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Applying an organisational agility maturity model

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Abstract

Purpose – The purpose of this paper is to identify the baseline model required to measure whole-of-organisation agility within a university information services division. The paper seeks to analyse the process of identifying and applying such a model.

Design/methodology/approach – The qualitative methodology applied is that of a single case study. The organisation analysed was an Australian university's information services division. A structured survey, based on Wendler (2014), was administered to all staff as part of a multi-phased approach, thus facilitating a triangulation process.

Findings – The current research has confirmed the applicability of Wendler's model to the higher education information technology sector. Application of the model establishes not only a baseline agility maturity score across the whole-of-organisation but also provides granular scores based on organisational units. Triangulation of survey results is recommended to achieve a more in-depth perspective.

Research limitations/implications – Further research comparing similarly and differently sized universities could provide valuable insights. More research is needed to extend the applicability of Wendler's model to a wider range of domains and industries.

Practical implications – The grouping of survey questions under particular broad themes reflected the strategic focus of the division being surveyed. Organisations implementing the proposed model will need to select themes that correspond with their respective strategic goals and culture.

Originality/value – The paper has extended the research and resultant model developed by Wendler by applying them not only to both managers and staff but also to a different domain, specifically higher education.

Keywords Self-assessment, Agility framework, Enterprise agility, Information technology services

Paper type Case study

1. Introduction

Higher education is facing significant disruption through technology that is fundamentally changing how universities operate (Aronowitz *et al.*, 2015; Adams Becker *et al.*, 2017). The impact of these changes on both culture and operations is necessarily transformative, and will require an understanding of core capabilities to ensure the required leadership. Universities must be agile if they are to respond quickly to the changing legislative and competitive environment and the changes in teaching, learning and research practice. Consequently their information services must ensure that they have the capability to be agile in response to these new challenges.

Agility is required at all levels of information service divisions as a way of operating, not just at the leadership/managerial level. The response needed to achieve this may lead to "a sweeping rethink of organizational structures, influence, and control", which inherently threatens organisational health (De Smet *et al.*, 2016, p. 1). However, as Aronowitz *et al.* (2015, p. 5) observed, managers may not spend sufficient time assessing the current state of their organisation because they assume that they have a good understanding of that current state. In short, they do not take time to survey the scene and establish a benchmark.

Based on the background above, the authors were interested to determine how a university information services division could rate its progress towards achieving organisational agility and

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also identify areas on which it should focus its efforts to improve its agility. The purpose, therefore, of this study is to identify the most appropriate organisational agility maturity model that could be applied to an information technology service division within a university.

This study contributes to the organisational literature by responding to the call for more research on whole-of-organisation agility maturity models (Sherehiy *et al.*, 2007; Wendler, 2012; Wendler and Stahlke, 2014) and their specific application across a range of domains other than just the commercial software and IT service industry (Wendler and Stahlke, 2014).

The paper is structured as follows. Following on from this introductory section, Section 2 presents a literature review of frameworks, or similar concepts, that describe the key components of organisational agility. Section 3 presents the methodology used. Section 4 describes the results obtained. Section 5 examines the authors' findings in terms of the research questions, and discusses implications and limitations. Finally, Section 6 offers a brief conclusion, including suggested further research.

2. Literature review

While the concept of agility is not new, it arguably came into prominence, particularly in regard to software development and project management, through the promulgation of the so-called "Agile Manifesto" (Beck *et al.*, 2001). The development and uptake of various agile methodologies has subsequently been well chronicled in the literature (Ionel, 2009; Dingsøyr *et al.*, 2012; Maurer and Hellmann, 2013; Al-Saleem and Ullah, 2015).

Agile methodologies, as such, have been transforming the way in which organisations undertake software development and project management for the past several decades (Rigby *et al.*, 2016). A more recent and broader concept is that of applying agile practices to whole-of-organisation. In fact, Gartner (2006, p. 1) defined agility as "the ability of an organization to sense or create environmental change and respond efficiently and effectively to that change", with the emphasis being on the organisation rather than its discrete elements.

As Sahota (2013, p. 1) suggested, the latter involves agile-as-a-mindset: "Adopting Agile practices focuses on modest process improvements that do not disrupt the organizational system. At the other extreme, transformation fundamentally alters the nature of the company—a paradigm shift". Based on the results of a 2014 worldwide survey, Manpower (2014) reported that in Australasia 78 per cent of respondents ranked as "important" the role of organisational agility in achieving company business goals. However, only 4 per cent agreed to some extent that their organisation had actually demonstrated a commitment to pursuing more organisational agility over the previous 12 months. It is uncertain whether part of the reason for lack of action could be attributed to a lack of clarity regarding how to achieve this.

Managing the transition from a current state to that of being an agile organisation connotes an underlying assumption that there is consensus as to what constitutes such an entity. However, there is a general lack of clearly defined frameworks for explaining agility from an organisational perspective (Sherehiy *et al.*, 2007; Wendler and Stahlke, 2014). The broad application of agility at the enterprise level has proved to be challenging. The lack of an agreed approach, which actually covers the whole-of-organisation, lies at the core of the problem. According to Sherehiy *et al.* (2007, p. 459):

> There is no commonly accepted definition of EA [enterprise agility], and there are a large number of opinions concerning the meaning of this term. Furthermore, there is a problem to differentiate the agility concept from adaptability and flexibility. Currently, all three terms: "adaptability", "flexibility", and "agility" are used in the research on how organization can cope with unpredicted and dynamically changing environment.

For his part, DeSouza (2006, p. xiii) has suggested four key attributes:

> How do we know an organization is agile? Being agile will result in the ability to (1) sense signals in the environment, (2) process them adequately, (3) mobilize resources and processes to take

> advantage of future opportunities, and (4) continuously learn and improve the operations of the organization. Furthermore, the preceding activities need to occur in quick time cycles and with minimal cost and effort.

While proposing a high-level overview of agility in relation to the whole organisation, DeSouza did not offer any more details, by which one could then construct a maturity model.

Kassim and Zain (2004) have highlighted the importance of information systems which supply accurate, timely and easily available information so that organisations can quickly adapt to changes. According to Tsourveloudis and Valavanis (2002), who proposed a framework to measure and assess manufacturing agility, organisational agility is comprised of many different individual and grouped infrastructure parameters. For her part, Charbonnier-Voirin (2011) created "measurement scale likely to represent the practices which contribute to developing the agile firm's capabilities of reactivity, reading the market, and organizational learning" (p. 145).

Bottani (2009, 2010) investigated different assessment methods of organisational agility and analysed manufacturing companies in Europe. From her findings, she identified several clusters of organisations that represent different agility levels. In addition, she performed a principal component analysis to describe the clusters with a small number of characteristics. However, her focus is on manufacturing, rather than software and IT service industry, which is the domain on which the current case study is based. According to Lu and Ramamurthy (2011), IT spending does not automatically lead to greater agility. Therefore, they advise, managers need to examine how other elements, such as culture, structure, process and people, interact with technology to enable organisational agility.

Harraf and Tate (2014) described ten agility attributes that are common to successful organisations. Rothschild (2015) has outlined eight "building blocks" of organisational agility. Gartner (Norton *et al.*, 2014) has defined best practice principles for organisations wishing to move from a project-level agile development focus to end-to-end enterprise agile delivery.

Aghina *et al.* (2015, p. 2) asserted that "the ability to be both stable and dynamic [is] the essence of true organizational agility". They have identified three core organisational areas where balancing the inherent tension between stability and flexibility is important: organisational structure, governance and processes. While the authors did not reference any model as such, they did include a checklist to test an organisation's current agility level. Respondents pick the words that best describe how it feels to work at a given company. The results indicate whether a company's "dynamic capability" tends to be more "start-up" or "agile", and whether its "stable backbone" tends to be more "trapped" or "bureaucratic". No explanation is provided as to how to interpret the scores.

In terms of creating a conceptual framework for defining the key components of organisational agility, Holbeche (2015, p. 55) has structured her approach based on strategic agility: "The ability to continuously adjust and adapt strategic direction in core activities, as a function of strategic ambitions and changing circumstances and create not just new products and services but also new business models and innovative ways to create value in complex and fast-changing conditions". Underlining the importance of resilience as a co-factor, she has outlined the key characteristics when shifting from conventional strategy thinking to agility strategising. In addition, she has created a visual representation of the key components which define an organisation's agility and resilience, based on four high-level concepts: agile strategising, agile operations, agile people practices and agile linkages. The "components", e.g. continuous learning, deep customer insight and values-based leadership and management, could be used to develop a self-assessment questionnaire.

A useful model has been developed by Allied Consultants Europe (ACE). Allied Consultants Europe (2010, p. 5) defined six "dimensions" for determining the agility level of organisations: leadership and management, innovation, structure, strategy, learning and change, and culture. For each dimension, there are two or more actions against which an

organisation can rate itself, e.g. fostering a learning organisation as a crucial part of strategy. The approach is designed to be very high level.

For his part, having acknowledged the highly competitive environment specifically within the commercial software and IT service industry, Wendler (2014) noted the relative scarcity of available tools and methods to help these organisations assess and improve their organisational agility. Wendler's (2014) research focussed on developing a maturity model to address this gap, based on the following rationale:

> The identified requirements of a comprehensive representation of the whole organization, an intuitive tool that is easy to use, a determination of the current state of organizational agility, and directions for further improvement can be fulfilled with a maturity model. A maturity model describes and determines the state of perfection or completeness (i.e. the maturity) of certain objects. The progress in maturity can be observed and managed by the definition of maturity stages or levels that measure the completeness of the analysed objects via different sets of (multidimensional) criteria (p. 1198).

