ABSTRACT

Higher education institutions codify institutional decisions and publish governance instruments in part in response to government regulation and accountability requirements, and increasing corporatisation. This paper explores technology-based solutions to communicate governance instruments (principally institutional policy), and considers the relationship between policy and institutional research derived from business intelligence (BI) systems. Data is drawn from surveys and interviews with higher education managers and policy practitioners from the United States and Australasia (Australia, New Zealand and Papua New Guinea). While the management and communication of higher education institutional policy from fundamentally different contexts varies in many respects, there is a remarkable level of consistency. These commonalities include approaches to institutional policy websites, online policy libraries and the use of information technology-based systems to operationalise finance, human resources and student life cycle policy, particularly between the United States, Australia and New Zealand. This paper explores institutional policy technologies and practices progressively professionalising this emerging field.

KEY WORDS

institutional policy, policy technology, policy library, business intelligence

INTRODUCTION

Institutional policy is an emerging focus for higher education research, as many higher education institutions in the United States and Australasia codify institutional decisions and publish governance instruments. In part, these developments represent an institutional response to government regulation and growing accountability requirements and corporatisation (Freeman, 2014). These developments require the production of evidence, and compilation and reporting of institutional research, giving rise to concerns higher education institutions are governed by numbers (Ozga, 2008). Despite this, there has been little attention given to higher education institutional policy and related policy technology, and very few institutional policy studies have employed an international comparative approach, unlike public policy research.

This paper draws on data from the Institutional Policy Project and doctoral research focused on higher education institutional policy in the United States and Australasia (Australia, New Zealand and Papua New Guinea). The Institutional Policy Project was initiated to explore conceptions of higher education institutional policy and identify
innovative organisational processes, technologies and practices. Despite fundamentally different national contexts for higher education systems, greatly varying organisational structures and missions, and internal variation in these jurisdictions, the research reveals surprising commonalities as well as points of differentiation. This paper is provided to communicate key findings to practitioners to support ongoing policy technology and process innovation.

METHOD

This paper draws on data from the Institutional Policy Project examining institutional policy in the United States, New Zealand and Papua New Guinea, and doctoral research focused explicitly on institutional policy in the Australian university sector. The mixed methods research (Cresswell, 2013) involved semi-structured interviews, a survey and document analysis of publicly available, internet-delivered governance documents, or 'artefacts' (Scott, 2014). The interviews were conducted face-to-face and using Skype (video and audio-only). In one instance, a Papua New Guinean interviewee provided written responses to the interview questions. The survey, comprising 94 questions, included multiple-choice questions and several opportunities for free text comments. Additionally, the survey enabled the collection of demographic data regarding the respondents’ institution. The survey was administered online using SurveyMonkey to Australian, United States and New Zealand respondents. Papua New Guinean participants were invited to complete the surveys manually at an Association for Tertiary Education Management (ATEM) policy seminar, and the chief investigator entered responses manually.

In total, 138 survey responses were received (Australia: 66; New Zealand: 10; United States: 58; Papua New Guinea: 4). They were tabulated using SurveyMonkey; with qualitative survey responses coded using thematic analysis (Boyatzis, 1998; Braun and Clarke, 2006). The survey results are indicative only given the low response rate, particularly with respect to Papua New Guinea and New Zealand. In many instances, Papua New Guinea and/or New Zealand survey responses are excluded from the published findings due to low response rate at the individual question level. 76 semi-structured interviews were conducted with higher education managers and policy practitioners (Australia: 37; New Zealand: 11; United States: 21; Papua New Guinea: 7). The interviews were recorded, transcribed and coded using thematic analysis (Boyatzis, 1998; Braun and Clarke, 2006). The University of Melbourne human ethics committee approved the research.

LITERATURE

Despite the wealth of public policy research there remains a dearth of literature specifically related to policy developed by higher education institutions (Blobaum, Ford, Hippchen, Petersen and Spellacy, 2005; Clark, Griffin and Martin, 2008; Freeman, Jensen and Hatwell, 2013). This small body of work includes research regarding policy content and readability analysis (Smith and Williams-Jones, 2009), policy-making governance structures (Eckert, 1970; Boren, 1965), policy process (Romana, 1975) and meta-policy (Freeman, 2014). There is an emerging body of research exploring institutional policy focused on specific academic matters, including plagiarism and
academic integrity (Jordan, 2001; Sutherland Smith, 2010; Bretag et al., 2011), research training (Tinkler & Jackson, 2000), admissions (Freeman, 2015) and student attendance (Marburger, 2006; Aaron, 2012). There is also a small body of work exploring higher education environment policies (Wright, 2006; Freeman, 2015), and policy implementation evaluation and review (Freeman, 2012a; Freeman, 2012b; Wong, Wong and Pang, 2015). More recently, research has provided an international comparative perspective of institutional policy development and management (Freeman, Lapan, Mafile'o, Capell, Goldblatt & Thompson, 2014; Freeman, Capell, Goldblatt, Lapan, Mafile'o & Thompson, 2014; Freeman, 2014).

Similarly, there is very little research regarding policy technology and related process innovations, such as policy websites, online policy libraries, policy management systems and business process software developed or employed by higher education institutions. Institutional policy websites have been referred to as 'the ‘front door’ to the policy repository' (Freeman, Jensen and Hatwell, 2013, p. 51). These policy websites 'generally function as: the online interface with the University Policy Repository; or [a] portal to provide information regarding the University Policy Framework; or [a] portal to provide resources supporting the university policy development cycle' (Freeman, 2010, p. 9). Online policy libraries are information technology-based systems that essentially hold and make available policy texts to communicate, drive and evidence institutional practices. Online policy libraries provide the authoritative source for institution-wide policy texts, and may be complemented by academic and administrative organisational unit collections of policy texts (including local policy) (Freeman and Jensen, 2010).

