

COMPLEMENTARITY OF CSR, ISO 26000 AND SIA, AND THEIR APPLICABILITY IN ENGINEERING DOMAINS

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Engineering and social sciences have more occasions for interdisciplinary advances. Influenced by the concerns brought about by sustainability, new concepts and tools have been developed in the second half of the XXst century such as: social responsibility, social impact assessment, social performance, socio-technic design, social environmental justice. All these have a good presence in engineering fields. This paper employs thematic content analysis (TCA), biographic research and the contribution made consists in: TCA of over 30 definitions of CSR; complementarity between CSR and SIA in engineering domain; overview of ISO 26000; limitation in using CSR and SIA in nowadays economic context.

Keywords: CSR, ISO 26000, sustainable development, social impact assessment, social environmental justice

1. Introduction

Development, innovation and decision-making processes are based not only on technical and economic indicators but, more and more these days, they incorporate indicators related to creating value in a sustainable way. This creates an increasing concern with regards to social responsibility and social contribution brought about by companies, in parallel with the focus on other important aspects such as: performance, profitability, innovation, cost management, resources, and technology. These concerns are present to a great extent in companies in the engineering domains, expressed in the way they run their operations and the way they promote change and innovate. In this regard, several conceptual distinctions and practical tools have been developed, implying the use of social data and research instruments in engineering domains, such as: corporate social responsibility (CSR), social impact assessment (SIA), participative processes involving stakeholders, socio-technic design, social environmental justice. The aim of including these tools in very technical domains is to have enterprises better adjust to their environment developing a relationship with communities and stakeholders impacted by their activity [10], [13]. As a result, the solutions,

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technologies developed in such way have better chances to be adopted by different stakeholders as they contributed to the process of developing them. Following from here come reduced socially generated risks and costs.

Industrial engineering literature review reveals the use of social data, tools coming from social research, participative tools involving stakeholders in aspects such as: performance and performance measurement; risk management; business model, strategic planning; relationship and communication management; management of change; design and implementation of production capacities; product development; industrial engineering and sustainability; ISO quality standards; technological innovation system.

This paper is organized around the following questions: how CSR concept was brought about and what was the evolution of the concept; Who is responsible, of what, and who is impacted by the CSR (based on a content analysis of over 30 definitions of CSR); which are the complementarity of CSR and SIA and how the data they provide could be integrated into more sustainable outcomes for engineering companies; which are some challenges and limitations in using CSR and SIA.

2. Social responsibility: evolution of the concept

Starting with the second half of the XX century, a change in the factors influencing management decisions started to occur. Concerns taken into consideration started to exceed the scope of strict economic efficiency. Defining development, performance and sustainability starting to shift in a way that integrates more social-environmental justice concerns [9]. A new type of responsibility begun to influence investment decisions, development and management, social responsibility looks at the effects of the activity of companies, planned interventions, development projects, public policy. The principles and values of social responsibility are supported and adopted by representatives of civil society, NGOs, academia, public organizations, companies, investors.

The modern theory around the concept of social responsibility begins to be clearly articulated from the '50s [4] of the twentieth century. One of the earliest references to social responsibility appears in Fortune magazine in 1946 [4]. Survey of managers by the magazine cited and referred to Bowen in his book speaks of a "social conscience" that involve accountability from managers of companies on issues related to the social context and 93.5% of the managers surveyed agreed with this statement [4].

In the '60s the discourse about social responsibility argues that decisions and actions based on arguments which include social responsibility and bring long-term benefits companies, contributing to improved economic performance

thereof [4]. Other authors in the '60s talk about the extent to which corporate's responsibilities go beyond the sphere of economic and legal obligations, thereby increasing the socio-economic welfare [4].

The '70s are for the concept of social responsibility very prolific in conceptual clarification, the definition of CSR becomes more specific and also occur, alternative phrases such as social sensitivity and corporate social performance, CSP. [4].

Committee for Economic Development in 1971 [3] proposes a three-dimensional model to understand how different levels of corporate reporting on corporate social personal responsibility. The model has three levels so from a level where there is no interest to increase corporate's awareness on social responsibility but only focuses on economic performance of the functions of the company related to growth, production and jobs. In the '80s there is a more pronounced focus on this research field. CSR continues to develop complementary conceptual formulations such as stakeholder theory, the theory of business ethics, PSC, corporate citizenship.[4].

