

MARKET DRIVEN, ACTIVITY BASED, PERFORMANCE MEASUREMENT: A TELECOMMUNICATIONS COMPANY CASE STUDY

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Abstract

Developing performance measurement is a necessary element for the effective management of organizations. Performance measurement has been gaining in importance in both operations and management literature. In this paper an evaluation of the development and implementation of performance measures is presented. Investigation of the process from an organizational view-point provides insights into the advantages and disadvantages of a strategic activity-based development framework for performance measurement. General issues and implications for the management of performance measurement development and implementation provide some fundamental guidelines.

Introduction

The case study chronicles the implementation of a performance measurement system (PMS) for SkyTel, a paging company in its start-up phase in Malta. The objective of the exercise was to observe the effects of measurement on the company (e.g. company acceptance, communication, performance) and identify its advantages and disadvantages. The paper describes how lead and lag indicators were selected for the operations monitoring process. A departmental, market driven, activity-based approach was used, extracting operational variables from the company's functional units. The measures were to be directly tied to what the market (customer) viewed as important, with a strong emphasis on the processes (activities) adding value to the customer.

Performance Measurement Requirements

The following perspectives were taken into account in the design phase of the measurement system:

1. Performance measures should permeate the organization's hierarchy. That is, a link between operational measures and strategic objectives should be made and integrated. Cross and Lynch (1991) propose such a structure of measures that permeate through the organization's hierarchy in order to integrate performance.
2. Measures should link across the organization. In order to be effective the measurement system would have to recognize the merits of the service profit chain, whereby customer relations, quality of service, and employee satisfaction have a direct effect on profits (Heskett, Jones, Loveman, Sasser, Schlesinger, 1994; Rubin, 1995). This requirement has also been noted by Crosby's (1984) third point of implementing a total quality management system.
3. The monitoring system should monitor the company from the perspectives of finance, customer knowledge and internal business processes. The three dimensional approach was selected because the company was in its start up phase. Its internal processes were under development and they would require checking and modification periodically. The company's knowledge of the customer was evolving as the operation grew. Timely information on its

customers would help the company to be more proactive in its approach to sales and customer care. The system would balance objective and subjective factors. Both tangible and intangible measures need to be integrated. The PMS would have to channel the energies, abilities, and specific knowledge held by people towards achieving long-term organizational goals (Kaplan and Norton, 1996).

4. During the design stage companies need to consider the multi-dimensional nature of PMS, in terms of the balance between external and internal factors, possible conflicts between performance measures, and the link between what is being measured and corporate strategy. PMS complexity may be minimized by employing structured methodologies. Research shows that firms that use a structured approach find it significantly easier to a) decide what should be measured b) decide how to measure it c) collect the appropriate data and, d) eliminate conflict in the measurement system. (Neely, et al., 1996)
5. Avoid looking at the firm from a mechanistic viewpoint. An organization needs to be viewed as a living organism, which needs to be sustained, motivated and provided the opportunity to learn and improve. Measures should be balanced by reporting on success and failure, and focus on the future and the past (Senge, 1990). This issue points to the need for dynamic characteristics of any measurement system (see Nanni, et al., (1992); Adams, et al. (1995)). An evolutionary approach, rather than a revolutionary approach fits well within this dynamic organizational perspective, and is usually preferable to most organizations (Blossom and Bradley, 1998).
6. The measurement system should act as a tool to encourage people to be creative, to improve skills, to derive satisfaction, and to produce better results for the company. It should not serve as an instrument to allocate blame, but as a tool to identify problems and to develop solutions.
7. Marketing acumen is central to the paging company. The system should monitor (1) how the company seeks to be master of a market, for which it seeks customer-satisfying products and services, (2) assess how the company is retaining and developing its expertise in certain technology, and (3) how markets are being effectively sought.
8. Deming (1986) warns against 'paralysis by analysis'. The reporting system would have to be easy to understand and quick to read, and information limited to what is really needed to make operational decisions to optimize market performance.

Organizational Background

SkyTel, in its start-up phase, required a monitoring tool to assess its progress in its first months of operation and organizational life cycle. The company could assess its competence by benchmarking against international standards in the paging industry. A measurement system for producing benchmarking metrics and gauging activities of vital operational functions was needed.

Early on the company was aware of the strict and volatile competitive environment it faced. The paging service was to be introduced in the region after mobile telephony a reverse introduction of what happened in the United States and other European countries. Managers were concerned with the company's ability to penetrate a difficult telecommunications market. They required a feedback system to highlight progress and to indicate fresh opportunities to gain market share.

