

Ideopolis: Knowledge City Region

Lisbon Case Study

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“the economic success of the Lisbon region is fundamental to improving the long-term competitiveness and wealth of the Portuguese economy”



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1. Introduction

This paper looks at whether Lisbon has become an 'Ideopolis'. It is based on a review of the Lisbon-related literature, and three interviews with relevant players in the Ideopolis context. It seeks to investigate the extent to which Lisbon is a 'knowledge city', and whether Lisbon has a significant opportunity to become an Ideopolis. Findings include:

- Lisbon is a small city with close links to a larger city-region with a central role in the economic geography of Portugal¹,
- The city of Lisbon is part of a wider region, known as Greater Lisbon ("Grande Lisboa") which contains about 20 percent of the national population ,
- The city has developed rapidly, making the transition from a position of traditional manufacturing-based industrial development to an economy concentrated on services,
- Lisbon is considered a focus for the country's economic growth, being possibly the sole knowledge based region in the country.

About the Ideopolis project

The Work Foundation has conducted a year-long research project looking at the concept of the Ideopolis - a sustainable knowledge city that drives growth in the wider city-region. Based on literature reviews, data analysis and UK and international case studies, the research highlights drivers of an Ideopolis. For more information on the Ideopolis project please see: www.theworkfoundation.com

About this case study

Lisbon is one of four international case studies that form part of the evidence base for the project, alongside Munich, Boston and Dublin. It focuses on the strengths and weaknesses of Lisbon, and the consequences of these for economic success and quality of life in the city, providing lessons for policymakers in other cities.

This case study is organised into the following sections:

- The Recent History of Lisbon
- The Drivers of Change
- Economic and Quality of Life Strengths of Lisbon
- Where are improvements needed?
- Challenges for Lisbon's Economic Model
- The Future
- Policy Recommendations
- Conclusions

¹ It is important to refer that, unlike most major cities, the city boundaries are narrowly defined around the historical city which in fact are part of the metropolitan perimeter of Lisbon.

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Like most capital cities, Lisbon is surrounded by smaller towns and cities² which depend on Lisbon for their economic and social life. It is estimated that close to one million people commute to Lisbon every day from the periphery. In fact there are strong economic and

social interdependences established between the areas surrounding the city, so it is crucial to complement the analyses with the data of two statistical sub regions: "Grande Lisboa" and "Península de Setúbal". Together they represent the Lisbon Region ("Região Lisboa").

Table 1 – Demographic Indicators

	Area (km ²)	Resident Population			Ageing ratio
	2004	1991	2001	2004	2004
Portugal	92,118	9,867,147	10,335,559	10,529,255	108.7
Lisbon Municipality	85	663,394	559,089	529,485	190.2
"Grande Lisboa" (1)	1,376	1,836,484	1,897,033	2,003,584	109.1
"Península de Setúbal" (2)	1,559	640,493	718,845	757,113	96.5

Source: National Statistics.

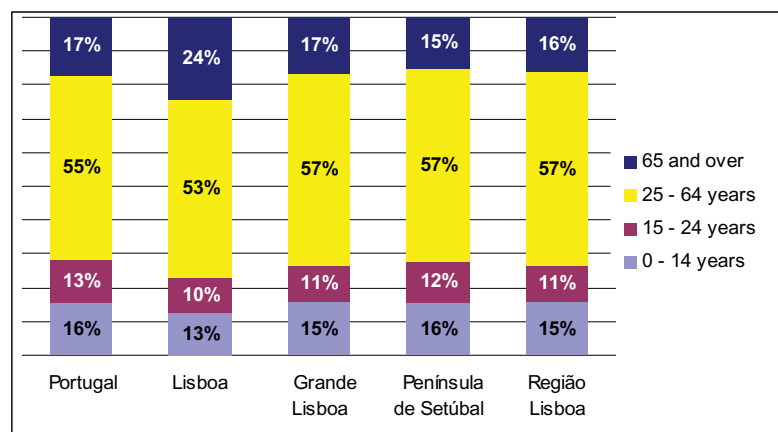
(1) Municipalities: Amadora, Cascais, Lisboa, Loures, Mafra, Odivelas, Oeiras, Sintra, Vila Franca de Xira

(2) Municipalities: Alcochete, Almada, Barreiro, Moita, Montijo, Palmela, Seixal, Sesimbra, Setúbal

According to national statistics the Lisbon city population (municipality level data) fell from 1991-2004. In 2004 population density in the city was 6.229 inhabitants per km², much higher than in the sub regions (1.456 in Grande Lisboa and 486 in Península de Setúbal).

The population is decreasing and ageing at the same time. In 2004 more than half of the resident population of the city of Lisbon was economically active and 24 percent were more than 65 years old, compared to 17% for Portugal as a whole.

Figure 1 – Resident population by age in 2004 (%)



Source: National Statistics.

¹ Among the most interesting neighbouring towns are Cascais, Estoril and Sintra, including the westernmost point in Continental Europe, the Cabo da Roca, as well as beautiful palaces, landscapes and cultural life..

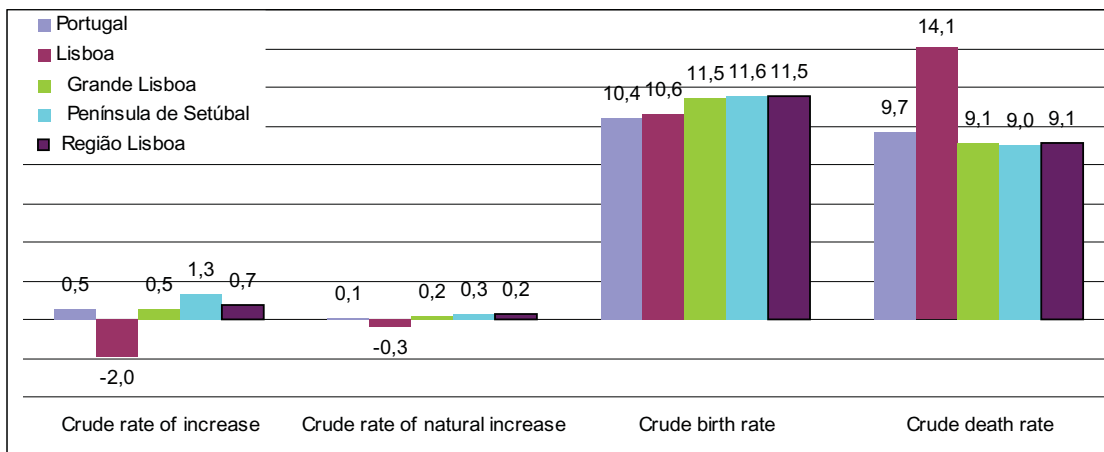
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The same finding is reached using population indicators, which are significantly different for the city of Lisbon compared to the surrounding territories. They show Lisbon as decreasing

in population, compared to a net increase in Portugal as a whole. The crude death rate is significantly higher than for the rest of Portugal.

