

Neweconomywifoproceedigns

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What do we know about the New Economy?

Two general-purpose technologies define the New Economy

Quite a few attempts have been made to define the "New Economy". One indirect approach is to stress the two input factors which increasingly shape developed economies: knowledge-based services and information and communication technology (ICT). Another line is to stress the interrelated changes in technology, organisation and consumption that came up in the last decade of the twentieth century. Paul Geroski offers a third definition which is very nice and easy: he defines the New Economy by the existence of two sectors; for him, "New Economy" is information and communication technology (ICT) plus life sciences. Countries with large shares of these two industries in production and consumption are frontrunners in the New Economy.

A growth penalty of half a percentage point for Europe in ICT alone

Assessing the relative progress of Europe versus the USA in the New Economy, we have to acknowledge that the USA is leading in both New Economy industries. This is well documented for ICT: the share of ICT is higher in the USA relative to the EU in production investment and in consumption. The extent of the US lead versus Europe differs depending on the indicator used, but ranges between a third and a half. The well-known "growth accounting method" calculates the impact of labour and capital on economic growth (labelling the unexplained part as multifactor technological progress). This approach can be used to compute the impact of ICT on growth. It is calculated to have added about 1 percent to US growth in the 1990s, but only half a percentage point to European growth. Thus Europe suffers a "growth penalty" of half a percentage point for its late entry and/or the slow diffusion of this technology in production and consumption. The relative share of life sciences is more difficult to measure. The consensus is that the USA is leading there too, but maybe to a lesser extent than in ICT. Taking the calculations for ICT at their face value and the impact of life sciences conservatively at half of that of ICT, we find that US growth has been accelerated by 1½ percent by these new generic technologies, or half of the trend growth rate of about 3 percent in the USA. In Europe, the impact could be ¾ of a percentage point. And the difference in the impact has the same magnitude as the growth gap between the USA and Europe in the 1990s.

Small European countries keep up with the USA

As Paul Geroski demonstrates, New Economy industries are characterised by pervasive economies of scale, economies of scope and network economies. Therefore it comes as a surprise that it is the small countries in Europe which most closely emulate the USA in the New Economy with respect to the importance of ICT in production and use. For information technology, the leading European countries are Sweden, Finland, Denmark and the Netherlands, and these countries are also surprisingly good in biotechnology. Some economists stress the role of large firms for the position of these countries within information technology, as that of Nokia for Finland, Ericsson for Sweden and Philips for the Netherlands, but this is too simple a view. Nokia had already been a conglomerate with a broad range of production lines less than 15 years before, and electronics was certainly not its largest and most profitable sector. In Sweden, the success of a widespread electronics sector kept the economy growing in years when Ericsson was in considerable turmoil (2002-03). Denmark is a leader in ICT diffusion and biotech clusters without any mega-sized firms.

Government played a decisive role

The progress of the New Economy is heavily intertwined with economic policy. Both technologies started out as public-sector research, both industries are heavily regulated, and in both industries a large share of demand comes from government or semi-private institutions. For information technology as well as biotechnology, national research grants are very important, and deregulation and liberalisation determine the speed of diffusion of new technologies. In biotech and the life sciences, health and safety as well as precautionary regulation and supervision play a decisive role. In all countries, studies and plans were made in the 1980s on what to expect from and how to shape the future information technology societies. In Northern Europe, emphasis was put on identifying targets for kindergarten, schools, and government agencies of when and to which extent to use the new electronic devices, and of ensuring the supply, organisation and use of the infrastructure (broadband lines, etc.).

Liberalisation is necessary, research and education is sufficient

In the European countries currently leading in information technology, the network industries were medium- to above-average regulated in the 1980s, but their regulatory regime today is far more liberalised than that of other European countries (with the exception of the United Kingdom, which, together with the USA, plays "in another league" in this respect; data on product market regulation are published by the OECD). But liberalisation of the product market is not the only success factor by far. Three other conditions have been singled out as decisive for the success of these countries in ICT as well as in their economic performance in general (*Aiginger, 2002*): each of the four countries suffered a severe crisis in competitiveness in the 1980s (Netherlands and Denmark) or 1990s (Sweden and Finland). All are welfare states which were determined to regain competitiveness by increasing productivity by way of a

proactive innovation policy. To put a long story into a single indicator: today the average share of R&D in their GDP is 3.2 percent, well above the European average of 2 percent and well in line with or above the US share. Fifteen years ago, R&D in these countries was lower than the average European rate.

Higher growth but no abolition of business cycles

Some of the predictions as to the consequences of the New Economy were exaggerated. Thus it is accepted and well documented today that the New Economy will not lead to a world free of business cycles. Investment in ICT is cumulative and firms, knowing that other firms will invest too, may push up investment above the optimal rate. In periods of lower profits, investment in ICT can be deferred. Yet we also know that the New Economy has contributed to growth and will continue to do so over the next decade. Production, organisation and qualification have changed irreversibly. We have seen that strategies and policies towards these new technologies differed across countries. This led to a competitive advantage for some smaller European countries specifically in relation to larger European countries, which did not embrace the new technologies to the same extent (notably Germany in ICT and Italy in both new technologies; France and the United Kingdom similarly are not among ICT leaders).

Welfare states need to boost productivity

The decisive proactive role played by the government in those European countries that are leaders in ICT is in sharp contrast to the view that the only role for government in boosting economic growth is to liberalise product and labour markets. Functioning markets are necessary conditions for innovation and diffusion of technologies, but research and education – heavily influenced and partly financed by government – are a sufficient condition for economic growth. The success of the Northern European welfare states in the new general-purpose technologies demonstrates that innovative forces need not suffer from high costs and reduced risk-taking. New technologies were given their boost by the pressure to stay competitive and by the determination to preserve the main elements of the welfare systems.

References

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