Wendler (2013) had already undertaken an extensive review of the literature and ultimately identified and compared 28 frameworks or similar concepts, which could be considered as possible candidates. He subdivided them into three categories of approaches to assessment: the first group used various metrics; the second group used methods such as the analytic hierarchy process; and the third group was based on fuzzy logic.

Wendler (2014) concluded that:

> The available approaches suffer from some limitations regarding their applicability to determine the level of organizational agility in practice. This weakness stems either from a too specialized orientation and, hence, an insufficient reflection of the whole organization with its interaction of people, structures, process, and technologies, as outlined above, or from the utilization of relatively complex algorithms, limiting an intuitive and ad hoc usage by management. In addition, although the available approaches are able to determine the current state of agility, they normally do not support management in suggesting further actions for improvement or development (p. 1198).

Wendler (2014) subsequently developed his own model ("Organizational Agility Maturity Model"), complete with a multi-part questionnaire for use by commercial software and IT service organisations. The objective of the model was to provide "a theoretically and empirically grounded structure of organizational agility supporting the efforts of developing a common understanding of the concept" (p. 1197), given the lack of consensus in the literature as to what constitutes an "agile organisation".

In their descriptive results of the application of the model to the software and IT service industry worldwide, Wendler and Stahlke (2014) identified the specific target group for their survey questionnaire as "general and IT-related decision-makers (like CEOs, CTOs, Managers, and employees in leading positions)" (p. 4). General staff ("employees") were not included. However, in their recommendations regarding further research, they identified two areas in particular: replicate the survey with different target groups, e.g. employees or roles; and apply the survey to other domains and industries.

Based on their recommendations, this paper aims to bridge this gap in the body of knowledge on this topic by examining the use of Wendler's survey with all staff, i.e. managers and general staff, in a non-commercial domain, specifically the higher education industry. The authors, therefore, propose the following research questions:

RQ1. Is Wendler's organisational agility maturity model applicable to an information technology (IT) service division within a university?

RQ2. Is such a model equally suitable for administering across staff at all levels of the organisation?

RQ3. Is any additional information required to fully assess the overall maturity of the agility of a university's IT service division?

3. Methodology

3.1 The case study

According to Yin (1984), social scientists in particular have used this methodology for many years to examine contemporary real-life situations and provide the basis for the application of ideas and extension of methods. It is well suited for exploring new processes or behaviours (Meyer, 2001) and for understanding complex issues (Zainal, 2007). As Gerring (2004, p. 342) observed, a case study should be "an intensive study of a single unit […] a spatially bounded phenomenon—e.g. a nation-state, revolution, political party, election, or person—observed at a single point in time or over some delimited period of time".

In regard to case study design, it is better to use a single case study when the researcher wants to study, for example, a person or a group of people (Yin, 1984). Based on his own research, Wendler (2014, p. 1204) advocated the use of case studies to further validate his model. He suggested that future research should use the results of his study to "develop further confirmatory approaches" (Wendler, 2016, p. 462). The authors selected the Division of Information Services at Griffith University as an example of the application of his model in a different industry from the one he surveyed. This choice reinforces Gustafsson's (2017, p. 2) view that the "conclusion that is aimed by a case study can be either illustrative or confirmable". The authors' primary objective was to confirm the applicability of Wendler's model to a non-commercial IT software and service industry.

3.2 The case subject

Griffith University is a comprehensive, research-intensive university, ranking 32nd in the 2017/2018 QS University Rankings Top 50 Under 50 (Quacquarelli Symonds, 2017). Located in the rapidly growing corridor between Brisbane and the Gold Coast in Southeast Queensland, Australia, the University offers more than 200 degrees across five campuses to almost 50,000 students from 130 countries studying at undergraduate through to doctoral level in one of four broad academic groups: arts, education and law; business; science; and health.

The key features of the University's current structure were introduced in 1997, when the majority of support services were organised as centralised, multi-campus offices. As a result, the Division of Information Services (INS) became one of the most centralised and integrated information services models in Australian higher education, and remained that way until 2017. At the time the work described in this paper was undertaken, the Division had integrated eResearch, library and information and communication technology into a single organisation, comprised of eight portfolios. Of these, two had a predominantly library focus: library and learning services, and information management. eResearch Services provided access to specialist eResearch technologies, as well as library and information professionals. Four portfolios covered various aspects of enterprise information technology: IT architecture and solutions; enterprise information systems; information technology services; and information technology infrastructure. The eighth portfolio was responsible for planning and engagement.

While the only constant within both higher education and information technology may be change, another truism is that people remain an organisation's most valuable asset (Allen, 2014). That said, INS realised that change and contented employees do not always easily co-exist. Recognising the potential inherent tension, the Division embarked on a strategic plan to understand how its workforce was faring. Over a period of six months, beginning in the second half of 2016, INS launched three targeted surveys. The first gauged the level of employee engagement, the second measured the maturity of organisational agility and the third was a workplace culture assessment. It is important to note that none of these were staff satisfaction surveys.

The overall objective was to test the hypothesis that INS was typical of large organisations in terms of staff perceptions, i.e. communication could be improved, processes

were bureaucratic and people were not feeling optimally motivated (White *et al.*, 2010). To that end, procedures were established to triangulate the data from the three surveys in order to formulate an appropriate action plan to address areas of concern.

This paper is focussed specifically on the organisational agility maturity survey. Given the changing nature of both the higher education and information technology sectors, the INS executive felt it important to set an agility baseline upon which to build in terms of managing change. In addition, the maturity assessment was undertaken to identify areas within the Division in which agility already existed as well as areas with an agility deficit. This knowledge was deemed critical to supporting the divisional goal of constantly seeking to align itself with the University's strategic priorities by having the agility and flexibility to respond to a rapidly changing environment, while remaining effective and efficient.

3.3 Original survey tool

An online survey was adopted as the method for this research because it enabled speedy distribution and response cycles (Taylor, 2000), as well as automatic verification and response capture in databases (Andrews *et al.*, 2003).

The survey was based on a questionnaire originally designed by Wendler (2014), which, in turn, was based on a comprehensive literature review and had, as its purpose, "to generate an understanding of organizational agility in a specific industry from a comprehensive and global view" (Wendler and Stahlke, 2014, p. 3). It was administered to "general and IT-related decision-makers (like CEOs, CTOs, Managers, and employees in leading positions) in organizations of the software- and IT service industry worldwide" (Wendler and Stahlke, 2014, p. 4). The questionnaire was carefully pre-tested by academics and practitioners, and ultimately comprised 68 questions. The questions are available in both English and German languages.

In the initial research undertaken by Wendler (2012), he undertook a mapping study of the available literature at the time on maturity models. One of his basic critiques was of the "relatively high number of conceptually developed maturity models without any validation at all" (p. 1332). He concluded that "that there is still a gap in evaluating and validating developed maturity models" (p. 1317).

In the development of his own model (the "Organizational Agility Maturity Model), Wendler (2014) outlined his use of a design science research approach, which included an extensive literature review and empirical investigation. He applied cluster analysis to an exploratory quantitative survey, which was designed to identify the elements of an agile organisation; the results led to the reduction of an initial five maturity stages to four (as shown in Table II). In a later publication, Wendler (2016, pp. 451-459) has discussed in detail the processes he used to validate both the structure that underpins his model and his results.

Wendler (2014) concluded that his model provided a theoretically and empirically grounded structure, that was "suitable to assess and describe the current state of organizational agility and to assist organizations from the software and IT service industry in taking further actions on their path to organizational agility" (p. 1204).

Of particular significance to the authors' current paper is Wendler's (2014) recommendations that:

> Further research should strive for additional validation. Of importance would be qualitative indepth analyses, for instance by case studies or action research approaches, to validate the proposed stages as able to deliver helpful information for individual cases. In addition, the survey used to identify the structure of organizational agility, and hence the structure of the maturity model, could be replicated with a different sample in other industries to check if the model is also applicable to other domains (pp. 1204-1205).

These recommendations helped to inform the approach taken at Griffith University.

3.4 Survey design and analysis

A small project team within the planning and engagement portfolio was tasked with designing and administering the INS organisational agility maturity survey. It was agreed that, where possible, the original 2014 survey questions (English version) would be retained without modification. However, a number of modifications were, in fact, introduced in order to meet the survey objectives of the division:

- Because an important objective was to assess perceptions among all staff, regardless of classification level, the survey questions were allocated to two separate questionnaires: Managers and General Staff.
- Because Wendler had found differentiation among managers' responses, the whole of the division needed to be assessed so as to establish a baseline for each of the two major roles, i.e. manager and general staff member.
- Because of the concern about "survey fatigue" among staff, the original 68 questions were reduced to 52 for managers and 40 for general staff.
- Because of some awkward phrasing (perhaps because of the original questions in German having been translated to English), some questions were slightly reworded for ease of understanding.

Wendler (2014) authored his questions for a managerial audience. However, for the reasons identified above, the Griffith project team felt that the questions were best segmented between a "manager" and a "staff" perspective. The questions were then reworded to be appropriate for their target audience.

In addition, Wendler grouped his questions according to six "dimensions". However, the Griffith project team felt that the following six dimensions (Allied Consultants Europe, 2010, p. 5) were more closely aligned with the high-level categories of the other two INS staff surveys mentioned previously:

(1) leadership and management;

(2) innovation;

(3) strategy;

(4) culture;

(5) learning and change; and

(6) structure.

