

Paola Roberta Boscolo

PhD Candidate Imperial College Business School, London, UK
Affiliate CeRGAS Bocconi, Milan, IT

Contact details:

Paola Roberta Boscolo

p.boscololo-chio-bisto13@imperial.ac.uk

+4407462708765

Keywords: Innovation cycles, abandonment, re-adoption, healthcare

Relevant for the following key conference topics:

Health care and technologies funding

Evaluation of health policies

Ageing, savings and retirement

Oral, PHD paper

Interested in the "AIES Young Researchers Award"

Revisiting the innovation journey. The case of home-based renal care

Theoretical Background

Almost fifty years ago prominent scholars introduced the concepts of technology discontinuities, technology paradigms and dominant designs (Abernathy and Utterback, 1978; Abernathy and Clark, 1985; Dosi, 1982; Anderson and Tushman 1986) to discuss how incremental or breakthrough innovations follow one another over time, changing the way technology developers, adopters and users operate. These models became prevalent in research (e.g. Klepper, 1996; Tushman and Rosenkopf, 1992; Utterback and Suarez, 1993) and assume a cyclical abandonment and replacement of different dominant designs, consistently with Schumpeter (1934) idea of creative destruction. These concepts are still relevant today, although some limitations of those models have not been addressed yet.

It has been acknowledged that technology evolution is only one part of the story, with innovation trajectories being the results of complex interactions between technology, social and institutional factors (e.g. Teece, 1986; Utterback and Rosenkopf, 1993; Katz and Shapiro, 1985). Nevertheless, most diffusion studies concerned with mapping the diffusion over time of innovations felt short in representing the complex nexus of interaction between technology and contextual factors. In addition, researchers have long highlighted the pro-innovation bias of technology innovation studies, i.e. the fact that they focus only on successful innovations (Gopalakrishnan and Damanpour, 1997; Kimberly, 1981; Abrahamson, 1991; Rogers, 1995). This has been observed also in the healthcare context (e.g.: Rye and Kimberly, 2007; Robert et al., 2009).

There have been few studies (Apodaca, 1952; Bikhchandani et al., 1998; Burns and Wholey, 1993, Rao et al., 2001) on the abandonment of innovations that were initially promising but then proved to be ineffective. Most of these cases confirmed the concepts of technological paradigms and 'dominant design' and technologies' displacement, that is the case of a better technology replacing the older one. Very few studies looked at the diffusion of inefficient innovation or the un-diffusion of efficient ones (Abrahamson, 1991; Greeve, 2011). After reviewing the literature, I found almost

no studies investigate the concept of re-adoption, that is why and how an old innovation was abandoned in favour of other alternative solutions but is then revived again.

Objectives

My study aims to resurrect the interest in studying the micro-phases of innovation life-cycles that do not necessarily culminate with stabilization of an innovation or its abandonment but could admit the revival of a previously abandoned innovation.

Methodology

My research combines an analysis of the field-level technology and policy evolution, starting from the origins of RRT in 1960s, with a hospital multiple case study project. This second part of my study aims at understanding how hospitals, in a selected and representative national health system, experienced different technological trajectories locally.

By investigating the science, technology, policy and organizational dynamics around the innovation journey of home-based dialysis, as well as other RRTs, the paper identifies ways in which the research literature on technology paradigms, substitution, and dominant design may be revived by including a more comprehensive theory of innovation abandonment and re-adoption. This has implications for theory, as well as practical implications for the renal care industry, the healthcare sector, and the broader society.

Preliminary results

The case of dialysis confirms that innovation diffusion is all but a one-way phenomenon, and a good exemplar of how the interaction between technology and contextual socio-political and institutional factors play out. The diffusion of home-based dialysis picked-up even when the technology was relatively rudimentary and the evidence in its favour limited or at best contested, yet its adoption is much lower now when technologies are safer, smaller and cheaper, and the clinical and quality of life evidence much stronger.

The drivers of abandonment therefore appear to be different from traditional drivers of adoption (Rogers, 1962, 1995): home based dialysis hasn't been abandoned

because of its lower competitive advantage compared to hospital in-centre dialysis, or because it was incompatible with complementary technologies and practices; its complexity actually reduced over time with learning and accumulating medical practices.

Disengagement from forms of home based renal care appears difficult to justify, given the strength of evidence for technologies' cost-effectiveness (Walker et al., 2014) and declared patient preferences (Tong et al., 2013). Moreover, the direction of travel for many healthcare services generally is for their devolution from costly settings – hospitals – into the community, including patient's homes.

(4954 characters)