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Knowledge Governance in Universities:
A Case Study of a University Merger

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ABSTRACT

Drawing on advances in knowledge-based theory and empirical research on merger of business firms, this article is aimed at exploring how governance systems in universities affect the characteristics of the knowledge processes undertaken within them and how these affect the organizational challenges associated with post-merger integration in the realm of higher education. As the present study confirms, under the institutional conditions currently shaping academic incentive structures, universities appear clearly inferior to firms in providing governance structures promoting inter-disciplinary combinations of knowledge. The low prestige and impact factors of the few inter-disciplinary journals available, the difficulty of finding reviewers capable of appreciating inter-disciplinary research and the personal investments necessary to acquire sufficient mastery of another field make such endeavours extremely unattractive. This institutional framework is in stark contrast to that of firms, in which the yardsticks applied in performance evaluations of employees tend to be largely internal, aimed to measure the individual's contributions to agreed-upon organizational goals. Universities major relative advantage vis-à-vis firms seems to be in the governance of knowledge processes involving the transfer of tacit knowledge in master-apprentice type of relationships, and knowledge creation through articulation, often too time consuming and expensive for profit oriented firms in competitive environments.

KEYWORDS: Merger, Knowledge Governance, Universities

INTRODUCTION

During recent decades, a rich stream of literature has provided new insights regarding the problems and opportunities associated with the 'management of knowledge' and 'knowledge governance'. In areas ranging from strategic management to the theory of the firm, empirical research and theoretical developments have focused on the nature of 'knowledge processes' in the governance context of business firms, often benchmarked against those that occur in arms-length market transactions (Grant, 1996a; 1996b;

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Kogut and Zander, 1992; 1993; Nahapiet and Ghoshal, 1998; Nickerson and Zenger, 2004). However, effective knowledge processes are not exclusive to firms; the real world provides many examples of complex knowledge-intensive activities undertaken in other types of organizations and institutional arrangements. One prominent such form is represented by universities, the organizational setting of the present study.

The paper is premised on the conviction that 'knowledge-based theory' should delineate not only the advantages of business firms vis-à-vis markets but also the extent to which these advantages are present also in other types of organizations and institutional settings, including instances where these may perhaps provide benefits unobtainable in business firms. We hope to contribute to such a broader understanding of knowledge governance by analysing the 'natural experiment' offered by the merger of two British higher education institutions. The immediate aims are (1) *to develop a set of propositions as to how governance systems in universities affect the characteristics of the knowledge processes undertaken within them* and (2) *to explore how these affect the organizational challenges associated with post-merger integration in the realm of higher education.*

These issues are not only of great theoretical interest, they have considerable empirical and managerial relevance: In the face of increasing global competition, cost pressures and demands to increase both research output and services to students, a wave of mergers have affected the university sectors in both North America and Europe (Eastman and Lang, 2001; Lang, 2002). These pressures have affected the organizational systems, managerial practices and organizational cultures of individual universities to different degrees; some have moved to become 'professionalized managerial systems', others have retained a more scholarly, collegial approach (Clark, 1998; Mosey, Wright, and Clarysse, 2012; Deiaco, Hughes, and McKelvey, 2012). Similar to the well-known problems cultural differences cause to post-merger integration of business firms (Schweiger and Goulet, 2000; Schweiger and Walsh, 1990; Stahl and Voigt, 2004), the subsequent case study indicates that such differences can considerably impact the merger and integration also between colleges, universities and other organizations in the sector of higher education.

The following section outlines the theoretical framework of the study. The study employs an exploratory, grounded approach (Strauss and Corbin, 1990), but was informed by the perspectives of two strands of research. These helped define our prior expectations as to the aspects of the merger that were likely to be significant and therefore influenced both the nature of the data collected and the subsequent interpretation of our observations. The conceptualization of organizational knowledge processes draws on inherited knowledge-based theory; that of the integration process on empirical research on post-merger integration of business firms.

Section three describes its methodology and empirical basis – a detailed ethnographic case study of the merger and subsequent integration of two British institutes of higher

education. It is prefaced by a brief background overview, sketching the evolution of the higher education sector in Britain. The empirical findings are presented in section four. It is divided into two parts. The first analyses the effects of the merger on administrative functions and their personnel, the second focuses on the effects on academic teaching and research. The concluding section summarizes the study, outlining how its findings may contribute to the development of a more general theory of knowledge governance in different institutional settings.

KNOWLEDGE PROCESSES IN UNIVERSITIES

A striking feature of knowledge governance in universities is the prevailing practice of organizing work according to specialized fields of knowledge. As a rule, members of departments, institutes and research centres belong to the same 'epistemic communities' – groups of individuals engaged in a common practice and sharing not only mastery of the codes, theory and tools of that practice, but also the tacit skills and experiential knowledge conferred by the practice in question (Holzner, 1968; Håkanson, 2007; 2010). Within such epistemic communities, exchanges involving *replication* of existing knowledge – for example in the master-apprentice relationships between supervisors and PhD students – and *articulation* of new knowledge – as is the aim of most academic research – are often relatively unproblematic, also in the case of tacit or poorly articulated knowledge (Figure 1).

Figure 1: Typology of knowledge processes

	Exploitation of existing capabilities	Creation of new capabilities
Within epistemic communities	Replication	Articulation
Between epistemic communities	Integration	Combination

Source: Håkanson (2010: 1812)

Most administrative tasks in universities are also organized in specialized work groups, in many ways similar to those found also in business firms. Here too, most knowledge processes take place among individuals with common cognitive backgrounds, such as those associated with specific professional or functional expertise. But in contrast to most academic teaching and research, administrative processes need to be integrated

across the organization. Like in business firms, efficient day-to-day operations require *integration* of the specialized expertise of individual functions through organizational boundary-spanning routines and other mechanisms (Boland and Tenkasi, 1995; Grant, 1996a; Lawrence and Lorsch, 1967).

