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# The Scottish electronics sector

## Introduction

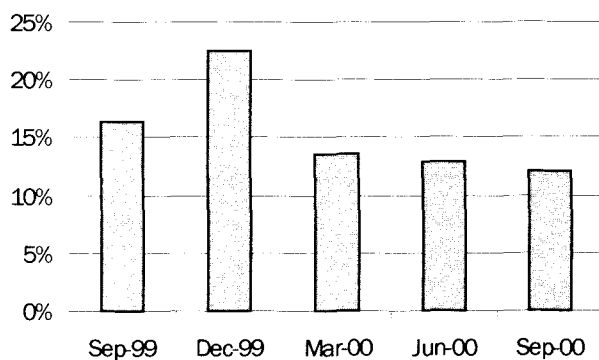
The closure of Motorola's mobile phone plant in Bathgate and the loss of over 3,000 jobs has raised concerns over the future of the Scottish electronics industry. Many other electronics companies have warned of further job cuts on the horizon due to weakening demand. Some have mooted relocation to countries in Eastern and Central Europe where production costs such as labour are a fraction of those in Scotland.

The development of an electronics 'cluster' within Scotland was intended to increase job security, opportunities and value added within the economy. The sector's downturn is therefore bad news for Scottish economic growth. This then begs the questions what are the underlying forces causing the recent developments and do they spell the end for 'Silicon Glen'?

## Demand

Certainly in the case of Motorola weakening demand for mobile phones appears to have been the main factor in the decision to close the plant. Figures from the Office of Telecommunications (OFTEL) show that within the UK whilst mobile phone subscription is rising it is doing so at a decreasing rate. Quarterly growth for the period ending in December 1999 stood at 23% by the end of September 2000 this had nearly halved to just 12%. Even accounting for higher Christmas demand in December, a downward trend is still evident as growth fell by 4.4% in September 2000 compared to the same period in the previous year.

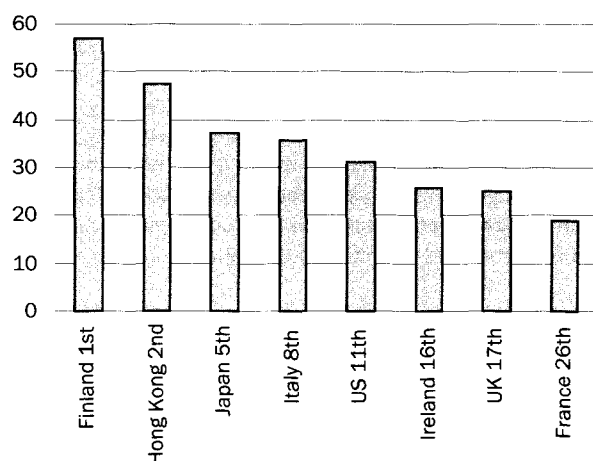
## Quarterly Growth in UK Mobile Subscriptions



Source: Office of Telecommunications (OFTEL)

At some point the market for most new products will reach saturation, that is to say the majority of consumers who want to purchase the product will have already done so. The UK market for mobile phones appears to be reaching this point and thus new demand is beginning to trail off. Of course firms such as Motorola supply not just the UK but a global market. However figures from The Economist show that in 1997-98 countries such as the US, Japan and Italy had more subscribers per head than the UK whilst countries like France were not far behind. This suggests that the global market may also be nearing saturation point.

## Mobile subscribers per 100 people Chart



Source: The Economist, "World in Figures"

A similar story for personal computers (PCs) has been linked to the weakening demand for semi-conductors, which are key components of PCs and other electronic goods. Additionally the current economic climate will not have helped this market as firms, through capital investment, are large purchasers of PCs. With the global economic climate looking uncertain firms may be reluctant to invest in upgrading or purchasing of new IT equipment, see the world economy section for further details.

## Cluster Issues

The premise of cluster theory is simple, a large number of firms involved in the same economic activity locate within the same vicinity. Resources such as equipment and workers could then be pooled between firms. The incentive for resources to become specialised in servicing the cluster will increase. Workers may be willing to undertake specialised training if there are greater specialised job opportunities within the area. Educational institutions may offer tailored courses or assist in research and development. The more specialised local resources become the more attrac-

tive the location will be for firms thus creating a 'virtuous circle' of growth.

Cluster development has been successful across a number of sectors in Scotland, for example biotechnology in Dundee and finance in Edinburgh. Interestingly clustering in the electronics sector has been successful elsewhere in the UK. Based around Cambridge a cluster has developed more affectionately known as 'Silicon Fen'.

The difference between the two electronics clusters can be seen in the table below which compares the average skilled employment in the electronics sector over 1997-99 in Scotland and the rest of the UK.

**Average Skilled Electronics Employment**

<i>Skilled Employment</i>	<i>Scotland</i>	<i>Rest of UK</i>
Professional Occupations	11%	14%
Intermediate Occupations	24%	28%
Skilled Occupations (non-manual)	11%	14%
Skilled Occupations (manual)	21%	21%
Partly Skilled Occupations	31%	23%
Unskilled Occupations	1%	1%

Source: Labour Force Survey (LFS) 1997-99

The table shows that employment within Scotland is skewed toward partly skilled employment such as assembly work. The rest of the UK is more concentrated in intermediate employment such as management and R&D.

This begins to shed light on why Silicon Glen may be in a weaker position than Silicon Fen and thus more susceptible to a downturn in demand. A successful cluster will follow the development process as outlined previously. Many regions both within the UK and across Europe are attempting to establish clusters. Often they will be competing within the same sector, such as electronics.

Winners will emerge which have well-developed links between firms, workers, training and education institutions and government which are difficult to replicate elsewhere. In the case of Silicon Fen managers, scientists and links with Cambridge University would be difficult to copy in another region. Often relationships between businesses and other organisations collaborating in research would be of a highly tacit nature and not easily transferable.

In the development of Silicon Glen the availability of a large, low cost workforce with inexpensive infrastructure attracted firms. This would of course be easier to replicate elsewhere and has been shown by a number of emerging economies such as Poland and the Czech Republic which have many of the same advantages as Scotland but at a far lower cost.

**The Future**

The workforce employed within the electronics sector will continue to slim as demand weakens and other emerging European regions develop their infrastructure and continue to offer lower labour and other production costs. This does not however spell the end for the electronics sector in Scotland. Scotland's educational attainment levels and healthy pool of graduates compare favourably with most of the UK regions and certainly to all of the emerging economies in Europe. Upskilling the activities carried out within the sector to take advantage of these Scottish specific resources will be key to its future.

Many well-developed relationships already exist within the industry. For instance, the Alba Centre links together Scottish Universities with the private sector focusing upon pooling R&D information. As the sector downsizes these linkages and upskilling may help to underpin a smaller but more highly skilled electronics cluster.

Richard Marsh  
14<sup>th</sup> May 2001