Cardiff Airport

Strategic Regional Context

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Cardiff Airport: Strategic Regional Context

The impact of related transport and infrastructure projects.

Prepared: 19th February 2013 by Mark Barry (M&G Barry Consulting Ltd) Version 1.0

Executive Summary

The Welsh Government's proposed purchase of Cardiff airport provides an opportunity to integrate its future development with a number of other major infrastructure projects and government initiatives in South East Wales, which collectively can positively impact the Welsh economy.

Such an approach, whilst addressing many policy objectives of the Welsh Government, also aligns with the key message of Lord Heseltine's 2012 report to The Prime Minister, "No Stone Unturned in Pursuit of Growth", which called for new strategic thinking and a focus on investment in infrastructure.

Wales has perhaps suffered more than anywhere else in the UK from a lack of major infrastructure investment. However, commitments to electrify the Great Western Mainline (GWML), and Valley Lines, the prospect of a South Wales Metro, upgrades to the M4 and Heads of the Valleys Road and a potential Severn Barrage, offer the prospect of a step change in investment over the next 20 years. When these investments are aligned with the economic potential of the emerging Cardiff City Region and Welsh Government Enterprise Zones and Sector initiatives, the prospects for long term economic growth appears strong.

It is vital then, that plans for Cardiff airport are developed in a way to complement the economic opportunities presented by all these schemes and initiatives, so that South East Wales can make a more significant contribution to the economic output of the UK.

This brief study explores the current status of Cardiff airport, the regional economy and a range of mutually beneficial infrastructure investments and government interventions and found that:

- Cardiff airport has underperformed over the last ten years vs. comparable regional airports in the UK, especially Bristol
- Cardiff airport has a limited natural catchment area that can be extended with the appropriate investment in transport infrastructure
- There is untapped demand for services to places in the Middle East, some European cities and locations in the US & Canada (predominantly served via Heathrow and Bristol)
- There is much evidence that demonstrates a link between the economic performance of a region and its level of international connectivity
- Cardiff's international connectivity falls some way behind many of its competitor cities across Europe
- Cardiff airport has physical infrastructure advantages over other South West UK airports in terms of potential infrastructure upgrades that can be made relatively easily (Eg Terminal upgrade/rebuild, runway extension, improved road and rail access)
- With investment, there is scope to address the underperformance at the airport through a different management and marketing strategy [redacted]
- [redacted]

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AIRPORT BACKGROUND AND CONTEXT

Cardiff airport began life as an RAF base at the end of the 2nd World War. Commercial operations began in earnest when it replaced the old Pengam airport in Cardiff as the city's primary airport in the 1950s. It was owned and operated by the local authorities until the mid-1990s when it was sold to TBI. It was later acquired by Abertis in 2005. Today the airport employs about 1,000 people and supports, approximately, the same number again in the wider region.

The current terminal was developed in the 1970s and is capable, with minor modifications, of handling up to 8M passengers per year. It would though need new gate facilities to handle that number of passengers. The runway is 2.35 Km in length and can be extended. As a comparison, Bristol airport's runway is 2KM and cannot easily be extended. The airport also operates a Cat 1 ILS system. The location of the airport and the fact that take-off and landing are over water or unpopulated areas means it has minimal noise and pollution impact. Current road access is adequate but can be improved (but no worse than Bristol airport). Rail access is poor but has potential for major improvements (see Section 5).

Today, the PAX is just over 1M (the same as 1999), split 80% leisure and 20% business, having peaked in 2007 at just over 2M. [redacted] Those destinations that are most significant in this regard include Dublin, Edinburgh, Paris, Rome, Newcastle, Barcelona, Geneva, Madrid, Naples, and Katowice. Some of these locations are not served by Cardiff at all. In addition, there are a number of long haul destinations for which significant demand exists [redacted] In the medium/longer term and with better connectivity and marketing, Cardiff could begin to offer some long haul services for the whole of the SW of the UK.

As regards freight, Cardiff has a negligible presence in this area handling less than 400 tonnes in 2011 versus over 16,000 tonnes at Birmingham and over 250,000 tonnes at East Midlands. This is an area that has potential for growth.

One area Cardiff airport performs better than many airports is in profitability, although [redacted] is somewhat lower that the £20M at Bristol. It does appear that some UK airports "buy" PAX in return for lower profits or even losses.

There are also a range of commercial activities and operations that are directly related to the airport itself or part of the wider aerospace cluster in SE Wales, all of which contribute to the local economy and are intrinsically linked to the on-going success of the airport. These include British Airways Maintenance Centre and a growing Maintenance, Repair and Operations (MRO) cluster at St Athan and the airport.

Still relevant today, are details of the airport, its operations and plans for the future set out in the 2006 Masterplan prepared by Cardiff Airport in response to the 2002 DfT White Paper. The main conclusions in that Masterplan were that:

- Cardiff should remain the principal airport serving South Wales
- Further terminal development is needed at Cardiff Airport
- Access to Cardiff Airport, and to airports in England, needs to be improved

However, the airport's recent performance has not met expectations and has fallen behind all comparable airports across the UK and especially Bristol.

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AIRPORT PERFORMANCE VS EXPECTATIONS

The performance of Cardiff Airport in terms of PAX has fallen some way behind all comparable UK regional airports since 1999 and against expectations for the airport presented by the DfT in 2002. Whilst there are some mitigating regional economic and demographic factors that have influenced the PAX figures, it is overwhelming likely that the performance of the airport over that period is more related to other factors unique to Cardiff airport.

2.1 Recent PAX Performance

The backdrop to the current potential acquisition of Cardiff Airport by The Welsh Government is the poor performance of Cardiff airport when compared to other comparable regional airports.

The figures below present a PAX summary analysis of the period 1999 to 2011 against a backdrop of a total UK PAX in 1999 of 165M which peaked at 240M in 2006, falling back to 220M in 2011[1](see Figure 1). Correspondingly, most UK airport experienced a fall in PAX after 2007.

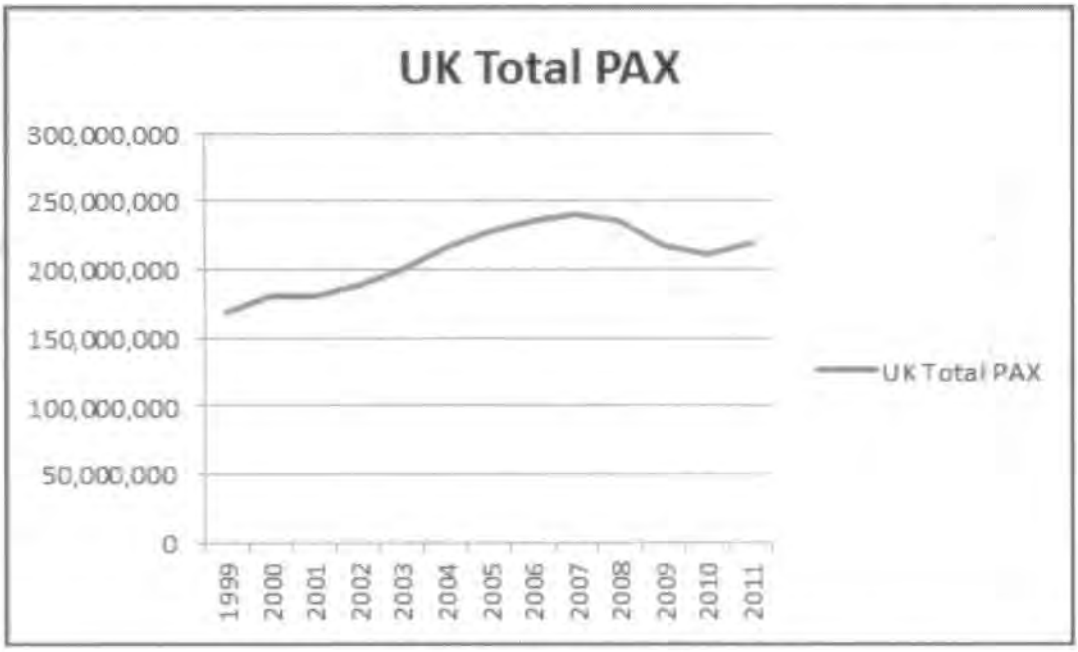

Figure 1 - Total UK PAX 1999-2011 (CAA)

The relative poor performance of Cardiff can be clearly seen by looking at PAX numbers over the last ten years and its declining share of the total UK PAX (See Figure 2, Figure 3, Figure 4, Figure 5, Figure 6 and Figure 6). This underperformance is perhaps brought into sharper focus when figures are compared with other similar UK airports such as East Midlands, Liverpool, Southampton and especially Bristol.

1 CAA, Airport Statistics, http://www.caa.co.uk/default.aspx?catid=80&pagetype=88&pageid=3&sglid=3

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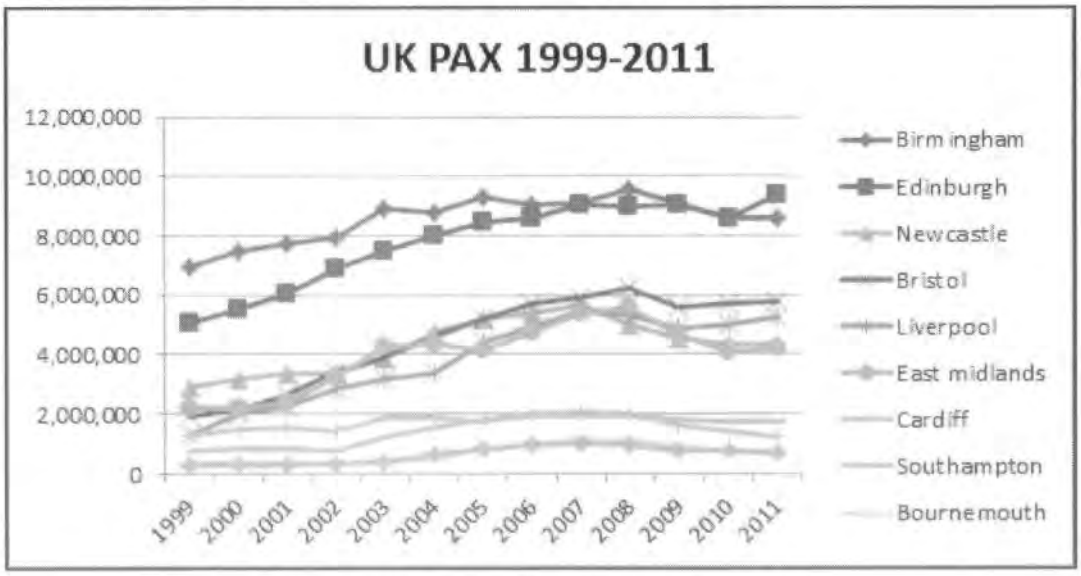

Figure 2 - PAX at selected UK airport 1999-2011 (CAA)

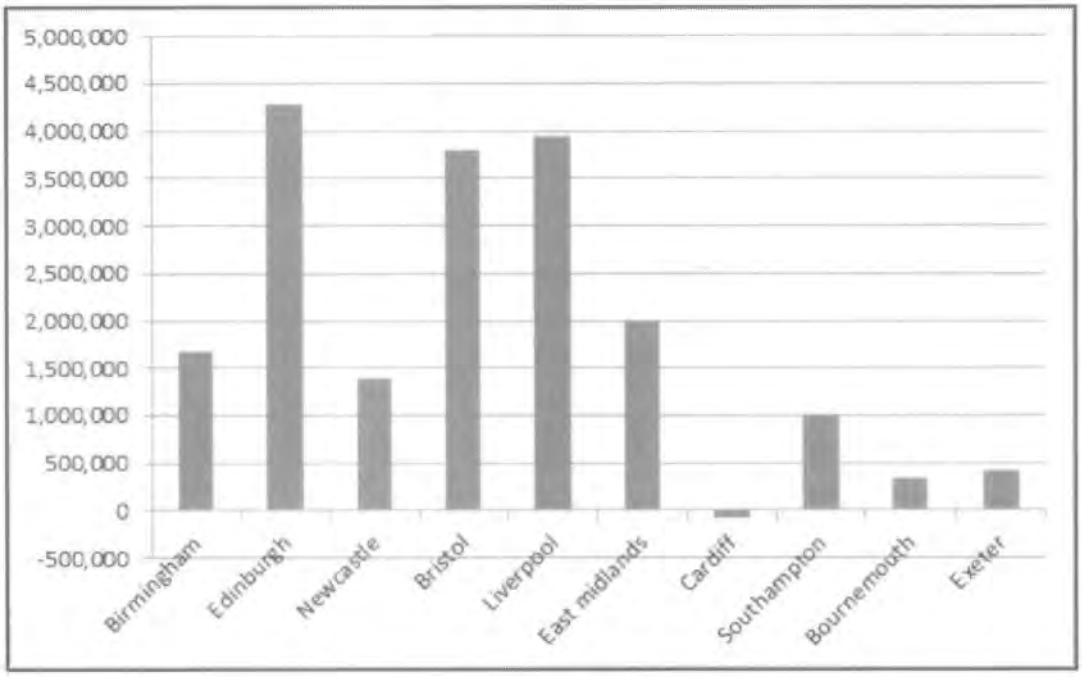

Figure 3 - Change in PAX at selected UK airports 1999 V 2011 (CAA)

