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## QUALITY AND INNOVATION IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

Anca Cristina Stanciu<sup>1</sup>, Elena Condrea<sup>2</sup> and Veronica Popovici<sup>3</sup>

<sup>1) 2) 3)</sup> "Ovidius" University of Constanta, Romania

E-mail: castan22us@yahoo.com; E-mail: elenacondrea2003@yahoo.com;

E-mail: verovnp@yahoo.com

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### Abstract

Quality and innovation are two important strands and challenges for sustainable development, which have not been linked in the scientific literature yet. This paper shows some of the issues posed by research for sustainability. Understanding and bridging this division offers a theoretical approach to the study of action for sustainability because that could turn out to be the greatest inspiration for innovation ever seen. The paper aims to analyze the opportunities offered by the binomial quality - innovation in facing challenges for a sustainable development. Meanwhile, there is some consensus in the business environment on the fact that corporate social responsibility strategy and sustainability management objectives must be aligned as social investments and measured in quality and economic terms.

**Keywords:** quality, innovation, sustainable development, corporate social responsibility

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### Introduction

The global challenge for sustainability has already begun to transform the competitive landscape, which will determine companies to change the way they think about products, technologies, processes, and organization systems. In that context, the key to progress and development, particularly in difficult times, seems to be the binomial quality- innovation. Quality and innovation are two important strands and challenges for sustainable development, which have not been enough linked in the scientific literature yet. The literature review would mainly aim at gaining understanding of the complex and comprehensive relation between quality and innovation. Both concepts are widely explained and developed in research studies, but their synergy has not been adequately studied and used in business models. While some studies found a positive association between quality management practices and innovation (Feng, et al., 2006), others showed no such connection (Santos-Vijande and Alvarez-Gonzalez, 2007). Specifically, it is possible to note the concepts of quality innovation and innovation quality from the literature, but the former is more closely related to investments in products/services during

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their life cycles, and the latter is a wider concept and is related to the innovation of products, processes and systems (Renzi, 2016).

Regarding concerns about the subject, it is worth mentioning that the main theme of the 19th QMOD/ICQSS conference held in September 2016 in Rome, was: Building a Culture for Quality, Innovation and Sustainability.

The main purpose of this paper is to highlight the power of a quality-innovation model in order to achieve a sustainable way to develop a business. There are companies that have developed new business models just by asking themselves, at different moments, what their business should be. Most executives assume that creating a sustainable business model entails simply rethinking the customer value proposition, but traditional approaches to business will collapse, and companies will have to develop innovative solutions, where quality should be in the front line. That competitive advantage could place them in good stead, because sustainability will always be an integral part of development.

### **Content/Background**

In agreement with an attitude of sustainable development that any company needs, Dow Jones introduced in 1999 an index measuring how a company works from this point of view: Dow Jones Sustainability World Index (DJSWI). In recent years, more and more investors have taken this index into account when they decided to invest in a particular company. According to the sustainable development knowledge platform, United Nations take into consideration 17 goals: no poverty; zero hunger; good-health and well-being; quality education; gender equality; clean water and sanitation; affordable and clean energy; decent work and economic growth; industry, innovation and infrastructure; reduced inequalities; sustainable cities and communities; responsible consumption and production; climate action; life below water; life on land; peace, justice and strong institutions and partnerships for the goals (United Nations, n.d.1). The 17 Sustainable Development Goals and 169 targets, which the United Nations are announcing today, demonstrate the scale and ambition of the new universal 2030 Agenda for Sustainable Development. The Goals and targets will take into consideration and balance the three dimensions of sustainable development, i.e. economic, social and environmental, and stimulate action over the next fifteen years in areas of critical importance for humanity: people, planet, prosperity, peace and partnership (United Nations, n.d.2).

The High-level Political Forum on Sustainable Development is the central UN platform for the follow-up and review of the 2030 Agenda for Sustainable Development adopted at the United Nations Sustainable Development Summit on September 25, 2015.

Consequently, we can say that there is no alternative to sustainable development. In the management of sustainability, businesses need to take into account economic, technological, environmental, socio-cultural and political elements.

Traditionally, economic progress has been measured in terms of the quantity of economic activity (GDP) and the size of the economy. In a sustainable world, the key issue is the quality of economic activity, the extent to which it meets real needs, and whether it respects ecological limits. At a product level, quality refers to durability, reparability and upgradability. The challenge for companies is to combine increasingly rapid technology cycles with longer product life cycles (United Nation, n.d.2).

The innovation and creation of new and more sustainable industries are stimulated by investments in research and development. According to United Nations Platform, global expenditure on research and development as a proportion of GDP stood at 1.7 per cent in

2013. This figure masks wide disparities. Expenditure on research and development was 2.4 per cent of GDP for developed regions, 1.2 per cent for developing regions, and below 0.3 per cent for the least developed countries and landlocked developing countries. The number of researchers per 1 million inhabitants showed a similar pattern. While the global average was 1,083 researchers per 1 million inhabitants, the ratio ranged from 65 per 1 million in the least developed countries to 3,641 per 1 million in developed regions (United Nations, 2016).