Figure 2 – Population indicators in 2004 (%)



Source: National Statistics.

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2. The Recent History of Lisbon

Lisbon has recently held three important international events. In 1994 Lisbon was the European capital of culture, in 1998 it attracted international attention with its ocean-themed World Expo, and in 2004 it held the European Football Championship. These were events with a significant influence that contributed to Lisbon becoming a prosperous city with a strong economy and infrastructure, a rich cultural mix of immigrants from ex-colonies and a revitalized urban life.

For more than 20 years now, specific policy instruments have been set out to provide grants aimed at the development of research and development (R&D) infrastructure and the transfer of technology between R&D centres and enterprises. These are not Lisbon specific and apply to the whole country, but the concentration of R&D structures and personnel in Lisbon area mean these funds are disproportionately used in the city.

For almost 20 years now the development programs co-financed by the EU had also clearly favoured innovative projects and tried to promote technological and management development in Portuguese industry. Evaluations show that little success has been obtained, with investment still very much concentrated in traditional industries and incremental patterns of innovation.

So, all in all, innovation policies have not succeeded well even if we can always find individual cases of success, with the country actually increasing its specialization in traditional sectors.

In the late 1980's and early 1990's, Portugal did succeed in attracting some large Foreign Direct Investment (FDI) projects to the country, and they significantly changed the industrial fabric. However, these projects have not constituted a

decisive change in the industrial development of the city, as they lack links with R&D institutions and have not led to the emergence of other companies.

Over the last two decades Lisbon has been physically transformed: we have witnessed the construction of roads, gardens, parks and open spaces, alongside the rehabilitation of derelict buildings in both the city and the periphery. The most evident investment has been in transport infrastructure, exemplified by:

- The extension of the underground,
- The construction of the new Vasco da Gama bridge across the Tagus,
- A new railway link between both margins of the Tagus,
- The construction of a network of peripheral motorways,
- Parking improvements in the center of the city.

Such development has not only improved the transport situation in the city itself, in terms of access and mobility, but has also helped to reduce congestion by avoiding the city center.

One problem is that new infrastructure projects have followed poorly planned urban developments in the Lisbon area, being more a reaction to events than a tool to guide development.

The development of new housing has been matched by the growth of new business centres, radically changing the geography of the city.

The cultural diversity of the region has increased with the flows of immigrants into the city and the increased importance of tourism. Lisbon has become a more cosmopolitan place. Today it is a multifaceted city in social and urban terms with wider employment opportunities and growing spatial constraints

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3. The Drivers of Change

Part of the economic success of Lisbon was possible due to the human capital flows which derive from the city's position as a port, a capital city and a city of commercial importance.

Recent developments in general policy, started in 2005, have given clear emphasis to the need to change the pattern of development. Interviewees saw this as the most important change in recent times.

Making financing easier for technological spin-offs and start-ups will help create a denser technological cluster in the region. Most agree that Lisbon is in a better position to do that than any other region in the country, because of the importance of the local market and access to European and World markets.

It is important to understand that this is a change in policy even though interviewees were sceptical about policymakers' commitment. However, the tradition of "stop and go" policies and sudden changes in policy orientation is a clear feature of Portuguese history. We should exercise some caution when referring to the 'present trends' simply because they can change very quickly.

The rooting of the existing science and technology parks are also important features of past developments that can now start to provide important results in future years.

The drivers of change are based on the creation of a friendlier environment for the emergence of more sophisticated entrepreneurial ventures, namely those related to knowledge industries. Start-up incubation infrastructures and access to venture capital (as well as a more streamlined administrative environment) seem to be central in this context and Lisbon is beginning to offer such conditions.

4. The Economic and Quality of Life Strengths of Lisbon

Economic activity

According to official statistics, the service sector is the most important sector in the economy of the Lisbon region, employing more than three quarters of the workforce. Some of the main industries in this sector include tourism, finance, consulting and telecommunications. See figure 3 on the next page.

The importance of the service sector is significant in terms of gross value added (GVA). In 2002, the service sector was responsible for more 85% of the total GVA in the Lisbon region. See figure 4 on the next page.

Finance is important to the city's economy and all major financial services companies and banks operating in Portugal have a presence there. Most of the headquarters of multinationals operating in Portugal are concentrated in Lisbon (for example Microsoft, IBM and Barclays Bank).

The region of Lisbon is the most important area in Portugal for service industry, including advanced business services to firms. In fact the Lisbon area includes a large share of upper tertiary service industries both in specialized consultancies and ICT related services.

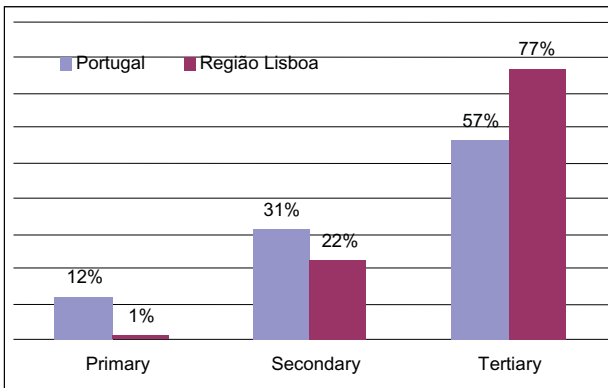
The role of the service sector in the city has been reinforced recently due to the increase in the importance of Lisbon's tourism platform (city-breaks, congresses and events industry)³.

³ Figueiredo, A. (2005), *Path dependency and enabling knowledge-based regional development strategies – the case of Portugal*, RSA International Conference.

