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HOW TO MEASURE THE VALUE FROM A SUSTAINABLE POINT OF VIEW

JORGE ALEXANDRE, ANABELA MAIA, DAVID CAMOCHO, FÁTIMA RODRIGUES, JOÃO HENRIQUES, JUSTINA CATARINO

Abstract

Entrepreneurial activities must change when taking into account the Sustainable Development paradigm. A new way of evaluating enterprises' performance which incorporates economical, environmental and social criteria is necessary. Any organisation can no longer work as a "black box". Society wants to know about the impacts of inputs and outputs on companies' activities and therefore a continuous process of transparency, communication and continuous improvement is required. Therefore the Value of a company can no longer be seen only as the profit for its shareholders, but must be extended in an objective way to the other elements of Sustainability: the social and environmental criteria. If Top Management and the VA team are sensitized for the Sustainability principles and for their contribution in creating Value, these aspects will be integrated in the company's strategic management so that they will contribute for its viability in the long term.

This paper aims at presenting a specific methodology to support the process of decision making at the level of the practices related to increasing Value towards a Sustainable Entrepreneurial Development. After a study of the possible synergies between tools used by Value Management (mainly Value Analysis) and Environmental Management (Cleaner Production, Eco efficiency, among others) a methodology, joining them and profiting from their synergies was developed and tested in several companies.

Author details

Jorge Alexandre MSc, Industrial Designer, Jorge currently holds a position as researcher at INETI/CENDES (National Institute of Engineering and Innovation/Centre for Sustainable Business Development, Lisbon). He has been working for the last fifteen years on the synergy between Value Management / Value Analysis and Industrial Design and more recently with Sustainability Development tools.

Phone +351 21 0924797 Email jorge.alexandre@ineti.pt

Anabela Maia, Post graduation on Environmental Management and Policies, Anabela is Technician at INETI/CENDES (National Institute of Engineering and Innovation/Centre for Sustainable Business Development, Lisbon), working for the last twelve years in environmental management, cleaner production, eco-efficiency and sustainability in companies.

Phone +351 21 0924600 Email anabela.nogueira@ineti.pt

David Camocho, Industrial Designer, David is an industrial designer, working for the last five years at INETI/CENDES (National Institute of Engineering and Innovation/Centre for Sustainable Business Development, Lisbon). He has been working in several projects in the area of Ecodesign and Sustainability.

Phone +351 21 0924797 Email david.camocho@ineti.pt

Fátima Rodrigues, Agronomic Eng, She is an engineer working for the last fifteen years in Environmental Management and more recently with Sustainable Development tools. She is a senior researcher at INETI in the Sustainable Development Department.

Phone +351 21 0924600/01 Email fatima.rodrigues@ineti.pt

João Henriques MBA, Mechanical Eng, João is an engineer working for the last twenty years in Value Management / Value Analysis, Portuguese delegate in the EGB and in the CEN/TC 279, member of the Board of Directors of APAV in Portugal. He is a researcher at INETI in the Centre for Sustainable Business Development.

Phone +351 21 0924797 Email joao.henriques@ineti.pt

Justina Catarino, PhD, Environmental Engineer, Justina is an engineer working for the last years in Cleaner Production, eco-efficiency and sustainability in companies. She is a researcher at INETI in Sustainable Development Department.

Phone +351 21 0924600 Email Justina.catarino@ineti.pt

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Introduction

Entrepreneurial activities must change when taking into account the Sustainable Development paradigm. A new way of evaluating enterprises' performance which incorporates economical, environmental and social criteria is necessary.

Any organisation can no longer work as a "black box". Society wants to know about the impacts of inputs and outputs of companies' activities and therefore a continuous process of transparency, communication and continuous improvement is required.

In EN 12973 Value is described as the relationship between the satisfaction of needs and the resources used in achieving that satisfaction. Therefore the higher Value is achieved with lower resources used and / or higher satisfaction of needs.

