Improving Innovation Process Performance and Service Quality in Innovation Networks

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Abstract The prevalence of innovation networks is ever increasing, with the role of universities in national innovation systems increasingly being emphasised. This chapter investigates the use of an innovation management application (IMA) by the technology transfer office of a university-focused innovation network that focuses on commercialisation of technologies developed by university researchers. Innovation process performance emerged as an important mediator between characteristics of the innovation management application (compatibility of the technology, perceived ease of use and perceived usefulness) on attitude towards the technology, and toward the intermediary's innovation orientation and service quality. Our research addresses marketing issues in the innovation context by relying on IMA as a means for fostering the underlying processes. Furthermore, the results extend the emerging literature on innovation process performance by not only establishing its relevance for an innovation network context but also by demonstrating its role as a mediator between IMA characteristics and attitude towards technology. The chapter concludes with an outline of managerial implications and future research directions.

Keywords Innovation networks · Innovation management application · Innovation process performance · Service quality · Technology transfer offices

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Introduction

Innovation is increasingly moving beyond organisational boundaries and occurring within inter-organisational networks, given scarce research and development (R&D) funding and shorter product life cycles (Bunn et al. 2002). These innovation networks comprise groups of organisations including government, business, research institutes and universities (Möller and Svahn 2009; Rampersad et al. 2009). Marketing and innovation literatures emphasise the need for firms to collaborate with other organisations in achieving strategic innovation outcomes including the development of new products and services (Möller and Svahn 2009; Rampersad et al. 2009). To ensure the effectiveness of innovation networks, authors points out the necessity of more research on the factors driving innovation process performance, including those pertaining to service innovation within networks (Salunke et al. 2011; Soosay and Chapman 2006).

A stream of research has emerged noting the role of intermediaries in innovation networks in bridging research and business throughout the innovation process (Yusuf 2008). Such intermediaries may engage in a broad range of activities throughout the innovation process and contribute to reaching the planned outcomes. With numerous literature contributions dealing with the different roles of intermediaries such as technology transfer offices (Gassmann et al. 2011) and mechanisms through which intermediation occurs (Yusuf 2008), our current understanding of these actors within an innovation network remains limited, leading to growing calls for further research in this area (Gassmann et al. 2011).

In a higher education context, university technology transfer offices (TTOs) are commonly expected to take over the role as intermediaries coordinating and supporting research commercialisation (Wood 2011; Perkmann et al. 2013). As service providers, they support researchers, students and doctoral candidates in making use of the university's innovation network potential (Kesting and Wurth 2015). As part of their service offering, TTOs have started to engage technology, such as innovation management applications (IMA), for innovation processes. Existing literature has not been based on strategic innovation process oriented technologies like IMAs but have focused on tactical technologies used in operations such as radio frequency identification systems (RFID); global positioning systems (GPS); point of sales (POS); electronic data interchange (EDI) (Bendoly et al. 2007). However, there are calls for more attention to be placed on strategic technologies like IMAs in supporting the link between research and development (R&D) and marketing in commercialising new technologies (Chapman et al. 2003).

This study is therefore pertinent as it focuses on such IMAs which serve to support these processes. They are important with respect to fostering relational advantages for organisations both internally and externally (Lengrand and Chartrie 1999), thereby enabling a holistic approach to commercialisation. Yet, their ability to improve innovation process performance and contribute to perceptions of the TTO remains unknown. Universities are increasingly identifying the need to innovate to contribute to economic and regional development, particularly given the

decreasing levels of public R&D funding, requiring the need to build relationships with other organisations (Patel et al. 2012). While they may focus on commercialising technologies that lead to either product or process innovations in industry, the process of innovation by which they commercialise these technologies are of increasing interest.