Some online policy libraries are automated using a policy management system. Gross and Churchill (2013) define such systems as 'a software package that automates the management of policies through their life cycle, from drafting to compliance monitoring' (p. 18), differentiating such systems from a webpage or content management system. Popular policy management systems include 'Microsoft SharePoint, Oracle (formerly Stellent), 2Compli, Doxcelerate, ECM Documentum, GovDelivery, Integrated GRC Solutions, Rsam Policy Management [and] PolicyTech' (Gross and Churchill, 2013, p. 22). In Australia, TWEEK! is currently used by a number of Australian universities as a sophisticated policy management system that can also interface with delegations systems.

Again, while there is much research regarding public policy evaluation (Dunn, 2003), there is little in terms of evaluation of institutional policy implementation (Freeman, Kelder and Brown, 2013). Despite the emergence of ‘Big Data’, where ‘the quantity, range and scale of data that can be and is gathered has increased exponentially (or close to exponentially)’ (Clow, 2013, p. 683), few studies have explored the use of institutional research or data held in business intelligence systems to develop or review institutional policy governing core operations. Institutional research offices provide a range of initiatives that could contribute towards institutional policy development or review, particularly at the 'issue identification and evaluation stages' (Whiteley and Skuja, n.d., p. 8). However, Whiteley and Skuja (n.d.) acknowledge that institutional research (IR) practitioners are ill equipped to provide the link between IR and institutional policy:
If the trend towards an insistence on the development of evidence-based policy continues, we may find that we lack the skills and resources to contribute meaningfully to policy development. There are no simple remedies, but we might at least start by having a look at our universities' existing policies, assess their quantitative dimensions and consider expanding our repertoire of research utilisation strategies. (p. 11)

Practitioners even suggest that 'of course, more often than not, the [institutional] research has no effect on policy outcomes at all' (Whiteley and Skuja, n.d., p. 2). Recognising that little research has been done in this area, Barnett et al. (2005) recommend based on their preliminary investigations that 'perhaps the more important outcome for institutional policy-makers and managers is the demonstration that standard institutional datasets can be mined for insights that have potential operational value' (p. 296).

Business intelligence is defined as 'a broad category of technologies, applications, and processes used for gathering, storing, accessing, and analysing data to help its users make better decisions' (Wixom and Watson, 2010, p. 14). Encouraging the use of such data for policy evaluation purposes, Freeman, Jensen and Hatwell (2013) observe that:

Many institutions now have management information systems and data warehouses which present institutional data and enable easy analysis of the data in the core institutional systems, to support management decision-making. The policy developer needs to engage with these sources of data, planning how to measure efficacy from the earliest stages of the policy project. Those undertaking reviews of policy implementation need to be aware of data available to support evaluation and review. (p. 46)

The progressive introduction of business intelligence systems in higher education institutions has also been coupled with the emergence of business and academic analytics technologies and expertise. The successful introduction of business analytics involves ‘high-quality technology and data infrastructure; people with business analytics, banking and interpersonal skills’ (Shanks and Bekmamedova, 2012), and senior management support. Key obstacles include ‘lack of understanding of how to leverage analytics … [and] accessibility of the data’ (Gudfinnsson, Strand and Berndtsson, 2015, p. 40).

While business analytics is relevant to corporate operations, learning analytics - 'the application of these Big Data techniques to improve learning' (Clow, 2013, p. 684), and research evaluation systems (Woelert and Millar, 2013) have progressively been introduced by higher education institutions to explore the core academic endeavours. While the application of analytics to education is relatively new (Gasevic, Mirriahi, Long, & Dawson, 2014), Wohlers and Jamieson (2013) suggest that ‘there is a growing sense of urgency for educational organisations to understand Big Data and to develop and deploy analytical capabilities’ (p. 1). Concurrently, the range of learning analytics packages (for example, Blackboard, Desire2Learn) and vendors (for example, Instructure and Tribal) has grown (Clow, 2013). Despite the urgency and rapid introduction of analytics packages, there are challenges with this technological innovation. Wohlers and Jamieson (2013) observe that:
For many in education, this evolving discipline of analytics is a dark science -- unfamiliar, overwhelming, and expensive. Knowing where to start is unclear, let alone beginning to make sense of what data is useful and developing the capabilities to use it. While the potential value of analytics is compelling, it is difficult to know where to begin. (p. 2)

In addition to these challenges, faculty concerns regarding commodification have emerged in recent decades with performativity conceived as ‘a powerful and insidious policy technology that is now at work at all levels and in all kinds of education and public service, a technology that links effort, values, purposes and self-understanding to measures and comparisons of output’ (Ball, 2012). While this tyranny of metrics (Ball, 2012) is of concern given the ‘pressure towards performance management, metrics and quantification’ (Clow, 2013, p. 685), business and academic analytics are being introduced alongside learning management systems and business intelligence systems to drive innovation, performance and quality improvements. Business intelligence, and business and academic analytics will transform higher education as data increasingly drives decision-making, planning and core operations. The question is: at what point will higher education institutional policy practitioners join this data and technology-driven transformation?

INSTITUTIONAL POLICY WEBSITE

The survey asked respondents to indicate if their institution had an institutional policy website distinct from their online policy library. The majority of Australian and United States survey respondents reported their institution had such an institutional policy website (62.50 per cent and 75.00 per cent respectively); however, only one New Zealand survey respondent answered ‘yes’. The survey asked those respondents whose institutions did have such an institutional policy website to elaborate on the elements that made up the institution's policy website (Table 1).

