A Service Design framework for doctoral program management

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Abstract

The conventional approach to doctoral program management in Australia and New Zealand has been criticized for its failure to keep pace with changes to the educational context. Ongoing challenges associated with the system parameters of doctoral programs further support the need for an alternative perspective to this critical research training process. As a first step toward improved doctoral program outcomes, a management framework based on the concept of Service Design is proposed. This framework emphasises the value of incorporating students as co-designers of the doctoral program. The effectiveness of this approach is demonstrated by undertaking and reporting a student journey-mapping exercise. Future research activities that contribute toward the Service Design approach for doctoral program management are identified and discussed.

Keywords: service design, new service development, service quality, doctoral programs, customer value, innovation adoption.

Effective research systems are central to a nation's economic growth and development as they provide new resource opportunities through the creation, dissemination and application of new knowledge (Commonwealth of Australia 1999; LERU 2007; Lisbon Summit 2000). With this benefit in mind, the federal governments of both Australia and New Zealand seek to ensure that the researchers and research managers who work within their national systems are highly skilled (Denholm & Evans 2007). Considerable importance is subsequently placed on the doctoral programs within each country as this type of training contributes substantially to the pool of skilled researchers that each individual research system may draw upon (King 2007).

Commenting over a decade ago, Pearson (1999) argued that the conventional view of doctoral education in Australia was problematic and that an alternate perspective was required if concerns over quality management were to be effectively addressed. Key issues driving this push for an alternate perspective were the rapid growth of student numbers, greater diversity in the student population and the move toward flexible patterns of research and study (Pearson 1999). In more recent times, additional factors which impact the quality management of doctoral programs have been realised. For example, the need to ensure that research training is more responsive to employer needs has been well recognised for students of both the professional (see Lee Brennan & Green 2009) and traditional doctorate (see Malfroy & Yates 2003). Despite this awareness however, and despite repeated calls for research training reform in Australia (see Commonwealth of Australia 1999; Bradley, Noonan, Nugent & Scales 2008), the framework which governs doctoral program management in this country has remained unchanged and outdated.

In this paper we propose a new approach to doctoral program management which is based on the concept of Service Design. In proposing this framework we argue that Service Design is particularly appropriate as it provides a research-based holistic approach that is necessary for quality management and program innovation (Pearson 1999; McAlpine & Norton 2006). To achieve our objective, we firstly review the concept of Service Design and establish an appropriate working definition. This discussion provides necessary background information for our subsequent application of Service

Design to the doctoral program context, a process that includes separate stakeholder mapping and customer journey mapping activities. The paper concludes with suggestions for future research that will make valuable contributions to further development of a Service Design framework for doctoral program management.

SERVICE DESIGN

According to service-dominant logic (Grönroos 2008; Vargo & Lusch 2008), services are understood to be a value-generating process in which the customer participates as co-producer of resources and the firm acts as co-creator of value for the customer (i.e. value-in-use). This joint value creation is said to result from interactions where the customer influences the firm's processes and the firm influences the customer's value creation (Grönroos 2011). This process-based interaction and value-creation highlight three key principles of service-dominant logic: (1) an interaction concept as a key construct, (2) a consumption process instead of product outcome, and (3) the co-creation of value and a value-in-use perspective (Grönroos, 2006; Vargo & Lusch, 2008). Building on this logic, the area of Service Design has evolved its scope from 'user-centred design' to 'co-design' (Mager 2009; Kimbell 2009). According to White (2008) and Ostrom et al., (2010), this mutually dependent process derives from a multidisciplinary approach to design, where designers work with experts from diverse fields such as research, technology and communication. Morelli (2009) and Ojasalo (2009b) similarly argue that Service Design integrates the expertise from different disciplines and incorporate customers as temporary participants in the service management process. Thus, due to the interactivity and complexity of services, co-design has changed the landscape of business and management practice by introducing collective creativity and mutual learning experiences.

