low user rate of the digital services among the target groups</p> <p>Technology / hardware companies dominate interventions related to smart city and digital economy development</p>

### **Ambitions and aspirations for TechTown**

#### **Integrated Action Plan**

Nyíregyháza's plan is likely to focus on:

- Increasing (high quality) employment in the digital economy and particularly exploring the job creation potential of the SMART city agenda and the digital city initiative
- Addressing the slow adoption of digital technologies and services by SMEs
- Attracting / retaining young talented people, particularly within the context of high levels of outmigration which means that there is a lack of potential workers to feed the development of the digital economy

- Expanding the availability of digital education and training, particularly the role of the College of Nyíregyháza
- Developing a living lab which brings together talents and technologies not available elsewhere in Hungary to start and scale new companies
- Providing benefits to the local population through digital solutions

### **URBACT Local Group**

The URBACT Local Group offers the city an opportunity to transform its work on the digital economy and to lead by example. It will:

- Offer a test bed where the municipality can show the potential of digital technologies
- Bring together a team to lead this agenda in the city in order to reach the necessary critical mass needed to make a difference
- Have role in promoting the digital economy, acting as an initiator, user, provider of services & development projects
- Activate what is currently a very passive population by raising awareness of possibilities and increasing levels of trust.

### **Membership**

Name	Organisation	Role
Tamás Batizi	Nyíregyháza Municipality	Head of mayor's cabinet
István Pató	Nyíregyháza Municipality	Head of city development department
István Oláh	Nyíregyháza Industrial Park Ltd	MD of Industrial Park Ltd, coordinator of the Digital Nyíregyháza Programme
Mariann Szabó Furkóné	Nyíregyháza TDM (Tourism Destination Management)	Head of unit
Menyhért Jászai	PRIMOM Foundation for Enterprise Promotion of Szabolcs-Szatmár-Bereg County	CEO
Péter Maleczki	Rutinsoft Ltd.	Local Business
Zoltán Bálint	Giganet Ltd.	Local Business
Zoltán Varga	EPER Studio (PR and design company)	Local Business

László Joó (tbc)	Nyírtávhő – Central Heating Company	Utilities company (wholly owned by the municipality)
Istvánné Szabó (tbc)	Nyírsékvíz – County Water and Waste Water Management Company	Utilities company (wholly owned by the municipality)
Zsolt Nagy	College of Nyíregyháza, Institute of Mathematics and Informatics	Lecturer, Institute of Mathematics and Informatics; head of project management unit

### Learning hopes

Above all, Nyíregyháza and its stakeholders want to use TechTown to better understand the digital economy and its potential both in terms of job creation and delivery of a smart city. It is particularly interested in understanding the role of a medium sized city in what is a highly centralised country. It wants to benchmark itself against other similar sized cities in the EU and to learn how to attract and retain (young) talent in order to grow digital jobs.

## 3.10. San Sebastian Partner Profile

### *San Sebastian FactFile*

**Population: 186,409**

### **Business Structure by Sector**

		<b>2014</b>	
	<b>Establishments by Activity (A10)</b>	<b>87,507</b>	
1	Agriculture, Forestry and Fishing	147	0.2%
2	Industry and Energy	3,634	4.2%
3	Construction	4,798	5.5%
4	Trade, Transport, Hotel and Catering	21,625	24.7%
5	Information and Communication	3,487	4.0%
6	Financial and Insurance Activities	3,167	3.6%
7	Real Estate Activities	714	0.8%
8	Professional Activities	17,021	19.5%
9	Public Administration, Education and Healthcare	27,607	31.5%
10	Artistic Activities and Other Services	5,307	6.1%
	Source: Eustat (DIRAE)		100.0%

## Business Structure by Size

Micro-businesses <10 employees	Small businesses 11-49 employees	Medium-sized businesses 50-249 employees	Large businesses (250+ employees)
87.6%	5.2%	1.3%	

## Some major employers

Name	Sector	No. employees
SABICO SEGURIDAD SA	Services	3100
GUREAK	Services and Social Inclusion	2900
IBERMATICA	ICT's Private company	2700
CITY HALL	Public Administration	1500
DHL	Transport company	1100
POLICLÍNICA GIPUZKOA	Health	400

## About the City

A beautiful city by the sea in the Basque Country in Northern Spain - just 20km from the French border

Known as the gastronomic capital of Europe and attracts 3m visitors per year

Ranked in the top 10 cities globally for quality of life

European Capital of Culture 2016, building on annual international film festival

## About the Economy

85% of employers are in the services sector

Higher than average rates of R&D activity 2.68% of GDP compared to EU rate of 2% and Spanish rate of 1.36%

Highly developed cluster policy focusing around 6 key sectors: Audio Visual and Digital, Fashion, Smart Energy, Surf, Assistance Technologies and Food and Agriculture

## About the Labour Market

Ageing workforce

12.6% unemployment (compared to Spanish national rate of 22%)

79% employment rate

31.6% of population have university education

## About the Digital Economy

There are 481 companies in the audio visual and digital industries in San Sebastian, representing a €176 million global turnover of which 74% is from traditional audio visual activity; 16% from new audio visual sector and 10% from ICT. These 481 companies represent 2454 jobs; 3.37% of San Sebastian's GDP and 2.35% of total jobs in the city

## Existing Strategies relevant to the Digital Economy

Audiovisual and Digital Industries is one of the 6 key sectoral clusters supported in the city. This means that there is a structured process to support and grow audiovisual and digital companies including activities which:

- Connect companies, professionals and actors in the audio visual, digital and creative industries
- Support training and development, start up and scale up and internationalisation
- Create a new value chain based on technology and market changes
- Aim to attract and retain talent to the city
- Add value by providing consulting services, offering physical space and giving support to projects - including the PI@, Cemei and Zentek buildings
- Encourage cross-sector convergence for new business opportunities.

Whilst there is not specific Digital Strategy for the city, the strategic approach is written up in an Implementation Plan which was developed as part of an INTERREG IVC project called Medi@TIC.

At Regional Level the Basque Digital Agenda - AD@15 - focuses on ICT as a key driver to improving the region's competitiveness and quality of life.