Methodology

The researchers played multiple roles as part of an "action research" (Susman and Evered, 1978) approach of facilitating the development process, observing the results, and monitoring the program for improvement. All these roles included support from a theoretical foundation in the

literature to help focus and guide organizations in the most effective direction. The process and some resulting issues are presented in the next few sections.

Metric Identification Process

Activities to be measured were selected by their organizational role. The PMS was to represent a balance between what managers think they need, what managers really need, and economic feasibility. Managers were interviewed to discover their concern with operational processes and information needs. Special attention was given to upper management's information desires and concerns. The development of SkyTel's PMS was achieved through a systematic approach and framework that secured commitment about how to turn the company's strategies and its departments' goals into operational measures.

Identification of Corporate Objectives

The initial stage was to identify the primary corporate objectives. The company had been set up a few months earlier. Its primary goals were identified and rated in the following order of priority:

- Establish an efficient operational set-up in each department. The tasks included establishing selling strategies, customer policies, the installation of complex telecommunications equipment and the development of engineering procedures.
- Ensure that each department was effectively set up to serve future customer requirements. The demand for future support services was based on records of previous company start-ups.
- Penetrate the market with pager sales at a rate that secures overheads and capital investment.

Departmental Evaluations

The selected company activities can be categorized into four departments: Marketing, Customer Care, Dispatch Bureau, and Operations. A series of workshops was devised with the key management decision-makers of each department. The objective was to identify performance measures for each department, based in the functions and the process flow of activities within the departments. Four sessions were held with each group to address the following subjects:

- PHASE 1 - INTRODUCTORY SESSION ON PERFORMANCE MEASUREMENT SYSTEMS. Commitment and trust from management were achieved through discussion of measurement practices across different industries. Managers started to identify how they could benefit from the system in terms of better evaluation of resources and to focus more clearly on objectives for which they were held accountable.
- PHASE 2 - CHARTING OF ACTIVITY BASED PROCESS FLOWS. Lists of activities, flow charts of work processes and job descriptions were configured and drawn up to describe what goes on within each department. The visualization of the work processes per department had a positive effect on management. It helped them focus on how the departments were evolving at a time when the company was in its infancy. Managers used the exercise to assess their functional operations and to help them evolve faster.
- PHASE 3 - LINK ACTIVITIES WITH OTHER DEPARTMENTS. The activities charted in the previous session were examined for overlap of functions between departments. This approach helped managers define accountability for performance more accurately. Furthermore, the departments obtained a clearer picture of how the functions interface with each other, and where co-operation must be strengthened to ensure performance targets were reached.
- PHASE 4 - IDENTIFY THE KEY PERFORMANCE MEASURES. Once the departmental activities were charted the metrics worth measuring were identified. The criteria for selecting the measures were based on the following rationale:

- The measure selected was for a value-adding activity that was of relevance to the customer. In this way value-adding activities were encouraged and rewarded. The net effect was for people in the organization to reduce non-value adding work in order to increase value-adding operations. Examples of such measures would be: sales patterns, handling of customer queries, and the efficiency of repair services.
- Key activities, which were not directly value adding, would be included if they were drivers of value adding activities, for example: commissions earned per salesperson and the number of pagers ordered per sales contract. Such measures would motivate performance and efficiency in the sales force.

During the system building process, comprehensive documentation was generated containing flowcharts of the departments' activities. Figure 1 provides an outline of the contents of this documentation, as well as the overall measurement development process for the marketing department as an example. A summary of the performance measures adopted within each department is shown in Table 1.

Performance Data Collection and Processing

A standard form was constructed with each departmental manager. The form contained a list of the relevant performance metrics. At the end of each week the department would complete the forms and dispatch them for processing. The data was translated into tables and charts. The graphs issued were found to be effective tools to monitor the variations in performance. The reports were supplied on a weekly basis. Given that the company was in its development phases, data needed to be supplied frequently, to troubleshoot problems as they arose. Even though they were valuable to management, the forms required repeated updating. This updating was completed on a monthly basis and reflected the changing market environment and the expansion of the company's operations.

Monitoring and Feedback of the Performance Measurement System

An important dimension for any PMS is that it will be dynamic and timely. That is why a critical element of any development process is the feedback loop to and from the developers, managers, and users of the system. To accomplish this phase in the development process observations were made, followed by the implementation of improvements and alterations.

