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# Environmental Innovation and Societal Transitions

journal homepage: [www.elsevier.com/locate/eist](http://www.elsevier.com/locate/eist)

## Factors behind sustainable business innovation: The case of a global carpet manufacturing company

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### ARTICLE INFO

#### Article history:

Received 4 June 2016

Received in revised form 11 October 2016

Accepted 21 October 2016

Available online 27 October 2016

#### Keywords:

Innovation management

Manufacturing

Interface

Case study

Sustainability

### ABSTRACT

Innovation is critical to business. Sustainability is a global challenge requiring innovation. Many organizations have publicly committed to innovate towards environmental, social and economic sustainability, but a behaviour gap remains. In order to promote the effectiveness of these endeavours, there is a pressing need to understand the conditions for successful innovation towards sustainability, backed by empirical evidence. This paper complements prior work by developing a definition of sustainability-oriented innovation (building upon definitions of eco-innovation), and by discussing observations of this activity in practice.

The paper presents an account of sustainability-oriented innovation at Interface, a global manufacturing company with radical sustainability goals. It expounds the contexts in which these innovations arose, focusing in particular on Net-Works, a radical, socially-minded fishing-net recycling programme. It was found that several unique factors contributed to success: adopting an existing route to market, partnering with an NGO, and learning from mistakes in a “safe failure space”.

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## 1. Introduction

### 1.1. Innovation for sustainability

Innovation has always been critical for long-term business success. Throughout history, organizations which have innovated successfully have typically been rewarded with growth, profits and access to new markets (Bessant and Tidd, 2007). Those organizations which fail to innovate risk being disrupted and made obsolete in a process described famously as “the perennial gale of creative destruction” (Schumpeter, 1942). A further force acting upon the global business landscape is the requirement for society to develop sustainably. Broadly, this may be interpreted as the need for society to enable continued human flourishing without subjecting nature to increasing degradation, accumulation of man-made waste, or accumulation of materials from the earth’s crust such as heavy metals and fossilized CO<sub>2</sub> (Robèrt et al., 1997). In the context of the global marketplace, the need for greater sustainability is a topic which presents opportunities for innovators by rewarding a competitive edge to those adopting more sustainable practices (Konar and Cohen, 2001) and to those offering more sustainable products to their customers (Nicholls and Opal, 2005).

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Innovation which produces improved sustainability may be described as “sustainability-oriented innovation” (SOI), a term first introduced by Hansen et al. (2009). In recent decades, an increasing number of descriptive and prescriptive works have been published which focus on these kinds of innovation processes (for systematic explorations of this literature, see Adams et al., 2012 and Schiederig et al., 2012). Sustainability-oriented innovation has gained recognition as a priority area for empirical studies (Bansal et al., 2012). Contemporary researchers seek to address the research-action gap that exists in this field, and to improve upon a rather sparse and highly variable literature (Adams et al., 2012; Bansal et al., 2012). This paper extends the field with a case study of Interface, a company with a radical sustainability vision.

### 1.2. Sustainable business

Since the 1980s, interrelated and complementary concepts have been proposed and debated as guiding principles for industry to become more sustainable while maintaining economic competitiveness. These include Industrial Ecology (mapping material and energy flows throughout the life-cycle of products or services; Allenby and Graedel, 1993), Ecological Modernization (an approach to environmental reform which utilizes the capitalist market system; Spaargaren and Mol, 1992), the Triple Bottom Line (a framework for reporting and accounting which encourages a balance of social, environmental and economic outcomes; Elkington, 1997) and Cradle-to-Cradle Design (an approach to product and service design which minimises material waste and mimics natural cycles; McDonough and Braungart, 2002). Together, these concepts contribute to a worldview in which business managers are economically-incentivized to innovate towards sustainability. In the academic literature, the efficacy of such approaches is the subject of debate (O’rouke et al., 1996; Mol and Spaargaren, 2000; York and Rosa, 2003).

Meanwhile, in the private sector, many of the world’s largest companies have readily adopted such a worldview; promising to promote goals such as environmental sustainability, wellbeing and social equity through their core business activities in their annual reports, with full support of their shareholders (see, e.g., CHEVRON, 2015; EXXONMOBIL, 2015; MICROSOFT, 2015). In practice, implementation of sustainability principles appears highly variable, with examples of sustainability best-practice counterbalanced by underwhelming performance and even deceptive, green-washing behaviour (Delmas and Burbano, 2011). Addressing sustainability challenges like global warming will require radical change extending beyond current efforts (Machiba, 2010). The Intergovernmental Panel on Climate Change noted that “stabilizing temperature increase to below 2 °C relative to pre-industrial levels will require an *urgent and fundamental departure* from business as usual” (Pachauri et al., 2014). If companies are to make a substantial contribution to addressing these issues within the framework of the prevailing sustainable business paradigm, there is a pressing need for managers to better understand how to innovate successfully towards sustainability.

### 1.3. Outline of the paper

This paper contributes to the study of SOI in practice by defining sustainability-oriented innovation as the production, assimilation or exploitation of a product, process, service, method, structure or social institution that is novel in its application, and which improves economic, environmental and social outcomes throughout the life cycle of the application, compared to relevant alternatives. This definition is derived in the following section. The paper then presents an analysis of empirical evidence from a global manufacturing company, Interface. It sheds light on how SOI is practised within Interface through a detailed descriptive case study discussing the company’s environmental programme, *Mission Zero*, and other relevant contextual information. The noteworthy innovation project *Net-Works* is introduced. By examining the contexts of successful SOI at Interface, and comparing this with previous unsuccessful SOI, this paper identifies relevant factors for SOI success. This paper extends a growing body of empirical studies focusing on this topic, which together will help to answer important questions around how sustainability-oriented innovation should be undertaken. This study corroborates and enriches similar descriptive case study research by others in the field (e.g., Van Der Duin et al., 2007; Stubbs and Cocklin, 2008; Arnold and Hockerts, 2011).

## 2. Sustainability-oriented innovation

### 2.1. Sustainability-oriented innovation in the literature

Discussion of SOI is made more complex because it has been defined in several different specific ways (Carrillo-Hermosilla et al., 2010; Adams et al., 2012), as have other associated terms. In particular, the meaning of the related concept “*eco-innovation*” is debated (Dyllick and Hockerts, 2002), with the question of the social dimension causing some disagreement (Rennings, 2000; Schiederig et al., 2012). ‘Intent’ is also an area of debate. Many authors discuss whether financially-driven improvements which happen to lead to social and environmental benefits as a by-product can be considered SOI (Kemp and Pearson, 2007; Bos-Brouwers, 2010; Carrillo-Hermosilla et al., 2010; Machiba, 2010). Innovation can be classed as incremental, such as a minor efficiency improvement, or radical, providing brand new features, dramatically increased performance or reduced cost (Leifer, 2000). Sometimes, radical innovations result in entirely new products or markets. These innovations may be classed as discontinuous or disruptive (Bessant and Tidd, 2007). The most radical forms of SOI lead to fundamental changes in both the business model and at the wider system level (Machiba, 2010; Adams et al., 2015).

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