Title of Paper: Servicing Academics and Building Relationships: The Case of Two University Commercialisation Offices in Australia

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Abstract

Adopting the contingency perspective, we examine the strategic orientation of university commercialisation models by conducting an explorative multiple-case study of two university commercialisation offices (UCOs). We base our study in Australia, a relatively small, open OECD trading economy, where universities are under strong pressures to commercialise. While existing literature mainly focused on quantitative and revenue-based measures of university commercialisation performance, we identify two different UCO strategic models: “service-provider” and “relationship-builder”. We also find university leadership, CEO ideology and academic awareness and support as key factors that shape UCO strategic models.

1. Introduction

The role of the university has undergone significant transformation and evolution over the last two decades (Clark, 1998; Gunasekara, 2006). Traditionally, universities had two core functions; the pursuit of knowledge (or “pure” academic disciplines) and the creation of educated elite (Denman, 2005). However, university-industry links started to strengthen in the 1980s and the role of the university in relation to the nation and market has become a key focus (Harloe & Perry, 2004). Universities are now orientating towards a new form of knowledge production, in which the engagement and cooperation of universities with

businesses and the government has become part of their role (Tornatzky, Waugaman, & Gray, 2002).

University commercialisation offices (UCOs) are established to meet the growing desire to transfer research output developed within universities. These organisations play the important role of managing academia-industry connections, which, in turn, determines to a large extent the manner in which university research benefits the economy (Geuna & Muscio, 2009; Rothaermel, Agung, & Jiang, 2007). University research commercialisation entails commercial applications of university research and technological output (Friedman & Silberman, 2003), and commercialisation offices are organisations that engage in activities that aim to transfer academic research output into commercial use. They are often wholly-owned subsidiaries of the universities they serve. Existing literature identifies the typical activities of commercialisation offices as: identification and marketing of IP, organising research joint ventures, patenting and licensing IP and organising spin-off companies (Phan & Siegel, 2006; Siegel, Waldman, Atwater, & Link, 2003).

The organisational performance of commercialisation offices attracted considerable academic interest, and some attention has been paid to the management of UCOs (Geuna & Muscio, 2009; Rothaermel et al., 2007). Existing university technology transfer literature streams mainly focus on: 1) the entrepreneurial university (Etzkowitz, 2003; Friedman & Silberman,

2003); 2) productivity of technology transfer offices (Jensen, Thursby, & Thursby, 2003; Markman, Gianiodis, Phan, & Balkin, 2005); 3) creation of new university spin-outs (Clarysse, Wright, Lockett, Van de Velde, & Vohora, 2005; O'Shea, Allen, Chevalier, & Roche, 2005); and 4) innovation networks or business incubators (Lee & Osteryoung, 2004; Lindelof & Lofsten, 2003). Based on the above, common measurements of commercialisation performance include number of inventions disclosed per amount of money spent on research; number of patent applications filled and granted per amount of money spending on research; licenses and options executed relative to number of inventions disclosed; average income per license; number of start-up companies; number of commercialisation staff and administration; and gross revenue from licensed technology (DEST, 2005; Sobol & Newell, 2003). These quantitative indicators of UCO performance reflect a highly revenue-oriented UCO strategy. However, few studies investigate UCOs' engagement in activities that may not be captured by quantitative measurement, and little focus has been placed on how UCOs with alternative performance indicators strategise their activities. Therefore, our study aims to identify and investigate different strategic orientations of UCOs that may diverge from a revenue-based model. Moving beyond the standardised classification of commercialisation strategies in UCOs, our model contributes to the literature by capturing alternative UCO strategic dimensions with a more holistic view of university commercialisation pathways. Instead of focusing only on growth and revenue-oriented measurements of technology transfer

performance, we advance the current literature by presenting a framework that can shed light on the range of different objectives and orientations that may be adopted by a UCO. We also try to make sense of how universities' key stakeholders have affected and shaped these different UCO models.

In this paper, we first present an overview of the Australian context for research and development (R&D) and commercialisation. Second, we describe the research and analysis methods adopted. Third, we present two different university commercialisation strategic models, their respective organisational structures and identify important university stakeholders, including university leadership (board of directors), CEO of the UCO and academics, who shaped these models. Finally, we discuss the implications of the research findings for university commercialisation strategies and practices in other similar contexts.

