

Creating shared value: An industry project framework

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SESSION C2: Interdisciplinary and cross-disciplinary engineering programs and learning environments

CONTEXT

Engineers have a responsibility to serve the communities in which they work and create solutions to the challenges that society faces in the 21st century, while maintaining the economic viability of the organisations to which they belong.

Current engineering education approaches often fall short of equipping graduates with the required skills to navigate the tensions between social and ecological sustainability and creating financial value.

An emerging concept in business literature, *creating shared value*, offers a framework to create value for society while simultaneously creating financial value for companies.

PURPOSE

This paper explores how the concept of *creating shared value* may be transferred from business literature to the engineering education context, as a way to equip graduates with the skills suited to the unknowns of future engineering practise.

APPROACH

This paper reflects on what shared value means to students, universities, industry and communities in the context of integrating industry and service learning projects as a mode of course delivery.

RESULTS

The creation of the new Bachelor of Engineering Practice at Swinburne University of Technology and the resulting industry project framework are used as an example to explore how the concept of creating shared value may be implemented.

CONCLUSIONS

The concept of *creating shared value* is a mechanism that can be used within engineering education to equip graduates with skills required for the unknowns of the future while simultaneously providing opportunities for universities as institutions to positive social impact for the communities in which they are located.

KEYWORDS Industry projects, shared value

Introduction

Society is facing global challenges associated with depleting natural resources, climate change, increasing populations along with technological advances that have both the potential to push society towards or away from sustainability (Broman & Robèrt, 2017). The engineers of the 21st century will need to alter their skillsets and approaches to respond to these challenges and in turn engineering education must adapt to create graduates ready to work in this changing environment.

Engineers, perhaps more so than most other professionals, have the potential to create large scale technological solutions to create positive social (Baillie, 2014; Fitzpatrick, 2016) and ecological impact and to shift society towards sustainability (Fitzpatrick, 2016). It is the responsibility of engineers to fulfil this potential. This responsibility is recognised in the preamble for the Engineers Australia (EA), Australia's peak engineering body, Code of Ethics states:

“As engineering practitioners, we use our knowledge and skills for the benefit of the community to create engineering solutions for a sustainable future. In doing so, we strive to serve the community ahead of other personal or sectional interests.” (Engineers Australia, 2017)

Engineers are expected to be both technical professionals and leaders within their companies. Engineers must then be equipped with technical and problem solving skills ready to tackle complex global challenges in addition to business acumen and leadership skills (National Academy of Engineering, 2005).

There are many studies within the literature calling for changes to engineering education approaches to respond to meet the needs of a changing society (Beanland & Hadgraft, 2014; King, (2008)). There are many different models, curriculum, pedagogies and frameworks being trailed and adopted by the engineering education community in response to this. Educational programs such as the EWB Challenge, an Australasian design program (Engineers Without Borders Australia, 2017), along with courses on engineering and social justice (Baillie, 2014) and the rise of dedicated humanitarian engineering education programs in Australia and New Zealand are all providing opportunities for students to explore the role of engineers in creating social impact and sustainability. Courses focusing on business, enterprise and management skills are also being made available to engineering students.

Within industry the need of companies to be financially sustainable and create a profit is often in direct competition with social and ecological agendas and the pressure from society to contribute to these agendas (Porter & Kramer, 2006, 2011). This tension between social and ecological impact and profit making is in part perpetuated by outdated notions of corporate social responsibility (CSR) (Porter & Kramer, 2006, 2011). Within the business literature *creating shared value* (CSV) is emerging as an alternative to CSR that creates social impact while simultaneously creating financial value (Porter & Kramer, 2006, 2011). The concept of shared value is still emerging but is already being adopted by companies. There is a need to provide companies with guidance on how to implement the concept (Dembek, Singh, & Bhakoo, 2016) in addition to a need for business schools to adopt better curriculum to better prepare graduates to create shared value (Porter & Kramer, 2006, 2011).

Engineering education often falls short of equipping graduates with the required social and economic skills to contribute to moving society towards sustainability (Fitzpatrick, 2016). There is a need to focus more on both social and economic aspects within engineering education (Fitzpatrick, 2016). Furthermore, as business schools must change approaches to allow graduates to navigate the tension between social impact and profit making so does engineering education. This paper explores how the concept of *creating shared value* (CSV), may be transferred from business literature to the engineering education context, as a way to

prepare engineering graduates to be able to not just navigate the tensions between social impact and economic profit but to avoid the tension in the first place.

