Overcoming Organisational Resistance to Sustainability Innovations in Australian Universities

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Abstract
Sustainability is becoming a paradigm guiding the operation of our industries, businesses and the society. Universities have the potential to play a vital role in delivery a sustainable future. They have the moral responsibility, social obligation, and own needs to adapt to new circumstances which are necessary ingredients for the leadership. By either signing declarations or making public statements, most Australian universities have shown the desire to become role models for enhancing sustainability. However, most universities in general are slow to implement sustainability, some even lagging behind the private sectors. There is pressing need to promote innovations on campus in order to drive universities’ sustainability goals. Little research was undertaken to examine universities’ organisational environment in the context of sustainability initiatives and deliverables. To address this deficiency, the authors carried out semi-structured interviews to study Australian universities’ organisational characteristics relevant to sustainability innovation. The study found that a lack of strategic vision, unwillingness to be innovative, financial constraints and misconception of sustainability are the most common barriers. Based on the recommendations of survey respondents, a set of strategies to overcome organisational resistance is developed to help involved practitioners promote sustainability innovation on campuses.

Keywords: sustainability, university, innovations, organisational resistance, decision making

Introduction
To respond to the challenge of environmental degradation, economic recession and social disparity, sustainability has been gaining popularity over the past few decades. Education is recognized to be critical for promoting sustainability and improving the capacity of people to address environment and development issues, as well as enhance environmental and ethical awareness, values and attitudes, skills and behaviour with regard to sustainable development (United Nations, 1993). The United Nations proclaimed the decade from 2005 to 2014 as “Decade of Education for Sustainable Development” (DESD) to emphasize that education is an indispensable element for achieving sustainability.

In this context, universities are placed in the ideal position to provide the most significant educational resources about environmental sustainability (Creighton & Rapport, 2007). Universities represent one of the most powerful tools when approaching sustainable development, due to the academic freedom, diversity of skills and knowledge for developing new ideas, ability to comment on society and its challenges, and engagement in experimentation regarding sustainable living (Cortese, 2003). Therefore, universities are being asked to become leaders and role models in the adoption and communication of sustainable practices (Mcnamara, 2008).

Uhl (2004) proposed that an audit of the campus, in relation to environmental sustainability, is the first important step for universities to pursue sustainability. A sustainable university should have a healthy campus environment, with a prosperous economy through energy and resource conservation, waste reduction and an efficient environment management, and promotes equity and social justice in its affairs and export these values at community, national and global levels (Habib & Ismaila, 2007). Universities campuses are the places where various activities happen every day and connected with green initiatives to impact on the community and society fundamentally. The campus environment is a growing concern as it doesn’t just affect how students live but also what they learn and how they will change workplaces and neighbourhoods as graduates (Kinzie, 2008). In order to build a green campus, universities are required to practice sustainable operations and concern about the long-term health and living of their community and region. “How universities build and maintain physical plants, engage in buying practices, dispose of waste, and consume energy is critically important” (Barlett &
Chase, 2004). Consequently, universities need to utilize “green technologies” to improve their practical performance such as sustainable building construction. However, in many cases, universities known for cutting-edge thinking, often times hesitate to adopt sustainability innovations. The report of “Campus Environmental Survey” discovered that universities have done better in conventional operational measures such as recycling or waste management (Shriberg & Tallent, 2003).

Previous studies have summarized that the obstacles to impede sustainability initiatives on campus are basically in two categories: organisational factors and financial factors (Richardson & Lynes, 2007). However, very limited studies looked into the organisational issues. It is confirmed that barriers to integrating sustainability into universities do exist, however such studies have not fully informed us about what is happening either at the institutional level or within the decision-making process (Newman & Abrams, 2005). The process involved with implementing organisational changes in higher education institutions that support environmental sustainability are not well understood (Wright, 2010).

To rectify this problem, this research project aims to explore and determine organisational barriers to adopting creative sustainability initiatives on campus. It also seeks strategies for overcoming organisational barriers to optimize the organisational environment to better facilitate decision making for sustainability innovations. The research results are expected to provide a critical view of organisational issues as an important first step towards developing a new framework for managing organisational change.

