Development of a Performance Measurement System: Case Study of an Italian SME

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Abstract: - Business performance measurement and management is a topic of increasing interest in both academic and industrial ambits. While performance indicators and frameworks have been developed for large companies, little research has focused on small and medium enterprises (SMEs). As a consequence of that, different kind of research are needed in order to extend the current body of knowledge. This paper is a contribute forward this direction. Particularly, the paper reports the case study of the implementation of a performance measurement system in a SME. The various stages of the project are highlighted and characteristics of the final system discussed. After two years of system’s adoption, feedbacks from user appear positive.

Key-Words: - Business Performance Measurement, SME, Value-Chain

1 Introduction

Performance measurement is a topic of increasing interest in both academic and industrial ambits [1]. The use of financial vs not financial indicators, the choice of proper performance measurement frameworks, the need of linking strategies to operations and the role of performance measurement systems in alignment and remuneration activities has been largely debated. Today, it is possible to affirm that business performance measurement is a mature research field. While performance indicators and frameworks have been developed for large companies, little research has focused on small and medium enterprises (SMEs) [2]. Particularly, there is evidence that metrics and models developed for large companies present limits in SME implementation [3]. As a consequence of that, research is needed in order to extend the current body of knowledge. In such a context, the topic of business performance measurement is multidisciplinary in nature, and its complexity calls for putting in place a wide variety of research approaches, such as action research, case studies, surveys, model development, etc. [4]. This paper is a contribute forward this direction. Particularly, the paper reports the case study of the implementation of a performance measurement system in a SME. The system of performance indicators, organized based on the value chain scheme, appears to fulfill the measurement needs of the SME, and offers good insights for future research and for the development of other similar case studies. The paper develops as follow: first, and overview of the SME object of the case study is presented. Second, the audit activity carried out within the firm is highlighted. The implementation of the performance measurement system follows, together with a discussion section. Conclusions end the paper.
2 Company Overview
The company presented in the case study will be named “Rossi Srl” for confidential reasons. Rossi Srl is a medium enterprise (under the EU definition) family run. It is a multitasking company: 5 business units whose technical productive processes cover either the engineering and production phases of raw materials for special applications and following phases of converting and printing. The company is organized in five business units, related to the five families of products, that are:

- Adhesive labels;
- Office supplies;
- Print on demand;
- Adhesive materials laminates for industry;
- Smart labels.

The company is located in Città di Castello, the Umbrian packaging district, and it has a turnover of approximately 17 M€ and about 80 employees.

The SME is following a path of growth. Particularly, it is expanding both in the national and international markets where it operates, and it is trying to consolidate its economical and patrimonial status so as to attract potential investors. The company owns ISO 9001 and ISO 14001 certifications, and it has SAP as ERP system.

3 Performance Measurement - Audit
The main objective of this phase was to identify the presence in the company of some measurement system in place, or the use of some performance indicators. The Audit activity resulted that the SME was missing a performance measurement system, even if it felt the need of it for better controlling and supporting the company’s growth process. The SME declared to use some financial indicators to analyze its balance sheet, but not as management tools. Moreover, the company demonstrated to have some performance indicators (PIs) that were reported in the quality manual. At the same time, it has been found that the firm had not rigor in monitoring such indicators and moreover, that PIs were been defined through a not-structured process. Particularly, the metrics available were not balanced, and not aligned to the firm strategy. As a consequence of that, such indicators were identified as useless to measure the SME performance, and therefore it has been chosen to consider the context a “scratch-context”.

5 Performance Measurement System - Implementation
In this section, the metrics defined for Rossi Srl are presented. It is important to remark that the achievement of such metrics was the outcome of a long process which involved the analysis of all firm processes, the identification of the real drivers and therefore the definition of proper performance indicators. The principal effort of the research team was to define a balanced set of indicators, comprehensive of both financial and not-financial metrics, aligned with firm strategy and objectives and, most important, really representative of the company business. Based on these considerations, a set of indicators was identified and implemented within the company. In order to structure the PIs in a measurement framework, it was chosen to adopt the Value Chain (VC) scheme of Michael Porter [92]. Porter’s (VC) representation categorizes the value-generation activities of an organization on “primary” and “secondary” activities. Primary activities include: inbound logistics, operations, outbound logistics, marketing and sales, services. Support activities include: administrative infrastructure management, human resource management, information technology, and procurement activities. Such a representation of value-creation activities (schematization of a firm business) furnishes a good base for organizing performance indicators.

The list of metrics defined for Rossi Srl is presented in Figure 1.
The audit phase highlighted that financial indicators were not really used within the company. However, this situation was unacceptable, considering the fact that the company had as main objective to consolidate its economical and patrimonial status so as to attract potential investors. This meant that the financial situation should be very solid and therefore it was particular important to monitor it effectively. The above indicators were identified as crucial together with the company owners.

**Market Indicators**
- Average Turnover Deviation from Budgeted (Global)
- Average Turnover Deviation from Budgeted (Business Unit 2)
- Turnover from new clients
- Turnover from TOP10 clients
- New markets’ penetration

The audit phase highlighted a general confusion regarding market and turnover performances, even if these aspects were very important for the company since it was following a growth path that was supposed to drive financial wellness. As a consequence of that, it was chosen to monitor the average turnover deviation from budgeted (first two indicators) with particular attention to the business unit 2, which was responsible for most of the turnover. Moreover, by taking in consideration the path of growth, it was chosen to monitor the turnover coming from new and TOP10 clients. Finally, since the company was trying to enter foreign markets, it was chosen to measure the effectiveness of such actions by measuring new markets’ penetration.