Table 1: Elements of institutional policy websites (Australia and United States)

<table>
<thead>
<tr>
<th>Element</th>
<th>Australia %</th>
<th>United States %</th>
</tr>
</thead>
<tbody>
<tr>
<td>The 'policy on policy' / 'policy framework'</td>
<td>96.00</td>
<td>86.67</td>
</tr>
<tr>
<td>The online policy library</td>
<td>92.00</td>
<td>90.00</td>
</tr>
<tr>
<td>Policy development resources (such as templates)</td>
<td>92.00</td>
<td>73.33</td>
</tr>
<tr>
<td>Contact details for policy staff</td>
<td>88.00</td>
<td>80.00</td>
</tr>
<tr>
<td>A list of new (recently approved) policies</td>
<td>68.00</td>
<td>60.00</td>
</tr>
<tr>
<td>Policies under development (that is, draft and proposed amended policies for consultation purposes)</td>
<td>64.00</td>
<td>46.67</td>
</tr>
<tr>
<td>Policy news items</td>
<td>44.00</td>
<td>56.67</td>
</tr>
<tr>
<td>Other high level institutional documents such as plans and governance documents</td>
<td>36.00</td>
<td>33.33</td>
</tr>
</tbody>
</table>

The vast majority of Australian and United States survey respondents reported their institutional policy websites included ‘the ‘policy on policy’ / ‘policy framework’ or meta-policy, links to the ‘the online policy library’, ‘policy development resources (such as templates)’ and ‘contact details for policy staff’. Nearly two thirds reported their institutional policy website included 'a list of new (recently approved) policies. Fewer survey respondents reported including 'Policies under development ...', or 'policy news items'. Only approximately one third reported including 'other high level
institutional documents such as plans and governance documents. In relation to these features, there was a remarkable degree of similarity between institutional policy webpages reported by Australian and United States survey respondents.

There are many examples of comprehensive policy websites in Australia, the United States and New Zealand, as illustrated in the following figures; however, by way of contrast, it appears no Papua New Guinea university has a policy website distinct from their online policy library, and only a couple of Papua New Guinea universities have published policies online. In some instances policy websites provide links to other policy technologies, such as discussion boards and listservs used for consultation processes associated with policy development, implementation evaluation and review. In at least one instance they link to an online training platform that trains policy development users in the institution's policy technology.

In Australia, the University of Tasmania policy and delegations webpage (Figure 1) provides a gateway to the online policy library (Policy Repository). The webpage also provides a coherent introduction to the institution’s policy management functions through linking to the meta-policy (policy framework), policy resources (Policy Toolkit and Policy Cycle), policy network and policy announcements, and linking to related governance instruments (legislation, by-laws, ordinances, rules, principles, codes of conduct).

In the United States, the Cornell University policy office webpage (Figure 2) also provides a gateway to the institution’s online policy library (A-Z Policy Index). The webpage provides an historical account of the University Policy Office, and an introduction to contemporary policy management functions through linking to the meta-policy (Policy on Policies), policy resources (Policy Development Took Kit, Policy Listserv) and news articles. The policy webpage also provides links to related policy functions (Information Technology Policy Office, Office of Human Resources).
In New Zealand, the University of Auckland Policy Hub (Figure ) introduces the institution’s policy and administration functions, including links to online policy library chapters (primarily by functional area, and an A-Z listing), and policy development and review resources, legislative compliance, and governance (principles, statutes and structure).

Figure 2: Cornell 'University Policy Office' webpage
http://www.dfa.cornell.edu/treasurer/policyoffice/

Figure 3: University of Auckland Policy Hub webpage
As such, the institutional policy websites both represent and link to policy technology and process innovations, including information technology delivered policy development and review resources (toolkits), policy networks and listservs, and online policy libraries.

ONLINE POLICY LIBRARIES

Historical development of policy compilations
Prior to the emergence of the Internet and widespread accessibility of information technology in Australia, New Zealand and the United States, higher education institutions used a variety of approaches to codify and publish decisions and policy texts. This included notebooks, academic handbooks or calendars, policy manuals (particularly for finance and human resources policies and work instructions), and formal minutes of committee meetings. Several interviewees discussed the historical development of policy compilations. For example, United States interviewees indicated the issuing and compilation of governance texts represented a precursor to contemporary online policy libraries:

Back in the 60s, we had something called university memorandum where any university department would send out its policies on its own letterhead to the rest of the campus telling them what they needed to know. And so somehow it was loosely gathered into a notebook. And the president also sent out memorandum ... and set up a notebook similarly. But the keeping of all of that soon became untenable and they started to codify a different system. ... And we put all these in something we called the policy directory. (United States interviewee #2)

Another United States interviewee reported that centralised collections of policy documentation dated back nearly fifty years, varying principally with respect to the institutional locus of control:

... we really have documentation of the first policy document going back in the early 70s and from the 70s until about five years ago ... there are some periods of time where there is really good documentation of policies and their establishment, and there are other periods of time where there's absolutely no documentation because we were probably in a period of decentralised control. (United States interviewee #6)

In Papua New Guinea, interviewees reported that academic policies are published in paper-based academic handbooks or calendars, and increasingly Internet-delivered, compilations (for example, see the Divine Word University Academic Policies & Attachments webpage). One Papua New Guinean interviewee advised that some administrative policies remain in manuals:

The HRM Manual and the Finance Manual have all their policies in one document. I find this is not as user-friendly as having each one separately as [occurs] … with the 17 current academic policies. (Papua New Guinea interviewee #7)
The noticeably lower prevalence of online policy libraries in Papua New Guinea universities reflects both the 'strength of the oral culture' (Papua New Guinea interviewee #1), and limited access to information technology infrastructure and Internet connectivity (both for institutions, students and higher education aspirants).

In New Zealand, several interviewees reported that higher education institutions are phasing out traditional, hard-copy academic handbooks and calendars, particularly as online policy libraries and institutional webpages increasingly hold course information, policy texts and general student-facing information. This follows similar developments in Australia from the early 2000s. For example, the University of Melbourne Undergraduate Studies Handbook, comprising course information and references to statutes and regulations, was last published in hard copy in 2006; while the University Calendar, containing statutes and regulations, was last published in 2005 in hard copy form. Digitisation of higher education governance instruments and policy texts, in part through the progressive emergence of online policy libraries, has been a consistent trend across most of these countries. Information technology has fundamentally changed institutional operations including the manner in which governance instruments are communicated and maintained.