**Literature review**

**Developing “sustainable universities”**

Many scholars have proposed various definitions of “sustainable universities” over the last two decades, as Table 1 illustrated in the following:

<table>
<thead>
<tr>
<th>Year</th>
<th>Author</th>
<th>Key Input</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>Creighton</td>
<td>“Reduce the number of on-and-off site environmental effects”; “Raise environmental awareness”</td>
</tr>
<tr>
<td>1999</td>
<td>Clugston &amp; Calder</td>
<td>“Help students understand the roots of environmental degradation and motivate them to seek environmentally sustainable practices”;</td>
</tr>
<tr>
<td>2000</td>
<td>Penn State Indicators Report</td>
<td>“Sustain the integrity and biodiversity of the local and planetary ecosystem”</td>
</tr>
<tr>
<td>2001</td>
<td>Universities’ Leadership in Sustainable Future</td>
<td>“Ecologically sound”; “Socially just”; “Economically viable”</td>
</tr>
<tr>
<td>2002</td>
<td>Shriberg</td>
<td>“Incorporate sustainability into and across their core mission of teaching, research and service as well as campus physical operations”;</td>
</tr>
<tr>
<td>2006</td>
<td>Velazquez, Munguia, Platt, &amp; Taddei</td>
<td>“Minimise environmental, economics, societal and health negative effects”; “Fill its main functions of teaching, research, outreach &amp; partnership, and stewardship”</td>
</tr>
<tr>
<td>2011</td>
<td>Emanuel</td>
<td>“Ecological (food and recycling, green building, and transportation)”; “Economic/Financial (endowment transparency and investing priorities)”; “Institutional (administration, student involvement, and stakeholder engagement)”; “Energetic (climate change and energy)”</td>
</tr>
</tbody>
</table>

According to these definitions, it is concluded that the vision for a sustainable university explicitly emphasizes a systemic model involving comprehensive issues: ecological, economic, cultural and societal. In terms of teaching and learning, environmental literacy is suggested by Orr (1992) that graduates of a sustainable university should be empowered with the ability to apply systems thinking...
(in a cross-disciplinary manner) and to recognize and challenge the dominant paradigm. Curricula reformation, formal or informal learning, or practical applications of sustainability concepts are all included in these definitions. With regard to research, a sustainable university apply sustainability in a wide range of research efforts and apply sustainability principles to measure research outcomes. As for operations, minimizing ecological footprint and improving operational efficiency to establish a role model is always topped on the agenda of “a sustainable university”. In addition, the outreach or partnership service is another criteria for “being sustainable” which requires universities to function as central agent to help the wide community and society to prepare for a sustainable future through public activities and close cooperation. This paper sheds lights on campus operations to achieve sustainability, which leads to the following discussion.

Sustainability innovations on campuses

Issues such as climate change, environmental degradation, energy crisis and economic recession compel people to explore alternative ways for solutions in addition to traditional approaches. The widespread concerns about environment created the concept of “eco-innovation” “environmental innovation” or “sustainability innovation” interchangeably. Regardless of the names used, the essence of innovations for sustainability emphasized the eco-efficiency, which directly contributes to the overall sustainability. The benefits for eco-efficiency are summarized into five areas: reduction in current environmental costs, reduction in potential future costs for their environmental liabilities, decreased capital costs, increased market share and creation of new market opportunities (DeSimone, 1997). Eco-innovations are all new ideas, behaviours, products and processes which are applied or introduced to reduce environmental burdens or contribute to ecologically specified sustainability targets (Klemmer, Lehr & Lobbe, 1999). Eco-innovations can be either technological, organisational, social or institutional (Rennings, 2000). A variety of factors can affect innovations, such as the size of corporate, location, technological opportunities, sources of information, government influence, appropriate conditions and so on (Hemmelskamp, 1997; Kemp, 1994). In order to successfully adopt and apply innovations, current management paradigm needs to be inspected and adjusted, because innovation is “any idea, practice, or material artifact perceived to be new by the relevant unit of adoption” (Zaltman, Duncan & Holbek, 1973), which involves change efforts in an organization. Put a blank line before and after the second level heading.

Organisational theory and context in a university setting

Organisational theory is a window through which to view the behaviour of individuals and groups in the context of a complex organization interacting with and being shaped by external exigencies and special interest groups (Kuh, 2003). Although organisational theory which concerns about universities can draw from organisational theory and management for business operations, the business analogies are not easily applicable (Sporn, 1999). The distinguished characteristics of academic organizations are so different from other institutions that traditional management theories do not apply to them (Baldrige, 1983).

