



Implementing sustainability initiatives in the business processes of Bangladesh

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Abstract

Recently, sustainability has become an increasingly important concern in the corporate world. Even while increasing numbers of firms are embracing sustainability practices at all organisational levels and in their operations and overall business processes, they have yet to meet their stated objectives. Currently available road maps, frameworks, and systems do not provide a solid foundation for long-term organisational change. It has been tested with industry/academic professionals and validated in a local organisation that focuses on sustainability efforts using a four-phase framework based on BPM. This research offers to help organisations integrate sustainability practices into the organization's business processes.

Verification and validation of a conceptual framework have already taken place. Because of its capacity to work cross-process while offering complete control over process performance, the framework is built on BPM concepts. It was then validated through an action research study on a biomass company focused on the development of sustainable energy technologies that wished to improve the implementation of sustainability initiatives in its business processes and operations, using a Delphi study with 21 specialists in Sustainable Operations Management from academia and industry.

Many organisations continue to have difficulty implementing sustainability initiatives. The research found that the conceptual framework of business process management (BPM) can be used to incorporate sustainability principles in an organization's business processes. Because of this approach's potential to enable continuous process improvement as well as to reduce costs and improve customer satisfaction, it can immediately contribute to an increase in environmental sustainability improvements.

Introduction

In recent years, the concept of sustainability has gained increasing prominence in the corporate context. Motivational elements may include, among others, social issues, regulatory aspects, and customer requirements (Epstein et al., 2010). Numerous organisations are devoted to improving their business processes and have implemented sustainability programmes. However, many of them have not yet achieved their projected objectives (Gallotta et al., 2016 and Ahmed and Sundaram, 2012). Every sustainability initiative necessitates organisational changes, ranging from the most fundamental (e.g., replacing disposable plastic cups with individual ceramic mugs) to the most radical (e.g., a company's whole business model). When



organisations attempt to conduct change initiatives to become sustainable, they face numerous obstacles. The project could fail if organisations are unable to overcome a specific obstacle. Some writers Vom Brocke et al., 2012; and Giunipero et al., 2012, have examined and determined the most prevalent obstacles/challenges that organisations experience when adopting sustainability programmes.

Existing roadmaps, frameworks, and systems do not adequately enable a sustainable business transformation, nor do they permit decision-makers to investigate interrelationships and effects between the sustainability components, according to Ahmed and Sundaram (2012). Consequently, because the notion of sustainability continues to be applied haphazardly, practising organisations have significant challenges in reaching their aims of achieving a full sustainability status. This is due to a lack of comprehension and support for the design, development, and implementation process, as well as a lack of adequate procedural and technological support for sustainability management decision making.

Bangladesh Business Environment

Bangladesh, country in South Asia, total area: 147,570 km², per capita income: USD 1,905.7, located in the northeastern portion of the Indian subcontinent in the delta of the Padma (Ganges [Ganga]) and Jamuna (Brahmaputra) rivers. When British colonial rule ended in 1947, the Bengal province was divided into East Bengal and West Bengal. East Bengal was renamed East Pakistan in 1955, then Bangladesh in 1971.

Bangladesh is bordered by the Indian states of West Bengal and Assam to the west and north, Meghalaya and Tripura to the north and northeast, and Assam and Meghalaya and Tripura to the east. It shares a southeastern border with Myanmar (Burma). It now comprises eight divisions, including the megacity of Dhaka. UNDP estimates the current population of Bangladesh to be 168.1 million (2019), with a growth rate of 1.01 percent. Female population (percentage of total population) in Bangladesh was 49.42% and male population (percentage of total population) was 50.58 % in 2019, according to the World Bank's collection of development indicators derived from official sources.

In 2019, Bangladesh's literacy rate was 74.70 percent. 76.67 % for men and 71.95 % for women. In recent years, Bangladesh has made remarkable strides in major human development metrics. According to the 2018 UNDP Human Development Index Statistical Update, Bangladesh ranks 136th out of 189 nations with an HDI score of 0.608, placing it in the category of countries with medium human development. Since 2010, 8 million people have left poverty. The nation is also on track to achieve the first Sustainable Development Goal by 2030, which is the eradication of extreme poverty.

