

# Sustainable Project Life Cycle Management: the need to integrate life cycles in the manufacturing sector

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## Abstract

The pressure on businesses to incorporate the principles of sustainable development into policies and activities is mounting. Project management methodologies are not excluded from this pressure. The current project management frameworks do not effectively address the three goals of sustainable development, i.e., social equity, economic efficiency and environmental performance. A prerequisite for aligning these frameworks with the principles of sustainable development is a clear understanding of the various life cycles involved in a project and the interactions between these life cycles. The way forward to achieve true Sustainable Project Life Cycle Management in the manufacturing is subsequently outlined.

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## 1. Introduction

The World Commission on Environment and Development (WCED)s report in 1987 is viewed as a major political turning point for the concept of sustainable development [1]. Since then the influence of the concept has increased extensively and it features more and more as a core element in policy documents of governments and international agencies [1]. The World Summit on Sustainable Development (WSSD) in 2002 highlighted this growing recognition of the concept by governments as well as businesses at a global level [2].

The concept of sustainable development is nevertheless inherently vague [3]. The first formal definition of the concept appeared in the 1987 WCED report (later published as a book “*Our Common Future*”) as “*development that meets the needs of the present without com-*

*promising the ability of future generations to meet their own needs*” [4]. There are currently over 100 definitions of sustainability and sustainable development, but most agree that the concept aims to satisfy social, environmental and economic goals. These goals are also referred to as the three pillars or objectives of sustainable development [5–7]. Although the concept is thus understood intuitively it remains difficult to express it in concrete, operational terms [8].

Business, as one of the three pillars of society (the other two being government and civil society) [9], has a responsibility towards the whole of society to actively engage in the sustainability arena [10]. The pressure is therefore mounting for businesses to align operational processes with the three objectives of sustainable development [11]. Four different types of drivers for the incorporation of sustainability in business practices have been identified [12]. An adaptation of the identified drivers is illustrated in Fig. 1.

In order to assist business, the International Institute for Sustainable Development (IISD) has suggested the

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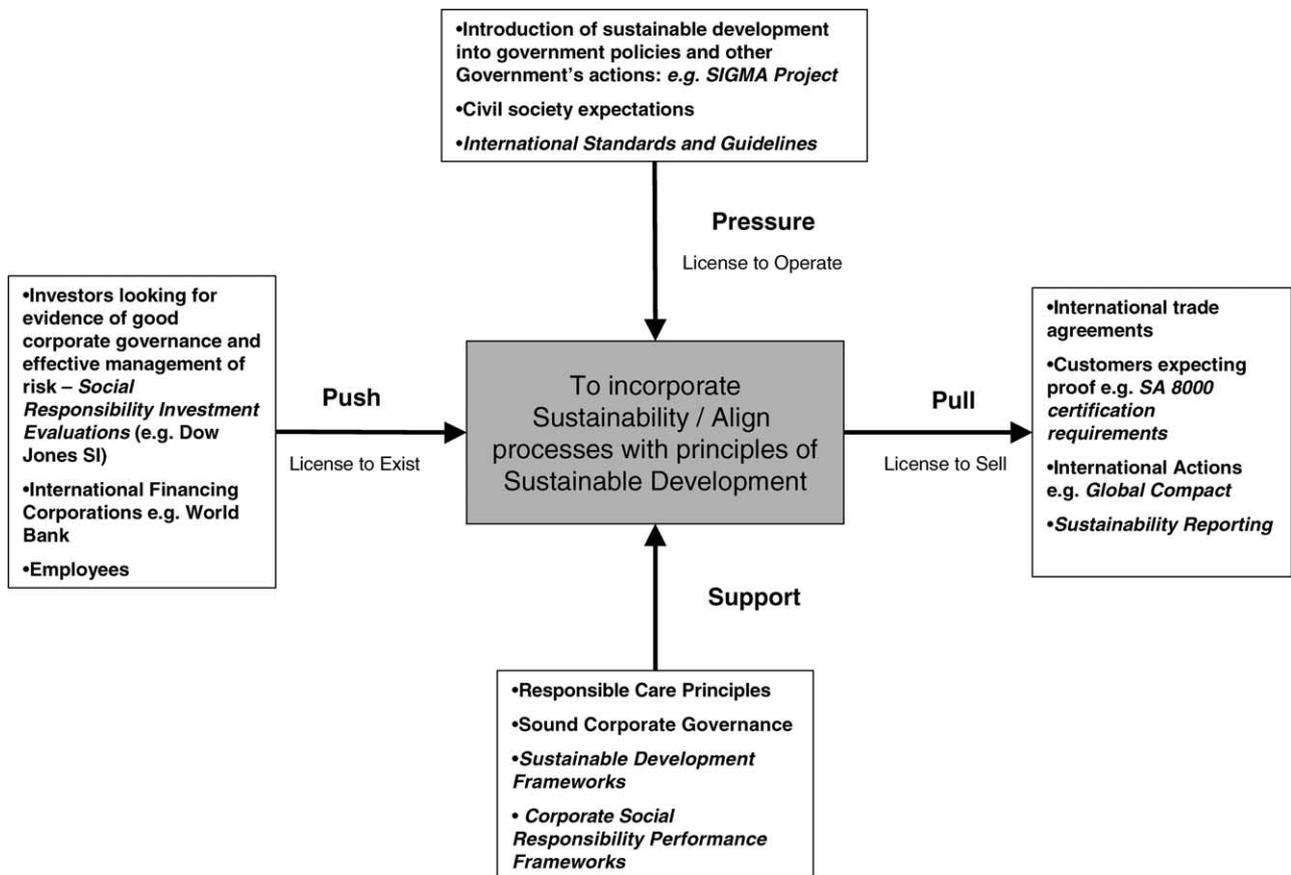


Fig. 1. Drivers for the incorporation of sustainable development in business practices.

following definition of sustainable development for the business community: “For the business enterprise, sustainable development means adopting business strategies and activities that meet the needs of the enterprise and its stakeholders today, while protecting, sustaining and enhancing the human and natural resources that will be needed in the future” [13].

### 1.1. The reaction of business to the sustainability challenge

Three levels within an organisation have been identified that can be subjected to change namely, the Strategic Level, Process or Methodological Level and the Operational Level [14]. In order for sustainability to manifest within a company, change needs to take place on all three levels. This is, however, not currently the case. On a strategic and operational level there are evidence of the integration of sustainability into the business environment. Some companies have started to define sustainable development for their business, while others endorse international agreements or include the principles of sustainable development in the company's vision and mission statements. The majority of emphasis has fallen on the operational level where companies im-

plement Environmental Management Systems and report on the sustainability of their operations in annual sustainable development reports. Companies also tend to place an increasing importance on corporate social responsibility and corporate philanthropic projects.

However, the 2002 PricewaterhouseCoopers Sustainability Survey [15] revealed that of the 101 Fortune 1000 companies that were interviewed, 72% of the respondents do not include the risk and/or opportunities of sustainability in their project, investment and transaction evaluation processes. Research by IWOe-HSG has further revealed that traditional business management systems are solely geared towards financial performance and therefore exclude environmental and social sustainability aspects [16]. Fig. 2 illustrates the statistics from the 2002 PricewaterhouseCoopers Sustainability Survey [15]. The second level of change that is required for an overall sustainability focus (as is shown in Fig. 2), i.e., business processes and methodologies, thus largely ignores environmental and social sustainability aspects.

The traditional top-down and bottom-up approaches to incorporate sustainability within the organisation have not seemed to be effective to a large extent. Practical tools, which systematically include sustainability within the evaluation processes, are needed to align busi-

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