The Value Management approach, involving the quantification and monitoring of Value and the focus on what things do rather than what they are (functional approach), requires the development of a Value culture within the organisation and the focus on customers' and other stakeholders' requirements. The results will show the reduction of useless and unnecessary efforts, and will encourage the orientation of limited resources towards areas where they can lead to Value increase.

This has been mainly an economical approach, but nowadays within a more demanding context in what concerns organisations Corporate Social Responsibility (CSR), Value can no longer mean the profit for shareholders, but must also consider the social and environmental aspects of the company competitiveness. Therefore the company's strategic management must integrate these three components [1].

Investors are more and more demanding towards companies in order to make them engage eco-efficiency strategies that lead to the reduction of damages to the environment and simultaneously to the increase, or at least not to the decrease, of value for the shareholders (economical and environmental efficiency).

Eco-efficiency is the business answer to the challenge of Sustainable Development – which means, according to the Brundtland Commission definition, meeting *"the needs of the present without jeopardizing the needs of future generations"*. This implies economic growth that does not deplete irreplaceable resources, does not destroy ecological systems, and helps reduce some of the world's gross social inequalities.

Eco-efficiency will be an important element in aligning any business with long-term social needs. It stresses [2]:

- Increasing resource productivity so that more is obtained from less energy and raw material input. Many environmental concepts and initiatives emphasize the importance of resource productivity or doing more with less, in particular UNEP's concept of Cleaner Production;
- Creating new goods and services that increase customer value while maintaining or reducing environmental impacts.

With this purpose World Business Council for Sustainable Development (WBCSD) – the business representative body for environmental and sustainability issues, defined how companies can achieve eco-efficiency:

"Eco-efficiency is reached by the delivery of competitively-priced goods and services that satisfy human needs and bring quality of life, while progressively reducing environmental impacts and resource intensity throughout the life cycle, to a level at least in line with the earth's estimated carrying capacity." WBCSD, 1992. [3]

Stakeholders may have different understandings of what "Value" means. VM aims at harmonising those different points of view enabling an organisation to progress in the best way towards the settled objectives at the lowest resources consumption.

If the minimisation of the necessary resources to satisfy stakeholders' needs is reached through:

- reducing energy, materials and water consumption; enhancing material recyclability and extending product durability and the close of materials cycle;
- reducing environment impacts: minimisation of emissions and waste, reducing toxic dispersion and maximizing sustainable use of renewable resources,

then VM will become a strategic instrument to create Sustainable Value and to integrate eco-efficiency and Sustainability in the organisation Planning.

If, for the satisfaction of different needs, social and environmental evaluation criteria will be considered, beyond the technical and economic ones, together with the improvement of the productivity of the necessary resources, then we can speak about Sustainable Value.

If Top Management and the work team are sensitized for the Sustainability principles and for their contribution in creating Value, these aspects will be integrated in the company's strategic management so that they will contribute for its viability in the long term.

VM provides the framework within which different methods and tools can be applied with identical objectives, together with complementary ones. The work developed in the last years led to the conclusion that some of the tools used in Sustainable Development area can be integrated with the VM tools resulting in new methodologies profiting from the best existing in each of them.

Objectives

After a study of the possible synergies between tools used by Value Management (mainly Value Analysis) and Environmental Management (Cleaner Production, Eco-efficiency, among others) a methodology, joining them and profiting from their synergies was developed.

This paper aims to present the methodology developed to support the process of decision making at the level of the practices related to increasing Value towards a Sustainable Entrepreneurial Development.

The results achieved in a first cycle of application in several Portuguese industrial companies, are presented.

Object of the research

Presentation

A methodology bringing together Value Analysis and Cleaner Production was developed and materialised in a manual (Sustainable Value Manual) to support the work within the companies.

In the first cycle the manual was applied in seven companies, SME from metal working and surface treatment areas. Five of them decided to study the manufacturing process and the other two chose the product as study subject.

Methodology developed

When we talk about measuring Value from a Sustainable point of view we mean that the three components that constitute Sustainability – economical, social and environmental are taken into account.

