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Company sustainability, an overview of the existing literature: in search of a common definition and its influence over continuous improvement endeavours.

Orlando Chirinos¹, Magali Pralus¹, Georges Habchi¹
Zahir Messaoudène²

¹Univ. Savoie Mont Blanc, SYMME, F-74000 Annecy, France

Orlando.Chirinos-Colmenares@univ-smb.fr, Magali.Pralus@univ-smb.fr, Georges.Habchi@univ-smb.fr

²ECAM, F-69000 Lyon, France

zahir.messaoudene@ecam.fr

Abstract: In a rapidly changing business environment, the implementation and sustainability of effective continuous improvement programs are synonymous with success. Maintaining an expected performance level over time is seen as the ultimate goal for any company. However, it becomes a complicated issue when there is little consensus for sustainability. The purpose of this paper is to study the definition of sustainability within the existing literature from different authors, dividing their work into five major subjects: semantics, financial, environmental, health and industrial. Keywords are highlighted in order to achieve a single definition, developed upon a continuous improvement setting. This definition will help companies to understand by a richer meaning the concept of sustainability. This leaves the door open for indepth studies, especially when facing sustainability of continuous improvement approaches. Based on this definition, further works could look at the incongruities innate to its definition and the elements influencing sustainability that are spread throughout the organization. The ultimately goal is to support continuous improvement sustainability.

Keywords: Sustainability, Performance, Continuous Improvement, Elements.

1. INTRODUCTION AND CONTEXT

Nowadays, companies feel a growing pressure to be highly efficient with the decisions and actions they take. With the current global climate, they have experienced a period of great change in their markets and operations (Oakland, 2014). In order to persist over time, they have been obliged to use a variety of techniques and approaches (Novkov *et al.*, 2007). That is the reason why the adoption of operational excellence strategies is becoming a common practice, for example, continuous improvement as a philosophy conceived to ensure best practices (Moen, 2009).

Continuous improvement endeavours have proven to deliver benefits, and it is very tempting to prematurely declare victory with initiatives that have attained most of their objectives (Mitchell, 2015). Unfortunately, most of them end in failure (Keating *et al.*, 1999), despite the fact that they are an essential element of operational excellence (Mitchell, 2015). Companies have found difficulties reaching sustainability, even in their early stages. Sustaining a successful improvement program is not an easy undertaking, for several reasons. Firstly, some enterprises have focused on performance objectives without assuring that the practices and procedures necessary to attain the improvements should be sustained in the long term (Mitchell, 2015). Additionally, companies must manage different factors simultaneously, which have different scopes with different evaluation and control systems, creating a complex and delicate environment (Marin *et al.*, 2016), where the collapse of one those factors can create a domino effect over the others (Burgelman *et al.*,

2007). For these reasons, we believe in the importance of having a clear sustainability definition, able to drift into company objectives along the organization, and specifically linked with continuous improvement ventures.

The concept of sustainability has grown in recognition and importance (Silvius *et al.*, 2010) and, consciously or not, is one of the main goals of every active member of an organization. Unfortunately, there is no consensus when directed at companies and in business in general; moreover, there is a lack of research (Shediak-Rizkallah *et al.*, 1998) into the different viewpoints on the subject. In this particular paper we elevate the discussion, not only by defining sustainability but by showing how it is associated with continuous improvement endeavours. This contrast between sustainability and continuous improvement might sound 'scientifically incongruous' (Benghozi, 2009), particularly when companies and their improvement initiatives have a changing and dynamic character. In order to understand the situation, we must ask ourselves, what is the profound meaning of sustainability? Is it possible to have a consensual definition of sustainability within a business context, specifically associated with continuous improvement practices? How does a comprehensible sustainability definition affect the way companies approach their continuous improvement endeavours? The objective of this paper is to find a consensual definition of the term that could be used for companies as way to leverage their continuous improvement programs.

2. APPROACH

The approach taken in this article is based on an analysis of the existing literature, specifically regarding sustainability definitions. We analysed publications by other authors from different research fields and contexts, and studied how sustainability is being perceived accordingly. Firstly, we separated the definitions found into five main groups or fields: semantics, financial, environmental, health and industrial. We were able then to find common points to be exploited, that eventually supported us in creating our own unique definition. Secondly, we came up with our own sustainability definition that will not only help us to better understand its significance but that can be linked with operational excellence strategies, in this case with continuous improvement programs. Lastly, we present a prospective approach in how sustainability presents a set of paradoxes, how it can affect the improvement programs depending on the right interpretation of its definition, and the possible existence of elements that influence the sustainability of continuous improvement programs.