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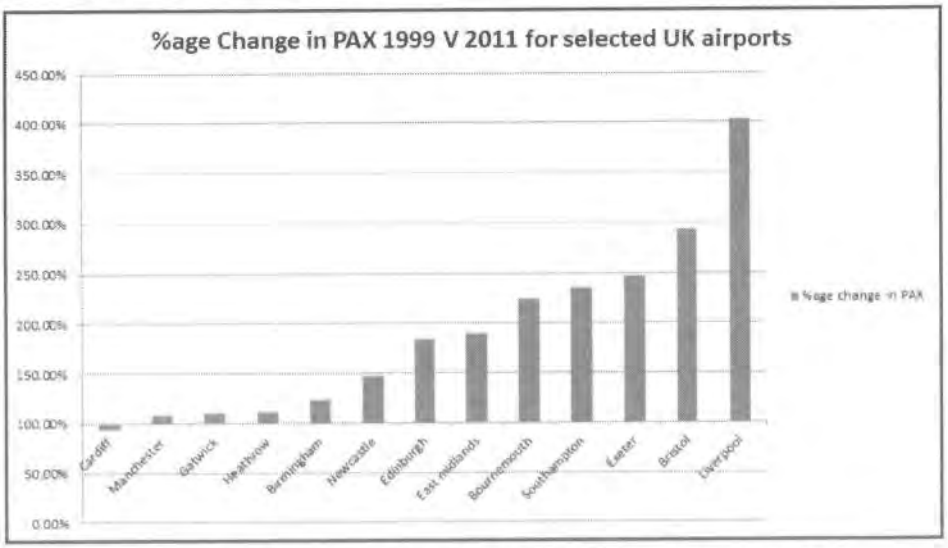

Figure 4 - %age change in PAX 1999-2011 at selected UK airport (CAA)

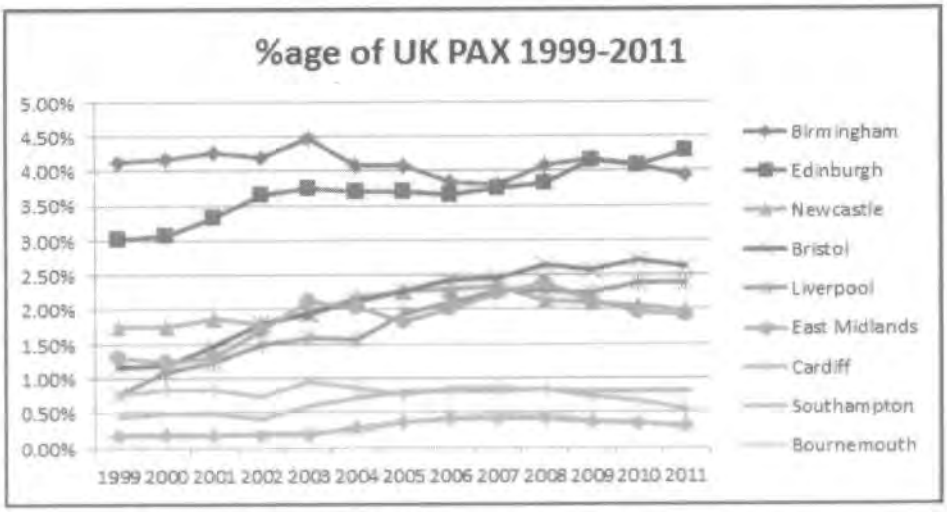

Figure 5 - %age of UK PAX for selected airport 1999-2011 (CAA)

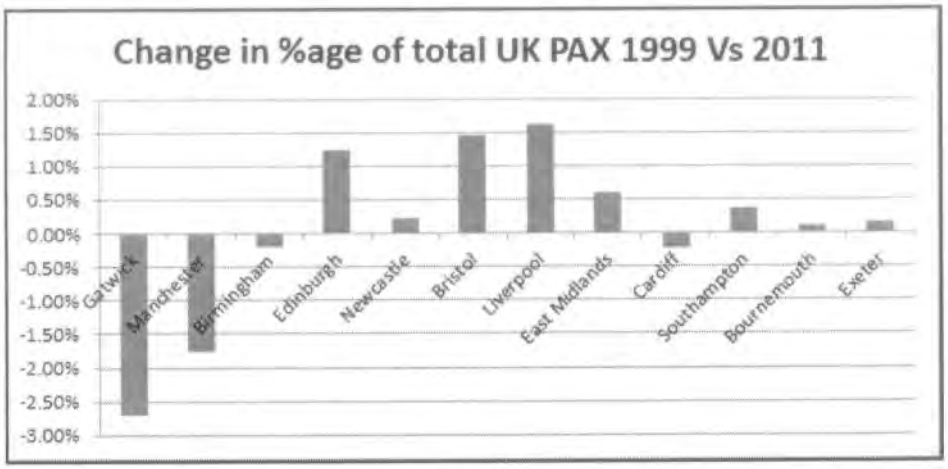

Figure 6 - Change in %age of UK PAX 1999 vs. 2011 for selected airports (CAA)

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The key themes one can draw from the above data:

- Cardiff's share of total UK PAX has fallen from about 0.75% in 1999 to ~0.5% in 2011
- Most comparable regional airports have seen an increase in both PAX and their proportion of total UK PAX in the last ten years
- The recession did impact overall UK PAX which, whilst rising again now and at 220M, is still some way off the 240M peak in 2007
- As a result most UK airports saw a fall or flat line at best in PAX after 2007
- Cardiff though has not, whose figure have fallen back to pre-1999 levels from a peak of 2M in 2007 (Bristol had a PAX of 5.9M in 2007 nearly 3* its 1999 PAX)
- The larger UK airports (Heathrow Gatwick, Birmingham etc whilst still increasing their total PAX numbers are losing a proportion of their share of total UK PAX to many of the more successful regional airports (e.g. Bristol, East Midlands, Southampton, Liverpool, etc)

The period since 1999 saw the emergence of the low cost carrier market on the back of a growing economy, which allowed many regional airports to grow and support their own local demand (for example Liverpool, East Midlands, Newcastle and Bristol). This had the effect of abstracting some of the overall UK PAX away from the larger UK airports (Heathrow Gatwick, Manchester, Birmingham, etc). Bristol did especially well, with operators such as Go, Easy Jet (which would later acquire Go) providing services to many short haul locations across Europe. In 2003, Bmibaby arrived in Cardiff and helped grow numbers at Cardiff to 2M by 2006. However, since 2006 the fortunes of Cardiff airport have diverged considerably from other comparable UK airports.

In is instructive to note that even before 2006 and the onset of the current economic downturn, the rate of growth at Cardiff was some way below that of other comparable regional airports and only a third of that at Bristol and a sixth of that at Liverpool (See Figure 7). In fact, in 1999 Liverpool and Cardiff handled the same number of passengers; today Liverpool handles nearly five times as many as Cardiff.

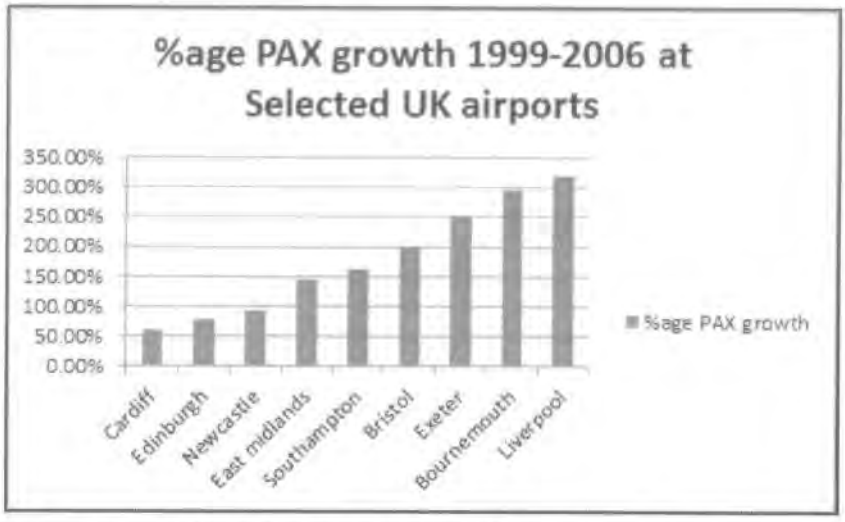

Figure 7 - %age PAX growth 1996 V 2006 as selected UK airports

There is some evidence that part of this difference in airport PAX is due to regional economic differences and demographics, but this, as set out later, only provides a marginal explanation.

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2.2 Underlying demand and demographics – 2002, DfT Study vs. today

When one assesses the relative performance of Cardiff [redacted] and other comparative airports one also needs to appreciate the underlying demographics and demand. In 2002, the DfT undertook a thorough review of airport capacity the UK [2]– which included a review of catchment and demand profiles across the UK – against a range of policy scenarios for demand to 2030. This provided forecasts for a no change approach, a South East constrained approach, UK wide constrained approach and a facilitating growth across the UK approach.

Whilst there have been changes in the UK's economic geography since then, not least a major downturn in the economy (which certainly impacted those projections – See Figure 8), there is still much that was presented in 2002 that is still relevant today. In fact it is the expectations that the DfT had for Cardiff airport in 2002 and its potential development and the performance of the airport up until 2006 that are perhaps most instructive.

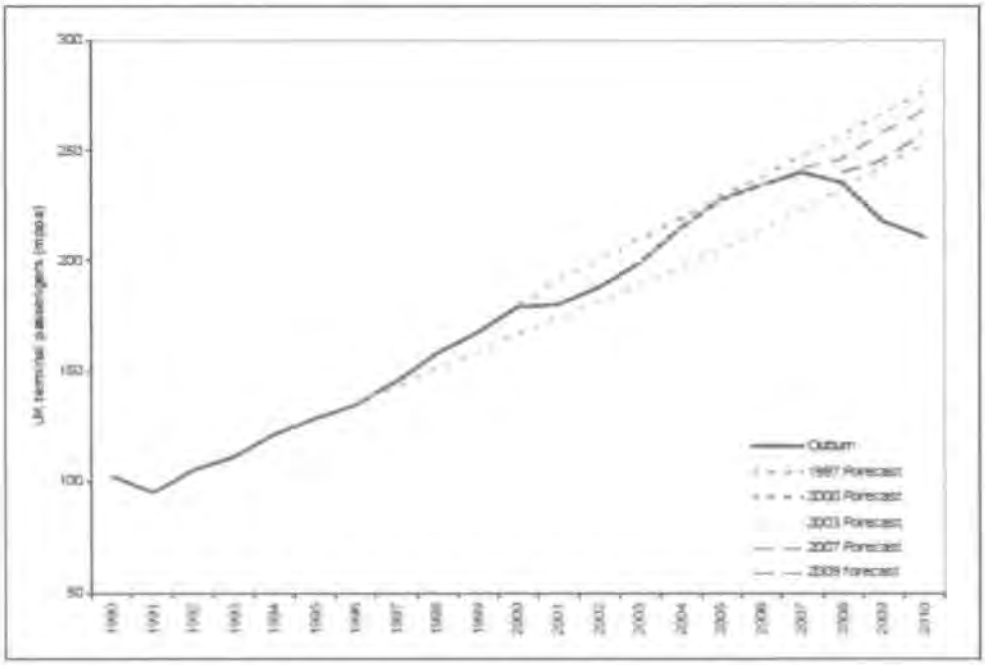

Figure 8 - DfT Forecasts 1997, 2000, 2003, 2007 vs. Outturn[3]

That study also found that Wales and SW England had a greater need for better access to Heathrow than any other region in the UK (outside the SE England). The study found the leakage of passengers to other regions, mainly South East of England Airports and especially Heathrow, was about 65 per cent for both Wales and South West England, the highest in the UK. For each region, the total annual trips were estimated at 3.4 million and 7.2 million respectively. The report also made some other relevant statements:

"It is important for Wales to maintain access to key London airports, especially Heathrow and Gatwick. Even if Cardiff was to provide a much wider range of services and frequencies than it currently offers, it is likely that a large number of Welsh air passengers would continue to use airports in the South East of England."

"Their [South East England airports] route networks especially for long haul, will continue to be wider than the route networks offered by regional airports. Links to London are also important, particularly for the business community."