For purposes of granularity in terms of evaluating the survey results, the project team first grouped the questions according to each of the six dimensions listed above and then further categorised them by sub-themes, which were based on what Wendler (2013) referred to as "agility concepts" (p. 1180). Table I shows this structure.

Questions were asked on a five-point Likert scale, based on the original survey. Both surveys used a behaviourist approach, whereby observable behaviour was measured rather than asking for an individual's subjective beliefs (Morrell-Samuels, 2002). According to Wendler and Stahlke (2014):

> In our opinion, an organization is not agile when its employees and managers "agree" with statements describing agility or when they "think" they are agile. Instead, it is the actions, capabilities, values, etc. of an organization that represent its agility. So, item-specific scales were developed to measure the dissemination of values and the implementation of conditions (from *completely* to *not at all*), the distribution of capabilities among employees and managers (from *all* to *none*), and the frequency of activities (from *always* to *never*) (p. 4).

Dimension	Corresponding sub-themes
Leadership and management	Communication
	Risk
	Style
Innovation	Flexibility
	Proactivity
Strategy	Engagement
	Industry awareness
	Planning
Culture	Accountability
	Trust
	Values and principles
Learning and change	Organisational learning
	Skills development
	Workforce capability
Structure	Adaptability
	Collaboration
	Cooperation

Table I.
Dimensions and sub-themes

Both questionnaires were pre-tested before being circulated to the target population.

Appendices 1 and 2 show each of the two questionnaires—Manager and General Staff—with their respective Likert values. Appendix 3 shows how the questions were then grouped by the Griffith project team for evaluation purposes according to the six high-level categories/dimensions (themes) and corresponding sub-themes, as outlined in Table I.

3.5 Definitions

According to Wendler (2014, pp. 1201-1202), the four stages of agility maturity are defined in Table II.

Maturity Stage 0—Non-agile "Organizations at maturity stage 0 show no or only rare properties of organizational agility. Agile values are principally unknown, and the technological basis is fragmented and unable to support communication processes effectively. Only a minority of employees and managers share capabilities necessary to implement agile values and actions"	Maturity Stage 1—Agility Basics "Organizations at maturity stage 1 share basic properties of organizational agility. Agile values and technological prerequisites underscoring agility are partly implemented in some but not the majority of departments […] Likewise, some but not the majority of employees share agile capabilities […] and some managers in the organization are able to manage change in an appropriate way. Often, these employees and managers are 'concentrated' in single teams or departments"
Maturity Stage 2—Agility Transition "Organizations at maturity stage 2 manage to disseminate agile values and to establish an appropriate technological basis in most parts of the organization. Many employees and managers share the idea of agility and possess corresponding capabilities. Change is mostly welcomed and handled accordingly. In many instances, the organization […] promote(s) teamwork and establishes organizational structures that are flexible enough to cope with upcoming changes"	Maturity Stage 3—Organisational Agility "Organizations at maturity stage 3 […] manage to establish a sufficient technological basis throughout the complete organization, and agile values are shared and accepted completely, too. All employees and managers have the capabilities to successfully work in an agile and changing environment […] and the structure is flexible enough to quickly and constantly react to upcoming changes"

Table II.
Four stages of organisational agility maturity

Following on from Wendler (2014, p. 1200), it was proposed that all sub-themes be treated as equally important and that the overall maturity score be simply the average. To determine the maturity stage of an organisation, Table III was applied, based on the average score calculated for each sub-theme.

3.6 Target audience identification

While the Division was comprised of eight official "portfolios", staff within the areas of the pro vice chancellor and her deputy (chief technology officer) were allocated to a ninth portfolio for consistency of reporting.

The survey target audiences were then determined based on the criteria that managers were defined as any staff member who was responsible for the day-to-day activities of staff, including team leaders, line managers, associate and full directors; and "general staff" comprised the remaining pool. Teams were subsequently grouped within portfolios to ensure that they contained five or more staff members, so as to help ensure anonymity. Managers were not grouped as such, but rather were classified into their respective portfolios.

3.7 Survey tool criteria and selection

The Employee Life (https://employeelife.com) survey instrument was selected for several reasons. First, it was known to INS staff, as it had been deployed to administer an Employee Engagement Program survey some three months prior to the agility assessment being done. Staff were familiar with the look and feel of the tool, and more importantly, understood that respondent anonymity was assured, as survey data were held by an independent third party. Second, raw data were not provided; rather aggregate responses were reported, which were then mapped to variables such as portfolio (directorate), campus, age range, gender, department (team), position and position level within the Australian Higher Education Worker (HEW) classification structure. Any variable that returned fewer than five responses had its data withheld.

There were some restrictions in setting up the questionnaire for the agility assessment, as the Employee Life tool has been traditionally used to measure employee engagement. Therefore, the tool did not possess (at the time) the same design features as a broad-spectrum survey instrument, such as SurveyMonkey. However, Employee Life could offer individual survey logins, which allowed for the capturing of respondent demographics, while at the same time ensuring anonymity. This feature also provided an assurance that respondents would only be able to complete the survey once.

3.8 Survey distribution and follow-up

Survey fieldwork was untaken entirely online, with a two and a half week survey window utilised from October 27 through until 13 November 2016. One initial launch e-mail was sent, followed by two reminder e-mails.

The total survey population was 521, which equated to actual staff. The survey generated 299 responses, representing an overall response rate of 66 per cent. The managers' survey had a response rate of 74 per cent (77/104) while the staff survey returned a response rate of 53 per cent (222/417).

Table III. Scoring ranges for the four stages of maturity

Average score	Maturity stage
(1, 2.5)	0: Non-agile
(2.5, 3.5)	1: Agility Basics
(3.5, 4.5)	2: Agility Transition
(4.5, 5)	3: Organisational Agility

3.9 Data extraction and pre-processing

The Employee Life team provided aggregated data with a total count against each question's Likert values broken down by the different cohort groupings, with each cohort grouping including a total population size as well. This raw data were then entered into a modelling spreadsheet, which converted the Likert count into an average and variance per question/cohort grouping. These were then used to generate the outputs showing the levels of organisational agility maturity across the organisation.

3.10 Visual representation of data

Following the pre-processing and data analysis, data were presented in Microsoft Excel by way of a "heat map". An effective and powerful visual presentation of the results was achieved by using a colour coded scale (refer Figure 1) to represent the scores. This displayed "chutes" of mid to high agility, represented by dark green (4.5 and above) and light green (3.5–4.4) cells, and "chutes" of low or non-agility, represented by pink (2.5–2.9) and red (< 2.5) cells. This allowed the reader to quickly understand the spread of organisational agility across the organisation, its teams and cohorts as specified by the pre-defined variables as appended to the population file.

Although these stages of agile maturity are based on the four defined by Wendler in Table II, the INS project team did make one modification. Given that the majority of scores across the Division placed INS in Agility Basics (Stage 1), the team split Stage 1 into two sub-sections. The first sub-section, which was colour coded white, indicated scores in the higher range within Stage 1, i.e. between 3.0 and 3.4; the second sub-section, which was colour coded pink, indicated scores at the lower end, i.e. between 2.5 and 2.9. As noted above, this greater level of granularity was designed to assist senior management in quickly identifying variations across the Division.

4. Selected results

Selected descriptive results of the survey are presented in this section. Section 4.1 provides a summary of the results for the whole Division.

4.1 Overview

The overall INS result was a score of 3.25, placing the Division in the Agility Basics (Stage 1) maturity model. Figure 2 shows a breakdown of this score when mapped against the six dimensions of the ACE Agility Index (the inner rings), and the sub-themes (the outer rings, as identified by Wendler). Results are for the Division as a whole. As in Figure 1, a colour scheme was used to visually differentiate each of the dimensions so as to help the reader comprehend high-level data in a concise and accessible way.

The six dimensions are represented by the four rings between the black centre and the ring which identifies them, i.e. leadership and management, innovation, strategy, culture, learning and change, and structure. All dimensions—as represented by their unique colour,

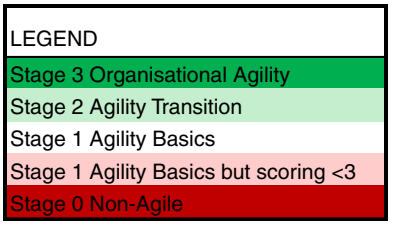
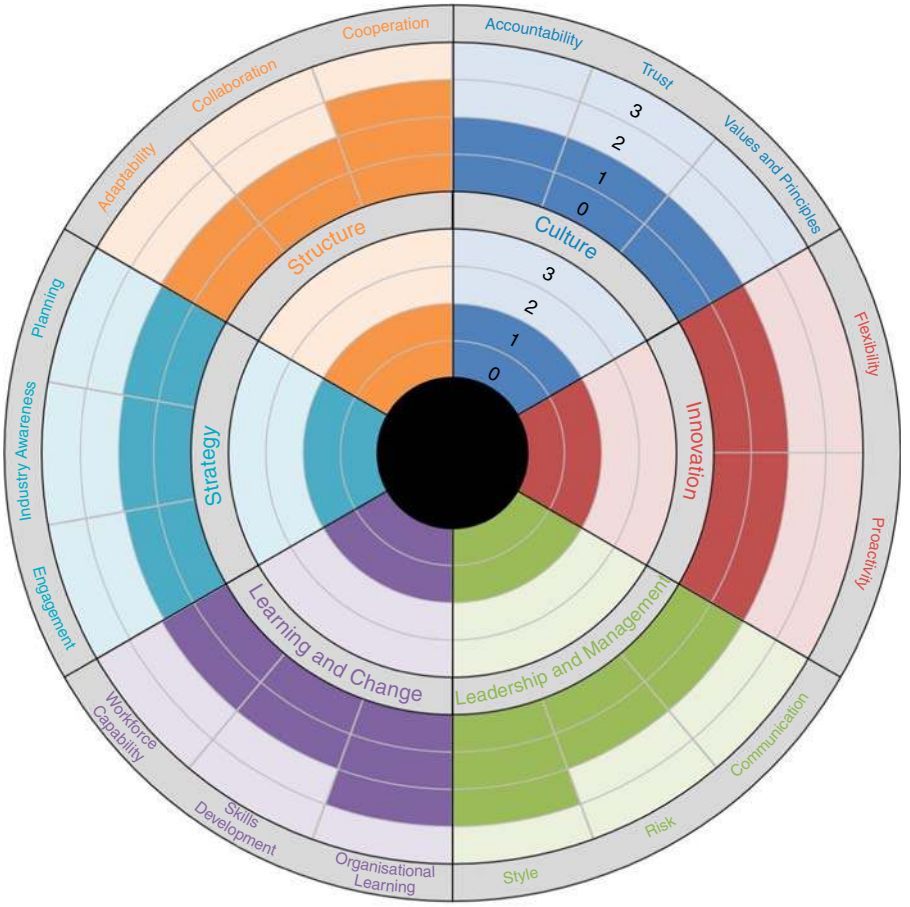