Universities are multi-structured, complex organization in which wide changes can be programmed and implemented (Sharp, 2002). Numerous subcultures of decision-making styles, time constraints, priorities and experiences exist within the university and degrees of differentiation between schools and also between students, administration and faculty within schools vary (Sharp, 2002). Universities are generally plagued with goal ambiguity and conflict, with poorly understood problems that wander in and out of the system, with a variable environment and decision makers with other things on their minds (Cohen & March, 1989). As a result, there should be organisational research which specifically looks into academic institutions’ organisational context.

Research methods

A qualitative approach is adopted in this research because of the exploratory and inquisitive nature. Qualitative paradigm is suitable for “uncovering and understanding what lies behind any phenomenon about which little is known” (Strauss & Corbin, 1998). Three most common qualitative methods are participant observation, in-depth interviews and focus groups and each method is particularly suitable for collecting a specific type of data. As interview study is optimal for collecting data on individuals’ personal perspectives and experiences (Mack et al., 2005), it is chosen to gather opinions on
organisational environment of Australian universities, identify obstacles, and seek recommendations to green initiative implementation.

The semi-structured interviews were particularly chosen because such interviews are more likely to evoke the interviewees' viewpoints than the case with standard interviews and questionnaires, which may restrict, rather than illuminate the interviewee's standpoint (Kohli, 1978). With the purpose of making interviewees talk about their opinions freely, semi-structured interview is an ideal tool with flexibility, which allows interviewees to explicit their opinions freely while interviewers can also give appropriate interventions at the necessary moment, and new questions can be posed during the interview as a result of what the interviewee says.

Data was collected through in-depth, semi-structured interviews conducted in 24 universities, which is a good representation of total 38 Australian universities. 66 potential interviewees were approached and 24 of them agreed to participate, resulting in a participation rate of 36.4%. Choosing appropriate individual interviewee is an important step in qualitative research as answers lie in the samples. This research mainly relies on the individual's comments on their organisational environment and sustainability practices. Purposeful sampling is chosen to contact key informants "with a broad general knowledge of the topic or have undergone the experience" (Morse, 1991). Accordingly, the selection criteria of interviewees depend on their professional expertise, academic background and working experiences related with sustainability programs in universities. Interviewee samples constituted critical people who carry out sustainability jobs directly on a daily base, such as sustainability managers, environmental managers, and senior managers. The breakdown is shown in Figure 1. Because all interviewees occupy key positions of dealing with sustainability programs in Australian universities for many years, their responses can be assumed to be creditable and reliable. Due to restrictions of locality and budget, all interviews were carried out over the phone and recorded for analysis. Out of consideration of privacy and ethics acclaim, all interviews were treated anonymous when transcribed.

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Figure 1: Number of interviewees in each professional group

The interview was composed of three parts: Part one served to investigate the overall condition of organization environments in Australian universities from several aspects of organisational issues; while Part two extracted interviewees' views on reasons why there is organisational resistance to sustainability innovations. The final part aimed to gather strategies for removing or overcoming organisational resistance. The analysis of the qualitative data was composed of coding and categorization which gives rise to groups of themes, namely "context analysis". Delphi study will be used in the subsequent order to refine the preliminary findings and identify more strategies from the interviews.
Research Results and Discussion

General Organisational Environment in Australian Universities

The total 24 interviews indicated that the sustainability progress in Australian universities is not at ground zero. Either signing declaration or making policies, all the sample universities have made their commitments to sustainability to respond to social requirement. In terms of adopting green technologies on campus, 18 universities positively answered that they have taken actions on the recycling program, water saving, waste management, solar power and so on. However, among them, few universities (only 3) have implemented GRLW or are planning to do. Universities are more likely to apply conventional technologies for sustainability.

All interviewees agreed that it is very necessary to inspect the organisational environment which has a great impact on sustainability programmes, because implementing sustainability is the integration with the whole organization, rather than simple “add-on”. However, the reality is that sustainability is not treated as part of core missions yet. By the very nature, universities have a good organisational foundation to lead a sustainable way because they are populated with literate people who have social and environmental concerns as well as research ability and skills. Due to the complexity and a wide variety of universities’ missions dealing with different people, different skill sets, different focuses of their work, sustainability remains a great challenge. There is still a lot of room for improvement in organisational environment. Majority of interviewees commented that the overall organisational environment of Australian universities is in the transitional stage, but it still shows an optimistic dawning to move towards sustainability.

