Productivity Commission submission: Public Support for Science & Innovation

Innovation in Services

Jason Potts
Senior Research Fellow, ARC Centre of Excellence in Creative Industries, QUT
Senior Lecturer, School of Economics, UQ

The remit of the proposed PC study is 'to focus on the physical and biological sciences with the social science (including the arts and humanities excluded to the extent that they are relevant to innovation.' (p.5) Innovation is in turn defined so as to focus on 'product and process innovation aimed at new or improved products or services … and not limited to R&D but covering all aspects of innovation'.

This seems to us to be a well-intentioned but effectively impossible conjunction that risks excluding the greatest part of the effects of innovation on the economy. Why? Because the service sector is the bulk of the economy (75% by GDP, 81% by employment) with primary and manufacturing sector making up the remainder.

There is a long standing tendency that goes back to Vannevar Bush (1945) to connect physical science to big publicly funded R&D to the production of new physical technologies that become mass produced and mass-market phenomenon (e.g. industrial and petro-chemicals, integrated circuits, etc). Most innovation and technology scholars regard that as a rather outdated way of looking at the world (e.g. see Dodgson et al 2005 ch 2, Freeman and Soete 1997) and see at least five further generations of innovation system since then.

But the other major part of this story is that innovation scholars have also recognized that innovation also occurs in the service sector of the economy as well as in the manufacturing and primary industries. The work of Jeremy Howells, Ian Miles, Stan Metcalfe and Bruce Tether at CRIC (University of Manchester), Faiz Gallouj at the University of Lille, and Paul Nightingale at SPRU at the University of Sussex, David Gan and Amon Salter at Imperial College and Mark Dodgson at the University of Queensland for example, have long argued this point which is now becoming increasing well recognized and studied (see OECD 2001, 2005).

However, innovation in services is not identical to innovation in primary and secondary industries. First, R&D expenditure and public laboratories are much less important. Instead, the use of ICT and the importance of skilled labour (and the flexibility of labour markets in this regard) plays a much greater role in the innovation process. Further, entrepreneurship (as the starting of new firms) is far more significant driver of innovation

in services than in even breakthrough science. All these difference have been highlighted by a raft of recent studies (led by OECD studies based mostly on surveys of barriers to innovation) that have been replicated in many different countries (including Australia).

The crucial point I wish to make in submission is that the terms of reference ('physical science and engineering', 'not just R&D' etc) do seem to point in the direction of overlooking both the significance of innovation in services and the contribution of innovation in services to economic welfare and growth.

A perhaps central point that innovation surveys have revealed is that innovation in services also has significantly less interaction with public funding bodies such as grant agencies, tax relief or university research. There are many reasons for this, but among them are relatively weak opportunities and institutions for developing such public support. The value of improved linkages in an innovation system should certainly be worthy of investigation. It seems then, that the PC might usefully seek to investigate the nature of innovation in services (including health, education, finance, transport, etc) specifically towards the **opportunities** for public support and also the effectiveness of such support, and in particular the role played by services innovation in a growing and structurally changing economy. At very least, this would provide some grounds for comparison against the overtly physical science-innovation link implied in the PC's remit to focus on R&D expenditure, number of 'scientists' or active laboratories, number of patents generated, etc.

The Centre of Excellence in Creative Industries at QUT has developed an extensive database on innovation in the creative industries (and especially for digital media, See also the *Creative Industries Cluster Study* vols. 1–3, DCITA) that may be of use for case studies in the service industry. For information about the database and recent analysis, contact: p.higgs@qut.edu.au.

REFERENCES

Bush V (1945) Science: The Endless Frontier. A Report to the President by, Director of the Office of Scientific Research and Development.
Dodgson M, D Gann and A Salter (2005) Think Play Do. CUP.
Florida R (2005) The flight of the creative class.
Freeman C and L Soete (1997) Economics of Industrial Innovation. CUP.
Gallouj F (2002) Innovation in the service economy: the new wealth of nations. Edward Elgar: Cheltenham.
Gallouj F, O Weistein (1997) 'Innovation in services' research policy, 26: 537–56.
Metcalfe JS, Miles I (eds) (2000) Innovation systems in the service sectors: Measurement and case study analysis. Kluwer

OECD (2001) Innovation and productivity in services.
OECD (2005) Enhancing the performance of the service sector.
Tidd J, F Hull (eds) 2003) Service innovation: organizational responses to technological opportunities and market imperatives. Imperial college press.