# Future or fancy?

Jonathan Cave, Senior Research Fellow at RAND Europe, examines the European Future Internet initiative as a unifying vision for the continent and beyond…

Since its emergence as the defining technical, social, economic, political and cultural phenomenon of our times, the internet has been suggested as an almost automatic solution for a vast range of problems. Yet its growth and impacts are sensitive to the actions of those with stakes in the 'old' methods of running the world's affairs (especially government and businesses). It is also clearly well beyond their understanding or direct control. The internet is complex, fast-moving and stubbornly unconfined to traditional boundaries. The challenge to governance is not specific to Europe. But the development of the European Future Internet initiative does reveal potentially useful ways to think about policymaking for a world driven by complex and adaptive (or self-organising) systems.

What makes the internet so hard to pin down? A long series of studies have tried to define the 'internet economy' (to take one example) and to apply well-known and tested methods of economic analysis to understanding its structure and performance. All struggle to do so. However
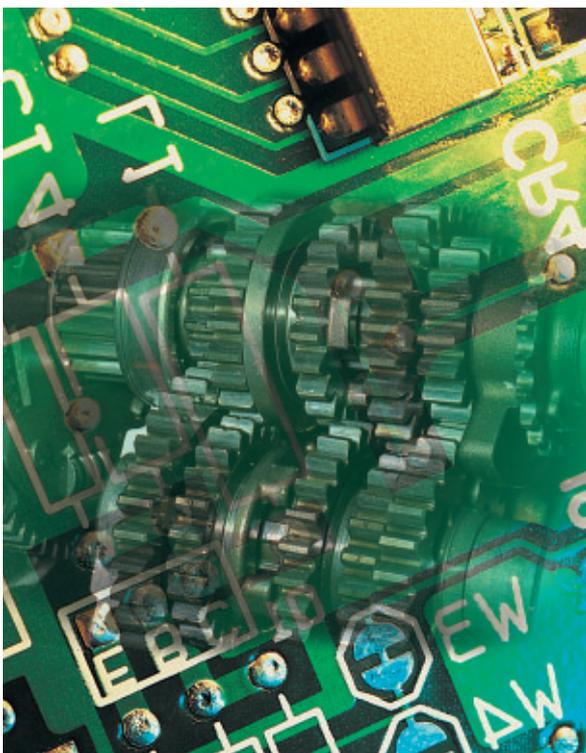

The internet is complex, with its 'component systems' operating in and across many layers

defined, the internet arose from government, technological and societal initiatives, and its transition to the private sector and commercial entities has been prolonged, partial and filled with turbulence. The structures and boundaries used to analyse economic activity (eg firms, sectors, value chains and business models) seem increasingly unstable, artificial and inadequate to capturing the internet's most important developments. Among many examples, new business models based on social networking often crystallise new communities whose collective interests drive developments that cross sectoral boundaries with ease, as shown by recent convergence among search, social network and electronic auction sectors or the growth of a rich ecosystem of cloud-based services. At the same time, many societal problems are pushed 'up the stack' towards automatic and somewhat generic technical solutions (eg Privacy-by-design).

Measurement of the internet's impacts is complicated by the difficulty of capturing important aspects: revenues (value capture) are easier to measure than economic value created. However, only a portion of what is valuable is produced for or obtained on markets, let alone on competitive markets where prices can be deemed accurately to integrate technological possibility, consumer preference and relevant information. The resulting focus on what has been measured can mislead impact assessments.

For instance, analysis of revenues 'shows' that the European internet economy is dominated by its large and concentrated telecommunications sectors. Innovative paid-for services are largely provided by major non-European entities, though intuitively local differences should be more evident towards the end-users' part of the value chain. This may simply be measurement error – the value created by the internet is only partially captured by paid-for communications and other services. But these measurements guide policy and business decisions alike.

