



Sustainability-driven innovation

PhD programmes are under increasing pressure to train researchers who help to solve critical societal challenges. **Sally Randles, Annemieke Roobeek, Sally Jeanrenaud** and **Simon Pickard** propose that sustainability-driven innovation, a new model for collaborative PhD training and research, offers a valuable framework for inspiring new approaches

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Despite recent political turbulence in Europe, the US and elsewhere, the past 18 months have witnessed an unprecedented level of intergovernmental consensus to tackle global sustainability challenges. The COP21 climate accords, UN Sustainable Development Goals (SDGs) and EU Circular Economy Strategy are perhaps the best-known outcomes, providing clear frameworks and long-term targets for companies, governments and other stakeholders to pursue.

In parallel, some of the world’s leading consultancies and think tanks have been putting numbers to the scale of opportunity that these challenges represent. Accenture Strategy estimates that a circular approach to global waste could alone be worth \$4.5 trillion to 2030. Meanwhile, the World Economic Forum’s Business and Sustainable Development Commission has found that achieving SDG targets in four key industry sectors could generate \$12 trillion in revenues and savings in the same period.

What seems clear is that many of the emerging opportunities will be seized by organisations that embrace sustainability-driven innovation (SDI) as a key driver of long-term growth, business model transformation, new collaborative capabilities and strategic repositioning within existing markets.

Understandably, this has major significance for the academic world, not least in its research activities. As outlined in a recent Global University Network for Innovation (GUNI) report, pressure is growing to move away from the dominant “republic of science” model towards one in which institutions serve as incubators of “science with and for society”.

The European Union – primarily through its Marie Skłodowska-Curie Actions body – is committed to investing billions of euros to advance responsible research and innovation (RRI) and to better develop the entrepreneurial skills of its scientists as a key accelerator of smart, sustainable and inclusive growth and systems transitions.

There is, however, an ongoing concern that universities and business schools are failing to keep pace with these macro shifts and emerging opportunity landscapes.

Questions abound regarding future academic purpose and licence to operate – in other words, how to play a more active and effective role in tackling complex societal problems (and not just apply a fresh coat of self-referential paint to the “ivory tower”) while also embracing more collaborative engagement with multiple stakeholders through interdisciplinary institutes, structures and incentives.

Taken together, this brings us to the vital issue of doctoral training programmes in business schools and universities. In particular: are graduates receiving the necessary skills to study, teach and practice in this new paradigm? And are they being empowered to act as change agents beyond the narrow confines of the university campus?

In the past four years, a ground-breaking project – “Innovation for Sustainability” or “I4S” for short – has generated fresh insights into how we might better “future-proof” researchers as creators of societal value and not merely publication machines.

Supported by €2.7 million in EU Marie Curie funding, and co-ordinated by ABIS (The Academy of Business in Society), I4S has developed a cohort of PhD graduates who are now equipped to thrive as SDI researchers and professionals at the interface between academia, business, communities and public policy.

SDI requires research that goes beyond the limits of classical approaches to the study, management and regulation of innovation. It is based on an integrated systems approach to economic, environmental and social performance, spanning producers, consumers and other social interests. It connects business and social innovation and it places partnership and collaboration at the heart of its design. Last, but by no means least, it leads to the development of new business models and technologies that create and capture tangible value for firms and society.

As such, SDI requires a scientific training that crosses conventional boundaries and siloes within academic institutions and which exposes young scholars to the reality of SDI in practice in the business world. Yet anecdotal evidence suggests that few business schools today offer this kind of interdisciplinary learning experience and environment to their PhD candidates.

Our project has sought to address this through a unique framework of experimentation and exploitation. I4S involved eight leading ABIS members from the UK, Netherlands, Germany, Belgium, Denmark and South Africa.

Uniquely, each one was partnered by a leading company, industry platform or NGO, which helped to define the central research questions and then supervised and/or hosted a PhD researcher for six-12 months of applied investigation and learning in the field.

