Chapter 32
The Commercialisation and Adoption of Emerging Technologies:
The Role of Professional Service Firms

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ABSTRACT

Professional Service Firms (PSFs) are organisations that may support technology firms and play a role in taking new or emerging technologies through the commercialisation process including developing competitive strategies and facilitating the business development activities. The focus of this chapter is how PSFs influence the commercialisation and adoption of new or emerging technologies which is examined through three case studies: Telemedicine; Wearable Technology and Mobile Services. They can either assist vendors through the commercialisation activities directly or indirectly by aiding with networking aspects. Further, PSFs may facilitate knowledge transfer from specialised research centres (either university or commercial centres) or spin-off firms (from established technology companies).

INTRODUCTION

Professional Service Firms (PSFs) are organisations that may support technology firms and play a role in taking new or emerging technologies through the commercialisation process including developing competitive strategies and facilitating the business development activities. Toward this, PSFs may facilitate knowledge transfer from specialised research centres (either university or commercial centres) or spin-off firms (from established technology companies). Knowledge transfer of implicit knowledge is not easy in practice as it can be hard to articulate knowledge such as that which has been accumulated by R&D personnel over time (Cummings & Teng, 2003).

Technological innovations may originate from the development of new technologies by a firm through R&D (research and development) activities by a firm's own in-house staff. This approach where new products are provided to the market based on a firm's development activities is known as 'Technology-Push'. For these types of products there is a need for substantial marketing promotional activities which may need to start by influencing those with industry prominence such as industry experts and market analysts given that a product is relatively unknown at the early stages when it has not yet realized successful commercialisation. PSFs can be helpful here as they are likely to have more familiarity and credibility with those experts.

The alternative approach to developing technological innovations is where there is a need identified by the market (often in the form of an issue or problem), referred to as 'Market-Pull' and here the marketing focus may shift to emphasizing a firm's strengths; its origins (or legacy) and competitive position. The role of PSFs in this case is likely to be more 'behind the scenes' in terms of advising their clients on potential positioning strategies based on their sector knowledge including likely trends.

The focus in this chapter is how PSFs influence the commercialisation and adoption of new or emerging technologies. Increasingly high technology firms are looking towards 'networked R&D' (research and development) as a means of enabling them to undertake the design and development of their next generation of products. PSFs can play a role either directly with the high technology firm (their client) or indirectly by aiding with the networking aspects. PSFs of primary interest here are engineering consultancies that are organisations which are more specialised than management consultancies that tend to have a broader remit.

BACKGROUND ON EMERGING TECHNOLOGIES

Emerging technologies are defined as "science-based innovations that have the potential to create a new industry or transform an existing one" (Day et al, 2000, p2). The challenge for technology firms is to recognise the emerging technologies which may affect their sector and business and develop strategies to address this. Committing scarce resources can be difficult for firms particularly given the uncertainties typically associated with emerging technologies where there may not only be technology or engineering limitations but also uncertainties in terms of consumers and their perceptions of risk (Binder et al, 2011).

The importance of emerging technologies cannot be underestimated particularly in cases where they supersede the existing dominant technology in an industry sector. Firms that do not react to system changes or technological innovations may find their market position threatened as they lose competitiveness. This is the basis behind the pressure on firms to keep up with technological transitions and upgrade or modernise their processes and technologies. Established technology firms may recognise that emerging technologies have the potential to displace their existing technology base (and working practices), however there can be uncertainty over which potential emerging technology is likely to succeed (Srinivasan, 2008).

The increasing technically complex nature of products increases the technological and management challenges of commercialisation necessitating the need for vendors to develop processes to consolidate best practice of their business development activities as well as accommodate new practices. The interaction with PSFs during the business development activities can aid technology vendors to determine the viability of a new business venture as well as operationalize their business plan. Such activities need to take into account the expertise and resources available at different locations since innovation activities

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