**Prevalence and features of online policy libraries**

Almost all Australian, New Zealand and United States survey respondents reported that their institution had an online policy library, including all New Zealand survey respondents, 97.50 per cent of Australian survey respondents, and slightly fewer United States survey respondents (85.37 per cent). There was, however, variation in terms of accessibility of texts held in these libraries. More United States survey respondents reported that their texts are all publicly available (83.33 per cent), than New Zealand and Australian survey respondents (57.14 per cent and 47.37 per cent respectively). In New Zealand, this most likely reflects the high representation of the Institute of Technology and Polytechnic (ITP) sector in the sample, as these institutions frequently utilise institutional webpages for student recruitment rather than governance and management purposes (Freeman and Thompson, 2015). In Australia, this likely reflects restrictions placed on a small number of apparently commercial in confidence policies (for example, financial delegations of authority). A small proportion of survey respondents from the United States (5.71 per cent) and Australia (2.63 per cent) reported that none of these texts are publicly accessible through online policy libraries.

The majority of survey respondents in Australia, New Zealand and the United States reported that their online policy library included all institution-wide policies. By contrast, only a few included local policies developed by discrete organisational units (such as faculties and schools). No survey respondents reported that their online policy library included all local policies, while very small proportions of Australian and United States survey respondents reported that their library included some local policies (7.89 per cent and 17.14 per cent). As such, online policy libraries remain predominantly the domain for publication of institution-wide policies. Almost no Australian or United States survey respondents, and no New Zealand survey respondents, reported having a notification of amendment facility embedded in their online policy library. While online platforms may be modified to include such a facility, given sufficient resources, this development is not a common feature of Australian, New Zealand or United States online policy libraries.
Table 2: Features of online policy libraries (Australia, New Zealand, United States)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Australia (%)</th>
<th>New Zealand (%)</th>
<th>United States (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have online policy library</td>
<td>97.50</td>
<td>100</td>
<td>85.37</td>
</tr>
<tr>
<td>All texts are publicly accessible</td>
<td>47.37</td>
<td>57.14</td>
<td>83.33</td>
</tr>
<tr>
<td>Some texts are restricted</td>
<td>47.37</td>
<td>42.86</td>
<td>11.11</td>
</tr>
<tr>
<td>None of the texts are publicly</td>
<td>5.26</td>
<td>0.00</td>
<td>5.56</td>
</tr>
<tr>
<td>accessible</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Includes all institution-wide</td>
<td>97.37</td>
<td>100</td>
<td>85.71</td>
</tr>
<tr>
<td>policies</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Includes all ‘local’ policies</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Includes some ‘local’ policies</td>
<td>7.89</td>
<td>0.00</td>
<td>17.14</td>
</tr>
<tr>
<td>Notification of amendment facility</td>
<td>2.63</td>
<td>0.00</td>
<td>5.71</td>
</tr>
</tbody>
</table>

Note: The New Zealand data are indicative only, given the low sample size.

Some interviewees discussed their institution’s approach to the publication of governance instruments, including institutional policy, in online policy libraries. Interviewees recognised differences between institutions with respect to their traditions and approaches to the codification of institutional decisions. For example, one United States interviewee, reflecting on the institution's poor history of documenting decision-making, suggested that 'we are really bad at creating structures for institutional memory' (United States interviewee #6). Another interviewee commented that staff anticipated the introduction of new information technology (that is, the online policy library) somehow involved modification to institutional policy content:

So for some peculiar reason people thought that the policies were something quite different to what we’d had in the past. So it was an interesting exercise in that regard because really nothing had changed. It was simply that they were written differently and published differently. (Australian interviewee #24)

While most or all New Zealand, Australian and United States respondents reported having online policy libraries, several interviewees clarifies that these repositories require further technical development:

So right now, it's online. It's accessible to anybody. ... but it's kind of cumbersome to manage and we are looking for some sort of software tool that might make that easier for us. (United States interviewee #8)

**Number of texts in online policy libraries**

The focus on policy development in recent years, partly in response to increasing government regulation, institutional corporatisation and concern regarding academic standards and quality, has led to a proliferation of discrete policy texts. Interviewees in Australia, the United States, New Zealand and Papua New Guinea consistently expressed concerns regarding policy proliferation, as many questioned whether a ‘magic policy number’ existed. One interviewee summed this up:

Is there an optimum number of policies a university should have? Someone has said that [our institution] has too many policies but we have far fewer than overseas universities. [Papua New Guinea interviewee #7]

Respondents were invited to provide an estimate of the number of discrete policy instruments held in their online policy library. Survey respondents from Australia, New
Zealand and the United States revealed their institutions held more policies than procedures, and more procedures than guidelines in their online policy libraries. It appears the United States online policy libraries hold the highest numbers of policies, as more than one third of all United States survey respondents (36 per cent) reported having over 200 policies in their online policy library. Indeed, nearly two thirds of United States survey respondents reported having over 100 policies in their online policy library. In Australia, fewer survey respondents (18 per cent) reported having over 200 policies in their online policy library, while half reported having either between 101-150 policies (26 per cent) or 151-200 policies (24 per cent). In New Zealand, there were fewer again, as the majority of survey respondents reported having either up to 50 policies (20 per cent) or between 51-100 policies (40 per cent). No New Zealand survey respondent reported having over 200 policies.

![Figure 4: Proportion of survey respondents in Australia, New Zealand and the United States with varying numbers of 'policies' in their online policy libraries](chart.png)

Note: The New Zealand data is indicative only, given the low sample size.

**Figure 4: Proportion of survey respondents in Australia, New Zealand and the United States with varying numbers of ‘policies’ in their online policy libraries**

The majority of New Zealand and Australian survey respondents reported having up to 100 procedures (80 per cent and 57 per cent respectively), while the majority of United States survey respondents (73 per cent) reported having more (up to 150 procedures).
Online policy libraries held fewer guidelines, with the majority of survey respondents reporting that their online policy libraries held up to 50 guidelines (Australia: 64 per cent; New Zealand: 80 per cent; United States: 88 per cent). As many online policy libraries explicitly exclude guidelines (as they are frequently considered ‘local documents’) this may under-state the actual number of guidelines in place at Australian, New Zealand and United States institutions.