Factors Causing Organisational Resistance to Innovations

The second set of interview results identify factors causing organisational resistance to innovations, which are mainly summarized into the following groups:

Lack of vision and willingness to be innovative
The first factor impacting on innovations’ adoption on campus is a lack of vision and willingness. A vision and willingness to sustainability innovations are the conceptual prerequisite. Universities are often juggling with multiple missions, so the lack of willingness of being innovative will cause people to stay in the comfort zone repeating the utilization of conventional methods. This explains why most of the universities are actively engage with recycling programme or grey water treatment because they are “low-hanging fruits”. Also, the naturally inherent uncertainty about innovations blocks people’s imagination about creative sustainability initiatives.

Lack of solid support from the top executives
It is significant for the success of innovation application on campus to obtain strong support from the senior management. Without consistently solid support from senior management, people are likely to have resistant to innovations for reasons that they need money and resource to try new things and run risks. Currently, the top management in universities seem to look supportive on the surface, but they are expected to improve their knowledge and skill about sustainability issues as well as providing funding and all other needed resources.

Financial impediment
Financial issue always remains one of top problems on the list. It involves tight budget and cost-effectiveness. There are competing missions in universities, sustainability programs are sometimes trimmed off due to the tight budget. Cost issue is mentioned by three interviewees, but they also admit their worries about cost originally come from the lack of knowledge or understanding. It is important to have an accurate analysis of the whole life cycle (cost-effectiveness and payback term). In addition, funding model restrains the adoption of innovations. The difficulties in obtaining initial funding slow down the progress of sustainability innovation. As a result, the importance of sufficient funding is emphasized by many interviewees. Plus, it is indicated that most Australian universities largely rely on funding from the federal government, which requires rapid responses to obtain the funding, so universities would like to go back to what they know best or what they have developed according to their basic understanding. This decreases the possibility of implementing innovations.
Limited understanding of sustainability and lack of information

The insufficient knowledge about an innovative technology or procedure results in people’s fear and resistance, suggested by 20.8% interviewees. A lack of knowledge leads to fear and worries. If people don’t understand how innovations work, what the benefits are, how much the cost is and how much it might cost to maintain, unavailability of these important messages will cause organisational resistance to change. Thus, there always needs to be lots of information to be available when the idea of innovations is proposed. However, it is worthy to note that the lack of tools or means to educate the whole university as a community causes difficulties in dissimilating information.

Maintenance issues

Four interviewees stress that maintenance is an important issue for universities to consider. The additional cost and human resource related with the maintenance of innovative technologies concerns. Universities are always lean to utilize something which can be easily maintained and last for a long time. Therefore, they more often choose proven technologies rather than newly emerging innovations. In addition, the sustainability project can’t work well if maintenance people are informed to be involved at a late stage.

Individual behaviour change

People’s own values and beliefs have an enormous impact on success of programs or any resistance. Whether they believe an innovation is important or not important will result in personal behaviour change. People have various skills and interests in universities and feel time sensitive. As a result, they are afraid that adapting to new things will increase their workload and takes long time. They get comfortable with doing things in a certain way. In a similar way, the organisational resistance to innovations involves cultural change as well: old generational thinking and values should be transformed into new ones; a culture of trust also needs to be established to equip people with faith in the institutions that they are doing right things.

Perceived risk

The perceived risks with innovations hinder their adoption. Universities are more inclined to stick to the ways that they usually do in order to avoid taking risks. Particularly the current economic recession make universities be more cautious about investment in new technologies. However, some interviewees relate the universities’ fear of taking risks to a lack of sufficient knowledge and accurate information, because each problem can be solved in a respondent way if the appropriate information and feasible technology is available. Although organisational resistance may slow down or even stop the process of an innovation’s acceptation, it is not considered to be negative all the time. It is also suggested that sometimes people come up with ideas that seem good, but a proper resistance can allow extra examination to ensure the overall outcomes can be well received. All of this certainly needs to be done in an open and well-prepared way so that people don’t need to be defensive or fearful of the change.

Recommendations to Overcome Organisational Resistance

Universities are inherently complex organisational structures that also have to cater to a wide variety of concerns while dealing with people of diverse skill sets and work foci. This poses a great challenge to sustainability. To overcome organisational barriers to sustainability innovations, a few strategies are summarised as shown in Table 2.