The literature shows great variations in formal descriptions of the Service Design concept. Gummesson (1994: 85) defines Service Design as "hand-on activities to describe and detail a service, the service system and the service delivery process" as part of the wider concept of service

development. Alternatively, Zehrer (2009) places Service Design as the second element in a three-phase model of service development that consists of service creation, Service Design, and service management; each of which align with the firm's overall service strategy. Other authors derive Service Design from product design and use the term Service Design for describing the whole process from 'idea generation' to 'implementation' (e.g. Zeithaml, Parasuraman & Berry 1990; Hollins 1993; Hollings & Shinkins 2006). Moreover, closely associated with Service Design is the concept of service innovation, whose definition ranges from the narrow view of 'idea generation' as part of the new service development (NSD) to the whole process of service development (Goldstein, Johnston, Duffy & Rao 2002; Magnusson, Matthing & Kristensson 2003; Ojasalo 2009a). Clearly, the lack of a single definition leads to confusion between the terms NSD, service innovation, Service Design and their individual processes (Johnson, Menor, Roth & Chase, 2000), an outcome which suggests that Service Design is not yet a defined discipline (Ostrom et al., 2010).

Instead of representing a distinct subordinate stage in the service development process, as suggested in early definitions, we adopt the view that Service Design is a multidisciplinary activity and a particular way of thinking to enhance creativity and connectivity across different disciplines in organizations (Stickdorn & Schneider 2010; Ostrom et al., 2010). Hence, Service Design is best described as a collaborative, cross-disciplinary activity that "involves the orchestration of clues, places, processes and interactions that together create holistic service experiences for customers, clients, employees, business partners, or citizens" (Ostrom et al., 2010: 17). As a collaborative and cross-disciplinary approach, Service Design enlists the customer as a co-designer. The view that the customer is a new source of competence and creativity in the Service Design process expands the boundaries of the service organization. In this context, the customer functions as 'informant' and 'co-designer,' and fulfils the role of temporary participant in the Service Design process (Ojasalo, 2009b).

Among the various techniques associated with Service Design, visualisation methods play a key role in developing effective communication between stakeholders. Poor communication is often attributed to the limited tangibility of services and the heterogeneous background of the co-designers (Diana,

Pacenti & Tassi 2009). Visualisation throughout all phases of the design process transforms ideas and processes into visible dimensions, thereby creating greater clarity for all stakeholders involved in the co-design process (Mager 2009). A study by Segelström (2009) found that the three main reasons for service designers using visualizations during their Service Design process were: (1) to articulate insights gained from the collected data; (2) to communicate insights to the clients; (3) to keep empathy as a way of keeping the data 'alive' during the process. The most common visualization techniques include stakeholder mapping, customer journey mapping, blueprinting, narratives, and personas.[1]

The fit of Service Design and Doctoral program management

According to Mager (2009), Service Design provides a holistic approach to service marketing and the development of a stakeholder map is a critical first step toward this outcome. The application of Service Design to the doctoral program context therefore begins with the identification of key stakeholders and their interactions.

Published work associated with the analysis of doctoral training effectiveness has predominantly focussed on the supervisor role. Given the pivotal function of this position, supervisors are often regarded as leaders or managers of the doctoral process (Vilkinas 2002) and training outcomes are somewhat unfairly attributed solely to their performance. Reflecting this focus is the variety of studies that have sought to examine the personal characteristics of supervisors and their influence on various measures of research training effectiveness. Examples include those studies which have focused on a supervisor's cognitive (Armstrong 2004) and management (Gatfield 2005) style, as well as their research interests (Franke & Arvidsson 2011).

While the supervisor clearly plays a critical role in the doctoral training process, there are many additional factors that contribute to program outcomes. Collectively, such factors may be described as

[1] For an overview of visualization techniques used in service design see: Service Design Tools (2010).

the system parameters of doctoral program management (Vilkinas 2002) and also includes individual students, institutions of higher education, government and the society in which they operate.

Students are the most conspicuous stakeholder in the doctoral training process and as such, extensive research has been undertaken to better understand their experience (see Harman 2003; Neumann & Rodwell 2009). Recent attention in this area has turned toward the analysis of a student's motives for undertaking doctoral studies (see Brailsford 2010; Gill & Hoppe 2009), a factor which has important implications for program management. For example, Brailsford (2010) argues that the value of this research focus lays in the mutual understanding created between doctoral student and their academic institution. Such understanding might help to identify various issues that lead to student dissatisfaction and therefore prevent attrition from the program.