Figure 1.
Colour coding for stages of maturity



Notes: Colours plot the level of organisational agility allocated to the four stages, where 0 = Stage 0 (Non-agile), 1 = Stage 1 (Agility Basics), 2 = Stage 2 (Agility Transition) and 3 = Stage 3 (Organisational Agility). The variation in colours is designed to uniquely identify each of the six dimensions

Figure 2.
Agility maturity radar chart

e.g. orange for structure—scored a maturity level of Stage 1, i.e. Agility Basics, as represented by the number "1" near the centre of the chart.

The outer rings—also numbered 0 to 3, i.e. the stages of agility—represent the dimensions broken down into their component sub-themes, based on Table I. In general, the sub-themes scored at maturity level Stage 1. For example, accountability, trust and values and principles, which are sub-themes of culture—as represented by the colour blue—all fall within the ring numbered "1".

However, cooperation (within structure), style (within leadership and management) and organisational learning (within learning and change) were all allocated an organisational agility maturity score of Stage 2 (Agility Transition). Their corresponding colour is sitting in the ring numbered "2", which is towards the outside of the chart.

Figures 3 and 4 represent a breakdown of the overall INS' agility score (3.25) by the six high-level dimensions. Figure 3 represents the scores for each of the dimensions by staff

type, i.e. managers and general staff. There was little variation between staff and managers' scores across the Division. In addition, no dimension was rated as non-agile. At the same time, however, no dimension was rated as having reached organisational agility (Stage 3). It should be noted that two dimensions, i.e. learning and change and structure) within the executive group were flagged (via the green colour coding) as having reached Stage 2 (Agility Transition) maturity level. This corroborates Wendler and Stahlke's (2014, p. 30) findings in their survey results that senior executives tended to have a more positive perception of nearly all items than did other roles within an organisation, including participants with managing positions.

Figure 4 represents the scores for each of the dimensions based on the eight official divisional portfolios (P1–P8), with the ninth portfolio (P9) representing the office of the pro vice chancellor, chief technical officer, and their staff.

It shows that there was some variation present between portfolios, with P5, P8 and P9 reporting as most agile, as evidenced by the amount of green colour coding. An overall Stage 2 maturity level (Agility Transition) was allocated to P5 and P9, with scores of 3.5 and 3.68, respectively. P8's score of 3.49 fell just short of the 3.5 threshold to be officially scored as having Stage 2 maturity. As in the case of Figure 3, it should be noted that the comparatively high scores by Portfolio 9 are in line with Wendler and Stahlke's findings regarding scoring by senior executives.

P1, P2 and P3 recorded the lowest scores, albeit still within the Stage 1 (Agility Basics) maturity level. No portfolio had an overall score below a mean of 3.0, which was a threshold INS used to flag those areas (via the pink colour coding) which were at the lower bracket of the Agility Basics scoring spectrum.

4.2 Differentiated results

The survey questionnaire for both surveys was divided into three parts: the first asked questions about INS at a divisional level (Tranche 1), the second asked about the managers

	INS		Staff/Manager				Staff Type		
Theme	INS as a whole		INS Staff	INS Managers	Variance		General Staff	General Managers	Executive
Overall	3.25		3.27	3.20	0.07		3.25	3.17	3.37
Culture	3.23		3.27	3.11	0.15		3.24	3.07	3.37
Innovation	3.05		3.09	3.01	0.08		3.06	2.98	2.17
Leadership and Management	3.36		3.40	3.21	0.19		3.37	3.17	3.42
Learning and Change	3.38		3.32	3.47	0.15		3.30	3.46	3.51
Strategy	3.14		3.16	3.12	0.04		3.15	3.09	3.27
Structure	3.21		3.19	3.28	0.10		3.17	3.24	3.51

Figure 3.
Overview of managers and general staff's scores

	Portfolio								
Theme	P1	P2	P3	P4	P5	P6	P7	P8	P9
Overall	3.12	3.07	3.06	3.25	3.50	3.27	3.32	3.49	3.68
Culture	3.06	3.02	2.98	3.24	3.55	3.24	3.38	3.50	3.62
Innovation	2.84	2.83	3.03	3.19	3.04	3.01	3.12	3.24	3.58
Leadership and Management	3.17	3.24	3.15	3.30	3.68	3.39	3.44	3.68	3.77
Learning and Change	3.42	3.18	3.27	3.24	3.42	3.40	3.39	3.76	3.71
Strategy	2.96	2.88	2.99	3.26	3.31	3.30	3.12	3.25	3.97
Structure	3.17	3.13	3.00	3.24	3.49	3.11	3.31	3.37	3.46

Figure 4.
Comparison between the scores of the INS portfolios

in the respondent's area (Tranche 2), and the third asked about the staff within the respondent's area (Tranche 3).

Figure 5 shows these three groupings and their scores for a typical team within INS, which is an indicative result for the whole Division. Each of the 40 general staff survey questions has been allocated to one of the three groupings. The results show that respondents scored organisational maturity quite harshly when thinking at the Divisional level. When respondents considered the managers within their own area, scores were overwhelming positive. When scoring organisational maturity levels of staff within the respondent's areas—that is, their peers—the results were still positive, but less so than when compared with scores for their managers.

In regard to other survey results, there was little variation in scores across the five campuses. In terms of seniority, staff at the HEW 3 and HEW 4 classification levels saw more organisational agility maturity than others; however, for levels HEW 5 and above, there was minimal variance.

Females responding to the staff survey rated organisational agility maturity as being more advanced than males did. While the Division had a relatively equal gender split overall (44 per cent female/56 per cent male), there was less diversity when looking at the library and IT areas separately. For the library, 84 per cent of staff were female and 16 per cent were male. For the IT areas, the trend was reversed, with females only accounting for 33 per cent of staff, whereas males comprised 66 per cent. The fact that female staff rated organisational agility maturity as being higher than males would seem to indicate that the library was exhibiting more agility traits than the IT areas.

	Score
Tranche 1—questions at the Divisional level	3.40
	3.00
	2.80
	3.20
	3.00
	3.20
	2.60
	2.80
	2.60
	3.00
	2.00
	3.20
	2.80
	2.60
	3.00
	3.40
	3.20
	3.00
Tranche 2—questions about the Manager in the respondent's area	4.20
	4.40
	3.80
	4.00
	4.40
	4.60
	4.00
	3.80
	4.00
	3.60
Tranche 3—question about peer staff in the respondent's area	3.80
	3.40
	2.80
	3.80
	3.20
	3.80
	2.20
	3.40
	2.80
	3.20
	2.60
	3.60

Figure 5.
Example of the scoring for all survey questions by a typical team within INS

It was also possible to drill down into a specific dimension, by displaying the results of the contributing sub-themes. Figure 6 shows the scores for the Division broken down by the respective sub-themes. As was illustrated in Figure 2 (radar chart), three sub-themes were allocated an organisational agility maturity score of Stage 2 (Agility Transition); these are indicated by the green colour coding.

Figure 7 is a team "league table" of staff results by the overall mean. Results are displayed, indicating whether a team was a front-line (client-facing) or back-end (non-client-facing) service provider. The portfolio to which each team belongs is indicated by the value in parentheses.

The highest team result was an overall mean score of 3.9; the lowest team result was an overall mean of 2.63.

Back-end teams had a higher agility score than front-end teams. Of the seven teams which were rated at Stage 2 (Agility Transition), four were back-end teams. Of the ten teams which were rated at Stage 1 (Agility Basics), six were back-end teams. When looking at the teams which scored a mean of less than 3, six of the seven were client-facing teams.

The spread of portfolios was relatively even across the middle and upper scoring teams; however, when looking at the teams which scored below a mean of 3, P6 had four of the seven positions.

As per Figure 4 (which showed portfolio-level results), no team was rated as being non-agile. However, no team was allocated a Stage 3 rating of Organisational Agility either. Breaking the team results down shows that:

- seven teams were rated at Stage 2 maturity, i.e. Agility Transition;
- ten teams were rated at Stage 1 maturity, i.e. Agility Basics;
- seven teams were rated at Stage 1 maturity (Agility Basics), but with a mean score of < 3; and
- six teams received no rating, as they did not register a minimum of five responses and therefore had their results withheld.