Moreover, to achieve progress towards sustainability, it is crucial to develop a realistic and viable vision of a sustainable world and a greater participation of companies, stakeholders and employees, because sustainability is not only about preserving environment but also social and cultural assets.

### **Quality and innovation**

Innovation provides quality professionals with a great opportunity to contribute to corporate performance more visibly. Gupta believes that innovation is the new face of quality and quality profession is evolving, from product control to quality assurance to advocacy (Gupta, 2009).

The main challenge is to determine how quality and innovation may be integrated into a coherent and powerful strategic package. Both quality and innovation play vital roles for businesses to remain competitive. While innovation aims for breakthrough, quality aims for high and sustainable performance in existing business areas, the two concepts being mutually dependent. It requires expertise, commitment, coordination, and innovative ideas to achieve.

There are studies about the relationship between quality management practices and innovation considering that organizational capability to manage quality processes may play a vital role in identifying routines, establishing a learning base, and supporting innovative activities (Dong-Young, [Kumar](#) and Kumar, 2012).

Quality management has the potential to invigorate an organization's product, process and administrative innovation. The positive relationship between quality management and innovation is moderated by the effects of organizational size, task and managerial ethics.

Social quality management practices enhance the use of technical quality management practices, and, in turn, the use of technical quality management enhances social quality management and innovation. Quality management is fundamental not only on a managerial level, but also among lower level employees. Social quality management, unlike technical quality management, focuses on employee empowerment which enhances innovation (Schniederjans and Schniederjans, 2015).

Obviously, the tools of quality management are very supportive in the development and management of innovation. Most of the organizations try to generate new ideas for innovation either by the measurement of customer satisfaction or by listening to the ideas of the members of the quality team, like in benchmarking practice.

The European Foundation of Quality Management has recently integrated the innovation concept into the quality management model. Innovation is linked to quality and should be an important part of quality management; the real issue is now to state how to assess this supporting culture of innovation, what the components are, and how it leads to high quality organizational performance (Anon, 2015).

Therefore, the concept of innovation quality allows for making a statement about the aggregated innovation performance in every domain within an organization by comparing

the result with the potential, and considering the process on how the result has been achieved. Starting from this basis, it will now be possible to integrate the concepts of quality and innovation. That's why we can say that there are strong similarities between innovation management and quality management (Anon, 2015).

In recent years, economic, environmental, and social forces have quickly given rise to the "sharing economy," a collective of entrepreneurs and consumers leveraging technology to share resources, save money, and generate capital; that could also be met on the innovation market, because it is in fact a socio-economic ecosystem built around the sharing of human, physical and intellectual resources (Shaheen, 2016).

A sharing economy is a robust, sustainable economic system that is built around a long-term vision, considering the impact and consequences of present day actions on the future (Matofska and Sharer, 2016).

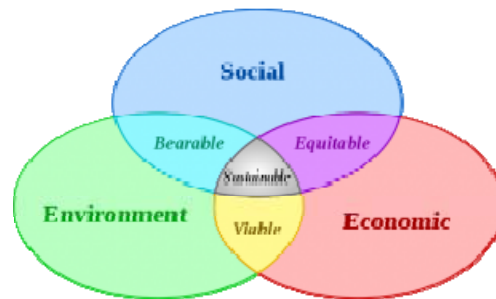
Open Sustainability innovation is the integration of the consumers' ideas into the process of innovation. This means that the creation of innovation should come largely from the consumer's input and ideas, that prove strong link with the feedback element of the TQM (Total Quality Management) (Anon, 2016).

**Sustainable development versus CSR**

Sustainable development and Corporate Social Responsibility are closely related business concepts that have greatly affected corporate governance in the early 21st century. One factor integral to both sustainable development and CSR is the environment. Both emphasize environmental preservation, recycling and renewal programs.

Sustainability is often equated or confused with a company's Corporate Social Responsibility (CSR) activities. In fact, the policy of sustainable development should include or incorporate the CSR actions of a company. At least, CSR actions should follow and comply with sustainable development policy.

Sustainable development recognizes the inseparable link between people, the planet, and wealth, and so does CSR; it advocates for policies that fully consider these three components to ensure that none negatively impacts on the others (Institute for International Urban Development, 2012). A program that is enacted "sustainably" means that attention has been given to meeting human and environmental needs, as shown in Figure no 1:



**Figure no.1: Sustainability Venn Diagram**

Source: Institute for International Urban Development (I2UD)

Therefore, companies have started to integrate the principles of sustainable development in business, business processes, and their philosophy of work requires that CSR shares held by the company contain a significant component of sustainable development. Basically, it wants any direct action supported by the company or company to achieve goals and obtain long-lasting results. Many managers believe that CSR actions should be subordinated to the company's sustainable development policy (Mandache, 2016).