Estimates of contributions to GDP may obscure important questions as to whether they are 'embedded' in European economies and how they are distributed. Job creation forecasts tend to concentrate on the quantity directly created by internet-related industries to the neglect of job quality, spillovers on other sectors, or impacts on aggregate employment. Innovation measures
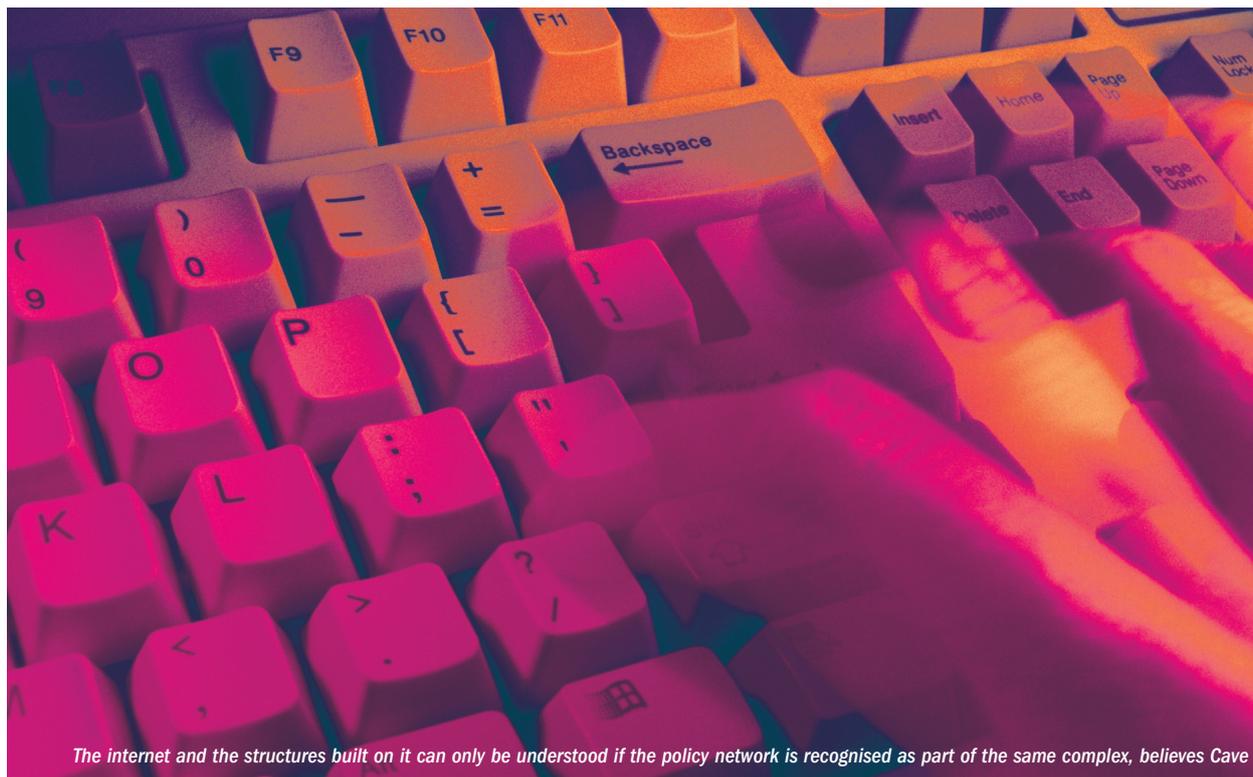
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emphasise indirect indicators such as R&D intensity or patenting over quality, originality and 'generativity'.

Connections among these impacts are even harder to assess: the internet arose from technological and commercial innovation, but the way it connects researchers, practitioners and stakeholders in virtually every field of endeavour facilitates innovation and incites creativity on a far grander scale. These innovation impacts are observed selectively, long after the fact and sometimes far from the original setting. The result is a measurement and conceptual framework better suited to establishing the internet's importance than definitively guiding policy.

Of course, the internet is complex; its 'component systems' operate in and across many layers. Some are quite tangible: communications networks, data centres and specific applications, eg eCommerce, eHealth, and eGovernment. Others are abstract and intangible: networks of ideas; the shifting web of relations among people and organisations; and even individual identity and cognition. This complexity has well-understood consequences. Serious policy challenges persist as a direct result of the inadequacies of traditional command-and-control regulation and predict-and-provide infrastructure and service provision. The Future Internet calls for a more alert and humble engagement where policymakers act as players in the game, with open eyes and open doors, rather than Masters of the Universe. Foregone conclusions – disruption and turbulence are bad, stability and order are good and more information and effective control are always preferred – may no longer apply.

All stakeholders should be continually invited to contribute opinions and actions. Hopeful developments include the qualified endorsement of co-regulation (including 'information as regulation') and the active pursuit of partnerships with industry and civil society by (in particular) the European Commission. Perhaps this was accelerated by crises in the financial network layered on top of the internet. The two are hard to separate; high-speed trading contributes to financial volatility while access to capital shapes the internet's evolution.

But the fundamental implication is clear – the internet and the structures built on it can only be understood if the policy network is recognised as part of the same complex. We must remain alert to emergent threats and opportunities, share responsibility where necessary, and be willing – politically as well as psychologically – to step back from a narrow focus on short-term outcomes, poorly-observed and understood.

Only a broader and longer view of our strategic interests can show us when and how to trust the 'wisdom' of internet self-organisation and the welter of disconnected, contesting and often self-interested activities that drive it. If we fight to subdue the internet and the altered conceptions of democracy and capitalism developing within its frame, we will surely lose. Broadening participation in the UK Future Internet Strategy Group and enhancing its policy role would be a useful step, especially at a time of profound and potentially fragmented policy realignment.

Jonathan Cave
Senior Research Fellow
RAND Europe
Tel: +44 (0)1223 227 596
Jonathan_Cave@rand.org
www.rand.org