In the '90s, CSR is integrating alternative theme launched in the past decade, stakeholder theory, the theory of business ethics, PSC, corporate citizenship, the concept of CSR remains present but without further development of new definition. Towards the end of the millennium, CSR remains a concept in theory and practice now for business, consistent with public expectations across from it [4].

In a comprehensive comparative analysis [5], a classification of CSR theories by the central purpose of the approach identifies four categories of theories: instrumental theory, political theory, integrative theories and ethical theories. Instrumental theories relate to the context / resources / social activities as a means to achieve economic goals. Political theories refer to corporations that certain entities that contribute to community life and holding certain resources and social power and how to use these resources responsibly by corporations to influence political power responsibly. Integrative theories propose to include in the analysis and distinctions that make them different social needs and actors who participate in them and the relationships between them such as public corporations and various stakeholders in companies. Ethical theories are guided by achieving a good society, referring to a common good, sustainable development and universal rights.

In the recent period, one of the European Commission's priorities, in a context inspired by sustainable development principles, is to promote and support the implementation of the international standards concerned with social responsibility. The International Organization for Standardization (ISO) has designed the international standard ISO 26000 concerned with social responsibility, while the European Commission is monitoring the extent to which

companies with over 1000 employees adopt and implement this standard as well as the international principles concerned with corporate social responsibility [8]. European Commission is requiring companies to take the engagement to adopt at least one of the following guidelines: UN Global Compact, OECD (The Organisation for Economic Cooperation and Development) guidelines for multinational enterprises, ISO 26000 [8]. The same above-mentioned document issued by the European Commission is referring to the Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy, due to be put in place by enterprises starting with 2014, as rules by EC.

3. Exploring through a collection of social responsibility's definitions

In this section we present a content analysis of the most influential definitions that governed the understanding of the social responsibility concept provide useful insights with regards to how different actors relate to social responsibility and with what effects, and how all these components changed in time. The analysis presented in the following table is based on the analysis of almost 30 definitions of social responsibility [4], [8].

Table 1

Insights from CSR's definitions analysis

Who are the actors responsible with the "social responsibility"?	Which are the actions due to be performed in the context of social responsible actors?	Which are the expected outcomes when performing socially responsible actions?	Upon who or what these outcomes are reflected?
<ul style="list-style-type: none"> • Business men • The managerial staff of the companies • Firms/ corporations 	<ul style="list-style-type: none"> • Develop policies, contribute to decision making, set course of action, develop managerial practices; • Oversees operations; • Analyzes the effects; • Oversight of operations; • Analysis of the effects of decisions and action taken; • Decisions with regards to the use of resources; • Develop social programs; • Adapting corporates behavior; • Establishing 	<ul style="list-style-type: none"> • Coordination with socially desirable objectives and values; • Take into consideration wider concerns than just economic and technical ones; • "Economic system that fulfills the expectations of the public" + "production and distribution should enhance total socio-economic welfare" (Fredrick, W.C., 1960); • Takes into consideration all actors 	<ul style="list-style-type: none"> • Society; • The expectations of the public; • Socio-economic well-being; • The whole social system; • Stakeholders, employees, suppliers, distributors, local communities, nations; • Social needs and goals; • A wide spectrum of human values; • The external social system;

	corporates' obligations; • Establishing corporates values; • Reporting, auditing, certification.	involved in or affected by the activity of the company, such as: employees, suppliers, distributors, local communities, nations; • Increases companies' profit; • Supports the needs and objectives of the society; • Contributes to social benefits; • Takes into consideration the impact over communities and environment the needs of different stakeholders with the needs of the company.	• Obtaining social benefits; • Social expectations and norms; • Ethical conduct towards society; • Economic opportunities, economic benefits, production capacity, professional skills, well payed jobs, wealth; • The communities and the environment.
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The first observation is that, although social responsibility concerns were initiated as return of value and/or compensation towards society and communities (and environment), some of these definitions expect that the outcome of CSR initiative would contribute to companies in terms of: “profit”, “economic opportunities”, “production capacity”, etc. Another observation is with regards to the change of wording in referring to social responsibility. During the '50 and '60 throughout the beginning of the '70, the used expression was social responsibility. Starting with the '70 and until present times these definitions are referring to corporate social responsibility. According to the analyzed definitions, the bearer of the social responsibility and the subject performing socially responsible actions are the businessmen and the managerial staff of the companies. Starting with the '70 the expression becomes corporate social responsibility and, as a result, the bearer of the social responsibility is the corporation which extends the group of persons responsible but in the same time brings about more ambiguity with regards to how social responsibility is supposed to be manifested, by who, in what context. Responsibility might remain diffuse if not clear principles and practices are established for all involved actors.