Research Aim, Objectives and Questions

This research aimed to provide a full lifecycle solution for the adoption of sustainability initiatives in business processes by analysing, designing, implementing, and monitoring and



controlling existing (or potential new) processes inside a single organisation. It established methodical procedures for its application, to achieve the aims of achieving full sustainability. Among other organisational benefits, the application may result in cost reduction, process optimization, innovation generation, energy/water consumption reduction, waste generation reduction, customer satisfaction improvement, and employee turnover reduction. The proposed aim was achieved through the following objectives:

1. Identify what are the current problems/barriers to implementing sustainability initiatives;
2. Identify and critically review the current sustainability implementation frameworks found in the literature;
3. Create a framework to effectively implement sustainability practices in organisations;

The research questions of this research are:

- How can an organisation adopt sustainability practices in their business processes?
- What are the benefits to adopt sustainability initiatives in the business processes?
- What are the main challenges to adopt sustainability initiatives in the business processes?
- What is the most efficient way to adopt sustainability initiatives in the business processes?

Literature Review

Sustainability is a phrase with numerous connotations, thus this chapter begins by introducing its fundamentals, including a few definitions and the topic's evolution. The significance of sustainability in the Operations Management scenario is then defended, followed by an explanation of how sustainability initiatives might be implemented. Organizations must do more than adopt sustainability initiatives in their company and operations; they must apply them in their business processes. Current Systems do not handle all sustainability implementation aspects. This chapter concludes with a discussion of the concerns and challenges associated with the present methods for implementing sustainability programmes. The word sustainability has numerous definitions, and these meanings frequently vary depending on whether you are from another culture, from the world of multinational organisations, a small business owner, or an individual attempting to determine what a sustainable lifestyle entails (McNall et al., 2011). However, this term is not easily defined, and several distinct and controversial interpretations can be established.

Sustainability and Operations Management

In recent years, the relevance of sustainability in the corporate environment has increased. Whether motivated by concern for society and the environment, government regulation, stakeholder pressures, or financial gain, the majority of managers recognise the significance of creating sustainability plans and operations (Epstein et al., 2010). According to Gunasakaran et al. (2015), both operations management and management science scholars have begun to focus on Sustainable Operations Management (SOM). SOM covers green supply chain (Darnall et al., 2008), green manufacturing (e.g. Ma, et al., 2018), circular economy (Kirchherr et al., 2017), lean/green manufacturing (Mittal et al., 2017), green procurement (Seuring and



Müller, 2008), and reverse logistics (Srivastava, 2008). SOM has the potential to play a crucial role in addressing the complex sustainability concerns faced by numerous organisations (White and Lee, 2009). Sustainability is an important topic in the current business environment due to the potential cost savings, process optimization, innovation generation, reduced consumption of natural resources, brand enhancement, and increased competitive advantage for businesses that implement sustainability projects. In the past two decades, businesses have been under increasing pressure to consider the environmental and resource impacts of their goods and processes (Kleindorfer et al., 2005), leading to a growth in Sustainable Operations Management (SOM) research (Walker, 2014).

Adoption of Sustainable Initiatives

In the catalytic approach, middle managers introduce and implement sustainability measures (Mirvis and Manga, 2010, Stoughton et al., 2012). Based on their education and indoctrination into their subculture, these middle managers establish their values and views on sustainability (Linnenluecke and Griffiths, 2010). As a result, managers from a specific subculture are anticipated to respond similarly to opportunities and difficulties related to sustainability, while managers from other subcultures are expected to respond differently. According to Gallotta (2016), several authors have investigated the sustainability implementation from various angles, including the Human aspect (Robinson et al., 2006 and Vora, 2013); the Sustainability Indexes/Reporting aspect (Tan et al., 2010 and Ahmed & Sundaram, 2012); and the Project Management side (Tan et al., 2010 and Ahmed & Sundaram, 2012). (Silvius & Nedeski, 2011; Silvius, Schipper and Nedeski, 2012; Agyekum-Mensah et al., 2012).