## Barriers and challenges to growing the digital economy

- Sharp drop in income; changes in traditional markets
- Emergence of a new type of professional
- Difficulties attracting and retaining digital talent
- Price pressure and changing business models
- Need to drive hybridisation and synergies (digital sector with mature sectors)
- Impact of technology; fear of risk or change
- Highly competitive global markets; Internet

## Experience relevant to TechTown

San Sebastian's **Cluster Plan** (including an Audio Visual and Digital Cluster) offers masses of learning for TechTown partners. Each cluster has a similar and defined structure and is supported by a cluster manager. The actions include:

- A Participation forum bringing together cluster members to reflect upon and develop new actions
- An Observatory - a database of sector agents, annual diagnostic and prospective-studies
- Infrastructure - The Pi@ Centre for AudioVisual and Digital companies(see below)
- Communication - newsletters, events, international visits
- Support with Training and employment - analysis of professional profiles within the industry, organisation of course and seminars
- Support with start up - business planning, access to finance, subsidised premises, expert training and direct subsidies
- Support for Internationalisation - advice, fellowship programmes, collaborative platforms for internationalisation, international business missions
- Support for Innovation - support for development, attraction and retention of talent, access to external finance for innovation (including EU funding applications), partner search

The **PI@ building**, opened in 2011 is San Sebastián Audio Visual and Digital Innovation Park. It offers 9000m2 of studios and co-working space for the city's audio visual and digital companies. It works on the principle of proximity - i.e. that bringing together companies under the same roof will help them to form relationships and to collaborate for future work - thereby increasing the value chain. The building is currently home to 52 companies and is 80% full.

San Sebastian is also starting to work on **hybridisation** of new digital companies with more traditional industry. As part of this they are exploring how to take advantage of the **smart cities** agenda to support companies to grow. This involves bringing together companies from 3 existing clusters (smart energy, digital and assistance technologies) to create opportunities to stimulate both supply and demand. A good example is an initiative in the city's pedestrianised area where digital companies are encouraged to test their technologies in real life conditions. It creates a sort of living lab for new technologies (e.g. energy efficiency, tracking and counting technologies) and provides local companies with better visibility by giving them a show room for their digital products and services whilst at the same time addressing city management challenges.

### Digital Economy SWOT for San Sebastian

<b>Strengths</b>	<b>Weaknesses</b>
<p>Consolidated, solid industry, fit for survival. The average age of companies is higher than the average survival rate for the sector.</p> <p>Experienced professionals, eager to find solutions.</p> <p>International Film Festival: Strong asset for the sector to be based on - recognition, presence of leading actors in town, communication platform and visibility, contacts.</p> <p>Quality of life in Donostia-San Sebastián, capable of attracting talent and becoming a reference.</p> <p>PI@: reference centre and meeting point.</p> <p>Support from Fomento de San Sebastián in conversion processes and aid to sector in the face of important changes.</p>	<p>Atomised sector: companies dependent on EITB (regional television).</p> <p>Lack of employment stability: jobs depend on projects; people are hired for individual works/services. Talent migrates in search of better terms/projects.</p> <p>Creation of project-specific companies which are therefore more vulnerable to changing environments in technology and business changes, affecting sustainability and continuity.</p> <p>Small potential market at the local level, and shrinking.</p> <p>Financing for complex audio visual projects not easy to find, reducing productions due to high risk (heavy initial investment, long return time) and affecting talent management (the absence of big projects makes it difficult to retain talent).</p> <p>Production dependent on aids and subsidies.</p> <p>Non-global products, difficult to export to other markets.</p>
<b>Opportunities</b>	<b>Threats</b>
<p>Renowned international film, short film and documentary film festivals held in the Basque Country. E.g Zinemaldia.</p> <p>Gradual rise in the demand of audio visual and digital products and in the consumption of these products.</p> <p>Growing trend towards cooperation between companies at the regional and national level to carry out joint projects.</p> <p>Analogue-to-digital conversion leading to the emergence of new businesses.</p> <p>Greater access by small or independent actors to creation and post-production, or even to new</p>	<p>Contents distributed and consumed under new business models through new channels. Price pressure.</p> <p>New players in existing markets; competition from other sectors.</p> <p>Changes in main content consumers (TV channels, broadcasting companies).</p> <p>Changes in entertainment consumption patterns; focus on new sectors.</p> <p>Value chain integration, no intermediaries and business creation in related sectors.</p> <p>Strong convergence between sectors, devices and technologies.</p> <p>Analogue-to-digital conversion leading to the emergence of new business but increasing the need of knowledge. Technology improves</p>

<p>markets like video games or social media.</p> <p>Changes in main content consumers (TV channels, broadcasting companies).</p> <p>Changes in entertainment consumption patterns; focus on new sectors.</p> <p>Support to leading agents and strategic interest in the sector.</p>	<p>operations, but it may become obsolete soon.</p> <p>Greater access by small or independent actors to creation or post-production.</p> <p>New skills and experience required by digital distribution formats (growing presence of freelancers and higher price pressure).</p> <p>Piracy. New rights and licences: copyright, copyleft, creative commons.</p> <p>Strong reduction of aids and subsidies to production and distribution.</p>
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### **Ambitions and aspirations for TechTown**

#### **Integrated Action Plan**

San Sebastian's plan is likely to focus on:

- Developing digital skills and entrepreneurial attitudes (especially amongst young people)
- Talent attraction and retention
- Hybridisation: linking digital companies with more traditional sectors (including health) to stimulate digital transformation and thereby grow jobs
- Better understanding how to grow digital jobs through implementation of the Smart Cities Agenda
- Developing and piloting more effective methods for working with digital companies - developing new participative methodologies.
- Understanding how to help digital companies keep abreast of market developments so as to remain competitive
- Understanding how to evaluate results of city action in this field.

#### **URBACT Local Group**

The URBACT Local Group will bring together digital stakeholders from the public and private sector. It will provide a forum for discussion of digital economy drivers and barriers and a test bed for pilot actions aimed at growing digital jobs.

