Models for Transforming Businesses Toward Sustainability

Julia Dobreva
VUZF University, Sofia, Bulgaria

The aim of this paper is to highlight the importance of modern day need for business transformation toward sustainability and the implications will have for the development of the economy. The theoretical base is focused on detailed analysis of a number of existing models for sustainable transformation of business, including the “blunders” that harm the efforts of the enterprises to become more sustainable and prevent new problems from emerging in the overall process and the sustainable maturity. The interventions which cause change toward sustainability are considered to be the solution that serves to fix flaws in organizational design and operations. Sustainability is considered as an on-going process and needs to be based on sound models which decision-makers should follow when transforming their organizations. A case study is provided as an example for the models’ applications.

Keywords: sustainability, business transformation, organizational design

A number of recent scientific studies have demonstrated the need for transforming business practices toward sustainability (Creamer & Amaria, 2012; Edelkraut, 2014). It has come not only as a result of the need to contribute to global initiatives for reducing environmental degradation, but also as a necessity to survive in today’s business climate and preserve competitive advantage on the market through transformative changes and innovative economics. The integration of environmental, social, and economic objectives into the corporate strategies is a key to the transformation of business operations toward sustainability. Moreover, modern day challenges comprise not only of the scarcity of resources and the social problems arising from income inequalities. Companies need to meet the expectations of the stakeholders of a company, like its clients, suppliers, investors, employees, or society in general and manage these challenges to benefit from the transformational power of the development and thus make sustainability a key success factors (Hahn & Scheermesser, 2006). At strategy level, several types of sustainability strategies exist (Baumgartner, 2005; Schaltegger, Herzig, Kleiber, & Muller, 2002). In addition, Baumgartner and Ebner (2010) distinguish inverted sustainability strategies (risk mitigation focusing on fulfilling legal and other external standards), extroverted sustainability strategies (legitimizing approaches focusing on external relationships), conservative sustainability strategies (focusing on eco-efficiency), and visionary sustainability strategies (holistic approaches focusing on sustainability issues within all business activities). Also, a wide range of management tools have been developed for the implementation and measurement of corporate sustainability (Schaltegger et al., 2002).

The common trait, which most business operations share in the process of transformation, is the fact that change toward sustainability does not come as a linear process. It usually involves movement throughout the system—backwards, forward, up, and down. The solutions used to overcome the obstacles should be
interconnected and form a coherent system; otherwise no intervention on its own can generate successful change. Each element of the system affects and is affected by the other solutions. Moreover, weak interventions may confine the entire change process and cause it to fail (Doppelt, 2010). The core of sustainability for most companies involves clean and efficient operations. This translates into enormous potential for companies to save money and boost performance through tighter supply chains as well as to grow revenues by designing products and services that help others to “reduce, reuse, and recycle”. The problem is that the road to sustainability traverses a broad range of issues, including strategy, organization, culture, technology, finance, and even law. The trick for the companies is to carve out a practical, manageable path to sustainability that produces ROI (return on investment) every step of the way. Companies are being pressured from many directions to become more sustainable. Consumers are asking for greener products; corporate consumers are requiring suppliers to adhere to green criteria; shareholders are demanding greater social and financial accountability; and governments are passing laws aimed at reducing waste and curbing CO2 emissions (Deloitte, 2015).

The most prominent sustainability measurement systems are the Sustainability Balanced Scorecard (SBS) as well as the sustainability maturity models. The implications for applying SBS are that for companies to contribute to sustainable development, it is desirable that corporate performance improves simultaneously in all three dimensions of sustainability—economic, environmental, and social (Figgie, Hahn, Schaltegger, & Wagner, 2002). On the other hand, the sustainability maturity models, which are based on the concept of following required stages of development, can be used to objectively evaluate a company’s state with regard to sustainability.

In this study, the author will make a general overview of a number of transformative models for implementing sustainability in business enterprises. Some decision models will be proposed, which follow a common matrix by aligning economic, social, and ecological objectives. Finally, to prove that the models are applicable and useful for obtaining valuable results, the analysis provides an example of how a specific company can change after being privatized and transform toward sustainability by improving at the same time its profit generating capacity.

