0495

Diversification versus Specialization in Knowledge Exchange Strategy: A Dynamic View of Ambidexterity in Universities.

Abhijit Sengupta[1], Federica Rossi[2]

[1]*University of Kent, Canterbury, United Kingdom* [2]*Birkbeck, University of London, London, United Kingdom*

Research Domain: Management, leadership, governance and quality (MLGQ)

Abstract: This paper examines how changes in the relative importance of knowledge exchange (KE) in their overall portfolio of activities triggers moves towards diversification of their KE strategies. Using a 8-year panel data of UK universities, we find that as a university's proportion of KE income increases, it becomes more specialized in its KE profile. On the other hand, as the proportion of income from research increases, the university increasingly diversifies its KE activities. We also find that the existing levels of tangible and intangible assets that the university possesses moderate these dynamic relationships. The move towards diversification or specialization tend to be more pronounced for universities with narrower knowledge bases (intangibles) and smaller asset bases (tangibles), and vice versa, that is smaller and narrow based universities are more responsive in adapting their KE portfolio than larger and broad based ones.

Paper: Universities are increasingly being looked upon as ambidextrous organizations, where they are simultaneously expected to explore the frontiers of knowledge through basic research, and at the same time, exploit this knowledge to create impact, both for the benefit of the wider society and for non-academic stakeholders for whom this knowledge has commercial value (Ambos et al., 2008; Sengupta and Ray, 2017b). While the exploration function has traditionally been a part of universities' core mission of research and teaching, it is only recently that the exploitation function - collectively referred to as Knowledge Exchange (KE) in the literature - has become a central feature in many universities (Ambos et al., 2008; Chang et al., 2009; Chang et al., 2016).

A key factor that encourages universities to evaluate KE much more strategically than in the past, is the gamut of significant changes in the public funding model of basic research (Bhattacharjee, 2006). In many countries, public support for basic research (and education) is gradually being reduced, and universities are being encouraged to reduce their dependence on these in favour of private sources (Muscio et al., 2013; Rosli and Rossi, 2016; Strehl et al., 2007). The latter includes income from private donations in some cases, but a more widespread source is KE, in the form of licensing of intellectual property, research contracting, provision of consultancy services, provision of executive education courses, and so on. Furthermore, the allocation mechanisms for public funding have changed, with an increased role of performance-based funding allocations, which concentrate funding at the top of the rankings, leaving middle and low-ranking institutions particularly vulnerable to uncertainty (Rosli and Rossi, 2016).

There is also growing evidence that universities are increasingly treating the exploitation function strategically, thus allocating resources, designing incentives, setting up internal mechanisms and processes to enhance KE, and generally taking a longer-term view of KE as an organization (Sengupta and Ray, 2017a). But not much is known about the dynamic impact of external and internal changes on the way a university's exploitation function has *evolved*, particularly around how KE is structured, strategized and executed (Uyarra et al., 2019). While it has been shown that increasing reliance on private funding changes the nature of universities' research activities and may encourage short termism (Archibugi and Filippetti, 2016), much less is known about how the exploitation arm reshapes itself in response to its own increasing relevance from a strategic point of view. The present study is one of the first to address this research gap, by analysing how universities' increasing dependency on its own exploitative function impacts its KE strategy.

While previous research has examined the dynamic interlinkages between KE and research in terms of overall output, there is little understanding of how KE evolves strategically over time. This is crucial, both from a theoretical and practical perspective, as ambidexterity as a concept is closely aligned with the *dynamic capabilities* of organizations, and the latter has been shown to be critical for long term survivability and prosperity of organizations (O'Reilly and Tushman, 2008; 2013; Teece et al., 1997). From a university's perspective, this implies that as its KE and research capabilities develop and mature, it may possibly wish to reconfigure its future KE strategies and develop new competencies in response to changing realities around both these functions underpinning ambidexterity.

Building on an eight-year panel dataset collecting publicly-available information about universities in the United Kingdom (UK) – where policy changes in recent years have increased the potential volatility of universities' sources of income – we examine how changes in the *relative importance* of exploration versus exploitation functions triggers moves towards diversification versus specialisation in KE strategies.

The findings reveal that as a university's exploitative function matures and becomes increasingly important relative to others, it becomes more specialized in its KE profile. On the other hand, as the exploratory function grows in relative importance, the university increasingly diversifies its KE activities. In both cases, we see similar results for the portfolio of KE channels as well as the portfolio of external stakeholders it engages with. We also find that the availability of tangible and intangible assets within the university moderate these dynamic relationships significantly. The relationships tend to grow stronger for universities with narrower knowledge bases (intangibles) and smaller asset bases (tangibles), and vice versa. Generally, those universities which are relatively smaller and/or with narrower knowledge bases are more *responsive* in their KE strategies to changes in the relative incomes from their exploitation and exploration functions, whereas bigger more broad-based universities are less so.

A limited amount of previous research shows that such realignment is linked to the way it is structured (centralised versus devolved) (Bercovitz et al., 2001; Sengupta and Ray, 2017a), to how its located (internal versus outsourced) (Sengupta and Ray, 2017a). Crucially, quite a few papers have examined the choice of KE channels, in particular the role of individual, departmental and organizational antecedents on the choice between commercialization and various forms of engagement (D'Este and Patel, 2008; Geuna and Rossi, 2011; Lockett et al., 2015; Perkmann et al.,

2013). While most of these papers have addressed the question of choice of KE profile from a static perspective, to the best of our knowledge, this paper is the first to consider it dynamically. Indeed, as ambidexterity and dynamic capabilities are closely interlinked (O'Reilly and Tushman, 2013), it is crucial to examine the evolution of the KE profile of universities over time, for theoretical and practical considerations.