This paper does not attempt to critique alternative approaches, nor does it attempt to compare the incorporation of CSV to other approaches within the engineering education literature. This paper simply introduces the concept and provides suggestions of how the concept of creating shared value may be incorporated into engineering education using the creation of a new Bachelor of Engineering Practice at Swinburne University of Technology (Swinburne) as an example to stimulate discussion and debate.

The tension between social impact and economic profit

There is a prevailing view within the general public that companies make profits at the expense of the communities in which they work, that companies will prioritise profits over doing social good (Porter & Kramer, 2011). *Corporate social responsibility* (CSR) programs within companies have emerged over many decades in response to this criticism by the general public. The definition of CSR varies widely within the literature, as do the frameworks, and in some cases lack of frameworks, with which companies create CSR policies. In general, however CSR programs focus on creating positive environmental and social impacts beyond the companies legal obligations (Bosch-Badia, Montlor-Serrats, & Tarrazon, 2013).

As CSR programs extend beyond a company's legal obligations and core business they are typically considered to be a financial burden by organisations (Bosch-Badia et al., 2013) and incompatible with making a profit (Porter & Kramer, 2011). Despite the financial cost of CSR to a company, societal pressure on companies to be seen doing social good has resulted in the continuing prioritisation of CSR activities (Porter & Kramer, 2006, 2011). What results is a tension within companies between maximising profits and creating positive social and ecological impact (Porter & Kramer, 2006, 2011). This tension is one that engineering professionals must learn to navigate throughout their careers.

Profit making and social impact however are not mutually exclusive. There is a need for new mindsets and organisational approaches to reframe how companies view and action the creation of social and ecological impact (Australian Centre for Corporate Social Responsibility, 2014). Examples of these new approaches can be seen in the rise of social enterprises (Reilly, 2016) and B-corporations (B Lab, 2017). Engineering education in turn needs to adopt new curriculum and pedagogies to equip graduates with the skills required to approach business and the creation of social and ecological impact in new ways.

Creating shared value – the concept

Porter and Kramer introduced the concept of *creating shared value* (CSV) in Harvard Business Review articles in 2006 and 2011 as an alternative to corporate social responsibility (CSR) that negates the tension between making a profit and creating social impact.

“Shared value can be defined as policies and operating practices that enhance competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates.” - (Porter & Kramer, 2011)

Some would argue that *creating shared value* is simply an optimal definition of *corporate social responsibility*. For example, the Australian Centre for Corporate Social Responsibility (ACCSR) define CSR as:

“Organisational practices that address the impacts of an organisation on business, society and the environment or seek to create positive social value through core business.” - (Australian Centre for Corporate Social Responsibility, 2014)

Very few CSR programs live up to this ideal however and are instead activities unrelated to core business that allow for good deed publicity opportunities (Bosch-Badia et al., 2013). The

ACCSR 10-year review of the state of CSR in Australia and New Zealand noted that CSR progress was unsatisfactory and called for systemic change in CSR practices in order to address deep-rooted social, environmental and economic challenges (Australian Centre for Corporate Social Responsibility, 2014). In this paper, we recognise the overlaps between CSR and CSV but have chosen to focus on the concept of CSV, as defined by Porter and Kramer above, as it cuts through the different definitions and outdated approaches to CSR giving room to inspire new thinking and action.

To paraphrase Porter and Kramer (2006 and 2011) corporate social responsibility programs are often kept separate from the business strategy and in a lot of cases are either managed by marketing departments or independent units such as foundations within a company. The concept of shared value brings the focus on social impact in from the fringes of an organisation to the core business strategy. The high-level CVS framework that Porter and Kramer (2006 and 2011) present revolves around identifying the points of intersection between society and the company or organisation's operations. Corporate social agendas are then created to address value chain social impacts and social dimensions of competitive context at these intersections.

We propose that CSV frameworks could be incorporated into engineering education curriculum to equip graduates with skills for their careers in addition to embedding CSV principles into university operational and research strategies to show leadership and generate new knowledge on the creation of shared value.