Institutional factors linked to the system parameters of doctoral programs include the management strategies which dictate how resources are to be allocated. For example, financial resources may directly impact training quality by providing the opportunity for students to attend an international conference early in their candidature or to support peer networks through communities of practice (see Wisker, Robinsion & Shacham 2007). Indirectly, financial resources might also be used by management to reduce the burden of other academic responsibilities on supervisors and faculty members, thereby providing greater opportunity for these key individuals to engage with doctoral students and their research training.

The influence of government on the system parameters of doctoral programs is most clearly illustrated by the conditions that accompany state funding policies. These conditions manifest in program quality assessments and include the ubiquitous reporting of candidature completion rates. As Colebatch (2002) points out however, completion rate data provides little evidence of program quality. More specifically, completion rate criteria enforce a neo-liberalist agenda on program management (Boshier 2009) in which investment return overshadows the human realities of doctoral training, such as the need to suspend one's candidature for a period of time due to personal reasons (Colebatch 2002). In

extreme cases, this approach may also impact the system parameters of doctoral programs through the candidate selection process. For example, it is possible to recognise how completion rates may influence the non-selection of candidates who have other commitments, such as family responsibilities, and are therefore less likely to meet the doctoral completion time-frame.

Though perhaps less obvious than all other factors, the social characteristics of a particular population play an equally important role in the system parameters of doctoral programs. In Australia for example, the immanent retirement of many experienced personnel from the academic workforce represents a key challenge for current University management (Hugo 2005). In terms of doctoral program management, this loss increases the burden on existing supervisors and places greater pressure on early-career academics to fill the supervisor void.

As this overview has highlighted, multiple factors impact the system parameters of doctoral programs and each has been the focus of considerable research and discussion within the higher education literature. While the attention given to individual factors represents a logical strategy in the pursuit of doctoral program knowledge, a notable criticism is that it has led to a disconnected view of the management challenges (Shaw & Green 2010). While concurring with this assessment, we would also argue that disconnection has evolved from a concerted disregard of the student perspective.

It can also be recognised from our overview that the system parameters of doctoral programs can be divided into components which are core and peripheral to the management process. As illustrated in Figure 1, students, supervisors and the institution fall within the core as interactions among these stakeholders occur on an ongoing basis. Alternatively, interactions with government bodies and the impact of societal factors, while still being direct and important influences on the program, occur periodically. From a doctoral management perspective, there is also little opportunity to control such factors.

Insert Figure 1 here.

Linking back to the goal of incorporating the various system parameters of doctoral training in order to achieve a holistic management approach, we now suggest that Service Design can facilitate ongoing interactions between the key stakeholders. Such interactions create space for mutual learning and co-design on a long-term basis, thereby improving doctoral training outcomes throughout each stage of the program.

The effects of using interactions for learning relationships are discussed by Grönroos and Ojasalo (2004) who argue that the development of service productivity should be a mutual learning experience where the customer and service provider interact to create a common field of knowledge regarding how to consume and produce the service (see figure 2).

Insert Figure 2 here.

The framework suggested by Grönroos and Ojasalo (2004) outlines how the customer in the upper part of the figure gains more experience of the service provider and service processes, whereas in the lower part the service provider learns more about the customer's competence as well as their specific needs. This relationship continuity is argued to lead to improved internal efficiency as the service processes are more effectively aligned to the customer's needs, and to improved external efficiency as perceived service quality for the customer increases (Grönroos & Ojasalo 2004). Applying this principle to the doctoral program context, relationship continuity occurs through a similar value-generating process, whereby the student participates as co-producer of resources and the university acts as co-creator of value for the student (value-in-use). This relationship is illustrated in the interactions on the left-hand side of Figure 3, where the service is provided by the university and experienced by the student. Consequently, a space is created for mutual learning and co-design as the ongoing interactions lead to more intensive participation and knowledge exchange. These interactions enable the co-design of better service provision and processes for the university (internal efficiency) as well as improved perceived service and value-in-use for the student (external efficiency). We therefore suggest that institutions of higher education should build on this relationship continuity with doctoral students and

use their knowledge and creativity for co-designing improved services, which lead to more efficiency for the respective institutions as well as to more desirable and useful solutions for the student. As such, Service Design acts as a space for mutual learning and co-design in which the student becomes an integrated part of the Service Design process not only as an informant but also as a co-designer.