The concept of a co-created international training network was in itself a radical break with convention. Perhaps more importantly, though, each doctoral student was tasked with developing a piece of a much larger scientific "puzzle". These included a deeper understanding of:

- The range of organisational capabilities that SDI requires compared to traditional approaches, with a specific focus on innovations in business models and processes and management frameworks



- The new inter-organisational structures that support effective SDI, including how firms engage with other key stakeholders through multi-actor platforms, networks and ecosystems or through "blended or hybrid innovation" combining social, environmental and business perspectives.

Table 1 opposite gives a snapshot of the research themes explored and the partners inspiring and supervising the students' work:

Against this backdrop, I4S students, supervisors and stakeholders convened nine times over three years, in different countries and milieus, to pool insights and to work on skills development. These intensive learning experiences created a unique network of supervisors and students across national boundaries, developed new empirical evidence to advance the SDI field and successfully integrated "real world" stakeholder concerns into research design and execution.

The early-stage researchers were also given a high degree of ownership of the design of their own training events, resulting in a professional development matrix that included role playing and simulations, innovative teaching practices and social media strategies for research dissemination.

As part of our post-project reflections, we have asked our community two key questions:

- What have we learned through I4S that might inspire similar innovations and change in current doctoral training programmes?

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Table 1

Academic Lead	Business / NGO Partner	Research Theme
Copenhagen Business School	Velux	The new standards paradigm in sustainability transitions: insights from the building sector
Leuphana University Lüneburg	Sieb & Meyer	Innovation processes in sustainable energy technology innovation
Manchester Alliance Business School	Tesco	Business model change through embedding corporate responsibility and sustainability
Nyenrode Business University	Kirkman Company	Entrepreneurs and collaborative innovation in ecosystems for sustainable systems change
Rotterdam School of Management	World Business Council for Sustainable Development	Inter-organisational dynamics of system change for sustainability
University of Exeter Business School	WWF	Factors influencing the adoption of biologically inspired innovation for sustainability in MNCs
University of Cape Town GSOM	Woolworths	Systems perspectives and values-based leadership in organisations
Vlerick Business School	i-Propellor	The role of multi-stakeholder platforms in sustainable development



€2.7m

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- What tangible value has been created through this new approach?

Regarding the first question, our “network of networks” design approach has clearly enhanced the salience and value of the young researchers’ development. Students have been exposed to a wide range of perspectives – scientific and societal – as a part of an international applied learning community, supported by a cohort of senior professors and managers.

This model of cross-border collaboration and exchange is a potential new way forward in the design of doctoral training and skills development programmes.

By extension, the dynamic interaction with business and other stakeholders has given our graduates a unique blend of academic rigour and entrepreneurial skills and above all a keener understanding of how research can bring tangible value to practitioner environments. Instead of treating companies as objects of study, the I4S students have been trained to frame scientific inquiry through the needs and interests of its intended beneficiaries.

Perhaps the greatest gain, however, has been the realisation that it is indeed possible to organise and harness the collective intelligence of doctoral students in a way that enhances business practice and stimulates new ways of working together for academic institutions.

In summary, the results of I4S suggest that we can equip our young scholars to create sustainable value in all sectors, and not just the academic world. And we should not overlook the mindsets that the I4S students are taking into their post-doctoral careers on the back of this project.

They are unshakeable in their belief that they can contribute to a better, more sustainable world through their future scientific endeavours, whether in academia or elsewhere.

This speaks to a growing evidence base around millennial attitudes and students’ quest for social purpose and experiential learning in their professional lives. Leading universities and business schools are well advised to factor this into their programme offers and designs if they wish to attract top doctoral talent in the years ahead.

Ultimately, if the I4S approach inspires a new model for young researcher development in Europe, the future will seem far brighter than it does at times today.



ABOUT THE AUTHORS

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