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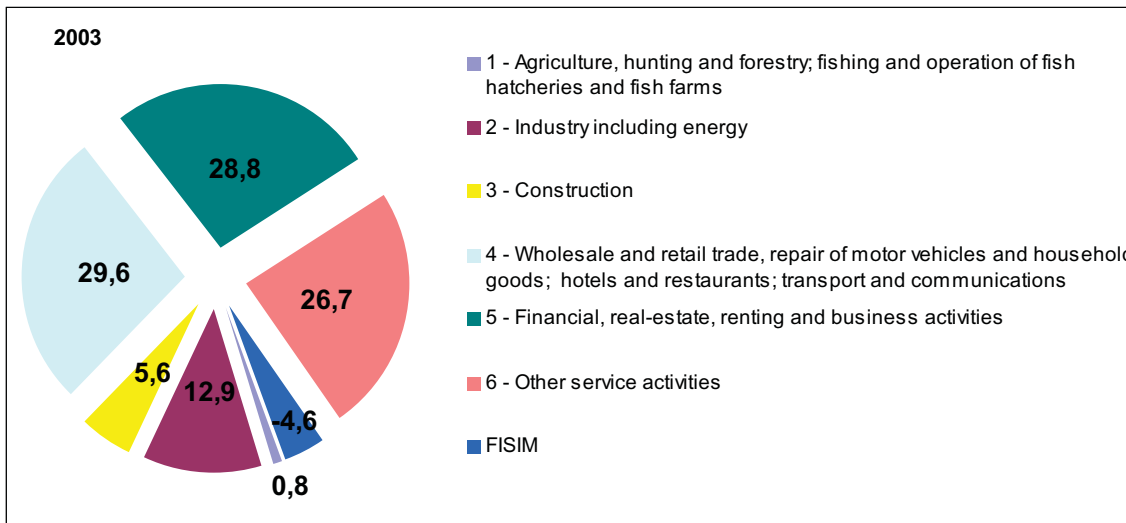
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Figure 3 – Employed population by sector of main activity in 2004 (%)



Source: National Statistics.

Figure 4 – Sector GVA as % of total in Lisbon region in 2003



Source: National Statistics.

The peripheral parts of the Lisbon region are more industrialized and dependent on industry, especially the Peninsula de Setúbal (on the south bank of the Tagus River / Rio Tejo), where the most significant concentration of specialized industrial suppliers in the Portuguese economy is located.

There are also emerging dynamics of technological-based start-up and spin-off firms

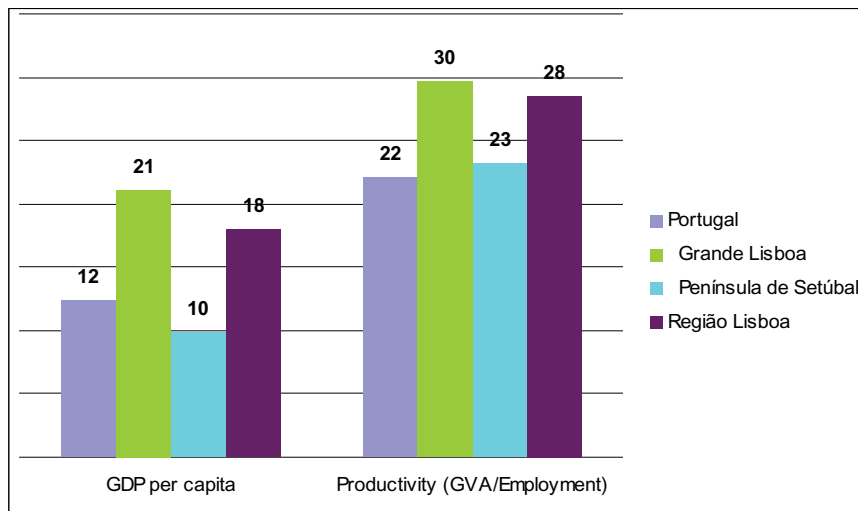
being created in specialized supplier sectors in the territories surrounding Lisbon.

The Lisbon region is by far the wealthiest in Portugal: in 2002 it produced 38 percent of Portuguese GDP, and in per capita terms it is well above the rest of Portugal. Labour productivity in Lisbon is also well above the Portuguese average.

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Figure 5 – GDP per capita and Productivity by region in 2002 (thousand euros)



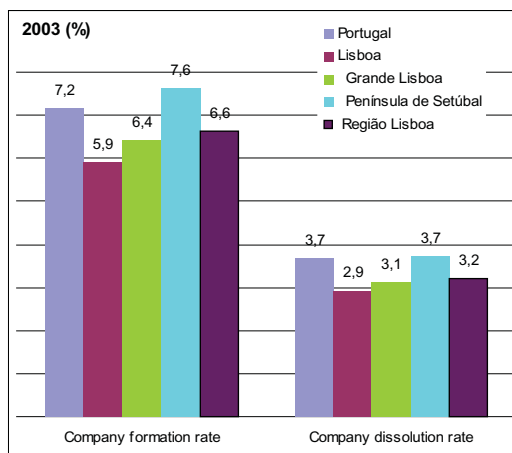
Source: National Statistics.

Lisbon is often seen in the Portuguese context as an example of an “increasing returns trajectory”, where an increase in the number of knowledge businesses leads to a greater than proportional increase in knowledge-related output. In part this is explained by the high level of political and economic concentration

in Lisbon which has led to the city-region being the only example of knowledge-based regional development in Portugal⁴.

The following figure shows some of the dynamics of economic activity through the indicators of company creation and destruction in 2003.

Figure 6 – Company formation and dissolution rates in 2003 (%)



Source: National Statistics.

⁴ Figueiredo, A. (2005), *Path dependency and enabling knowledge-based regional development strategies – the case of Portugal*, RSA International Conference.

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A number of points must be highlighted here, as the above picture reveals some of the common features of the Portuguese economy and the particulars of Lisbon area.

The high rate of company creation and the relatively lower rate of destruction are both worthy of further exploration. We can see that enterprise creation is relatively dynamic, - there are lots of births. But the much smaller number of "deaths" may be a result of a regulatory framework that makes company dissolution difficult. Lisbon has a much lower average level of both births and deaths. Of course, it is simply not the company creation rate that matters, but the sectoral distribution of the new entrants. . Lisbon's higher GVA suggests that many of the new enterprises will be relatively more knowledge intensive with higher skilled workers.

Local Transport and Infrastructure

The underground is the main artery in the transport system of Lisbon, connecting the city centre with a vast surrounding area. There are some ambitious expansion projects that will increase the network by almost one third, connecting the airport and the northern and western districts. Other transport services such as bus and train networks are being adjusted as a response of the recent development of a wider metropolitan area⁵.

The city is connected to the south bank of the Tagus River by two important bridges⁶. Lisbon is connected to its suburbs and the rest of Portugal by an extensive motorway network that has been developed dramatically over the past 15 years. There are three circular

motorways around the city (2ª Circular, CRIL and CREL).