2 Department for Transport, 2002, The Future Development of Air Transport in the UK: Wales
3 Department for Transport, UK Aviation Forecasts, August 2011

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Pop Catchement Ms (DfT 2002)	1 hr road	2 hr road	1hr rail	2 hr rail
Birmingham	5.6	16.4	2.3	7
Manchester	5.9	16.5	1.3	6.5
Bristol	1.2	7.3	0.6	1.7
Cardiff	1.2	3.7	0.4	1.3

Table 1 - Airport Catchment Areas

On the basis of the analysis in Table 1, Cardiff airport's effective catchment area only encompasses South Wales and penetrates a little into South West England. It is also clear, that when journeys to Cardiff are greater than one hour from the east, then other airports become more attractive – especially Bristol and the larger airports in SE England (esp. Heathrow which tends to abstract demand away from both South Wales and SW England (as DfT stated above). Cardiff also has a relatively small population to the west (where there are no competing airports). Compare this with Bristol which has >4M people to the South and West who are closer to Bristol than Heathrow.

The DfT also found that the propensity to fly in Wales was 0.58 (the lowest in the UK apart from NE England at 0.57) whereas in the SW England it was 0.73. This has the effect of reducing the potential catchment area vs. Bristol by a factor of ~25%.This reflects in part the higher GDP and GVA/capita in SW England vs. Wales and also the lack of services available form Cardiff vs. the potential demand. So Bristol has a number of natural demographic and economic advantages over Cardiff.

Whilst recognising the importance of Heathrow, Cardiff's more limited catchment vs. Bristol, the 2002 study did predict significant growth for Cardiff airport and found that:

- by 2015 passenger numbers could be from 2.6M to 4.0M passenger per year and by 2030 be up to 8.7M
- Bristol's growth likely to be larger given its larger and wealthier catchment area, up to 7.3M by 2015 and up to 13.5M by 2030
- South Wales will still be dependent on access to Heathrow for many long haul services

Nonetheless, it is marked how differently the two airports have performed relative to each other over the last ten years versus expectations (See Figure 9.). In fact when one looks at a range of similar airports (Exeter, Bournemouth, Liverpool, Southampton and East Midland) then Cardiff's relative performance looks even more disappointing (even when one considers the economic down turn in 2007), especially in comparison to Bristol which is exceeding expectations.

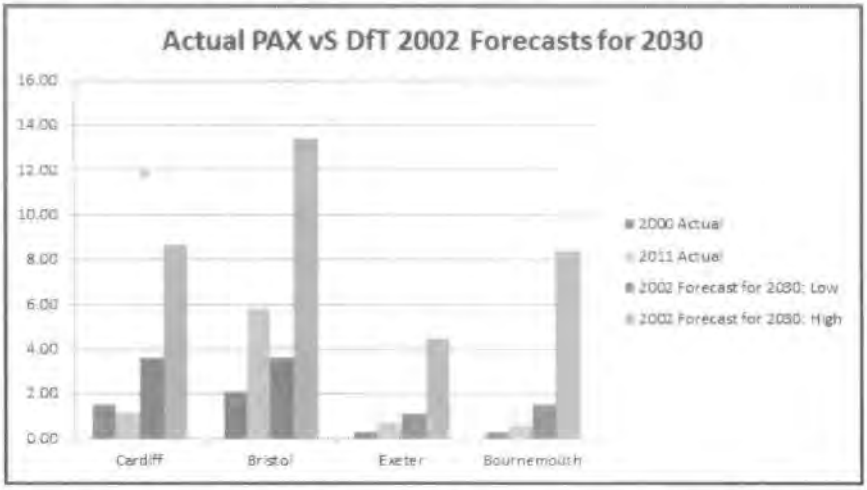

Figure 9 - PAX in 2000 & 2011 vs. DfT 2002 based forecasts for 2030

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Other key changes since then:

- UK PAX grown from 188M in 2002 to 220M in 2011 (and peaked at 240Min 2007)
- Heathrow has grown – but constrained, higher numbers but falling share of UK PAX; 32% UK PAX in 2011 vs. 38% in 1999 although it is handling >7M more passengers
- No new capacity in SE England
- Some demand abstracted to regional airports from the larger UK airports
- Heathrow predicted to be at capacity by 2030; need to explore new runways in SE England – Hence Davies Commission

Conclusions

- Bristol has grown at rate coincident with the top end of projections from the DfT in 2002 and has (like East Midlands and Liverpool) managed to increase its share of overall UK PAX
- When compared to airports like Bristol and East Midlands (and even smaller airport in the SW England) Cardiff has underperformed

2.3 Changes in Economy 1999 vs. 2011

There is an established relationship between demand for flights and economic performance across a region. As can be seen above, the overall UK PAX figure did drop significantly as a result of the economic downturn that started in 2007. It is only in 2010 that UK PAX figures started to rise again. However, it appears that the economic downturn impacted the UK evenly with nearly all airports experiencing a similar fall in PAX numbers.

Perhaps of more interest to Cardiff and its demonstrable underperformance vs. Bristol (and other similar regional airports), is the performance of the SE Wales Economy vs. SW England and Merseyside since 1999. Some of the relevant regional data (at different NUTS levels) are set out in Table 2 and Figure 10.

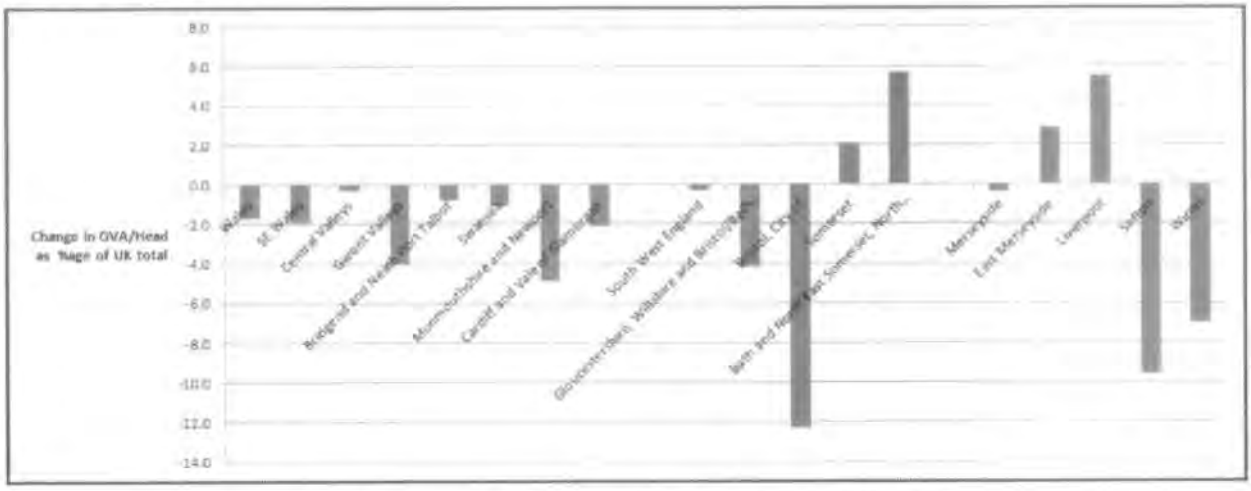

Figure 10 - Change in GVA/capita for selected regions 1999 - 2011

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	Selected GVA/Capita Data from ONS December 2012	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	99V2011
UKL	Wales	76.9	76.6	76.3	76.3	76.0	75.7	75.4	75.3	74.8	74.1	73.8	74.9	75.2	-1.7
	SE Wales	82.9												81.8	-1.9
UKL15	Central Valleys	62.5	62.8	63.3	64.3	63.8	62.4	61.2	60.6	60.0	59.9	60.2	61.6	62.2	-0.3
UKL16	Gwent Valleys	59.7	58.6	58.8	58.6	55.2	55.4	55.5	55.7	54.7	54.2	54.0	55.0	55.7	-4.0
UKL17	Bridgend and Neath Port Talbot	74.8	71.9	69.8	68.8	67.9	67.9	68.7	70.5	71.4	71.9	72.2	73.8	74.0	-0.8
UKL18	Swansea	77.4	79.0	80.0	80.6	80.2	80.1	79.3	77.9	75.9	75.3	75.6	76.4	76.3	-1.1
UKL21	Monmouthshire and Newport	102.4	101.9	100.4	99.5	100.4	101.4	101.5	100.8	99.3	97.7	96.4	97.5	97.5	-4.9
UKL22	Cardiff and Vale of Glamorgan	104.5	105.1	108.8	109.8	109.9	108.4	107.1	106.1	105.5	104.9	103.9	103.3	102.4	-2.1
UKK	South West England	91.8	91.8	92.1	92.4	92.5	92.6	91.7	91.7	91.1	90.9	91.0	91.3	91.5	-0.3
UKK1	Gloucestershire, Wiltshire and Bristol/Bath area	109.7	109.5	110.2	111.0	111.1	110.0	108.2	107.1	106.1	105.5	105.8	105.5	105.5	-4.2
UKK11	Bristol, City of	137.6	135.9	136.3	136.2	135.1	132.4	129.6	127.5	126.5	127.6	128.7	127.1	125.3	-12.3
UKK23	Somerset	80.3	80.7	79.7	78.6	78.3	79.6	79.6	80.6	80.0	79.4	79.8	81.4	82.4	2.1
UKK12	Bath and North East Somerset, North Somerset and South Gloucestershire	97.8	99.1	101.5	104.1	106.4	106.3	106.2	104.9	102.6	101.8	102.2	103.0	103.5	5.7
UKD7	Merseyside	75.2	75.8	76.1	76.5	76.0	75.3	74.8	74.6	74.5	74.6	74.6	75.0	74.8	-0.4
UKD71	East Merseyside	74.9	76.3	77.2	77.9	77.3	76.9	76.3	76.4	76.9	76.6	76.9	77.5	77.8	2.9
UKD72	Liverpool	92.2	93.2	94.4	94.8	94.9	94.6	95.1	95.3	96.1	97.6	99.3	99.1	97.7	5.5
UKD73	Sefton	66.1	66.7	66.4	67.0	66.2	64.5	63.2	61.5	59.6	58.5	57.8	57.2	56.6	-9.6
UKD74	Wirral	60.5	59.4	58.4	58.0	57.4	56.4	55.4	55.3	54.7	53.9	53.0	53.4	53.5	-7.0

Table 2- Headline GVA 1999-2011 for selected regions

Given the above data, since 1999, there have been some incremental (though not fundamental) changes in the relative outputs of South Wales vs. SW England. The key points are:

- GVA/Capita of both SW England and SW Wales have fallen vs. UK average by 0.3% and 1.7% respectively; Merseyside saw a fall of 0.4%
- So whilst the fall was biggest in SE Wales, that fall was not unique and of the same order of magnitude as the falls in SW England and Merseyside
- The biggest falls in GVA/capita across the regions above were Bristol, from ~137% to 125% or by about 10% and the Wirral from 60.5% to 53.5%
- In contrast the fall in Cardiff and the VoG was much smaller, from 104% to 102%.
- Growth in headline GVA has been bigger in absolute terms in SW England (larger population) but more modest in %age terms. In fact over the period Cardiff and the Vale grew more than Bristol.
- However, other parts of SE Wales grew less than parts of the SW England

Whilst the marginally better economic performance of SW England and Merseyside vs. SE Wales could contribute to greater demand within the catchment of at Bristol and Liverpool airports vs. Cardiff, the differences do not correlate with the dramatic difference in PAX that has been observed. This would suggest that the economic performance of SE Wales has had a small incremental impact in reducing demand from Cardiff airport. However, the actual reduction in PAX observed at Cardiff (vs. growth at Liverpool and Bristol) has been influenced to a far greater extent by other factors and most likely those related to the airport itself.

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ECONOMIC CHALLENGES FACING SOUTH EAST WALES

Investment in Cardiff Airport will help the Welsh economy

Whilst better to access to Heathrow and its extensive range of long haul flights is essential to the economy of South East Wales, so is the need to provide access to international markets from a local airport – not least to support the case for inward investment. The Cardiff City Region clearly has the potential to play a more prominent and equitable in the economy out of the UK. However, it needs its transport infrastructure to match the potential – road, rail, ports and airports.

Radical interventions are needed to begin to address this imbalance and help Wales address some of the serious economic challenges it faces. The development of Cardiff airport as part of a coherent regional infrastructure investment plan can play a major role in growing the economy of South East Wales.

3.1 The UK economy is unbalanced both spatially and sectorally

The proportion of national GDP accounted for by London and the South East is over 36% - while Wales accounts for less than 4% and Wales and SW England together, only 11% of UK GDP[4]. This imbalance is unique in Europe. No other City Region in the EU commands such a high proportion of national GDP as the South East and when measured in terms of GDP/head the imbalance is even more stark. London also has by far the highest GVA/capita of any European region.

Wales and SE Wales "Underperform"

Measured on the same basis, Wales' GVA per head comes in ~ 75% of UK average[5] (the lowest of all regions and nations of the UK) and the South West at ~91%. So, Wales with ~5% of the population produces ~4% of the wealth. Wales GVA/Capita is the lowers of all regions/nations of the UK. The Cardiff City Region itself is ~ 80%, ranging from below 60% in the Heads of the Valleys to ~104% in Cardiff and the Vale. This reflect economic inactivity indices which range from >25% in some valley communities to <20% in Cardiff and the Vale of Glamorgan.

