
Editorial

Tobias Kesting*

Science-to-Business Marketing Research Centre,
Münster University of Applied Sciences,
Johann-Krane-Weg 27, D-48149 Münster, Germany
Email: kesting@fh-muenster.de
*Corresponding author

Carolin Plewa

Adelaide Business School,
The University of Adelaide,
10 Pulteney Street, Adelaide, SA 5005, Australia
Email: carolin.plewa@adelaide.edu.au

Thorsten Kliewe and Todd Davey

Science-to-Business Marketing Research Centre,
Münster University of Applied Sciences,
Johann-Krane-Weg 27, D-48149 Münster, Germany
Email: kliewe@fh-muenster.de
Email: davey@fh-muenster.de

Biographical notes: Tobias Kesting works as a researcher, Scientific Consultant (specialising in organisational marketing/management process issues) and Lecturer in Marketing, Innovation Management and Key Competencies at Münster University of Applied Sciences and other universities. He furthermore takes over research and teaching activities at the Science-to-Business Marketing Research Centre (S2BMRC) in Münster. He holds a doctoral degree from the International Graduate School Zittau [now part of Dresden University of Technology (TUD)]. From ESB Business School Reutlingen, he holds a Diploma in Business Administration and an MBA in International Business Development. His primary research areas are knowledge and technology transfer, innovation management, research communication and commercialisation, as well as service marketing. He is the author and co-editor of several books on these issues (university knowledge and technology transfer; marketing for innovations; business-to-business communication; and organisational marketing).

Carolin Plewa is a Senior Lecturer in Marketing at the University of Adelaide, Australia. Following a Diplom Betriebswirt at the Münster University of Applied Sciences, Germany, she completed her PhD degree at the University of Adelaide. In addition to her academic role, she held a number of industry positions, such as Manager for Marketing and Strategy at Flinders Partners Pty Ltd., the commercial arm of Flinders University. She received an inaugural Barbara Kidman Women's Fellowship in 2013 and Australian Research Council Grants in 2009 and 2011. She was also awarded the Scott Henderson Award for Excellence in Learning and Teaching in 2007. Her primary research

interests lie in the areas of university-industry engagement, relationship and services marketing. Her research has been published in leading journals, such as *R&D Management*, *Education & Training*, *Journal of Engineering and Technology Management*, *Psychology & Marketing* as well as *Marketing Theory*.

Thorsten Kliewe is the Chairman of the University Industry Innovation Network (UIIN), Lecturer for Innovation, Entrepreneurship and Marketing at Münster University of Applied Sciences (MUAS) and Research Associate at the Science-to-Business Marketing Research Centre (S2BMRC) at MUAS. At the same time, he is completing his PhD on Value Creation in University-Industry Relationships at Coventry University Business School in the UK. Having worked in industry as part of Deloitte Australia's Innovation Acceleration Team and having taken Visiting Researcher positions in Spain, Switzerland and Germany, he is passionate about integrating market-oriented and entrepreneurial thinking and acting in order to create sustainable, innovation-driven environments for both business and academic organisations. He has co-edited two books (one on business-to-business communication and one on organisational marketing), chairs the International University-Industry Interaction Conference series, serves on various committees and boards, and is a frequently invited speaker on national as well as international events.

Todd Davey is an Invited Lecturer on Innovation and Entrepreneurship at Münster University of Applied Sciences, Germany, and Visiting Researcher and Lecturer at Free University Amsterdam (Vrije Universiteit) in the Netherlands and at Nelson Mandela Metropolitan University in South Africa in the same fields. The co-creator of the UBC Ecosystem model and the University-Business Cooperation Information Portal, he was the Project Manager of the largest study yet completed into European University-Business Cooperation (UBC) finalised in 2011. Originally working in industry, he is a former Senior Manager with Deloitte Australia's Technology Commercialisation Group and now is the Managing Director of Apprimo, a Strategic Consultancy dedicated to university-business cooperation and innovation and Director at the University-Industry Innovation Network (UIIN). His area of research include: university-business cooperation (UBC), innovation program development, motivation for entrepreneurship, entrepreneurial thinking and acting and the entrepreneurial ecosystem.

