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Environmental Management Accounting (EMA) Implementation: Motivation and Expected Results from a Business Perspective

INTRODUCTION

“EMA is broadly defined as the identification, collection, estimation, analysis and use of physical flow information (i.e., materials, water, and energy flows), environmental cost information, and other monetary information for both conventional and environmental decision - making within an organization” (UNSD, 2001)

The study of the actual implementation is relevant because there is little implementation-related advice. Although several studies such as Munkøe and Jasch (2008), Burritt and Saka (2006) and De Palma and Csutora (2001) present results of EMA implementation and technical recommendations, to the best knowledge of the author, there are no studies on EMA implementation from a project management perspective that considers the organizational aspects.

BENEFITS OF EMA IMPLEMENTATION

As the implementation of EMA requires resources (financial, time and people), for an organization to apply EMA it must make business sense.

The literature presents several categories of reasons for implementing EMA such as:

- ▶ **eco-efficiency** (simultaneous reducing costs and environmental impacts via more efficient use of resources)
- ▶ **cost-effectiveness** (increasing internal efficiency by clearly identifying and allocating environmental costs; therefore adequately pricing products)
- ▶ **sound investment appraisal** (better assessment of the economic impacts and the environmental performance of the business)
- ▶ **compliance with the environmental** legislation and environmental reporting standards

METHODOLOGY

The research is based on extensive literature review and the practical knowledge of the researcher during the implementation of EMA in a company

CONCLUSION

- ▶ Analysis based on the EMA data provides information and influences significantly the decision making process.
- ▶ EMA can be valuable for a company only if some conditions exit, such as: support and commitment from top management, the use of a coherent methodology, good communication and involvement of stakeholders.
- ▶ As more and more companies report environmental data and because EMA allows a lot of customization at the moment, the creation of a standardized methodology would create better understanding of the indicators.
- ▶ In order to use EMA at full potential, first of all it must be clear what EMA is, how it can be implemented and the way it can be used.

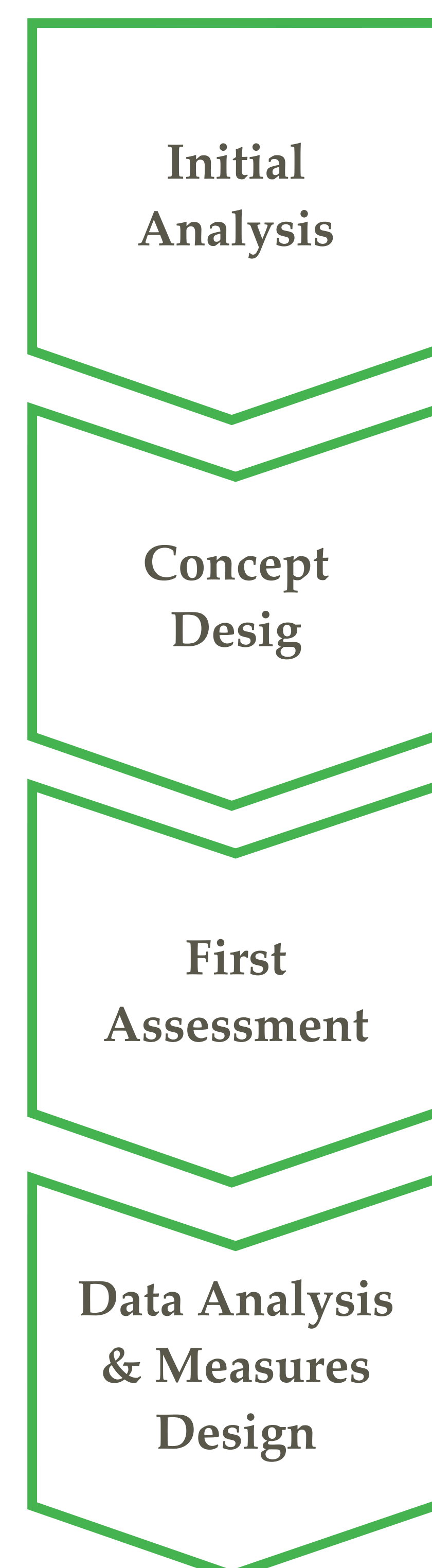
FURTHER RESEARCH

- ▶ Comparative studies are necessary to bring forth what is working and what doesn't; a coherent methodology is needed to be able to compare different types of implementation.
- ▶ An ontology and maybe the creation of international standards for EMA such as the International Financial Reporting Standards. Such standardization would significantly aid environmental audits and would make easier the knowledge transfer between companies.