Lisbon international airport is located in the city itself and offers scheduled flights to and from most major European destinations as well as numerous destinations worldwide. It is Portugal's busiest airport and in 2003 handled nearly 5 million passengers. The increase in passenger numbers has meant modernization and expansion works were required and the airport is scheduled to handle its maximum capacity, of 20 million passengers a year, sometime around 2012. Plans are also underway for the construction of a new airport in the Ota district to the north of Lisbon (about 45 km) which is due for completion by about 2010. There is some discussion about the benefits of this infrastructure to the economic development of the Lisbon region.

Most political actors in Lisbon see the new airport as a threat to the city's development, diverting tourists, business travellers and enterprises from the city, and encouraging them to locate in the surrounding regions. This can hamper the positive agglomeration effects that have stimulated the recent good performance of the region and attracted high profile technology ventures⁷. For others (led by the recently formed government) the new airport is not only necessary because of the lack of spare capacity at the existing one, but also will allow the creation of new growth pole, overcoming the negative impacts of congestion that the Lisbon region currently suffers from.

Lisbon also has the country's largest sea port and has facilities to deal with a wide variety of commodities including cars, containers, dry

⁵ There are four suburban train lines departing from the city of Lisbon to Cascais, Sintra and Azambuja as well as to Setúbal crossing the Tagus River over the 25 de Abril bridge

⁶ The April 25 Bridge, inaugurated in 1966, is the longest suspension bridge in Europe. The Vasco da Gama Bridge, inaugurated in 1998, is one of the longest in the world

⁷ These positive agglomeration effects may include the beneficial impact to firms of a large specialised labour market, good forward and backward links with suppliers and 'knowledge spillovers' or information sharing between firms and employees (see Ideopolis Final Report).

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and liquid bulks, general cargo, grain, iron ore, project cargoes, fruit and roll on roll off traffic. The port provides excellent connections with numerous destinations throughout the world including Australia and New Zealand, North and South America, West Africa, the Middle East and the Far East.

Lisbon has also made an effort to develop high technology clusters in the region. An example is the Taguspark, a Science and Technology Park⁸ covering science, technology, housing and leisure activities which provides the major spatial concentration of knowledge based companies and knowledge workers. It benefits from several facilities, namely one university, one golf course, one hotel and several shopping and services areas as well as a high quality residential area. Information technology is the largest sector in the park.

Another example is LISPOLIS, the Lisbon Technopole, a business park for technological companies. Its location in the city is near to the main national institutions of R&D, aiming to make information and technology transfer easier between public research laboratories and universities and commercial enterprises. Importantly, a technical school is located in the Technopole, constituting a good example of human capital formation in crucial knowledge sectors (like telecommunication and computer networks).

These initiatives have played an important role in the incubation process of technology based companies in knowledge intensive sectors in

the Lisbon region. However, observers would hardly say that many of the incubated projects have been a result of the existence of the parks alone. Many of these companies would have been successful anyway, even though the cluster effect promotes technology transfer and information exchange.

Local Workforce

According to a report from the Ministry of Finance⁹, 85 percent of companies surveyed in Lisbon considered their working climate to be excellent or good. The Lisbon region can be considered to have a large proportion of highly qualified¹⁰ workers, relative to the national average. See figure 7 on the next page.

In 2002, the city of Lisbon had the highest level of employment in knowledge intensive business services. See figure 8 on the next page.

The following figures show that the Lisbon area has a high concentration of knowledge intensive activities, thus supporting the idea that it can be a knowledge city in some sense, at least at a national level.

A recent study by the Municipality of Lisbon contained some interesting evidence about the importance of the knowledge-based economy to the city, and its dynamics between 1991 and 2001. For them an 'economy based on knowledge' had the largest share of the city's employment, although only a much smaller proportion was actually 'advanced' employment based on knowledge.

⁸ Located in Greater Lisbon, municipality of Oeiras

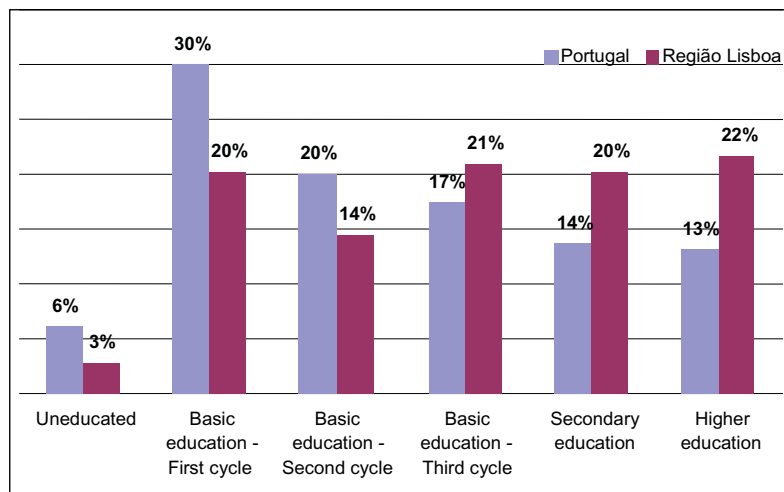
⁹ The Portuguese Economy - Stability and growth (1998), "(...) Portuguese employees are reliable, hard working, intelligent and ready to learn. Surveys among 139 companies in Lisbon with more than 28,000 employees, showed that the percentage share of companies that consider their working climate to be excellent or good has constantly increased over the last ten years and has reached the very high level of 85 per cent."

¹⁰ The city has several private and public primary, basic, secondary and higher schools. There are four major state owned universities in Lisbon: The University of Lisbon, founded in 1911 (it is the oldest institution of higher education in Lisbon, its history dating back to 1290), the Technical University of Lisbon, New University of Lisbon and the ISCTE, providing degrees in the natural sciences, engineering, medicine, law, education, social sciences and humanities. Major private institutions of higher education include the Portuguese Catholic University, as well as the Modern University of Lisbon, the Lusíada University, the Lusófona University of Humanities and Technologies and the Autonomous University of Lisbon.