Conclusions

To demonstrate leadership towards sustainable practices, Australian universities are making long term commitments. Despite the potential and natural connection to exploration, innovation and learning process that are key businesses of a university, the rate of sustainability innovation on campus is very modest. This study identified that within universities, the various organisational components interact together to provide a context for accommodating sustainability innovations. The organisational environment in Australian universities is still in a transitional stage. While the mainstream of vertical structure is reasonably suited for sustainability programmes, it may need to be modified in terms of the reporting process and responsibility distribution. Closely linked with the hierarchy of vertical structure, centralized decision making will benefit from consultants’ participation. Senior management is expected to be more supportive with more awareness and appropriate knowledge on sustainability.
The communication and coordination between different departments and divisions can be enhanced through networking. Identifying and involving key stakeholders during early stages of development is an effective way of ensuring participation without slowing down the decision making process. A long-term cultural change may need years to take effect.

Table 2: Strategies of overcoming organizational barriers

<table>
<thead>
<tr>
<th>Focus area</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness programme</td>
<td>• Keep up with new and emerging technologies by means of open lectures/seminars/workshops, conferences as well as research.</td>
</tr>
<tr>
<td></td>
<td>• Set up a smooth and efficient communication channels to form a feedback loop to involve key stakeholders.</td>
</tr>
<tr>
<td></td>
<td>• Deliver correct information to the target audience consistently.</td>
</tr>
<tr>
<td></td>
<td>• Select an open and well-prepared way to propose the idea of innovations.</td>
</tr>
<tr>
<td>Leadership</td>
<td>• Reduce the gap between the top executive level and operational level.</td>
</tr>
<tr>
<td></td>
<td>• Enhance senior executives’ knowledge and skills of practicing sustainability innovations.</td>
</tr>
<tr>
<td></td>
<td>• Strengthen top-down approaches of supportive leadership (e.g. policies, finance, ethics) to stimulate the sustainability initiative and bottom-up approaches to provide on-the-ground support.</td>
</tr>
<tr>
<td></td>
<td>• Engage executive level with coal face to enforce policies and procedures.</td>
</tr>
<tr>
<td>Organisational Culture</td>
<td>• Provide continuous and appropriate education and training to staff and students.</td>
</tr>
<tr>
<td></td>
<td>• Define a clear statement of sustainability to reflect organisational culture and ensure its direction is supported in any transitional stage;</td>
</tr>
<tr>
<td></td>
<td>• Individual behavioural change.</td>
</tr>
<tr>
<td></td>
<td>• Eliminate culture clashes when planning and implementing sustainability innovations (e.g. taking culture differences into account when planning and designing innovative projects);</td>
</tr>
<tr>
<td></td>
<td>• Limit or remove bureaucracy</td>
</tr>
<tr>
<td>Finance</td>
<td>• Establish financial models to better facilitate the budget and provide adequate resources;</td>
</tr>
<tr>
<td></td>
<td>• Seek additional ways to obtain funding</td>
</tr>
<tr>
<td></td>
<td>• Promote financial people’s sustainable literary and sustainability practitioners’ financial literacy</td>
</tr>
<tr>
<td></td>
<td>• Demonstrate cost-effectiveness and provide persuasive evidence through exemplar projects and case studies;</td>
</tr>
<tr>
<td>Maintenance and Risk</td>
<td>• Involve facility management department in the early planning stages to relieve their worries about future maintenance requirements;</td>
</tr>
<tr>
<td></td>
<td>• Test small scale pilot project</td>
</tr>
</tbody>
</table>

This research identifies factors causing organisational resistance to sustainability innovations. To start, a lack of vision and willingness to be innovative is a main obstacle to impact on people’s mindset. Financial impediments such as tight budget, funding resource and expensive cost remain the most significant barrier. It is also related to the misconception about sustainability and the lack of understanding and information about innovations, which cause apprehension among people towards innovations. Inadequately support from the top executives makes it difficult to introduce sustainability innovations as innovation deliverables demands financial and human resources as well as professional consultation. The perceived risks and on-going maintenance are also ranked high on the list of barriers. Individual behaviour change along with cultural change discussed by interviewees adds to another obstacle. The size of some very large universities is also considered as a factor impacting on sustainability innovations deliverables on campus. In response to these interconnected barriers, a series of recommendations have also been identified finally.
References