## Membership

Name	Organisation	Role
Elisabeth Jorge	Fomento de San Sebastian	European Projects manager
Ruth Jorde	Fomento de San Sebastian	Digital Sector strategy manager
Nora Mendoza	Fomento de San Sebastian	Smart Cities strategy manager
Judith Gómez	TECNALIA	Research Centre
Cristina Urtiaga	GAIA	Association cluster of telecommunications Basque Association of electronic and ICT'S companies
Jesús Garduño	DINYCOM	Digital Company
Ibon Juaristi	AKAIN IKASTETXEA	Training Centre
Oscar Marín	CEINPRO	Training Centre
Mertxe Gordillo	TAK	Digital Company
Ainhoa González	MEDIA ANTENA EH	Media programme contact point in the Basque Country
Ainhoa Lete	BUNT PLANET	Digital Company
Iñigo Artetxe	IKERTALDE	Consultancy Company
Unai Elosegui	Hispavista	Digital Company

## Learning hopes

San Sebastian would like to improve the way that the city connects with digital companies and supports them to connect with more traditional companies and the smart city agenda. It has done a lot of innovative work already but would like to develop and use better collaboration (collision) and networking methodologies. Companies work in their own silos and the city is keen to learn more about how to break these down.

### 3.11. Siracusa Partner Profile

#### *Siracusa FactFile*

**Population:** 120,000 city (399,933 province)

#### **Business Structure by Sector**

		Employees	Share (%)
1	Agriculture, forestry and fishing	825 (**)	0.7
2	Manufacturing, mining and quarrying and other industry	13.548	9.4
3	Construction	8.907	6.9

4	Wholesale and retail trade, transportation and storage, accommodation and food service activities	22.910	10.5
5	Information and communication	992	29.1
6	Financial and insurance activities	1.768	2.1
7	Real estate activities	443	3.0
8	Professional, scientific, technical, administration and support service activities	5.672	0.9
9	Public administration, defence, education, human health and social work activities	24.729	8.7
10	Other services	1.861	33.1

### Business Structure by Size

Micro-businesses <10 employees	Small businesses 11-49 employees	Medium-sized businesses 50-249 employees	Large businesses (250+ employees)
95.39%	4.16%	0.42%	0.02%

### Some major employers

Name	Sector	No. employees
Local Health Unit of Siracusa Province	Health	3250
Isab s.r.l.	Oil industry	998
Municipality of Siracusa	Public administration	850
Augusta 2 s.r.l.	Construction	234

### About the City

Medium-sized (wonderful and sunny) on the coast of Sicily

UNESCO World Heritage site

Under developed infrastructure in terms of utilities and mobility

Part of the city (Ortegia district) is an 'island' and connected to the rest of the city by a bridge.

### About the Economy

Petrochemical industry arrived in the 1900s

Outside this industry, the economy is dominated by food and agriculture and services

All of these sectors seriously affected by the global downturn although services has been the most resilient

Heavy reliance on public sector which accounts for over 30% of employment

### **About the Labour Market**

Very low employment rate of 38%

High – and rising - levels of unemployment (17.9% in 2014) and even higher amongst women and young people

### **About the Digital Economy**

Whilst large and small employers across the city are no doubt using more digital tools and systems within their processes, the digital economy as an entity is in its infancy in Siracusa.

### **Existing Strategies relevant to the Digital Economy**

Siracusa does not have a digital economy strategy for the city. It has however done a lot of work around Smart Cities and the conclusions of the IBM Smart Cities Challenge report (2012) were that:

- Siracusa is a city of two parts. Ancient history and culture is juxtaposed with industrial and commercial strength.
- Collaboration among stakeholders is key to success
- Accessible data is fundamental to good decision making and
- Technology can support the City's future transformation

It was against this backdrop that the city got involved in TechTown and decided to focus some effort on developing its digital economy.

At a national level a new digital agency – Italia Digitale – was launched in 2012. The Italian Digital Agenda sets out actions and policies for the development of technology, innovation and the digital economy. The themes targeted include:

- Infrastructure (Cloud computing, etc);
- Public Administration (digital identity for citizens and business)
- Open data (International Open Data Charter);
- Digital Skills
- Smart Cities and Communities
- EU and International Projects (PEPPOL eProcurement; ECRN; OpenDAI (open data); e-SENS European Digital Market development); Cloud for Europe; etc. )
- Innovation Procurement (Pre-Commercial Procurement – PCP and Public Procurement of Innovative Solutions - PPI)

The national training agency – Formez PA offers courses for public sector agencies on digital skills and open data. Learning coding is now compulsory in schools.

### **Barriers and challenges to growing the digital economy**

- Disconnected (physically and virtually) from the innovation and research world
- Low levels of digital and entrepreneurial culture
- Difficulties understanding what the digital economy is and what potential it offers
- Remoteness from national and regional strategic centres
- Regional authority lacks strategies and visions

### **Experience relevant to TechTown**

Although the city does not explicitly target the Digital Economy to date there are a number of projects / activities offering lessons for other partners. These include:

**GeniUSiracusa** (part of the **URBACT II GENIUS Open Network**) which helped the city to develop more open, inclusive and participatory governance and to unlock some of the city's potential through an open discussion platform which empowers citizens to get more involved in how the city works: (more at <http://geniusiracusa.ning.com>)

**SMART LAB 2.0.** which aims to engage people under 35 with digital skills with the city administration to improve institutional performance and administrative efficiency. The young people - as well as helping the city to develop its own capacity - also benefit from increased knowledge and experience which helps them to be more competitive when applying for future jobs. The project only started in 2015 but the signs are that it is achieving its aims, both for the city and for the young people.

**CODING** is another new project, which aims to address the skill shortage in computing. School staff are trained to help them support young people with computing and to support the development of wider skills, problem solving and tech (games) development. The idea is to grow a new generation of developers.

**PRISMA** is a partnership made up of large national companies, research centres and major Italian universities. With a €24m budget the project aims to simplify, improve and manage processes and information and develop new opportunities for the city. The overall aim is to develop an open market for digital applications. PRISMA is creating a 'Platform as a Service' (PaaS) type, specific for Public Administration which provides developers of applications and, in particular, SMEs to choose the necessary components (Operating System, Application Server, Libraries for installation and configuration of databases or applications

and even libraries that provide the necessary scripting languages like Python or Java), both for the development of its application and for the creation of a production environment and activating the services needed by the public administration. E-Government, e-Health and e-Seismic are the experimentation platform areas.