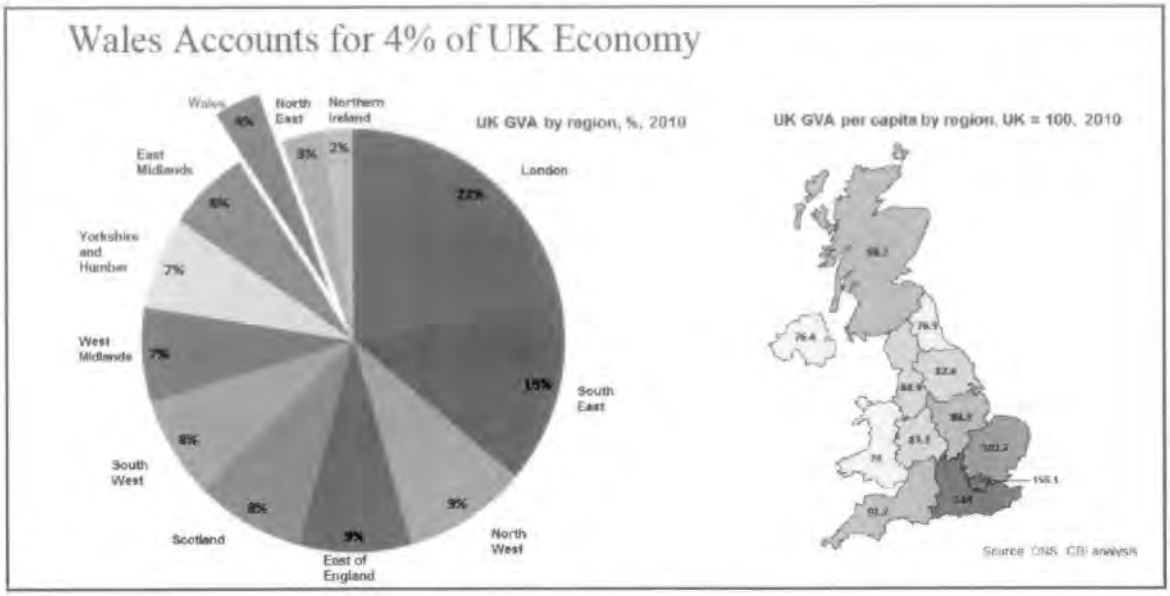

Figure 11 - UK nations/regions GVA/capita

4 ONS - NUTS 1 Regional GVA, 2010 & 2011)
5 ONS/Welsh Government Regional Economic &Labour Market Profiles SE Wales, December 2012 – SB 128/2012

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Demographic Profile of South East Wales

The Cardiff City Region (This includes 10 Local Authorities: Cardiff, Newport, Vale of Glamorgan, RCT, Caerphilly Bridgend, Merthyr, Blaenau Gwent, Torfaen and Monmouth) has a population of over 1.4 million, within 20 miles of Cardiff; that's half the population of Wales. Cardiff itself has a population, based on Census data for 2011, of 346,000[6] (~11% higher than the ~310,000 in2001).

The region's population is expected to grow significantly over the next 25 years, especially in Cardiff which the Welsh Government had projected to reach ~460,000 by 2033[7]. These figures have though been disputed; however, even using a growth trend from 2001-2011 of 11%, Cardiff's population would still be over 400,000 by 2026.

The opportunity and the challenge

Commensurate with its growing size and potential, Cardiff contains one of the UK's leading research universities and member of the Russell Group, Cardiff University. There have also been initiatives and some early success in exploiting this intellectual base in terms of commercialisation with a number of biotech companies established base in part on IP from the university. The city also boasts a FTSE100 company from the financial service sector, which the Welsh Government has targeted for support by creating an Enterprise Zone in Cardiff. The creative and media industries are also well represented in Cardiff with the BBC recently establishing a major production facility in Cardiff Bay. All these are businesses and activities with an international reach and so need "international connectivity" to grow and develop.

Whilst Cardiff may have done "reasonably " well when compared with the region as a whole (which would be a very narrow perspective), we must also be cognisant of the fact that in UK terms, Cardiff's GVA/capita Vs. UK average still falls behind places like Belfast (149.1), Nottingham (125.8) Edinburgh (174.8) and Bristol (126.1)[8]. Of significance is the fact that Cardiff's GDHI is also low in UK terms at only 91% of the UK average[9].

In fact when compared to other parts of the UK it seems the major economic challenge for SE Wales is as much to do with Cardiff's underperformance when compared to leading towns/cities of the other regions of the UK (See Figure 12) as it is to do with economic inactivity in some Valley communities.

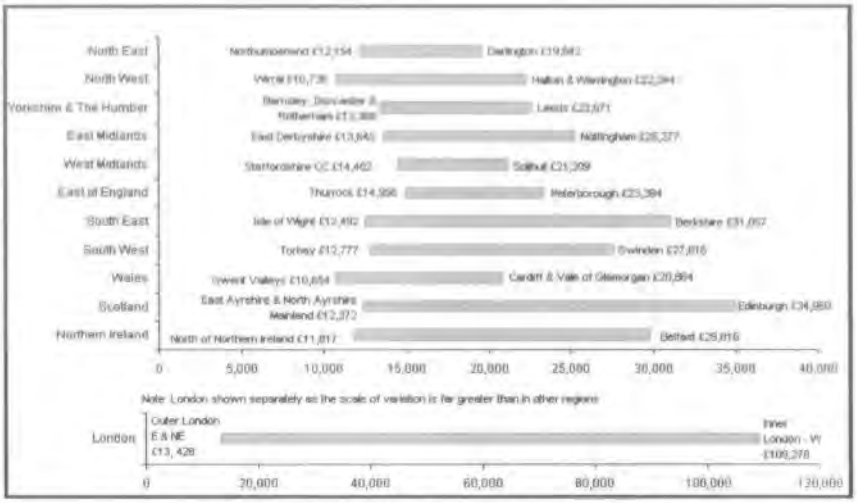

Figure 12 - Regional variation in GVA 2011: highs and lows

[6] ONS/WG 2011 Census Data
[7] ONS/WG, 2010, 2008 based Local Authority Population Projections to 2033 (ISBN 978 0 7504 5794 1)
[8] Regional, sub-regional and local Gross Value Added 2010 Date: 14 December 2011
[9] Regional Economic & Labour Market Profile – South East Wales – November 2012 SB 113/2012 29 November 2012

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The SE of England has taken up most of the UKs infrastructure investment

One of the main differences between the South East of England and the rest of the UK is the significant investment in infrastructure, particularly in transport, that has taken place in that part of the UK over the last three decades. Investment in road, rail and air over many years has meant that the transport network and inter-modal transport hubs are all focused on the South East England.

3.2 The importance of a dynamic regional airport to the Cardiff City Region economy

For Wales in particular, a lack of investment in transport infrastructure over many years – especially road, rail and airports has contributed to its economic underperformance.

The electrification of the Valley Lines, GWML (which must be the first step on a longer term programme to turn the GWML into a quasi high-speed line) and the western rail link to Heathrow, begin to address this imbalance. However, the lack of a major airport in South Wales is still a problem and was identified in the DfT's 2002 study as being a major impediment to foreign direct investment.

".. it does appear that Wales is suffering in attracting inward investment because it does not offer a wide range of air services to European centres."[10]

This weakness was effectively presented in the report by the European Institute for Urban Affairs[11] which found the Cardiff ranked 47 out 51 EU cities in in terms of accessibility by air. This position was also reflected in a Cushman and Wakefield Report, in which Cardiff was ranked 12th of major UK cities in terms of ease of access to markets, 12th in terms of transport links to other cities and 10th in relation to international transport links[12].

Figure 13 - Cardiff's relative air connectivity (Parkinson & Karecha)

Investment in Cardiff airport, to help it grow and provide more services, is essential to the economy of South Wales. If the airport was to deteriorate further or, in a worst case scenario close, the negative impact on the economy of this region would be significant.

10 DfT, 2002, "The Future Development of Air Transport in the United Kingdom: Wales"
11 European Institute of Urban Affairs, Parkinson & Karecha, 2006, "Cardiff – A Competitive European City"
12 Cushman and Wakefield, UK Cities Monitor 2008

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ECONOMIC IMPACT OF CARDIFF AIRPORT

There is well understood relationship between the presence of an airport and its impact on the regional economy. An airport supports jobs, both those directly employed by or at the airport and more indirectly through employment supported in the supply chain. The presence of an airport can also help the wider economy by projecting a dynamic image for a region.

As regards Cardiff airport in particular, there are a range of commercial and government initiatives that can be enhanced/enabled by the presence of a more dynamic regional airport.

The future of Cardiff airport is also inevitably very much tied up with the wider South Wales and Severnside economy. As such, it is important to develop plans for the airport in a way that reflects and supports other major projects in the region (committed or proposed). These will include transport infrastructure (See Section 5), commercial developments and the commercial environment in which the airport operates.

4.1 Direct and Indirect Employment

When performing an analysis of the number of direct jobs generated by regional airports, a ratio of 1000 on-site jobs per million passengers per annum (pmppa) is typically used as a 'rule of thumb' (though the efficiency ratio is 800 on-site jobs pmppa)[13]. This relationship was also presented in 2006, by Oxford Economic Forecasting (OEF) in their update of their 1999 report[14] which found that 215M terminal passengers across the UK's airports supported 186,000 direct jobs, or 865 jobs pmppa. The OEF Study also found 167,000 jobs in the supply chain across the UK or a ratio of indirect to direct jobs of 0.9, suggesting that for every million passengers then a further 780 jobs would be supported in the supply chains (This is lower than the figures OEF estimated in their 1999 report). There is also a contribution from induced jobs and those supported through tourism.

Table 2.4: Jobs Supported by the Aviation Industry
(thousands)

	1998	2004
Direct employment	180	186
Indirect employment	200	167
Induced employment	94	88
Travel agents	75	82
Total	**549**	**523**

Source: ACA, ONS & OEF estimates

Figure 14 - OEF Analysis of 2004, 215M UK PAX in terms of jobs supported

Of course the relationship between passenger numbers and jobs varies from airport to airport and is dependent on a number of factors, including the mix of scheduled, charter and airfreight services - and the number of airlines based at an airport. For example, Bristol Airport, which now serves 6M passengers per year, employs about 2,700[15] people or more like 500 on site jobs pmppa; so its recent growth has delivered economies of scale which in turn has also helped its profitability.

As a broad guideline a Cardiff airport operating with 3M passengers a year, could support perhaps 2,400 direct jobs, ~2,300 indirectly employed and further ~2,300 for induced and tourism related employment. That is approximately 7,000 jobs.

Some of the specific examples of direct and indirect employment currently at or related to Cardiff airport and/or St Athan include: The British Airways Maintenance Centre (BAMC) was established at the airport in 1993 and today supports over 800 jobs directly and indirectly; Cardiff Aviation, set up in 2012 at St Athan with plans to create up to 1,000 job; and GE Aviation which employs over 1,000 skilled staff at its base in Nantgarw.

13 The Future Development of Air Transport: Wales , July 2002, Department for Transport, Page 67, Section 6.4.13
14 Oxford Economic Forecasting, 2006, The Economic Contribution of the Aviation Industry in the UK
15 http://www.tymconsult.com/casestudy_Bristol-International-Airport-_27.php

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4.2 Strategic Regional Role

The presence of a vibrant and successful airport can also help to project an image of economic activity and vitality to support the wider regional economy, help promote the region as place to do business and in helping to attract inward investment and tourism.

The strategic role of Cardiff airport in supporting the wider regional economy was presented in the 2006 Masterplan for the airport which stated...

...The development of Cardiff International Airport is an important component in the development of the Welsh economy and the provision of employment in Wales. A strong international airport for the capital city enhances the image and 'brand' of Wales, helping it to sell itself as a location for both foreign business investment and tourism. Cardiff International believes that the airport has the potential to contribute more than it currently does and to contribute substantially more than the Department for Transport (DfT) expects, while improving the attraction of the region as a place to work and live.

The importance of connectivity to a regional economy was also presented by OEF (from Healey and Baker), where transport links with other cities and internationally, were as identified as being and an essential requirement when deciding where to locate a business.

	% of respondents reporting factor as "absolutely essential"			
	2002	2003	2004	2005
Easy access to markets, customers or clients	57	58	61	60
Availability of qualified staff	59	57	56	57
Transport links with other cities and internationally	51	56	58	52
Quality of telecommunications	46	49	47	50
Cost of staff	32	35	39	35
Climate governments create for business through tax and the availability of financial incentives	34	33	36	32
Value for money of office space	30	31	29	31
Availability of office space	27	26	27	30
Ease of travelling around within the city	21	24	25	22
Languages spoken	20	24	28	24
Quality of life for employees	18	15	18	16
Freedom from pollution	12	14	16	13

Source: Healey and Baker European Cities Monitors

Figure 15 - OEF 2006 (from Healey & Baker) - Factors influencing business location

Similarly, OEF found, in their 2006 study, that the availability of air services was a key feature in the decision making process when companies decided on a location (See Figure 16).