Survey respondents reported that their online policy libraries held a relatively small number of forms (with United States survey respondents reporting more than Australian or New Zealand survey respondents). Similarly, survey respondents reported that their online policy libraries held a relatively small number of other texts (again with United States survey respondents reporting more). An examination of online policy libraries at a number of institutions reveals that these texts include higher order governance instruments (such as enabling legislation, statutes, charters and plans), indicating a
trend whereby ‘policy libraries’ are effectively broadened in scope to ‘governance instrument libraries’.

The proliferation of institutional policy coupled with lax policy review practices has led many institutions to conduct comprehensive reviews of their whole suite of policy texts. The survey asked ‘Has your institution, within the last five years, conducted a review of the whole suite of policies?’ Large proportions of the New Zealand (71.43 per cent), Australian (46.67 per cent) and United States (40.48 per cent) advised that their institution had.

Organisation of online policy libraries
In terms of organisation, the vast majority of Australian and New Zealand survey respondents (82.05 per cent and 83.33 per cent respectively) reported that their online policy library was presented using both an alphabetical list of titles, and a list of titles under broad categories; however, a large proportion of United States survey respondents (42.42 per cent) reported that their online policy library was organised using a list of titles under broad categories only.

The survey asked: ‘What are the categories that you use to organise your policy library?’ and respondents in Australia, the United States and New Zealand answered this question providing a diverse range of organising constructs with little consistency across institutions or between countries. While it is possible to discern the broad categories ‘administrative policy’ (finance, human resources, information and communication technology, occupational health and safety, facilities and assets), ‘academic policy’ (teaching and learning, research and research training, student administration), and in some instances ‘governance policy’ from the survey responses, there is then considerable variation in terms of categories employed. These organising constructs, while varied, frequently employ one of four alternatives.

- higher education streams of operations (learning and teaching, research, community engagement);
- organisational structure (human resources, finance, information technology, campus operations/infrastructure, work health and safety, student administration/life cycle, academic);
- policy category (administrative, academic, governance); or
- some combination of these.

Several United States survey respondents reported that their online policy libraries comprised administrative policy, excluding some or all academic policy (that is, teaching and learning, and research policy). Notable points of differentiation are observable between the responses from the United States (athletics, gifts and endowments, health sciences, safety, security), New Zealand (quality management, commercialisation) and Australian survey respondents (equity, community engagement, advancement).

Versioning
More than half of the Australian and United States survey respondents (57.89 per cent and 73.53 per cent respectively) reported that their online policy library did not hold previous versions of policy texts; however, as a point of differentiation, the majority of New Zealand survey respondents (83.33 per cent) reported their online policy library
When then asked: ‘Are these previous versions accessible?’ only a small proportion of Australian and United States survey respondents reported they were readily accessible (8.33 per cent and 7.41 per cent respectively). Respondents did note, however, that previous versions could be made available to policy owners, staff, students or the public either electronically through the policy library, or through authentication processes, or on request (Table 7). Only a small proportion of survey respondents reported that previous versions of policy texts were neither publicly accessible nor available through the online policy library by any other means to staff, students or policy owners (Australia: 13.89 per cent; New Zealand: 25 per cent; United States: 14.81 per cent).

Table 3: Availability of previous versions in institutional policy (Australia, New Zealand and United States)

<table>
<thead>
<tr>
<th></th>
<th>Australia % (n=36)</th>
<th>New Zealand % (n=4)</th>
<th>United States % (n=27)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, they are publicly accessible (that is, to the public, staff and students)</td>
<td>8.33</td>
<td>0</td>
<td>7.41</td>
</tr>
<tr>
<td>No, but they are available to the policy owners (that is, electronically through the policy library)</td>
<td>36.11</td>
<td>75.00</td>
<td>29.63</td>
</tr>
<tr>
<td>No, but they are available to staff through an authentication process (for example, login) or by request</td>
<td>41.67</td>
<td>25.00</td>
<td>29.63</td>
</tr>
<tr>
<td>No, but the are available to students through an authentication process (for example, login) or by request</td>
<td>11.11</td>
<td>25.00</td>
<td>7.41</td>
</tr>
<tr>
<td>No, but they are available to the public on request</td>
<td>19.44</td>
<td>25.00</td>
<td>44.44</td>
</tr>
<tr>
<td>Not, they are not available</td>
<td>13.89</td>
<td>25.00</td>
<td>14.81</td>
</tr>
</tbody>
</table>

Note: The New Zealand data is indicative only, given the low sample size.

The majority of survey respondents reported their online policy libraries are searchable by keyword within metadata (Australia: 59.46 per cent; New Zealand: 100 per cent; United States: 51.52 per cent). In addition, the majority of Australian and United States survey respondents reported that their online policy libraries are searchable by word or phrase within the policy text (51.35 per cent and 63.64 per cent). Fewer survey respondents reported their online policy libraries were searchable by the area responsible for the policy (Table 4).

Table 4: Search capacity of online policy libraries (Australia, New Zealand and United States)

<table>
<thead>
<tr>
<th></th>
<th>Australia % (n=37)</th>
<th>New Zealand % (n=5)</th>
<th>United States % (n=33)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, searchable by keyword within metadata</td>
<td>59.46</td>
<td>100.00</td>
<td>51.52</td>
</tr>
<tr>
<td>Yes, searchable by word or phrase within the policy text</td>
<td>51.35</td>
<td>0.00</td>
<td>63.64</td>
</tr>
<tr>
<td>Yes, searchable by area responsible for the policy</td>
<td>29.73</td>
<td>40.00</td>
<td>30.30</td>
</tr>
<tr>
<td>No, not searchable</td>
<td>16.22</td>
<td>0.00</td>
<td>21.21</td>
</tr>
</tbody>
</table>

Note: The New Zealand data is indicative only, given the low sample size.