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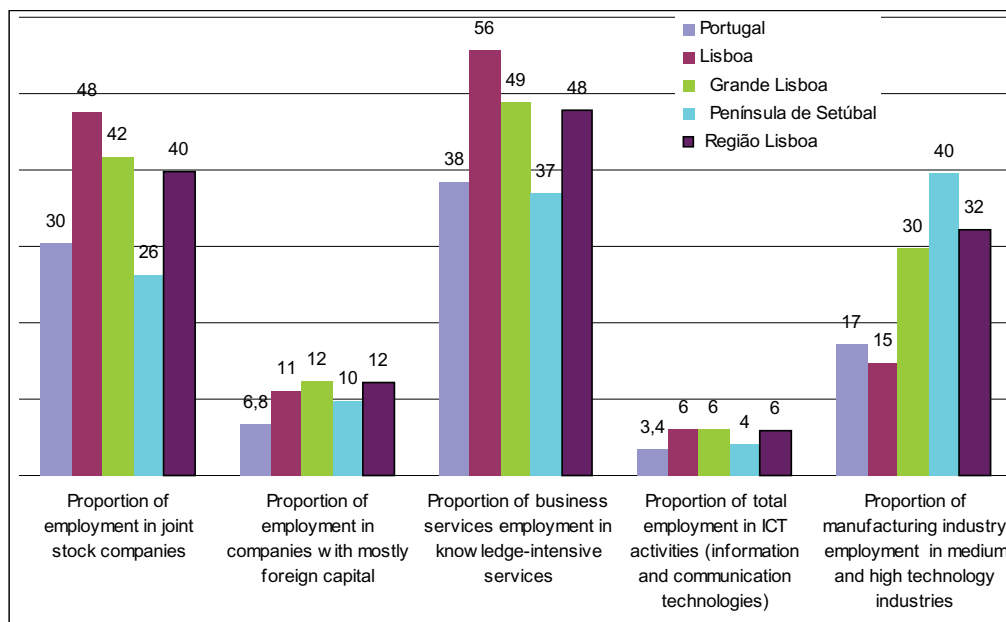
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Figure 7 – Active Population by educational level completed in 2004



Source: National Statistics.

Figure 8 – Indicators of enterprises and establishments in 2002 (%)

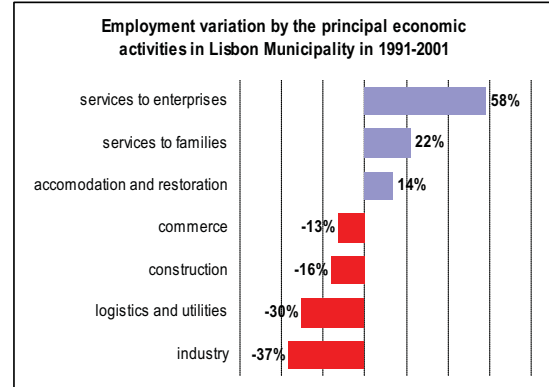
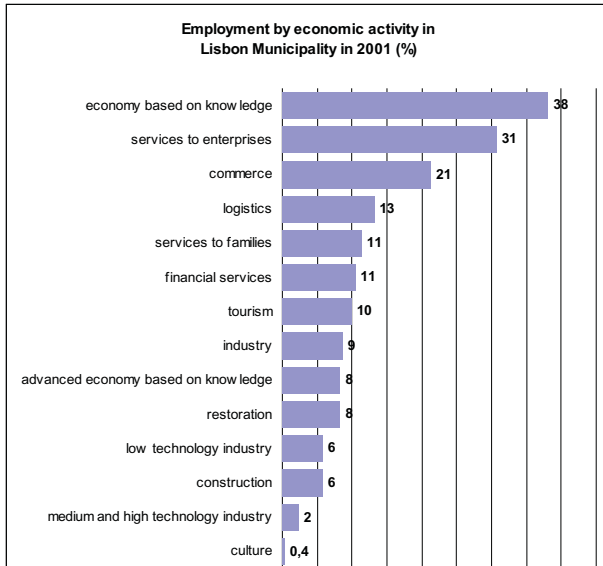


Source: National Statistics.

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Figure 9 – Employment in Lisbon Municipality

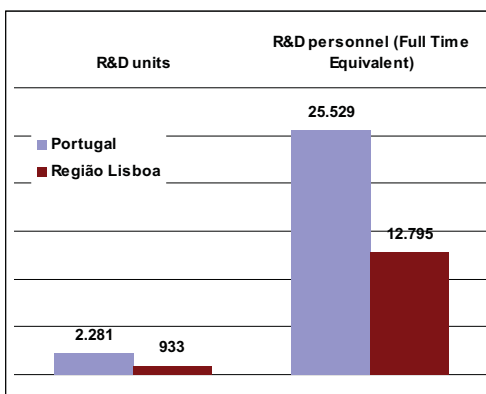


Source: Câmara Municipal de Lisboa (2004), Desenvolvimento Económico e Competitividade Urbana de Lisboa.

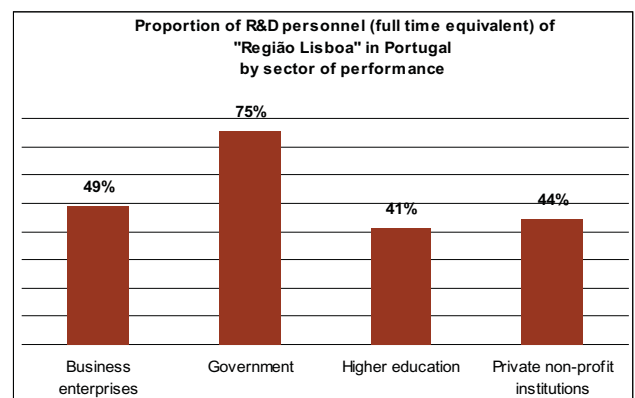
These enterprises are, by far, the faster growing employment sector in the city, growing by 58% between 1991 and 2001. It is also important to point out that there is a large amount of

employment located in the Lisbon region, which is responsible for 50 percent of national employment in R&D activities (full time equivalent) in 2003.

Figure 10 – Research and Development Indicators in 2003



Source: National Statistics.



Thus larger public R&D institutions are a "specialisation" of the Lisbon Region. This can be seen by the share of Lisbon in older and larger universities and the location in the capital city of the older public laboratories and research centres.

The high proportion of Portugal's R&D system located in Lisbon is also due to the less famous but still important private R&D facilities, which are concentrated in the city.

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Quality of Life

Compared to other European cities Lisbon offers a good quality of life with a pleasant climate. In the quality of life report published by Mercer Human Resource Consulting in 2005¹¹, Lisbon was positioned 13th in the European Union and 53rd in the world, scoring a total of 97.5 points. The report was based on the evaluation of 39 criteria including political, social, economic and environmental factors as well as personal safety, health, education, transport and several other public services. In terms of personal safety and security, Lisbon is positioned 11th in the EU, ahead of Paris, Rome, London and Athens, and 45th in the world from a sample of 215 major cities.

