

# Chapter 10

## Technology and the Multipolar Global Economy: Implications for European Competitiveness

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### ABSTRACT

*The European Union has engaged in several attempts to increase the level of innovation in member states – largely without success. This chapter argues that a combination of global and regional issues explain this failure. What was once a process dominated by Europe and America, innovation is “going global,” with many countries now developing national innovation systems. European firms are conducting more of their research in emerging markets, and in Europe, firms seem unable to raise their share of overall research and development spending. The Commission, for its part, lacks the necessary regulatory and legislative powers to forge a new regional innovation system and is instead reliant on a policy mix of overarching objectives, some directed funding, and comparative analysis of member state policies.*

### INTRODUCTION

The globalization of production that developed in the latter parts of the last century is now augmented by the globalization of innovation. This process is at once welcome and potentially destabilizing. It is welcome in the sense that it represents a victory for the western liberal economic tradition advocated by the United States and Europe: that a comparatively open, predictable and rule-

based capitalist system remains the best way to spur economic growth and raise living standards. However, in the United States and the European Union there is increasing anxiety that the dispersion of innovative capabilities represents, if not a zero-sum competition between economies, then at least an episode of relative economic decline. While the Kindle is sold by Amazon (an American company) and marketed as an example of American ingenuity, the product itself could not be manufactured in the US. This is not because of

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cost; rather, the problem is that the US economy no longer has the technological capacity to produce the item (Munro, 2010). Aside from the ink the key manufactured elements of the Kindle rely on Asian manufacturing firms. For now, the US dominates the design process, but extensive academic work on innovation suggests that design and production are, in the medium term, tightly interwoven. The tacit knowledge acquired in the production process eventually underpins new innovations at the design phase. Europe shares many of the anxieties seen in the United States. The European Commission has made several high-profile efforts to address the perceived decline in European competitiveness. The Lisbon Agenda, launched in the early 2000's to much fanfare, was effectively abandoned late in the last decade and the Commission attempted to relaunch a European drive to increase the region's position in high technology industries through the Competitiveness and Innovation Framework Program (CIP). The programme had three elements: first, support for entrepreneurs; second, a set of policies designed to generate greater use of information technology in European firms; and, finally, an initiative to promote innovation in sustainable energy supplies. In 2010 a new effort, Europe 2020, was launched, featuring a broader assault on the perceived failings of Europe in the areas of innovation, new business creation, tertiary education and job creation.

Innovation is often envisaged as the lone inventor working in his laboratory, hoping for that crucial breakthrough. Though serendipity can be important, the key to the success of Europe and American innovation was that both actors created systems, comprised of firms, government and other stakeholders such as universities and research institutes. European universities – particularly German institutions – led the world in the developing institutions devoted to scientific research, and linked with German firms, who were among the first to develop in-house R&D facilities (Dosi, et al, 2005:21). American firms were also early adopters of a model where firms

devoted money to research, rather than leave new product development to opportunistic acquisition. American universities were also well funded by a variety of sources – federal and state government, students and philanthropy – and played a crucial role in the ascent of the US to dominance of innovation in the 20th century. Both Europe and America adopted what has been described as the 'linear' model, which presumed a relatively straightforward process of discovery, development and sales, with many held within the firm, or within its control (Chesbrough, 2003). As the name suggests, the model envisaged a more or less linear relationship between basic research conducted at universities, leading to applied work at corporate research and development centres leading to successful commercialisation.

So successful were Europe and America that follower states developed their own innovation systems, borrowing and adapting European and American practice as needed. Japan of the 1980s was the most successful follower state but the new millennium has seen the field of top-quality innovating nations become much more crowded. China is merely the most obvious gainer, with Singapore, India and Taiwan other states that have developed top quality innovation systems. Just as production was globalised in the last century, it seems likely that the 21st century will see the true globalization of knowledge, as many economies develop the capabilities to innovate at the very frontier of a variety of technologies – and are simultaneously dependent on knowledge created elsewhere. This 'networked' technological system poses challenges to state policies oriented around keeping innovative activities confined to the home base.

In both Europe and America, this development has been met with apprehension and even hostility in some quarters. This is because the high-skill, 'knowledge' economy was supposed to be a safe haven for developed economies faced with the loss of manufacturing jobs. Public policy in both economies has focused on the need to enhance the

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