		INS
Dimension	Sub-theme	INS as a whole
Culture	Accountability	3.50
	Trust	3.11
	Values and Principles	3.11
Innovation	Flexibility	3.03
	Proactivity	3.07
Leadership and Management	Communication	3.25
	Risk	3.44
	Style	3.51
Learning and Change	Organisational Learning	3.67
	Skills Development	3.18
	Workforce Capability	3.48
Strategy	Engagement	3.08
	Industry Awareness	3.18
	Planning	3.13
Structure	Adaptability	3.08
	Collaboration	3.07
	Cooperation	3.60

Figure 6.
Example of overall scoring for dimensions and their sub-themes

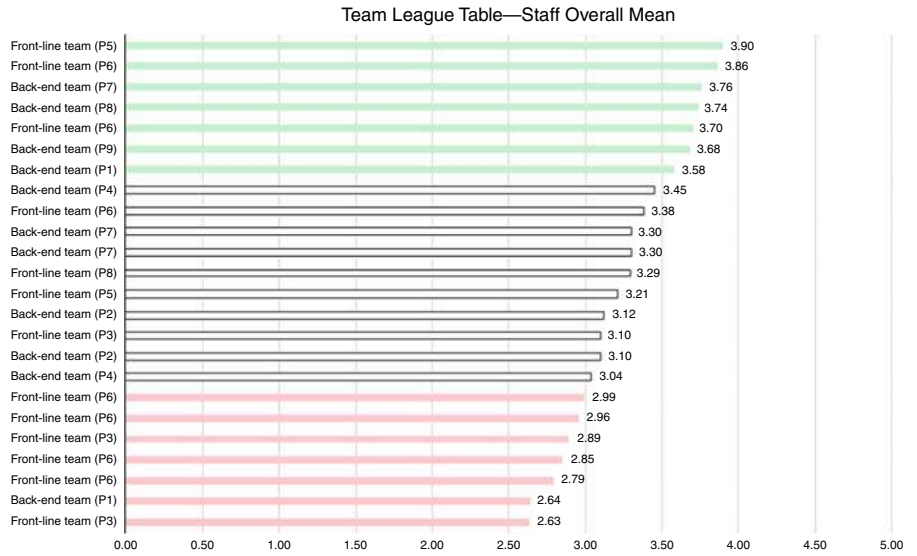


Figure 7.
Example of overall mean scores for each team within INS

5. Discussion

The purpose of this research study was to identify the most appropriate organisational agility maturity model that could be applied to an information technology service division within a university. Based on an analysis of the extant literature, the authors selected Wendler's Organizational Agility Maturity Model as the most suitable tool (Wendler, 2014).

The authors then proposed three research questions, for which the following results were identified:

RQ1. Is Wendler's organisational agility maturity model applicable to an information technology (IT) service division within a university?

The main findings for this research confirm the general applicability of Wendler's model to the higher education sector. However, in applying the model, the authors discovered that considerably more work was required, than originally anticipated, to adapt the questionnaire to meet the needs of the division. The reasons were twofold. First, as Krell (2011, p. 97) has observed, "Bias exists in all forms of manager-employee interactions". Therefore, a desire to balance the impact of potential bias among managers and general staff led to the design of separate surveys for each group, rather than simply administering Wendler's original questionnaire, which had been designed only for managers. Second, the amount of data generated by the survey led to lengthy discussions about how to visualise the data in a variety of ways that could encapsulate high-level themes as well as expose issues at a more granular level, and also provide for correlation of the data with the results from the two other surveys mentioned previously, i.e. engagement and culture.

Applying the survey model, as outlined in this paper, will provide a university IT service division with a baseline maturity-level score. However, in the case of INS, the overall score of 3.25—Agility Basics (Stage 1), while at best an interesting reference point—was a score which offered little in diagnosing the actual maturity level of the individual elements within the organisational structure, i.e. the portfolios and their respective teams. It was only when results were interrogated at a portfolio and team level that the true picture emerged. It is when working at this more granular level

that pockets of agility maturity and, indeed, pockets of non-agile practices can be identified, understood and addressed, as appropriate:

RQ2. Is such a model equally suitable for administering across staff at all levels of the organisation?

In analysing the results of the original survey, Wendler and Stahlke (2014) reported on noticeable variations when comparing the answers given by respondents in different managerial roles, for example:

> CEOs seem to have a much more positive perception of nearly all items than other roles in an organization. This is surprising because all participants had managing or at least leading positions in their organizations and thus were able to answer the items from a comprehensive perspective. Although it is appropriate to assess agility from an organizational view, it still raises the question of whether other employees, for instance programmers or consultants, would show different results (p. 30).

The results of the current study also showed differentiated results, particularly among general staff. For example, as reported in Figure 7, from the perspective of teams, those which were client facing generally had lower agility scores than those which were non-client facing.

While providing considerable granular data, the results raised a number of questions for further investigation. A key consideration, for example, is the potential impact of organisational structure. In an organisation in which most units are structured on the basis of function, multiple units are required for end-to-end business processes. If, in a given functional area, one unit achieves a high score in Stage 2 (Agility Transition) but the other units score at mid to low range within Stage 1 (Agility Basics), what implications can be drawn? Further research is indicated as to whether organisational unit structure can be a limiting factor in achieving organisational agility:

RQ3. Is any additional information required to fully assess the overall maturity of the agility of a university's IT service division?

A post-analysis of the survey did not reveal any issues with any of the questions. However, while, in general, senior INS management had an intuitive feeling as to how the organisation would score, nevertheless, some areas were more agile than expected and other areas produced counterintuitive results. In addition, as was shown in the case of Figure 5, scores varied markedly among divisional teams depending upon whether staff members were responding to questions about the Division, their respective manager or their peers. Given that although the survey was not based on employee satisfaction, it was based on employee perceptions, management recognised the importance of being able to triangulate the data so as to better understand any apparent anomalies. As Wendler (2016, p. 442) has observed, "Incompatibilities between agile methods and organizational culture may occur; therefore, one has to understand and consider the organizational context". Therefore, whereas Wendler's model provides considerable useful data, ideally organisations should incorporate other data to achieve a more in-depth perspective.

Triangulation involves "corroborating data from multiple perspectives to enhance the depth of understanding of a particular theme and to provide verification" (Stavros and Westberg, 2009, p. 307). Beverland and Lindgreen (2010, p. 57) have suggested that triangulation is fundamental to ensuring quality in case studies. To validate the findings from the organisational agility survey, management administered two other surveys—employee engagement and workplace culture. At time of writing, this triangulation has yet to be completed.

5.1 Practical implications

This study makes a theoretical contribution by extending the previous literature on organisational agility maturity models and also presents some useful insights for managers. First, the effort expended by a university IT services division to apply Wendler's model will result in an instrument that not only provides a lot of rich data but also can be re-used over several years as a benchmark against which to assess progress. Second, the types of data visualisation shown in this study should be considered as important tools for presenting complex data in a concise and accessible way, especially to senior management. Third, management should consider what other data gathering initiatives it would wish to employ to supplement Wendler's model.

Fourth, an important aspect of the environment in which the current survey was administered was staff awareness of impending transformative changes within the University and, by extension, the Division. Senior INS management had already used a variety of communication channels to promote the need to embrace change as a constant and to become more agile as a response. Therefore, in theory, the survey should not have come as a surprise to staff. Clearly there were different perceptions among staff as to what constituted "agility", especially in areas which were already practicing agile project methodology. However, for a survey of this type to provide real return on investment to an organisation, managers are advised to introduce all staff to the concept of agility, and more especially organisational agility, before the survey is administered. As the literature review has demonstrated, organisational agility is a nuanced concept; it takes time for those who are familiar with agile project methodology to appreciate the broader environment in which a whole-of-organisation approach needs to be considered.

Finally, from these observations, it is readily apparent that the action plan an organisation develops as a response to this survey is an important output. In the specific case of INS, one of the portfolio managers used the results in her area to inform structural transformation. Ideally the development of such a plan should be based on an appropriate, defined target state. The action plan should focus on those work areas in which the survey has identified an agility deficit. At the same time, it is important to recognise that the achievement of desired outcomes across separate areas within the organisation may require different actions, based upon the culture of each of those areas.

5.2 Limitations

One of the limitations of applying Wendler's model as outlined in this case study is that Employee Life was the selected survey tool. Using a broad-spectrum survey instrument, such as SurveyMonkey, would possibly require a different approach to the design of the questionnaire and the extraction of data.

A university IT services division does not sit in isolation within the parent organisation. While INS had a history of trying to understand its own environmental factors, it did not know the level of influence of external environmental factors. These include, but are not limited to, university organisational structure, governance and resource constraints; human resource issues, such as staff turnover and performance management; and the enterprise's perspective on key issues, such as risk tolerance. The compilation of additional data within this broader framework could help to better contextualise the data derived from the current survey.

Finally, the grouping of survey questions under particular broad themes reflected the strategic focus of the division being surveyed. Organisations implementing the proposed model would need to select themes that corresponded with their respective strategic goals and culture.

6. Conclusion

The higher education industry is evolving at an ever-accelerating pace. As a result, university information technology services must be able to support their clients with an

effective balance of leadership, guidance and high-quality service delivery. IT services are constantly seeking to align themselves with their university's strategic priorities by having the agility and flexibility to respond to a rapidly changing environment, while remaining effective and efficient. Organisational agility is seen as a strategic imperative for achieving these goals.

In this paper, the authors have extended the work of Wendler (2014) by expanding his organisational agility maturity model in two ways: they have applied it specifically to a university information services division and to both managers and general staff (employees). Having undertaken a self-assessment exercise using the maturity model, the next step for Griffith University is to triangulate the survey results within a broader framework that incorporates employee engagement and organisational culture as key pillars in the better enablement of agility, flexibility and alignment of services.