In particular, researchers are yet to examine what drives network actors' perceptions of such organisations in an innovation network context. In this respect, perceptions of innovation orientation and service quality are deemed critical. Innovation orientation can be defined as the openness of an organisation to new ideas and its capacity to change through the adoption of new technologies, skills, resources, and systems (Chen et al. 2009a; Siguaw et al. 2006). Given its implications for sustained customer demand, perceptions of value, loyalty and competiveness, service quality has been attracting considerable attention from both researchers and practitioners. Benefits arising from high levels of perceived service quality include service loyalty (Bitner 1990), word of mouth intentions (Parasuraman et al. 1991), service acceptance (Olorunniwo et al. 2006) and willingness to pay a price premium (Zeithaml et al. 1996).

An important outcome of innovation processes surrounding service innovation is the perceived service quality and whether perceived service quality with a focal innovation is higher than before. TTOs service both inter- and intra-organisational groups, by not only focusing on external clients in the business and government communities but also by servicing researchers, students and other actors within the university. Such a complex approach requires an integrative view of marketing perspectives, previously described as organisational marketing (Kesting et al. 2014). Despite the prolific research on service quality and its benefits on an organisational level, scholars in a technology context have tended to examine the service quality of the technology-based service rather than of the organisation (i.e. Carlson and O'Cass 2010). In particular, technology represents a strong facilitator of effective and efficient service delivery as it provides customers and employees with tools to optimise the service experience (Bitner et al. 2010). However, service quality is yet to be conceptualised and tested in an innovation network domain where IMAs are employed.

Hence, our chapter addresses the following research question: How does an IMA implemented by a TTO impact on innovation process performance and service quality perceptions within innovation networks? With hypotheses developed next, our empirical study examining the users' perception of an IMA implemented by an Australian TTO is discussed. We finalise our chapter by outlining conclusions, implications and future research directions.

Hypotheses Development

Compatibility has been shown to be an important driver of technology adoption in a business-to-consumer context (Liang et al. 2007). It is defined as the "degree to which the innovation is seen as consistent with potential users' existing values,

previous experiences, and needs" (Wu and Wang 2005, p. 721). The greater the fit between the individual's work style and a technology, the more likely acceptance will be (Saaksjarvi 2003). In our research, this means that if the IMA is perceived to be well-suited to the individuals' current way of working, they are more likely to regard it as useful and, consequently, become motivated to integrate it into their current work routines (Meuter et al. 2005). Increased compatibility reduces the efforts required for technology adoption, suggesting that individuals might view the technology as easier to use than one that is not compatible with their respective working habits (Chau and Hu 2002).

Perceived ease of use is the "degree to which a person believes that using a particular system would be free of effort" (Davis 1989, p. 82). While the impact of perceived ease of use on technology adoption has been well documented, its role in the technology acceptance research remains controversial, as the nature of a technology, task or related service may influence its perceived ease of use (Fang et al. 2005). Perceived usefulness is "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis 1989, p. 320). A technology is expected to be highly useful when a potential adopter believes that there is a direct relationship between use and productivity, performance, effectiveness or satisfaction (Lu et al. 2003). Another relevant aspect is a user's attitude towards technology, defined as an evaluative summary judgment or predisposition to respond either favourably or unfavourably to a computer system and software, staff, or procedures related to it (Hong et al. 2008; Melone 1990). In work settings where innovation network partners from different organisations collaborate in technology usage, IMA use is likely to be voluntary. Under such conditions, technology acceptance and usage is only likely to ensue when users hold favourable attitudes towards it (Liker and Sindi 1997), suggesting the need for including attitude as a relevant construct in this research. Therefore:

Hypothesis 1: Compatibility is positively related to IMA's perceived ease of use (H1a) and perceived usefulness (H1b).