1 Introduction

This special issue focuses on individual and organisational actors in the university-business cooperation (UBC) context. It features selected contributions to the 2013 University-Industry Interaction Conference, hosted by the university-industry interaction network (UIIN) at the Vrije Universiteit Amsterdam in May 2013. The core theme of this conference, 'challenges and solutions for fostering entrepreneurial universities and collaborative innovation', aligns with the emergence of topics such as the commercialisation of higher education (Bok, 2003), academic capitalism (Slaughter and Rhoades, 2009) and the entrepreneurial university (Etzkowitz, 2008). Indeed, conference tracks specifically highlighted topical issues such as 'universities in the regional innovation chain', 'research commercialisation', 'science-to-business marketing',

‘valorisation, ‘academic entrepreneurship’ and ‘entrepreneurial universities’ (2013 UIIN International Conference, 2013).

The UIIN (<http://www.uiin.org>) was established in 2012 with the aim of fostering and improving relationships between university and industry actors. It serves as a platform for knowledge and information exchange, the initiation of new UBC ideas and projects, as well as professional development at the interface of science and business activities.

As outlined in its title, this special issue puts particular emphasis on one aspect of the 2013 University-Industry Interaction Conference, namely the interrelations of, and interactions between, actors on the interface of UBC. The importance of UBC is well recognised and features strongly in academic, business and policy discussions (Arvanitis et al., 2008; Lam, 2010; Lambert, 2003; Mindruta, 2013). However, few have examined the actors that operate on the interface of UBC. Considering the well-documented challenges, such as the differing institutional cultures, structures and goals of individuals and organisations involved (Fransman, 2008; Kliewe et al., 2013; Plewa, 2009; Schartinger et al., 2001), success can only be achieved if those actors that proactively drive collaboration and pursue collaborative opportunities can be identified, characterised and encouraged.

With the UBC literature focusing strongly on the organisational and inter-organisational levels, considerably less attention has been dedicated to the individuals involved in UBC. Moreover, while the importance of champions in this context has been recognised (Betts and Santoro, 2014), sparse research exists examining the large variety of individuals on the interface of UBC. This lack of attention is insofar surprising as UBC activities are undertaken by people (Lee, 2000) and researchers in principle can decide for themselves if they would like to engage in UBC (Azagra-Caro, 2007). Indeed, multiple authors have noted that research featuring individual UBC protagonists must not be neglected (e.g., Azagra-Caro, 2007; D’Este and Patel, 2007).

The second core focus of this special issue lies on organisational actors at the interface of UBC. We hereby particularly refer to university technology transfer offices (TTOs) and their role as organisational intermediaries. The primary purpose of these TTOs commonly lies in encouraging and managing relations between universities and industry partners with the primary aim of optimising transfer processes (Bianchi et al., 2013; Poyago-Theotoky et al., 2002; Stankiewicz, 1986; Wood, 2011).

In practice, university TTOs have been explicitly established to promote the transfer of knowledge and technologies out of the university, i.e., to moderate, support and manage commercialisation activities. Moreover, their role is to facilitate the relationships between universities and businesses (Bianchi et al., 2013; Stankiewicz, 1986). The increasing focus of universities on generating and transferring knowledge and technologies aligns with a modern view of UBC, which Stankiewicz (1986) entitles as ‘integrationist school’. It views the generation and transfer of knowledge and technologies from universities into business practice as central activities of universities. Several elements of this approach have nowadays come to reality. This is particularly true for the increase in interdisciplinary research and network activities of universities with their respective environment. Both aspects can be promoted by TTOs and other intermediaries.

Bringing together a wide variety of perspectives and methods, the research presented in this special issue spans six countries, offering novel insights and impulses regarding interface actors. This special issue particularly focuses on the variety of actors at the

interface of UBC and likewise aims at overcoming a certain myopia regarding the roles and activities of interface actors by putting particular emphasis on communication, integration and synergy effects between organisations and individuals engaged in UBC activities.

An overview of the contributions to this special issue follows in a chronological order; starting with research examining the individual level and moving to studies investigating the organisational interface level.

