Sustainable Supply Chain Management: A Three Dimensional Framework and Performance Metric for Indian IT Product Companies

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ABSTRACT

In the current business environment firms have started conceding pressure from the government, international agencies and not-for-profit organizations to make their business activities more responsible towards environment as well as society. Their supply chain management has also imbibed environmental and social concern to its reincarnation as Sustainable Supply Chain Management (SSCM). This paper with help of integrative literature review, experience survey and case study method, develops a three dimensional SSCM framework and its performance metric for Indian IT product industry. This framework suggests Supply Chain (SC) actors on X-axis, Management/Economic (M) on Y-axis and Sustainability (S) on Z-axis. The three levels of Y progresses from operational to tactical and then strategic, whereas Z axis levels are innovation, environment and social. The framework identifies sub-dimensions of sustainability and their connectivity with supply chain process. This research also identifies and proposes the Management and Sustainability performance metric for suggested framework. This framework will help IT product companies to (re)design their SC and develop performance measures on identified metrics.

KEYWORDS
Environment, Framework, Innovation, Management, Metric, Social, Sustainability, Sustainable Supply Chain

INTRODUCTION

In the present global and dynamic business environment, survival and growth have become the major challenges for the organizations. Globalization, newer business models, technological advancements and interdependencies on business partners have further increased the complexity of the current businesses. Now the focus of doing business has shifted to integration and collaboration with a greater emphasis on managing their supply chains. Integration of business activities and collaboration with upstream and downstream partners has become an integral part of doing business. Businesses realized that integration and collaboration among the partners for efficient and economic utilization of resources leads to better performance. This realization led to the idea of Supply Chain Management (SCM). The term first appeared in print in 1982, and is attributed to Keith Oliver, a consultant with Booz Allen Hamilton (Ayers, 2006). Mentzer et al. (2001) extensively examined various definition of the terms “supply chain” and presented the following synthesized definition: “A supply chain (SC) is a set of three or more entities directly involved in the upstream and downstream flow of products, services, finances, and information from a source to the customer” (Mentzer, et al., 2001).
Organizations have realized that effective and efficient management of supply chains is essential for present and future survival of an organization (Olhager, Perssom, Parborg, & Rosén, 2002). The importance of supply chain management (SCM) has grown over a period of time and various planning models have been put into practice by organizations across the globe. In the present global scenario, performance of an organization is no longer determined by the decisions and actions that occur within a firm; rather it will depend on the decisions and actions taken in its entire supply chain (Naslund & Williamson, 2010). Therefore, SCM is viewed as managing product flows across multiple enterprises (Ballou, 2007).


In the early 21st century, global and national outlook moved towards human rights, safety and welfare of society at large. The concept of this inclusiveness was also adapted in the supply chain management by the researchers and named Sustainable Supply Chain Management (SSCM). The concept is rapidly being explored by the researchers, supply chain managers, and organizations to include the parameters of TBL of economic performance, environmental safety and social welfare (Elkington, 1998), (Carter & Rogers, 2008). A sustainable supply chain is a supply chain that is not only optimal for the focal firm, but is optimal relative to its environmental and societal impact (Carter & Rogers, 2008).

INDIAN IT INDUSTRY

The Information Technology (IT) is the world’s largest and fastest growing industry. IT is increasingly finding applications in all sectors of the economy and thus is accepted as a key enabler in development (DIT, 2010-11). After the opening up of the Indian economy during reforms of 1991-92, incentives provided by the government in form of lower Value Added Tax (VAT) on software and elimination of duties on imports of information technology products, and investments made for IT and ITES services, IT industry has flourished and India is playing a major role as a technology provider to the world economies.

The IT industry is broadly categorized into IT services and software, Information Technology enabled Services-Business Process Outsourcing (ITeS-BPO) and IT hardware products segment. (OECD, 2010). IT Hardware segment includes personal storage devices, printers, servers, Personal Computers (PCs), supercomputers, data processing equipment and peripherals such as monitors, keyboards, disk drives, plotters, SMPS, modems, networking products and add-on cards (NSDC, 2009).

The share of hardware in total IT spending is expected by Business Monitor International (BMI) to remain above 50% during the 2012-2016 forecast period. BMI forecasts the PC market will grow at a Compounded Annual Growth Rate (CAGR) of 22% between 2012 and 2016. Overall, the hardware market is predicted to grow from an estimated US$9.3bn in 2012 to US$16.0bn in 2016, with PC sales including accessories projected to rise from an estimated US$7.6bn to US$13.0bn over the same period. An annual PC sale which was 11.8mn units in 2011 could rise to more than 30mn by 2016.

The computer software and hardware sector received Foreign Direct Investment (FDI) inflows of US$ 11,640.37 million during April 2000 to January 2013, according to the Department of Industrial Policy and Promotion (DIPP) (OIFC, 2013). This growing market, which is currently sized at USD 13 billion, has been led by Banking, Financial Services and Insurance (BFSI), Manufacturing and
Analyzing the Lead Time and Shipping Lot-Size in a Chaotic Supply Network
Mohammad Jafar Tarokh and Sina Golara (2013). Technological Solutions for Modern Logistics and Supply Chain Management (pp. 163-177).
www.igi-global.com/chapter/analyzing-lead-time-shipping-lot/72846?camid=4v1a

Information Transmission with Quality of Service
www.igi-global.com/chapter/information-transmission-quality-service/37619?camid=4v1a