In line with Schumpeter's (1934, p. 65) classical definition of innovation, as a 'new combination of new or existing knowledge', *combination* and synthesis of theory, codes and tools from different disciplines and areas of expertise are often key elements of innovation and renewal (Kogut and Zander, 1992; Grant, 1996b; Galunic and Rodan, 1998; Nahapiet and Ghoshal, 1998; Nickerson and Zenger, 2004; Schumpeter, 1934). According to the 'knowledge-based view' advanced by Kogut and Zander (1992), it is the ability to efficiently accomplish and exploit new combinations and re-combinations of such knowledge elements that constitutes the fundamental advantage of hierarchical governance of business firms. In contrast, knowledge creation in universities largely takes the form of articulation and 'puzzle-solving' within defined disciplinary frameworks and paradigms (Kuhn, 1962/1970). As the present study confirms, the governance systems of universities are generally not supportive of inter-disciplinary research.

Both integration and combination often involve tacit and incompletely articulated knowledge requiring cumbersome interaction across epistemic boundaries. It is in these situations that knowledge processes within firms can be expected to be generally more efficient than those that take place in interaction between cooperating firms or in the market (Håkanson, 2010). Through requisite investments, firms can create epistemic communities in their own right, providing their members cognitive commonalities – common codes and vocabularies as well as the common references of a shared organizational culture – and access to dedicated 'boundary objects' spanning professional and functional domains. While a large body of literature has studied knowledge processes in the 'organizational epistemic communities' of business firms (Grant, 1996b; D'Adderio, 2004; Wareham, Mahnke, Peters, and Bjorn-Andersen, 2007; Håkanson, 2010), little research has so far been undertaken in other institutional settings, such as universities. To what extent can universities provide integrative, organization-specific mechanisms analogous to those observed in business firms, to enable and support knowledge exchanges across epistemic boundaries?

The institutional settings of universities differ in several fundamental and rather obvious ways from those of business firms, including their objectives, ownership and financing, legal frameworks and governance structures (Deiaco *et al.,* 2012; Hughes and Kitson, 2012). But there are also certain similarities to firms, especially to firms active in knowledge-intensive industries, where the management of highly educated professional experts is often a key to performance.

In a highly stylized manner, the competences of universities can be divided into two groups, *administrative* and *academic,* with the latter devoted to two main activities,

teaching and *research* (Figure 2).[2] 'Administration' here denotes the routines and competences employed in the raising and allocation of resources, the management of external relations and the design of organizational structures, policies and rules to ensure efficient performance. Structurally, these tasks are typically divided among organizational units at the level of the entire university, individual faculties or those of individual departments or centres. 'Teaching and research' represent the core activities of universities and is typically organized in the form of departments, institutes or research centres, most of which divide their time between the two activities.

Figure 2: Stylized University Structure
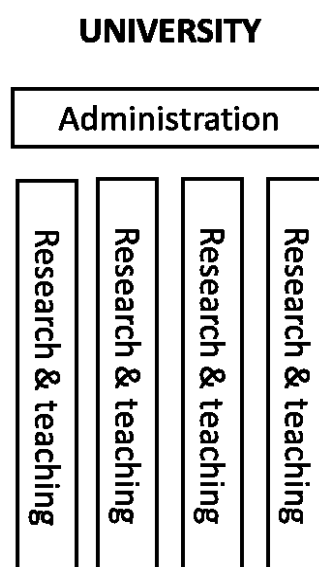
UNIVERSITY

The distinction is analogous to the one in business firms between 'organizational/economic' and 'technical' competences (Teece, Rumelt, Dosi, and Winter, 1994: 19). The former are in many ways similar to the administrative competences of universities, and the latter, which includes "the ability to develop and design new products and processes" as well as "the ability to learn", parallels the skills employed in university research. The major difference is in the relative emphasis on teaching. In most business firms, teaching is primarily an activity undertaken to promote organizational growth. In reflection of their wider societal missions, in universities teaching is a main goal in itself.

In a somewhat stylized manner, each of the competences of a university is associated with a specific type of knowledge process (Figure 3). As previously noted, university departments are traditionally organized along disciplines, and their members tend to belong to the same epistemic communities. Most of the research undertaken takes place through *articulation* of tacit knowledge within the frames of the paradigms of established 'schools' or disciplines (Kuhn, 1962/1970). Codification of such knowledge,

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[2] For the purposes of the present study, we view organizations as providers of (primarily) research output and educational services. In this simplified perspective, students are seen as clients rather than as members.

in the form of journal articles or books, for example, facilitates its *replication* among peer researchers elsewhere. Codified knowledge is also important in teaching, but much teaching also involves the passing on of tacit or imperfectly articulated knowledge.

Figure 3: Stylized Knowledge Processes

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Integration

Articulation & replication	Articulation & replication	Articulation & replication	Articulation & replication
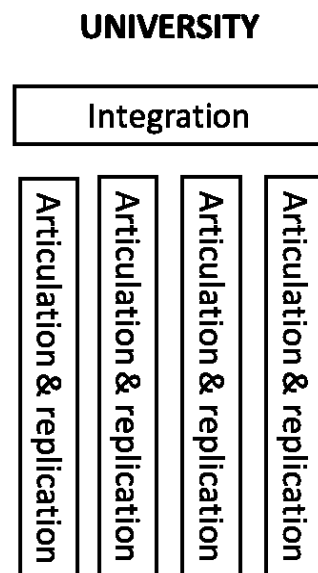
In contrast, the university administration typically requires a range of professional skills and the coordination of expertise from different epistemic domains. Like in the case of the organizational/economic competences of firms, effective knowledge *integration* across epistemic boundaries is key to performance. Such integration needs to bridge the boundaries both of different types of professional administrative expertise and those of academics of different disciplines. Rotation of academic staff into administrative roles has traditionally been an important mechanism to facilitate this.