Research has conceptualised and confirmed the direct effects of ease of use and perceived usefulness on attitude towards a technology in multiple contexts (Davis 1989). While demonstrating general applicability, it should be noted that both antecedents, ease of use and perceived usefulness, are very broad in their conceptualisation and have primarily been tested in individual user contexts without considering the manner in which they operate in networks. With multiple actors engaging in innovation, it is likely that an actor's attitude towards a technology supporting collaborative innovation processes depends on individual perceptions concerning innovation outcomes rather than merely on the perceived IMA characteristics, even if these are perceived to support individual efforts. That is, drawing on social cognitive theory (Compeau and Higgins 1995), the ease with which an IMA can be used and its usefulness for individual work effectiveness may positively impact on innovation development by driving individual actions. However, the individual's attitude towards the technology is likely to depend on the actual outcome of using the technology within the innovation network; for example,

whether suitable industry partners have been engaged and if the outcome of commercialisation in actually leading to a successful product or service.

This outcome can be measured by using innovation process performance, which refers to whether the commercialisation pace of new products or services is accelerated; and whether new products or services are developed, are profitable and enhance market value (Chen et al. 2009b; Rampersad et al. 2012a). Despite growing calls for research on better performance measures to assess innovation processes within networks (Soosay and Chapman 2006), the construct of innovation process performance is yet to be tested empirically within the context of innovation networks (Rampersad et al. 2012b). Based on these considerations, we thus hypothesise that:

Hypothesis 2: Perceived ease of use is positively related to innovation process performance.
Hypothesis 3: Perceived usefulness is positively related to innovation process performance.
Hypothesis 4: Innovation process performance is positively related to attitude towards the IMA.
Hypothesis 5: Innovation process performance mediates the associations between IMA characteristics (ease of use [H6a] and perceived usefulness [H6b]) and attitude towards the IMA.

In further conceptualising innovation process performance in a network, we note that research has yet to examine its association with the perceptions of intermediaries in the innovation processes. For example, while previous research has investigated the adoption of innovation orientation (Simpson et al. 2006), it has omitted the role such orientation can play for intermediaries within a network context. We expect the success in innovation development to positively influence the perception of the TTO. The greater such success, the more likely the involved actors will perceive the TTO as innovation-oriented. Therefore, we hypothesise that:

Hypothesis 6: Innovation process performance is positively related to the perceived innovation orientation of the TTO.

Whilst considerable research is devoted to improve our current understanding of service quality (Brady and Robertson 2001), there is a paucity of studies concerning its role in innovation domains. Specifically, research has yet to examine whether the provision of an IMA in innovation networks helps to improve the users' perceptions of the service quality offered by the intermediaries involved. While the services marketing literature converges in relation to the importance of perceived service quality, many conceptualisations and measurements of this construct exist. Brady and Cronin (2001) developed a framework aimed at integrating earlier divergent perspectives. It suggests that service quality entails three dimensions, namely interaction (functional), outcome (technical) and physical environment quality. Hence, if an intermediary utilises an IMA as an extension of its service provision, a positive attitude towards the IMA is likely to transfer to the intermediary. This is consistent with the work of Dabholkar (1996), who finds that attitude towards a

technology is directly related to service quality when technology-based self-service options were used by customers in a fast-food domain. The argument also aligns with research on self-service technologies (Liljander et al. 2006). Hence, we hypothesise that:

Hypothesis 7: Attitude towards the IMA is positively related to perceived service quality of the TTO.

Despite Hurley and Hult (1998) pointing out the necessity to explore the impact of innovation orientation on perceived service quality more than 15 years ago, the relationship between a firm's innovation orientation and perceived service quality remain under-researched in innovation networks (Chen et al. 2009a). With innovation central to the network facilitated by the intermediary, a positive evaluation of the intermediary's emphasis and attention to innovation is likely to positively affect service provision evaluations. This reasoning is consistent with Simpson et al. (2006), who offered a comprehensive analysis of innovation orientation outcomes and propose a number of market advantages arising from innovation orientation, including a positive impact on company image and reputation (Simpson et al. 2006). Hence, we propose that:

Hypothesis 8: Innovation orientation is positively related to perceived service quality of the TTO.