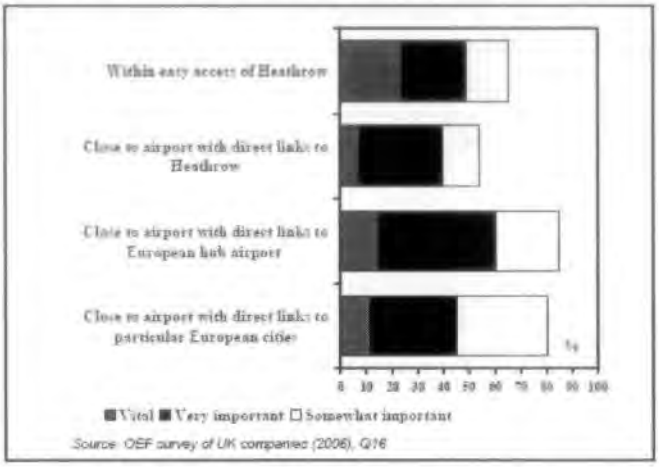

Figure 16 - OEF, 2006, Importance of air services to location assessment

It is clear then; the overall success of the SE Wales Economy is dependent on both good access to Heathrow and the presence of a dynamic regional airport at Cardiff.

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4.3 Commercial Projects in the Region

There are also a number of potential commercial developments in the region that have, or could have, a mutually beneficial impact on the development potential of Cardiff Airport.

4.3.1 International Convention and Conference Centre

There are proposals under discussion for a major international conference and convention centre, possibly in the centre of Cardiff or at a location similarly well connected. Studies undertaken for Cardiff Council and reported to the council [16][17] highlighted that the conference and events market in the UK has an expenditure of £9.3 billion, contributes £4.1 billion to GDP and provides 0.5% of all employment in the U.K. The council report also noted that the market had grown and developed since the original analysis, but that Cardiff had been unable to share increased opportunities. Currently Cardiff is 7th on the list of favoured destinations in the UK for exhibitions and conferences, and only takes 2% of the market, whilst the six competitors above Cardiff take 55%. An Economic Impact Assessment carried out by the Council indicates that in addition to generating an additional £5.8 million of economic activity during construction, a Conference Centre should generate an additional £46.3 million of economic activity per annum from delegate/visitor/operational spend.

A new convention/conference centre will be seeking to attract the major European business conferences in sectors such as Life Science and IT. Such events require both exhibition and meeting spaces and the ability to support up to 2,000 delegates. Typically, conferences such as these use established centres in locations such as Milan, Hannover, Dresden, Manchester and Barcelona – all cities with good European air links. So, whilst the prospect of a direct rail link to Heathrow by ~2020 will be important to the success of a convention/conference centre, it could deliver even greater benefits if more services were available to European business locations from Cardiff Airport.

Whilst an airport can help the Convention Centre proposition, the plans for the convention centre can also help boost the prospects of the airport – again a mutually beneficial arrangement. In fact if the city can attract 30 major conferences per year supporting an average of 2,000 delegates/attendees each, then this suggest 60,000 additional business visitors to the city each year. A significant proportion could use Cardiff airport if sufficient services were available.

4.3.3 Hosting Major Events

The ability of SE Wales to attract major events (sports, conference, etc) is also dependent to a degree by the regions international connectivity. Cardiff aspires to host Champions League and International European football events. It's chances of success will be enhanced by the presence a strong local airport supporting services to a range major European cities.

16 Cardiff CC, Executive Report by the Chief Executive, 30th March 2011
17 Cardiff CC, 16th November 2012 Agenda Item 4, : Policy Review & Performance and Economy & Culture joint Committee (data from Economic Impact of UK Exhibition Market 2005 KPMG)

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4.3.4 Severn Barrage

The re-emergence of the Severn Barrage project[18] could have a major impact on the prospects of Cardiff airport. This project will cost up to £25 billion to build, be privately financed by sovereign wealth funds and other infrastructure investors, of which around 80% will be spent in the UK.

The proximity of what would be a "globally significant project" will have a positive impact on the airport in terms of increased demand for services during the design and construction of the barrage and also to help the marketing of the airport to an international market.

The barrage will employ at least 20,000 workers in construction – including concrete and steel jobs in South Wales and turbine manufacture and maintenance divided between the Bristol area and South Wales during the nine year build. The project will indirectly create and support tens of thousands more jobs and help Britain become be technology leader in this field (based in region) able to export expertise. During design & construction the project will link with suppliers and experts from across the world.

Having an airport nearby to service this demand will be beneficial. More importantly a project with the profile of the barrage can help project a more dynamic image for the wider region. Cardiff airport can leverage this to help project a more dynamic image for itself to help attract both airlines and passengers.

The impact of potential Severn Barrage Transport Links are explored in Section 5.8

Related to the barrage is also the potential for the development of Port Talbot Docks as a container terminal. Again this is not within the remit of Hafren Power who identified Port Talbot docks as a potential manufacturing and assembly location for Barrage components. However, once completed the dock facilities could be modified to provide a major port operation on the west of the UK. There will be scope to explore integrated freight operations with Cardiff airport.

4.4 City Region Economy and WG Economic Interventions

It is clear that continued success of Cardiff airport and the ambition to broaden its service offering can have a positive impact on a number of related initiatives in the region. More specifically, the economic fortunes of Cardiff are to a certain extent (as are all major cities) dependant on access to an international airport offering a range of services to major business locations. More widely, the prospects of success for the WG Enterprise Zones and Sector initiatives can be enhanced with support for and investment in Cardiff Airport.

4.4.1 Cardiff and the City Region Economy

It seems likely that in the next few years a formal Cardiff City Region body will be established following a series of Task Force studies by the Welsh Government.[19] Functions related to transport, economy and strategic regional planning are those most likely to be delivered via a city region. However, for the city region to be internationally competitive and an essential ingredient of a successful FDI initiative is an airport offering a range of services to major European Business locations (See Section 3.2). Whilst better access to Heathrow will play a key role, there is still a major opportunity for Cardiff Airport to help contribute to the economic development of the Cardiff City Region.

[18] http://www.hafrenpower.com
[19] http://new.wales.gov.uk/topics/businessandeconomy/policy/cityregions/?lang=en

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4.4.2 Enterprise Zones

There are three Welsh Government Enterprise Zones in South East Wales. One focussed on financial and professional services in Cardiff, one focussed on advanced manufacturing in Ebbw Vale and, most relevant, one focussed on aerospace at Cardiff airport/St Athan. The role of Cardiff Airport can have a positive influence on all three

- Financial Services

  The Financial and Professional Service Enterprise Zone in Cardiff reflects the growing importance of the sector to the economy of SE Wales. Companies like Admiral, British Gas, Legal and General, Go Compare, Eversheds, Hugh James, PWC, Lloyds TSB, Capital Law, KPMG, Deloittes Global Risk Management Centre, Conduit BPO, Zurich and ING Direct amongst others provides the basis from which the sector can be further developed to help create more of the high value jobs the region needs. Most of the companies are based in, or near, the centre of Cardiff which provides good access to the wider region for employees and also connectivity to London and Heathrow. However, the growth of the sector is in part, dependent on the provision of better international links via both Heathrow and Cardiff airport.

  One of the reasons Cardiff did not make the short list for the Green Investment Bank, was the lack of services available at Cardiff airport. One of the criteria was the ability to attend a three hour meeting at a major European financial centre and return the same day. Any high value financial service operation needs to be able to connect to major financial centres across Europe. The GWML electrification and Western Rail Access to Heathrow will make Cardiff more "connected" in this regard and with Crossrail it will be possible to say Cardiff is less than 2 hours from Canary Wharf and One hour 40 minutes from both London and Heathrow.

  However, Cardiff can do better and its connectivity can be enhanced even further through the development of services from Cardiff Airport to European business centres like Frankfurt, Amsterdam, Milan, Barcelona, Madrid, Berlin, etc. Better Heathrow links and more services from Cardiff airport will together make Cardiff more attractive to leading financial and professional service organisation. Without the intervention and support of the Welsh Government it would appear unlikely that Cardiff airport could address these opportunities; even worse the scenario that Cardiff airport continues its decline and closes (which though unlikely is possible without intervention) would seriously damage the potential of Cardiff to market itself as a major location of financial and professional services.

- Aerospace at Cardiff Airport and St Athan

  The establishment of an Aerospace Enterprise Zone to cover both St Athan and Cardiff Airport builds on previous Welsh Government investment in aerospace, which totals tens of £Ms through projects like Red Dragon.

  The St Athan site itself has an 1,800 metre runway with Cat 1 ILS. The site has full airfield support ranging from air traffic control to fire and rescue. The runway and accommodation is suitable for both fixed and rotary wing aircraft from light GA all the way up to A330 and 767-sized aircraft. There are also circa 493 acres (200 ha) of development at St Athan with further capacity for expansion. There is also 30,000 m2 of hangarage capacity available for immediate use, with planning permission for new and replacement hangarage up to 117,000m2.

  This infrastructure is being exploited by a growing cluster of aerospace companies across the wider region; these include British Airways Maintenance Cardiff, British Airways Avionics, GE Aviation, Nordam, EADS Defence & Security Systems and General Dynamics. Within the zone there are aircraft maintenance, salvage and storage providers.

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Operating from a purpose built building adjacent to Cardiff airport; the International Centre for Aerospace Training (ICAT) is one of the UK's leading aerospace education and training providers, with a worldwide reputation for excellence. There are also training resources at the nearby University of Glamorgan which offers degree and postgraduate courses in aeronautical engineering and avionics.

In total The Welsh Aerospace and Defence sector employs 20,000 people in 160 companies with a turnover of £5 billion. The strength of this sector has enabled the recent Aerospace Enterprise Zone initiatives to secure the following[20]:

- Cardiff Aviation Ltd decision to locate at St Athan with the potential to create hundreds of jobs in South Wales. Cardiff Aviation has taken a lease on the Welsh Government owned 132,000 sq ft Twin Peaks hangar at St Athan to establish a Maintenance Repair and Overhaul (MRO) operation. As well as maintenance of airliners and other large aircraft for several major and independent airlines, Cardiff Aviation will have facilities to complete the full range of ancillary aircraft maintenance and training activities and has the expertise and approvals to certify aircraft from many jurisdictions, including the USA.
- BAMC has created over 160 jobs over the past 12 months and is set to recruit a further 15 apprentices this year at its facility within the new St Athan Enterprise Zone. The BAMC facility, which carries out heavy maintenance on British Airways' fleet of long-haul aircraft, supports more than 800 jobs in the local area

The continued success of Cardiff Airport is essential not only to safeguarding current commercial activity in the Enterprise Zone but to expand the portfolio of organisations operating in the sector across the region.

4.4.3 Sector Initiatives

The Welsh Government has established support mechanisms to assist a number of sectors important to the Welsh economy. The prospects of some of those sectors would be enhanced by a strong local airport. These include: Creative Industries, Financial and Professional Services, ICT, Life Science and Tourism which perhaps more than the others require a high degree of interaction with international partners, investors, customers and suppliers. For example, in the global Life Science sector, interaction with place like San Francisco and Boston will be as essential as links to London/Oxford and Cambridge. Financial service organisation will exploit links to places like New York, Frankfurt and Hong Kong as well as London. Whilst Cardiff cannot offer direct links to all of these locations; it must be part of the airports plan to begin to serve some of these routes in the medium/long term.