In this simplified depiction of knowledge processes in universities, innovation in the form of *combination* of knowledge elements from different epistemic areas is notably absent. In spite of insistent calls for more 'inter-disciplinarity' in order to better tackle real-world problems that refuse to be organized around the lines of traditional disciplines (Clark, 1998; Mosey et al., 2012), both teaching and research across disciplines are notoriously difficult. However, as the following case analysis will make clear, the university merger that we studied was not only motivated by the possibility to achieve economies of scale in areas such as administration and infrastructure, but also by the hope of creating innovative synergies through the combination of different areas of expertise.

This ambition, expressed already as plans for the merger were first announced, added a significant complication to the ensuing post-merger integration process. As emphasized in the seminal study by Haspeslagh and Jemison (1991), successful exchanges of specialized capabilities following the organizational merger of two previously independent units requires the implementation of a '*symbiotic*' integration approach,

balancing the two units' new strategic interdependence with their simultaneous need, at least initially, to maintain autonomy and preserve existing work practices (Figure 4).In contrast, cost savings through shared and more efficient utilization of infrastructure and administrative services could probably be obtained also with a '*preservation*' approach to integration, minimizing the disruption of day-to-day academic work by maintaining the structure and relative autonomy of existing teaching and research units. In university mergers, this may not be the case for many administrative functions. In order to exploit economies of scale and ensure efficiency, streamlining of administrative systems and procedures is often necessary, often implying an '*absorption*' integration approach with little or no consideration to maintaining the practices of smaller units.

Figure 4: Integration Approaches

NEED FOR STRATEGIC
INTERDEPENDENCE

	Low	High
High	*Preservation*	*Symbiosis*
Low	*Holding*	*Absorption*

NEED FOR
ORGANIZATIONAL
AUTONOMY

Source: Haspeslagh and Jemison (1991: 145)

EVOLUTION OF THE HIGHER EDUCATION SECTOR IN BRITAIN

European, and especially British universities, were traditionally organized into single-discipline-based schools or departments. Their focus and the priorities of their boards of directors typically emphasized teaching or research excellence, sometimes both. In this organizational setting, a broad range of scientific domains constituted a faculty base that could attract a large student body (Locke, 1989; Clark, 1998). Over time, however, these organizational practices, in combination with prevailing regulatory regimes, were increasingly perceived as detrimental to the ability of universities to address modern-day real world challenges often requiring a multidisciplinary approach (Mosey et al., 2012). In the U.K., two sets of governmental procedures aggravated the situation. The so-called Research Assessment Exercise (RAE) – later Research Excellence Framework (REF) – strongly emphasized publications in peer-reviewed discipline-based journals, thereby reinforcing the single-discipline structure (Lee, 2007). In addition, budget allocation systems favoured the offering of single-discipline programmes to large numbers of students. The resulting management practices tended to nurture a narrow,

'needle-shaped' teaching and research focus as a means to safeguard the financial sustainability of higher learning institutions (Mosey et al., 2012).

To counteract these tendencies, U.K. governments have in recent decades devoted considerable policy effort to promote the creation of multi-disciplinary research centres. The objective has been to support the development of interdisciplinary capabilities to address current societal, economic and industry problems, perceived to require 'T-shaped' professionals undertaking research and teaching across traditional borders (Lee, 2007). To this end, the reliance for funding decisions on metrics of research excellence produced in evaluation schemes such as RAE and REF has been relaxed. To attract discipline-based academics to the new multidisciplinary institutes, these were granted various privileges, including more financial autonomy, flexible time schedules, better physical infrastructures, industry contracts and consultancy, as well as access to research students (Mosey et al., 2012). Alternative, matrix-type organizational structures began to emerge, nurturing individual academics with boundary-spanning roles to facilitate knowledge transfer from more traditional 'needled-shaped' academics (Wright, Mosey, Piva, and Lockett, 2010).

By and large, however, the overall impact of these initiatives has been limited. Long-held norms and traditions conspired with extant systems for both financial and reputational rewards to dissuade most researchers from undertaking the investments necessary to engage in risky inter-disciplinary work (Boardman and Corley, 2008; Kraatz and Moore, 2002). In contrast to the hierarchical governance of business firms, universities rarely provide incentive structures conducive to the largely transaction specific investments needed to overcome the epistemic boundaries between scientific disciplines (Davidsson, 2002; Håkanson, 2010).

RESEARCH SETTING

The findings of this case study need to be understood in its research context, a merger between two British academic institutions, an internationally recognized university and an acknowledged art college. The Art College was well-known for its pedagogical methods, including practice-based and media-and-methods inspeculative and self-reflective contemporary art. Its activities included art, design and architecture and landscape architecture; areas concerned not only with the development and transmission of codified theory and practice but also with the passing on of tacit, experiential and embodied skills acquired through practical trial-and-error. With a heavy emphasis on teaching, the Art College had developed approaches, systems and structures to support all aspects of its educational provision, nurturing the distinctive culture of an 'art college' education.

The University tended to take a more historical, literary and theoretically-informed approach. It tended to have a more even balance between research and teaching and was generally more research oriented. This included also its School of Arts, Culture and Environment (ACE) which conducted teaching and research in architecture, history of

architecture, history of art and music. The school had a strong track record of cross disciplinary innovation, based on excellent links with other schools and colleges within and outside the university including the Art College.

