# *Better policies for better lives*

*As the following examples show, the OECD has been a major influence on how governments approach science, technology and innovation, and how economics as a discipline tries to understand these phenomena.*

## National Innovation Systems

In 1963 already, *Science, economic growth and government policy* convinced governments that science policy should be linked to economic policy, while in 1971 *Science, growth and society* anticipated many of today's concerns by emphasising the need to involve citizens in assessing the consequences of developing and using new technologies.

For many experts though, the major contribution was the concept of national innovation systems, presented in 1992 in a landmark publication, *Technology and the Economy: The Key Relationships*. The origins of the concept go back to the 1970s crisis, which had provoked an in-depth re-examination of previous economic thinking on how growth came about and why growth in productivity was slowing. A 1980 OECD report, *Technical Change and Economic Policy*, is now widely recognised as the first major policy document to challenge the macroeconomic interpretations of the 1970s crisis, and to emphasise the role of technological factors in finding solutions, for instance, innovation can be more powerful than wage competitiveness in stimulating an economy.

Economists working at the OECD were pioneers of a new approach that saw innovation not as something linear but as a kind of ecosystem involving interactions among existing knowledge, research, invention; potential markets; and the production process. And contrary to the dominant thinking in policy circles in the 1980s and early 1990s, they also saw it as something that governments should play a central role in – hence the term *national* innovation strategy.

This continues to be the case today, even though we now talk of globalisation rather than internationalisation, and the emphasis of new innovation strategies has now shifted to services.

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## Governance of biotechnologies

Bakers and brewers have been using biotechnologies for millennia, but today scientists are manipulating organisms, and their basic components, with ever greater precision. This raises concerns about the ethics and safety of the new biotechnologies. At the same time, even people who are worried about the dangers may recognise the benefits of better drugs or other products. Researchers and firms developing the applications have additional concerns: they want access to the new knowledge, as well as recognition of their rights regarding their ideas and inventions.

In such an innovative domain, legal precedents for protecting intellectual property may act as a guide, but are often inadequate to deal with the precise issues at stake. In the early 1980s, the debate was often presented as being about the right to patent life. The OECD argued that discoveries regarding chemical processes could be accorded protection as intellectual property. Its 1985 publication *Biotechnology and Patent Protection* became the basis for patent systems in OECD countries and beyond.

Firms then knew that they could invest in developing biotech applications without the fear that a rival would simply use their work without paying. We tend to think of the spectacular side of biotechnologies, but many mundane, but useful applications followed, such as enzymes that allow detergents to work at low temperatures and with far less water than before.

The OECD defined a new framework again in 1986, this time regarding recombinant DNA, and once again governments everywhere followed the lead. However, there was also a risk that too many patents would be granted, giving patent holders too much power. For instance, a company that developed a genetic test for cancer wanted to keep complete control of the testing and the databanks built up while doing it.

The *OECD Guidelines for the Licensing of Genetic Inventions* came out strongly against this, saying that yes, intellectual property should be protected, but it should also be shared. Health benefits should not be restricted by patent protection. Likewise, strict privacy guidelines were defined to protect the rights of the public.

Today, synthetic biology is challenging us to rethink the science of science policy. Synthetic biology promises tools to design and construct new biological parts, devices and systems which do not exist in the natural world, and to redesign existing biological systems to perform specific tasks. The science is so new that we don't have all the answers, but the various guidelines developed by the OECD since the 1980s now provide the framework for biotechnology governance worldwide and offer an approach to dealing with emerging issues that has proved its worth and will no doubt be called on again in the decades to come.

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## Rights and trust in the age of Internet

In 1980, ten years before Tim Berners-Lee developed all the components of what would become the Web, the OECD published its *Guidelines on the Protection of Privacy and Trans-border Flows of Personal Data,* the first internationally-agreed statement of core privacy principles. They address the twin concerns of protecting privacy and individual liberties, while minimising the economic costs of privacy-related restrictions on trans-border data flows. Over the years the *Privacy Guidelines* have been remarkably influential. Today nearly every OECD country has a privacy law, whereas only one-third of members had such at the time of their adoption. And the impact can be seen well beyond the OECD borders: the 21 economies of APEC have also agreed a privacy framework modelled explicitly on OECD's *Guidelines*.

As the Web emerged and Internet began to develop, forward-looking thinkers began to see that the initial vision of the Net's commercial potential as mainly a platform for business to business exchanges could be bypassed if shopping and other activities could be as simple and reliable online as in more traditional forms. Trust is the basis for any commercial transaction, but how can you trust somebody you'll never meet to supply goods you'll only see when (and if) they're delivered? And how can a seller be sure online customers will pay? If there's a dispute, who should arbitrate?

The 1999 OECD *Guidelines for Consumer Protection in the Context of Electronic Commerce* ("*E-commerce Guidelines*") help to ensure that consumers are just as protected when shopping on-line as when buying through more traditional means. The *Guidelines*, which set out the characteristics of effective consumer protection for on-line business-to-consumer transactions, call for global enforcement co-operation among OECD countries and non-member economies through enhanced information sharing on consumer protection issues. These were followed in 2003 by *Guidelines for Protecting Consumers from Fraudulent and Deceptive Commercial Practices Across Borders* and the 2007 *Recommendation on Consumer Dispute Resolution and Redress*.

As new challenges have emerged – email scams or phishing for example – the OECD has reacted to give people tools to combat them. And because the OECD had already worked on consumer issues for many decades, and had experience in adapting to new developments, a lot of the groundwork was already done, enabling governments to move swiftly to get the most out of new technologies.

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## Cheap communications for everybody

In 1985 when Midge Ure was organising Live Aid with Bob Geldof, he didn't have a phone in his flat in London and had to call from the street or from friends' places. Like many other people in the UK and elsewhere, he was on the waiting list of the only telephone company in the country. Calls charges were calculated by distance and length of time. Today, unlimited calls to numerous parts of the world are part of many standard Internet deals, and free calls are available via VoIP. The OECD played a part in this, arguing over the years that by breaking up the big monopolies and allowing different service providers to compete, prices would fall and technological progress would be encouraged.

The OECD's pioneering role in liberalisation of telecommunication markets led to an *OECD Statement of the Benefits of Telecommunication Infrastructure Competition* in 1994. The statement represented a milestone, in that for the first time OECD governments agreed on the benefits of liberalising the sector, even though the majority still had monopolies. In the coming years the sector was rapidly transformed, as predicted, with rapid growth in mobile telephony, the Internet, and broadband. Liberalisation, in turn translated into greater choice and lower prices for consumers. In undertaking this work the OECD also developed a framework for trade in telecommunication services which served as a basis for the agreement on a General Agreement on Trade in Services as applied to telecommunication.