2 Special issue contributions

Berna Beyhan and Annika Rickne's article 'Motivations of academics to interact with industry: The case of nanoscience' focus on the individual. Set in Turkey, this research offers important insight into the motivations that drive nanoscientists to interact with industry. It contributes to the literature by offering in-depth insight into the motivational structures of academics collaborating with industry. The results provide interesting correlations between motivational factors for interaction and forms of engagement and imply a more integrated view of motivational structures as Turkish nanoscientists seem to hybridise traditional motivations (having access to resources and learning from industry) and entrepreneurial motivations (commercialisation of research outcomes).

In their paper titled 'Managerial challenges of publicly funded principal investigators', James A. Cunningham, Paul O'Reilly, Conor O'Kane and Vincent Mangematin address the role of individuals central to many collaborations between universities and businesses yet often neglected in the literature, namely publicly funded principal investigators (PIs). Examining the managerial challenges experienced by publicly funded PIs in Ireland, the authors identify project management, project adaptability and project network management as the three managerial key challenges faced by PIs. The study suggest the need for a more structured and more intense professional development support for PIs, hereby encouraging the transfer of (human resource) management practices to the environment of UBC.

Giselle Camille Rampersad's article 'Developing university-business cooperation through work-integrated learning' highlights the importance of students at the interface of UBC. From a theoretical perspective, this article provides concrete insights on how the concept of work-integrated learning may foster such collaboration in terms of outcomes. Based on Australian qualitative data, the article outlines the development of a conceptual framework of UBC development through work-integrated learning. The study results provide important implications on how to foster work-integrated learning, e.g., by integrating alumni and intensifying the process of such approach. In this context, the author recommends better communication of such programmes to build relationships between the individual actors at universities and firms engaged in work-integrated learning projects.

In the article 'Transferring knowledge: PhD holders employed in Spanish technology centres', Susana Pablo-Hernando examines the involvement of PhDs in various stages of the knowledge transfer process, with a particular focus on technology centres (TCs), non-academic UBC intermediate organisations, in Spain. The author studies the UBC involvement of PhDs employed by TCs and suggests an increase in PhD employability in non-academic organisations. The study results emphasise the importance of integrating academic and non-academic actors in regional innovation systems, thus better bridging

the gap between science and business practice. In this context, PhDs turn out to play a decisive role in supporting TCs, hereby contributing to a better knowledge flow and increased commercialisation in UBC knowledge transfer activities. Hence, the paper highlights the large potential of integrating organisational and individual actors for a better exploitation of UBC knowledge transfer potential as well as a better integration of science and business practice.

Will Geoghegan, Conor O’Kane and Ciara Fitzgerald’s paper titled ‘Technology transfer offices as a nexus within the triple helix: the progression of the university’s role’ outlines research findings from a three-country study, including Ireland, New Zealand and the USA. Specifically, the study focuses on TTOs and issues of commercial orientation in the context of patenting activities. The results show that the degree of commercial orientation is largely influenced by the environmental context a university is embedded in. This means that differences between countries with regard to the sophistication of university commercialisation can be explained by path dependency, support from university leadership, and scale and connectivity of operations. The paper illustrates potential issues with policy makers holistically adopting best practices from the USA TTO to other countries. Furthermore, the authors raise the question if it is desirable for each university to strive for a degree of commercial orientation.

3 Outlook and future research directions

The articles in this special issue offer important contributions, improving our understanding of the actors at the interface of UBC. In particular, the broad international focus of research presented in this special issue provides research impulses with regard to the transfer of the presented concepts to a large range of geographical areas. Nonetheless, at the same time they signal the need for future research to progress the theoretical development as well as advance managerial and policy implications.

In particular, future research may wish to build on the findings reported here, refining our understanding of how those organisations and individuals on the interface can best support the development and extension of UBC over time. Future studies may not only seek to test the adaptability of concepts to other countries but also consider adaptability challenges with regard to specific disciplines and science systems. Though the latter may be partly linked to cultural particularities, they provide an additional focus that is worth considering in deriving further implications on optimising and professionalising the UBC interface.

Longitudinal studies are also of particular importance so as to enable researchers to better understand changes over time and, in turn, offer more specific management guidelines. Furthermore, little knowledge exists of the capabilities that facilitate collaborative success in a UBC context, suggesting the value of research investigating how those on the interface can best be trained and managed.