**Modeling Business Change Toward Sustainability**

In his study, Doppelt (2010) introduced the “wheel of change toward sustainability”, which consists of seven solutions to business operations and the blunders they address (see Table 1). Although change is not linear, the interventions of this model form a natural progression. Each action provides a fundamental building block for the next. Change results from cumulatively progressing through the three overall change modules embedded in the process as well as from the sequential completion of each separate intervention.

The first three solutions—change the dominant mind-set, organize deep and wide teams, and adopt sustainability visions and principles—combine to create a new organizational mental model and organizing framework. The fourth and fifth solutions—develop operational and governance change strategies and communicate with them—establish the means to design and test new ways of thinking and operating. The last two steps—foster learning and embed sustainability in standard operating procedures provide the means to make sustainability grow and stick over the long term.

Doppelt (2010) claimed that in order for each change module to provide a foundation for the next, each of the individual interventions must be satisfactorily completed, e.g.:
(1) Only after a sufficiently compelling case for change has been established will the right people willing to participate in the development of sustainability plans;

(2) Only after powerful transition teams are organized can an inspiring new purpose and vision for the organization be adopted;

(3) Only after people become clear about what they are striving to achieve and how this differs from their previous purpose can effective sustainability strategies be developed.

Also, because the process of change is circular, organizations can start anywhere on the wheel. No matter where change begins, eventually all of the seven interventions of the change process must be sufficiently completed, otherwise the effort will fail. The lack of clarity about the future sustainability image of the organization might be a cause for confusion and terminate temporarily the process of change. On the other hand, the adoption of operational and governance-change strategies and/or the production of some highly visible success may help people gain clarity about what they are striving to achieve. Yet, if effective leadership does not exist or a business as usual mentality has not been sufficiently undermined, it is highly unlikely that a sufficient number of skilled, credible, and politically powerful people can be engaged in the change effort. It is impossible to develop a shared understanding of a new vision or purpose without broad-based involvement. Therefore, timing and good leadership are the most important elements in any process of becoming more sustainable.

However, improving sustainability performance involves more than implementing solutions (Deloitte, 2015). It also involves revising business practices, instituting governance programs, and managing change. Deloitte and Oracle, for example, align people and processes and enable them with technology. Some of the green areas in which they assist companies in their efforts to reduce waste and improve productivity include:

Table 1

<table>
<thead>
<tr>
<th>Blunders</th>
<th>Solution</th>
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<tr>
<td>Patriarchal thinking that leads to a false sense of security</td>
<td>Change the dominant mind-set that created the system through the imperative of achieving sustainability</td>
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<tr>
<td>“Siloed” approach to environmental and socioeconomic issues</td>
<td>Rearrange the parts of the system by organizing deep, wide, and powerful transition teams</td>
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<td>No clear vision of sustainability</td>
<td>Alter the goals of the system by crafting an ideal vision and guiding principles of sustainability</td>
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<tr>
<td>Confusion over cause and effect</td>
<td>Restructure the rules of engagement of the system by adopting source-based operational and governance-change strategies</td>
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<tr>
<td>Lack of information</td>
<td>Shift the information flows of the system by tirelessly communicating the need, vision and strategies for achieving sustainability</td>
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<tr>
<td>Insufficient mechanisms for learning</td>
<td>Correct the feedback loops of the system by encouraging and rewarding learning and innovation</td>
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<tr>
<td>Failure to institutionalize sustainability</td>
<td>Adjust the parameters of the system by aligning systems, structures, policies, and procedures with sustainability</td>
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Note. Source: Doppelt (2010, p. 106).