[20] Welsh Government, Enterprise Zone Website, Feb 2013, http://enterprisezones.wales.gov.uk/enterprise-zone-locations/st-athan-cardiff-airport

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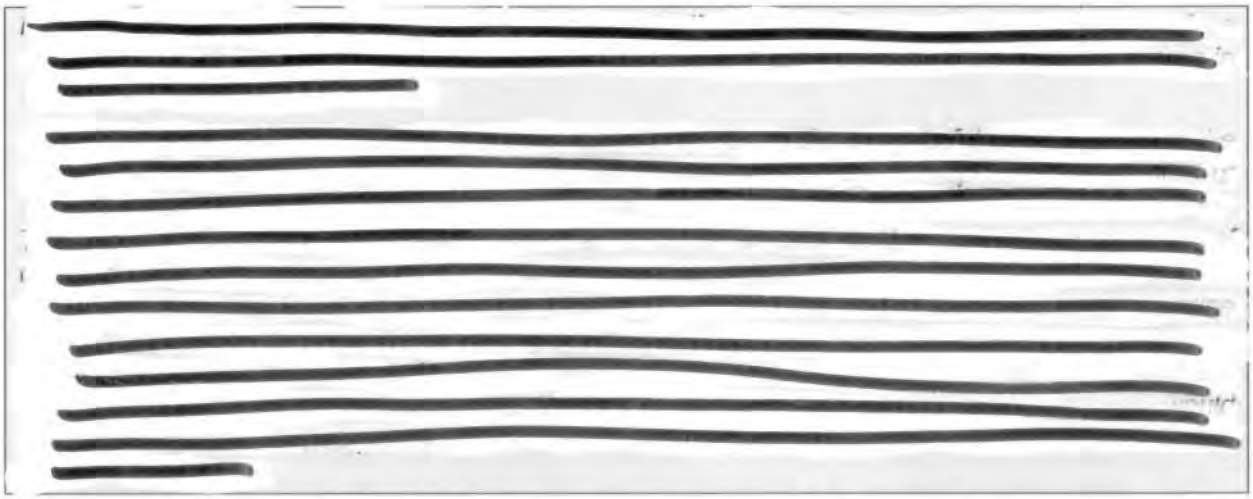
TRANSPORT PROJECTS THAT COULD IMPACT CARDIFF AIRPORT

Airlines look to perhaps fours areas to assess whether to base operations at an airport: catchment area, GDP of that catchment, local taxes and the commercial terms. As regards Cardiff Airport, one area that could be enhanced is connectivity and thereby catchment. This was an area also identified in the 2006 Cardiff Airport Masterplan[21] which identified a need to enhance transport connectivity….



A number of related projects now offer the prospect of addressing many of the issues identified in the 2006 Masterplan and when/if implemented will have a positive impact on the development of Cardiff airport. These are compared in terms of timing and potential impact in Figure 17 and explored in more detail in the following sections.

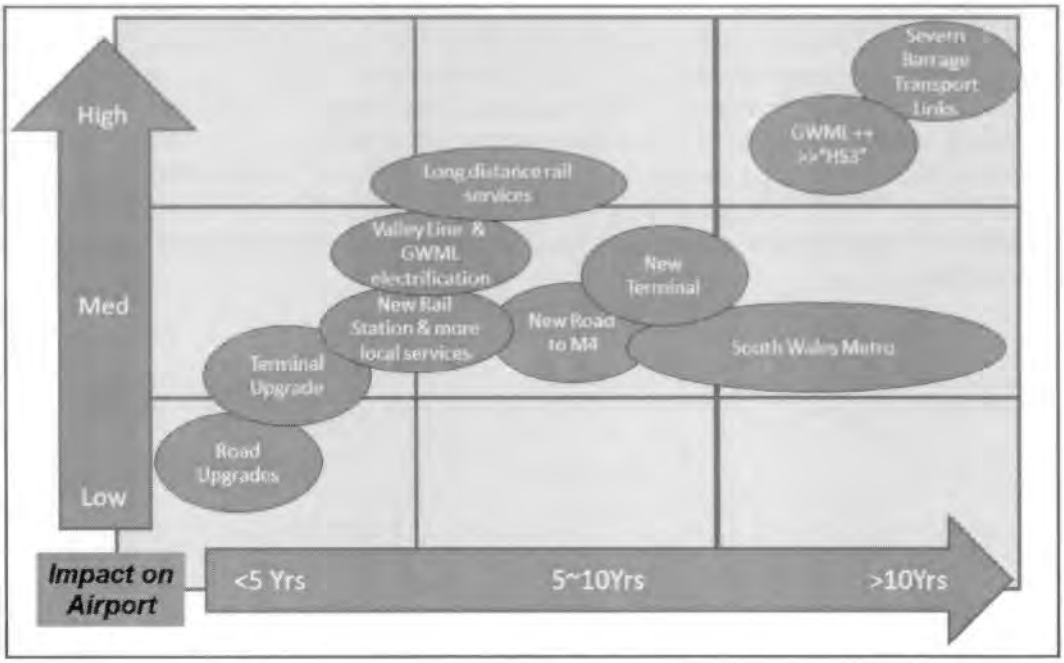


Figure 17 - Comparison of timing vs. impact of a range of related transport projects

[21] Cardiff Airport, 2006, "Cardiff International Airport's Response to the Government White Paper on the future of aviation – Masterplan 2006"

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5.1 Valley Lines Electrification

The investment in Valley Line Electrification provides an opportunity for Cardiff airport. If a new rail station was developed at the airport then VLE would make it possible to connect some/all valley lines services to the airport and so provide a direct public transport link to many parts of the Cardiff City Region directly with the airport.

In July 2012, the Department of Transport announced, in its High Level Output specification for England and Wales[22], its intention to proceed with the electrification of the entire Valley Lines network. This decision represents the most significant rail investment in Wales since the Severn Tunnel opened. More importantly it delivers the first phase of the South Wales Metro. According to Network Rail's Strategic plan[23] VLE should be substantially completed by 2020.

VLE will deliver clear operational benefits for the rail network and these formed the key component of the positive business case. In addition, the investment will also enable faster journey times from the network periphery to Cardiff.

5.2 South Wales Metro

The impact of a "South Wales Metro" on Cardiff airport could be considerable and add to the connectivity provided by VLE. If a new rail station was available at the airport then, with Metro it would be possible to connect all of the Cardiff City Region directly with the airport via public transport. It would increase the local catchment area and make it, perhaps, more attractive than Bristol (which does not have the prospect of a direct rail link) even in Newport and Monmouthshire.

The concept of a "South Wales Metro" was originally set out in the 2011 Cardiff Business Partnership/Institute of Welsh Affairs publication, "A Metro for Wales' Capital City Region[24]". In that report, the Metro concept (See Figure 18) was presented as a catalyst for the development and implementation of a strategic regional plan and focussed on the role of transport in supporting economic development and regeneration. It recommended that plans for major locations should be complementary and contribute to the overall economic performance of the region.

The report was also clear, that whilst transport investment was essential, it could only have an impact alongside a range of complementary interventions including improving education, supporting access to capital and developing a high quality urban environment. The approach also acknowledged the increasing importance of the role of cities in driving economic growth as set out by the likes of Richard Florida[25], The Work Foundation[26] and the European Commission[27].

For the Cardiff City Region, the report presented the primary objectives of future transport investment and how that should be integrated with economic development:

1. Connecting all the major settlements of the Cardiff City Region with a high quality, high capacity "turn up and go" Metro network with <45min journeys to Newport or Cardiff
   - *Valleys electrification will be the core of the Metro*
2. Delivering faster rail services between Cardiff and London/Heathrow
   - *& run some Inter-city services to Cardiff Airport*
3. Facilitating commercial development at locations on the "Metro" network most likely to attract private sector support & investment

22 DfT, July 2012, HLOS for England Wales CP5 (2014-2019)
23 NR, January 2013 " Strategic Plan 2014-2019"
24 Mark Barry/Cardiff Business Partnership/IWA February 2011, "A Metro for Wales' Capital City Region – Connecting Cardiff, Newport and the Valleys"
25 Basic Books, 2002, Richard Florida, "The rise of the Creative Class"
26 The Work Foundation, 2006, "Ideopolis – Knowledge City Regions"
27 The European Commission, May 2007, "The State of European Cities Report"

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– *complementary location, economic & community regeneration plans forthe region*

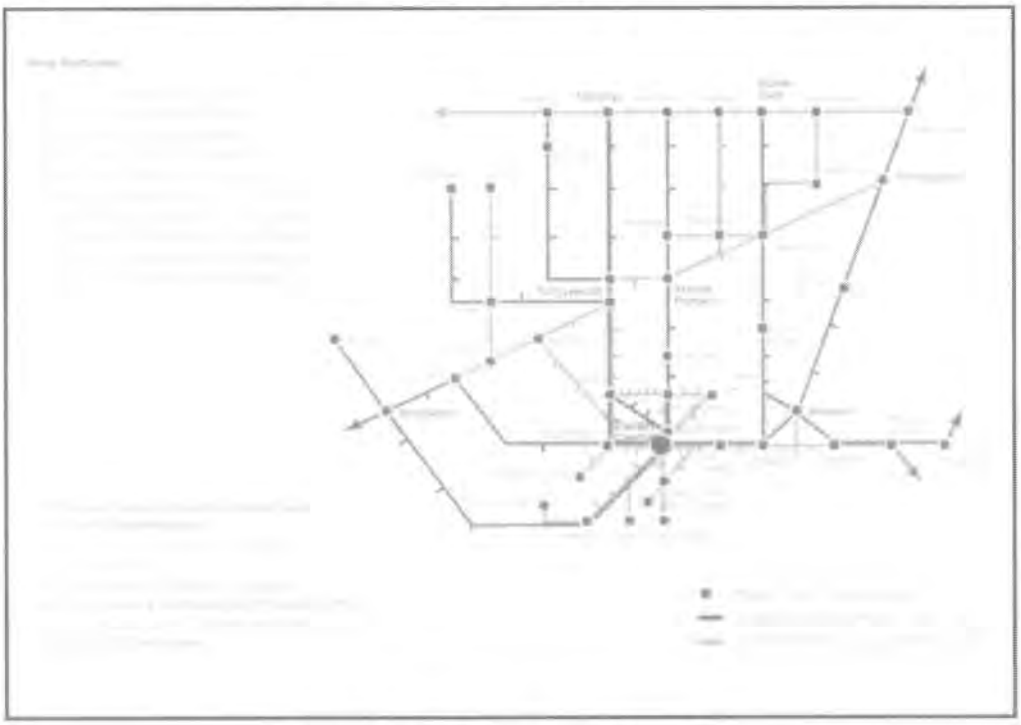

Figure 18 - South Wales Metro Concept Map

Essentially, the report argued that the Metro project should be the foundation of a coherent city region plan for housing, transport and the economy that will benefit 1.4 million people and help reverse a long term decline in the economic fortunes of The Valleys and help Cardiff and the wider city region maker a more significant contribution to the economy of the UK.

In the two years since the report was published, the concept of a South Wales Metro has secured widespread political and governmental support. A cross party motion secured unanimous support for the Metro concept in December 2011 which led to the establishment of the National Assembly's cross party rail working group in February 2012. The Metro concept was also included in the Ministerial statement accompanying the revised National Transport Plan published in December 2011 and in March 2012, The South East Wales Transport Alliance (SEWTA) formally adopted the Metro concept.

At the end of 2012, the Welsh Government established a Task Force to explore integrated transport and the potential of a Metro in South East Wales. An early 2012 Task force exploring the economic potential of city regions also highlighted regional transport – and the Metro concept – as being fundamental to the development of a Cardiff City Region. A new City Region task force set up in December 2012 will also need to acknowledge the potential of a Metro to help the regional economy.

5.3 GWML Electrification

GWML Electrification perhaps provides an even greater opportunity for Cardiff airport than VLE/Metro. A new station at the airport could support services from outside South East Wales and connect directly with places like Bristol Temple Meads, Swindon, Bath, Gloucester, Cheltenham, etc. With a high quality service then the rail catchment area of Cardiff airport could be significantly enhanced. The current 0.4M 1hr catchment could be increase by a factor of 3, 4 or even 5 fold.

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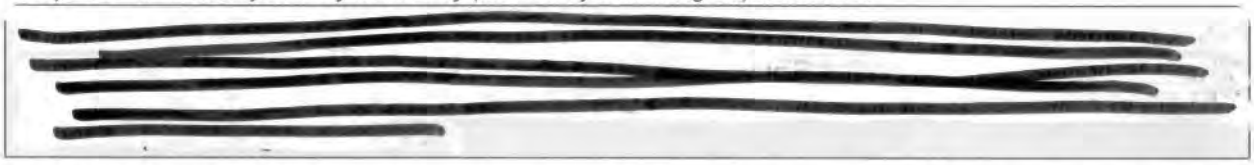

In July 2012, alongside the welcome investment in the valley lines, the DfT also confirmed that the electrification of the GWML will extend to Swansea. This is most welcome and will deliver journey time between Cardiff and London of 1hr 45mins which was in fact the journey time that was available in the mid1980s. More importantly the electrification project will enable a longer term and more ambitions upgrade of service and journey times between Cardiff and London/Heathrow.

5.4 GWML++ to counter HS2

In the longer term a further upgrade of the GWML ("HS3) will bring more people from a far wider geographical area into the catchment of Cardiff Airport. In this circumstances Cardiff airport could begin to attract a significant portion of demand from as far east as Reading. This would be even more likely if new London Hub airport was located to the East or North East of London.

The journey time benefits accrued to other UK cities as a result of the £9Bn WCML upgrade and the step change in connectivity offered by HS2 will result in Cardiff being further away from London than every major English city apart from Newcastle. Both Leeds and Manchester will be less than 80 minutes from London. In fact since 1980 and up to 2032 Manchester will go from being 45 minutes further from London than Cardiff to being 30 minutes closer (See Figure 19).