The pre-merger collaborations between the two institutions created the backdrop for the merger, alongside the difficult financial situation faced by the Art College. However, the latter clearly provided the impetus for the merger. The merger proposal expressed the objectives as follows:

> ...while the fundamental objectives of the merger are academic, merger should ensure that, within future funding constraints, the Art College academic strengths can be maintained and enhanced in a way that would prove extremely difficult in the current and anticipated economic and public funding environment were the College to remain an independent institution. (Merger Proposal, 2011: 7)

Cooperation between the two institutions can be traced back to the 1940s, when they began to offer a conjointly taught programme (Figure 5). In the new millennium, several initiatives were taken to strengthen the collaboration, with the University first becoming the awarding body for the degree programmes offered by the College, later followed by the creation of an 'academic federation'. On the eve of the merger discussions, a joint school of architecture and landscape architecture was established. In 2010, following the success of this and other collaborations, a merger proposal was advanced. Following its approval the following year, the Art College became formally a part of the University with the beginning of the academic year 2011-2012, offering courses in art, design, music, history of art, and architecture and landscape architecture.

Figure 5: The Merger Timeline and Previous Collaboration History
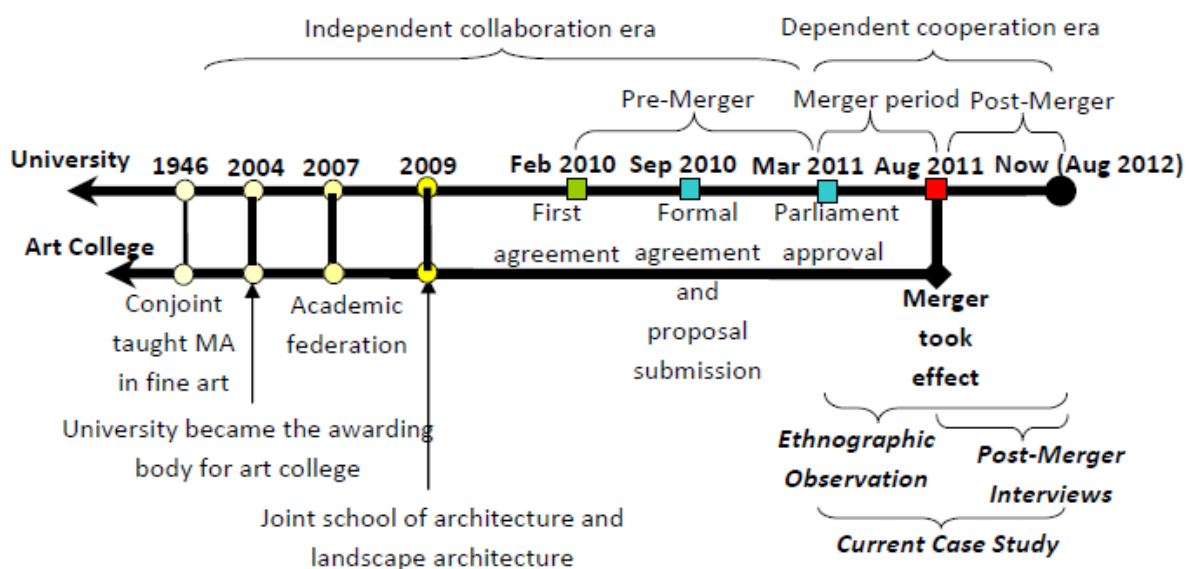
During the months between approval and implementation as well as in the post-merger era, the institutions had to work closely together, seeking to achieve planned synergy effects with a minimum of disruption to academic activities. Key administrative tasks

were centralized for cost savings purposes, involving the implementation of new systems and procedures suitable for the Art College, transfer of its staff and student records into the University system and integrating the information systems of the two institutions, alongside the creation of new joint programmes and cross-disciplinary research centres. Drawing from the most successful disciplines in each institute, the flagship of the merger was a new cross-disciplinary Design and Informatics Centre, established with governmental funding support.

Research Approach and Methods

Adopting an exploratory case study research design (Eisenhardt, 1989; Yin, 2003), we pursue a grounded theory approach (Strauss and Corbin, 1990) based on 35 in-depth interviews, roughly eighteen months of ethnographic observation, as well as other primary and secondary documentation. The research aimed initially at exploring the potential for organizational learning which could be realized throughout the organizational integration processes. A case study methodology is seen as appropriate because of the exploratory nature of the topic, examining organizational transformation phenomena that need an in-depth inductive approach. As shown in figure 5, our approach is essentially longitudinal, covering three stages: pre-, during, and post-merger integration.

Research Procedures and Data Sources

Interviews: in order to capture multiple perspectives on the merger, we conducted 35 in-depth interviews both with leading key players in the process and with affected academic and administrative staff. The informants include the project manager, the project officers, the conveners of all integration working groups, the new principal of the Art College, the Heads of Schools in the Art College (including both old and new heads in cases where they changed), the heads of the departments in ACE, the heads of post-graduate and undergraduate programmes in both institutions, the chief operation officers in different sections, human resources managers and staff, knowledge exchange managers and registry officers from both institutions. The interviews thus cover a cross-section representation of the organizations. Three interviews were done before the merger, the remaining in the post-merger era. The interviews varied in duration from 45 minutes to 2 hours with an average of roughly an hour. All but three interviews were recorded, and 31 of the recorded interviews were transcribed verbatim.

Initial interviews included broad questions which helped to draw a big picture of the merger and the intentions behind it; subsequent ones were more structured and focused, targeting the main challenges, underlying causalities and effects (Strauss and Corbin, 1990). At this stage, the interview questions probed such topics as the interviewees' day-to-day activities before, during, and after the merger, the changes in their perception of the benefits and costs of the merger, the biggest problem areas in the integration process and their reasons, the least problematic (most straightforward)

integration processes and the reasons for the unproblematic nature of those processes. The discussions tended to focus on issues such as the centralization of administrations and operations, collaboration across academic disciplines and working together in cross-disciplinary centres and joint programmes, and the level of integration they had achieved in their area of expertise up to the time of the interview.