Companies need to implement sustainability initiatives in their Business Processes

According to Slack et al. (2013), whenever a business strives to meet the demands of its customers, it will employ several processes, both in its operations and in its various roles; each of these processes will contribute in some way to meeting customer needs. Once the organisation decides to restructure its operations, each product is generated from a starting point through processes (which comprise the necessary components for production) to a final stage. This notion is known as "end-to-end" procedure, which fulfils the needs of the consumer. Typically, these end-to-end procedures transcend conventional organisational boundaries.

Nonetheless, a number of sustainability implementation attempts concentrate on a single division of the organisation (IT sector in Uddin & Rahman's (2012) study, warehousing in Tan et al. (2008) and Tan et al. (2010) studies, Logistics in Rossi et al. (2013)'s study). They do not consider, however, that these departments collaborate with other departments to form an end-to-end process (systemic view). According to Michael Porter's (1985) model, products move sequentially through a chain of activities, gaining value at each step. Similarly, the "product" (in the case of a product-based industry) gains some "sustainable effect" in each activity. Therefore, a more comprehensive analysis would evaluate the complete status of the sustainability implementation by considering the interaction of the entire process. According to Houy et al. (2012), when resource scarcity, rising pollution, and the global warming debate



are taken into account, an increasing number of businesses recognise the impending need to improve the sustainability of their business processes. The issue develops increasing relevance in the context of business and compels organisations to make more efforts to improve resource efficiency and reduce waste creation in the context of business activities.

Sustainability Implementation Problems

Numerous organisations are devoted to improving their business processes and have implemented sustainability programmes. However, they have not yet reached the expected outcome (Ahmed and Sundaram 2012). Every sustainability project necessitates organisational adjustments, from the most fundamental (such as replacing disposable plastic cups with individual ceramic mugs) to the most fundamental (such as modifying company operations). Burnes (2003) estimates that between 40 and 70 percent of these reform programmes continue to fail. These projects fail for a variety of reasons, including a lack of management support, improper communication, and stakeholder participation.

However, the failure of the programmes may be due to the difficulties of implementing sustainability initiatives. This endeavour may fail if an organisation fails to overcome a particular obstacle. Few researchers (Frandsen et al., 2013; Seidel et al., 2012) have examined these obstacles. According to Epstein et al. (2010), the obstacles of implementing sustainability efforts include establishing clear and measurable objectives, coping with financial incentive pressures, and understanding stakeholder responses. The difficulty, according to Seidel et al. (2012), is how sustainability factors (such as carbon footprint, renewable energy consumption, waste production, and other environmental performance indicators) may be taken into account in the management of an organization's processes. According to Frandsen et al. (2013), the greatest issue is integrating sustainability within the organisation. According to Poveda et al. (2014), the difficulty comes in the sustainability indicators, specifically in picking the appropriate indicators, determining the measurement method, and aligning them with the project's aims and objectives. According to Giunipero et al. (2012), the primary barriers to sustainability adoption are (1) lack of CEO consensus; (2) costs of sustainability and economic conditions; (3) lack of sustainability standards (covering all three aspects of the Triple Bottom Line) and appropriate regulations; and (4) misalignment between short-term and long-term strategic goals.

According to Ahmed & Sundaram (2012), existing roadmaps, frameworks, and systems do not adequately support a sustainable business transformation nor do they permit decision makers to study the interrelationships and effects between the sustainability dimensions. However, because the notion of sustainability continues to be applied haphazardly, these organisations face significant challenges in achieving their aim of achieving complete sustainability status. This is due to a lack of awareness and support for the design, development, and implementation process, as well as inadequate procedural and technology support for sustainability management decision making.



Defining Business Process Management (BPM)

BPM has developed into an all-encompassing management practise for managing and altering business operations (Hammer, 2010). BPM incorporates elements of the total quality management (TQM) and business process re-engineering (BPR) management techniques from the 1980s and 1990s, respectively (Rosemann et al.2010).