Method

Research Context and Sampling

Our research focuses on a newly developed IMA, which had recently been implemented at a mid-sized Australian university, namely by its TTO. This TTO promotes exchange and partnership between university actors and external entities and aims at fostering engagement of relevant stakeholders throughout the innovation process and in general. The IMA in question constitutes a web-based platform that has been successfully commercialised and facilitates information exchanges amongst the members of an innovation network project as well as flexible planning and reporting mechanisms for innovation portfolios. The underlying environmental conditions reflect a typical scenario in which a TTO is embedded in the university and acts as an intra-organisational service provider. In addition, due to its emphasis on promoting interaction between members of the innovation network, the IMA implemented by this Australian TTO was deemed a suitable technology for investigating the factors impacting on innovation process performance and service quality perceptions within innovation networks.

The relevant population of IMA users comprises in total 100—students, university researchers and university's TTO staff members. A sample size of 100 is

deemed suitable for the relevant structural equation modelling analysis technique that will be applied (Hair et al. 2006), as discussed in Sect. 4. Students represent the largest user group. 65 students extensively used the IMA over the period of one semester as they worked on the commercialisation of an idea as part of an innovation management course. In addition to students, 22 university researchers employed the IMA for managing their commercialisation projects and engaging with the TTO at the time of data collection. The third group included in the population comprises 13 TTO staff members that routinely engage with the IMA. Having sent out the questionnaire, we achieved a rather high response rate of 68 %. The final sample is composed of 57 students, nine TTO staff members and two researchers.

Construct Operationalisation

Existing and validated measurements for all constructs were adapted from extant literature to the current context. Specifically, the framework entails four constructs relating to technology and its connection with the user: compatibility, ease of use, perceived usefulness and the attitude towards the technology. The measurement of compatibility with the technology reflects the extent to which the technology is compatible with an individual's work practices and preferences (Meuter et al. 2005). Much of the extensive work examining perceived ease of use and perceived usefulness have adopted scales developed by Davis (1989), also employed here. Similarly, we conceptualise attitude towards the technology in line with research on technology adoption models (TAM), measured as seen in Taylor and Todd (1995).

Innovation process performance refers to the advancement of new products and services (Chong et al. 2011), considering the level of perceived development and profitability as well as the extent to which the innovation provides market value (Chen et al. 2009a, b; Rampersad et al. 2012a). The firm-related constructs are based on marketing and innovation literatures. Service quality of the TTO was captured by a global measure of quality based on Dagger and Sweeney (2007) and Brady and Cronin (2001). Hence, rather than focusing on individual aspects or separate episodes of service delivery, the measure takes a cumulative perspective, asking respondents about their general perceptions of the TTO's service. Regarding innovation orientation, we employ the measurement proposed by Chen et al. (2009a) (see Appendix for the complete list of construct items included in the framework).

Construct Reliability and Validity

Construct reliability was confirmed using Cronbach's alpha (α) (Cronbach 1951) and composite reliability scores (Diamantopoulos and Siguaw 2000), all of which

Table 1 Reliability, convergent and discriminant validity scores

Construct	No. items	α	p_η	AVE	Highest λ^2
Compatibility of technology	3	0.90	0.90	0.74	0.61
Perceived ease of use	3	0.90	0.90	0.74	0.24
Perceived usefulness	4	0.97	0.97	0.87	0.61
Attitude towards technology	3	0.91	0.92	0.79	0.50
Innovation process performance	3	0.94	0.93	0.83	0.50
Perceived service quality	3	0.94	0.94	0.85	0.65
Innovation orientation	4	0.95	0.94	0.80	0.65

α = Cronbach's alpha (Cronbach 1951)
p_η = Composite reliability (Diamantopoulos and Siguaw 2000)
AVE = Average variance extracted (Fornell and Larcker 1981)
Highest λ^2 = Highest shared variance (Fornell and Larcker 1981)

are 0.90 or higher (Table 1). Average Variance Extracted (AVE) was employed to test for convergent validity (Fornell and Larcker 1981), with all scores above the required 0.5. Finally, discriminant validity was substantiated as the highest shared variance emerged as higher than the AVE scores (Fornell and Larcker 1981). With proven construct reliability and validity, composite scores were created for further analysis (Farris et al. 1992). As detailed in Table 1, results demonstrated acceptable construct reliability and validity.