Observation and Archival Sources: In addition to interview data, the researchers had the opportunities to attend a few meetings of the merger integration working groups. We used the observations and insights contained in the field notes to supplement the transcribed interviews. We also analysed the minutes of all meetings of the integration working groups, public merger documentations, and published news, articles and university bulletins on the subject of the merger in order to enrich the research data.

Analytical Approach

We triangulate 35 interviews, roughly eighteen months of ethnographic observation and the minutes of monthly meetings of the integration working groups, with extensive analysis of secondary documents developed by the merger communities. The unique chance to observe a merger in practice, before, during, and after the integration processes advanced the understanding of the phenomenon in a way which is impossible for mere post-merger studies. We inductively analysed the collected data adhering to case study research design techniques (Eisenhardt, 1989; Yin, 2003) and constant comparison techniques (Strauss and Corbin, 1990). The rich data resulting from this approach, accompanied by a comprehensive line-by-line open coding and memoing, formed the basis of our findings and discussion in this article. Comparisons of multiple respondents over time allowed the detection of similarities and differences. As outlined in the following section, this enabled us to identify conceptual patterns from our massive bulk of qualitative data (Strauss and Corbin, 1990).

EMERGENT FINDINGS

As our observation of the merger progressed throughout the process of bottom-up coding, it became increasingly evident that the merger consequences were perceived very differently by administrative and academic staff.

For most academics, the merger implied only minor changes and was often seen to present opportunities of various kinds. At least initially, the effect of the merger on 'articulation', 'replication' and other day-to-day academic activities was generally limited, suggesting a 'preservation' integration approach. But in a few areas, the merger also opened or strengthened opportunities for 'combination' of knowledge across disciplines and epistemic communities. In some cases this occurred in both teaching and research, as was the case in the newly formed Design and Informatics Centre, an explicit attempt at 'symbiotic' integration.

In contrast, for many of the administrative staff, the merger lead to big adjustments and was perceived as a threat to their careers and job-security. Most of the changes were a consequence of centralization and standardization of processes and routines with the aim to reduce overheads and increase productivity. With very few exceptions, the procedures implemented were those in place at the University, reflecting an 'absorption' approach to the integration, at least in the eyes of the Art School's administrative personnel.

The difference between the two areas was described by one respondent as follows:

> I think they are two very separate mergers: Academic merger and non-academic merger. I think they are very separate although both are in the same institution… [B]ecause the [academic] disciplines were so different, you were not going to have any real duplication of effort… There was no threat to that side…; a threat may come from having a duplication of departments, as with HR, finance, registry… So there were two very different mergers.

In reflection of these differences, we present the findings separately for the administrative and the academic sides of the merger.

Merging Administrations

Integration Approach. On the administrative side, the post-merger integration focused on centralization, specialization and standardization, mainly to achieve scale economies, but also to ensure that administrative practices met both the University's own and other legal requirements in terms of transparency and equitable treatment. The financial difficulties of the Art College were widely recognized, and the merger was generally seen as an opportunity to ease the financial restraints that had limited its development:

> Art colleges are incredibly expensive to run. You can't have high staff-student ratio. It is very intensive teaching, big studio spaces, you need the latest equipment. All those sort of things can be shared in a larger university. That sort of investment is far easier to make. Then you can open up to other uses.

> I also think that as a small independent institution, the focus of the old Art College, because of circumstances, was of difficulties with finance…They were trying to expand but didn't have the capacity to expand; they didn't have the economies of scale to be able to make their development sustainable in a way, which is why they ran into trouble.

> The Heads of School in the old Art College… would be doing everything at every level. I always laughed and said that 'we were even ordering the milk'. Because in a way, a small institution, you got the same hurdles to jump over as the University as far as quality, as far as HR, as far as all of these kinds of services. But we were small, so we're almost kind of replicating things; at similar level of quality, but we were too small to do that. So, I think these kinds of economies of scale are very important.

As a result of the difficulties that the Art College was facing (including the financial ones), its administrative practices were almost all perceived as 'bad practice' that should be terminated. Although endeavouring to maintain good personal relations to

their new colleagues, the attitudes of the University administration staff were reminiscent of the –so-called 'conquering army syndrome' (Datta and Grant, 1990)

> The Art College was being run so badly that we can't let those practices come in here, but we're trying not to say that, because at the personal level we were trying to be respectful of individual skills. 'There is nothing wrong with you, but the way you've been told to do things for the last ten years were so bad and you can't do it like that anymore.' But we're not going to say that because that is a bit embarrassing.

> No maintenance … changing light bulbs nothing else! … health and safety practices that all were out of date or just non-existent. …budget, staffing, student records are areas that I think were just completely inadequately managed. And those are the core things of running any institution.

> …whether you are very conscious of it or not, there is this kind of tacit acknowledgement around the place. Everyone was trying not to talk about it but the management of the art college was a shambles. And you are trying to say, 'your own skills are great, and we will bring them in and we can do things with them and they are lovely but they are different'. But no matter what people were saying, I think everybody is aware that underneath it was thinking but it was a shambles."

Because of the financial difficulties of the Art College, the larger size of the University and the need to gain scale economies through standardization, the integration strategy pursued in administration was one of 'assimilation' or 'absorption', where the university's systems and procedures were imposed with little or no adaptation:

> I think when you look at the size of the University and the size of the College, comparably they're miles apart. The College really has 300 staff, here you have 10,000. So if there are things that we've done well and there were some that we've done better than the University … but the point I'm trying to make is that it is easier for 300 people to change to the ways of 10,000 than if it is for 10,000 to change to the ways of 300.

> We tell the new Art College how they need to adapt their old processes and adopt our processes…overarching all of that is training, linking together and making sure that people can understand how to do their business when it's a new business, a business that we have been involved in for some time so that we can say 'we can help you'.