2. University commercialisation in Australia

Our research focuses on the Australia context, which represents a comparatively small, open OECD trading economy with powerful commercialisation pressures operating on their universities. Similar to many other nations around the world, the government and policies in Australia began to focus on innovation in the 1980s (Cutler Report, 2008; Engelbrecht & Darrogh, 1999). In terms of Australia's commercialisation contexts, more emphasis is placed on demand pull (i.e. more input from industry and other users) and setting clear directions

(Martin & Johnston, 1999). This has enhanced the involvement of stakeholders in Australia's innovation systems (Harman & Harman, 2004). In 2010, the gross domestic expenditure for R&D (as a percentage of gross domestic product) is 2.20% for Australia, which is close to the OECD average (2.38%) and comparable to France (2.24%) (OECD, 2013). In addition, in Australia, compulsory contributions to superannuation have contributed to its capital market and a consistent flow of investment funds into the share market, and financial supports are available via tax incentives and direct funding (Atkinson, 2007; Hall & van Reenen, 2000). Taken together, Australia's government regulatory arrangements surrounding R&D investment and tax incentives provide universities and thus UCOs with the opportunity to develop strategic foci other than revenue generation. In addition, regardless of the extent to which UCOs are revenue-oriented, market capacity and industry trends such as economic conditions and existence of large businesses (that are more likely to take interest and invest in university research output and prototypes) are also likely to have an influence on UCO strategic models and performance.

Adopting a contingency perspective of organisations, our study acknowledges that organisations attempt to enhance organisational outcomes by ensuring better fit between environmental demands and organisational structures (Lawrence & Lorsch, 1967; Van de Ven, Ganco, & Hinings, 2013). In other words, rather than having one best way of strategizing and operating the firm, the optimal strategy and course of action for an organisation is dependent

upon its external environmental trends, internal situation, and stakeholders. Such concept of fit emphasises that firms are more effective when their internal structures, processes and operations are well-integrated, and matched their external environments (Burns & Stalker, 1961; Woodward, 1965). Based on this contingency perspective, in this article we examine and explain the emergence and operation of two different UCO models.

3. Methods

We adopt an explorative multiple-case studies design. Many researchers highlight the role of the case study approach in examining complex phenomena or issues within their contexts (Baxter & Jack, 2008; Collis & Hussey, 2009; Yin, 2014). This research approach is therefore appropriate for our study, which draws on the contingency perspective to investigate different UCO strategic models and how these may have been shaped by environmental forces and actors.

Our study applied the purposeful sampling method, and selected cases based on three criteria: quality of research generated by the university, the UCO's strategic model and accessibility to the organisation. Having sufficient world-class research being conducted in the university is one of the three essential conditions for successful university research commercialisation (Collier, 2008). Therefore, we only considered UCOs based in large, comprehensive and research-based universities. We investigated two UCOs in established, front-rank universities

in Australia, which have been given the names of ServiceCo and RelationshipCo in this article. Initial research indicated that while the two UCOs are established to commercialise university research output, they do not operate by a revenue-based model. Furthermore, differences on these two UCOs' goals exist in part, making them ideal for comparison. These differences are explored in further details in section four.

We conducted semi-structured interviews with staff members across all levels (strategic team members, middle managers, and employees) within each case. The average duration of the interviews is 45 minutes. We conducted 31 interviews (including three repeat interviews) with 28 staff members in ServiceCo (45 per cent of total staff) and 20 interviews in RelationshipCo (65 per cent of total staff); this included at least one staff member from every department (including both client-facing divisions and support divisions). We also collected and examined company policy documents where available (such as company mission statement, reports to the board, company strategic plans). Table 1 below presents an overview of the informants.

[Insert Table 1 here]

The CEO or Acting CEO acted as first-level gatekeepers who granted access to the firm, and HR manager or CEO assistant acted as second-level gatekeepers who assisted us with informant invitations. In order to enable structured comparison across the two UCOs, we

asked a set of standardised, general questions in each case. We also made use of an interview guide that outlined the key areas to be covered (including company history, company strategy, performance measurement, organisational structure, and each staff member's jobs and tasks, depending on the informant's role), which permitted on a contingent basis different phrasing and order of questions (Eriksson & Kovalainen, 2008).