INFORMATION TECHNOLOGY-BASED SYSTEMS

The survey asked respondents to consider the extent to which institutional policy is operationalised through information technology-based systems. Typically this could
systems for accounting and financial management, student information management, research output monitoring (grants, publications, doctoral completions, ethics) and learning management. The majority of Australian survey respondents (72.22 per cent) reported that at least some of their institution’s policies were operationalised through information-technology based systems; however, the majority of United States survey respondents (63.89 per cent) reported that they were not. Australian and United States survey respondents who reported that at least some of their institution's policies were operationalised through information-technology based systems elaborated in Table 5.

### Table 5: Policies operationalised through information-technology based systems (Australia and United States)

<table>
<thead>
<tr>
<th>Category of policy operationalised through information-technology based systems</th>
<th>Australia % (n=24)</th>
<th>United States % (n=9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student administration policies</td>
<td>91.67</td>
<td>77.78</td>
</tr>
<tr>
<td>Finance policies</td>
<td>75.00</td>
<td>77.78</td>
</tr>
<tr>
<td>Human resources policies</td>
<td>70.83</td>
<td>88.89</td>
</tr>
<tr>
<td>Teaching and learning policies</td>
<td>70.83</td>
<td>44.44</td>
</tr>
<tr>
<td>Research (including research grants and publications)</td>
<td>45.83</td>
<td>66.67</td>
</tr>
<tr>
<td>Occupational health and safety</td>
<td>37.50</td>
<td>66.67</td>
</tr>
<tr>
<td>Governance</td>
<td>33.33</td>
<td>33.33</td>
</tr>
</tbody>
</table>

The majority of Australian and United States survey respondents reported that student administration policies, finance policies and human resources policies were operationalised through information-technology based systems. The majority of Australian survey respondents (70.83 per cent) reported that teaching and learning policies were operationalised through information-technology based systems. Two thirds of United States survey respondents (66.67 per cent) reported that research, and occupational health and safety policies were operationalised through such systems.

### BUSINESS INTELLIGENCE SYSTEMS / DATA WAREHOUSES

The survey asked: 'Does your institution have a business intelligence system or data warehouse to collect, store and/or present institutional data?' The majority of the survey respondents responded in the affirmative (Australia: 89.19 per cent; United States: 68.75 per cent; New Zealand: 100 per cent). The survey then asked those respondents whose institutions did have such systems to elaborate on the sets of data collected, stored and/or presented in these repositories (Table 6).

### Table 6: Sets of institutional data collected, stored and/or presented (Australia, New Zealand, United States)

<table>
<thead>
<tr>
<th>Category of data related</th>
<th>Australia % (n=32)</th>
<th>New Zealand % (n=4)</th>
<th>United States % (n=22)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student administration related</td>
<td>96.88</td>
<td>100.00</td>
<td>86.36</td>
</tr>
<tr>
<td>Finance related</td>
<td>87.50</td>
<td>75.00</td>
<td>90.91</td>
</tr>
<tr>
<td>Human resources related</td>
<td>81.25</td>
<td>75.00</td>
<td>90.91</td>
</tr>
<tr>
<td>Teaching and learning related</td>
<td>75.00</td>
<td>100.00</td>
<td>54.55</td>
</tr>
<tr>
<td>Research (including research grants and publications) related</td>
<td>71.88</td>
<td>75.00</td>
<td>50.00</td>
</tr>
<tr>
<td>Occupational health and safety related</td>
<td>53.13</td>
<td>50.00</td>
<td>36.36</td>
</tr>
<tr>
<td>Research training related</td>
<td>53.13</td>
<td>50.00</td>
<td>22.73</td>
</tr>
<tr>
<td>Governance related</td>
<td>34.38</td>
<td>50.00</td>
<td>40.91</td>
</tr>
</tbody>
</table>
The majority of survey respondents in Australia, New Zealand and the United States reported their business intelligence system or data warehouse collected, stored and/or presented student administration, finance and human resources data. Further, the majority of Australian and New Zealand survey respondents reported that these systems also held teaching and learning, and research related data.

The survey asked respondents to indicate what institutional data was used for (Table 7). The majority of Australian, New Zealand and United States survey respondents reported that data was used for management decision making, external reporting to government and accreditation associations/bodies, internal reporting and strategic planning.

**Table 7: Intended use of institutional data collected, stored and/or presented (Australia, New Zealand, United States)**

<table>
<thead>
<tr>
<th></th>
<th>Australia % (n=35)</th>
<th>New Zealand % (n=5)</th>
<th>United States % (n=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management decision making</td>
<td>91.43</td>
<td>80.00</td>
<td>83.33</td>
</tr>
<tr>
<td>External reporting to government</td>
<td>82.86</td>
<td>100.00</td>
<td>79.17</td>
</tr>
<tr>
<td>External reporting to accreditation</td>
<td>71.43</td>
<td>80.00</td>
<td>79.17</td>
</tr>
<tr>
<td>Internal reporting</td>
<td>88.57</td>
<td>80.00</td>
<td>75.00</td>
</tr>
<tr>
<td>Strategic planning</td>
<td>85.71</td>
<td>100.00</td>
<td>70.83</td>
</tr>
<tr>
<td>Operational planning</td>
<td>88.57</td>
<td>60.00</td>
<td>70.83</td>
</tr>
<tr>
<td>External reporting to a quality assurance body or regulator</td>
<td>80.00</td>
<td>80.00</td>
<td>37.50</td>
</tr>
<tr>
<td>External reporting for international institutional rankings purposes</td>
<td>51.43</td>
<td>40.00</td>
<td>37.50</td>
</tr>
<tr>
<td>To analyse or evaluate policy options (in the policy development process)</td>
<td>31.43</td>
<td>20.00</td>
<td>20.83</td>
</tr>
<tr>
<td>Monitoring and evaluation of policy implementation</td>
<td>17.14</td>
<td>20.00</td>
<td>16.67</td>
</tr>
<tr>
<td>Review of policy implementation</td>
<td>28.57</td>
<td>20.00</td>
<td>12.50</td>
</tr>
</tbody>
</table>

Note: The New Zealand data is indicative only, given the low sample size.