4. International standard on Social Responsibility

ISO 26000 was published in 2010 and has been adopted (or in process of adoption) in more than 53 countries, including Romania starting with 2011. Being a guidance standard and not dedicated to certification goals, it also has a wide area

of applicability, it addresses not only enterprises but could also be adopted by all types of organizations such as: companies, multinational enterprises, small and medium enterprises, not for profit organizations, public companies, trade unions, public institutions. The change brought about by this standard is the openness towards the idea that social responsibility is not a concept and set of practices due to be adopted only by corporates but, in order to increase their social accountability, also by other types of organization, as per the above enumeration. The overarching goal set by ISO 26000 is to establish a framework of principles, values, and guidelines of practice for social responsibility.

ISO 26000 defines social responsibility in Clause 2.18 as it is following:

“Responsibility of an organization for the impacts of its decisions and activities on society and the environment, through transparent and ethical behavior that: contributes to sustainable development, including health and the welfare of society; takes into account the expectations of stakeholders; is in compliance with applicable law and consistent with international norms of behavior; and is integrated throughout the organization and practiced in its relationships.” [7]

According to ISO 26000, putting social responsibility to good use requires an integrated view over seven core subjects: organizational governance, the human rights, labor practice, the environment, business practice, consumers’ issues, community involvement and development.



Fig. 1 – Seven core subjects for the integrated approach to social responsibility

ISO 26000 emphasizes that organizations should not focus selectively on some of this core subjects but rather to look holistically over them.

Applying the point of view brought about by social responsibility can be a difficult and complex engagement. Cultural differences and competitive priorities could challenge a standardize manner to regard social responsibility. However, ISO 26000, invites organization to relate to the following guiding principles of

socially responsible behavior: accountability, transparency, ethical behavior, respect for stakeholder interests, respect the law, respect for international norms of behavior, respect for human rights.

Through ISO 26000 a number of fundamental practices are promoted such as maintaining constant dialogue with stakeholders, transparency and communication of social responsibility approach developed by organizations through periodic reports, developing tools to prevent and manage potential conflicts with stakeholders, development of culture integrating organizational principles of social responsibility, skills in social responsibility to employees of the organization, etc.

5. Corporate Social Responsibility, Social impact assessment and sustainability and engineering domains

A complementary concept to the CSR is social impact assessment (SIA), defined as: "Social impact assessment is the process of analyzing (predicting, evaluating and reflecting) and managing the intended and unintended consequences on the human environment of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions so as to bring about a more sustainable and equitable biophysical and human environment." [11]. Social impact assessment has been developed in the context of environmental assessment. Starting with the '70 SIA start developing as a separate theoretical and practical approach in impact assessment. SIA is being applied mostly in engineering domains that imply a physically changing the environment and/or use of natural resources such as: extractive industry; constructive industry; energy industry, etc. SIA aims to mitigate possible negative impacts and to extend possible positive impacts of a planned intervention. This adds an extra-dimension in the decision-making process with regards to a planned intervention, besides technical and economic considerations, social aspects are integrated into this process. According to the literature [12], data provided by SIA is used, from design throughout implementation, to change the parameters of the planned intervention such that it would accommodate the needs of different stakeholders and would eliminate negative impacts. In time, SIA's distinctions and tools developed, creating the capacity to address important power disbalance between corporations, aiming to implement a planned intervention, on the one hand, and communities, on the other hand. For some of the most vulnerable communities FPIC act have been put in place, requiring formal, prior, intent consent from the communities affected by a planned intervention. For now, FPIC is required when the planned intervention is affecting indigenous populations, but the conversation continues to include other categories of vulnerable populations under FPIC umbrella. Similarly, for other distinctions

and tools with which SIA operates there has been a development since the '70s onward, towards including social impacts into the decision making of companies in engineering domains, with the aim to provide their planned interventions, initiatives, projects, innovation with more sustainable traits.