Observation of Effect on the Organization

It is important that a PMS is closely linked to the actual performance of an organization, one of the common sense and fundamental purposes of PMS that is typically overlooked (Blossom and Bradley, 1998). As part of this effort the monitoring included an evaluation of how the data was used by top management in strategic decision making. From an operational perspective, the extent to which the reports were understood, and how easily they could be translated into actions, were also measured.

During the implementation phase of the PMS, managers were assisted in understanding the data and developing action plans. When a slow-down in performance was detected, an inter-departmental task force would be assembled to address the problem. A strategic plan of action would be devised to improve performance. In most cases the corrective plans included the implementation of new operational procedures, to improve performance in the short term, and avoid a re-occurrence of negative performance variance in the long run.

An important and final element of the monitoring and feedback phase was to determine how well the PMS and its purpose have been diffused throughout the organization. Specifically, recommendations to assist employee knowledge and acceptance of PMS philosophies were

provided. In this stage several discussions were held with the management team to establish how the reports could chart the path towards improving the company's performance.

Findings and Results from the Performance Measurement System

Positive Factors of the Performance Measurement System

1. The reports and measures supplied were concise, accurate and informative. The elements chosen for measurement were appropriate and highly relevant to performance.
2. The company could see itself as it really was, free of assumptions on performance of staff and market penetration.
3. The charting of customers' opinions and levels of satisfaction highlighted the company's strengths and areas for improvement.
4. The organization was measured from all angles via the monitoring of market growth trends, channel analysis, market shares, sales trends, and external demand.
5. All targets were concise and focused.
6. All measures and targets were tied to a given department, its subsections and its staff members.
7. Staff members were aware of their targets intended to satisfy market requirements.

Limitations of the Performance Measurement System

The negative results of the PMS were also obvious in this case. The following issues were targeted for improving the system. These observations are lessons that provide insight into what managers should attempt to avoid in a market-driven PMS.

1. There was a conflict of 'fit' between the highly structured PMS and the young, rapidly evolving company. From a subjective point of view the mechanistic characteristics of the reports and performance measures seemed to detract and constrain management's creativity. Creativity may be necessary for effective growth in a difficult and competitive market.
2. Even though the results of the PMS indicated what the weaknesses were, the market and organizational environment did not facilitate the action necessary for improvement. Cultural and organizational constraints limited the effectiveness of the PMS.
3. Personnel found it difficult to relate the marketing oriented targets to what they had to do in their daily routines. Even though there was some effort to diffuse the measures vertically through the organization, this effort was difficult and not completely successful.
4. The corporate culture was starting to focus on operational problems. Thus, the charting of problems on a regular basis could have been de-motivating. Success is sometimes viewed as something where employees are rewarded while failure is penalized.
5. Management and personnel required further training to learn how to handle PMS information. If the reports were used ineffectively, a blame culture could emerge within the organization. Once again, the cultural goal of improvement, and not blame-laying, is a difficult barrier to overcome when it comes to the actual utilization of performance measurement outputs.
6. The performance measurement outputs (reports and measures) needed to show more effectively how the work that was accomplished in the organization affected the customer, or of what value they were to the customer. Customer opinions and feelings were recognized, but the impacts of the actions on the customer were not easily determined.
7. The system lacked the ability to help the organization help itself. It told the company where it was and where it should be but did not motivate action or create a dynamic environment

conducive to change. Clearly, this is a large goal for any system, but it provides the lesson that any strategic project in an organization will require a substantial cultural evolution as well.

Conclusion

The challenges that arose with the implementation of performance measurement concerned the introduction of a relatively rigid measurement process, within a vibrant evolving company, which was in its start-up phase. Corporate knowledge, structure, and skills were in the process of development. The learning curve within the organization seemed to require a natural period to reach maturity, which could not be accelerated by the performance data reports. If one looks at the issue from Arie de Geus's (1997) perspective of corporations as 'living' companies, the organization needs to evolve in response to its surroundings. The organization's response to the performance reports would come at a second stage, when the identity and culture of the company become established.

The PMS was effective in terms of design influence on customer oriented operations procedures. The main lesson learned is that the process could neither be forced into the structure nor rushed to completion. The company would have been identified as being in its adolescent phase in terms of the 'Learning and Growth' perspectives (Kaplan and Norton, 1996). A natural progression of the operation would be required until it could use the full potential of the more complex PMS. One issue that arose is the need to investigate the "life-cycle" characteristics of an organization and how to model appropriate PMS for different life cycle stages.