A broadening of our focus would be valuable to better understand the interface between UBC actors and their broader environment, including relevant direct and indirect stakeholders. For example, while the relevance of UBC on the student body of universities has been conceptualised (Stephan, 2001), further empirical research is required to better understand the impact of UBC on the perceptions and behaviour of a large variety of stakeholders. Such theoretical development would benefit from a better

application of the existing marketing and management theory and its advancement in the UBC context.

Indeed, identifying approaches and theories which could be transferred from, for example, business-to-business (B-to-B) and service marketing to UBC (Kesting et al., 2014) would help to professionalise and optimise UBC processes, hereby contributing to a better exploitation of cooperation potential. An intensification of UBC may be beneficial for academia, business practice and societal progress and prosperity (Perkmann et al., 2013; Poyago-Theotoky et al., 2002). Given that research-based relations between science and business bear considerable particularities, science-to-business (S-to-B) marketing provides a relevant foundation by integrating marketing elements from B-to-B, service and relationship marketing and adapting them to the needs of the UBC actors (e.g., Baaken and Schröder, 2008; Kesting et al., 2014). S-to-B marketing “entails the marketing of research competencies, capacities and results at research institutions, particularly universities, to business organizations and other interested parties” [Kliewe et al., (2013), p.60], with individuals and organisations at the interface playing a decisive role for successful and sustainable UBC.

Further research should also improve our understanding of how to use existing synergies in exploiting unused UBC potential. For example, Rampersad suggests a better alignment of teaching and UBC, while Pablo Hernando proposes a better integration of academic and non-academic actors, following recent work by Wei et al. (2013) on the relevance of founders’ academic experience on UBC. Hence, we suggest focusing future research on examining UBC activities and consequences within the complex higher education environment, i.e., with a stronger focus on the interrelationships between research, learning and teaching, as well as business and community engagement. This will enable the advancement of UBC at the interface of all involved actors as well as the broader network of stakeholders.

Acknowledgements

We hereby would like to take the opportunity to sincerely thank all authors who contributed to this special issue. Our particular thanks also go to Dr. Mohammed Dorgham and his colleagues for providing us the platform and the support for realising this *International Journal of Technology Management* special issue. Last but not least, we are very grateful for the input provided by all the reviewers, which greatly contributed to the development of the papers presented in this special issue.

References

- 2013 UIIN International Conference (2013) [online] university-industry.com/index/tracks (accessed 12 July 2014).
- Arvanitis, S., Kubli, U. and Woerter, M. (2008) ‘University-industry knowledge and technology transfer in Switzerland: what university scientists think about co-operation with private enterprises’, *Research Policy*, Vol. 37, No. 10, pp.1865–1883.
- Azagra-Caro, J. (2007) ‘What type of faculty member interacts with what type of firm? Some reasons for the delocalisation of university-industry interaction’, *Technovation*, Vol. 27, No. 11, pp.704–715.