For the administrative staff of the Art College, the merger led to a redefinition of work tasks that tended to become narrower and less interesting:

> I think that perhaps depends where they work. …registry staff where very disappointed to be moving into very defined roles where in the College they had a broader remit. More of the same for what happened in other areas such as HR…I am going from being a free range hen to a battery hen. You had the run of the place but all of the sudden then you are in this very small defined area and that's all you are going to do from then on!

> I was more involved at strategic level at the Art College. That has become more operational now [in the university]. In the Art College, I dealt more with senior management and the executive of the College, taking an overall approach, if you like to HR. Many of the small or individual problems would be taken on by the staff in the HR team. Here, I've become part of that team! So I'm dealing with the day-to-day problems…

Acculturation. Differences in organizational culture, a long recognized obstacle to successful post-merger integration, were big enough to create a 'culture chock' for administrators moving from the Art College to the University:

> We had a village mentality. The College was like living in a village; everybody knew everybody, and all of a sudden, we were moving to a metropolis; just massive, you don't know anybody! And I think that's a huge culture change.

The organizational culture of the Art College is described as being along 'traditional, academic' lines, with a 'results orientation', emphasizing research and teaching with little regard for economic efficiency, systems and procedures:

> …everything was at really kind of individual levels…if something cropped up and needed changing, someone would have gone to the old principal, to the old secretary, to the old somebody in management and said: 'oh we have got a problem; someone is being very difficult, this professor wants to do such and such'. And there would always be a kind of exception made, or a one-off bespoke model created for that issue whether it was a difficult professor, or changing the equipment of something that had broken down, anything, it was kind of a deal with one-off bases.

The University, in contrast, had developed a culture of 'public management' (Ferlie, Ashburner, FitzGerald, and Pettigrew, 1996), a 'process orientation' emphasizing efficiency, accountability and quality control:

> [In the University] we get involved in the matriculation side, the nurturing side, the on-programme side, where our role is again to keep a light touch on the quality assurance oversight of what our schools are doing, but also have the control of certain things where we need to make sure that due processes happened.

> …there is a very, very clear understanding of the norm… I think that's the biggest contrast for what I can see; [in the Art College] there was less shared understanding of the normal, correct procedures. It doesn't sound as if there were normal processes and practices for things! You always have to have deviations from the normal; you are always going to have someone very difficult. But there was not that sense of saying: 'look this is the normal run of business and every one may get a deviation'. It was like everything was a deviation!

Following the merger, the non-academic staff from the Art College was required to manage according to defined University procedures. In this regard, the computerized management information system served as a pervasive 'boundary object', linking the various communities of the university:

> We have many academic members of staff who are coming in to see our STUDSYS (a pseudonym) student system for the first time and it is very daunting. They have been used to a system which was partly electronic, partly paper. Coming to a system which is mainly electronic and completely different… and as we know, it's not totally intuitive the way it works, and there has been no training set up….

The University has developed an 'umbrella mind-set' including a set of common codes that helped to ensure administrative cohesion across disciplines and epistemic communities:

> The Head of the Business School, with the Head of Divinity, the Head of History, the Head of the LLC, the Head of the Art College, the Head of Education, …., on one level, we all talk with different languages even within the same college; but on the other level, there is a sort of understanding of the jargon, the kind of management speak we have to engage with internally and in the kind of national debates in higher education. That common language exists.

Being unfamiliar with the terminology, the acquisition of this common understanding presented an initial hurdle for the Art College staff:

> We sat at one meeting, for instance, just with the year budget to talk about. 'What would be the assumptions for going through the budget? What does each of the headings mean? What room for manoeuvre have we got?' The terminology is difficult! … Because it certainly seemed that the two schools within independent Art College had not seen a budget before! …And they were like 'could we vary that? Could we move that?'…there were lots of very, very basic explaining and answering questions.

The Academic Merger

Integration Approach*.* Teaching and research were generally not strongly affected by the merger, as these activities were undertaken in discipline-based departments with quite distinct characteristics. The quality of teaching and research in both institutions was generally recognized to be at a high level and, in line with the autonomy traditionally afforded individual disciplines in the University, the prevailing integration strategy was one of *preservation*:

> Most academics do not have [a] clue what institution they are in; their mind is in their discipline. And that's what they're bobbed about. OK if an institution comes along tells them to do things differently, they moan about it, and then probably they do it eventually a bit.

> Definitely the quality of students' work and therefore of the teaching, and the quality of the research, where research was happening – because research was not necessarily happening across the board [in the Art College] – were all fine. There is no question they're very strong. And there is this kernel of [academic] staff that was very strong and remains very strong. That's what's going to make the thing work.

> The University is basically quite a light touch institution. And lots of people on the ground, lots of academics on the ground, actually just do their thing. There is not a huge army of bureaucracy behind it. There are policies but they are quite light touch. And there is a lot of tolerance of devolution and different approaches… The academics and students [from the Art College] have not had to make the changes as they feared. They haven't had that kind of cultural backlash.

For the most part, therefore, the merger involved few, if any, changes to on-going knowledge processes of replication and articulation. The Art College's academic staff continued teaching and engaging in master-apprentice relationships, passing on the skills of their respective communities to their students (replication), and those engaging in research (articulation) carried on without much disruption. However, in a few areas a more symbiotic integration approach was pursued with the explicit aim to achieve synergies through innovative combinations of knowledge across disciplines. Foremost among these was the attempt to combine design (from the Art College) with informatics

(from the University) – an endeavour that became something of 'flagship' project. In mobilizing political backing for the merger, the benefits of such a combination were early on highlighted by top management, who also provided financial support:

> ...the merger was obviously a large political exercise and was certainly pushed strongly by the Principal of the University and the Head of the Art College at that time. And in the document that they originally wrote to explain why it would make sense to have this merger, the idea of design and informatics collaborating was actually pushed quite hard.

