

THE APPLICABILITY OF HART'S SUSTAINABLE VALUE FRAMEWORK TO ENVIRONMENTAL SUSTAINABILITY ACTIVITIES IN INSTITUTIONS OF HIGHER EDUCATION

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Abstract

This paper gives an overview of the issues of environmental sustainability and briefly reviews how this has grown as an issue of importance over the past two decades. It explores the seven key dimensions, as defined by Calder & Clugston (2003), that universities need to address from the perspective of sustainability and then introduces Hart & Milstein's Sustainable Value Framework (Hart & Milstein, 2003), which proposes that businesses need to address sustainability in four quadrants — Today/Internal, Today/External, Tomorrow/Internal, and Tomorrow/External for them to have continuing success.

The methodology proposed in this paper entails categorizing sustainability initiatives and programs first into Calder & Clugston's seven dimensions and then organizing them into the four quadrants of Hart & Milstein's Sustainable Value Framework. By applying this methodology a university can assess its progress towards sustainability and use it for planning further environmental sustainability activities, as gaps or weaknesses are made evident by applying this methodology. This proposed methodology of bringing together the seven dimensions of university sustainability with Hart's four quadrants is termed the *7x4 University Sustainability Framework*.

It is proposed that the *7x4 University Sustainability Framework* and its outcomes can be used as the basis of assessment by universities and as a tool to guide planning, goal-setting, and decision-making for environmental sustainability in universities.

1 INTRODUCTION

Sustainability is currently a hot topic in all aspects of business and education in the developed world, indeed it is currently the United Nations *Decade of Education for Sustainable Development* (2005-2014).

Sustainable development has been examined formally by the United Nations since 1983, and a major UN report on sustainable development was published in 1987 (Brundtland, 1987), where a widely used definition of sustainable development is found:

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

p54 Brundtland (1987)

Sustainability, as the term is currently used, is broader than *environmental sustainability*, and important aspects of sustainability include economic, food production and distribution, population, political, and social justice issues. Some dimensions of environmental sustainability include issues such as minimizing energy use, using renewable sources of energy, minimizing water use, and waste minimization and disposal. The broader sustainability issues (in particular economic and social) are of immense importance and must be tackled by our society and by universities, but will not be addressed further in this paper, where the focus is on environmental sustainability.

2007 was a tipping point for the many politicians' and wider public's recognition of climate change as an issue that must be dealt with. The publication of two major reports on climate change led to major political repositioning and to more sectors of society coming to the acceptance of the reality and implications of human impact on the planet's climate. The Intergovernmental Panel on Climate Change (IPCC) report (IPCC, 2007) made clear statements about the reality of climate change with a solid and united scientific basis, and the Stern Report (Stern, 2007) demonstrated the economic imperative to respond to climate change. These reports led to a substantial shift in public and political mindsets, such that environmental sustainability is now clearly on the agenda for almost all organisations in the developed world, including universities.

1.1 Sustainability Issues in Universities

Along with the rest of society, universities are currently grappling with issues of environmental sustainability. The impact that universities can have in sustainable development is vastly greater than the impact of any other single sector of society. This is because universities educate the next generation of decision-makers and influencers (including politicians, business leaders, engineers, educators and thinkers) and are centres of research & development activities – universities are where knowledge and attitudes are formed and their influence is vast. Thus, the responsibility of universities to society to take a leadership role in environmental sustainability is commensurately greater. This area of the roles that higher education can play is explored further by Cortese (2003).

The term 'education for sustainable development' emerged from the Rio Earth Summit in 1992 and has grown in prominence on university campuses in the years since then. From the 1960s, when Rachel Carson's seminal book *Silent Spring* (Carson, 1962) illustrated how the use of pesticides was having far-reaching impacts across the planet, there have been groups that advocated humans reducing their impact on the planet and predicting dire consequences if they did not. Such groups have had a presence on university campuses and have worked toward changes in society and human behaviour and increased respect for the environment. These groups have been active in some parts of society and on university campuses for decades, but their causes have not been mainstream until quite recently, when even big businesses want to 'go green'.

