

# Developing the Welsh Economy by learning the lessons from successful areas

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# Introduction

There are many economically successful cities in Britain and across Europe and not only the capital cities and larger cities but medium sized cities such as Aarhus in Denmark with a population of 273,000 and Mannheim in Germany with a population of 305,000 which are similar to Swansea and Cardiff.

I examine what makes cities such as Mannheim and Aarhus are more successful than comparable cities in Wales

This pamphlet further looks at what medium sized companies say they need in order to grow into large companies

It also looks at the use of science parks and how they have helped local economies.

Finally it looks at cities as growth engines of the economy.

# Mannheim region and the Swansea Bay city region

Mannheim is Swansea's twin city but that is where the similarity ends. The economic data for the two areas makes interesting, and as a Swansea resident, depressing reading. In Mannheim metropolitan region its GVA is 147% of the European average but in Mannheim city it rises to 210%, compare that to the Swansea Metropolitan region on 75% and the Swansea local authority area on 79%.

What does Mannheim do differently and can Swansea learn from its twin city?

The city of Mannheim has been referred to as the first "Smart City" where they have been successful in connecting each household within the city to a smart energy network. Bus stops state when the next bus is arriving and have signs indicating where traffic jams are. Furthermore, in both the city and region, you are able to reach everything simply via bus, tram or train.

Mannheim's University, which is one of the leading research institutions within Germany, plays a key role in its economy. The research institutions of the University closely collaborate with a number of national and international partners. Some examples are the Mannheim Centre for European Social Research and the Centre for European Economic Research. Mannheim Business School is Germany's number one business school offering world class management education.

An institution affiliated with the University is the Mannheim Centre for Entrepreneurship and Innovation (MCEI) that provides a founder and incubator platform for students, young entrepreneurs and investors. The institute is supported by the Mannheim Institute for Mittelstand and SME Research (IfM) and the Chair of SME Research and Entrepreneurship at the University of Mannheim. Several successful start-ups have already been launched at the University of Mannheim or been initiated by former students, for example (according to local media sources), Payback (€500m exit to American Express), Delivery Hero (raised \$1.4b funding), AUTO1 Group (raised \$200m funding), StudiVZ (€85m exit to Georg von Holtzbrinck Publishing Group), Simfy (raised €30m funding), Goodgame Studios (initiating IPO), SavingGlobal (raised \$32m funding), Synchronite (sold to LivePerson) and movilizer (sold to Honeywell). The Metropolitan Region is more and more becoming a draw for multimedia and high-tech service providers through SAP, and leading major corporations such as ABB, BASF and Roche Diagnostics have set up there.

The above helps explain why Mannheim was ranked eleventh in the top fifteen of the most inventive cities worldwide.

Mannheim also has not lost its historical manufacturing base with the successor to Karl Benz's automobile manufacturing companies, Daimler AG, headquartered in Stuttgart, having had a large presence in Mannheim. And it is in Mannheim that diesel engines and buses are assembled.

The city is also home to major, multinational corporations such as ABB, IBM, Roche, Unilever, Phoenix Group and several other well-known companies. Also there are numerous emerging medium-sized companies, for example Fuchs Petrolub and Pepperl & Fuchs, which operate internationally.

The creative industries are firmly established, with the famous Mannheimer Schule and the National Theatre. Mannheim also has a long standing cultural tradition. The Popakademie, Germany's first university for pop music and music business, is internationally renowned. Music festivals such as Maifeld Derby and Time Warp underpin Mannheim's position as a city of music. There is also the atelier of the fashion designer Dorothee Schumacher and her creations are presented at international fashion weeks.

With the aim of contributing to an environment where many more creative businesses can arise, the Mg: Mannheimer Gründungszentren supports business founders. The centre advises during the foundation process, provides office space and helps start-up companies overcome the challenges they face.

I believe the role the University plays in supporting the development of start-up companies is crucial to the prosperity of the area. Also the idea of having key industrial sectors and supporting them, building on local expertise and areas where expertise has been developed over several years. Mannheim has also kept its manufacturing sector especially based around Mercedes Benz.

Whilst Swansea cannot replicate everything in Mannheim, building on the universities – especially the bay campus – to generate start-up companies via a centre for Entrepreneurship and innovation would be a substantial step forward. Mannheim has made progress on energy and connectivity, two areas that Swansea Bay City region can benefit from.