It is evident that both Lisbon and Portugal as a whole have an external image of a good quality of life. But to those who live in the city this positive view of quality of life is not so clear. Some of our interviewees were Portuguese people with an experience of expatriate life as students and/or professionals. They agreed that this image of quality of life dissolves as soon as people cease being tourists and become residents.

Even if infrastructure (communications and transport especially) has improved in recent years, the overall complexities of a country where things simply do not work properly offsets the leisure and amenities of the climate and the unspoiled landscape (which is, anyway, diminishing).

5. Where are improvements needed?

Economic activity

There is significant evidence¹² that Portugal cannot continue to develop with the Lisbon Region as the exclusive engine of economic growth. Furthermore, if Lisbon continues to be the engine of national growth, based on an economic development strategy dominated by non-tradeables, and given that only a low percentage of services are exported, this may lead to the worsening of the Portuguese trade deficit.

Portugal may be doing reasonably well in information-intensive service sectors like telecommunications, banking, insurance and media) but the linkages to software and other ICT industries remain weak. In the Lisbon Region there is a strong presence of foreign direct investment in scale-intensive projects (e.g. Ford-Volkswagen plants and automotive components sectors associated) and in electronics, even if with low levels of national added value and technological linkages.

It is important to note that the strong presence of public research centres and laboratories does not mean that they are well linked to the technological accumulation strategies of local firms. They are actually producing very low levels of patents compared to countries with similar development levels.

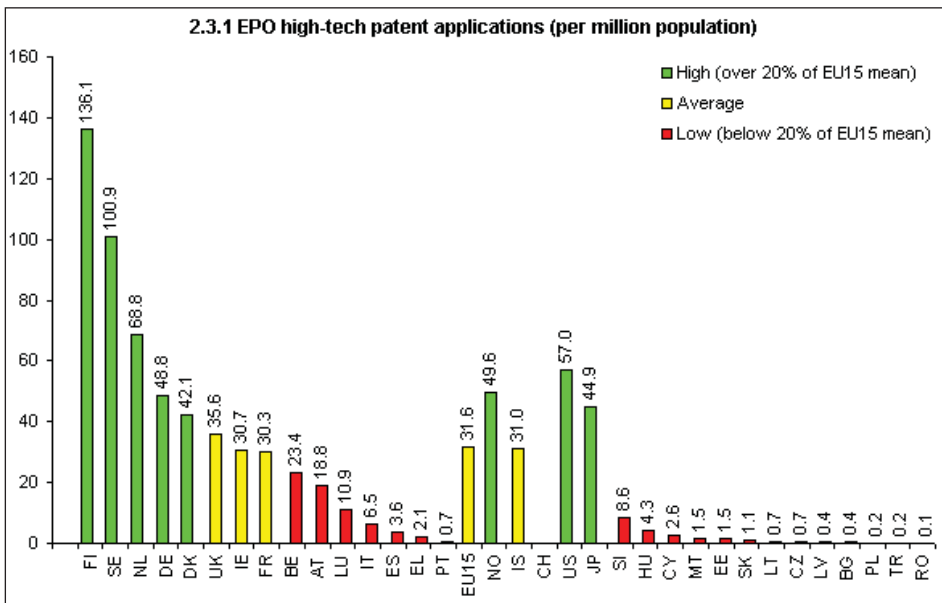
¹¹ Cities are ranked against New York as the base city, which has a rating of 100. The analysis is part of a worldwide quality of life survey, covering 215 cities, to help governments and major companies to place employees on international assignments.

¹² See footnote 4.

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Figure 11 – EPO High- Tech patent applications (per million population)



Source: http://trendchart.cordis.lu/scoreboards/scoreboard2003/indicators_2.3.1.cfm.

Transport Infrastructure

Although Lisbon's public transport network is extensive and reliable it does not link well with new developments and the city still suffers from severe congestion traffic problems, in part due to the high levels of commuting. This congestion is seen as a threat to the quality of life of residents and may hinder the ability of the city to attract highly qualified people, who have many options about where to live and work.

Local Workforce

Lisbon is clearly the Portuguese region with the highest concentration of highly qualified workers. In fact Lisbon "exports" brains to other European and North American destinations which provide more attractive work and career development conditions.

As one of our interviewees argued, the next stage of globalization may well be the globalization of employment. So although Lisbon has a fairly good pool of qualified

workers for the development of knowledge intensive ventures, these workers are very mobile and have access to opportunities elsewhere. This suggests that Lisbon may struggle to retain its most talented workers.

Ensuring that enterprises have continued access to a high quality labour force is, according to observers, one of the key challenges to be faced if Lisbon is to become an Ideopolis.

There are some deficits in the production of graduates in technical areas (mainly in engineers related to new information technologies and electronics) and a lack of mobility of PhDs and Masters level students between companies and universities.

Quality of Life

Lisbon attracts people because of the quality of life, with a fairly developed and well-performing health system, an attractive environment, where the mildness of the climate plays an important role, while the cultural offering is steadily

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developing to match other European cities of comparable size.

However, observers and knowledge workers seem to evaluate these living assets in a very critical way. What are nowadays called in Portugal the “context costs” seem to offset the value of the natural endowments.

These context costs are mainly related to poor management and inefficiency in the delivery of Public Services, a problem which is consistently identified by national and international observers. It has also been argued that private companies behave in a similar inefficient way, thus providing a bad business and living environment.

These costs are a severe burden on economic development but they are also one of the most important issues highlighted when discussing quality of life, because they put a burden on the daily life of citizens. For those who have never experienced another working context they are considered hard, but a “fact of life”. But once people have experienced living in other countries they are considered unacceptable. It is interesting to highlight that these issues have been placed on the top of the agenda by our interviewees, above more conventional issues like transport, infrastructure, economic problems or labour market questions.

The challenges faced by the city are seen in terms of a broader picture where social performance towards development is seen as the most important issue. Thus change cannot be obtained in the short run, but requires deep social transformations.

6. Challenges for Lisbon’s Economic Model

The Portuguese economic and social structure is facing important challenges associated with the shift from a traditional industrial model based on low salaries, low quality and low skill jobs that has marked the formidable growth obtained by the country in the second half of the twentieth century.

The first symptoms of the decay of the old growth model began to show in the last quarter of the century (from the 1st oil shock) but it was possible to keep the model working for a long time based on three factors: increased exploitation of the low salary model in traditional industries (textile and clothing, shoes, cork and some other food industries) and tourism; the upsurge of new income sources like the EC transfers; and the development of a flourishing non tradable goods sector financed by increasing public expenditure and unilateral transfers from abroad.