- Baaken, T. and Schröder, C. (2008) 'The triangle for innovation in technology transfer at Münster University of Applied Sciences', in Laine, K., van der Sijde, P. C., Lähdeniemi, M. and Tarkkanen, J. (Eds.): *Higher Education Institutions and Innovation in the Knowledge Society, The Rectors' Conference of Finnish Universities of Applied Sciences*, pp.103–116, Helsinki.
- Betts, S.C. and Santoro, M.D. (2014) 'Champions and trust as drivers of industry/university collaborations: a relationship marketing perspective', in Kliewe, T. and Kesting, T. (Eds.): *Moderne Konzepte des organisationalen Marketing – Modern Concepts of Organisational Marketing*, pp.269–284, Springer Gabler, Wiesbaden.
- Bianchi, M., Chiaroni, D., Frattini, F. and Minola, T. (2013) 'A dynamic capability view on the determinants of superior performance in university technology transfer offices', in Welter, F., Blackburn, R., Ljunggren, E. and Åmo, B.W. (Eds.): *Entrepreneurial Business and Society. Frontiers in European Entrepreneurship Research*, pp.101–126, Edward Elgar, Cheltenham.
- Bok, D. (2003) *Universities in the Marketplace. The Commercialization of Higher Education*, Princeton University Press, Princeton and Oxford.
- D'Este, P. and Patel, P. (2007) 'University-industry linkages in the UK: what are the factors underlying the variety of interactions with industry?', *Research Policy*, Vol. 36, No. 9, pp.1295–1313.
- Etzkowitz, H. (2008) *The Triple Helix. University-Industry-Government Innovation in Action*, Routledge, New York.
- Fransman, M. (2008) 'Disaggregating firms in analysing the costs and benefits of the university-industry relationship: based on an analytical and empirical study from Scotland', *Economics of Innovation and New Technology*, Vol. 17, Nos. 1–2, pp.123–136.
- Kesting, T., Kliewe, T., Korff, N. and Serbin, D. (2014) 'Organisational marketing – making use of linkages and transfer potential between marketing disciplines', in Kliewe, T. and Kesting, T. (Eds.): *Moderne Konzepte des organisationalen Marketing – Modern Concepts of Organisational Marketing*, pp.3–21, Springer Gabler, Wiesbaden.
- Kliewe, T., Baaken, T. and Kesting, T. (2013) 'Introducing a science-to-business marketing unit to university knowledge and technology transfer structures: activities, benefits, success factors', in Szopa, A., Karwowski, W. and Ordóñez de Pablos, P. (Eds.): *Academic Entrepreneurship and Technological Innovation: A Business Management Perspective*, pp.53–74, IGI Global, Hershey.
- Lam, A. (2010) 'From 'ivory tower traditionalists' to 'entrepreneurial scientists'? Academic scientists in fuzzy university-industry boundaries', *Social Studies of Science*, Vol. 40, No. 2, pp.307–340.
- Lambert, R. (2003) *Lambert Review of Business-University Collaboration*, HMSO, London.
- Lee, Y.S. (2000) 'The sustainability of university-industry research collaboration: an empirical assessment', *Journal of Technology Transfer*, Vol. 25, No. 2, pp.111–133.
- Mindruta, D. (2013) 'Value creation in university-firm research collaborations: a matching approach', *Strategic Management Journal*, Vol. 34, No. 6, pp.644–655.
- Perkmann, M., Tartari V., McKelvey, M., Autio, E., Broström, A., D'Este, P., Fini, R., Geuna, A., Grimaldi, R., Hughes, A., Krabel, S., Kitson, M., Llerena, P., Lissoni, F., Salter, A. and Sobrero, M. (2013) 'Academic engagement and commercialisation: a review of the literature on university-industry relations', *Research Policy*, Vol. 42, No. 2, pp.423–442.
- Plewa, C. (2009) 'Exploring organizational culture difference in relationship dyads', *Australasian Marketing Journal*, Vol. 17, No. 1, pp.46–57.
- Poyago-Theotoky, J., Beath, J. and Siegel, D.S. (2002) 'Universities and fundamental research: reflections on the growth of university-industry partnership', *Oxford Review of Economic Policy*, Vol. 18, No. 1, pp.10–21.
- Schartinger, D., Schibany, A. and Gassler, H. (2001) 'Interactive relations between universities and firms: empirical evidence for Austria', *Journal of Technology Transfer*, Vol. 26, No. 3, pp.255–268.

- Slaughter, S. and Rhoades, G. (2009) *Academic Capitalism and the New Economy. Markets, State, and Higher Education*, John Hopkins University Press, Baltimore.
- Stankiewicz, R. (1986) *Academics and Entrepreneurs. Developing University-Industry Relations*, Frances Pinter Publishers, London.
- Stephan, P.E. (2001) 'Educational implications of university-industry technology transfer', *Journal of Technology Transfer*, Vol. 26, No. 3, pp.199–205.
- UIIN [online] <http://www.uiin.org/> (accessed 12 July 2014).
- Wei, W., Li, D., Chok, J., Yang, D. and Shang, H. (2013) 'The impact of founders' academic experiences on linking with local alma maters for Chinese start-ups', *International Journal of Technology Management*, Vol. 62, Nos. 2/3/4, pp.177–192.
- Wood, M.S. (2011) 'A process model of academic entrepreneurship', *Business Horizons*, Vol. 54, No. 2, pp.153–161.