Insert Figure 3 here.

Within the service marketing literature, the call for customer integration is far from a new approach. For example, from his investigation of innovation projects in the financial service sector, Alam (2002) identified six factors which explained why organisations that involved customers in their service innovation process produced a superior service. Furthermore, Alam (2002) also found that the most common forms of involvement were in-depth interviews and observations during user visits, a strategy in which the customer was used as an informant rather than as a co-designer. This assessment suggests that the potential benefits of a co-design approach have not yet been fully recognised, a position that has been attributed to various challenges including communication barriers, time constraints, a high level of uncertainty, lack of appropriate incentives, and difficulty in capturing customer knowledge (Matthing et al., 2004). While these challenges equally apply to the doctoral program context, it can be recognised that the long-term nature of the interaction between doctoral student and their institution provides a rich opportunity in which to capture the student's co-design potential.

As discussed, recognising the need for effective relationship continuity between student and institution, and the opportunity it provides for co-design, is a fundamental step toward improved doctoral program management. Beyond this awareness however, lies the task of practical implementation. That is, where exactly does the 'space' for mutual learning and co-design take place and exactly what is created through the process? To identify these tangible features, a customer journey mapping exercise should be undertaken to visualise the doctoral process from a student perspective. According to Diana et al., (2009), this visualisation technique resembles the classical blueprint which details the interaction between designer and customer for each design phase, and can

also be applied to graph the interactions between services providers and service users. However, customer journey mapping involves a higher level of synthesis than the blueprint as it provides improved readability and communication (Diana et al., 2009).

Drawing on our perspective as students of a business-related doctoral program, Figure 4 illustrates the outcome of a customer journey mapping exercise. As detailed, the map identifies numerous touchpoints that characterise the prominent interactions between student and key stakeholders of the doctoral program. Such interactions subsequently provide the opportunity (i.e. space) for direct interaction with students and the reciprocal exchange of relevant information. In turn, this knowledge transfer contributes to the on-going co-design of the doctoral program.

Insert Figure 4 here.

For the purpose of the customer journey mapping exercise, our premise is that upon seriously considering doctoral studies, a potential student firstly investigates different opportunities among different institutions. This investigation represents the first step in our student journey map. It is recognised, however, that different students may have different beginning touchpoints (e.g. initial contact with supervisors or academics at their previous institution of study). Therefore the structure we have proposed is not definite in either the initial phase or subsequent phases. Depending on the particular circumstance of the student, some variation to the journey may occur.

Following the stage of 'discovery & investigation,' the student goes through 'application,' 'qualification,' 'research & writing' and 'thesis submission,' before undertaking 'career transition'. Each of these stages is marked by multiple touchpoints in which channels of dialogue are established between students and other stakeholders.

At a general level, the journey map adds a greater level of structure to the doctoral program. While the opportunity for unplanned and casual interaction among stakeholders remains an important option in

any program, the identification of specific touchpoints helps to avoid high levels of stakeholder uncertainty. For students in particular, visualising the distinct stages of their future journey and recognising the many opportunities to engage with key program stakeholders will provide considerable reassurance and help to address the sense of isolation that many students experience.

More specifically, the journey map identifies particular spaces where mutual learning and co-design can take place. For example, touchpoints with a range of stakeholder interactions during the initial 'discovery and investigation' stage can provide the potential doctoral student with a broader understanding of program policies and institutional culture. If given the opportunity at this early stage to have a say in how their doctoral journey might progress, students are also more likely to feel a sense of ownership and greater commitment to their doctoral training. Alternatively, these same touchpoints provide the opportunity for different stakeholders to personally consider the fit between potential student and the institution's strategic objectives. Moreover, touchpoints spaced throughout the student journey provide a range of other assessment possibilities. For example, touchpoints during the qualification period provide the opportunity to assess not just the ongoing development of a student's research proposal but also the student-supervisor relationship and their satisfaction with various institutional services. Finally, from an administration perspective, touchpoints provide the opportunity to quantify the level of institutional resources a candidate consumes during a particular period and to budget for future resource requirements.

