Editorial

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1 Introduction

The field of knowledge management is characterised by a wide array of theoretical perspectives as well as empirical evidence. Research not only spans a lot of disciplines, e.g. information systems, organisational behaviour, psychology, economics or sociology, but also different research units, such as organisations, groups or individuals within these organisations or among organisations. However, while it is becoming essential for all organisations to generate and retain reliable knowledge, one special kind of organisation, though traditionally reliant on the production of knowledge, has not been at the centre of research interest so far: research-intensive organisations, such as academic institutions, 'big science' centres, business incubators and competence centres of high-tech or consulting companies in the private as well as the public sector. Especially for organisations of this kind, it is important to connect effectively experts and provide means for knowledge sharing as a pre-requisite of organisational learning, knowledge

creation and innovation. While the creation of knowledge is the raison d'être of research-intensive organisations, scarce attention has hitherto been spent on its professional management within and among these organisations. In particular, we assume the following questions to be in urgent need answering:

- What are the specifics of the environment for knowledge management in research-intensive organisations as compared to knowledge management in a business context?

- How is knowledge management practice likely to be influenced by these specifics?

- Which competencies and assets, namely, capability, social and human capital, are crucial in order to induce and sustain knowledge management?

- How are processes of exploration and exploitation balanced in research-intensive organisations?

- How are knowledge creation, evaluation and exchange influenced by strategic and innovation management, i.e. different avenues and priorities for knowledge deployment in value creation and marketable products?

2   The Special Issue

To address these issues, we launched a track at 23rd EGOS colloquium, held from July 5–7, 2007 in Vienna, Austria. The *European Group for Organization Studies* (EGOS) is a scholarly association which aims to further the theoretical and empirical advancement of knowledge about organisations, organising and the contexts in which organisations operate. In response to our Call for Papers for a sub-theme workshop on *Knowledge Management in Research-Intensive Organisations*, we received 27 proposals. After a first review, we accepted 12 submissions for presentation of the full paper at the conference. Each article was instructively commented by peers. The authors greatly benefited from these comments and the subsequent discussions in the plenum about how to improve their article. Out of the variety of high-quality articles, we invited five which we assessed to be valuable to a Special Issue of IJLC. After having received the revised articles, we reviewed them again and gave the authors recommendations for further improvement. This Special Issue contains the final contributions.

By spanning a wide range of theoretical backgrounds, the selected articles show the complex and differentiated landscape of the academic discussion on knowledge management. What is new and common to all contributions here, is the specific focus on 'research-intensive organisations', for which knowledge management processes are of particular importance. The articles deal with a wide array of these institutions, from groups of stem cell scientists, R&D departments in the steel-making industry, high-tech organisations, and consultancies, to DNA forensic scientists, and public think tanks. On a process level, the articles differ with respect to the insights sought after, regarding knowledge generation, knowledge sharing and knowledge retention. By this theoretical and empirical diversity, the authors make a significant contribution to the understanding of knowledge management practices in research-intensive organisations and indicate worthwhile avenues of future inquiry.

3   The articles

The purpose of the article by Ines Mergel, David Lazer and Maria Christina Binz-Scharf is to expand the understanding of why individuals in knowledge-intensive domains are willing to share knowledge. Since individuals do not possess all the work-related knowledge that they require, they turn to others in search for that knowledge. The authors provide illustrations from a particular knowledge-intensive community, DNA forensic scientists who work at public laboratories. Their article proposes a multi-level framework for voluntary engagement in knowledge sharing (VEKS): individual, relational, group, and informational. At the individual level, there are the factors they have identified (variation in intrinsic motivation), but also other factors that the study was not designed to capture (such as personality or attributes). At the relational level, both dyadic (e.g. similarity, familiarity and proximity) and triadic (shared friends leading to referrals) factors were important drivers of the willingness to share knowledge. Underlying some of these individual and relational factors are key group level variables: e.g. the socialisation into norms encouraging generalised reciprocity, the presence/absence of solid group boundaries. Finally, interplaying with all of these drivers of knowledge sharing are features of the knowledge in question: is it complex or simple? Is it tacit or explicit? Is it public or confidential?