2 CALDER & CLUGSTON'S SUSTAINABILITY DIMENSIONS

University activities that need to be addressed when considering sustainability issues have been placed into seven critical dimensions of sustainability by Calder & Clugston (2003). These seven critical dimensions are:

1. Curriculum
2. Research & Scholarship
3. Operations
4. Faculty and Staff Hiring, Development & Rewards

5. Outreach & Service
6. Student Opportunities
7. Institutional Mission, Structure & Planning

The first three of these dimensions – Curriculum, Research & Scholarship, & Operations – are the core activities of universities. The remaining four dimensions are important as they frame the culture of a university as it progresses on its journeys toward environmental sustainability, and without policies in place other sustainability activities can be ephemeral and not sustained as staff change.

3 HART & MILSTEIN'S *SUSTAINABLE VALUE FRAMEWORK* & UNIVERSITIES

For most business organisations shareholder value, as measured by dividends and the price of shares, is the measure of a company's success. More recently, the concept of the 'triple bottom line' (measuring financial, social, and environmental outcomes) in place of only the financial measure has taken increasing prominence, and recent Annual Reports of almost all companies now report on sustainability issues.

3.1 Sustainable Value Framework

Hart & Milstein (2003) have proposed the concept of 'sustainable value', which links the creation of shareholder value to the challenges of global sustainability and frames this with two sets of competing tensions – today's needs *vs* planning for tomorrow; and internal development and perspectives *vs* external needs and perceptions (Figure 1). Hart's *Sustainable Value Framework* proposes that business managers and leaders need to be addressing: (i) sustainability issues in its day-to-day operations (Today/Internal); (ii) how its operations are presented to stakeholders external to the organisation and take on board the concerns of these stakeholders (Today/External); as well as, (iii) planning for and designing innovative processes and technologies for more sustainable operations (Tomorrow/Internal); and, (iv) planning for ways that the organisation can develop unmet needs and address inequities (Tomorrow/External).

Activities are classified into the 'Today' quadrants if the payoff for that activity is today, for example, reduced power consumption leading to lower energy costs. Activities are classified into the 'Tomorrow' quadrants if the payoff is in the future, for example, planning and commissioning an energy-efficient building will lead to energy savings and reputational benefits, but these benefits will not be realised for a number of years.

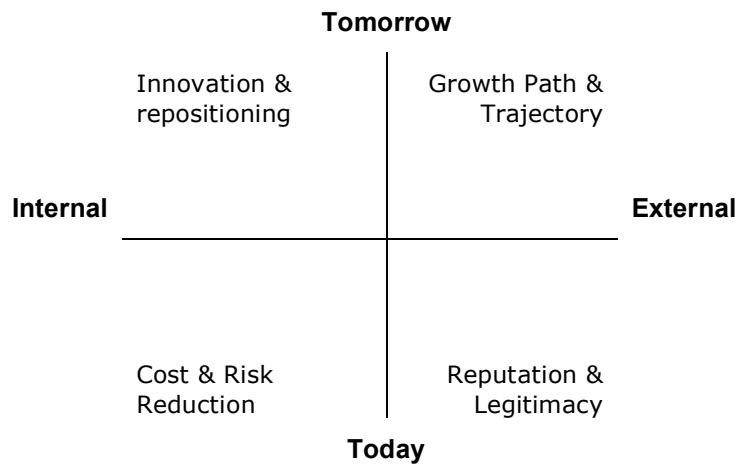


Figure 1 Hart & Milstein's Sustainable Value Model (from Hart & Milstein, 2003).

Hart & Milstein assert that if a business is not addressing all four quadrants, then their ongoing success will be at risk. Example of businesses that did not address all four quadrants and whose shareholder value was impacted negatively that they discuss include *Kodak*, who focussed on current technologies, while ignoring 'tomorrow's' technologies and markets, and early internet companies who were overly focussed on coming technologies to the detriment of current income.

The Sustainable Value Framework sees shareholder value as being impacted by how a business responds to the Today/Tomorrow and Internal/External tensions that arise with respect to global sustainability issues, and proposes that those organisations that can address sustainability issues in all four quadrants are those that will have ongoing success.