Data analysis

We created all interview transcripts in verbatim form and carried out within-case and cross-case analyses on the data. Within-case thematic analysis involved descriptive coding (reading through case records (including interview transcripts and company policy documents) and attaching brief comments), interpretive coding (clustering descriptive codes by topics including environmental factors, organisational strategy, structure, organisational activities, key challenges, stakeholder perspectives and influence), and analytic coding (deriving general themes across all transcripts based on theoretical and practical perspectives of this research) (Merriam, 1988; Miles & Huberman, 1994; Morse & Richards, 2002). We then constructed a "meta-matrix" to compare descriptive information from each case (Miles & Huberman, 1994), and performed cross-case analysis by selecting and comparing key themes that emerged across both cases during the within-case analysis (Eisenhardt, 1989; Eisenhardt & Graebner, 2007). Based on the meta-matrix and cross-case comparisons, we were able to identify

differences between the two UCO models, their respective strategic orientations, and key stakeholders who influenced these models. The results are presented in the next section.

4. University commercialisation strategies and contextual factors

4.1 UCO strategies and strategic goals

Similar to the revenue-oriented UCOs, both cases share the same overarching mission, which is to enhance the university's commercial viability. However differences on their goals exist in part as they address this mission through two distinctly different strategies.

ServiceCo: Providing services to academics

Although established over two decades ago, the role of ServiceCo was not clearly defined initially and it has experienced numerous changes driven by university (board). Currently the strategic goal for ServiceCo is to provide commercial services for the university. These services include delivering teaching and learning course development consulting for university academics and external partners, as well as providing IP management, licensing and commercial research advice to academics. The key driver of the organisation's strategy at present is to help the university produce better economic bottom line, and it measures its performance by its delivery of required services and meeting the goals set by the board (the university) every year.

ServiceCo's key performance indicators and objectives reflect the outcomes that the university wants from the company, and include providing services to enhance faculties' financial capacity and quality of teaching, help establish spin-out companies and assist with invention disclosures. Financial revenue is not part of ServiceCo's performance measurements, and at times such measurements may even include budgeted financial losses on the company's account, which is usually a result of the UCO providing commercial services for the academics through its corporate structure. This indicates that the university values the services provided by ServiceCo more than the financial returns it generates.

RelationshipCo: Building relationship between academics and industry partners

Prior to 2011, the focus of RelationshipCo has always been on generating profit. After a significant organisational restructuring driven by the UCO's strategic level in 2011, RelationshipCo now aims to focus on knowledge exchange, rather than commercialisation revenues. Its strategy places strong emphasis on innovation and publicity, as well as fostering relationships between university academics and industry partners, which are essential for successful knowledge exchange. RelationshipCo's strategy acknowledges that UCO success is based on three vectors that often push in different directions: bringing in financial returns from intellectual property (IP), proving value to academic community and building positive external (industry partners) perception. Although generating financial return is one of the

three criteria, this UCO positions itself as a service unit for the university rather than a money-making unit. One senior management team member explains “The university has to accept that at least for the short to medium term, [this company] will be a cost to the university...we are (now) saying [this company] is about innovation. Innovation requires risk in order to get rewards” (Interview 51).

In line with the current strategy, RelationshipCo promotes an Easy Access IP model that discloses intellectual property to businesses that are interested in these projects at a small cost. Adopting this model means that the organisation no longer has to spend as much time and resources on assessing every opportunity. For these early stage inventions, RelationshipCo processes them by “...quickly write up a summary, put it online, talk to some companies in the area and let the market tell us whether there is interest” (Interview 32). Through engaging in such activities, RelationshipCo is able to increase the frequency of interactions between its commercialisation managers and businesses, which in turn often leads to better relationship-building between academics and industry partners.

RelationshipCo bases its performance evaluation on academic perception and public awareness. These can be measured by indicators including the number of new academics contacted, number of Easy Access IP contract established, frequency of media exposure, and most importantly, qualitative feedback from academics and community. It also aims to

generate financial return from the university's IP in the longer term, yet it views itself as an innovation hub rather than profit-generating unit and it does not list revenue growth as its immediate priority. Figure 1 depicts the two models and the traditional revenue-based model along two dimensions of “revenue or service-focused” and “university or industry-focused”.