In their book "The Debate over Corporate Social Responsibility", May et al. (2007) provide detailed evidence in the interrelationship between CSR and sustainable business. According to them, both concepts highlight the notion of balancing economic interests versus social and environmental interests and the current versus future generation's interests. However, they quoted Foot and Ross's (2004) argument that sustainability or sustainable business is a broader concept compared to CSR (May, Cheney, and Roper, 2007).

These two terms can seem interchangeable, but there are some differences between them, in terms of: vision, targets, business, management, reward and drive (Last, 2012). CSR and sustainability are interrelated and many use them interchangeably as well. However, we find it useful to distinguish between CSR and Sustainability in a business context.

In a world where the two terms are slowly becoming intertwined, should we focus on the similarities or the differences? There is a multi-dimensional view of CSR, known as [4CR](#). This incorporates three interlinked movements in the corporate world: CSR, sustainability and worldwide reforms on corporate governance (Knowless, 2014).

It is useful to think about sustainability that is the context in which the business will operate, especially with a focus on the natural resources it consumes both directly and indirectly, but the key challenge for companies today is that best practice quality management systems (QMS) for applying CSR are not total readily available, against which a company can benchmark its efforts in this regard. However, in the meantime, various organizations have developed resources, analyzed and offered guidance on various aspects of CSR.

#### **Quality - Innovation - Sustainability**

Sustainability is generally defined as achieving 'triple bottom line' success. Triple bottom line has also been called 'full cost accounting' and when success shows economic, environmental and social profit (some people say: People, Planet, Profit as a way of referring to the triple bottom lines of sustainability) (Anon, 2007).

In the interdependent and competitive global economy, one must find true competitive advantages based on features and capability rather than quality alone. Deming used to consider the four pillars of quality as:

- improvement of current product(s) and service(s);
- innovation of product(s) and service(s)
- improvement of current processes
- innovation of processes.

The quality of innovation becomes a differentiating factor. The quality of innovation implies how well each business is equipped to innovate and offer high-volume custom solutions. Thus, the businesses will be moving from quality improvement to innovation improvement (Elkington, 2011).

There are opinions considering sustainability the new total quality management. Looking back in time, International Standards Organization launched its first quality standard, ISO

9000, in 1987, focusing on the management of quality in business. Later, in 1996, it came up with its family of environmental quality standards, starting with ISO 14001. And most recently we have ISO 26000, released in 2010, and designed to bring social responsibility (Elkington, 2011).

Many authors consider that TQM can become "even more compelling and exciting" if it works out how to embrace sustainability. In 2009, Nidumolu and Rangaswami, in the Harvard Business Review, declared sustainability to be the "key driver of innovation" (Elkington, 2011).

Innovation, quality management and community action are also important strands for sustainable development. The opportunities presented by grass-roots innovation are the challenges confronting activity at this level ([Seyfang](#) and Smith, 2007). Using the binomial Quality-Innovation, enterprises face different challenges and must develop new capabilities to tackle them by following 5 stages (Nidumolu, Prahalad and Rangaswam, 2009):

- viewing compliance as opportunity;
- making value chains sustainable;
- designing sustainable products and services;
- developing new business models;
- creating Next-Practice Platforms.

Focus on sustainability, quality and innovation will take companies beyond process and product, towards management policies and practices, organizational structures, and beyond the borders of their organizations.

### **Conclusions**

Understanding and bridging the complexity of the relationship between quality, innovation and sustainability offers a theoretical approach to the study of action for sustainability because that could turn out to be the greatest inspiration for innovation ever seen.

Since Total Quality Management (TQM) has proven to contribute to good economic performance over the years, it is interesting to review synergies of TQM, innovation and sustainable development.

Meanwhile, there is some consensus in the business environment on the fact that corporate social responsibility strategy and sustainability management objectives must be aligned as social investments and measured in quality and economic terms.

Traditional approaches to business will collapse, and companies will have to develop innovative solutions.

Sustainability = Innovation+ Quality is the equation that could make it possible.

These types of considerations begin to explore the areas where quality and innovation are taken into consideration with a view to adopting sustainability as a way of doing business.

Currently, it is generally accepted that progress toward sustainability is possible only with significant changes in the modes of production and methods of doing business. This means that the way to achieve sustainability and corporate social responsibility requires a wide and permanent consideration of a double perspective in which individual businesses should be analysed more specifically, from the quality and innovation point of view, embedded in a larger societal system.

One of the main basis for generating competitiveness could be considered the capacity to generate and manage innovation by integrating the quality dimension, and the society has to decide which (balance of) economical, ecological and social goals are to be met.

Every successful company needs leaders who can understand and fully implement these concepts in order to help lead sustainability, innovation, and quality in the organization and to manage the opportunities and challenges that result. The management of the organization has a major role to play in terms of ensuring a culture of quality and innovation which permits every member to be involved and contribute to improvements through the involvement of employees in detecting and monitoring quality performance.

Quality management should be scrutinised by stressing the sustainability of values, tools and techniques through innovation and a sustainable quality management provides the potential to improve and extend the best practices of TQM in the future.

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