3.2 Stakeholder Value of a University

In the context of universities, 'stakeholders' is a more relevant term than 'shareholders', although there is complexity around this, as a university's 'stakeholder value' is more complex to determine than a business' shareholder value. The stakeholders of universities include:

- Students – current & future
- Staff – current & future
- Graduates/Alumni
- Employers of graduates
- The wider community
- State & Federal governments
- Business community
- Researchers & Scholars worldwide
- Other universities

Defining stakeholder value in the context of universities must acknowledge all of these stakeholders and their varied connections to the university. Some stakeholders are direct 'clients' of the university, for example students attending the university or businesses that work with the university on research or who use the outcomes of university research. Some stakeholders are less direct clients of the university, such as the parents of students, employers of graduates, and the wider community, who are strongly impacted by the activities of the university, even though they do not directly interact with the

university. Funding bodies, including taxpayers and governments, also are stakeholders of the university, with a strong interest in the outcomes, both the graduates and the research outcomes of universities.

The major aspect of the stakeholder value of a university is measured by its reputation, both locally and internationally. This reputation is indicated by the high value that universities place on international rankings of universities, such as the Times Higher Education Supplement *World University Rankings* or the *Shanghai Jiao Tong University World Rankings*. It is asserted that these rankings have a much greater impact on the stakeholder value of a university than the financial state of the university, though it is acknowledged that having a strong budgetary position will allow a university to provide better facilities and support research more than if it coming from a less strong financial position.

A university with a strong reputation will attract world-class staff who, in turn, attract top research students and research funding. The reputation of a university directly affects its ability to attract student enrolments. A university that is seen as excellent through its research outcomes and the quality of graduates will have the approval of its community and of funding bodies. Thus, the stakeholder value of a university can be developed, maintained and enhanced through activities that enhance the reputation of the university, which, in turn, leads to strong students demand, high quality staff, excellent research outcomes, good facilities and success in attracting funding.

In the context of high, and increasing, sensitivity to environmental sustainability, environmental sustainability is of growing importance in enhancing, or damaging, the reputation of a university.

3.3 Drivers for Environmental Sustainability in Universities

Universities have numerous drivers toward implementing environmental sustainability initiatives and programs on their campuses. The most concrete of the drivers is compliance with external regulations. To not do so would bring not only fines for non-compliance, but also damage to reputation when reporting of non-compliance appeared in the media. In addition to these legal requirements, the wider community increasingly judges large organisations, including universities, through their environmental impacts and sustainability activities.

Many organisations, including universities, have found that when they put programs in place to comply with external regulations that it can lead to cost reduction. A simple example is that complying with water restrictions also leads to lower water bills for the university.

Less concrete, but a powerful driver for universities to engage with environmental sustainability include the moral responsibility of an organisation as culturally powerful as a university to undertake environmentally sustainable activities and to model environmental sustainability technologies to the wider community, as well as developing an attitude of environmental sustainability in its graduates.

Developing a strong reputation as a leader in environmental sustainability and sustainability education will enhance a university's reputation in the community and with prospective students and staff.

As alluded to above, there are both short-term and longer-term payoffs for universities that engage deeply with environmental sustainability and embed it into their mission and business. Payoffs include cost-reduction, enhanced reputation, increased demand from students, and the ability to attract staff and research funds.

4 THE 7 BY 4 UNIVERSITY SUSTAINABILITY FRAMEWORK

The seven key dimensions of university sustainability functions are:

1. Curriculum
 2. Research & Scholarship
 3. Operations
 4. Faculty and Staff Hiring, Development & Rewards
 5. Outreach & Service
 6. Student Opportunities
 7. Institutional Mission, Structure & Planning
- (see section 2 *Calder & Clugston's Sustainability Dimension*, p1; Calder & Clugton, 2003)

The Sustainable Value Framework defines four quadrants that sustainability activities should be categorized into. The four quadrants are:

- I. Today/Internal
 - II. Today/External
 - III. Tomorrow/Internal
 - IV. Tomorrow/External
- (see section 3.1 *Sustainable Value Framework*, p7; Hart & Milstein, 2003)

The proposed methodology, termed the '7 by 4 University Sustainability Framework' (7x4USF) combines these two frameworks to create a new methodology for analysing and planning sustainability activities of a university. The 7x4USF involves categorizing the sustainability initiatives and programs of a university first into Calder & Clugston's seven key dimensions of university sustainability and then organizing them into the four quadrants of Hart & Milstein's Sustainable Value Framework.