[Insert Figure 1 here]

4.2 Organisational structure

ServiceCo

[Insert Figure 2 here]

ServiceCo adopts a functional structure and has three client-facing divisions: Teaching and Learning Commercialisation division, which provides services for university academics by developing and running courses on top of the standard university courses on a consulting basis; Contract and Asset Management division, which looks after IP management, consulting and commercial research services contracts; and Technology Transfer division, which focuses on assisting the academics in transferring research output through licensing of technology and establishing start-up companies. Figure 2 presents ServiceCo's organisational structure.

RelationshipCo

[Insert Figure 3 here]

RelationshipCo adopts a matrix structure and its client-facing operations division has four teams: a small Commercialisation team, which focuses only on “high-value opportunities” that have a track record of generating good financial return, or show great financial potential; a larger Academic Services team, which is in charge of engaging with academics and researchers and finding out what services academic researchers need from the organisation; an Open Innovation and Marketing team, which looks after all the branding, messaging, all the marketing core materials, the web, social media and engagement with new partner organisations; and an Intellectual Property team, which is in charge of managing patents. Apart from the above, this UCO also utilises the matrix structure by setting up numerous cross-functional “project teams” to work on technology projects and “working groups” to implement organisational changes. The duration of the project teams and working groups vary from a few months to several years. Figure 3 presents RelationshipCo’s organisational structure.

Each UCO’s organisational structure and divisions correspond to its strategy. Although both organisations have an organisational function that is dedicated to technology disclosure, each company’s level of emphasis on this activity is different. For example, for ServiceCo, the number of technology commercialisation staff (including research and consulting) accounts for 30% of total staff number. The same figure is 39% for RelationshipCo (which does not offer research and consulting services). The largest division for ServiceCo is Teaching and

Learning, accounting for 40% of all staff. On the other hand, although only accounting for 10% of the company, RelationshipCo has an open innovation and marketing team, which does not exist in the ServiceCo. RelationshipCo also has a position that is first of its kind in the country that targets technology commercialisation from students, and its implementation of matrix teams also provided staff members with more flexibility, which in turn enhances relationship-building. These differences in organisational structures are clear indications of each UCO's key focus, with ServiceCo focusing on service delivery for the university's own academics (clear functions each focusing on one type of service), and RelationshipCo combining technology commercialisation with marketing (enhancing both academic and public awareness) to facilitate relationship development.

4.3 Factors shaping the strategic model

ServiceCo

ServiceCo has been established for two decades and its role has changed multiple times since its inception. These include providing consulting services for the university, offering assistant services for the university's teaching and course design, and managing a private university run by the university. One executive team member suggests that "One thing (about) this company (is that it) goes through a lot of change...as the university changes, we need to change. Otherwise we're not aligned in the direction they want us to go" (Interview 18).

According to one strategic team member, traditionally, this university and its academics were somewhat resistant to the idea of commercialisation (Interview 9). However, due to changes in government funding in recent years, the university began to orient more towards commercialisation and activities that help to improve cost efficiency. Despite strong strategic intention (mainly from the CEO) to enhance organisational effectiveness, ServiceCo finds itself tangled in issues that are entrenched in the organisation's history and the university's structure. As the university did not clearly define and decide the role of the UCO when it established this organisation, this UCO's mission and strategic goals have experienced a number of shifts in the past two decades. Organisational restructuring and name-change often accompanied these shifts, yet most of these shifts were top-down, spontaneous board decisions rather than results of careful long-term planning.

While ServiceCo's missions and strategies are directed by the university executives (board members), many informants point out that existing university structures and policies do not provide strong support for the UCO's functions. For example, in terms of the consulting and contract research activities that the company is working on, there is no clear policy on how university academics should cooperate with this organisation. At times there is competition between university research office and this organisation, and some university academics also

seem to misunderstand how this UCO works or they do not even know of the existence of this organisation.

In addition, the university also does not regulate how academics work with the UCO and the management structure of the university adds to the ambiguity and complexity of commercialisation processes. One executive team member explains “The university...will not force the academic staff to use our services...So we have to spend a lot of time convincing people to work with us...the rules are very clear, but there seems to be ways that people can waiver...I know that there should be flexibility. However the flexibility moves too far down the organisation, and that’s the ambiguity” (Interview 9). Moreover, being at the interface between two very distinct environments (academia and industry) also makes relationship or trust-building with university academics a key challenge for this company. One informant describes: “We have always been perceived as a bit on the outside to the academics, and not the university...it takes you quite a while to build that credibility and those relationships and those connections” (Interview 24).