Finally, building on the creative industries already in the region and also recognising the continued importance of the metal industries would help take the Swansea Bay City region forward.

# Welsh economy: lessons from Aarhus

I further examine how another European city, Aarhus in Denmark promotes entrepreneurship and has a GVAs above the European Union average. I will also consider some of the barriers to the growth of medium sized businesses and barriers to micro and small businesses growing into larger businesses.

The second city, in population, in Denmark is Aarhus and the second city in Wales is Swansea. Whilst Swansea which is part of the West Wales and Valleys and the Swansea metropolitan area has, according to Eurostat, a GDP per capita of 75% of the European average, Aarhus has 107% of the European average, so what can Swansea learn from Aarhus and its economy?

Aarhus University which was founded in 1928 is Denmark's largest, with a total of 44,500 students as of January 2013. In ranking lists of the world's best universities, Aarhus University is placed in the top 100. The largest research park in Aarhus is INCUBA Science Park, focused on IT and biomedical research. The organization is owned partly by Aarhus University and partly by private investors and aims to foster close relationships between public institutions and start-up companies. IT and biomedical research are two of the current main growth industries across the World.

Aarhus Development Park has a number of specific industry related parks including Navitas Park which shares with the Aarhus School of Marine and Technical Engineering and AU Engineering.

Another major centre for knowledge is Agro Food Park in Skejby, established to facilitate co-operation between companies and public institutions working within food science and agriculture. Arla Foods has the global innovation centre Arla Nativa in Agro Food Park and in Aarhus University is moving the Danish Centre for Food and Agriculture there. A 1000 people worked at Agro Food Park, spread across 50 companies and institutions.

Aarhus is home to the Aarhus School of Architecture, and some of the largest architecture firms in the Countries such as schmidt hammer lassen architects, Arkitema Architects and C. F. Møller Architects are located there and these organisations form a unique concentration of expertise and knowledge.

The city council supports a culture, business and education centre in the area. The future occupants of the neighbourhood will be businesses and organisations selected for their ability to be involved in the local community and it is hoped the area will evolve into a hotspot for creativity and design

Turning to Wales, what medium sized companies tell me are their problems are include: the inability to secure funding on assets especially any held abroad; the limit of £5 million pounds on lending by the Commercial Bank of Wales does not meet the needs of medium sized enterprises; size of welsh government contracts, some put together in such a way as

medium sized enterprises cannot tender for them; and the difficulty of raising working capital from commercial banks and the danger they will call it in at any time.

What small companies that have grown tell me their problems were include: finding premises that are expandable; needing to move continually as they grow; lack of readily available buildings; late payments; in construction the continuing growth of the sub-contractor and agency worker that distorts competition and makes it difficult for small firms to compete and access to markets.

Is it any surprise that small and micro- breweries have been successful when large supermarkets and Wetherspoon's have been keen to retail their products?

We need an economic strategy that works more closely with the Universities, either using Aarhus business park model or Manheim's centre for innovation and entrepreneurship model. Whilst the term Technium has become synonymous with failure the initial idea of using it in Swansea to provide facilities for start-up companies spinning out of the university was a good one but labelling all advanced factories as Techniums was doomed to failure. The Welsh universities need to become drivers of the Welsh economy, promoting innovation and entrepreneurship.

Things that the Welsh Government can do are: provide larger loans through the commercial bank to medium sized companies; provide loans against assets, including overseas assets; let Government contracts of such size that medium sized Welsh companies can bid; and make it easier for micro companies to expand by supporting variable size and expandable units in industrial and commercial areas.

We in Wales are no less skilled, entrepreneurial and capable than anywhere else in the World. What we need are policies that work to support the growth of Welsh companies and establish new ones.

# Science Parks

Two things we know about the Welsh economy, from ONS and GVA data, are: it is doing less well than the British average; and that it is under performing in key economic sectors such as ICT, professional services and life sciences, the latter despite substantial Welsh government support and investment.

One of the reasons that I believe the Welsh economy is underperforming in these areas is the lack of science parks. Throughout Europe and North America science parks have been created over the last 60 years. The world's first university research park started in the early 1950s near Stanford University and today there are over 170 science parks in the USA. In 1969, the Sophia Antipolis Science Park in France was formed and has been followed by more in the UK and mainland Europe.