The DfT have stated that HS2 will bring most major English and Scottish cities at least 30 minutes closer to London and deliver economic benefits in excess of £40Bn with the first phase alone generating over 40,000 jobs. However it seems these benefits are not going to spread to Wales or South West England – in fact there will almost certainly be a negative economic impact.

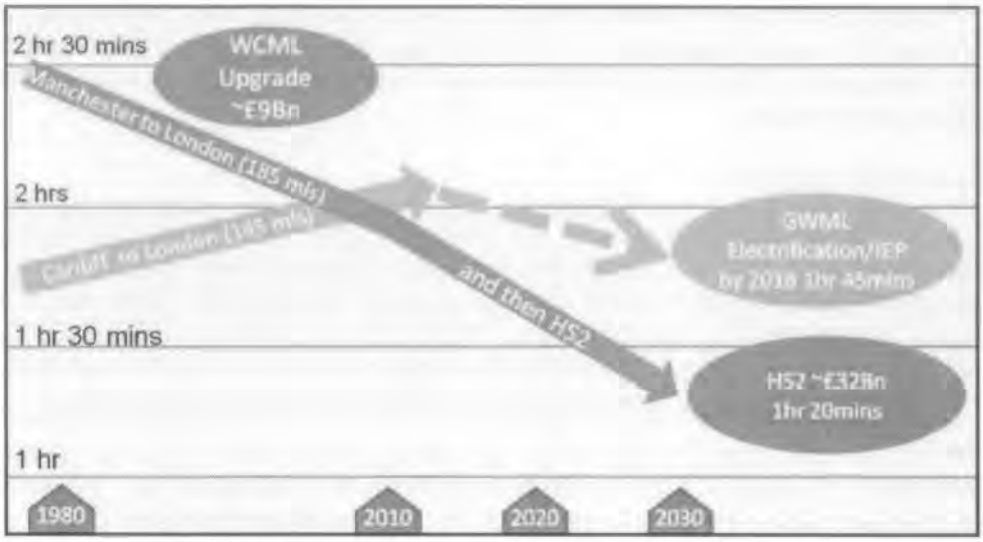

Figure 19 - Journey times to London from Cardiff and Manchester

The analysis of the potential impact of HSR on the economy and regions of the UK, undertaken by Greengauge21and KPMG [28]found that even with GWML electrification Wales would have

- 21,000 less jobs in Wales to 2040
- 0.04 % lower annual growth in Wales to 2040

[28] Greengauge21/KPMG, March 2010 "High Speed Rail in Britain, Consequences for employment and economic growth"),

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- £600 average lower income in 2040.

The impact on the SW England is actually even starker with over 40,000 fewer jobs to 2040.

Evidence that future UK infrastructure spend needs to address this impact in Wales and SW England.

So, for example GWML electrification, could be seen as a first step in long term incremental upgrade of the GWML to essentially create a quasi-high speed line, able to counter the impact of HS2 from London to the north of England.

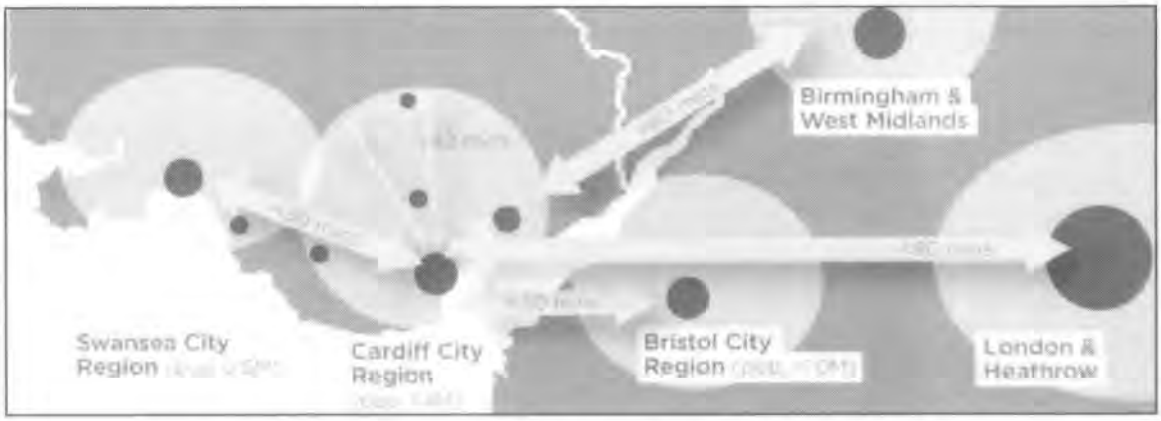

Figure 20 - Enhanced rail connectivity to London, Heathrow and The Midlands by CBP

Details of this approach were set out in "A Metro for Wales Capital City Region", the CBP submission to the Westminster Transport Committees review of High Speed Rail in 2011[29] and by the Great Western Partnership in its Conditional Output Statement (COS)[30]. The aim must be to transform the GWML in to a quasi-high speed line (HS3?) that enables journey times of <80 minutes between Cardiff and London/Heathrow *(See Figure 20)*. In parallel, faster links to the Midlands will also be needed as will a direct link to HS2 going north so that services from South Wales to places like Leeds, Newcastle and Scotland can make use of the HS2 network. Similarly, a direct link between the GWML and HS1 for onward connections to Europe (as will be possible from HS2) are also required.

5.5 New Airport Rail Station

The prospects of Cardiff Airport will be enhanced by leveraging recent electrification announcements to expand its rail catchment area by developing a new high quality station (with check-in facilities if not integrated within the main terminal) to serve the airport and a high quality link to the existing terminal (or integrated within the existing or a new terminal). This would make it possible to attract passengers from outside the airports natural catchment area by providing a direct link between the airport and place like Bristol, Bath, Swindon, Gloucester, etc

The current Vale of Glamorgan (VoG) rail line passes the airport near it southern perimeter at the end of the runway. There is a station at Rhoose where a bus link provides a link to the terminal about two miles away (See Figure 21). However the service frequency on the VoG is only 1tph to Cardiff/Bridgend so, when one adds in the bus link, this does not provide the service frequency or the connectivity necessary to attract many new passengers to the airport.

29 http://www.mgbarryconsulting.com/docs/03072012113816.pdf
30 www.greengauge21.net/publications/great-western-conditional-output-statement

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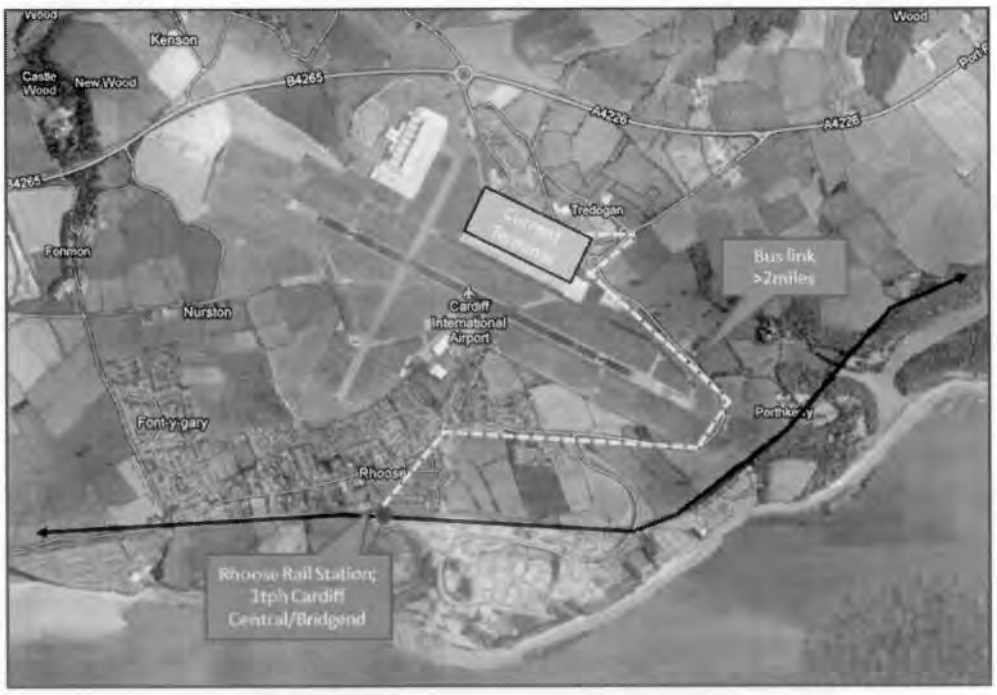

Figure 21 - Current rail link to Cardiff airport

All the scenarios for increasing the rail catchment of the airport will be dependent on a new high quality rail station at the airport itself. There have been discussions related to several schemes. However, the most practical options include:

- New spur from VoG line to existing terminal (See Figure 22)

  Whilst this penetrates the airport directly and so provides a fully integrated transport experience, the location off the main line restricts services; for example it would not be possible to access the airport from the west.

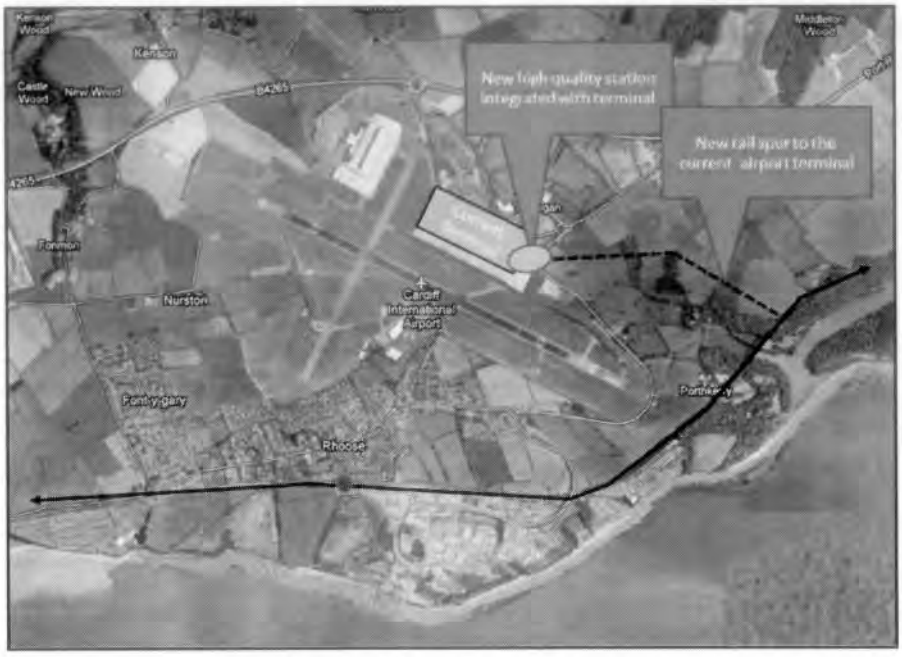

Figure 22 - Potential rail spur to existing terminal

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- New station on current line with high quality link to existing terminal (see Figure 23)

  This provides for greatest rail operation flexibility, but will require a high quality link between the station and the current terminal. The station should also be developed as a satellite terminal and support check-in and bag drop.

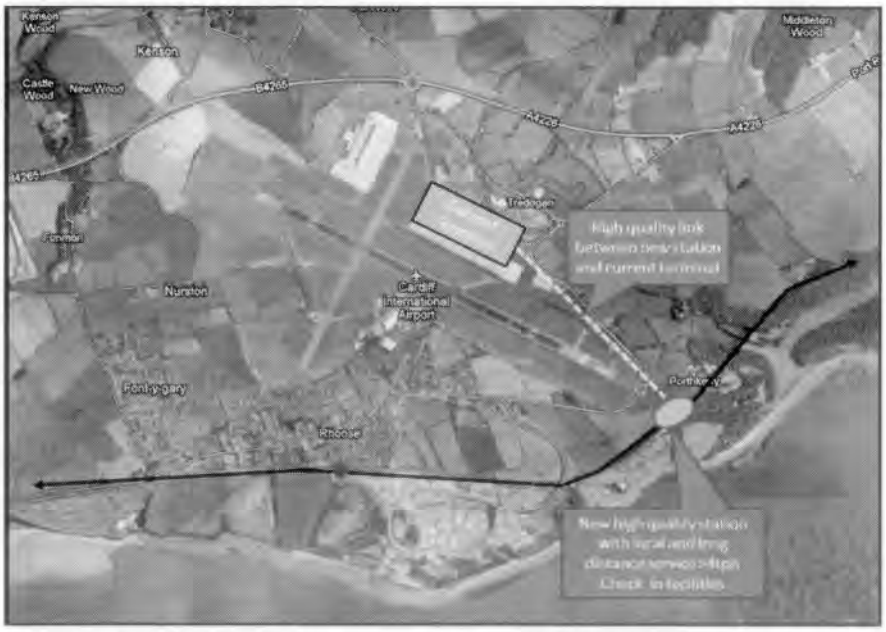

Figure 23 - Potential new station on existing line with high quality link to terminal

- New station on current line integrated with new terminal (see Figure 24)

  This would be the most costly but most strategic investment. A new terminal built on the current rail route would provide a seamless interchange between rail services and the terminal itself. As it is likely to be costly, it is not anticipated that this would be a short term measure - but could be considered in the longer term?