To date 4 mobile's apps have been designed for Siracusa: city reporter; city mover; city data; city welfare.

**Youth LAB** is a new initiative which aims to empower young people to co-design youth policies leading to the creation of new jobs. Whilst in its early stages, it may be useful to explore its progress during TechTown as lessons emerge.

The National Association of Artisans and SMEs is a partner in **digitally** which, run in association with Google & Amazon, aims to help businesses to develop web pages & implement e-commerce.

### **Digital Economy SWOT for Siracusa**

Strengths	Weaknesses
<p>Existing Smart Cities Strategy</p> <p>A growing Smart community engaged in several ongoing projects (=credibility)</p> <p>A group of partners (stakeholders and municipality) already enthused, mobilised and stabilised</p> <p>Digital Economy is a new area of work and holds lots of potential for the city</p> <p>The City dimension (medium sized city, suitable for innovation piloting)</p> <p>Presence of diverse economic sectors (i.e. multinationals)</p> <p>Good quality of life</p>	<p>Distance from research centres /universities</p> <p>Cultural backwardness/ Digital Divide</p> <p>Fragmentation of the digital offer (lack of network)</p> <p>Poor knowledge of languages</p> <p>Low levels of innovation, research and development</p> <p>Lack of entrepreneurial culture</p>
Opportunities	Threats
<p>Open to growing digital jobs through the SMART City Agenda</p> <p>Ability to attract external (EU) funding – perceived to have strong administrative approach</p> <p>Strong reputation (also through</p>	<p>Relation with the Region of Sicily</p> <p>Peripherality</p> <p>Lack of understanding of digital community and the potential it holds</p>

GeniUSIRACUSA) Presence of local Impact Hub and Accelerator Opportunity to track alumni and bring them home to live and invest in the city	
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### **Ambitions and aspirations for TechTown**

#### **Integrated Action Plan**

Siracusa's plan is likely to focus on:

- Better understanding the digital economy, the digital community and what it means for the city – so as to grow a new digital ecosystem
- Addressing lack of digital education in schools and exploring how to attract and retain digital talent within the city
- Developing a digital culture from which entrepreneurs and start ups will grow
- Creating the conditions within which the digital community can grow (access to finance, support, lighter bureaucracy, agile public services)
- Brokering links between the digital community and city-wide initiatives such as the SMART City Agenda
- Continuing to use collaborative governance to facilitate this process (including the digitalisation of public services – leading by example)

#### **URBACT Local Group**

The URBACT Local Group will provide a network and community that shares, co-designs and grows the city's digital economy.

#### **Membership**

Name	Organisation	Role
Salvo Fallica	Impact Hub Siracusa	Co working space and incubator for social entrepreneurs
Salvatore Biazio	Impact Hub Siracusa	idem
Carmelo di Mauro	'Rizza' technical Institute	Teacher
Rino Mulè	'Rizza' technical Institute	Teacher
Simona Lo Vecchio	Chindemi School	Teacher

Simona Falsaperla	Confindustria (Industries Confederation)	PR, Communication
Luigi Grasso	Etna Hi Tech (PRISMA Project)	CDA member
Emma Schembari	Siracusa Municipality	Consultant (environment sector)
Giancarlo Micieli	Chambre of Commerce and Association of Craftsman	SME / micro business intermediary
Fabio Moschella	Consortium of Siracusa Lemon	Director
Franco Massimo	Confagricoltura (Confederation of agriculture)	Director
Linguanti	Confesercenti	Director
Massimo Riili	ANCE (Construction)	Director
Paolo Lentini	Confartigianato (Confederation of Craftsman)	Director
...	Confturismo (Tourism)	
Prof. Lucia Lo Bello	Unversity of Catania	National Laboratory of Smart Cities
...	Enrico Fermi Institute	
Giuseppe de Guardo	Siracusa Municipality (Europe Office)	Core Team
Caterina Timpanaro	Consultant	Facilitator, participatory processes expert
Rita Savasta	Siracusa Municipality (Europe Office)	Core Team
Emanuela Reale	Siracusa Municipality (Smart Lab)	

### **Learning hopes**

Siracusa would like to learn more about how to optimise the benefits of the digital economy. As well as creating jobs and opportunities for (young) people, this can also contribute to the better functioning of public services and improve collaborative governance.

## 4. TECHTOWN - ANALYSIS AND RECOMMENDATIONS

### 4.1. The digital economy opportunity

Cities are in the process of experiencing a digital transformation, one which brings the citizen closer to the city and, if optimised, creates jobs and develops human capital. The data reviewed in the State of the Art highlights the huge scale of opportunity on offer and suggests that there is much that cities can do on both the demand and the supply side of the economy to grow digital jobs. This includes:

- Facilitating open access to data for developers, e.g. mapping, meteorological and real time public transport data as well as information on community level services (and ensuring security of data).
- Enhancing connectivity and making good wifi more widely available in public, business and education spaces.
- Leading by example by e.g. embracing app-driven / digital innovations across all sectors, and services, e.g. health, education, enterprise, lifestyle, wellbeing.
- Ensuring a flexible and supportive business environment for start-ups and entrepreneurs – providing affordable spaces, co-working spaces, networking opportunities, flexible business support and access to finance programmes – so as to make it as easy as possible for people to start and grow digital companies
- Linked to the above, creating living labs for start ups and scale ups with a lighter regulation load and where expertise, talent and investment can co-exist to promote the new European digital entrepreneur
- Facilitating labour market flexibility and promoting STEM skills development in local schools and training providers (Science, Technology, Engineering and Mathematics) to meet demand
- Encouraging a risk taking, entrepreneurial culture where failure is not frowned upon but rather embraced
- Brokering relationships and networking opportunities – e.g. between large and small companies, between ‘luvvies and geeks’, along supply chain, between digital companies and others needing digital transformation, between research institutes / education providers and SMEs

Perhaps the biggest two challenges are 1) the need to accept and embrace disruption and 2) to understand when public sector intervention make sense. Traditional methods and models will be threatened and transformed through innovation and digitalisation. Some cities may not feel comfortable in this new space. They may not understand it or their role within it. TechTown will help them to explore and define this.