In summary, the interaction between doctoral student and institution represents a complex relationship. This mapping exercise therefore highlights the value of using visualisation techniques in the Service Design approach as it helps to present the relationship in a manner that can be more readily understood. In this case, the mapping of the doctoral journey serves as a key function in the co-design process as it creates mutual understanding of the students' experiences during their doctoral training.

CONCLUSION

Numerous changes to the doctoral education context in Australia and New Zealand over the past decade have called into question the effectiveness of conventional quality management processes. Greater diversity among the student population and a move toward more flexible patterns of research and study are just two examples of the changes that necessitate an alternative perspective if the effective research training outcomes are to be realised.

Responding to this need, we have advocated the value of a Service Design approach to doctoral program management. As part of this approach, we first developed a stakeholder map which recognises both core and peripheral components of the system parameters affecting doctoral programs. In this way, we have utilized the holistic characteristic of Service Design to identify those factors within the system which can be more easily controlled by program managers.

Most importantly, the interactions between students and the university are seen as key opportunities in the co-creation of value. Hence, our approach goes beyond recognising the student only as an informant. Through the development of a student journey map, which is a well-recognised visualisation technique used in Service Design, the active participation of students in the design process is achieved through their interactions with each core stakeholder during their doctoral training.

In proposing Service Design as an appropriate framework for doctoral program management, we acknowledge that this paper represents a very early step toward that objective. Considerable opportunity is therefore available for future research efforts to build on the framework presented in this paper. Most notably, it is recognised that additional detail can be included in our student journey map. For example, while it effectively visualises a student's progress through the doctoral training process, a more comprehensive map might also identify those key steps which are indirectly related to research training. Such steps include the teaching obligations and outside work commitments that many students undertake during their doctoral candidature. Future research might also consider the

application of a Service Design approach to other educational contexts, such as the undergraduate domain. In particular, the co-design focus of Service Design is a feature that may contribute greatly to redevelopment of the first-year student experience. From the Service Design literature, methodologies which may be appropriate for the research objectives identified include ethnography, observation, case studies and personas (Mager 2009; Zomerdijk &Voss 2010). Such efforts will further contribute toward the research-based holistic premise that underlies our application of Service Design to doctoral program management.

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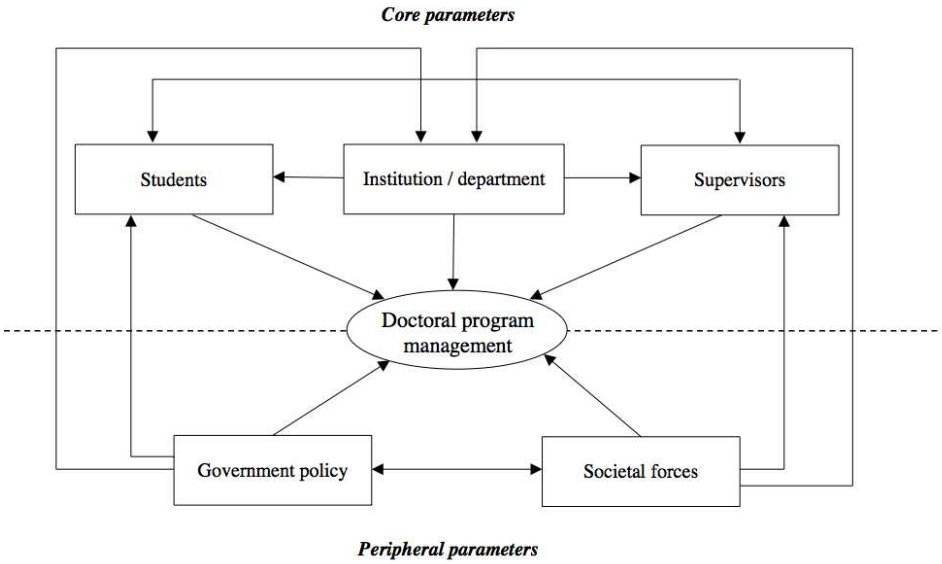
Figure 1: Stakeholder map of a doctoral program