RelationshipCo

The predecessor of RelationshipCo has been in business for more than half a century, yet the university decided to restructure the organisation a decade ago and created the current UCO.

This UCO has always pursued financial returns, until 2011, when it underwent another

restructuring due to low academic satisfaction (with the UCO) and failure in income generation. The board searched and brought in the new CEO, who restructured this UCO in line with his relationship-focused, innovative ideology. One executive team member explains "We have moved (this UCO) from being a traditional commercialisation company into being an innovation organisation...Our strategy now is maximising the flow of knowledge into use rather than maximising the financial returns to the university from IP" (Interview 51). RelationshipCo has experienced two significant organisational restructurings, and both changes were driven by the UCO's own strategic activity rather than board interactions. With the organisational effectiveness and reputation (on campus) reaching a historical low a decade ago, this UCO has gradually re-established itself by enhancing operational clarity and efficiency between 2005 and 2011, and then began refocusing its strategy in 2011.

Similar to ServiceCo, RelationshipCo has also experienced numerous organisational restructurings, but there is a major distinction in that the changes for RelationshipCo are driven by the UCO's own strategic activity rather than board interactions. The board brings in a CEO who they believe is able to deliver what the UCO requires at that particular stage of organisational development, and lets the CEO drive the organisational changes. Although RelationshipCo has primarily focused on generating income and commercialising research since its early beginnings, when it became clear that the revenue-generation model is no longer viable and the company is unable to succeed on this measure, it has undergone a

significant paradigm shift that not only changed its strategy and strategic goals, but also the whole operational structure that supports the strategy.

Informants from RelationshipCo report a great need to gain academic trust and attract academic interest, and academic perceptions also have an effect on UCO operations. One key factor that reinforced RelationshipCo's smooth introduction of the new Easy Access IP model is academic support. As one executive team member describes, "The vast majority (of academics) don't think their research is worth a million dollars, but they think it's a pretty cool invention, and if they can find somebody to work with in developing that invention, everyone is happy" (Interview 51). Another informant also describes academics as being "very receptive to the new message" (Interview 39).

RelationshipCo's informants report two key organisational challenges. First, although the Easy Access IP model presents an alternative way of approaching research commercialisation, companies do not necessarily want to invest in early stage inventions which have a high risk of failure. Therefore the effectiveness of the Easy Access IP model is yet to be proven. One informant explains, "It's a hard thing, especially in Australia where people just want things finished...With the Easy Access IP...It certainly gets it easier for them, but it doesn't make it much cheaper for (the companies)...They need to make an investment. So it's not easy to give it away" (Interview 50). Second, as the university's promotion system and performance

evaluation is largely based on scholarly publications, academics are less likely to engage in commercialisation activities. This makes it extremely crucial for UCO staff members to establish relationship and maintain high levels of trust with academics.

From the above, it is clear that each UCO's strategic model and organisational structures are shaped by three interrelated university stakeholders: university leadership (board of directors), CEO's ideology and academic awareness or support. ServiceCo's current strategic model is significantly affected by its board of directors' continuous change of mind regarding how to position this entity, the academics' traditional resistance towards the idea of commercialisation (therefore ServiceCo instead positions itself as a service provider for the academics), and the CEO's limited autonomy in driving strategic change under the governance of a powerful board. Also, difficulties for ServiceCo to promote its activities stem from unclear university regulations, which in turn limit academic awareness of ServiceCo's role. On the other hand, RelationshipCo's present strategic model emerged as a result of its board of director's belief that the UCO's strategy required change. This prompted the board to recruit a new CEO, who brought a new and unconventional ideology to RelationshipCo. As the organisational restructuring and strategic shift were clear and distinct, and the new strategy is better aligned with academic interests, academics have become much more supportive of this UCO's new strategic model. However, unless the university integrates

research commercialisation activities with its academic promotion system, it may remain difficult to attain higher levels of academic engagement. We also acknowledge the fact that the roles, perceptions and interests of these stakeholders may continue to change over time, which will in turn lead to further development and evolution of the UCO models. Table 2 compares the two UCO models.