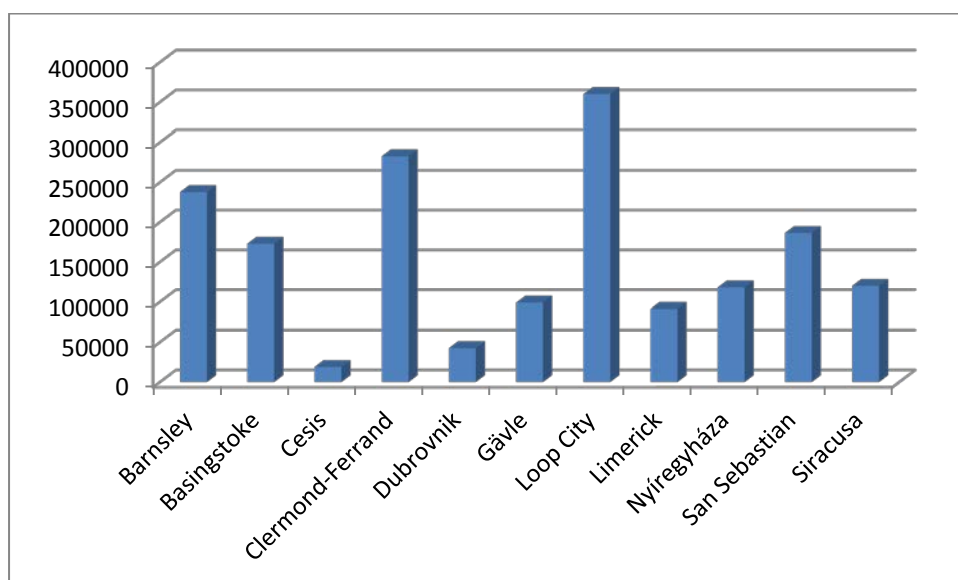
## 4.2. TechTown Cities

It is clear from the work undertaken in preparing this baseline study that TechTown cities have much in common in terms of challenges and aspirations. There are of course important local contextual differences which will affect the way that they will address these challenges through the co-creation and possible implementation of Integrated Action Plans.

### *Size*

The network set out to target small and medium sized cities and, in the main, this remains the intention. However the final partnership includes 2 much smaller cities (Cēsis and Dubrovnik - both nevertheless important in their own national context) and 2 cities which are home to more than 250,000 people (Clermond Ferrand and Loop City). Despite their size, the questions being asked in these cities resonate with those of the rest of the partnership: How do we compete with larger city centres and their accompanying lifestyle and digital offer, higher salaries, connectivity to higher education and larger knowledge based communities? What can we do locally to attract national and regional incentives and programmes for growth and inward investment - to grow digital jobs - when they so often focus on larger cities?

**Chart 1 - Population by city**

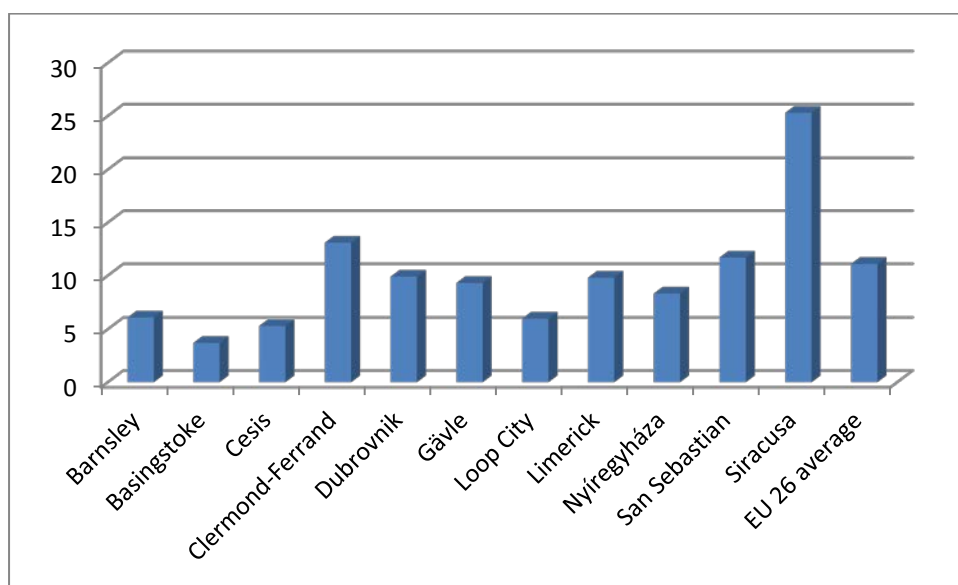


### *Labour market*

TechTown cities also differ hugely in terms of socio economic context and labour market challenges. Unemployment rates vary from just 3.7% in Basingstoke to 25.3% in Siracusa. Most cities have a rate which is lower than the EU average. Youth unemployment is seen to

be an issue in all the partner cities and the digital economy is seen as an opportunity to create jobs which are attractive to young people. Many of the partners reported high levels of out migration of young people although the population in all TechTown cities is actually growing either due to positive birth rates or inward migration from rural areas or from other countries.

**Chart 2 - Unemployment rate by city**



### *Business structure*

In terms of company size, employment in all partner cities is dominated by small and medium sized enterprises. In terms of sector, perhaps not surprisingly most of the partner cities have a preponderance of public sector and service related activity.

### *Digital strategies*

The 11 cities are also all on slightly different stages of their digital economy journey. Some - like Nyíregyháza and Cēsis - are just setting off. Others - like Limerick, Basingstoke, San Sebastian and Barnsley - have made significant progress already.

Some cities - notably Dubrovnik, Loop City, Limerick, Nyíregyháza, San Sebastian and Siracusa - are linking their ambitions to grow digital jobs to development and delivery of smart city strategies. Within this sub group there are a mixture of 'first, second and third

generation' smart cities<sup>2</sup>. Third generation smart cities are seen to be more sustainable as this collaboration between local people (developers) and city challenges will not only bring better solutions but also contribute to the creation of local jobs and companies. Three of these (Dubrovnik, San Sebastian and Siracusa) have a thriving tourism or visitor economy. This generates considerable income for the city but also brings real challenges including a reliance on (low level) seasonal employment and congestion at peak times. The digital economy offers real opportunities to grow new and better jobs for local people whilst enhancing the visitor offer.