While CSR implies a philosophy adopted by a corporation corresponding to an ongoing set of actions, SIA is project based, it can spread over a rather long period of time if the intervention is complex and SIA is used ex-ante and ex-post, but it is concerned with a specific planned intervention. Both CSR and SIA can benefit of the insights provided by the other one (SIA benefits of the CSR build capacity, and CSR could use the resources and capacity build by SIA around a certain intervention). Combined outcomes of the two contribute different aspects that feed into the corporates' capacity to create more sustainable outcomes, such as: design development initiatives in sustainable way; open the design and decision process to stakeholders, by consulting them with regards to their needs; responsible use of resources; creating cohesion among and with local communities; care for the environment; etc..

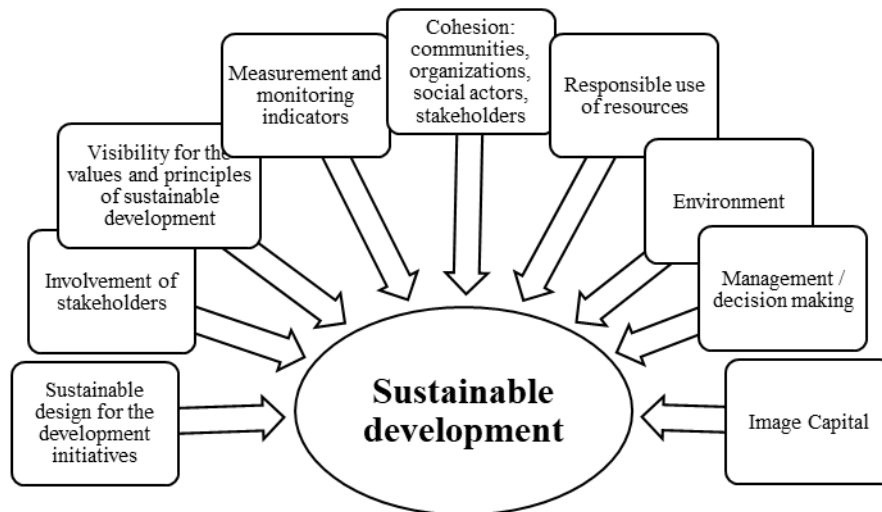


Fig. 2 – How CSR and SIA contribute to sustainable development

Between the concept of social responsibility and social impact assessment there is an obvious complementarity resulting from shared principles and values, common tools and approaches. Their simultaneous use increases the capacity of organizations to have a positive impact on the environment and the long-term social context, increases their capacity to contribute to sustainable development.

Sustainable development objectives are operationalized into actions and practical initiatives that are also monitored by setting and measuring over time indicators that can deliver progress towards the set goals. CSR and SIA contribute

to putting sustainable objectives into practice. In the context of sustainable development policies, establishing development goals, actions and indicators, contribute to a broader perspective in setting development goals, a perspective that integrates besides technological and economical aspects also concerns regarding the environment and the social context.

Data provided by CSR, SIA, consultative processes with stakeholders are integrated in different aspects of their activity by engineering companies, aspects such as:

- Re-design production cycle and products' life cycle aiming to reduce negative impacts over the environment and social context, "clean production" concept is defined [10];
- Industrial engineering is more and more focused on the sustainable aspects in the technological and organizational solutions it proposes, based on consulting the relevant stakeholders [13];
- Industrial engineering is redefining enterprise performance, in a more holistic way, such that it integrates not only economic and technical performance but also social and environmental performance [10];
- A new production model proposed by the physicist Karl-Henrik Robert named "the natural step" describes key principles such as: not spreading in the environment matter extracted from the earth bark and/or produced by industry; integrating care for biodiversity and environment within the production process; use of natural resources with respect for human' (and other forms of life) needs [13].