3. SUSTAINABILITY, A KALEIDOSCOPE OF INTERPRETATIONS

Inevitably, we tend to link sustainability to an environmental setting, but it has a larger scope, and to fully understand it, we have separated the definitions and as we explained earlier, we are separating the definitions in groups. By doing this, we will be able to identify major keywords and features that enable us to have our own interpretation linked to a continuous improvement environment.

3.1 Sustainability in semantics

Regarding **semantics**, we refer ourselves to the use of dictionaries, which offer a very direct and even pragmatic explanation. However, that does not mean that they are neither accurate nor relevant, but that they lack information that can successfully translate within a continuous improvement setting. Within the research, we have expanded the terminology by adding 'sustainable' and 'sustained' as extensions of sustainability, finding that 'sustainable' can be described as "*an action that last long or a long time*" or "*action able to continue over a period of time*" (Larousse, 2015). In both cases, we obtain a sense of temporality but not of space. On the other hand, the term 'sustained' is described as, "*a process that is continuing for a long time*" (Cambridge, 2015).

By including the term '**process**', we perceive that a set of logical actions must take place in order to endure time, informing us with some statements that those actions follow a certain order, they are in constant flux and they share a common goal. We then start to realize that sustainability is not a static definition. On the other hand, when we highlight 'process' in an improvement program, its importance must be emphasised and must be executed successfully for an organization's strategy to succeed (Bhuiyan *et al.*, 2005). Within the semantic definitions we can highlight at least four major keywords (Fig. 1).

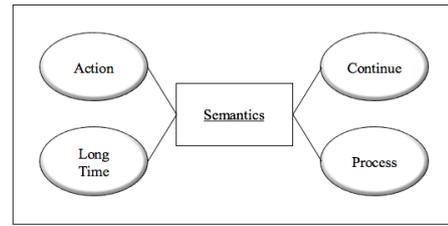


Fig. 1. Semantics keywords.

3.2 Sustainability in the finance field

Sustainability within the **finance** field has several concepts. It is defined by economists and international development agencies as the "*capacity of a project to continue to deliver its intended benefits over a long period of time*" (Bamberger *et al.*, 1990, p.7). In this case, we discuss sustainability as the "*capacity to continue*" that can be understood as the existence of suitable conditions for this capacity in order to exist, based on the investment of resources. This resonates with our idea that in order to excel in a continuous improvement endeavours, it is necessary to allocate and invest in a set of resources (Bessant *et al.*, 1994). Other authors suggest that a program is sustainable when it is "*able to deliver an appropriate level of benefits for an extended period of time after a major financial, managerial and technical assistance from an external donor is terminated*" (U.S Agency for International Development, 1998, cited in Shediak-Rizkallah & Bone, 1998, p.91)

In this case, a monetary benefit is the major reason to persist over time, but further than that, the ability to last is sustained by managerial and technical effort, so we can see that it is a combination of factors aimed at the same goal. Regarding benefits, we can interpret them within a continuous improvement context, such as decreases in waste, improvements in the handling of inventories, employee engagement, among others. Additionally, another statement suggests that "*a sustainable growth, as the annual growth rate that is consistent with the firm's established financial policies*" (Higgins, 1977, p.7). The introduction of policies established is showing us that sustainability is part of a mission from higher company levels, which can be easily translated into our research, since the majority of improvement programs are linked with high management support (Hines *et al.*, 2011). Within this field we have drawn attention to three major keywords (Fig. 2).

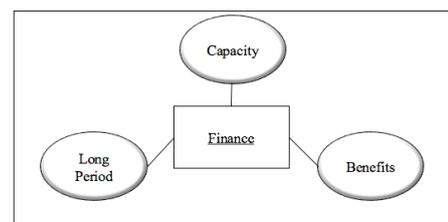


Fig.2. Finance field keywords.

3.3 Sustainability in the environment field

From an **environmental** point of view, the results are related to sustainable development and, in that context, some authors (Nelson *et al.*, 2012, p.71) refer to it as “*restructuring of human population on Earth around a core awareness that the natural resources upon which it depends for survival are limited, perishable and renewable only within narrow and delicate parameters*”. In this interpretation, sustainability can be conceived only under certain conditions and having a conscious use of the resources given, it can be easily translated within a company point of view, and possibly be pursued in future research to seek out those conditions in order to sustain continuous improvement programs.