The network also includes a number of cities which are moving away from an economy which was heavily reliant on manufacturing or production industries - Barnsley (coal mining) is the most obvious. Limerick, Nyíregyháza, Clermont Ferrand and San Sebastian also view 'digital' as an opportunity to diversify their economic base away from other more traditional industry. There are also of course also opportunities to grow digital jobs through the transformation of existing industry - as in Gävle for example.

The table below summarises some of the local experiences which it would be useful to share and highlights key learning and capacity building needs.

**Table 5 - Summary of learning needs and potential contributions**

Partner city	Potential contribution: experience	Potential contribution: good practice	Learning needs	Capacity building needs
<b>Barnsley</b>	Jobs and Growth Plan recognises Digital as transformative Establishment of Digital Media Centre Long term experience of working closely with local SMEs and the digital community	Enterprising Barnsley - business support programme Digital Media Centre CLICK South Yorkshire - e-commerce programme for women SmartStart - Business start up programme Genesis - Business Incubator	Maximising potential offered by existing assets & particularly spillover potential from regional and national tech initiative (TechCity, TechNorth) Clustering in medium sized towns Digitalising the high street Attracting & retaining talent Growing digital jobs through starts ups and by transforming traditional industry	Sustainable (not project-based) financing models
<b>Basingstoke</b>	Enterprise M3 Report -	SETSquared (award	Understanding the	Building

<sup>2</sup> The first generation was oriented to big companies providing solutions to cities. The second was where cities went to big companies seeking solutions and the third are engaging local citizens (and developers) in solving city problems.

	Seizing the opportunities of the digital age ESIMeC - employer led skills development	winning incubator service) TeenTech - inspiring young people to consider STEM careers 5G Innovation Centre Digital High Streets	digital economy and identifying the digital community Building on existing digital community to grow jobs Addressing skills mismatches - Attracting and retaining talent Understanding the role of the council	meaningful relationships / networking with digital community Participative action planning Creative approaches to funding
<b>Cesis</b>	Medi@Tich INTERREG IVC project (region)		Understanding the digital economy Growing a new sector / new jobs attractive to young people Becoming a more outward looking city Attracting & retaining talent Understanding how to get best value from digital hub space	Stakeholder engagement and participative action planning More integrated, strategic and proactive approaches
<b>Clermond-Ferrand</b>	Auvergne TIC (regional digital cluster) Digital Hub / Digital Neighbourhood	Prev@Pass - healthcare information system	Becoming a more outward looking city Growing digital jobs through start ups and by transforming traditional industry Better connecting education with the labour market Understanding how to get best value from digital hub space Positioning the city alongside larger digital centres (Lyon, Grenoble etc)	Governance – public private collaboration and partnership (digital hub) Strengthen knowledge on the digital economy Understand EU digital agenda
<b>Dubrovnik</b>	Smart City Strategy includes employment and entrepreneurship angle - city seeking to be '3rd generation' of smart city to ensure it benefits from local jobs and companies as well as addressing complex city challenges	Hackathons Start Up Weekends Business Incubation Centre Smart City Lab	Defining and understanding the size and growth potential of the digital economy Better connecting education with the labour market Maximising job growth potential of smart city strategy Attracting & retaining talent	SME engagement Improving digital skills within city staff
<b>Gävle</b>	Long term successes in	Future Position X	Defining and	Business

	bringing together employers and education and in promoting youth entrepreneurship	(GIS Cluster) FindIT (Forum for Industrial IT Solutions) Fiber Optic Valley	understanding the size and growth potential of the digital economy Developing strategic competence in order to grow the digital sector Maximising spillover potential from nearby Stockholm Maximising job growth potential of digital start ups and digitalisation of traditional industries Attracting & retaining talent	engagement How to efficiently and effectively integrate individual initiatives into a strategy for the future How to gather evidence and analyse it with stakeholders
<b>Loop City</b>	Long term experience of e-government and participative planning & co-creation	Gate 21 - public private partnership developing innovative solutions to smart city challenge Digital Infrastructure Project White Book (on data security)	Defining and understanding the size and growth potential of the digital economy Maximising job growth potential of smart city strategy Maximising spillover potential from nearby Copenhagen Attracting & retaining talent	Better connecting with the digital community Public private collaboration
<b>Limerick</b>	Limerick 2030 plan which integrates Economic Strategy, Spatial Strategy and Marketing Plan	Limerick for IT - skills partnership to bring supply and demand of labour market closer together Innovate Limerick Ltd Online Trading Vouchers Fab Lab Local Community Development Committee	Defining and understanding the size and growth potential of the digital economy Maximising spillover potential from local, regional and national initiatives Maximising job creation potential of smart city strategy Attracting & retaining talent	Community and stakeholder engagement Sustaining stakeholder participation and partnership momentum Evidence-based policy making (analytical skills for decision makers) Digital skills for public sector staff
<b>Nyíregyháza</b>			Defining and understanding the size and growth potential of the digital economy Maximising job creation potential of smart city strategy Attracting & retaining talent	Business engagement Better connecting with the digital community Participative action planning

<b>San Sebastian</b>	Long term experience of cluster development - 6 local clusters - and now starting to work on hybridisation Medi@Tich INTERREG IVC project	Pi@ Building - Audio Visual and Digital Innovation Park Hybridisation between digital community and traditional industries Smart city work acting as living lab / test bed for new digital products and services	Attracting & retaining talent Maximising job creation potential of smart city strategy Keeping abreast with fast moving trends in digital economy Growing jobs by digitalising existing industry 'Hybridisation' of existing clusters so as to grow digital jobs	Participative action planning with local digital community Evaluating impact of public sector interventions
<b>Siracusa</b>	City included in IBM Smart City Challenge, 2012	GeniUSSiracusa - Open, inclusive and participatory governance Smart Lab 2.0 Coding in schools PRISMA - 'Platform as a Service'	Attracting and retaining talent Maximising job creation potential of smart city strategy Defining and understanding the size and growth potential of the digital economy	Collaborative governance - breaking through policy and institutional silos Knowledge sharing

So the headline topics in terms of cross cutting capacity building needs are:

- Innovative approaches to funding and financing future activities
- Collaborative governance
- Public private partnership structures and working
- Participative integrated action planning - and maintaining stakeholder engagement in co-creation throughout the process
- Understanding and evaluation the impact of (public sector) interventions

The common thematic interests are unpicked in Section 4.2. below.