Discussion

Hypotheses were tested with Structural Equation Modelling (SEM) principles using AMOS 19. SEM is advantageous in this context as it enables the analysis of complete and complex models (Kline 2005). To allow its use despite a small sample size, we employed composites scores and utilised bootstrapping, a re-sampling procedure which derives confidence estimates based on numerous sub-samples of the original sample (Kline 2005). The results reported below were also confirmed by linear regression analysis using SPSS, confirming that the sample size did not affect the results. The analysis shows a model that fits the data well (χ^2: $p > 0.05$, χ^2/df = 1.20, RMSEA = 0.05, GFI = 0.94, TLI = 0.98, CFI = 0.99, NFI = 0.93). Overall, the model explains 65 % of the variance in the firm's perceived service quality.

As shown in Fig. 1 and Table 2, all hypotheses are supported. Compatibility of the technology has a strong positive impact on perceptions relating to the technology, including its perceived ease of use and usefulness. In particular, compatibility explains a strong 53 % of the perceived usefulness of the IMA. Hence, whether an IMA is seen as useful depends to a great extent on whether users perceive a close alignment between their current way of working on the one hand, and the IMA on the other. This finding contributes to the literature by substantiating

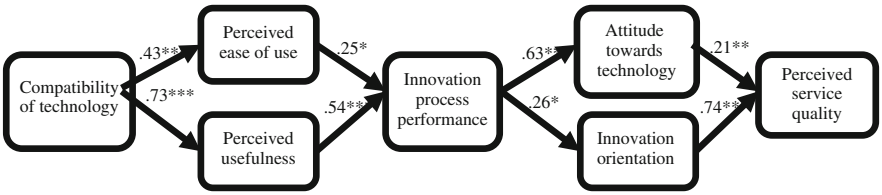

Fig. 1 Path Model

Table 2 Path model results

Hyp.	Independent variable	Dependent variable	Standardized Effects	Critical ratio
1a	Compatibility of technology	Perceived ease of use	0.43	3.88***
1b	Compatibility of technology	Perceived usefulness	0.73	8.69***
2	Perceived ease of use	Innovation process performance	0.26	2.49*
3	Perceived usefulness	Innovation process performance	0.54	5.28***
4	Innovation process performance	Attitude towards technology	0.63	6.84***
6	Innovation process performance	Innovation orientation	0.26	2.24*
7	Attitude towards technology	Perceived service quality	0.21	2.96**
8	Innovation orientation	Perceived service quality	0.74	10.21***

χ^2: $p > 0.05$, χ^2/df = 1.20, RMSEA = 0.05, GFI = 0.94, AGFI = 0.87, TLI = 0.98, CFI = 0.99, NFI = 0.93

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$

Results are based on Bootstrap = 500; 95 % confidence level

the association between compatibility and perceived usefulness identified in a consumer context (Koenig-Lewis et al. 2010; Wu and Wang 2005) within an innovation management context. Furthermore, it illustrates the importance of considering the users' work routines and customs in the design of technology aimed at supporting intra-organisational innovation processes.

Researchers argue that the compatibility of a technology with an individual's working habits is particularly critical if repeated performance of a particular role has reinforced specific work customs and patterns of behaviour (Chau and Hu 2002). As our sample primarily comprises students, this reasoning does not explain our findings. These students represent early career innovation managers lacking long-established work behaviour patterns. Rather, our findings suggests compatibility as critical for IMA adoption independent of the length of practice, emphasising the importance of considering behavioural work patterns and working habits

when arranging the use of technology in networked innovation management contexts.

