

Guest editor's introduction to the special issue: entrepreneurship and strategic management in new technology based companies

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Why a Special Issue on business models for new technology-based companies? We came together as guest editors through mutual awareness of each other's work on internationalization of new ventures and a shared interest in new high technology ventures. It transpired that we had all noted how inter-related the processes of internationalization, innovation and venture creation are in high technology new ventures and the variety of business model designs that were emerging to accommodate early and rapid internationalization alongside those other growth processes. From our field studies in Italy, US and UK, respectively, we were aware that the “business model” and “business model design” had become key challenges for management particularly in industries characterized by new and emerging technologies such as biotechnology, and to our knowledge at that time, the literature

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on business models appeared under-developed, fragmented, and advancing at a speed somewhat slower than developments in business practice. Emerging industries, most of which are technology based, represent a pivotal field of analysis which permits scholars to explore the embryonic and innovative business models established by entrepreneurs and firms to meet the challenges of rapid technological change, environmental turbulence and globalization. With these thoughts in mind we hosted two almost parallel events to stimulate discussion and foster potential collaborations on the theme of emerging technologies and business models for internationalization. On 21st April 2008 the Centre for Internationalization and Enterprise Research (CIER), University of Glasgow, Scotland hosted an international seminar for business and industry entitled “Life-Science New Ventures: International Start-up and Development” and on 23rd November of the same year the CrESIT-Assobiotech Workshop on “Business Model for Biotech”, was held in Varese on the basis of which the Journal of Management and Governance proposed this Special Issue dedicated to “Entrepreneurship and Strategic Management in Life Sciences. Business Models for High-Tech Companies”. Papers were submitted in response to a competitive call for papers and selected on the basis of the journal’s normal review procedures and policy.

Our primary purpose for this special issue was to assess and evaluate extant knowledge on the strategic design and management of business models and business model innovation. The literature we conducted and which is presented as a position paper in this issue (Onetti, Zucchella, Jones and McDougall-Covin) indicates that the constructs of a business model and its relationships with strategic design and management represent a relatively recent field of investigation. Literature on the topic is still fragmented and lacks any clear conceptualization. In the last decade the emergence and rapid growth of science based industries have accelerated the need for new and innovative business models and provide a promising context for research on this subject. Business modeling is an essential construct in competitive positioning and in value creation for new technology based firms and constitutes the key element of their strategic design. For these firms, strategic decisions and growth processes are characterized by a deep inter-relationship amongst the processes of *internationalization, innovation and entrepreneurship*; processes which have tended to be examined independently in distinct bodies of literature. In practice strategic decisions concern each of these processes and address issues such as organizational boundaries, location of the operational activities, what activities to focus on and selection of value partners. The business model by which firms operate needs also to accommodate the spatial dimensions indicated by globalization; and the emergence of global technology markets. Little is known to date about the extent to which business models are adapted to or accommodate internationalization, innovation and entrepreneurship. For those reasons, our second purpose for this Special Issue is to explore the distinctive imperatives of new technology based and, in particular, life sciences strategic management addressing the relationship between business model design and strategic management and exploring the links with *internationalization, innovation and entrepreneurship*.

In the position paper we present a review of the business model literature from which a generic business model framework is derived, identifying and introducing

the main elements of these processes as the firms' focus, modus and locus. Accordingly, *we define the business model as the way a company structures its own activities in determining the focus, locus and modus of its business* (Onetti et al. 2010). This contribution makes a clear distinction between the architecture of the business model and its strategic elements and highlights the relevance of location decisions—not considered by extant business model literature to date. While the discussion draws on the high technology new venture as our primary example, we believe our business model conceptualization has general applicability.

The importance of the geographical dimension is highlighted by David Audretsch and Taylor Aldridge. A number of previous studies have examined why some scientists engage in entrepreneurial activity in the life sciences while others do not. However, these studies have generally not incorporated the impact that social capital plays, which has recently been found to be a key ingredient in entrepreneurship. Audretsch and Aldridge link not just social capital to scientist entrepreneurship in the life sciences, but also to identify whether the geographic dimension of that social capital, in particular transnational social capital, contributes to scientist entrepreneurship.

Business model affects the firm's collaboration incidence. Raphael Greiner and Siah Hwee Ang investigate the linkages between business models and collaborations for biotechnology firms. Specifically, they compare inter-firm collaboration conducted by biopharmaceutical firms adopting different business models.

The processes of innovation and internationalization are deeply intertwined. In particular, the extent and quality of the R&D effort (both internal and external) impacts the internationalization intensity of firms. Alfredo D'Angelo, working on a sample of Italian small and medium size firms operating in the high tech settings within the manufacturing industry, analyzes the influence of innovation measures on the export intensity.

Business model defines the modus operandi with regards to the internal organization and network design. Cristina Simone and Luca Proietti introduce a model for assessing the openness degree of knowledge governance strategies (“wholly proprietary” versus “wholly open”) and apply it to the biotech firms based upon empirical evidence from their research in the field. Fabio Sorrentino and Francesco Garraffo discuss how experience in previous alliances, repeated partnerships and tight relationships have positive effects on R&D productivity and affect the business models of biotech firms. Conversely rigid governance structures and public R&D subsidies have negative effects on such productivity.

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Reference

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Patricia P. McDougall-Covin is the William L. Haeberle Professor of Entrepreneurship at Indiana University's Kelley School of Business. Her path breaking research on born global firms pioneered the growing field of international entrepreneurship. She and her co-author, Benjamin Oviatt, were presented the JIBS Decade Award for their 1994 article on the early internationalization of new ventures. The award is given to the article that has had the most significant impact on international business research during the past decade. McDougall has been an active developer and presenter of executive programs for companies as well as has consulted on strategy with multinationals, entrepreneurial firms and not-for-profit organizations.