## 4.2. Recommended thematic focus for transnational exchange

There are many topics which could usefully be covered through transnational exchange. It is simply not possible to cover all of these within one project. Rather it is better to focus on fewer interrelated themes and cover them in more depth. TechTown views 'digital' opportunities through a job creation lens and looks at the economy through a 'digital' lens. Whilst other topics (such as digital infrastructure, e-inclusion, internet of things, e-government etc) are all closely related to this theme, it is important that TechTown retains a clear focus on job creation. Clearly there will be opportunities for informal exchanges on these topics - and for signposting partners to other useful sources of experience and expertise - but they are not the core focus of TechTown.

The recommendation therefore is that the phase 2 transnational activities focus on the following themes:

**Table 6 - Recommended themes for transnational activities**

Theme	Potential areas of focus
<b>Better understanding the digital economy</b>	<p>How can cities identify their digital community?            What mapping methodologies already exist? Who are the key players?            How to others define 'digital jobs' and is it helpful to pin down a precise definition or even have a list?            What tools already exist which can help to measure existing and future growth potential?            How do cities' digital strategies vary? How do they fit with regional and national strategies?            Is it best to diversify or specialise? Clustering or non clustering within the digital community?            What new metrics will be needed to measure city interventions?            Is there scope to develop a tool for TechTown cities to help with this?</p>

**Growing digital jobs - to be split into 3 sub themes as follows:**

<ul style="list-style-type: none"> <li><b>Growing new digital jobs through start ups and existing businesses</b></li> </ul>	<p>What can cities do to support digital start ups and businesses?            How can cities better position themselves to optimise the conditions for competitiveness?            What sort of business support do digital start ups want and need?            How does this support differ from 'normal' business support? What is required? What is different?            How can they encourage older people to consider digital start ups?            How can cities help start ups to survive and to grow? What can they offer post incubation?</p>
<ul style="list-style-type: none"> <li><b>Growing jobs through the digital transformation of traditional industry</b></li> </ul>	<p>What can cities do to support digital transformation of traditional industry and existing businesses?            How can they ensure that 'digital' is an opportunity (and improves productivity) and not a threat to existing industry?            What is the role of cluster policy?            How can cities help / motivate traditional small businesses to digitalise?</p>

- **Growing digital jobs through the smart city agenda**

When can we say a company has gone through digital transformation?

How can cities ensure that they maximise the local jobs creation potential linked to delivering smart city agendas?

How can they avoid larger multinationals reaping all the rewards and ensure that cities grow indigenous digital businesses and local jobs?

What role could local city challenges, hackathons play?

What role could public procurement play?

What does good governance look like? Political leadership? Public private partnership?

How can cities ensure that the LOCAL job creation potential from smart cities are maximised?

How can cities create 'living labs' or 'test beds' for new intelligent city solutions?

**Providing spaces and places for connections for job generation**

How important is it to have a physical space for the digital community? What does this space look like?

What is the accompanying 'offer' in terms of business support, incubator or accelerator support? How can the city make it a living thing which makes digital people tick?

Are there positive examples of long lasting networks and hubs?

Who is best placed to develop and run such a space? Public? Private? Both? Other?

What is the unique position of medium sized cities?

**Finding, growing, retaining and returning talent**

How can medium sized cities attract and retain (young) skilled people?

How can they position themselves so that people want to live and work there?

What can cities do to better match education and training provision with the needs of the digital economy (now and in the future)?

(How) Can they influence education provision?

How can they ensure that everyone has (equal) access to the right digital education and training?

How can they avoid losing out to larger regional and national 'hubs'?

What role does city 'branding' have to play?

There is also a common interest in **Governance** which cuts across all of these - What capacity do cities and their stakeholders have to rise to the new challenges of the digital economy. Do they have the right skills and attributes to maximise its potential? Are they the best people to do so for the city? Could others do it better? How can they better engage with other stakeholders? What new governance arrangements should be considered? How can cities be as responsive and nimble as the digital economy, how can they understand the risks whilst maintaining resilience? Where will the money come from? How can cities define the right metrics to measure the impact of their interventions?

Finally it is important to remember that URBACT is all about INTEGRATED sustainable urban development. It will be important to consider **sustainability** and **inclusion** goals alongside the obvious **economic** objectives when developing and delivering both transnational activities and local groups and plans. Many digital solutions, for example, are related to the environment (smart grids, air quality, urban mobility) whilst offering tangible job creation opportunities for cities. Others offer opportunities for excluded groups. It is important to join up some of these agendas and to ensure that policies and practices maximise opportunities in all areas of urban development.

#### 4.3. Recommended transnational exchange activities

Given the thematic focus set out above, it seems logical to have a substantive transnational activity bringing all TechTown cities together around **each of the main themes** and for the **cross cutting / city governance themes** to be covered alongside these. Experts from within and outside the network would be invited to share their experiences in a **Masterclass** type format. This would be followed by a round-table or panel discussion and Q&A so that cities can ask their individual questions - and then a **thematic workshop** where partners can look in detail at how the learning is relevant to their own city and how it might be used in the co-production of their Integrated Action Plan. The expert speakers will be encouraged to stay for all of these activities so that they can work with the partners in small groups or on a 1:1 basis. Some of the themes also lend themselves to study visits to practices of interest in partner cities. Where this is the case it is recommended that an additional half day or day is included in the transnational meeting so that partners which are interested can participate in site visits.

From the work undertaken, however, it is clear that some of the TechTown cities have more specific or individual areas of interest and there are some themes which are not (currently) of interest to all partners. It is therefore recommended to have a flexible approach to some elements of transnational exchange and to allow scope (and budget) for:

- Bilateral study visits,
- Small 'deep dive workshops' to bring necessary expertise to the less developed cities

- Smaller clusters of partners meeting around themes of interest as they emerge during phase 2

It is recommended that a full transnational meeting is dedicated to **peer reviews of the Integrated Action Plans** in the second year of phase two. The S3 Platform Peer Review Methodology will be adapted to facilitate this exercise. A masterclass on some of the governance and funding related topics could also be part of this event - looking particularly at how to define and measure results and how to fund future activities.