Sustainability Reporting

(1) Leverage enterprise systems to reduce the lead time necessary to generate sustainability reports;

(2) Track and analyze environmental metrics internally through business intelligence applications;

(3) Implement a governance, risk and compliance framework for managing and tracking environmental sustainability processes and initiatives.
Green Data Center Practices
(1) Virtualize and consolidate servers, which can be facilitated via technologies to reduce energy costs and decrease system maintenance;
(2) Leverage the advanced storage management capabilities available in some enterprise systems to reduce storage requirements and decrease energy use;
(3) Consolidate applications using a global, single instance model to save money on energy and hardware;
(4) Better manage workloads, using technologies to allocate spare server capacity and deploy additional processing power to production systems.

Environmental Compliance and Supply Chain Optimization
(1) Manage products’ environmental compliance;
(2) Optimize supply networks;
(3) Reduce manufacturing costs and environmental impacts via lean manufacturing principles;
(4) Shrink transportation and energy costs;
(5) Increase efficiencies in reverse-logistics;
(6) Decrease paper waste using customer self-service, customer e-billing, and contact center solutions.

Muller and Pfleger (2014) provided exemplary ideas on how to improve working conditions in production processes (social perspective) or optimization of delivery routes (ecological perspective). They complement these two perspectives (first: corporate activities; second: dimensions of sustainability) by additionally introducing a way to capture the progress of sustainability actions, adapting the basic idea of stages of development and maturity to sustainability context. The analysis results with the design of Sustainability Maturity Cube, which serves as a blueprint of how an organization can structure the field of action for the transformation toward sustainability. This model serves as a basis for the installation of concrete sustainability maturity models and for deriving corporate actions. Furthermore, the model opposes the costs and benefits of sustainability actions in order to determine how these should be implemented, considering their economic effect. Hence, the assumptions behind this Sustainability Maturity Cube are that the economic dimension needs to be treated with a special focus—on the one hand, it is one of the three main pillars of sustainability, on the other hand, as companies need to follow economic principles to preserve their competitive advantage and gain long-term business success, it emerges as an additional organizational incentive when engaging in sustainability transformations and therefore should be differentiated from the other two dimensions.

The Sustainability Maturity Cube
In their study, Muller and Pfleger (2014) claimed that depending on the progress and strength of the transformation toward sustainability in the respective company, different stages of development within each sustainability dimension and corporate activity, and hence within each starting point, can be reached. A company that has already implemented sustainable actions at some stages could have achieved a certain level of maturity in some of the identified corporate activities and thus can improve its actual situation by further transformation.

The perspectives, namely the corporate activities, the dimensions of sustainability, and the respective sustainability maturity levels form a cube that structures the possible field of action regarding transformations toward sustainability. One field of the cube represents the description of a certain sustainability maturity level
in one of the three dimensions of sustainability for one identified corporate activity. Thus, the Sustainability Maturity Cube can be used as a blueprint which is based on acknowledged scientific concepts to support the systematic improvement of sustainability management by considering certain corporate activities, the three dimensions of sustainability and the corresponding stages of development. Of the three perspectives of the cube, only the operationalization of the dimensions of sustainability is fixed.

The focus of the model is that implementing actions to improve sustainability (and thus the sustainability maturity level) requires investments. These payments may differ from starting point to starting point and may not be necessarily completed in one period: Therefore, the net present value of the investment will be applied. Whereas small improvements of the sustainability maturity level can be implemented relatively straightforward, greater improvements are expected to require a more complex approach, resulting in higher cash outflows.

Another model for business sustainable transformation is proposed by Dobreva (2015). The study introduces a model for developing sustainable SMEs (small and medium-size enterprises). The author suggests that the role of SMEs in contributing to sustainability could be discussed in five major aspects: innovation development, social contribution, environmental contribution, good management and leadership practices, contribution to local networking incentives and NGOs (non-governmental organizations) (see Figure 1).

SMEs are the most appropriate environment for generation of innovation and development of innovative mechanisms. They are easily adaptable to macroeconomic fluctuations and most ready to respond to the needs to invest in improvements of processes and products (incremental improvement) or developing products/services which are entirely new (radical innovation). In most cases, innovation in SMEs is an imitation of existing practices through the process of learning by using or learning by doing (Favaretto, 1989). The indicators which are most often used to monitor the level of innovation in SMEs are R&D (research and development) expenditure, personnel employed in R&D and number of patents.