Business Process Management (BPM) has risen in prominence over the past few decades, and many organisations are now focused on identifying and documenting business processes, defining key performance indicators (KPIs) for measuring and monitoring process performance, and implementing means for continuous process improvement and innovation (vom brocke, Gartner, 2013; Rosemann, 2014; vom Brocke & Rosemann, 2015; Zairi, 1997). It provides appropriate tools for the design, implementation, monitoring, and analysis of business processes to enhance value creation inside single organisations and inter-organizational value networks (van der Aalst, ter Hofstede, & Weske, 2003). According to Seidel et al. (2012), in their attempts to manage and enhance business processes, BPM allows business benefits relating to prices, flexibility, time savings, quality, and even sustainable practises (Gallotta, 2016).

Relating Business Process Management (BPM) and Sustainability

According to Vom Brocke et al. (2012), business process management has not explicitly emphasised sustainability as a change aim or driver until recently. Although BPM and Sustainability-related approaches currently exist (e.g. (Hoesch-Klohe et al. 2010; Houy et al.2012; Seidel et al.2012). According to Opitz et al. (2014), green BPM is the sum of all management efforts that help monitor and mitigate the environmental impact of business processes during their design, improvement, implementation, and operation phases, as well as lead to cultural change throughout the process lifecycle. Green BPM is intended to include environmental objectives into the management of business operations. To attain this goal, BPM must be supplemented with ecologically oriented elements, such as the consideration of environmental strategy as part of process strategy or the awareness for energy use and pollution (Houy et al.2012). According to Levina (2015), the majority of sustainability initiatives focus on reducing the general resource usage (such as electricity). Cost savings was the second exclusive goal mentioned by the businesses, indicating that the environmental benefits that result from the accordant activities are considered a by-product of lean or optimisation actions rather than the goal itself, while providing a unique proposition to gain customers and market share. It has been demonstrated that process management strategies, particularly process optimisation techniques, result in environmental advantages, i.e. resource utilisation or waste reduction, without being specifically geared toward developing green processes. Due to the presence of numerous sectors in the study sample, recommendations regarding preferred management strategies for green efforts can vary throughout industries.



Research Methodology and Approach

The study employed two methodologies: the Delphi Study and action research. Action research was performed to validate the framework by testing it in a real-world setting. The Delphi technique was utilised to verify the framework. According to Linstone and Turoff (2002), the Delphi technique is a by-product of defence research. Beginning in the early 1950s, "Project Delphi" was the name given to an Air Force-sponsored Rand Corporation research on the utilisation of expert opinion. The gathering of data for Action Research was based on the observation and resolution of a particular issue. A biomass firm with a focus on the development of sustainable energy technologies and a desire to improve the implementation of sustainability initiatives in its business processes and operations was the subject of the study.



Figure 1: Relation between the stakeholders and the triple bottom line

Results and Discussion

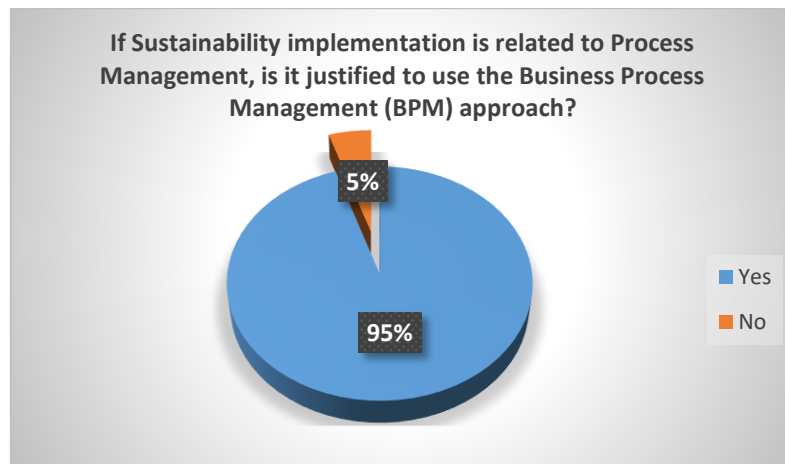
Leadership and cost were highlighted as the primary obstacles to the adoption of sustainability by organisations ("cost" was stated by 54% of the specialists and "Leadership" was mentioned by 23% of the specialists). According to one expert, a company must consider multiple factors in addition to sustainability, such as those stemming from global competition (e.g., profitability, conditions relative to low-cost countries), meeting different customer demands, legislative and not, and responding to other future trends such as digitalisation, flexibility, etc. Another specialist linked the application of sustainability to organisational culture, stating, "In my opinion, the greatest obstacle to implementing sustainable practises in an organisation is organisational culture." Many businesses view sustainability as an added expense or a regulatory duty. There are numerous sustainable business practises, however the majority of businesses have yet to embrace them.