Sustainable development can be seen as “*the place that meets the needs of current generations without compromising the ability of future generations to meet their own needs*” (Brundtlan, 1985, p.1), but this definition comes solely from an ecological approach. From an organizational point of view, it can be studied in a business environment where project needs have to be met. Similar explanations on the subject can be found (IISD., 1992, p.1) where the idea of “*strategies and environmental activities are combined to meet the needs of the enterprise and its stakeholders while protecting, sustaining and enhancing the human and natural resources that will be needed in the future*”. Following these results, we were able to highlight three keywords (Fig. 3).

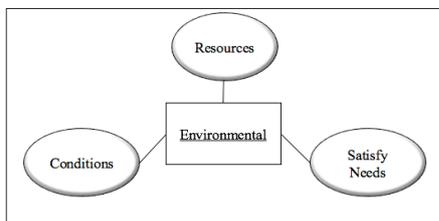


Fig.3. Environmental field keywords.

3.4 Sustainability in the health field

According to some experts in the **health** services field, sustainability can be portrayed as “*the capacity of a structure to be essential to sustain the equilibrium between population, financial outputs and processes, in a fixed moment, from this point of view, there is little point in defining a frozen sustainability*” (Cornillot., 2005, p.8). Once again, the capacity is seen as a key element, but in this case a revolutionary idea is presented that the notion of sustainability as a fixed state must be discharged, meaning that sustainability is a dynamic idea, which makes sense if we consider that the productive processes of any company are highly dynamic. Sustainability “*exists in the process by which the activities undertaken or supported are permanently maintained in its effects to the benefit of the population served*” (Decroix *et al.*, 2005, p.10). According to the author, sustainability not only has to be supported but maintained as well, therefore it can be planned and organized, having similarities to company endeavours. Furthermore, we see the inclusion of other terms, such as, ‘outputs’, and the use of a defined structure, and even the sense of organic

development and management planification (Fig. 4).

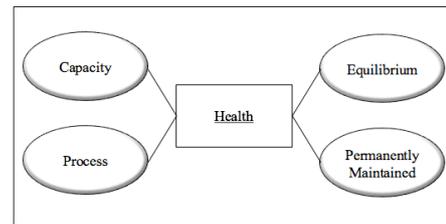


Fig.4. Health field keywords.

3.5 Sustainability in the industrial field

The **industrial** context uses sustainability as a new source of competitive advantage by “*being used as an intangible asset*” (Jackson *et al.*, 2003, p.369). The author explains that sustainability is considered as an intangible advantage. Therefore, it is something that we can not easily feel but exists, and is heavily linked to survival among competitors by creating and applying knowledge to mark a difference within the market: sustainability is linked with knowledge management as well. Other authors describe it as “*the ability of an enterprise, its products and its system to remain competitive and productive long-term, without failure, while minimizing waste; by adopting a strategy with an established performance requirement in the most effective and efficient manner possible over the entity’s life cycle*” (Mathaisel *et al.*, 2009, p.11). Here, we can see that there are some expressions included that can be linked with continuous improvement easily, for example, waste as a counterproductive measure, the notion of performance to be an achievable objective, the notion of ‘competitiveness’, the awareness of the external environment, how they differentiate themselves from the rest, and the use of strategies to achieve effectiveness in their operations. In this final research field, we can observe that sustainability leans towards a more dynamic environment where not only is it affected by internal conditions but also modified by external situations (Fig. 5).

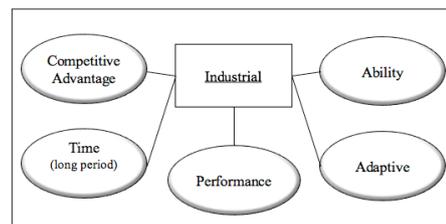


Fig.5. Industrial field keywords.

4. FINDING A COMMON GROUND

After analysing these different interpretations of sustainability from different authors, research fields and contexts, we came to the conclusion that it is in fact a highly adaptable definition with a group of characteristic features that we were able to highlight and exploit (Fig. 6), in order to form our interpretation that can not only be understood easily but can be used in other fields or endeavours, or in this particular case, continuous improvement programs.