The social responsibility of universities

Universities are not immune from the pressures of society to create social impact. As public institutions universities have a responsibility to serve the communities in which they are located (Nørgård & Bengtson, 2016). This service is reflected in the strategic plans of universities across Australia and New Zealand. For example, Swinburne University of Technology's 2025 strategic framework positions Swinburne as "a world class university creating social and economic impact through science, technology and innovation".

Universities intersect with society and have opportunities to create shared value with society through the education of students, the development of staff and the knowledge created through research. These same opportunities exist when the focus narrows from a whole institutional view to a focus on a single faculty, such as engineering, or a single discipline within a faculty, such as engineering education.

Creating shared value through engineering education

At Swinburne University of Technology an opportunity has arisen to rethink engineering education and experiment with new approaches through the creation of the Engineering Practice Academy (the Academy), launching in 2018, and its associated Bachelor of Engineering Practice (Honours) (BEPH). The Academy is one of many initiatives that operationalise Swinburne's mission to create social and economic impact. Throughout the creation of the Academy consideration has been given to how the Academy's operations might create shared value with the local community of Melbourne where the Academy is located, communities within Victoria and Australia more broadly, the Australian professional engineering sector and finally the international engineering education community of which Academy staff are members.

The Academy is being established as a simulated consulting firm within Swinburne. Students will join the Academy as associates enrolled in the BEPH. The BEPH is being co-created with industry and will be delivered entirely through real-world projects with industry and community partner organisations. Curriculum will be delivered with a just-in-time approach and students capability to apply the concepts within the curriculum tracked through micro-credentials. Students will move through four intensive six-week units a year, with each unit

focusing on one of four curriculum pillars; social impact, emerging technology, research and development and entrepreneurship. In addition to the projects conducted within the four units, 15% of student's workload will be dedicated to service learning projects working alongside Academy staff on long-term projects within the community.

In the early stages of establishing the Academy a strategic planning process was undertaken, identifying the contribution that the Academy could make to social issues affecting the communities in which the Academy intersects. The strategic planning process identified five vision elements through which the Academy could have impact:

1. Develop engineers suited for the unknowns of future engineering practise
2. Embody and advocate sustainability
3. Celebrate being and becoming professionals
4. Embrace diversity and inclusion
5. Re-imagine and transform engineering education

The design of the Academy's programs, policies and procedures in all areas including; operations and infrastructure, people and culture, services and engagement with community and clients, are at the time of writing this paper being aligned to the five vision elements and mapped to show how they will contribute to the achievement of desired outcomes and thus create shared value under each of the vision elements.

Industry and service learning projects framework

The structure of the BEPH allows for natural intersections with both the Australian engineering sector and the boarder community through student-led projects with industry and community based organisations. The BEPH includes two types of student-led projects, 1) industry based projects within the six-week intensive units and 2) long-term service learning projects with community based organisations.

Service-learning projects have been used internationally with great success to embed a sense of social responsibly and equip students with global citizenship skillsets (Bielefeldt, Paterson, & Swan, 2010; Pritchard & Tsang, 2000). Service-learning projects place students within communities where they work on a project that benefits the community in which they are embedded. Service-learning projects through their very nature have the potential to create shared value with communities. Service learning projects conducted in isolation to industry projects however have the potential to perpetuate the view that social impact is achieved through CSR activities that are separate to core business.

In the Academy students will also work on real-world projects identified by industry partners in addition to service learning projects. These industry projects are also viewed as an opportunity to create shared value. Industry projects have the potential to create shared value;

- For **students** by providing opportunities to build skills, gain exposure to professional working environments and build their professional networks;
- For **industry partners** to crowdsource new ideas and innovative solutions for projects they identify in addition to opportunities to identify up-and-coming talent within the next generation of engineers;
- For **society** by acting as transformative platforms through which industry partners in collaboration with Academy students and staff can identify opportunities to increase the social and ecological value of the industry partner's core business. Participating in student projects allows industry partners to explore these opportunities in a low-risk manner, without the need to commit time or financial resources up-front.