Examples across Britain and Europe include the following:

## Exeter Science Park

When it is at full capacity is estimated to employ at least 3000 people. The site offers facilities for science and research in areas including food security, biosciences and sustainable energy sources; and has a number of large multinational companies such as Arabian Industries Energy Solutions - who provide “specialist process engineering packages for the oil and gas industry”, and seeDATA, who are “a digital agency delivering software, websites and design.

## Bristol and Bath Science Park

The park houses the National Composites Centre (NCC) which facilitates a number of experts and academics within the industrial sector. The NCC is led by the University of Bristol and is an open access area for businesses of all sizes, with offices, workshop space and teaching facilities. Currently, the site is partnered with businesses including Airbus, GKN Aerospace, and Rolls-Royce and is aiming to create 6000 jobs.

## Malvern Hills Science Park

In the Malvern Hills set in rural Worcestershire there is a science park that has been successful. Despite having no major population centre near it the Science Park has employed 300 people in industries as diverse as “UTC Aerospace Engineering” and “Worcestershire 5G Test Bed”.

## York Science Park

York in a city slightly smaller city than Swansea, has a science park that offers around 137,000 square feet of flexible, high-specification space for growth. Over 100 businesses are currently within it employing 2800 people, including ClearSky Medical Diagnostics.

## Pentland Science Park

Pentland Science Park in Midlothian has over 20 commercial tenants involved in R&D in life sciences and employing over 200 people, making it one of the major employment centres in the area and companies set up there include BioReliance - a company that provides testing and manufacturing services to pharmaceutical and biopharmaceutical companies; and

TCBioPharm - a company that is developing an autologous anti-cancer immunotherapy, formulating a treatment for a wide variety of tumour types.

#### Lindholmen Science Park

In Sweden, Gothenburg has a science park founded in 2000 with over 150,000 square metres of land and employment for 10,000 people. Lindholmen Science Park is dedicated to research and development in mobile communication, intelligent vehicles and transports systems, and the modern media industry. It has over 375 current tenants include Volvo, Saab and the telecommunications company Ericsson.

#### Leiden Bioscience Park

In the Netherlands, Leiden Bioscience Park opened in 1984 and focuses its research within the biotechnology sector. It offers 110 hectares of building space employing 18000 people with over 60 companies and knowledge-based institutions, including Janssen Biotech and pharmaceutical research company Galapagos NV.

#### Taguspark

In Portugal, Taguspark is located on the outskirts of Lisbon and opened in 1992, it covers an area of approximately 150 acres employing 10,000 people, offering several R&D labs, innovative start-ups and business incubators in a range of fields such as IT, materials, biotechnologies and fine chemistry with prominent companies including Portugal Telecom and consultancy agency ISQ.

#### **So what about Wales?**

The first designated Science Park in Wales did not open until 2018 at Menai on the isle of Anglesey (Ynys Mon).

Menai Science Park (M-SParc), a subsidiary of Bangor University, currently has 11 companies ready to move in when the park opens in early 2018. They range from start-ups like Ambionics, a company from Menai Bridge developing life changing prosthetic arms for children, to Loyalty Logistix, developing customer retention and data intelligence services for the automobile industry

#### Do Science parks work

Quoting from University world news from May 2011

“Clusters of innovative firms are an old phenomenon. In the UK during the first Industrial Revolution, for example, the cotton industry was heavily concentrated in Lancashire within the Oldham-Bolton-Manchester triangle. In more recent times, clusters of high-tech firms, prime among which is Silicon Valley in California, have gained fame and are routinely referred to as role models for promoting innovation, successful commercialisation of research and economic growth. What is it that makes clusters so attractive?”

There is extensive empirical evidence for thinking that clusters generate some tangible benefits, such as knowledge spill overs, the sharing of inputs and forward and backward linkages to research innovation, which make firms within the cluster more productive and innovative. Some firms might even never have been founded outside of such clusters.”

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There are those that believe that the same success can be achieved with clusters without having a formal science park.

We know that Science parks have created jobs, often in large numbers across the UK and Western Europe. The success depends upon have close relationships with or better being led by the local University in areas that the university specialises in.

I believe that whilst science parks will not solve the problem of the Welsh economy underperforming compared to the UK economy, they will take us several steps in the right direction especially if they are located by and run in conjunction with the universities.

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# Cities as engines for growth

We need to acknowledge the importance of Wales' urban areas as engines of economic growth, learning and creativity.