We may say that if one of the milestones of Value Management is the consideration of the stakeholders all those aspects are taken into account. But from our past experience this was not happening, at least explicitly. Therefore we decided to explore the synergies that exist between several different methodologies, namely Value Analysis (VA), Cleaner Production (CP), Life Cycle Assessment (LCA) and Ecodesign in order to measure what we called Sustainable Value.

We followed the VA work plan, and, for the different phases, introduced tools that would allow us, at the end of the application, to measure the Value variation in what concerns those three aspects: economical, social and environmental.

Gathering comprehensive data about the study – besides the information referred in EN 12973, and for each VA subject, the team also built the manufacturing diagram, with the identification of every single operation and for each of them the quantification of the inputs (materials, water and energy) and outputs (products and sub products, emissions, effluents and waste), this being an approach also used in CP.

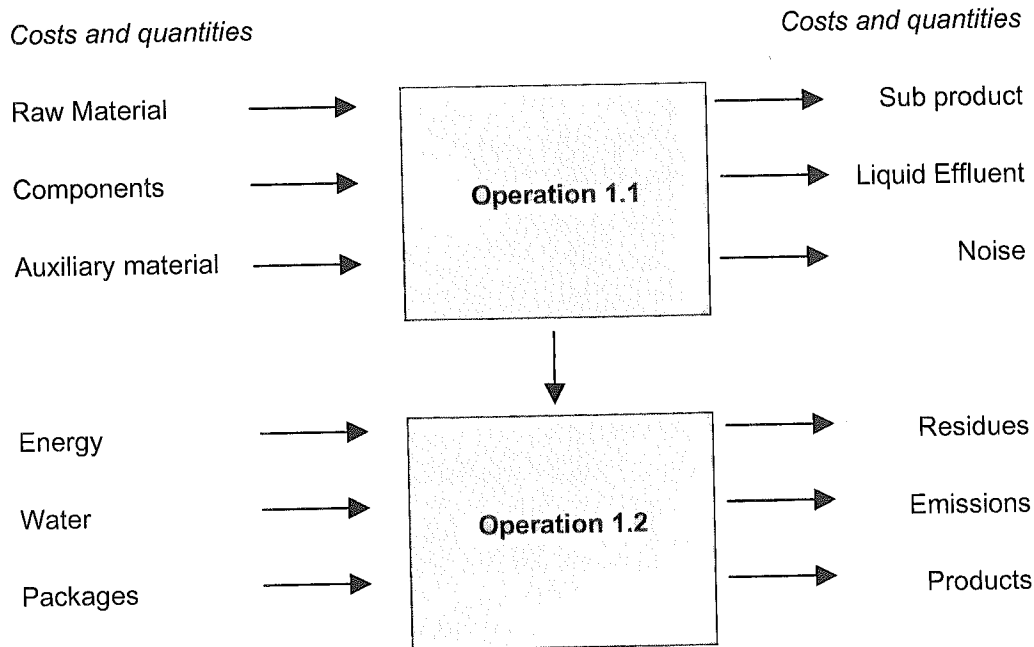


Figure 1- Example of Inputs and Outputs of single operations

Functional Analysis – is defined in the European Standard as “a process that results in a comprehensive description of the functions and their relationships, which may be systematically characterised, classified and evaluated”. Even when there was no explicit function dealing with social and environmental aspects, in the characterisation of each function, technical, environmental and social aspects were considered. For each criterion, existing and desired levels were defined. This allows the work team to evaluate whether the study subject answers or not to the needs / expectations of the users.

Evaluations of solution ideas – to evaluate the ideas, the criteria defined in the Functional Analysis phase were used again. The technical, environmental, and economical feasibilities of each proposal were evaluated through specific matrixes. With this data we estimate the Sustainable Value of each proposal and therefore decide which to implement.

In Figure 2 we summarise the way we evaluate Value.