Applying this methodology with existing sustainability programs and initiatives is an assessment exercise that determines a university's progress towards environmental sustainability and identifies areas of strength and weakness. Once these strengths and weaknesses have been identified, it is used as a planning tool to structure brainstorming and planning sustainability activities in each of the 28 specific areas defined by the methodology. It should be noted that the 7x4USF is designed for use within a university, rather than as a tool for comparisons between universities, and it is not an auditing tool that quantifies specific outcomes. Audits of specific areas (such as water or energy consumption, or integration of sustainability into the curriculum) could be undertaken to inform inputs to the proposed 7x4USF.

Preliminary analysis of sustainability activities from publicly available documents could be undertaken initially and followed up with teams of staff populating the 7x4USF grids with initiatives and activities that are in place in their area of expertise or responsibility (assessment phase), and then a brainstorming session on possible activities that the university could undertake, with particular focus on those

quadrants that are empty or have only a limited or weak presence of activities (planning phase). Applying the proposed framework makes evident where there are weaknesses and strengths in current sustainability activities. Managers of units would work with their staff to consider all four quadrants for the dimension(s) that their unit works within and determine (i) where current sustainability activities fit in the four quadrants, (ii) identify areas of weakness and strength, and (iii) brainstorm possible sustainability activities and desired outcomes across the four quadrants. University managers will need to work with their teams, so that university leadership can gain a clearer view of the university's current successes across the dimensions and then implement ideas, processes and policies to support the university in enhancing its achievements in sustainability.

For example, a university may be doing well in the area of environmental sustainability in campus operations (today/internal), and have programs in place so that this will continue into the future, with new initiatives, such as new buildings, being designed in an environmentally sustainable way (tomorrow/internal). However, if this is not being well-communicated to the university and wider community (today/external), it means that the university is not reaping the reputational benefits that it could from the considerable efforts that it has put into having sustainable campus operations (tomorrow/external).

4.1 Example of applying the 7x4USF

The tables below apply the 7x4US and illustrate possible environmental sustainability initiatives and outcomes that a university could categorise for the first three dimensions across the four quadrants. These listed initiatives and outcomes are not exhaustive. Where a university finds empty or lightly populated cells it indicates a need to strengthen that area, Initiatives are indicated with a bullet (•) and Outcomes with an arrow (➤).

4.1.1 Curriculum: Possible initiatives & desired outcomes

<p>Tomorrow/Internal</p> <ul style="list-style-type: none"> ➤ Reputation as an organisation that embeds environmentally sustainability in its programs will attract and maintain staff who value this ➤ Student satisfaction because their desire to develop their skills in a context of environmental sustainability are met 	<p>Tomorrow/External</p> <ul style="list-style-type: none"> ➤ Enhanced reputation to wider community and employers as graduates have a sustainability ethos ➤ Research & development funding in sustainability, including funding from business sources, increases because of reputation for leadership in sustainability through activities and reputation of graduates ➤ A strong focus of sustainability in the curriculum will attract students, who are increasingly demanding it ➤ Recent alumni are informed and are able to represent current thinking on sustainability to their community and work environments
<p>Today/Internal</p> <ul style="list-style-type: none"> • Ensure students & staff are aware of and follow university protocols in teaching-related activities (<i>e.g.</i>, handling of toxic materials, waste management) • Incorporation of sustainability and associated issues across the curriculum, creating an embedded culture of addressing all problems with an understanding of sustainability issues • Develop subjects in sustainability with interdisciplinary problem based learning approach so that students develop skills and knowledge to address such issues in their future workplaces 	<p>Today/External</p> <ul style="list-style-type: none"> ➤ Reputation enhanced by being seen as a thought leader in sustainability in higher education community and the wider community ➤ Reputation in the community as a responsible community member and leader