Question 1: Is Sustainability implementation directly linked to Process Management?

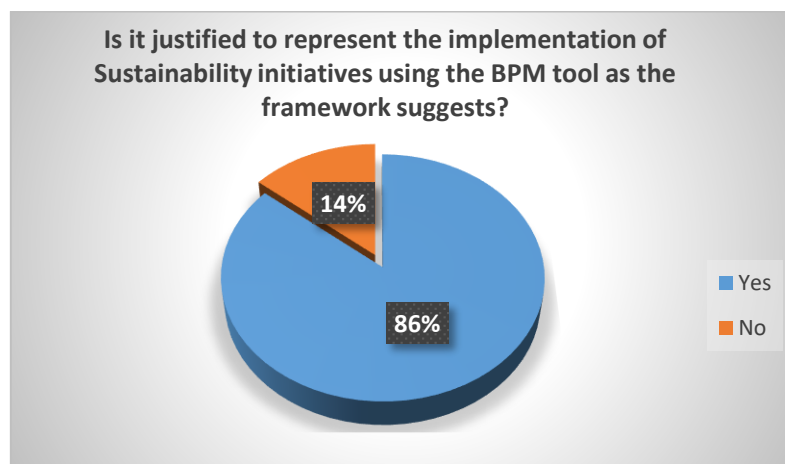




Question 2: If Sustainability implementation is related to Process Management, is it justified to use the Business Process Management (BPM) approach?



Question 3: Is it justified to represent the implementation of Sustainability initiatives using the BPM tool as the framework suggests?

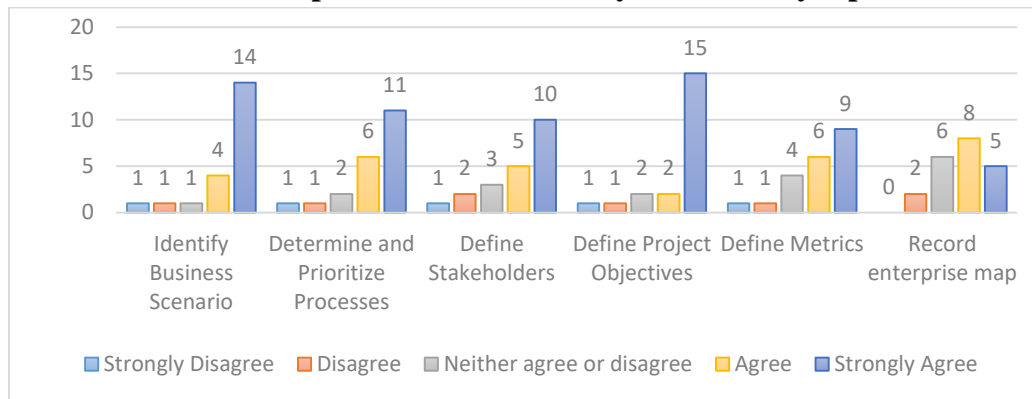


Thus, indicators, Lifecycle assessment (LCA), and triple bottom line (TBL) were the most often used search terms (respectively with 36 percent, 14 percent and 14 percent of the respondents). According to one expert, "the key is to connect these three dimensions to establish the triple bottom line. To attain and evaluate sustainability in terms of Business Processes, a holistic perspective on the triple bottom line is essential. Unfortunately, I get the impression that sustainability is unclear and primarily associated with the strategic level of organisations. To assess sustainability, one must therefore construct a bridge between strategy and operations." as well as corporate procedures that are tied to the sustainability characteristics. Another specialist stated, "To assess all the sustainability dimensions in terms of business processes, it is important to identify how and what the business processes influence each dimension, which activities and aspects are relevant, and which are the hotspots for each dimension so that businesses can prioritise the activities and aspects with the greatest

