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Implementing change in universities' knowledge exchange profiles: a management perspective

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

**Abstract:** In this study, we investigate the managerial interventions that underpin different types of strategic changes in universities' knowledge exchange (KE) profiles, considering in particular patterns of KE profile specialization, KE profile diversification, and KE profile mixing. Building on control systems theory (Simons, 1994, 1995; McCarthy and Gordon, 2011), and using evidence from KE managers at 12 UK universities, we show that managerial interventions relating to belief systems, which align the behaviour of university staff to the desired KE profile, are important in order to achieve all types of changes in KE profiles; interventions relating to interaction systems are particularly important for KE profile diversification, as they enable staff to identify and grasp a wide range of KE opportunities; while interventions relating to boundary systems and diagnostic systems are particularly important for KE profile specialization and KE profile mixing, as they support staff acting in accordance with specific KE activities and achieving targets aligned with those activities.

**Paper:** Exchange of knowledge between universities and external stakeholders, often referred to as universities' "third mission", has become increasingly important for policy makers, practitioners and researchers alike (Etzkowitz et.al., 2000; Guerrero and Urbano, 2014). As a consequence, universities increasingly strategize their engagement in knowledge exchange (KE) in order to achieve institutional objectives including income growth, reputation, prestige and visibility. It has been noted that universities have very different KE profiles (Hewitt-Dundas, 2012) which tend to be aligned to their organizational goals and objectives (Buckland 2009), and to their tangible and intangible resources (research intensity, subject specialization, entrepreneurial culture, competencies within the KTO: Hewitt-Dundas, 2012; Rossi, 2017; Kitagawa et al., 2016). Furthermore, universities change their KE profiles over time (Sánchez Barrioluengo et al., 2019), in response to contextual conditions and increased competition for funding with other universities.

While some studies have sought to identify patterns of change in universities' KE profiles (Hewitt-Dundas, 2012; Sánchez Barrioluengo et al., 2019) scant attention has been paid so far to the micro-level management interventions within universities that allow them to implement these changes. Nonetheless, in a context of progressive managerialization of higher education, and of greater strategic importance of KE as a university mission, changes in KE profiles are likely to be the outcome, at least in part, of strategic decisions supported by relevant actions designed to support these changes.

In this paper, we investigate the managerial interventions that underpin changes in universities' KE

profiles. In particular, we consider universities that have changed their KE profiles over time, according to three different patterns (which we term, respectively, KE profile specialization, KE profile diversification, and KE profile mixing) and we investigate what are the different interventions that management have implemented in order to achieve these changes.

Building on control systems theory (Simons, 1994, 1995; McCarthy and Gordon, 2011), we discuss four possible types of managerial interventions – relating to belief systems, boundary systems, diagnostic control systems and interactive control systems – and their relevance for each of the three possible patterns. We argue that managerial interventions relating to belief systems, in order to align the behaviour of university staff to the desired KE profile, are important in order to achieve all kinds of changes in KE profiles; interventions relating to interaction systems are particularly important for KE profile diversification, in order to enable staff to identify and grasp a wide range of KE opportunities; while interventions relating to boundary systems and diagnostic systems are particularly important for KE profile specialization and KE profile mixing, in order to support staff acting in accordance with specific KE activities and achieving targets aligned with those activities.

To provide an in-depth investigation into the relationship between change in KE profiles and management approaches, we relied on a mixed method quantitative-qualitative investigation. First, we identified universities exhibiting the three types of changes in KE profiles (KE profile specialization, KE profile diversification, and KE profile mixing) by analysing the changes in relevant variables over time using a panel dataset of 150 universities in the UK. Second, we selected twelve case studies of universities representative of each change pattern (between three and six cases for each pattern) to be investigated in greater depth. Through in-depth qualitative interviews we explored what management interventions were associated with each pattern of change in KE profiles.

Our analysis of the interview suggests that, in line with our expectations based on control systems theory, different change patterns are supported by different management interventions. KE profile diversification requires universities to exploit the full variety of competences within the institution in order to enable new KE channels to emerge. This requires belief system interventions in the form of a centralized approach to KE strategizing, and interaction system interventions to promote interactions within the university at all levels (institution, faculties, departments) as well as collaborations between academics to facilitate the exploration of new areas of engagement. KE profile specialization requires universities to focus on internal competitive strengths in order to enable researchers to do more of what they are already doing well. This requires belief system interventions in the form of creating awareness among academics of knowledge exchange and of its strategic importance, and boundary systems interventions to support and mentor academics in KE. This strategy is also associated with support for interdisciplinarity. Finally, KE profile mixing requires universities to refocus their efforts from certain KE channels to others – probably in response to events that have made certain KE channels less feasible than they were in the past, encouraging the university to put effort in new areas. This strategy requires belief system interventions in the form of renewing the focus of its mission and its KE stakeholders, and developing departmental / faculty-level strategies; interaction system interventions to promote interactions between departments and faculties, organize meetings, workshops and events to promote collaborations; and boundary system interventions in the form of career incentives for academics and incentives for managers.

In providing evidence about the kind of interventions that have underpinned successful changes in

universities' KE profiles, this study has implications for university managers who are wishing to implement similar changes in their organizations. It also has implications for policymakers, since it provides greater appreciation of the challenges that universities encounter in adapting their KE strategies to changing external conditions, many of which are policy driven, and it sheds light on the kind of support that universities might need in order to undergo these adaptation processes.