Following market trends, there is a trend for academic programs in engineering to include within the curriculum disciplines to leverage knowledge in sustainable development. A comparative analysis of academic programs in industrial engineering in USA and Germany present the tendency to reform the study of this discipline such that "manufacturing sciences" become "sustainable manufacturing sciences" [2].

In the same time, with all the developments in the field of CSR and SIA, in the world there are reported a lot of social conflicts, affecting corporations and local communities. The Environmental Justice Atlas (ejatlas.org) reports today (the beginning of 2019) a number of 2770 cases of social conflicts, spread around the World, in domains such as: nuclear, mineral ores and building extractions, waste management, biomass and land conflicts, fossil fuels and climate justice, water management, infrastructure and built environment, industrial and utilities conflicts. While including SIA and CSR practice would allow the needs of different stake holders to be taken into consideration, there are some limitations to these approaches. Moving towards a more sustainable approach implies not

perpetuating pollution and damage towards environment and communities [20]. CSR reports talk about commitments taken by corporation with regards to environment and stakeholders, but they are rather expressed as risk management rather than adopting a (just) sustainable paradigm. Some studies point that regardless initial commitment of companies and specialists in engineering domains, the interest in respecting these commitments decline in time and the technical aspects tend to weight more for these specialists in comparison to social responsibility [1]. Standards and indicators are put in place and the Global Reporting Initiative (GRI) is monitoring CSR performance, in the same time a lot of the companies are externalizing CSR activities which does not allow the space for them to internalize CSR values and approach [6]. There are situations in which CSR departments and initiatives encounter difficulties in involving internal stakeholders (other departments in the company), and in cases, when companies encounter financial challenges, CSR budgets are among the first to be reduced. This calls for better mechanisms involving external actors (institutions, organization, stakeholders, etc.) to keep accountable companies with the CSR commitments they took and to foster more sustainable outcomes, more openness to change business practices that generate pollution and are damaging to the society. A lot of advances have been made in developing distinctions and tools for CSR and SIA for corporations, but they need to be paired with the corresponding regulations and an increased awareness of different actors (civil society representatives, members of corporation, decision-makers) with regards to sustainability.

6. Conclusions

This paper is presenting insights into how engineering domains could create value in a more sustainable way by integrating data and tools provided by CSR and SIA. The two approaches have been both developed starting with the second half of the twenty century and are being used in an important proportion by companies in engineering field. Their contribution is expressed in aspects such as: technology and product design; innovation processes; use of natural resources; risk reduction and management; hazard prevention and management; participative processes involving stakeholders, etc.

The paper goes through the evolution of the CSR definitions and distinctions since the term was initially launched until nowadays. CSR has developed in over 70 years a complex set of tools and capacities for companies to adopt. In the recent years the social responsibility standard, ISO 26000, opens up the CSR floor for a wider range of categories of companies. ISO 26000 was adopted by over 53 countries, including Romania in 2011, the paper gives an

overview into what this standard implies, which are the principles and tools provided by it.

A content analysis of over 30 definitions of CSR, presents some insights into the transformed in time meaning of social responsibility. While initially the ones responsible for social impact were the managers of the companies, and then the managerial staff, eventually the bearer of the social responsibility became the “corporation”. This opens up and extends the conversation and invites different actors from the company and other stakeholders to contribute, but in the same time creates the ambiguity and diffuse responsibility, which, as proven in different psycho-sociological experiments could mean that a lot of actors are responsible and no one acts, as all presume the other might get involved.

The final section of the paper briefly introduces SIA concept and its complementarities with CSR, and how they both provide data and tools for companies in technical fields to take more sustainable initiatives. A tridimensional model is suggested, one that would integrate into decision-making process, besides the consecrated economic and technical indicators, also social impact considerations. The paper brings up front the tension between a developed CSR apparatus, expressed in theoretical distinctions in academia and practice examples adopted by companies, and, on the other hand, existing social conflicts, and limited present of CSR only in some areas of the activity of the companies, without accommodating more fundamental changes that might be required according to CSR and SIA. ISO 26000 standard extends the social responsibility conversation and capacity further but in order to produce a change institutional capacity and regulations and awareness need to be put in place to back up this paradigm.

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