Over 80 per cent of Australian and New Zealand survey respondents reported their institution used data for external reporting to a quality assurance body or regulator; while over 70 per cent of Australian and United States survey respondents reported that data informed operational planning. Notably, a very low proportion of Australian, New Zealand and United States survey respondents reported that data was used for policy-related purposes, including analysis or evaluation of policy options, monitoring and evaluation policy implementation, or reviewing policy implementation, suggesting the relationship between institutional data and institutional policy is loose.

The interviewees in all countries, including Papua New Guinea, confirmed that insufficient resources or management attention was given to policy implementation monitoring, evaluation and review. For example, one United States interviewee reported that:

… there are policies on the books, you know, one from what, 1997, that hasn't been looked at so you know, we have our challenges in terms of getting a, you know, management review process engaged. (United States interviewee #5)
Indeed, one United States interviewee suggested that appreciation of the implications of this failure was not well understood:

"[Senior management] don't realise the impact. And it only takes one lawsuit with an old policy that people are trying desperately to walk away from to make them realise what the problem is. But you don't want the lawsuit, and you don't want the penalty' (United States interviewee #2)

RELATIONSHIP BETWEEN POLICY AND INSTITUTIONAL RESEARCH

Interviewees were asked to consider the relationship between institutional policy and institutional research (IR), amongst other things such as strategic planning, delegations, risk and quality. The majority of interviewees in Australia, New Zealand, the United States and Papua New Guinea perceived no apparent or current linkage between institutional policy and data held by the institution, and indeed frequently misunderstand the question. For example, a typical response is:

"We don't have any existing systems in the University that interface with the policy system, at present. (Australian interviewee #24)

A small number of interviewees acknowledged the potential for linkage, where none generally existed, while very few acknowledged that there is, and indeed should be, a relationship between institutional policy and institutional research. These interviewees tended to be more senior in the organisation. As such, the majority of interviewees could be categorised as Level 1 in the following maturity grid.

**Table 8: Maturity grid: Perceived linkage between institutional policy and strategy, budget, delegations, quality, risk, compliance and audit, and institutional research**

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1 = Silo</td>
<td>Interviewees report no apparent or current linkage</td>
</tr>
<tr>
<td>Level 2 = Emergent</td>
<td>Interviewees acknowledge the potential for linkage</td>
</tr>
<tr>
<td>Level 3 = Aligned</td>
<td>Interviewees report well established and articulated linkages</td>
</tr>
</tbody>
</table>

Source: Freeman, Capell, Goldblatt, Lapan, Mafie’o and Thompson, 2014, p. 16

DISCUSSION

The findings of the research start to paint the picture of policy technology and process innovations as employed by policy practitioners from United States and Australasian higher education institutions. Many Australian and United States higher education institutions have institutional policy websites; whereas fewer New Zealand and no Papua New Guinea higher education institutions appear to. Variation in prevalence may be attributed to differential resourcing of centralised policy functions, divergent objectives for institutional webpages, or limited information technology capacity. New Zealand Institutes of Technology and Polytechnics (ITPs) operate in a highly competitive market and frequently employ their publicly-accessible institutional webpages for marketing purposes. In Papua New Guinea, a developing country with limited information technology infrastructure, institutional webpages are recent
developments and present major connectivity challenges for institutions, staff and students.

In higher education institutions in Australia and the United States, where institutional policy websites are most prevalent, there is a remarkable degree of similarity in terms of features. As suggested by Freeman, Jensen and Hatwell (2013), institutional policy websites provide the ‘front door’ to the online policy library and allow users to access institutional meta-policy, policy development resources and contact details. While institutional policy websites provide ready access to online policy libraries and a relatively small number of features, the technology remains underutilised. There is scope for such websites to be deployed, both by more higher education institutions and in more innovative ways for policy development, consultation and review purposes, and to better communicate policy in an effort to facilitate successful policy implementation.

In the United States, in particular, there are a large number of longstanding higher education institutions with a history of codifying and publishing decisions in academic handbooks, calendars, manuals and formal committee minutes. In all jurisdictions, technology has been employed to digitize authoritative source, centralised institutional policies and in doing so, making at least some of these texts redundant. Widespread in the United States, Australia and New Zealand, and emerging in Papua New Guinea, governance instruments, principally including institutional policies, have been standardised and published in online policy libraries. The transition from paper-based to digital records represents an apparent efficiency for higher education institutions that have established online policy libraries. There is variation in terms of accessibility, with online policy libraries more accessible in United States higher education institutions than other jurisdictions, and such technologies least likely to be used in Papua New Guinea. There is commonality across the jurisdictions in terms of the publication of institution-wide policies, and general exclusion of local policies in these online policy libraries. Many of these libraries are subject to ongoing development as technology advances, and human resources are made available for policy functions or related technical developments.

This transition to digitised policies has not come without challenges. Higher education institutions in Australia, New Zealand and the United States have suffered from an extended period of policy proliferation, and questions regarding the optimum number of policies are even asked by Papua New Guinea higher education managers. In codifying decisions and centralising governance instruments, policy has come to be seen as a panacea. With United States higher education institutions leading in terms of the number of texts held in online policy libraries, Australia and New Zealand institutions follow in number. There may well be too many policies; however, slashing the number without reconceptualising intent and content is too simplistic. In part, policy proliferation reflects the increasing complexity of large, bureaucratic organisations with broad-ranging academic and corporate operations. It also reflects increasing government regulation that frequently requires policies as evidence of practice and/or quality. The trend towards comprehensive policy suite reviews, where institutions heroically 'review' their whole suite of institutional policy, illustrates that institutions are failing to maintain their policy.
There is much variation in categorisation used in online policy libraries, both between and within jurisdictions. It is possible to discern four main approaches to categorisation:

- higher education streams of operations (teaching and learning, research, community engagement);
- organisational structure;
- policy category (administrative, academic, governance); or
- some combination of these.