[Insert Table 2 here]

5. Discussion and conclusion

As universities are under increasing pressure to enhance their financial viability and engagement with the wider community, it is necessary to focus on the different models that universities can adopt to commercialise. Based on the relatively small yet open OECD economy of Australia, our study found two different UCO strategic models that are not revenue-focused. It is important to note that every UCO's strategy pays a certain level of attention to every component (university, industry, service and revenue), yet UCOs may emphasise one end of the continuums more than the other. ServiceCo represents the "service-based" commercialisation strategy, which is internally and service-focused. It aims to provide a commercial service for the university (and its academics) through utilising its commercial entity and structures. RelationshipCo represents the "relationship-based" model, which sits in the middle of both continuums as its strategic goals incorporate balanced internal

and external foci, as well as service and revenue foci. Its main objectives are to facilitate knowledge exchange and establish long-term organisational sustainability by covering all three aspects of university commercialisation, including academic service, public awareness and revenue generation.

The two UCOs are also facing different challenges. ServiceCo's main challenges are the absence of clear university policy around research commercialisation and a lack of clear communication (to academics) about the role of this UCO. On the other hand, RelationshipCo is finding that companies often do not want to invest in early stage inventions (offered via the East Access IP option) with high risk and academics do not engage in commercialisation activities due to promotion based on scholarly publications.

Our findings reflect the contingency perspective, where the strategies and operations of the two UCOs responded to environmental conditions and are shaped by different stakeholders. The findings of our research show that although national regulatory contexts can provide opportunities for UCOs to focus on strategies alternative to the revenue-based model, the development, implementation and effectiveness of each UCO's respective strategic model is more significantly influenced by the university, in particular leadership (board and CEO) ideologies and academic perceptions. The university, and especially board members, are the stakeholders that have the most influence on the organisation in both cases, as the board

(which represents the university) defines the role of the UCO, guides the organisation's strategy, and is in charge of CEO selection. The significance of university and leadership influences on UCO strategic models is best illustrated by the fact that although both ServiceCo and RelationshipCo are operating within the same national context and facing similar national contexts and external environmental challenges, they have developed and are pursuing different strategic goals, and have established different organisational structures. On the other hand, in both cases, without awareness or support from the university academics, UCOs will not be able to successfully implement their strategies and achieve intended strategic goals.

Our paper contributes to the literature by presenting a framework with a more holistic view of the array of university commercialisation pathways. The identification of two different university commercialisation models and what they mean sheds light on the complexity of the nature of university commercialisation activities as well as external environmental demands faced by the UCOs. It is important to identify the contexts and strategic orientations of UCOs as these firms seek alternative strategies and pathways to deliver their mission of enhancing university commercial viability within volatile markets and environments. In this respect, our framework may benefit future researchers by providing a basis for the classification and distinction of UCO strategic orientations. Providing specialised services Janus-like to two

highly dissimilar sectors, UCOs are likely to shift towards pursuing objectives beyond financial growth and revenue generation. Our study advances the understanding of such strategic variations.

UCOs are special in the sense that their survival depends on the existence of the university, and most of the main stream universities will strive to establish and maintain a research commercialisation entity. The two cases examined by our research show that while these UCOs are the same type of organisation established by similar universities, they can still pursue very different outcomes. The outcome of our research can therefore inform UCOs of different strategies and activities that may be adopted to achieve a greater fit with their environmental and stakeholder demands. Our findings can especially benefit the UCOs in economies similar to the Australia context.

Future studies may investigate other emerging UCO models. As this particular type of organisation is still evolving in response to changing contexts and shifting needs of both the industry and university, it will be meaningful to explore different aspects of emerging UCO models, including commercialisation strategies or ideologies, organisational structure, performance indicator, governance and management approach, and specialisation of services.

Future research may also examine different UCO strategic models from the academics' and

industry partners' perspectives. This can contribute to the understanding of different university commercialisation strategic models' strengths and weaknesses.