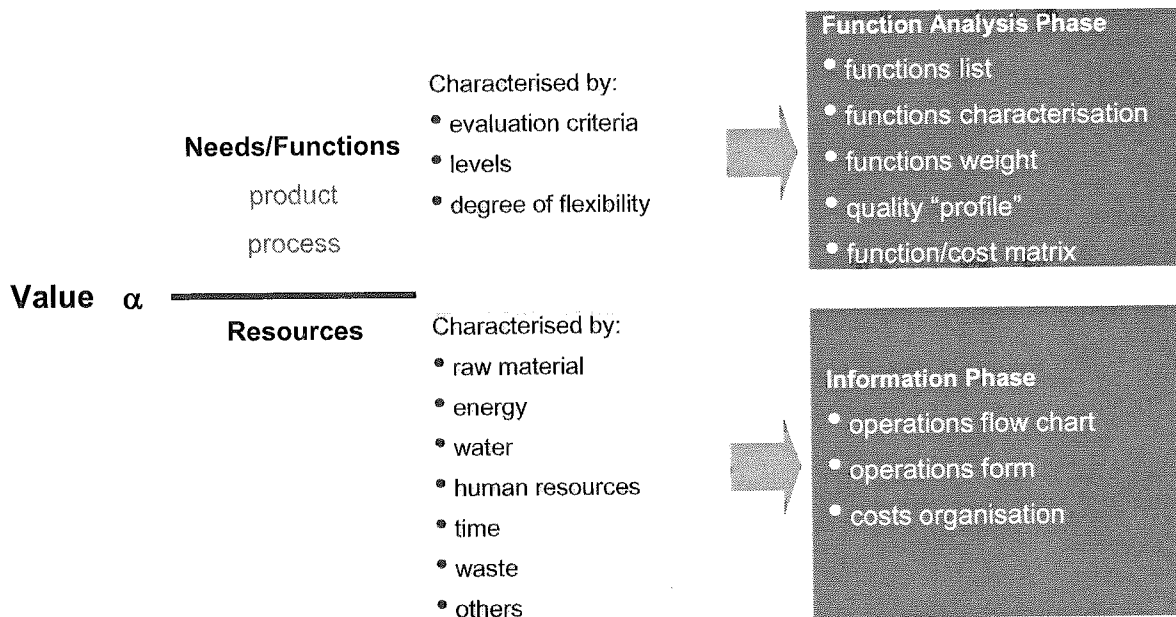


Figure 2: The evaluation of Value

Global results

The methodology was applied in seven SME where the following results were attained:

- Diagnosis of manufacturing processes at environmental, economical and social levels;
- Optimisation of manufacturing processes;
- Reduction of materials, energy and water consumption;
- Waste preventive approach;
- Identification and reduction of cost;
- Reduction of toxic dispersion;
- Company eco efficiency improvement;
- Company competitiveness improvement;
- Development of new products;
- Improvement of internal and external communication;
- New competences development in companies and entrepreneurial associations;
- Adoption of more social responsible behaviour by the companies;
- Increase of Sustainable Value.

The results are summarised in Figure 3, in which the changes in the satisfaction of product/process needs (P) and the associated changes in resources (R) are plotted to provide a graphical indication of the impact on value delivered.