Both ease of use and perceived usefulness impact innovation process performance, supporting H2 and H3, with IMA's perceived usefulness showing a stronger impact than ease of use. Hence, the more the IMA is seen to increase work effectiveness and productivity, the more positive the individuals' evaluations are relating to the innovation project. This means that ease of use and perceived usefulness drive innovation advancement by fostering actions that lead to an accelerated commercialisation pace and/or improved product development. In turn, innovation process performance positively impacts attitude towards the technology (H4), as shown by a strong path coefficient of 0.63. This finding may be explained by the context, which entails a strong emphasis on work performance. This means that the achievement of a positive outcome within the innovation network will determine whether the individual user develops a positive attitude towards the IMA. Moreover, considering the integration of multiple actors, these actors use the outcome relevant for the network (i.e. the innovation process performance) as a key driver for their attitude towards the IMA.

Given the integration of innovation process performance as a mediator into the commonly investigated associations between perceived ease of use and perceived usefulness on attitude towards the technology, further analysis of this mediating role was undertaken. Based on Barron and Kenny (1986), perceived ease of use, perceived usefulness and innovation process performance significantly impacted on attitude towards technology individually (0.42, $p < 0.000$; 0.52, $p < 0.000$; 0.64, $p < 0.000$, respectively). However, the direct paths between the independent variables and attitude towards technology became insignificant once innovation process performance was included into an overall framework. Hence, innovation process performance is shown here to fully mediate the central paths of the technology acceptance model, confirming H5.

Embedded in the network context of this study, the results support the proposed association between innovation process performance and the perceptions of an innovation orientation of the TTO in the innovation network (H6), providing insight into the drivers of such perceptions. Research has investigated the relevance of innovation orientation, an organisational resource commonly investigated at an organisational level, for innovation outcomes of the firm (Simpson et al. 2006). However, this study provides an initial examination that the level to which an innovation is seen as developed, profitable and valuable in the marketplace impacts on perceptions of the network actor responsible for innovation management. Hence, it broadens our understanding by going beyond the organisational unit of analysis: Outcomes of collaborative activities enhance perceptions relating to resources, which are embedded in the network (Baraldi et al. 2007), and thus may positively impact on other actors and joint activities.

Results further show that a positive attitude towards the technology fosters the perceived service quality of the TTO implementing the IMA (H7). These findings

contribute to the literature by surpassing a common focus on technology usage intentions or actual usage (Chau and Hu 2002; Meuter et al. 2005) and endorsing an association between attitude towards technology usage and performance on an innovation project as well as on the perception of central actors within the network. This extension is critical as it validates the benefits of IMA adoption at both a project and organisational level in an innovation network.

Perceived service quality also emerged as dependent on the respondents' perceptions of the TTO's innovation orientation, supporting H8 with a path coefficient of 0.74. While earlier research has confirmed the relevance of innovation orientation as an organisational resource for achieving competitive advantage and firm performance (Chen et al. 2009a; Matzler et al. 2010), customer perceptions resulting from such resource have not been considered previously. This is despite attitudes such as perceived service quality being known to improve loyalty and word-of-mouth behaviour as well as service acceptance (Olorunniwo et al. 2006).

Conclusion

Scholars have been seeking to develop a comprehensive understanding of innovation networks and their success factors, taking into account some of the inherent challenges, such as the diversity of the actors' goals (Corsaro and Snehota 2011). We contribute to the discussion by examining the impact of an IMA on innovation process performance and service quality perceptions within a university-focused innovation network. The university TTO served as the intra-organisational service provider in this context.