References

- Atkinson, R. D. (2007). Expanding the R&E tax credit to drive innovation, competitiveness and prosperity. *The Journal of Technology Transfer*, 32(6), 617-628.
- Barlow, T. (2006). *The Australian Miracle: An Innovative Nation Revisited*. Australia: Pan Macmillan Australia Pty Limited.
- Baxter, P., & Jack, S. (2008). Qualitative case study methodology: Study design and implementation for novice researchers. *The Qualitative Report*, 13(4), 544-559.
- Burns, T., & Stalker, G. M. (1961). *The Management of Innovation*. London: Tavistock.
- Clark, B. R. (1998). *Creating Entrepreneurial Universities: Organizational Pathways of Transformation*. United Kingdom: Elsevier Science Ltd.
- Clarysse, B., Wright, M., Lockett, A., Van de Velde, E., & Vohora, A. (2005). Spinning out new ventures: a typology of incubation strategies from European research institutions. *Journal of Business Venturing*, 20(2), 183–216.
- Collier, A. (2008). *Enhancing Australian Universities' Research Commercialisation Performance*. (Doctor of Philosophy), Royal Melbourne Institute of Technology University, Melbourne.
- Collis, J., & Hussey, R. (2009). *Business Research: A Practical Guide for Undergraduate and Postgraduate Students*. New York: Palgrave Macmillan.
- Cutler Report. (2008). *Venturous Australia: Review of the National Innovation System*. Australia: Cutler & Company Pty Ltd.
- Denman, B. D. (2005). What is a University in the 21st Century? *Journal of the Programme of Institutional Management in Higher Education*, 17(2), 9-28.
- DEST. (2005). *Metrics for Research Commercialisation: A Report to the Coordination Committee on Science and Technology*. Australia: Department of Education, Science and Training.

- Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*, 14(4), 532-550.
- Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: opportunities and challenges. *Academy of Management Journal*, 50(1), 25-32.
- Engelbrecht, H., & Darrogh, J. (1999). A comparative macro-level assessment of New Zealand's "national innovation system". *Prometheus*, 17(3), 283-298.
- Eriksson, P., & Kovalainen, A. (2008). *Qualitative Methods in Business Research*. London: Sage Publications Ltd.
- Etzkowitz, H. (2003). Research groups as 'quasi-firms': the invention of the entrepreneurial university. *Research Policy*, 32(1), 109–121.
- Friedman, J., & Silberman, J. (2003). University technology transfer: do incentives, management and location matter? *Journal of Technology Transfer*, 28, 17-30.
- Geuna, A., & Muscio, A. (2009). The governance of university knowledge transfer: A critical review of the literature. *Minerva*, 47(1), 93-114.
- Gunasekara, C. (2006). Reframing the role of universities in the development of regional innovation systems. *Journal of Technology Transfer*, 31, 101-113.
- Hall, B., & van Reenen, J. (2000). How effective are fiscal incentives for R&D? A review of the evidence. *Research Policy*, 29(4/5), 449–469.
- Harloe, M., & Perry, B. (2004). Universities, localities and regional development: the emergence of the 'mode 2' university? *International Journal of Urban and Regional Research*, 28(1), 212-223.
- Harman, G., & Harman, K. (2004). Governments and universities as the main drivers of enhanced Australian university research commercialisation capability. *Journal of Higher Education Policy and Management*, 26(2), 153-169.

- Jensen, R. A., Thursby, J. G., & Thursby, M., C. (2003). The disclosure and licensing of university inventions: "the best we can do with the s**t we get to work with". *International Journal of Industrial Organization*, 21(9), 1271-1300.
- Lawrence, P. R., & Lorsch, J. W. (1967). Differentiation and integration in complex organizations. *Administrative Science Quarterly*, 12(1), 1-47.
- Lee, S. S., & Osteryoung, J. S. (2004). A comparison of critical success factors for effective operations of university business incubators in the United States and Korea. *Journal of Small Business Management*, 42(4), 418-426.
- Lindelof, P., & Lofsten, H. (2003). Science park location and new technology-based firms in Sweden - implications for strategy and performance. *Small Business Economics*, 20(3), 245-258.
- Markman, G. D., Gianiodis, P. T., Phan, P. H., & Balkin, D. B. (2005). Innovation speed: transferring university technology to market. *Research Policy*, 34(7), 1058-1075.
- Martin, B. R., & Johnston, R. (1999). Technology foresight for wiring up the national innovation system: experiences in Britain, Australia, and New Zealand. *Technological Forecasting and Social Change*, 60(1), 37-54.
- Merriam, S. B. (1988). *Case Study Research in Education. A Qualitative Approach*. San Francisco: Jossey-Bass Inc., Publishers.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook* (2nd ed.). California: Sage Publications, Incorporated.
- Morse, J. M., & Richards, L. (2002). *Readme First for a User's Guide to Qualitative Research*. California: Thousand Oaks, CA: Sage.