Finally it is recommended that, should budget allow, an **optional study visit to Estonia** is considered as part of Phase 2. Estonia is one of the most advanced e-societies in the world. Its latest innovation is an e-residency card for non-nationals. Much of Estonia's e-government infrastructure has benefitted from investments under ERDF and the lessons learnt are likely to be of real interest to (most) TechTown partners.

The table below summarises the core proposed workplan for transnational exchange. The suggested locations have been selected based on a number of factors including accessibility, experience in the theme to be addressed and the presence of physical assets which are worth visiting.

**Table 7 - Proposed workplan for transnational exchange**

	<b>Date</b>	<b>Host</b>	<b>Thematic Focus</b>	<b>Format</b>
<b>1</b>	June 2016	Basingstoke	<b>Better understanding the digital economy</b>	Masterclass Thematic workshop Study Visit to TechCity (London)
<b>2</b>	September 2016	Limerick	<b>Growing new digital jobs through start ups</b>	Masterclass Thematic workshop
<b>3</b>	November 2016	Cēsis	<b>Finding, growing, retaining and returning talent</b>	Masterclass Thematic workshop
<b>4</b>	March 2017	Barnsley	<b>Providing spaces and places for connections</b>	Masterclass Thematic Workshop Peer reviews between partners with / considering physical space-based activities
<b>5</b>	June 2017	Gävle	<b>Growing jobs through the digital transformation of traditional industry</b>	Masterclass Thematic Workshop

				Study visit to FIND-IT, FPX &/or Sandvik Potential to link to 'RetailLink'
6	September 2017	Loop City, Copenhagen	<b>Growing digital jobs through the smart city agenda</b>	Masterclass Thematic workshop Study visit to Copenhagen / Gate 21 Potential to link to 'SmartImpact'
7	November 2017	Dubrovnik	<b>Action Planning for the digital economy</b>	Masterclass on cross cutting / governance themes and input on measuring impact and finance Peer review of Integrated Action Plans
8	Spring 2018	Brussels	<b>Final Dissemination Event A Digital City Future: Adapt or Die Lessons from TechTown</b>	

### *Recording, sharing and capitalising upon the learning*

In line with the ambition to be 'of' the digital economy, the learning will be captured and shared through a digital toolkit, available on a collaborative platform and including podcasts and prezi's highlighting learning from transnational events and (live) web streaming of local and transnational events. Building on the 1st TechTown Hack Day in January 2016, members of the tech and digital community will come together through a series of hack-type events in the different cities to explore how best to build this digital toolkit - hacking into existing platforms and tools and creating new ones where appropriate.

The learning from TechTown will be relevant to all European cities. The network hopes to create new methodologies and explore novel approaches to city governance which are at the forefront of innovation and highly relevant to the evolving EU Urban Agenda.

## 4.5. Conclusion

The digital economy is the here and now. Whether, and how, a city embraces it proactively - or simply rides the waves and hopes for the best - will have a massive influence on its future. The consensus is that digital jobs are attractive to young people and that this, coupled with the lifestyle opportunities on offer, will help medium sized cities to attract and retain talent and thus to grow and thrive. The opportunities are immense and TechTown addresses a thirst for learning and exchange between the 11 partner cities.

The challenge will be to ensure that themes to be addressed through transnational activities are sufficiently focused to allow depth of discussion and exchange and retain a flexibility to adapt to this rapidly changing landscape. It is simply not possible to address all possible 'digital' themes in a single URBACT network. The focus in TechTown therefore will be on job creation and economic growth.

All TechTown cities bring some learning to the network but there is also a need to bring in experience and expertise from outside. There are clear opportunities to influence policy and practice - both locally and more widely. Engaging with organisations and stakeholders operating at national and European level - such as the European Digital Forum - will also be important.

With 60% of Europe's population living in medium sized cities, the way that they respond to digital economy challenges and opportunities is central. The message is simple: Adapt or Die.

## Annex 1 - Methodology and structure

For TechTown the information included in this report has been gathered through:

### a) Desk research

In order to prepare the State of the Art secondary research was carried out looking at an extensive range of source literature from a wide array of organisations including EU institutions and programmes, Organisation of Economic Cooperation and Development (OECD), National institutions and programmes and Campaigning groups and trade unions.

### b) Eleven City Questionnaires

Detailed questionnaires were prepared and circulated to all partners during the Autumn of 2015. Partners were asked to return the questionnaire at least one week prior to the programmed city visits. The questionnaire asked for information about the demography of the city, the economic and business structure, the workforce and the digital economy. Partners were also asked to send relevant documents and research to feed into the desk research along with key images of their cities.

### c) Eleven City Visits

The TechTown Lead Partner and Lead Expert visited all eleven cities, spending at least one full day in each place. In advance of the visit a programme of meetings was agreed with the host partner. Every visit included as a minimum a meeting with the local TechTown coordinator and their team and an initial meeting with the URBACT Local Group.

Partners were asked to prepare a presentation following a common template giving further information on the city to supplement that included in the questionnaire. The lead partner and lead expert gave information about URBACT and about TechTown and in depth discussions were held on local challenges and activities. Following each partner visit all the information gathered on the partner was condensed into a concise, visual and easy to read partner profile. The draft was sent to each partner within a week of the visit and finalised in consultation with the partner.

### d) Two meetings of all partners

Two meetings were held with project partners - the 1st, in October 2015, included the initial 6 partners and the 2nd, in February 2016, the final 11. These meetings gave the partners the opportunity to get to know each other better. Information on URBACT requirements was shared and there were lengthy discussions on potential areas of focus. The meetings

included innovative and interactive methodologies to help create a participative, structured and effective partnership.

e) Bilateral and multi-lateral consultation via telephone and email

Throughout the period from September 2015 and February 2016 there has been ongoing and regular dialogue between the lead partner and lead expert and individual partners. The partnership has taken advantage of ICT tools such as Skype and WebEx to facilitate contact between face to face meetings.

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