RESULTS

Implementing EMA is a complex task because it must be integrated with other environmental tools, e.g. Environment Management Systems (for example as defined by the ISO standards), cleaner production assessments, environmental performance and evaluation. Building on different methodologies (Munkøe and Jasch, 2008; De Palma and Csutora, 2001; Kumpulainen and Pohjola, 2008), this blueprint for implementation of EMA also takes into account the structure of a company. The defined phases for EMA implementation and their respective objectives are shortly presented below.

PHASES



OBJECTIVES

- ▶ Identification and classification of the environmental issues considering the specifics of the company's activities
- ▶ Definition of the EMA reporting unit
- ▶ Analysis of the specifics of accounting system and identification of the accounting practices relevant from an environmental perspective
- ▶ Identification of the databases and software resources that will support EMA data gathering and reporting processes
- ▶ Identification of existing and potential conflicts with the current setup with the purpose of integrating the EMA processes requirements with the existing setup of the company
- ▶ Choosing the EMA methodology to be used
- ▶ Definition of the specific cost centres, cost centre hierarchy, cost elements and secondary cost elements relevant from an environmental perspective
- ▶ Definition of the significance threshold for EMA indicators
- ▶ Identification of gathered data and the sources
- ▶ Drafting of the specific EMA reports for each EMA reporting unit
- ▶ Assessment of the regulations and procedures that are impacted by EMA implementation
- ▶ Definition of the personnel requirements for the newly defined EMA processes
- ▶ Updating the company regulations (policy/ standards/ recommendations/ work instructions, etc.) to include the necessary changes
- ▶ Communication of all the changes resulted from implementation of EMA to the relevant personnel
- ▶ Identification of personnel to be trained and the assessment of training needs
- ▶ Communication of EMA to all relevant (internal and external if the case) stakeholders (such as employees, clients, suppliers, authorities, etc.) and the support required from their side (if the case);
- ▶ Implementation of the adjustments in the software system to include EMA necessary conditions
- ▶ Highly dependent on the concept implemented
- ▶ The analysis of the data for the reporting period is prepared in order to identify improvement measures for the environmental and economic performance
- ▶ Data analysis should support the decision making process
- ▶ The following types of analysis are recommended:
 - ▶ statistical analysis of EMA data evolution
 - ▶ qualitative analysis of the causes of the out of range values of indicators
 - ▶ comparison of the achievements of set objectives
 - ▶ targets and determination of trends of significant indicators

CRITICAL FACTORS FOR A SUCCESSFUL IMPLEMENTATION

- Top management support** is crucial issue in applying EMA, as Without this support, EMA risks to be a one-time exercise rather than everyday practice (De Palma and Csutora (2001, p. 36); (Kumpulainen and Pohjola, 2008)
- ▶ EMA is easier to introduce in companies with group wide **environmental policies**. If the whole group adopts EMA, it can be used as a benchmarking tool (Munkøe and Jasch, 2008)
 - ▶ The **absence of strategic management** is a barrier in the implementation of sustainable enterprise strategies that included EMA (De Palma and Dobes; 2010)
 - ▶ **High prices input prices** encourages the use of EMA since significant savings opportunities can be revealed. On the other hand, low input prices are small and often insignificant (De Palma and Csutora, 2001)
 - ▶ Strict **environmental regulation** and enforcement encourages the use of EMA, due to potential savings from reduced environmental fines fees, and liabilities. (De Palma and Csutora, 2001)
 - ▶ Good communication of the EMA scope and application to the relevant stakeholders inside the company, Appropriate training of relevant personnel

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