This study presents opportunities for further research. First, as highlighted previously, additional research is indicated as to whether organisational unit structure may be a limiting factor in achieving organisational agility. Second, the case subject was a medium-sized university in Australia. Future research should compare the results from surveying similarly sized universities from different regions in the world and differently sized higher education institutions. Third, more research could be undertaken to compare the results of different organisational roles within university IT service divisions. Finally, more research is needed to extend the applicability of Wendler's model to a wider range of domains and industries.

References

Adams Becker, S., Cummins, M., Davis, A., Freeman, A., Hall Giesinger, C. and Ananthanarayanan, V. (2017), "NMC Horizon Report: 2017 Higher Education Edition", The New Media Consortium, Austin, TX.

Aghina, W., De Smet, A. and Weerda, K. (2015), "Agility: it rhymes with stability", *McKinsey Quarterly*, December, pp. 1-12, available at: https://meincoach.at/pdfs/agility_rhymes_with_stability_201512_McK.pdf (accessed 31 July 2017).

Allen, M. (2014), *Aha Moments in Talent Management*, ASTD Press, Alexandria, VA.

Allied Consultants Europe (2010), "Organisational agility – the new normal", Allied Consultants Europe, Stuttgart, available at: www.ace-alliedconsultants.org/publications/files/2010-ace-organisational-agility (accessed 31 July 2017).

Al-Saleem, S.M. and Ullah, H. (2015), "A comparative analysis and evaluation of different agile software development methodologies", *International Journal of Computer Science and Network Security*, Vol. 15 No. 7, pp. 39-45.

Andrews, D., Nonnecke, B. and Preece, J. (2003), "Electronic survey methodology: a case study in reaching hard-to-involve internet users", *International Journal of Human-Computer Interaction*, Vol. 16 No. 2, pp. 185-210.

Aronowitz, S., De Smet, A. and McGinty, D. (2015), "Getting organizational redesign right", *McKinsey Quarterly*, June, pp. 1-11, available at: www.ohisolution.com/media/16083/Getting-organizational-redesign-right_McK-Quarterly_June2015.pdf (accessed 31 July 2017).

Beck, K., Beedle, M., Van Bennekum, A., Cockburn, A., Cunningham, W., Fowler, M. and Kern, J. (2001), "Manifesto for agile software development", available at: http://agilemanifesto.org/principles.html (accessed 31 July 2017).

Beverland, M.B. and Lindgreen, A. (2010), "What makes a good case study? A positivist review of qualitative case research published in Industrial Marketing Management, 1971–2006", *Industrial Marketing Management*, Vol. 39 No. 1, pp. 56-63.

Bottani, E. (2009), "On the assessment of enterprise agility: issues from two case studies", *International Journal of Logistics*, Vol. 12 No. 3, pp. 213-230.

Bottani, E. (2010), "Profile and enablers of agile companies: an empirical investigation", *International Journal of Production Economics*, Vol. 125 No. 2, pp. 251-261.

Charbonnier-Voirin, A. (2011), "The development and partial testing of the psychometric properties of a measurement scale of organizational agility", *Management*, Vol. 14 No. 2, pp. 120-155.

De Smet, A., Lund, S. and Schaninger, W. (2016), "Organizing for the future", *McKinsey Quarterly*, January, pp. 1-14.

Desouza, K. (2006), *Agile Information Systems: Conceptualization, Construction and Management*, Routledge, London.

Dingsøyr, T., Nerur, S., Balijepally, V. and Moe, N.B. (2012), "A decade of agile methodologies: towards explaining agile software development", *Journal of Systems and Software*, Vol. 85 No. 6, pp. 1213-1221.

Gartner (2006), "Achieving agility: defining agility in an IT context", available at: www.gartner.com/doc/491393?ref=ddisp (accessed 31 July 2017).

Gerring, J. (2004), "What is a case study and what is it good for?", *American Political Science Review*, Vol. 98 No. 2, pp. 341-354.

Gustafsson, J. (2017), "Single case studies vs multiple case studies: a comparative study", available at: www.diva-portal.org/smash/get/diva2:1064378/FULLTEXT01.pdf (accessed 31 July 2017).

Harraf, A. and Tate, K. (2014), "Attributes of agile organizations", paper presented at 2014 AABRI International Conference, Honolulu, HI, 12-14 June, available at: www.aabri.com/HC2014Manuscripts/HC14036.pdf (accessed 31 July 2017).

Holbeche, L. (2015), *The Agile Organization: How to Build An Innovative, Sustainable and Resilient Business*, Kogan Page Publishers, London.

Ionel, N. (2009), "Agile software development methodologies: an overview of the current state of research", *Annals of the University of Oradea, Economic Science Series*, Vol. 18 No. 4, pp. 381-385.

Kassim, N.M. and Zain, M. (2004), "Assessing the measurement of organizational agility", *The Journal of American Academy of Business*, Vol. 4 Nos 1/2, pp. 174-177.

Krell, E. (2011), "An impartial review", *HR Magazine-Alexandria*, Vol. 56 No. 10, pp. 97-99.

Lu, Y. and Ramamurthy, K. (2011), "Understanding the link between information technology capability and organizational agility: an empirical examination", *MIS Quarterly*, Vol. 35 No. 4, pp. 931-954.

Manpower (2014), "2014 organisational agility survey key findings – Australia & New Zealand", available at: www.manpowergroup.com.au/documents/White-Papers/2014_organisational-agility-survey.pdf (accessed 31 July 2017).

Maurer, F. and Hellmann, T.D. (2013), "People-centered software development: an overview of agile methodologies", in De Lucia, A. and Ferrucci, F. (Eds), *Software Engineering*, Springer, Berlin, pp. 185-215.

Meyer, C.B. (2001), "A case in case study methodology", *Field Methods*, Vol. 13 No. 4, pp. 329-352.

Morrel-Samuels, P. (2002), "Getting the truth into workplace surveys", *Harvard Business Review*, Vol. 80 No. 2, pp. 111-118.

Norton, D., Hotle, M., Mesaglio, M., Fitzgerald, D., Swanton, B. and Wilson, N. (2014), *Best Practices for Implementing Enterprise Agile Principles*, Gartner, Stamford, CT.

Quacquarelli Symonds (2017), "QS University Rankings: Top 50 Under 50 2017-2018", Top universities, available at: www.topuniversities.com/university-rankings/top-50-under-50/2018 (accessed 22 January 2018).

Rigby, D., Sutherland, J. and Takeuchi, H. (2016), "Embracing agility: how to master the process that's transforming management", *Harvard Business Review*, Vol. 94 No. 5, pp. 40-50.

Rothschild, H. (2015), "8 vital best business practices", *Wealth Professional*, 8 September, available at: www.wealthprofessional.com.au/news/8-vital-best-business-practices-205122.aspx (accessed 31 July 2017).

Sahota, M. (2013), "An organizational transformation checklist", Agile Alliance, Corryon, TN, available at: www.agilealliance.org/wp-content/uploads/2016/02/An_Organizational_Transformation_Checklist.pdf (accessed 31 July 2017).

Sherehiy, B., Karwowski, W. and Layer, J.K. (2007), "A review of enterprise agility: concepts, frameworks, and attributes", *International Journal of Industrial Ergonomics*, Vol. 37 No. 5, pp. 445-460.

Stavros, C. and Westberg, K. (2009), "Using triangulation and multiple case studies to advance relationship marketing theory", *Qualitative Market Research: An International Journal*, Vol. 12 No. 3, pp. 307-320.

Taylor, H. (2000), "Does internet research work? Comparing electronic surveys results with telephone survey", *International Journal of Market Research*, Vol. 42 No. 1, pp. 51-63.

Tsourveloudis, N.C. and Valavanis, K.P. (2002), "On the measurement of enterprise agility", *Journal of Intelligent and Robotic Systems*, Vol. 33 No. 3, pp. 329-342.

Wendler, R. (2012), "The maturity of maturity model research: A systematic mapping study", *Information and Software Technology*, Vol. 54 No. 12, pp. 1317-1339.

Wendler, R. (2013), "The structure of agility from different perspectives", *2013 Federated Conference on Computer Science and Information Systems (FedCSIS)*, IEEE, September, Kraków, Poland, pp. 1177-1184.

Wendler, R. (2014), "Development of the organizational agility maturity model", *2014 Federated Conference on Computer Science and Information Systems (FedCSIS)*, IEEE, Warsaw, Poland, pp. 1197-1206.

Wendler, R. (2016), "Dimensions of organizational agility in the software and IT service industry: insights from an empirical investigation", *Communications of the Association for Information Systems*, Vol. 39 No. 1, pp. 439-482.

Wendler, R. and Stahlke, T. (2014), "What constitutes an agile organization? Descriptive results of an empirical investigation", Dresdner Beiträge zur Wirtschaftsinformatik No. 68/14, Technische Universität Dresden, Dresden, available at: http://nbn-resolving.de/urn:nbn:de:bsz:14-qucosa-130916 (accessed 31 July 2017).

White, C., Vanc, A. and Stafford, G. (2010), "Internal communication, information satisfaction, and sense of community: the effect of personal influence", *Journal of Public Relations Research*, Vol. 22 No. 1, pp. 65-84.

Yin, R.K. (1984), *Case Study Research: Design and Methods*, Sage, Newbury Park, CA.