This has meant that consumption levels have kept up an impressive pace of growth for the last three decades, diverting investment away from tradable goods, with higher knowledge content, to low skilled personal and enterprise services in what seemed to be an artificial self-sustained economy.

At the end of the twentieth century Portugal (and Lisbon as its core region) was facing the need to promote dramatic changes but lacked the social energy to make the transition to a more intensive development path with higher levels of business risk.

Cities in Portugal are growing at a rapid pace, but with little planning and often in an environmentally damaging way. Lisbon is the most obvious example of this process, having developed very large satellite towns with generally low quality housing. These suburbs

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were the answer to a growing demand for housing around Lisbon, the fastest growing labor market in Portugal, by a low to middle income class of workers.

These new towns have been poorly planned (if planned at all) with poor infrastructure provision and so have boosted an army of commuters, suffering long hours in the traffic to travel relatively small distances (around 30km). At the same time Lisbon City has lost inhabitants during more than 20 years of depopulation, due mainly to the very high housing costs in the city itself.

The outcome is that the existing housing stock in Lisbon cannot provide high living standards for the entire population, but are instead reserved for a few more affluent citizens living in closed condominiums. In this context Lisbon (as well as the Portuguese situation overall) has been able to keep a development model that was *“adverse and inhospitable to innovation”* in the words of one of our interviewees.

This meant that 10 years ago Lisbon had a context where innovation and R&D paid a very low premium, especially when compared with more traditional or consumption directed investment ventures, diverting local talents to sources of rents other than innovation and knowledge.

The country's social mindset was very much based on low levels of selectivity in the quality of the efforts and much more sustained by a framework where meritocracy was replaced by what can be named an *emeritocracy* (from the *emeritus* professor status). Emeritocrats concentrate on finding a path to a situation that guarantees status and place little value on innovation. This is seen as a major problem in the Portuguese R&D system, where Universities have a central role, but are governed by titleholders and not by active researchers. More challenging selection processes for researchers

have begun only recently, using more competitive methods. Education (at all levels) is normally seen as being of low quality while school attainment levels are very low when compared with European and OECD averages. This is a severe problem (some say the problem) for the Portuguese development process.

The challenges Lisbon has to face to become an Ideopolis are, thus, formidable, even if in the national context it can be pictured as a success in attracting knowledge industries.

In the recent years this picture has begun to change, although all the challenges above must be simultaneously addressed if Portugal is to become an inclusive, open and progressive civil society, with high quality education, sustainable communities and a high quality of life for all citizens.

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7. Lisbon as a 'knowledge city'?

Our interviewees and practical actors in urban and business management hardly concur (to say the least) on whether Lisbon is a "knowledge city".

Besides the general difficulty of defining "knowledge" there is only weak evidence to support the idea that Lisbon is a knowledge city. While performance may be above the Portuguese average there are real problems in exploiting "knowledge" in a way that gives the city a genuine comparative advantage.

One of the issues raised by our interviewees is the soft innovation appropriation regime in the country. There are inadequate incentives to invest in innovation and generate patents that can be exploited. Without a harder appropriation regime it is difficult for spin-offs and start-ups to be successful in the market while venture capital is difficult to obtain. Neither can the technology transfer system operate adequately, establishing the links between the research community and enterprises.

8. The Future

For the next ten years at least, it is hard to see Lisbon closing the gap in development with the more advanced European cities. Nevertheless there are some expectations about the continuity of the present technological enterprises development cycle. The question that remains is whether enough capital will be accessible to finance new knowledge enterprises until a sufficient critical mass of industries can stimulate the emergence of a venture capital sector (which presently does not exist).

The Lisbon region is likely to continue the intensive model of growth of the last twenty years. The important questions will be to assess whether or not this intensive model of growth will lead to closer links between information intensive institutions and firms, and if the group of technologically based firms will increase in size.

A critical variable in the near future will be the permanence of the foreign multinational firms in the automotive sector, considering their significant impact in exports and employment. If they were to leave the country this would have considerable consequences for the economy of the Lisbon region and Portugal as a whole. The region will face another critical turning point: although the major part of technological and R&D public infrastructures are located in the region, the efficiency of R&D activities located in this kind of infrastructures is very low and their linkages with commercial firms are weak. This is a major bottleneck preventing the exploitation of this research, hindering the development of a knowledge based model of economic growth¹³.

¹³ See footnote 4

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Drivers of future success

An important input to the discussion about the future of the city is the strategy for the region of Lisbon 2005-2015¹⁴. The strategy contains four important elements:

- Networks,
- Competitiveness,
- Economic Restructuring,
- Focusing and coordination of interventions by all actors,
- Cohesion (qualification/training, social inclusion).

The city is has reached a pivotal stage of development. Whether Lisbon can build on the modest success of the last decade to become a genuine Ideopolis remains an open question.

There are some grounds for optimism principally because the conditions are set to improve for both technology and knowledge intensive start-ups. Public support is available for this purpose and commercial banks are tentatively exploring the venture capital market. The most critical factor will be whether the infrastructure can keep pace with economic development. This demands rather more imagination from policymakers at the city-region level and it is here that the greatest uncertainties about the future are to be found.

9. Policy Recommendations

It is necessary to invest in the improvement of environmental conditions and in the qualifications of the labour force, to recover the reductions in the quality of life, which was the consequence of the disorderly growth of the last few years, and so to make the city more attractive to knowledge workers. In fact, the capacity to overcome the challenges of globalization is connected to the ability to attract investments, visitors and residents that imply the increased value placed on human resources, quality of life and the synergies of international links.

Policy recommendations focus in the following four points:

- The necessity to reduce context costs. (General inefficiencies in public services but also in the quality of management of private companies not exposed to international competition),
- Internal mobility (continue the efforts to reduce congestion in Lisbon Region),
- Provide institutions to harden the protection regime for innovation and patent registration,
- Financing projects with more intelligent venture capital.

There is also a need for greater political accountability, with local communities being more demanding in their criticism of politicians.

¹⁴ Comissão de Coordenação e Desenvolvimento Regional de Lisboa e Vale do Tejo (2001), Gestão Estratégica da Região de Lisboa e Vale do Tejo. Uma estratégia de Lisboa para a região de Lisboa 2005-2015.