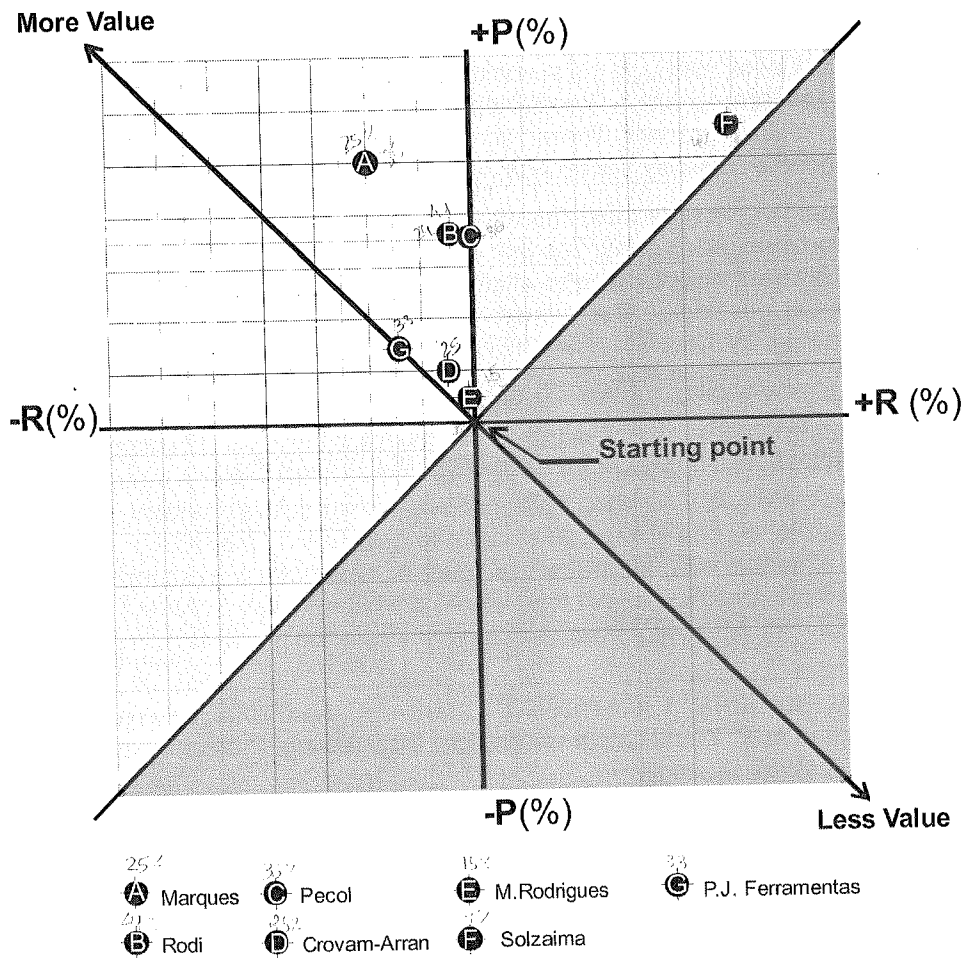


Figure 3: The improvement of Value in each company

Summary of results

The methodology used enabled the companies to diagnose the main problems concerning their manufacturing processes and products (for those that made an integrated study of the product) leading to the quantification of the total costs including the environmental and social ones.

Globally the application of the methodology that brings together Value Analysis and Cleaner Production, lead to:

- improve the functional performance of the study subject, improving the satisfaction of user's needs, taking into account a pollution preventive approach. Therefore the eco-efficiency principles were used (namely the progress in recyclability and product durability, the reduction of toxic dispersion and the maximisation of the use of renewable resources and of the service intensity) to quantify the increase in the satisfaction associated to each function;
- reduce costs associated to the study subject, taking into account the minimization of resources intensity (materials, energy, water, operation time,...) of products and services.

The application of the methodology leads to ideas that enabled to increase the Sustainable Value of the study subject of each company and to improve communication. It also leads to the adoption of more Corporate Social Responsible behaviour by the companies as well as to the increase of their competitiveness.

The methodology shows a high potential to be used as an operational tool for the development of sustainability at entrepreneurial level.

Final comments

At the management style level, although the application of the concepts of value and function is ensured it is necessary to widen the scope so that the social and environmental aspects are taken into account at the decision making process. Those two aspects must also induce new challenges to the companies in what concerns creativity, innovation and competitiveness.

Those concerns at management style must rise within the organisation itself through a transparent behaviour and using communication dynamics with the different teams responsible for the implementation of the different objectives to be attained. Therefore each member of the enterprise must be informed about its positioning, the defined horizons and what contribution is expected to attain them.

In a Corporate Social Responsibility context it is necessary that the organisation takes into account the interests of the different stakeholders, being them external or internal and the result of its activity must be the balance between the satisfaction of the real needs of both of them.

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