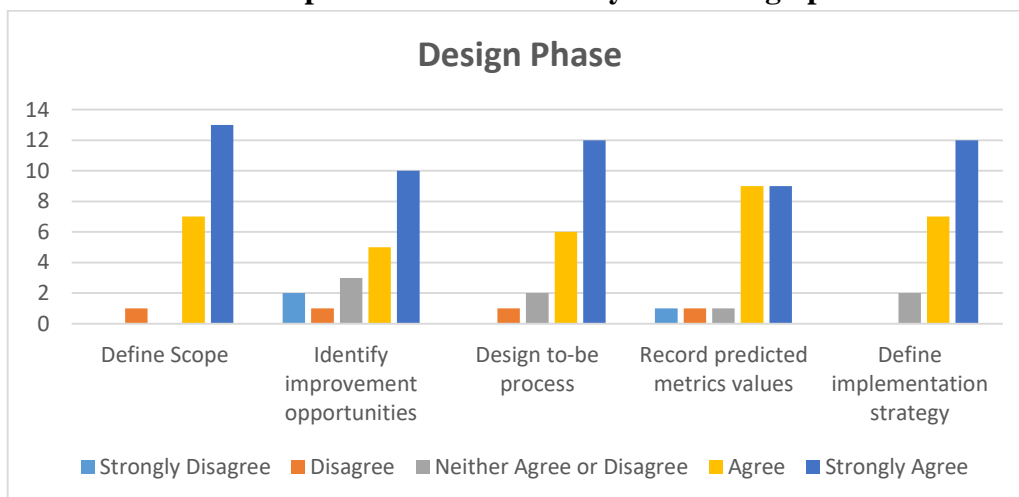


sustainability improvement potential. Thus, businesses could build and execute business process performance indicators, but it remains difficult to resolve trade-offs between the three aspects.

Question 4: Which of the steps would be mandatory for an Analyse phase?



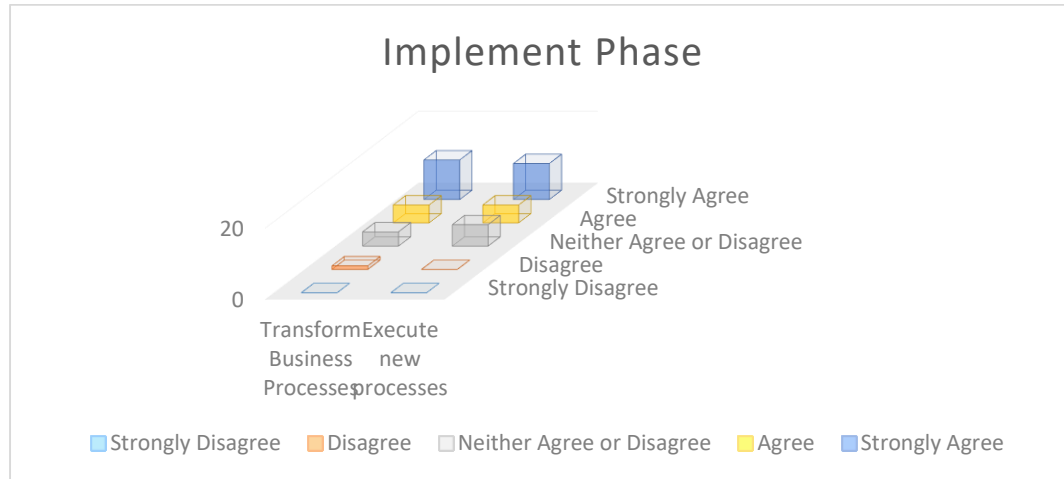
Question 5: Which of the steps would be mandatory for a Design phase?