Successful towns and cities have always been at the heart of economic development and the creation of prosperity. Initially as marketplaces for the exchange of goods, then as business centres, and more recently as centres of enterprise, knowledge, culture, learning and innovation.

More specifically, it is the larger cities and urban areas that generate large scale employment and wealth. In Britain we only need to look at London, or on a world scale New York and Tokyo, to see that is true. Then there are the less well known cities across Europe, such as [Mannheim](#) and [Aarhus](#) as I have mentioned in previously that generate employment and wealth for the cities and surrounding areas.

All urban areas need to achieve their economic potential and enjoy sustainable growth and rising prosperity for the area. However a fairer sharing of prosperity is essential. Wealth and opportunity often exist side by side with poverty and isolation. Sometimes only a few streets away from wealthy neighbourhoods are the left behind.

The diverse skills and backgrounds of all people needs to be used, thus enabling everyone to fulfil their potential and excluding no one. This is important for a caring and inclusive society. This also makes sound economic sense, as it will help to increase the long-term growth potential of the economy as more and more people contribute.

Successful places need to be able to attract, then retain, businesses and this has to be based on understanding their requirements. An analysis of successful and less successful places suggests the following four factors are key to economic success:

**A culture of enterprise and innovation** – where places adapt quickly to new opportunities and everyone can share in the possibilities and rewards of business success. This includes embracing the opportunities presented by the revolution in life science, information and communications technology, and artificial intelligence.

**Access to investment, including venture capital** – essential for businesses to start up, grow, and to deliver jobs and opportunity for all.

**People equipped with the skills employers need, as well as with motivation and opportunity to work** – a culture of lifelong learning enabling people to fulfil their potential and maximising employment opportunities; enabling a flexible response to changing opportunities; and encouraging companies to come to and remain in towns and cities.

**An efficient and reliable transport system** – enabling efficient delivery of raw materials to industry and of goods to market; providing access to jobs; making towns and cities better places to live in; and helping tackle social exclusion.

## Swansea Bay City Region

So what does this mean for the Swansea Bay City region?

Economic and transport planning needs to be based on the region. We need to build on the strengths of the universities and see them as economic drivers. Too many students, including many from the area, move away on graduating and often never return.

We need science parks attached to universities so that we can use them as innovation hubs and to specialise in key economic sectors such as life sciences, artificial intelligence and ICT. We also need an entrepreneurship and innovation centre that can provide a founder and incubator platform for students, young entrepreneurs and investors.

We need access to capital, not just at the start up stage, but at the two important growth stages of small to medium sized enterprise, and then medium to large. Too often medium sized enterprises sell up to companies outside the area, and the economic benefits reduce, or disappear.

Working with the Universities and Further Education colleges we need to look to upskill our population: education should not end at 16, 18 or 21. Education and re-skilling needs to take place throughout life. Someone aged 65 retiring today, who left school at 15 in 1968, would have seen huge and unexpected changes including wholesale closure of coal mines, and closure and cutbacks in the steel industry and petrochemical industry.

They will have seen the ICT revolution that has led to wholesale job losses. A revolution that also led to ICT jobs being created and other technological change, such as renewable energy. There have also been lifestyle changes such as the opening of gyms, personal trainers, a huge fast food and restaurants expansion, along with a huge increase in students and staff in higher education. Why should the next 50 years not produce the same level of change?

On transport we need to give people have an alternative mode of transport to the car by:

- reopening railway stations
- creating bus rail interchanges
- having bus services linking residential areas with work and leisure areas
- Providing safe cycle routes without gaps.

To grow our economy in south west Wales we need to develop and expand the economic opportunities in the Swansea Bay City Region, and it will involve both the public and private sector.

The Swansea Bay City Region is a relatively poor part of Europe and to improve the wealth of the area we need to develop a culture of enterprise and innovation, build on the strengths of the universities, improve the skills of the workforce and improve transport links. The city deal gives us a great start in improving the wealth of the area, but the key is building on it.

# Conclusion

We can either keep on doing the same things and get the same results or we can learn from the successful economies in Britain and Europe

We need to develop regional economies with the cities as the hub

We need a culture of enterprise and innovation

We need Access to investment, including venture capital

We need People equipped with the skills employers need, as well as with motivation and opportunity to work

We need an efficient and reliable transport system

We need to provide more help to business starting up and going through the different stages of development

We need to develop Science Parks across Wales

We need to support and develop key growth areas of the economy