The next aspect is social contribution of small and medium businesses. Social entrepreneurship is particularly promising in SME environment, when social problems are to be adequately solved—e.g., alleviating poverty, providing employment opportunities, integrating people with disabilities, etc. Hence, SMEs have high levels of social contribution as they are easily adaptable to changing economic and social environment.

Equally important is the contribution of SMEs in solving problems of environmental concern. SMEs individually have, by definition, very limited operations, and therefore would not have the potential to impact the environment, to the same degree, as very large businesses (Gadenne, Kennedy, & Mckeiver, 2009). Yet, it is primarily in the limited scope of their performance that we can expect to identify motivating factors for environmental contribution of such companies. They are largely driven by the high competition among SMEs occupying the same market position as well as the close relationship established both with customers and suppliers, which provides for tight environmental requirements being set out by both parties.

Good management and leadership practices are of paramount importance when developing sustainable SMEs. They are particularly manifested in environmental management and pollution control (Perez-Sanchez, Barton, & Bower, 2003), as well as in managing activities with significant social impact. Hence, SMEs are the proper environment for implementing CSR (Corporate and Social Responsibility) practices with local as well as national impact.

Local networking incentives and NGOs work in close cooperation with SMEs, acting as intermediaries between the government and business as well as between local communities and small companies. NGOs and
SMEs might work together in developing sustainable local markets and this cooperation is expected to be organized on several levels of networking aggregation, although they might have different perspectives on sustainability. While NGOs’ main aim is to promote development, SMEs’ main aim is to produce products or deliver services at the market (Castro Aponte, 2013).

![Diagram showing the contribution of SMEs to sustainability. Source: the author’s own model based on analyzed case studies (Dobreva, 2015, p. 290).](image)

**Model Application—Case Study in Bulgaria**

Solvay Sodi Ltd. is one of the biggest industrial enterprises in Bulgaria and the largest plant in Europe for production of synthetic calcinated soda, which has a nominal capacity of 1.5 million tons of soda per year. The company was privatized in 1997 when its capital was shared by the international chemical group Solvay (75%) and the Turkish chemical group Shishedjam (25%). The calcinated soda is the main raw material for the production of glass and is also used as ingredients for detergents and washing powder. The company exports 90% of the products. After its privatization, a number of investment projects have been implemented at the total amount of more than one billion leva (approximately 500 million euro) for increasing the scope of the production capacity, modernization and renewal of the installations and for preventing environmental damage.

The latest big investment is the building of a new distillation installation which will ensure additional energy savings and will contribute to the achievement of the national goals to reduce the energy intensity by 2020. It is expected that once the installation starts functioning, the use of steam will be significantly reduced and the direct effect will be the reduced production of heating energy, as well as the decreased demand of crude oil and CO2 emissions.
This new vacuum absorbing and distillatory installation is an element of a whole investment project at the amount of 200 million leva (approximately 100 million euro), which the company plans to implement by 2017. Another investment in this project is the construction of a second brewery by using an exceptionally modern technology, which is unique for Bulgaria.

In addition, the company has participated in a number of social and cultural activities and has significantly contributed to the training and development of its employees.

The analyzed case with Solvay Sodi Ltd. follows the sustainability model by complying with:

1. Ecological commitment—constant improvement of the products with a view to reduce the consumption of power and other resources that are involved in the use and production of products;

2. Social commitment—acting responsibly toward employees with the direct participation of the employees in the success of the company as well as actively supporting social and cultural activities in the region;

3. Economic commitment—significant investments have been made for sustainable and long-term economic activities which are more important than achieving short-term profits.

Conclusions and Implications

This study provided a broad overview of some basic models for business transformation toward sustainability. The results of the study can be used as a basis for company transformation as well as to systematize the decision making process of the management of such enterprises. The approaches presented in the analysis allow aligning economic, social, and ecological objectives by determining the increase in sustainability and highlighting the importance of the economic dimension. A case study was also included to illustrate the models’ applicability and to stress on the role of investments for achieving higher levels of sustainability.

References