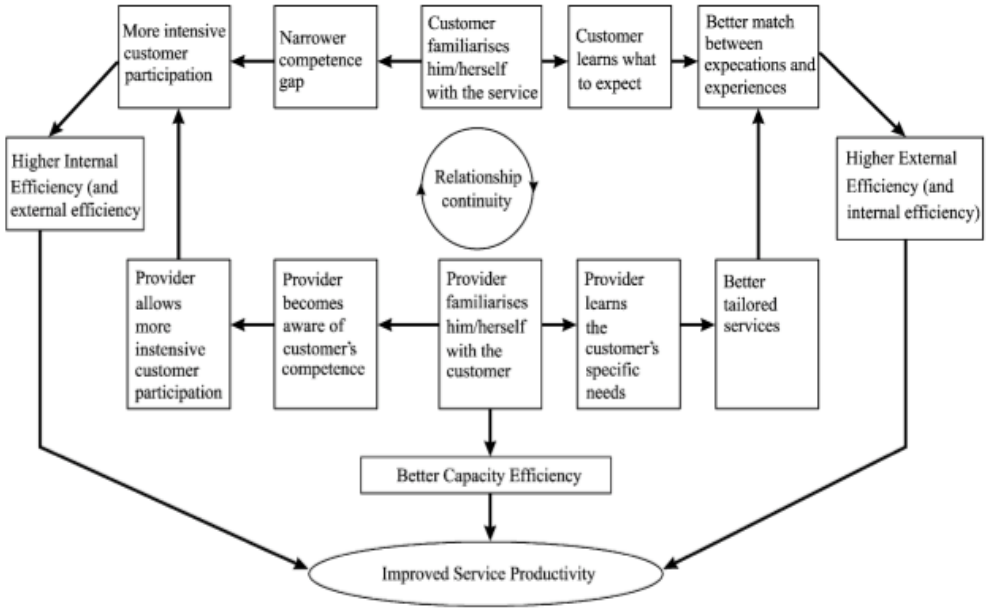


Figure 2: Effects of learning relationships on service productivity

Source: Grönroos and Ojasalo (2004: 419)

Figure 3: Service as mutual learning and co-design in the higher education context

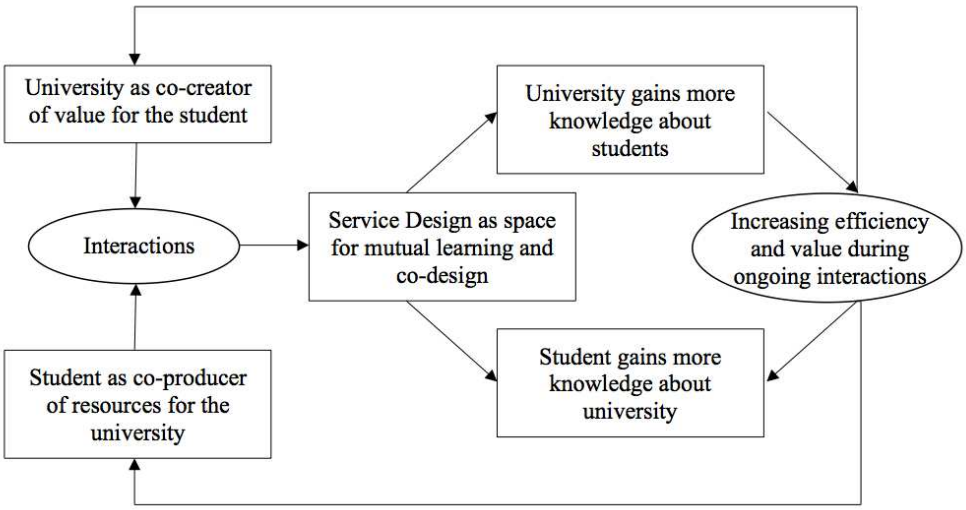


Figure 4: Student journey map