Julia Müller, Alexandra Kaar and Birgit Renzl conducted an exploratory study of electronic communities in the context of a research-intensive organisation. The company under study is a big multinational Austrian-based steel processing company with 23,000 employees worldwide. Depending upon its final use, the raw steel had to possess different characteristics. Hence, in order to develop highest quality steel for application in the manufacturing and processing of different components in the other divisions, as well as continuously to improve these products, close cooperation and ongoing dialogue between research and development at division steel and the other divisions is required. Thus, the R&D department was the first to recognise the potential of internal networks and communities and introduced research.net. Their study sheds light on the socio-cultural issues that accompany the top–down introduction vs. the bottom–up emergence of communities. Up to this point, studies had hardly contrasted communities that emerge from the bottom–up and those that are initiated top–down within a single organisational context, and the implications for their sustainability. Drawing on social identity theory, the authors demonstrate that a lack of common identity keeps employees from actively contributing to and exchanging knowledge in the communities.

Helmut Kasper, Jürgen Mühlbacher and Barbara Müller diagnose the lack of comprehensive theoretical frameworks for knowledge management on the basis of so-called 'grand theories'. Knowledge Management overemphasises good values like openness and trust. This very distinction into good versus bad is problematic and questioned by the authors. Their article aims at bringing a new perspective into the knowledge management discussion. Taking up the stance of the social systems theory, the aim of their research is to identify organisation-specific logics that allow drawing conclusions on the knowledge management process within research-intensive companies. The way knowledge is handled and retained depends on systems logics. These logics are influenced by the specific selection processes. Selection processes are influenced by expectations structures within the organisation ('expectations of expectations') and the relations between system and its environment: in economic systems, these are the organisation/market relations determined by the organisations' strategy formulation.

From a systems-theoretical perspective, the generally accepted process of knowledge management, 'data–information–knowledge', acquires a new quality, as against the background of newer systems theory, information is a difference that makes a difference (Bateson, 1990). The deep structure of a social system decides on the processing of information and the system/environment relationship has been determined by structural coupling. Organisations differentiate the environments, which markets are relevant to them to what extent, using a variety of established differentiation schemata. Thus, new points of view are opened up for knowledge management. This way, the 'good/bad' debate can be relativised. The main differentiations are 'suitable/not suitable' and 'efficient/not efficient' and become relevant.

The article of Rüdiger Wink analyses the role of gatekeepers between regional and disciplinary innovation systems in stem cell research as a case of integrative technologies. Because of increased mobility, knowledge interaction is expected to be realised more easily due to the high level of codification. Geographical proximity should not be as important as in other sectors. In most countries, therefore, the gatekeepers focus on cognitive proximity. Nevertheless, for the researchers, geographical and social proximity still play a vital role and with increasing relevance of applications for therapies, these dependencies may even assure compliance with joint quality standards. For research and regional policies, this should lead to a higher awareness of other forms of proximity than cognitive proximity: the organisation of interregional conferences to strengthen temporary geographical and social proximity, as well as joint research project schemes with other countries to build up organisational proximity, seem to be important elements within such strategies. Stem cell research seems to be a specific case, particularly when considering the ethical debates. The experiences in the interviews, where the high amount of uncertainty was mentioned as the decisive challenge for collaboration, which is typical for many basic research disciplines, and similar results in other studies on biotechnology, however, lead to the conclusion that science policy in general should rather include elements of social, institutional and organisational proximity to improve links to innovation systems in other countries.

In their article, Jetta Frost and Rick Vogel focus on think tanks which they analyse as intermediary organisations acting as 'linking pins' among different stages of the knowledge cycle, i.e. exploration and exploitation. In recent years, think tanks, emanating from the tradition of the U.S. political system, have grown almost explosively in number and spread throughout the world. Although they vary considerably in aims and structure, the general purpose of think tanks is to give advice to decision makers in politics, business, administration and the general public in social and political issues throughout the spread of knowledge products. While some think tanks only imitate the style of scientific work, they often either conduct research by themselves or adapt research outcomes from their environment. Moreover, think tanks engage in the transformation and modification of this knowledge in several ways in order to enhance its power of persuasion among potential applicants. In one of the scarce case studies of this kind, the authors elaborate on their arguments and show how a think tank has triggered the diffusion of a new model of managerial control among public agencies in Germany.