- O'Shea, R. P., Allen, T. J., Chevalier, A., & Roche, F. (2005). Entrepreneurial orientation, technology transfer and spinoff performance of US universities. *Research Policy*, 34(7), 994-1009.
- OECD. (2007). New Zealand. *Organisation for Economic Co-operation and Development Reviews of Innovation Policy*.
- OECD. (2011). Gross Domestic Expenditure on R&D as a Percentage of GDP. from Organisation for Economic Cooperation and Development http://www.oecd-ilibrary.org/science-and-technology/gross-domestic-expenditure-on-r-d_2075843x-table1
- Phan, P. H., & Siegel, D. S. (2006). *The Effectiveness of University Technology Transfer*. Hanover, MA: Now Publishers Inc. .
- Rothaermel, F. T., Agung, S. D., & Jiang, L. (2007). University entrepreneurship: a taxonomy of the literature. *Industrial and Corporate Change*, 16(4), 691-791.
- Siegel, D. S., Waldman, D. A., Atwater, L. W., & Link, A. N. (2003). Commercial knowledge transfers from universities to firms: improving the effectiveness of university-industry collaboration. *Journal of High Technology Management Research*, 14, 111-133.
- Sobol, M. G., & Newell, M. K. (2003). Barriers to and measurements of the diffusion of technology from the university to industry. *Comparative Technology Transfer and Society*, 1(3), 255-276.
- Tornatzky, L. G., Waugaman, P. G., & Gray, D. O. (2002). *Innovation U: New University Roles in a Knowledge Economy*. Southern Growth Policies Board.
- Van de Ven, A. H., Ganco, M., & Hinings, C. R. (2013). Returning to the frontier of contingency theory of organizational and institutional designs. *The Academy of Management Annals*, 7(1), 393-440.

Woodward, J. (1965). *Technology and Organization*. Oxford: Oxford University Press.

Yin, R. K. (2014). *Case Study Research: Design and Methods* (5 ed.). United States of America: Sage publications, INC.

	ServiceCo	RelationshipCo
Strategic/ executive level staff interviewed	8	6
Line Managers interviewed	9	(4)*
Employees interviewed	12	14
Male	10	14
Female	19	6
Total number of interviews (including repeat interviews)	31	20

Table 1: Overview of cases and informants

*4 line managers in RelationshipCo are also part of the strategic team

Figure 1: The strategic dimensions and models of university commercialisation

Figure 2: ServiceCo organisational chart

Figure 3: RelationshipCo organisational chart

		ServiceCo	RelationshipCo
UCO strategies	UCO strategic goal	Providing services similar to commercial consulting to the academics and enhancing the university's economic bottom line.	Focusing on relationship-building in the aim to further increase public awareness of the research output generated by the university
	Measurement of performance	Delivery of required services; meeting goals set by the board.	Academic perception and public awareness (e.g. number of new academics contacted and qualitative feedback from academics and community).
Organisational structure	Organisational structure	Functional structure: Three client-servicing divisions and three company support divisions. Clear service areas.	Matrix structure: Focusing on technology commercialisation, Easy Access IP and marketing. Enables flexibility.
	Key organisational activities	Teaching and learning commercialisation (developing courses for university academics); Contract and asset management (IP and contract management); Technology transfer (licensing and company start-ups).	Commercialisation for high-value opportunities (licensing, spin-off); Academic services team disclosing IP to businesses at a small cost; Open innovation and marketing; Managing patents.
Factors shaping the strategic model	University leadership	Board directs UCO strategy.	Board searches for and selects CEO.
	CEO ideology	CEO has little autonomy in driving strategic changes.	CEO in charge of driving changes and initiates new strategy.
	Academic support	Lack of academic awareness of ServiceCo's purpose or existence and lack of university guidelines regulating how academics work with ServiceCo.	Prior to 2011 low academic support. After 2011 higher level of academic interest and trust.

Table 2: UCO strategies and characteristics

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