> The Principal has a background in informatics and he is interested in design. So he was quite keen for his own kind of reasons to push that idea, I think. He was certainly the strongest support of the move to trying to get money for the design and informatics centre as a concept ... there was money which effectively was made available by the Principal...

The combination of design and informatics into a new centre was also seen as a way to attract external funding, partly because the combination of design and informatics was 'in the air' at the time:

> ...there was the idea of creating a centre for design and informatics which would be a more substantial thing that would get funding from the Government Funding Council somehow, and would be a kind of flagship to foster research but also teaching between design and informatics.

> It was also timely, because at the same time that the merger was going on, you have to look at the broader picture and the broader picture was quite a lot of interest in things like digital media and so on in the UK and internationally.

In addition to the supporting institutional, political and economic factors, the setting up of the new inter-disciplinary centre was facilitated by a history of collaboration between individuals in informatics and in the Art College and by the active support of the Heads of School affected, providing both executive support and taking on the roles of project champions:

> We had a lecturer... who is half and half, half in architecture and half in informatics. He got involved with the design and informatics actively... And then, there are people inside architecture who were very well acquainted with informatics ideas. So that was all very handy, because those guys had already made bridges.

> One of the things that I think was important in the early stages was, both the Heads of Design and Informatics were quite keen on it. Then ... we had various meetings and little workshops just to see whether the culture will work. If no one would have turned up for these meetings, we would have known that it wouldn't have worked and we would just have shrugged and say: 'well no, we can't really do this, because nobody is really interested'. But the reverse was true. We got quite a lot of people turning up. At that time, that was all being done without any money. There was going to be a merger and we were just interested in doing this.

In spite of these favourable conditions, the attempt to create an inter-disciplinary, innovative combination of design and informatics in both teaching and research, actual results did not meet initial expectations:

> So, we thought we would have this research programme [design and informatics] which I kind of agreed to try to get working. And it worked for a while and there were keys which are still there.

> And we had some meetings and discussed various things. And it was quite good, but it sort of pitted out off after a while as these things often do. It became more and more difficult to get people to come to the meetings and we ended up with quite small groups discussing things. That's still interesting but it is just difficult to keep the momentum going really. So as a [joint] research programme, that kind of faded out to a large extent.

A range of factors and circumstances conspired to thwart the initiative. Foremost of these were the nature of career patterns and reward systems that failed to provide the incentives for individuals to engage in interdisciplinary cooperation and the investments necessary to overcome the cognitive barriers separating epistemic communities. In fact, institutional pressures and governance systems at times created clearly negative incentives to do so:

> The idea was that we would hire a lecturer in informatics and design; he [sic] would be facilitating the design and informatics thing, the joint programme. So they had this kind of recruitment exercise to recruit people for this. But it became evident to me… that most of the people in informatics really saw this is a possibility to get someone who is in their area. They could make the case that this person had something to do with design but what they really wanted was just a person in their area. … I think it was inevitable that there would be limited support within informatics for really getting involved with designers and really trying to understand what designers were doing and how you could work with them.

> There are only a few mechanisms that the University has for incentivizing people. You know you can't pay them any extra! It is very hard even to give them more time or less other responsibilities. I mean you can to some extent, but it is very difficult. Because everything is so autonomous and devolved! Within the school, people may or may not agree to shift workloads around to create some kind of space for creating a new programme. But if one person is going to do less work, it means everyone else is going to have to do some more of that and they are not necessarily very keen on that. And the system is usually democratic enough that is very hard to get them all to agree.

The most clearly negative incentives came from the university career system, in which promotions and salaries were largely based on the REF, with an emphasis on publications in top tier disciplinary journals:

> People have their own research interests and they want to push their own research interests. …there is no point in trying to get people to do something they don't really want to do. They won't produce lots of publications that way! Informatics, like many other parts of the University, is very much driven by things like the REF…So they want to get more research publications. Well if you can convince them that creating a new collaboration is going to generate more and better publications than they are already generating then that could attract them. But otherwise why should they be interested?

> Academic performance, in general, definitely arrowed the narrow specialists! There can be no doubt about that; from the publications' point of view, publishing in a narrow field is much more likely to have an impact than publishing in a broad field.

A few years into the process, the initial objectives for a creative synthesis combining design and informatics have been revised downwards, with some staff members resigned to the hope that students exposed to both disciplines will be better positioned to bridge the two disciplines:

Very often their [the designers'] understanding of anything in informatics is somehow kind of superficial in the same way there is a superficial level of understanding of design in informatics. So actually getting these things to meet at a deeper level is quite difficult and is going to get quite a lot of time and will probably really happen only through the students if it happens at all… Most of the academics are already too entrenched in what they do. But if you can get students to come together that's where there is the possibility.

CONCLUSION AND THEORETICAL IMPLICATIONS

In various guises, the so-called 'knowledge-based view (KBV) of the firm' is based on the idea that firms are in a privileged position to manage knowledge-intensive processes. According to Bruce Kogut and Udo Zander's (1992) seminal contribution, their advantages in these respects are the result of what they termed 'higher-order organizational principles' through which firms become 'social communities of voluntaristic action'. In their conceptualization, the basis for the formation of such communities is the sense of identity that "… in modern society is bound with the employment relationship and its location" (Kogut and Zander, 1996: 503). In addition, Nicolai Foss (1996a, b) emphasized the critical importance of incentives and formal governance structures for those communities formation. In firms, contractual arrangements mitigate the risk of opportunism and promote the emergence of trust, cooperation and information exchange thereby providing incentives for employees to invest in the acquisition and development of firm-specific social knowledge, providing capabilities of little or no value outside the organizational context where they apply (Håkanson, 2010). This allows firms to set up internal collaboration across diverse competencies smoothly for exploration or knowledge combination purposes.