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10. Conclusions

According to the strategic management plan for Lisbon in the period 2005-2015 the SWOT analysis for the region of Lisbon goes as follows:

Table 2 – SWOT analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> • Natural, patrimonial and landscape resources • Productive and scientific resources • Geo-strategic position • Endowment of infrastructure and basic equipments 	<ul style="list-style-type: none"> • Territory disorganized • Suburbanisation process • Poor human resources • Mobility • Governance
Opportunities	Threats
<ul style="list-style-type: none"> • Reduction of territorial intra regional asymmetries • Expansion of infrastructures, human resources and I&D expenditures • Modernization of companies • Expansion of tertiary activities • Move up the value chain in some sectors like tourism 	<ul style="list-style-type: none"> • Insufficiencies of the educational and vocational training system • Aggravation of earnings disparities and social precariousness • Maintenance/Aggravation of urban pressure on land and environment • Energy production/consumption disequilibrium • Lacks in diffusion, support services and innovation technician • Struggle/changing in the productive specialization model

Source: Comissão de Coordenação e Desenvolvimento Regional de Lisboa e Vale do Tejo (2001), Gestão Estratégica da Região de Lisboa e Vale do Tejo. Uma estratégia de Lisboa para a região de Lisboa 2005-2015..

As can be seen strengths and opportunities are outnumbered by weaknesses and threats. Lisbon has some potential to development knowledge industries, but a lot remains to be done. The most important threats and weaknesses are found in the lack of openness of Portuguese society to innovative ventures and risky new entrepreneurial initiatives.

The so called “context costs” (that cover the overall management inefficiencies in public administration and enterprises not exposed to international competitiveness) seem to have

a prominent role in the creation of additional difficulties to knowledge industries that “*make things more difficult to do here*”.

The idea of leapfrogging intermediate stage of development, by jumping from a very low level industrial fabric to the frontiers of the existing technology seems appealing in political terms, there are considerable practical problems in doing so.

Neither the R&D system nor the industrial system seems to be ready to start interacting with each other easily. So new ventures have to

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start from scratch, which is clearly something much more difficult to do without a base to build on.

Another way of looking at the Lisbon region is provided by António Figueiredo. In his opinion the potential turning points and specific assets of the city-region are the following¹⁵:

- Potential linkages could be developed between the concentration of entrepreneurial groups in the service sector and specialized suppliers in software industries and information systems,
- The media concentration and the emerging tourism platform generated in Lisbon city are crucial areas for generating a strong cluster of knowledge-intensive cultural industries,
- A significant part of the R&D expenditures made by public laboratories needs a complete revision to increase of the efficiency of R&D effort.

In this report the economic and social vitality and complexity at local and regional level was evident. The economic success of the Lisbon region is fundamental to improving the long-term competitiveness and wealth of Portuguese economy. Nevertheless there are tough challenges like driving up skills levels and better governance.

Local actors believe that the present moment is an opportunity to bring together policies and implement a new strategy for the city where the local leadership, venture capital, partnerships, and telecommunications infrastructures are of vital importance.

In general, Lisbon is a place where people choose to live, to learn, to generate and exchange ideas and to do business, but it still has many obstacles preventing it building

on these assets. It is necessary to maximize the intellectual capacity of the city and use the quality of higher education and other assets to deliver widespread benefits. Also it is necessary to capture and translate the resulting knowledge opportunities into real economic and social investment and benefit.

Nevertheless the Lisbon city possesses some key qualities and assets that characterize knowledge capitals, including:

- A critical mass of higher education resources (but insufficient commercial network),
- A major international airport and supporting transport infrastructure (with congestion problems),
- Emerging economic clusters (ICT),
- Architectural heritage by one hand, and new city developments by other hand (places like "Parque das Nações" and "Alta de Lisboa").

As a whole Lisbon is unmistakably Portugal's leading area in knowledge industries and shows some signs of growth in this sector. In the current academic debate in Portugal Lisbon is sometimes even seen as a knowledge city, at least at national scale. However, by international standards it is hard to conclude that Lisbon is a knowledge city, far less an Ideopolis.

¹⁵ See footnote 4

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Appendix A: The Block of Competences Approach

With so many challenges and so many difficulties it is pertinent to briefly present a theoretic approach which might help place the concept of knowledge in perspective and its implications for the city successful development.

Several concepts are involved, such as competitiveness, productive networks, labor competencies, innovation and knowledge. It is necessary to comprehend those which are the dynamic actors, like companies, universities, R&D centres and enterprises that might compose a **block of competences**¹⁶ which is defined by a minimum set of competencies that are necessary to profitably identify, generate, select, exploit and expand business ideas. These competencies jointly exist in an interactive structure of customers, inventors and innovators, entrepreneurs and industrialists.

A competence block is dominated by **human capital** and **information** flows and becomes fully operational, or complete, when it has a critical mass of activities, which attract competent actors for all its various functions.

A successful competence block cannot be deliberately designed, although economic policy instruments such as creating institutions and influencing business conditions would have an important impact. A competence block that has reached a critical mass would function as a magnet for actors and firms. Even if actors have to be present in the competence block they could seek attachment, which could be geographically close to key actors, but actors could also remain dispersed as agents in a network that is dynamic and inventive in knowledge creation. Thus, a competence block could often be labeled a functional cluster or a

sector cluster in which geographical co-location plays a submissive role.

Functional clusters, or competence blocks, are an outcome of an ongoing globalization that is creating a new international division of labour, which is characterized by flows in which information and (human-embodied) intelligence play a very important role. Flows are distinguished not only by their functions or contents but also by their forms, which are shaped by political, economic, cultural and social factors.

Some results of a study about localization factors and competences in the industrial development of Biotechnology in Portugal can be highlighted as aspects to consider in the reflection about the Lisbon region as a knowledge city:

- The development of block of competences and economic activity localization phenomena are complex processes, resulting of the confrontation of capacities and social incitation of innovations with the economic opportunities of the region,
- Science and Technology Parks by themselves doesn't seem to be sufficiently appealing for the localization options of knowledge based enterprises. That happens in the Lisbon region where the existence of such infrastructures doesn't mean a successful articulation, and therefore not considered a central focus of economic development,
- Venture capital is considered an important competence in the block which was seen by the actors as critical factor, existing some disequilibrium in the articulation between investigation capacity and entrepreneurial capacity.

¹⁶ Eliasson, Gunnar & Eliasson, Åsa, The Biotechnical Competence Bloc, Revue d'Economie Industrielle, 78 – 4 Trimestre (1996), p. 14 See footnote 4

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In fact knowledge has to be practical, structured, flexible and adapted to emerging dynamics. It is consensual that the promotion of knowledge is a central instrument of distinction and qualification of human resources and territories. Knowledge clusters have an important role in the creation and sustainability of wealth and added value being this way capable to fix people and generate information assets. Investment in knowledge implies a new paradigm in the territory literature.

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