This research aimed to provide a full lifecycle solution for the improvement of business processes into sustainability business processes in a single organisation by conducting a literature review in the fields of sustainability, sustainability implementation, and Business Process Management; identifying and critically reviewing the best practices frameworks for implementing sustainability projects, and developing a model or framework to assist organisations in implementing sustainability practices. It has been determined that present strategies for implementing sustainable practices do not adequately address the sustainability problem (Ahmed & Sundaram, 2012).



Question 6: Which of the steps would be mandatory for an Implement phase?



Several efforts to apply sustainability focus on a specific division of an organisation (IT sector in Uddin & Rahman's (2012) study, warehousing in Tan et al. (2008) and Tan et al. (2010) studies, Logistics in Rossi et al. (2013)'s study). However, they do not recognise that these departments collaborate with other departments to form a whole process (systemic view). Consequently, a more thorough study would evaluate the whole status of the sustainability implementation by taking into account the interplay of the entire process. Adopting environmentally friendly practices is not a minor task. Several factors of an organisation (such as stakeholders, culture, and business environment) are involved in the implementation of the project, and several barriers exist (such as setting clear and measurable goals, comprehending stakeholder reactions and selecting the right sustainability Indicators). Existing roadmaps, frameworks, and systems do not effectively facilitate sustainable business transformation, nor do they allow decision-makers to analyse the interrelationships and implications of the sustainability components. Moreover, a majority of existing solutions tend to focus on a specific segment of the organisation. This goes against recent administration theories that emphasise process-centricity as a vital quality for boosting organisational effectiveness. Consequently, a more thorough analysis would evaluate the status of the overall implementation of sustainability by examining the interaction of the entire process.

The World Bank has already noticed that Bangladesh has a history of growth and development despite numerous natural disasters, fuel and food price crises, and other obstacles. Goldman Sachs refers to Bangladesh as one of the "Next Eleven" rising countries in December 2005. Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, the Philippines, Turkey, South Korea, and Vietnam also appear on this list. Bangladesh was listed by JP Morgan (2007) as one of the 'Frontier Five' countries with significant economic and investment prospects, alongside Vietnam, Nigeria, Kazakhstan, and Kenya. Bangladesh is on a growth trajectory in which poverty has decreased by roughly a third while life expectancy, literacy, and food output per



capita have improved dramatically over the previous two decades. Bangladesh's largest shopping mall is evidence of the country's recent economic boom. Foreign Direct Investments (FDIs) are enabling Bangladesh to become a consistent performer in the global economy. Nationwide, Bangladesh administers eight exporting zones that permit 100 percent foreign ownership of businesses. The Economist Intelligence Unit (EIU) forecasts that the real GDP of Bangladesh would grow at an average annual rate of 6.30 percent, as private consumption and investment will continue to develop steadily. Foreign investors are permitted up to a one hundred percent equity stake, and all sectors are accessible to private investment (exceptions are defence and armaments; nuclear energy production; forestry; currency printing, railways and air transport). With a wide consumer market (youth with rising earnings), Bangladesh's enormous populace is optimistic about private spending. Bangladesh is a prospective destination for foreign direct investment due to its favourable geographical location (placed between South Asia and South-East Asia) close to India and China and its low labour costs. The Foreign Private Investment Act protects the repatriation of money and dividends and offers legal protection against nationalisation and expropriation. Bangladesh is a founding member of the South Asian Association for Regional Cooperation (SAARC) and the South Asian free trade area, together with India and Pakistan (SAFTA).

Conclusion

Notwithstanding, many sustainability implementation programmes have targeted a single department of an organisation, such as IT (Uddin and Rahman, 2012), warehousing (Tan et al., 2010; Tan et al., 2008), logistics (Rossi et al., 2013), etc. They do not consider, however, that these departments collaborate with other departments to form an end-to-end process. According to Porter's (1985) model, items move sequentially through a chain of activities, gaining value at each step. Likewise, we might consider that the 'product' (in a product-based sector) gains some sustainability impact' in each activity. Therefore, a more comprehensive analysis would evaluate the complete status of the sustainability implementation by considering the interaction of the entire process.

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