Zainal, Z. (2007), "Case study as a research method", *Jurnal Kemanusiaan*, Vol. 5 No. 1, pp. 1-6, available at: www.jurnal-kemanusiaan.utm.my/index.php/kemanusiaan/article/view/165

Appendix 1. Survey questions—Managers question set

The questions listed below were utilised in the survey instrument and presented for managers to complete

Order	Question Text	Scale
1	Information Services values a culture that considers teamwork as an integral part	(1) not at all - (5) completely
2	Information Services values a culture that considers changing customer-related requirements as opportunities	(1) not at all - (5) completely
3	Information Services values a culture that nurtures an environment where people trust and respect each other	(1) not at all - (5) completely
4	Information Services values a culture that embraces accountability from top to bottom	(1) not at all - (5) completely
5	Information Services prefers a proactive continuous improvement rather than reacting to crisis or "fire-fighting"	(1) not at all - (5) completely
6	Information Services prefers flat hierarchies or simple structures to eliminate barriers between individuals and/or teams	(1) not at all - (5) completely
7	Information Services prefers simplicity, i.e. skipping product and/or service features that go beyond the customer requirements	(1) not at all - (5) completely
8	Information Services prefers a values-based leadership approach	(1) not at all - (5) completely
9	Information Services prefers transparency of information for staff	(1) not at all - (5) completely
10	Information Services prefers implementation of guiding principles with clear direction, so that all staff understand their contribution	(1) not at all - (5) completely
11	Information Services has a process for managing suggestions for improvement, new ideas, and solutions from all levels	(1) not at all - (5) completely
12	Information Services has staff that have a good understanding of how their own job relates to INS' overall	(1) not at all - (5) completely
13	Information Services has a strategic approach which fosters learning as a crucial element	(1) not at all - (5) completely
14	Information Services has information systems and technologies that make organisational information easily accessible to all staff	(1) not at all - (5) completely
15	Information Services has information systems and technologies that provide information helping our staff to quickly respond to change	(1) not at all - (5) completely
16	Information Services has information systems and technologies that enable decentralisation in decision making	(1) not at all - (5) completely
17	Information Services has information systems and technologies that are standardised or comparable among different departments and/or business units	(1) not at all - (5) completely
18	Information Services has information systems and technologies that provide rapid feedback on operations and keep intelligence on changing conditions	(1) not at all - (5) completely
19	Information Services managers within my portfolio maintain an informal management style with focus on coaching and inspiring people	(1) none - (5) all
20	Information Services managers within my portfolio quickly implement changes in products and/or services	(1) none - (5) all
21	Information Services managers within my portfolio recognise opportunities for innovation in products, services and/or processes which will deliver benefits for the University	(1) none - (5) all
22	Information Services managers within my portfolio flexibly deploy their resources (material, financial, human . . .) to make use of opportunities and minimise threats	(1) none - (5) all

23	Information Services managers within my portfolio acknowledge and tolerate ambiguity	(1) none - (5) all
24	My staff sense, perceive, or anticipate the best opportunities which come up in our environment	(1) none - (5) all
25	My staff have a broad range of skills which can be applied to other tasks when needed	(1) none - (5) all
26	My staff are willing to learn and are prepared to constantly access, apply and update knowledge	(1) none - (5) all
27	My staff are willing to continuously learn from one another and to pass their knowledge to others	(1) none - (5) all
28	My staff can re-organise continuously in different team configurations to meet changing requirements and the newly arising challenges	(1) none - (5) all
29	My staff are self-motivated	(1) none - (5) all
30	My staff are prepared to take responsibility for their own decisions	(1) none - (5) all
31	My staff acknowledge mistakes quickly	(1) none - (5) all
32	My staff collaborate closely with different teams and across portfolios	(1) never - (5) always
33	My staff work in small teams in their projects	(1) never - (5) always
34	My staff rotate among different activities, tasks, positions or departments	(1) never - (5) always
35	Regarding Information Services staff, we trust them to get their job done	(1) never - (5) always
36	Regarding Information Services staff, we offer reward & recognition not only for individuals, but for the team and their contribution to the overall organisation	(1) never - (5) always
37	Regarding Information Services staff, we encourage our staff to upgrade their skills and training	(1) never - (5) always
38	Regarding Information Services staff, we encourage staff at lower levels to make decisions and take responsibility	(1) never - (5) always
39	Regarding Information Services staff, we provide opportunities for staff to multi-skill staff, e.g. job rotation, job mobility	(1) never - (5) always
40	Regarding Information Services staff, we develop staff skills with a view to INS' long-term future development	(1) never - (5) always
41	In Information Services, we scan and examine our environment systematically to anticipate change	(1) never - (5) always
42	In Information Services, we react to approaching changes by immediately updating our business strategy and processes	(1) never - (5) always
43	In Information Services, we jointly operate across different functions and/or portfolios for strategic decision-making	(1) never - (5) always
44	In Information Services, we encourage early involvement of several departments and/or functions in new product and/or service development	(1) never - (5) always
45	In Information Services, we have a process to inform ourselves about information technology innovations	(1) never - (5) always
46	In Information Services, we strategically invest in appropriate technologies and have a clear vision how information technology contributes to business value	(1) never - (5) always
47	In Information Services, we focus on our core competencies and delegate further tasks to our partners	(1) never - (5) always

48	In Information Services, we select our partners and subcontractors by quality criteria (rather than pure cost-based decisions)	(1) never - (5) always
49	In Information Services, we align all our activities to customer requirements and needs	(1) never - (5) always
50	In Information Services, we closely collaborate with and encourage feedback from our customers and partners	(1) never - (5) always
51	In Information Services, we design our processes to include early feedback and adaptation	(1) never - (5) always
52	In Information Services, we are able to rapidly gain the approvals needed	(1) never - (5) always

Likert-Type Scale Response values (used as described in 3.4)
(1) not at all (2) a little (3) partly (4) mainly (5) completely
(1) none (2) few (3) some (4) many (5) all
(1) never (2) seldom (3) sometimes (4) often (5) always

Appendix 2. Survey questions—Staff question set

The questions listed below were utilised in the survey instrument and presented for general staff (employees) to complete

Order	Question Text	Scale
1	Information Services values a culture that considers team work as an integral part	(1) not at all - (5) completely
2	Information Services values a culture that accepts and supports decisions and proposals of staff	(1) not at all - (5) completely
3	Information Services values a culture that is supportive of experimentation and the use of innovative ideas	(1) not at all - (5) completely
4	Information Services values a culture that considers changing customer-related requirements as opportunities	(1) not at all - (5) completely
5	Information Services values a culture that nurtures an environment where people trust and respect each other	(1) not at all - (5) completely
6	Information Services prefers proactive continuous improvement rather than reacting to crisis or fire-fighting	(1) not at all - (5) completely
7	Information Services prefers flat hierarchies or simple structures to eliminate barriers between individuals and/or teams	(1) not at all - (5) completely
8	Information Services prefers a values-based leadership approach	(1) not at all - (5) completely
9	Information Services prefers transparency of information for staff	(1) not at all - (5) completely
10	Information Services has a process for managing suggestions for improvement, new ideas and solutions from all levels	(1) not at all - (5) completely
11	Information Services has a structured staff training program	(1) not at all - (5) completely
12	Information Services has staff who have a good understanding of how their own job relates to INS overall	(1) not at all - (5) completely
13	Information Services has a strategic direction that is clearly communicated to all hierarchical levels in terms easily understood by all	(1) not at all - (5) completely
14	Information Services has a process to encourage our staff to upgrade their skills and training	(1) not at all - (5) completely
15	Information Services has a strategic approach which fosters learning as a crucial element	(1) not at all - (5) completely
16	Information Services has information systems and technologies that make organisational information easily accessible to all staff	(1) not at all - (5) completely
17	Information Services has information systems and technologies that are integrated among different departments and/or business units	(1) not at all - (5) completely
18	Information Services has information systems and technologies that are standardised or comparable among different departments and/or business units	(1) not at all - (5) completely
19	My manager maintains an informal management style with focus on coaching and inspiring people	(1) not at all - (5) completely
20	My manager has the knowledge and skills necessary to manage change	(1) not at all - (5) completely
21	My manager manages the sharing of information know-how and knowledge among staff appropriately	(1) not at all - (5) completely
22	My manager encourages staff at lower levels to make decisions and take responsibility	(1) not at all - (5) completely
23	My manager is empowered to make decisions needed to improve services	(1) not at all - (5) completely
24	My manager trusts staff to get their job done	(1) not at all - (5) completely
25	My manager fosters and enables staff to take responsibility and contribute to change	(1) not at all - (5) completely
26	My manager is aware of the broad range of skills within my team	(1) not at all - (5) completely
27	My manager acknowledges mistakes without delay and visibly adjusts their actions	(1) not at all - (5) completely
28	My manager acknowledges and tolerates ambiguity	(1) not at all - (5) completely

29	Staff in my portfolio are able to act with a view to continuous improvement of our products, services, processes, and/or working methods	(1) none - (5) all
30	Staff in my portfolio communicate with each other with trust, goodwill, and esteem	(1) none - (5) all
31	Staff in my portfolio can re-organise continuously in different team configurations to meet changing requirements and the newly arising challenges	(1) none - (5) all
32	Staff in my portfolio collaborate closely with different teams and across portfolios	(1) never - (5) always
33	Staff in my portfolio reflect at regular intervals on how to become more effective in their team, then tune and adjust their behaviour accordingly	(1) never - (5) always
34	Staff in my portfolio work in small teams in their projects	(1) never - (5) always
35	Staff in my portfolio rotate among different activities, tasks, positions or departments	(1) never - (5) always
36	Regarding Information Services we offer reward & recognition not only for individuals but for the team and their contribution to the overall organisation	(1) never - (5) always
37	Regarding Information Services we raise staff strategic awareness e.g. workshops and discussions	(1) never - (5) always
38	In Information Services we regularly scan and examine our environment to anticipate change	(1) never - (5) always
39	In Information Services we have a process to inform ourselves about information technology innovations	(1) never - (5) always
40	In Information Services we align all our activities to customer requirements and needs	(1) never - (5) always