A fundamental but largely unnoticed weakness in this strand of literature is its exclusive empirical and theoretical focus on the governance properties of business firms as compared to those of arms-length markets. The lack of attention to other forms of governance raises concerns regarding the validity of its claims. Do the theoretical arguments advanced apply only to firms, or do they perhaps apply to organized, non-market interaction more generally?

In order to explore this issue, the present study focuses on the merger of two institutes of high learning. The empirical setting was selected not only because, alongside firms, universities provide prominent institutional locales for the governance of knowledge processes in society, but also because the organizational processes following a merger offer an opportunity to study the formation (or not) of boundary-spanning organizational communities, capable of bridging the cognitive gaps between specialized functional and professional epistemic communities.

As a disruption to the steady state, a merger generates new patterns of interactions with the external and within the internal environment (Nonaka, 1994). Such disruptions to the stability or resilience of taken-for-granted routines lead to their change and adaptation (Feldman, 2000,; 2003). A merger, hence, has the potential both to

strengthen the exploitation of existing capabilities and to create opportunities for exploration of new ones.

But as many studies of post-merger integration find, the integration of merged organizations in a holistic epistemic community, in which smaller knowledge communities can form and survive, requires more than the mere bundling of the contracts of employees and bringing the properties of independent entities under a single ownership umbrella:

> The creation and maintenance of organizational culture (theory), a common language (code), and efficient boundary objects (tools) do not come about automatically but require investment and effort on the part both of the firms' owners and managers and of their employees ... However, a large portion of the physical and intangible assets needed to establish the firm as an epistemic community is highly situational and cannot readily be transferred to applications outside the organizational context where they were created. (Håkanson, 2010: 1817)

In the present context, post-merger integration offers a valuable opportunity to study the factors that facilitate or block the formation of the kind of 'social communities of voluntaristic action' invoked by Kogut and Zander (1992). Doing so in the context of a university merger offers the possibility to compare these factors to those that have been observed in the large literature of post-merger integration in business firms. As reported above, some of the findings of our study are similar to processes observed in firms, others differ in theoretically significant ways that help provide a slightly new perspective to knowledge-based theory.

A clear similarity between the university merger observed and findings from the literature on post-merger integration in firms concerns the merger of the university administrations, where the systems and procedures of the larger university were imposed on the Art College with little or no appreciation of its acquired capabilities. The process displays parallels with the forced cultural assimilation frequently observed in business mergers. Since inherited work practices form an important element of organizational culture and employees' sense of identity, the integration process was clearly perceived as painful by the Art College's administrative employees and, as is frequently observed, many decided to seek other employment.

In contrast, for most of the academic personnel, the merger was perceived to entail only marginal changes. Although expectations on research output increased somewhat, most of the Art College's academic staff could continue their work largely as before. The integration subsequent to the merger, or rather the lack thereof, parallels that observed in conglomerate mergers, where there is little scope for synergetic gains through cooperation between existing and acquired business units, and where a preservation integration strategy is matched by the employees' general desire to maintain their autonomy and identity. The parallel is enlightening, as it highlights the fact that – as

reflected in their organization into faculties and discipline-based departments – universities are typically composed of largely autonomous epistemic groupings with little overlap or mutual interdependence. This may be a consequence of the present stage of their historical evolution (Martin, 2012), in which many are still assigned rather vague and broad societal missions and where the ideal of autonomous scholarship is still an influential tradition.

An important legacy of this tradition is the prevailing practice of evaluating academic institutions through their research output, as evident in publications in peer-reviewed journals. In inevitable consequence, this practice permeates the career and reward systems in universities, shaping the incentive structures facing individual academics. The low prestige and impact factors of the few inter-disciplinary journals available, the difficulty of finding reviewers capable of appreciating inter-disciplinary research and the personal investments necessary to acquire sufficient mastery of another field make such endeavours exceedingly unattractive. This institutional framework is in stark contrast to that of firms. In business firms, the yardsticks applied in performance evaluations of employees tend to be largely internal, aimed to measure the individual's contributions to agreed-upon *organizational* goals. Since the prestige and recognition enjoyed in professional peer groups outside the firm are generally less important, individuals are generally more prepared to undertake the learning necessary to effectively collaborate with colleagues with other epistemic backgrounds, thereby facilitating not only the integration and coordination of day-to-day tasks, but also the pursuit of innovatory combinations of knowledge emanating in different epistemic environments.

The most evident indication of the University's problems in sustaining interdisciplinary research is the failed attempt to establish a centre combining design and informatics. In spite of extremely favourable conditions, including top management support, dedicated project champions and government financial support, the initiative appears to have petered out after an initial flurry of enthusiasm, as – on second thought – prospective participants more carefully weighed the required investment in new learning against rather unclear potential benefits.

Under the institutional conditions currently shaping their incentive structures, universities appear clearly inferior to firms in providing governance structures promoting innovation through inter-disciplinary combinations of knowledge. Their major relative advantage vis-à-vis firms seems to be in the governance of knowledge processes involving the transfer of tacit knowledge in master-apprentice type of relationships, often too time consuming and expensive for profit oriented firms in competitive environments. Universities may also have a relative advantage in knowledge creation through articulation, given that their reward and career systems so clearly favour the explication and dissemination of codified knowledge.

The conclusions sketched in the preceding paragraphs are, of course, tentative at most. However, we hope that the study reported in this paper has demonstrated the potential inherent in expanding the scope of research on knowledge processes beyond the institutional conditions of business firms. By comparison and contrast, analyses of knowledge-intensive activities in other types of institutional environments hold, we believe, great promise in increasing our understanding as to the unique roles and properties of different governance modes for the creation and exploitation of productive knowledge.

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