**Strategically Indicators**
- ROI of current investments
- Punctuality of delivery

**Critical Projects of Strategic Impact - Indicators**
- Average disalignment from budgets

The growth path that the company was passing through it was of course characterized by significant investments. The ROI of current investments was suggested as important indicator from the owners, since it was very important for them that all investments should economically return soon and it was very important to monitor this path of return. Otherwise, punctuality of delivery was indicated as strategical metric for two main reasons: first, it was a current lack of the company that should be fulfilled; second, it was considered an important driver to improve customer satisfaction and attract new customers.

Regarding the critical projects of strategic impact, it was identified a project that the firm was running with the help of a consulting firm, in relation to the capability of setting up budgets. In fact, the audit phase highlighted a scarce capability of the company management to define budgets, as confirmed by the huge deviations they used to have from “budget” and “real”.

**PRIMARY ACTIVITIES**

**Marketing**
- Average time for producing an offer
- Number of offers that become orders/Number of offers
- Number of offers by agents/Number of offers
- Number of market surveys/Number of clients

**Process & Product Development**
- Number of orders in delay/Number of orders
- Average time for graphic elaboration/Number of orders
- Number of ongoing graphical projects/Number of printing orders

**Manufacturing**
- Number of claims/Number of orders
- Effective machine hours/Planned machine hours Manufacturing linearity
- Manufacturing progress
- Manufacturing cost variation
- Percentage of scraps, returns and replacements
- Percentage of machines utilization

**Sales & Distribution**
- Percentage of deliveries on time
- Average delay (days) on deliveries

**After Sale**
- Customer satisfaction

Regarding primary activities, again the audit phase highlighted a situation of confusion and
disalignment. Regarding marketing activities in fact, there was a huge confusion of parameters that were supposed to measure agents’ performances. As a consequence of that, such indicators were reorganized through a structured approach. A similar process was carried out for reorganizing Process & Product Development PIs and those of Sales & Distribution.

Regarding manufacturing, it was chosen to go more deeply in the measurement process. Particularly, a number of new metrics were identified in order to control specific problematics, such as the “manufacturing linearity”, the manufacturing progress” and the “manufacturing cost variation”. Regarding the “after sale” process, the customer satisfaction metric was implemented. This parameter, was not in fact founded in the audit phase.

SUPPORT ACTIVITIES

Procurement
- Number of claims versus suppliers/Number of suppliers;
- Average delay (days) of supplies

Technology Development
- Number of BOs identified through a market pull approach
- Number of BOs identified through a technology push approach
- Percentage of success of technology push projects Time to market

Human Resources Management
- Number of worked hours/Number of workable hours
- Coverage (percentage) of capabilities needed for growth

Infrastructure
- Machineries’ maintenance costs/Value of machineries
- Warehouse rotation index
- Warehouse coverage time
- Average time between money receiving and payment

Regarding support activities, a number of considerations are needed. First it is important to remark the metrics developed in relation to the “technology development” activity. Particularly, the focus has been on the business opportunities deriving from this activity, “percentage of success of technology push projects” and the “time to market”. These parameters were chosen since they permitted a strict control of the research and development activity, which can often lead to high costs and unsuccessful projects. Moreover, it is interesting to remark the “Coverage (percentage) of capabilities needed for growth”-metric, defined under the “human resource management” voice. These parameters were “ad hoc” defined since the belief that the company, in order to achieve successfully the path of growth, it needed specific resources (HR) that at the moment were not available. Finally, two indicators were implemented under the voice “infrastructure”, since issues were found in the warehouse management process.

Performance Measurement System - Results Achieved
Rossi Srl is currently using the performance measurement system presented since 2 years. Feedbacks obtained by company owners and management appears positive. They can be summarized as follows:

Simplicity of the System
The performance measurement system developed, based on the VC scheme, was easy to understand to users and this created a shared sense of trust on the system. Particularly, firm owners and managers by understanding value creation processes of their business, positively accepted to define performance indicators based on the VC scheme.

Coherence of the System with Firm’s Strategy
The development of the performance measurement system started from the understanding of company strategy and processes. Moreover, the outcomes of the initial audit highlighted the uselessness of the previous metrics, and motivated the consequent effort of developing a performance measurement system based on firm strategy.

Alignment Support
Feedbacks for owners and managers report the benefit of the performance measurement system as a tool for creating alignment within the firms. Particularly, they remark that the system has become the base for defining business targets, and all employees are evaluated based on the achievement of performance goals. Moreover, users remark that the system developed is a good base for reporting, and that they use it for internal and external communication.
Effort Needed for Success
Users’ feedbacks remarked that a strong effort was needed for adopting the system in day by day operations. Particularly, users highlight the time, costs and efforts that are needed in order to collect and analyze data related to all performance indicators identified in the system. Users remark such an effort is particularly intense at the beginning, when benefits are not yet clear in the organization.

8 Conclusions
This paper has presented the case study of an Italian SME which developed a performance measurement system for assisting and driving its path of growth. The initial audit phase of the project resulted a lacking situation in terms of metrics and practices. The development of the new system lead to a structured set of performance indicators, based on the value chain scheme. After two years of adoption, feedbacks from system users appears positive. Particularly, the performance measurement system returned positively in terms of: simplicity, coherence to strategy and company alignment. However, the case study has also shown that the implementation of performance measurement system is a complex and time requiring activity. As a consequence of that, big effort is required from final users in order to push and sustain such projects in the preliminary stages, so as to guarantee future success.

References:
Figure 1 - Rossi Srl - Performance Measurement System