Sustainability from a semantic point of view, takes into account the **time** factor and the element of process as the most relevant parts of its definition. This leads us to believe that sustainability is linked to temporality and the achievement of coordinated actions in order to succeed. Meanwhile, from a finance point of view, sustainability is linked with **economic growth** based on the intervention of different factors within the company that are inscribed within their **policies**, which give us a glimpse of how sustainability can be affected by other elements. From the environmental point of view, effectively managing a certain quantity of **resources** is an important factor in order to respond to specific **needs**. In the health field, once again we can see the use of **capacity** as well as **process**. And finally within an industrial context, the pursuing of sustainability is embedded in how companies can differentiate themselves from the rest, seeing it as an **advantage** that positively affects **performance**. By studying these keywords, we were able to portray sustainability, as follows:

"Sustainability can be defined as the capacity to maintain a level gradually over time, associated with a performance, project, program;

- according to well-defined process,
- with limited and finite resources,

with the particularity of being able to adapt itself to context evolution, which can be easily translated into a company environment where it is one of the top priorities of any level of the organization".

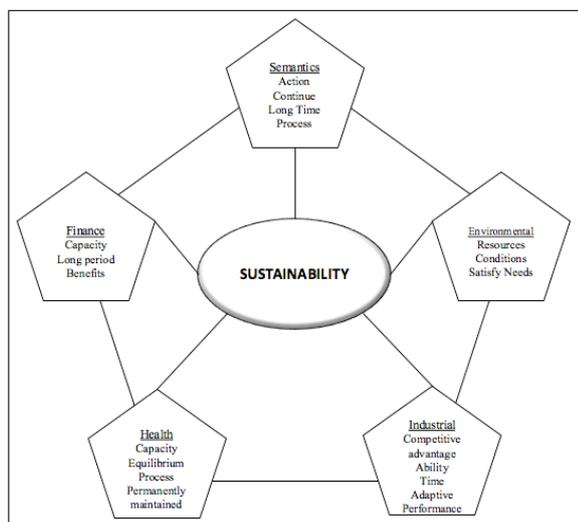


Fig. 6. Sustainability common points.

5. DISCUSSIONS

Sustainability is not an innate or inner-self characteristic; on the contrary, it can be analysed as capacity-linked with long term periods, where the investment of resources to develop that long period aptitude is highly important. It is related to benefits, either by financial growth or the decrease in waste in manufacturing production. It is linked with success and change, which can be contradictory just by the fact that

sustainability is embedded with maintaining a particular state. Sustainability has the singularity, that it is affected not only by internal but also external factors, meaning that it can be disturbed or modified by elements of the environment. For these reasons, we have seen that sustainability can in fact be studied as a dynamic concept, which has certain peculiarities that may or may not be more accentuated depending on the area in which it is developed. When performing this type of interpretation, the exercise of introducing the essence of sustainability definition within processes of continuous improvement becomes much easier, mainly because they both dwell within a dynamic of constant change; the probable risk presented is to limit ourselves with a static vision of sustainability, since it will be nearly impossible to link it with continuous improvement programs.

6. CONCLUSION AND FURTHER RESEARCH

Sustainability is a very broad and flexible term that can be interpreted from different contexts. Nevertheless, these points of view have neither been discussed in depth nor confronted, which can cause confusion when trying to translate it into a company environment, and more especially within continuous improvement programs. The objective of this article has been to present a clear and understandable sustainability definition. An interpretation, capable to leverage the improvements programs and their quest to remain in time. We developed it by selecting a set of scientific resources from different fields, underlining the common points and demonstrate how they can be utilized to make our own definition, and how they can be used in order to spread company objectives in the spirit of sustaining continuous improvement endeavours. However, there are several latent ideas that can be exploited for further research. Firstly, that sustainability is not a static process. On the contrary, it is embedded within a highly dynamic progression, which generates some kind of a paradox regarding the essence of its definition. Particularly when we try to transfer the idea of sustainability within a continuous improvement framework. This possible symbiosis invites us to study in depth the idea that; sustainability of continuous improvement programs dwells within a two-state dynamic, one stable and the other fluctuant. Lastly, since we have discussed the existing of that symbiosis, and by the fact that both sustainability and continuous improvements can be affected by its environment, we were capable to list a set of elements, that have the potential to affect it. The impact of each element, could be use as a tool in order to measure not only the different visions of sustainability, but the priorities of the company in order to sustain their improvement programs.

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