Establishing real-world projects and partnerships with industry and community based partner organisations however is not enough to ensure that shared value is created. At the time of

writing this paper the Academy is in the process of creating an industry projects framework complete with tools to assist academic staff to design student projects to explicitly create shared value, prioritise projects that will contribute to achieving the Academy and broader Swinburne University of Technology strategic plans, effectively facilitate students to deliver projects and evaluate the social impact they create.

Conclusions

Engineers of the future must be equipped with skills to address global social and ecological challenges. They must be able to serve society and create financial value to the companies in which they operate. Outdated notions of corporate social responsibility coupled with societal pressure on companies to create social impact outside of their legal obligations are creating tensions between social impact and profit making. Current engineering education approaches are not adequately preparing graduates to navigate this tension.

The emerging concept within the business literature of *creating shared value* provides a framework for companies to identify opportunities to create social impact while simultaneously creating economic value for the company. The concept of *creating shared value* is a mechanism that can be used within engineering education to equip graduates with skills required for the unknowns of the future while simultaneously providing opportunities for universities as institutions to positive social impact for the communities in which they are located.

References

- Australian Centre for Corporate Social Responsibility. (2014). *The 10th year - Progress and prospects for CSR in Australia and New Zealand: The State of CSR in Australia and New Zealand Annual Review*. Retrieved from <http://accsr.com.au/what-we-do/csr-resources/csr-research/>:
- B Lab. (2017). What are B corps? Retrieved from <http://bcorporation.com.au/what-are-b-corps-0>
- Baillie, C. (2014). *Engineering and Social Justice In the University and Beyond*. Ashland.
- Beanland, D., & Hadgraft, R. (2014). *Engineering education: Innovation and transformation* Retrieved from
- Bielefeldt, A. R., Paterson, K. G., & Swan, C. W. (2010). Measuring the value added from service learning in project-based engineering education. *International Journal for Engineering Education*, 26(3), 535-546.
- Bosch-Badia, M. T., Montlor-Serrats, J., & Tarrazon, M. A. (2013). Corporate social responsibility from Friedman to Porter and Kramer. *Theoretical Economics Letters*, 3, 11-15.
- Broman, G. I., & Robèrt, K.-H. (2017). A framework for strategic sustainable development. *Journal of Cleaner Production*, 140, 17-31. doi:10.1016/j.jclepro.2015.10.121
- Dembek, K., Singh, P., & Bhakoo, V. (2016). Literature review of shared value: A theoretical concept or a management buzzword. *Journal of Business Ethics*, 137(2), 231-267.
- Engineers Australia. (2017). Engineers Australia Code of Ethics. Retrieved from www.engineersaustralia.org.au/ethics
- Engineers Without Borders Australia. (2017). EWB Challenge. Retrieved from www.ewbchallenge.org
- Fitzpatrick, J. J. (2016). Does engineering education need to engage more with the economic and social aspects of sustainability? *European Journal of Engineering Education*, 1-11. doi:10.1080/03043797.2016.1233167

- King, R. ((2008)). *Engineers for the future: addressing the supply and quality of Australian engineering graduates for the 21st century*. Retrieved from Sydney, Australia:
- National Academy of Engineering. (2005). *The engineer of 2020: Visions of engineering in the new century*. Washington, DC: The National Academies Press.
- Nørgård, R. T., & Bengtsen, S. S. E. (2016). Academic citizenship beyond the campus: a call for the placeful university. *Higher Education Research & Development*, 35(1), 4-16.
- Porter, M. E., & Kramer, M. R. (2006). Strategy and society: The link between competitive advantage and corporate social responsibility. *Harvard Business Review*, 84(12), 78-92.
- Porter, M. E., & Kramer, M. R. (2011). Creating Shared Value: How to reinvent capitalism and unleash a wave of innovation and growth. *Harvard Business Review*, 89(1-2), 1-17.
- Pritchard, M. S., & Tsang, E. (2000). *Service learning: A positive approach to teaching engineering ethics and social impact of technology*. Paper presented at the American Society for Engineering Education (ASEE) Conference and Exposition Proceeding.
- Reilly, T. (2016). Are Social Enterprises Viable Models for Funding Nonprofits? *Human Service Organizations: Management, Leadership & Governance*, 40(4), 297-301. doi:10.1080/23303131.2016.1165047