Variations between the jurisdictions also reflect differences in government policy priorities (for example, social inclusion), regulatory drivers (compliance quality and health science regulation) and funding regimes (privatisation, diversity of contributions, commercialisation). These differences remind us that while there are many similarities, higher education institutions employ policy technologies within different contexts.

Institutional policy is operationalised, to varying degrees, through information technology-based systems. Where this does occur it is most common in the areas of student administration, finance and human resources. As one of the key challenges remains the disconnect between policy and practice, further research is required to investigate the extent to which institutional policy is embedded in information technology-based systems for core academic and corporate operations.

Table 9: Potential areas of connection for operationalisation of institutional policy through IT-based systems

<table>
<thead>
<tr>
<th>INSTITUTIONAL POLICY</th>
<th>INFORMATION TECHNOLOGY-BASED SYSTEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student administration policies</td>
<td>Student information management systems</td>
</tr>
<tr>
<td>Finance policies</td>
<td>Accounting and financial management systems</td>
</tr>
<tr>
<td>Human resources policies</td>
<td>Human resources systems</td>
</tr>
<tr>
<td>Teaching and learning policies</td>
<td>Learning management systems</td>
</tr>
<tr>
<td>Research (including research grants and publications)</td>
<td>Research output monitoring systems (grants, publications, doctoral completions, ethics)</td>
</tr>
</tbody>
</table>

Given the emergence of business intelligence systems and business and academic analytics, the research explored the relationship between institutional policy and institutional research. While somewhat expected, it is concerning to find that despite having business intelligence systems, data was rarely used for policy implementation monitoring, evaluation or review. Furthermore, most interviewees failed to see a relationship between policy and institutional research, and appear unaware of the transformation such systems promise. Until or unless this disconnect between institutional policy and practice is recognised for the risk that it is, the potential for change appears disappointingly low.

**CONCLUSION**

Rapid information technology advancement has provided opportunities for higher education institutions to innovate. In the governance space, institutions have employed technological solutions in quite consistent ways to centralise and consolidate authoritative documentation codifying institutional decisions. These innovations enable
higher education institutions to effectively disseminate governance instruments, principally including institutional policy, to the growing number of staff and students. In part, the necessity to codify and disseminate readily accessible policy information has been driven by government regulation, corporatisation and massification against a backdrop of contracting financial and human resources. The ‘efficiency and effectiveness’ agenda that has permeated the academy is reliant on technology. Despite this, there is a serious disconnect between institutional policy and institutional research, with policy practitioners unaware of important developments relevant to their field of operations. This is particularly the case for the development of evidence-based policy, evaluation of policy implementation, and institutional decision-making more broadly. Higher education institutions are ill equipped to maintain their frequently extensive suites of institutional policy. As such, the shared and pressing challenge is to avoid the emerging situation whereby online policy libraries become repositories for outdated, irrelevant, redundant texts disconnected from institutional practices.

ACKNOWLEDGEMENTS

This project draws on data arising from the Institutional Policy Project, which involved collaborating partners from the University of California – Berkeley, United States (Andy Goldblatt), Otago Polytechnic, New Zealand (Sue Thompson), Pacific Adventist University (Tracie Mafile'o), Island Research and Consultants, Papua New Guinea (Miskus Lapan) and Nancy Capell (previously from the University of California Office of the President).

BIOGRAPHICAL NOTE

Brigid Freeman, Master of Education Policy (International) (Melb) is a University of Melbourne-based Research Fellow for an ARC funded project (‘The Humanities in Asia’) with the Australian Academy of the Humanities (AAH). Brigid is undertaking a Doctor of Philosophy focused on Australian university policy process, and leads an international research project exploring institutional policy in the United States, New Zealand, Papua New Guinea and Malaysia.

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WHAT DO ACADEMICS THINK OF PROFESSIONAL STAFF AND WHAT SHOULD WE DO ABOUT IT?

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ABSTRACT

This study investigates the attitudes of a sample of academics across five Australian universities towards professional staff; both to staff at the local, departmental level and to those in centralised or shared services units. Are professional staff seen as allies or are they viewed in a far more negative light? Is there a difference in perceptions of locally situated professional staff versus those in central units? Is the relationship healthy or is it on the brink of divorce? From the extant literature on professional staff, five themes emerged that are historically representative of the relationship between academics and professional staff. These five themes informed the development of a framework that guided the composition of online surveys and interviews which sought to ascertain academic attitudes towards professional staff. The findings of this primary research is presented along with a discussion of what the findings mean in practice for the academic and professional staff working relationship.

KEY WORDS

professional staff; general staff university management; staffing strategy; complementary agendas.

INTRODUCTION

The world of higher education is changing at a rapid pace. Increasingly, our students are also our customers. New operational paradigms and models of service delivery and financial sustainability are needed in an environment where government funding can no longer be relied upon to meet 100 per cent of what it costs universities to operate. Indeed we are no longer simply part of a national or global higher education community, but also competitors in a national and global marketplace. Sadly one kneejerk response to these challenges is a call for universities to reduce numbers of professional staff (Ernst and Young, 2012). While this may reap short-term benefits to the bottom line, little focus is given to how this would impact on the lives of academic staff.

It is against this turbulent backdrop that the interest in this topic led to formal research into the interface between professional and academic staff. According to Department of Education figures (2013), professional staff make up around 55 per cent of the Australian university workforce, but little research has been undertaken on what academics think about their working relationship with professional staff. This paper adds to scholarship on that topic.
Author/s: FREEMAN, B

Title: Higher education policy technology and process innovation in four different worlds: Australia, United States, New Zealand and Papua New Guinea

Date: 2015

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