  This could also be phased; a new station could serve the existing terminal as in Figure 23 above, then in future a new terminal could be fully integrated with this rail station. On that basis any plans for a new station and its location on the current line should also consider the longer term potential for a relocation of the main terminal itself.

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Figure 24 - Potential new station integrated with new terminal

Other options that have been discussed related to Park and Ride facilities on the current mainline at J33/34 do not provide the level of integration required and so have not been assessed.

Whilst there is clearly potential to enhance rail access, there are also a number of rail operational issues re: capacity and speed that will need to be addressed as part of any new station development. For example:

- Line speed on VoG line

  The current line speed on VoG line is only 50mph. This means that if mainline trains are diverted via a new station on the current line to Swansea, they will lose time vs. the current mainline. An upgrade to ~100mph would be needed to avoid such journey time impacts.

- Turnbacks

  It is likely that many services from the Cardiff area will stop/turn back at the airport (e.g. if some of the current Barry Island services terminated at the airport instead). However, if the station is on the existing line then additional platforms will be required for turnbacks. This would not be required for a station on a spur (although a spur would almost certainly restrict access from the west)

- Capacity through Cardiff Central

  Whilst more services from the east (Bristol, Swindon, GWML, etc) are desirable, there are constraints to the number of trains that can pass through Cardiff Central to the VoG line from the east; there are also stopping commuter services on the VoG line that any long distance intercity service will need to navigate. Current plans to extend capacity on the VoG to 16tph and the passing loop at Cogan will go some way to provide the operational flexibility required. However, further measure maybe required. For example, Penarth has 4tph on the same corridor, if these could be converted in the longer term to light rail/tram/train and avoid the VoG line & Central then further pathways could be enabled.

These will need to be subject to further and more detailed study of rail access, station design and new services that an airport station could support.

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5.6 M4 road surface access

Whilst road connectivity to the airport is adequate, there is scope for a series of incremental improvements that will help boost its catchment area. In the short term, measures on the existing network will have an impact; in the longer term more radical solutions may need to be considered.

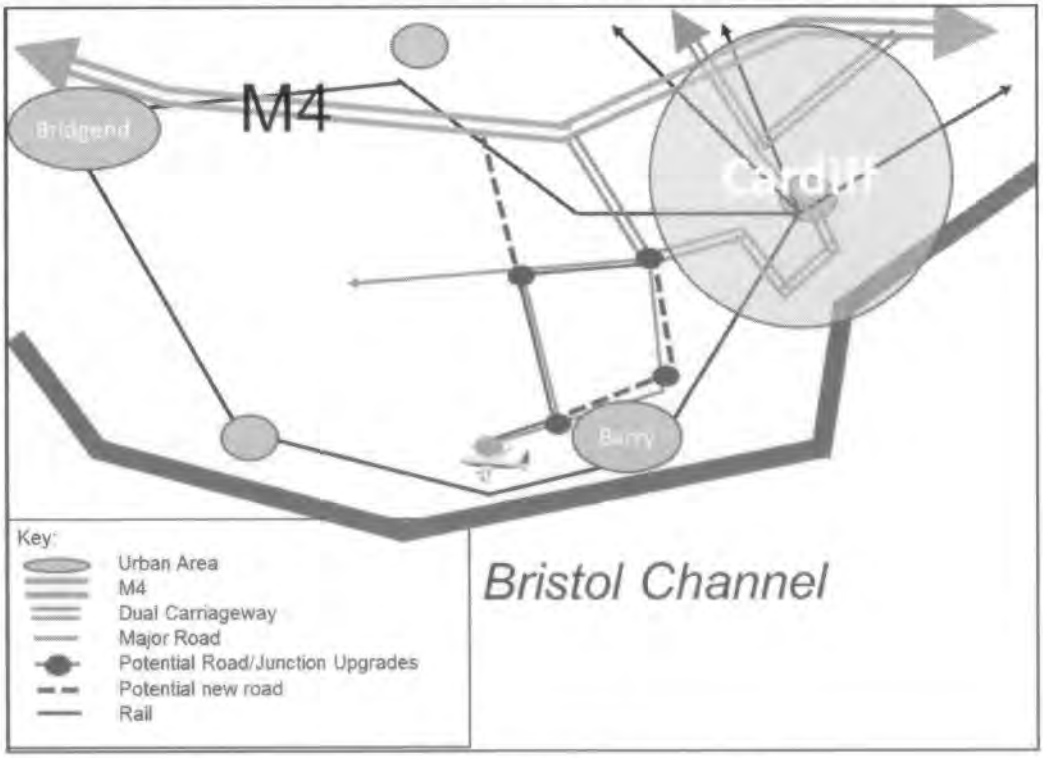

Figure 25 - Current and potential road connectivity

There has been much debate over many years as to the need to enhance road access to Cardiff airport – especially from the M4. Proposals have ranged from a new road from Culverhouse Cross to a series of upgrades and junction improvements to the existing network. There is no doubt better road connectivity will help enhance the prospects of the airport - both in terms of its catchment area and in terms of the image the airport projects.

As part of new development plans for the airport, previous studies and perhaps new options will need to be reviewed. It is also clear that there are a range of relatively inexpensive enhancements that can be made in the short term that can have an impact and that these should progress (e.g. five mile lane improvements) in advance of any consideration of a major new road.

However, even with the current transport configuration, there is no reason why Cardiff airport cannot develop and grow. Bristol airport has similarly challenging surface connectivity but has managed to develop a large range of services and a PAX >5M.

5.7 Bus Links

In advance of the road and rail projects identified, it is possible to implement a high quality bus link between Cardiff Central and the airport. However, this must be viewed as a temporary measure until a high quality rail link is established.

5.8 Severn Barrage Transport Impacts

The potential impact of a Severn Barrage with integrated road and rail links between South Wales and north Devon/Somerset are considerable. Not least the potential catchment area of Cardiff

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Airport (and Bristol Airport for that matter) will be transformed and enable Cardiff airport to attract many more passengers and airlines. This one project more than any other has the potential to deliver a step change in the potential of the airport

More importantly, the prospects for transport links across the barrage (See Figure 26) could fundamentally alter the airports catchment area. Linking Somerset/North Devon to the Vale of Glamorgan, will potentially double the number of people within one hour travel of the airport and position Cardiff Airport at the centre of the SW UK. Given this catchment and upgraded runway and terminal facilities, then Cardiff Airport could support a range of services and routes that are currently not viable. More particularly, this will include many longer haul routes, not least because Bristol airport's runway cannot easily be extended to cater for fully laden long haul jets.

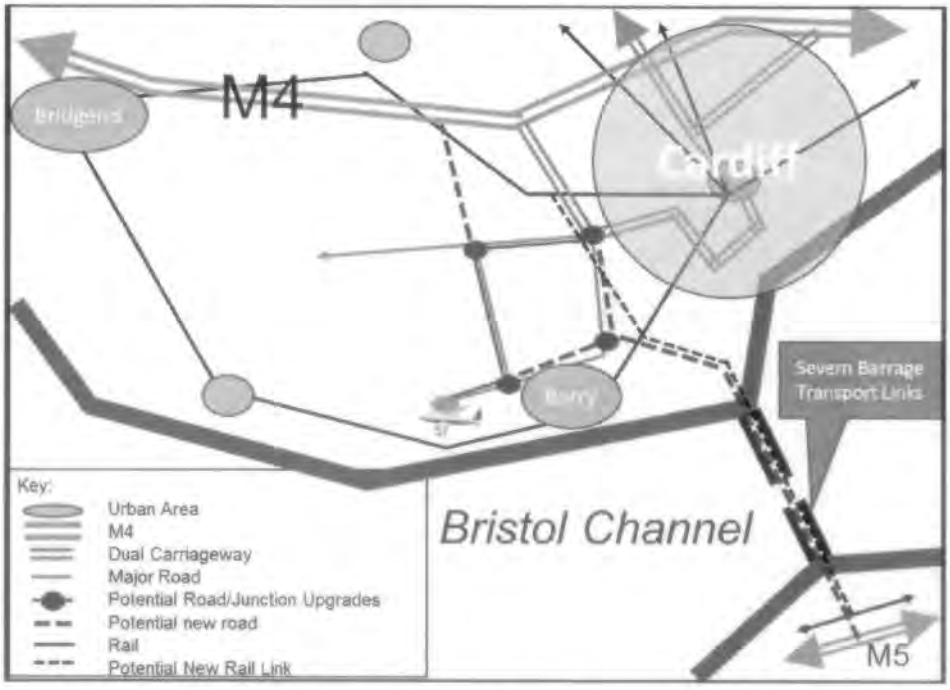

Figure 26 - Impact of Severn Barrage Transport Links

More strategically, barrage transport links could bring Cardiff and Bristol airports within 30 minutes travel time (as they will only be thirty miles apart) presenting an opportunity for the airports to work in partnership?

It is vital then, that plans for Cardiff airport are developed in conjunction with the potential transport links of a barrage and that the Barrage project team are informed by the Welsh Government as it develops proposal and strategy for Cardiff airport. This is essential as the current proposals presented by the Hafren Power state that they are focussed on designing the barrage as an energy project and would need to be engaged by other parties if barrage transport links are to be considered.

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AIRPORT: STRENGHTS, WEAKNESSES AND PUBLIC SECTOR RISK

6.1 Strengths and Weaknesses of Cardiff Airport

In assessing a potential strategy for Cardiff airport one needs to be cognisant of its strengths and weaknesses. From a strategic perspective and in particular when assessed against Bristol, these will include:

Aspect	Strengths	Weakness
Catchment	Could be enhanced with improved surface access	Limited >1hr catchment when compared to Bristol; at that level of travel time then Heathrow also begins to attract passengers
Terminal	Has capacity to handle <8M passengers. Room for growth/development either at current site or other sites in/adjacent to airport land	Terminal is old not and designed for most efficient operations and is in need of refurbishment
Runway	Only airport runway in SW UK that can be extended to enable fully laden long haul flights Current runway longer than Bristol by >200M	N/A
Road Connectivity	Potential for short term incremental improvements to enhance accessibility and catchment	Limited road access – although no worse than Bristol.
Rail Connectivity	Potential to be much better with high quality integrated station – either at terminal, new terminal or via satellite with check-in at station with high quality link to terminal	Limited, current 1tph at Rhoose with "bus link" not commensurate with ambition/potential of airport (Bristol airport has high quality direct bus link to Bristol Temple Meads)
Noise/Pollution	Limited impact as runway approaches over sea or unpopulated land	N/A

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6.2 Qualitative Assessment of Welsh Government's Risks/Benefits re: Airport Purchase

The below table represents a qualitative and high level assessment, of the risks and benefits Welsh Government should consider when reaching a decision on buying airport.

	Buying and supporting the airport	Do nothing
Risks	Costs and financial liabilities in excess of those anticipate Operational and reputational exposure if airport operation leads to on-going losses and lower PAX. Operations of procured 3rd party management service does not align with policy objectives Mismatch between operational and financial management priorities and policy objectives. *Although risks can be managed and lessons from operations at other publically owned airports can be applied (e.g. Manchester, Newcastle)*	Airport continues to operate on low PAX and does not grow – leaking further demand to Bristol and Heathrow Worst case scenario, airport closes with consequential impact on Welsh economy – loss of many direct jobs and those that depend on them. Reputational damage to related commercial activities at the airport and St Athan re MRO as well in sectors where the presence of an airport is desirable attribute Will negatively impact the marketing and profile of the city region
Benefits	Value created through WG investment in the airport can be captured and retained by WG Investment can be aligned and coordinated more effectively with related projects (e.g. road and rail enhancement) Will help in the development and execution of a coherent economic plan for the region	No capital put at risk No reputational risk if purchase does not lead to improved performance
Dis-benefits	Investment in other government projects delayed/deferred	Underperformance of a number of government supported projects, including Convention Centre, Enterprise Zones & Sector initiatives

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NOTES

As part of the work of the Welsh Government initiative to explore the purchase of Cardiff Airport is an assessment of the strategic drivers for public investment in the Airport, with a focus on:

- potential wider economic benefits/risks of public-sector ownership and investment in the airport
- synergies with other major capital investment - public and private - programmes; whether confirmed or in the pipeline
- synergies with the wider transportation network.

Mark Barry of M&G Barry Consulting has undertaken this work as follows:

- Desk research to establish the current operational baseline at the airport (passenger numbers, catchment area, development plans, issues, etc)
- Review a range of committed infrastructure (inc transport) investments in the region that can have an impact on airport performance
- Explore a range of potential infrastructure proposals that could also impact the airport
- Review impact of other related regeneration programmes (Enterprise Zones at Cardiff, St Athan, etc)

This study was undertaken between the 4th February and 20th February 2013

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