4.1.2 Research & Scholarship: Possible initiatives & desired outcomes

<p>Tomorrow/Internal</p> <ul style="list-style-type: none"> ➤ Reputation as an environmentally sustainable organisation will attract and maintain staff 	<p>Tomorrow/External</p> <ul style="list-style-type: none"> ➤ Become a visible research leader in sustainability issues ➤ Attract research funding through strong reputation in the area
<p>Today/Internal</p> <ul style="list-style-type: none"> ➤ Staff satisfaction in being part of an environmentally sustainable organisation ➤ Reduced costs & risks in managing toxic materials • Support development of interdisciplinary research in sustainability ➤ Expanded research in sustainability and attraction of associated funding 	<p>Today/External</p> <ul style="list-style-type: none"> • Respond to community desire for knowing about sustainability issues through seminars and showcasing about reducing energy use and reducing waste

4.1.3 *Campus Operations: Possible initiatives & desired outcomes*

<p>Tomorrow/Internal</p> <ul style="list-style-type: none"> ➤ Cost savings on water, energy and waste disposal 	<p>Tomorrow/External</p> <ul style="list-style-type: none"> • Communicate and share with the public successes in building and campus operational issues, perhaps including tour and features on the university’s Open Day • Public seminars showcasing exemplary programs and outcomes ➤ Enhanced reputation through environmental sustainability activities ➤ Sustainability role model for complex organisations
<p>Today/Internal</p> <ul style="list-style-type: none"> ➤ Cost reduction through waste management & recycling ➤ Risk reduction through compliance of environmental regulations • Reduce cost through minimization of inputs for operations, such as water and energy • Design energy and water saving capabilities into new buildings and building refurbishments • Plan to include sustainability into all new building and building management practices • Design all new gardens to be low water use 	<p>Today/External</p> <ul style="list-style-type: none"> • Communicating successes in campus operations to the wider community (including potential staff & students) • Include information about sustainability practices on campus in information resources for potential staff • Develop credibility in sustainability education provision by practising what is preached and having this visible to current and prospective students ➤ Enhanced reputation as sustainability successes become more visible to the wider community

5 CONCLUSIONS

For a university to progress in this area the university leadership team needs to review its mission statement and policies and determine how sustainability can be embedded into the university’s mission and policies, because without this underpinning all activities they are less likely to succeed in the long term. Appropriate funding must to be allocated so that members of the university can achieve the university’s mission and enact sustainability policies. University managers at all levels need to gain an understanding of environmental sustainability issues and work toward embedding sustainable practices into all aspects of their operations and policies. Progressively all processes and policies at all levels need to be reviewed and revised until all have been redesigned to reflect the university’s goal of environmental sustainability. To achieve this goal for the university its senior managers will be engaged in the mission of environmental sustainability, so that all parts of the university adjust their focus so that all processes consider sustainability issues as an assumed way of doing business. This is no small task.

The proposed *7 by 4 University Sustainability Framework* methodology combines in a novel way two existing ways of looking at the sustainability activities of an organisation and enables universities to assess their progress toward sustainability more effectively and to identify areas of weakness that need attention. The methodology, it is proposed, is one that should be applied by university managers and leaders in all parts of the university, with results from different parts of the university combined to get an overview of the university’s sustainability activities. It is further proposed that unit managers and their staff should then brainstorm about possible activities in each quadrant for those dimensions that

their unit is involved in. This would be useful both for developing new strategies and processes, as well as a powerful staff development activity.

All of Calder & Clugston's seven key dimensions of university sustainability activities need to be considered when assessing a university's progress towards sustainability and by combining these dimensions with the four quadrants of Hart & Milstein's Sustainable Value Framework, a new methodology has been proposed for universities to assess their progress and plan their future environmental sustainability activities.

6 REFERENCES

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