Likert-Type Scale Response values (used as described in 3.4)
(1) not at all (2) a little (3) partly (4) mainly (5) completely
(1) none (2) few (3) some (4) many (5) all
(1) never (2) seldom (3) sometimes (4) often (5) always

Appendix 3. Survey questions—full question set grouped by themes and sub-themes (category)

The themes correspond to the six dimensions of the Ace Agility Index; the sub-themes (categories) draw upon work done by Wendler (as explained in 3.4)

Theme	Category	Question Text
Culture	Accountability	Information Services values a culture that . . . embraces accountability from top to bottom
Culture	Accountability	My manager . . . fosters and enables staff to take responsibility and contribute to change
Culture	Accountability	My manager . . . is empowered to make decisions needed to improve services
Culture	Accountability	My manager . . . encourages staff at lower levels to make decisions and take responsibility
Culture	Accountability	My staff . . . are prepared to take responsibility for their own decisions
Culture	Accountability	Regarding Information Services staff, we . . . encourage staff at lower levels to make decisions and take responsibility
Culture	Trust	Information Services prefers . . . transparency of information for staff
Culture	Trust	Information Services values a culture that . . . nurtures an environment where people trust and respect each other
Culture	Trust	Staff in my portfolio . . . communicate with each other with trust, goodwill, and esteem
Culture	Values and Principles	In Information Services, we . . . strategically invest in appropriate technologies and have a clear vision how IT contributes to business value
Culture	Values and Principles	Information Services has . . . a strategic approach which fosters learning as a crucial element
Culture	Values and Principles	Information Services prefers . . . a values-based leadership approach
Culture	Values and Principles	Information Services prefers . . . implementation of guiding principles with clear direction, so that all staff understand their contribution
Culture	Values and Principles	Information Services prefers . . . simplicity, i. e. skipping product and/or service features that go beyond the customer requirements
Culture	Values and Principles	Information Services values a culture that . . . considers changing customer-related requirements as opportunities
Culture	Values and Principles	Staff in my portfolio . . . are able to act with a view to continuous improvement of our products, services, processes, and/or working methods
Innovation	Flexibility	In Information Services, we . . . are able to rapidly gain the approvals needed
Innovation	Flexibility	Information Services has information systems and technologies that . . . are standardised or comparable among different departments and/or business units
Innovation	Flexibility	Information Services managers within my portfolio . . . flexibly deploy their resources (material, financial, human . . .) to make use of opportunities and minimise threats
Innovation	Flexibility	Information Services managers within my portfolio . . . quickly implement changes in products and/or services
Innovation	Proactivity	Information Services has . . . a process for managing suggestions for improvement, new ideas, and solutions from all levels
Innovation	Proactivity	Information Services has information systems and technologies that . . . provide rapid feedback on operations and keep intelligence on changing conditions
Innovation	Proactivity	Information Services managers within my portfolio . . . recognise opportunities for innovation in products, services and/or processes which will deliver benefits for the University
Innovation	Proactivity	Information Services values a culture that . . . is supportive of experimentation and the use of innovative ideas
Leadership and Management	Communication	Information Services has . . . a process for managing suggestions for improvement, new ideas, and solutions from all levels

Leadership and Management	Communication	Information Services has . . . a strategic direction that is clearly communicated to all hierarchical levels in terms easily understood by all
Leadership and Management	Communication	Information Services has information systems and technologies that . . . make organisational information easily accessible to all staff
Leadership and Management	Communication	My manager . . . manages the sharing of information, know-how, and knowledge among staff appropriately
Leadership and Management	Communication	My manager . . . is aware of the broad range of skills within my team
Leadership and Management	Communication	Regarding Information Services, we . . . raise staff's strategic awareness, e.g. workshops and discussions
Leadership and Management	Risk	Information Services has information systems and technologies that . . . enable decentralisation in decision making
Leadership and Management	Risk	Information Services values a culture that . . . accepts and supports decisions and proposals of staff
Leadership and Management	Risk	My manager . . . trusts staff to get their job done
Leadership and Management	Risk	My staff . . . acknowledge mistakes quickly
Leadership and Management	Risk	Regarding Information Services staff, we . . . trust them to get their job done
Leadership and Management	Style	Information Services managers within my portfolio . . . acknowledge and tolerate ambiguity
Leadership and Management	Style	My manager . . . acknowledges and tolerates ambiguity
Leadership and Management	Style	My manager . . . acknowledges mistakes without delay, and visibly adjust their actions
Leadership and Management	Style	Regarding Information Services, we . . . offer reward & recognition not only for individuals, but for the team and their contribution to the overall organisation
Learning and Change	Organisational Learning	My staff . . . are willing to continuously learn from one another and to pass their knowledge to others
Learning and Change	Organisational Learning	My staff . . . are willing to learn and are prepared to constantly access, apply and update knowledge
Learning and Change	Organisational Learning	My staff . . . sense, perceive, or anticipate the best opportunities which come up in our environment
Learning and Change	Skills Development	Information Services has . . . a structured staff training program
Learning and Change	Skills Development	Information Services managers within my portfolio . . . maintain an informal management style with focus on coaching and inspiring people
Learning and Change	Skills Development	My manager . . . maintains an informal management style with focus on coaching and inspiring people
Learning and Change	Skills Development	My staff . . . have a broad range of skills which can be applied to other tasks when needed
Learning and Change	Workforce Capability	Information Services has . . . staff who have a good understanding of how their own job relates to INS' overall
Learning and Change	Workforce Capability	Information Services has information systems and technologies that . . . provide information helping our staff to quickly respond to change
Learning and Change	Workforce Capability	My manager . . . has the knowledge and skills necessary to manage change
Learning and Change	Workforce Capability	My staff . . . are self-motivated
Strategy	Engagement	In Information Services, we . . . closely collaborate with and encourage feedback from our customers and partners
Strategy	Engagement	In Information Services, we . . . design our processes to include early feedback and adaptation

Strategy	Engagement	In Information Services, we . . . focus on our core competencies and delegate further tasks to our partners
Strategy	Industry Awareness	In Information Services, we . . . have a process to inform ourselves about information technology innovations
Strategy	Industry Awareness	In Information Services, we . . . regularly scan and examine our environment to anticipate change
Strategy	Industry Awareness	In Information Services, we . . . scan and examine our environment systematically to anticipate change
Strategy	Industry Awareness	In Information Services, we . . . select our partners and subcontractors by quality criteria (rather than pure cost-based decisions)
Strategy	Planning	In Information Services, we . . . align all our activities to customer requirements and needs
Strategy	Planning	In Information Services, we . . . react to approaching changes by immediately updating our business strategy and processes
Strategy	Planning	Information Services has . . . a process to encourage our staff to upgrade their skills and training
Strategy	Planning	Information Services prefers . . . a proactive continuous improvement rather than reacting to crisis or "fire-fighting"
Strategy	Planning	Regarding Information Services staff, we . . . develop staff skills with a view to INS' long-term future development
Strategy	Planning	Regarding Information Services staff, we . . . encourage our staff to upgrade their skills and training
Structure	Adaptability	My staff . . . can re-organise continuously in different team configurations to meet changing requirements and the newly arising challenges
Structure	Adaptability	My staff . . . rotate among different activities, tasks, positions or departments
Structure	Adaptability	Regarding Information Services staff, we . . . provide opportunities for staff to multi-skill staff, e.g. job rotation, job mobility
Structure	Adaptability	Staff in my portfolio . . . can re-organise continuously in different team configurations to meet changing requirements and the newly arising challenges
Structure	Adaptability	Staff in my portfolio . . . reflect at regular intervals on how to become more effective in their team, then tune and adjust their behaviour accordingly
Structure	Adaptability	Staff in my portfolio . . . rotate among different activities, tasks, positions or departments
Structure	Collaboration	In Information Services, we . . . encourage early involvement of several departments and/or functions in new product and/or service development
Structure	Collaboration	Information Services has information systems and technologies that . . . are integrated among different departments and / or business units
Structure	Collaboration	Information Services has information systems and technologies that. . . make organisational information easily accessible to all staff
Structure	Collaboration	Information Services prefers . . . . . flat hierarchies or simple structures to eliminate barriers between individuals and/or teams
Structure	Collaboration	Information Services values a culture that . . . considers team work as an integral part
Structure	Cooperation	In Information Services, we . . . jointly operate across different functions and/or portfolios for strategic decision making
Structure	Cooperation	My staff . . . collaborate closely with different teams and across portfolios
Structure	Cooperation	My staff . . . work in small teams in their projects
Structure	Cooperation	Staff in my portfolio . . . collaborate closely with different teams and across portfolios
Structure	Cooperation	Staff in my portfolio . . . work in small teams in their projects

About the authors

David Gunsberg is Director of the Planning and Engagement within Digital Solutions, Griffith University. He is responsible for the delivery of the Division's portfolio of transformational projects. He is Passionate Advocate of placing the customer at the heart of corporate strategy, and is also known for his focus on performance and his track record of developing future leaders. Prior to joining

Griffith University, David worked as Strategic Consultant for five years, focussing on the areas of corporate transformation, strategy development and high performance leadership.

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