This research improves our understanding of the importance of compatibility in the innovation context, confirming a particularly strong relevance for perceptions of usefulness, which in turn emerged as a strong predictor of innovation process performance. Furthermore, our contributions extend the emerging literature on innovation process performance by not only establishing its relevance for an innovation network context but also by demonstrating its role as a mediator between IMA characteristics and attitude towards technology. This mediating relationship reflects an important feedback loop as the adoption of a technology not only impacts on performance but this performance, in turn, subsequently impacts on attitude towards the technology and orientation and perceptions of service quality. Adopting IMA in organisational networks can instead maximise network externalities and innovation development efficiency (Troshani and Doolin 2007; Troshani et al. 2011). Importantly, this research directly addresses recent calls in the literature for research providing a better understanding of the role of and impact of boundary-spanning actors (Gassmann et al. 2011), as perceptions relating to the innovation orientation and perceived service quality of TTOs in an innovation network context have remained under-researched.

Managerial Implications

As shown in our research, when choosing an IMA and encouraging its adoption within a network context, emphasis should be placed on the extent to which the technology fits with the way actors work. That is, these actors should assess the extent to which an IMA fits with existing systems, processes, and practices (Troshani et al. 2011). Not only does compatibility directly impact on perceived usefulness, but it also indirectly impacts on innovation performance. This is likely to be challenging in innovation networks, as it brings together a multitude of actors (Rampersad et al. 2009), most of whom are likely to differ not only in their innovation goals but also in their ways of working (Plewa et al. 2005). Intermediaries should evaluate and foster identified drivers of service quality perceptions. Our results show that perceptions of innovation orientation are partly formed by innovation process performance. However, TTOs may also seek to further build and communicate their innovation orientation across networks.

Limitations and Future Research Directions

Despite its contributions, our research suffers from some limitations. First, the sample largely consists of student respondents. While student samples may affect the external validity of the study, they were deemed suitable as these students not only represent one important IMA user group in university contexts, but they also worked on real-life innovation projects with viable and realistic commercialisation outcomes. Nevertheless, a replication of the study across different IMAs, TTOs and across countries is recommended to test for generalisability. Second, based on these findings, additional qualitative surveys among the IMA users would allow researchers to establish in-depth insight regarding the implementation of IMAs in different contexts and the mediating role of innovation process performance on technology and firm-related outcome factors as discussed here.

To sum up, our research serves as an important first step for validating relevant measures as well as proposing and testing a conceptual model in examining the use of technology in fostering innovation process performance and in turn improved service quality in an intra-organisational context.

Appendix: Measurement Items

Variable and items used (all measured on 7-point Likert scales)
Compatibility of technology (α = 0.90)
Using [the technology] is compatible with my way of working
Using [the technology] is completely compatible with my needs

(continued)

(continued)

Variable and items used (all measured on 7-point Likert scales)
[The technology] fits well with the way I like to get things done
Perceived ease of use (α = 0.90)
I find it easy to get [the technology] to do what I want it to do
My interaction with [the technology] is clear and understandable
I find [the technology] easy to use
***Perceived usefulness* (α = 0.97)**
Using [the technology] in my work enables me to accomplish tasks more quickly
Using [the technology] improves my work performance
Using [the technology] in my work increases my productivity
Using [the technology] enhances my effectiveness on the work
***Attitude towards technology*(α = 0.91)**
Using [the technology] is a good idea
Using [the technology] is a wise idea
I like the idea of using [the technology]
Innovation process performance (project for which the technology has been or is being used) **(α = 0.94)**
The new products or services are developed
The new products or services are profitable
The new products or services enhance value to the market
Perceived service quality of the firm (α = 0.94)
The overall quality of the service provided by [the TTO] is excellent
The quality of the service provided by [the TTO] is impressive
The service provided by [the TTO] is of a high standard
Innovation orientation of the firm (α = 0.95)
[The TTO] pays close attention to innovation
[The TTO] emphasizes the need for innovation for development
[The TTO] embraces, accepts, and measures innovation
[The TTO] actively seeks innovative ideas

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