The case study highlights an area of research into performance measurement that requires additional investigation, namely: how to integrate a performance system (which is mechanistic and numbers oriented) with a corporation (which can be viewed as a living and evolving entity). The results could provide valuable insights on how to create and manage viable measurement systems.

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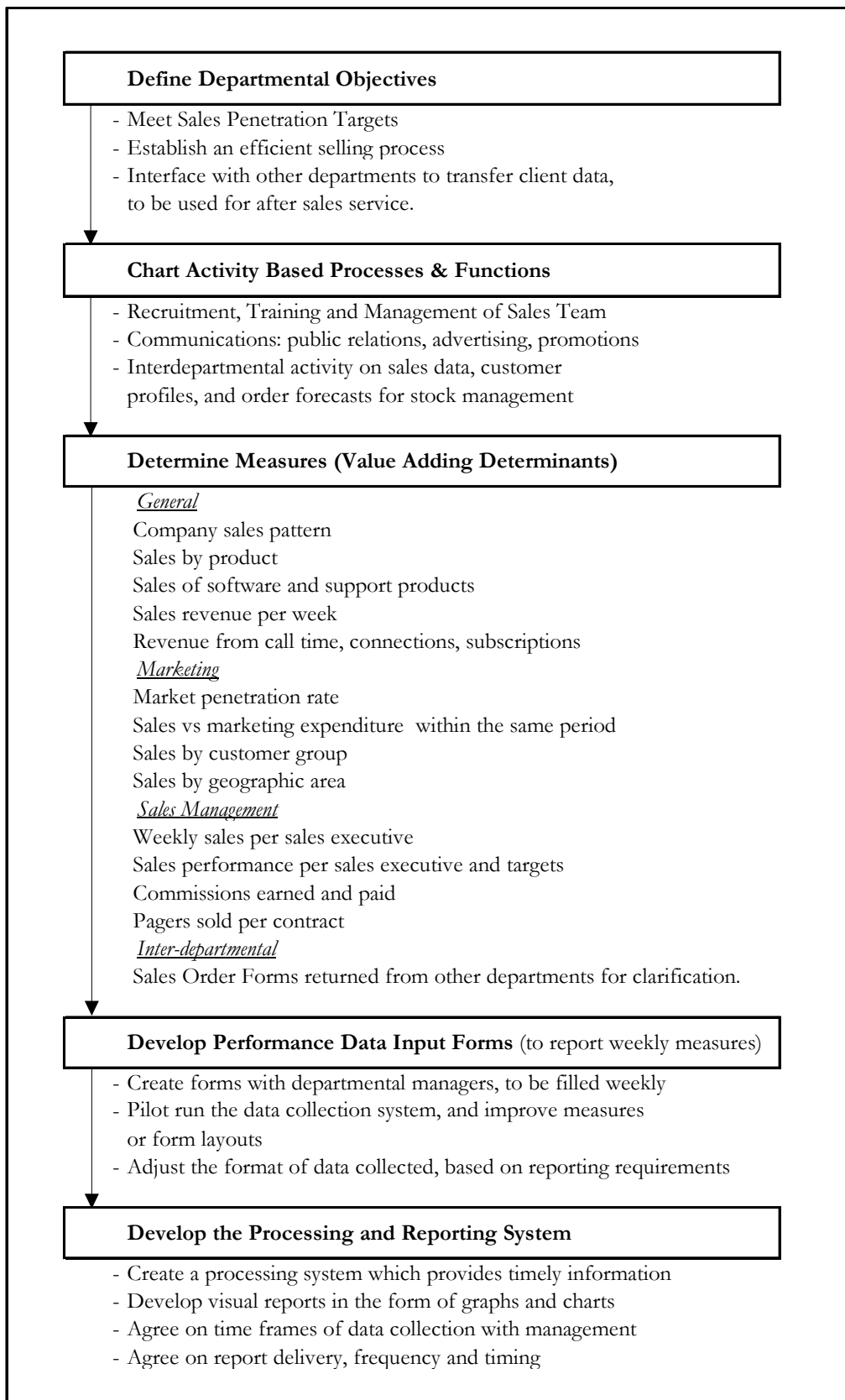


Figure 1: Marketing - Measurement Identification Process

Marketing Department	<p><u>General</u> Company sales pattern Sales by product Sales of software and support products Sales revenue per week Revenue from call time, connections, subscriptions</p> <p><u>Marketing</u> Market penetration rate Sales vs marketing expenditure within the same period Sales by customer group Sales by geographic area</p> <p><u>Sales Management</u> Weekly sales per sales executive Sales performance per sales executive and targets Commissions earned and paid Pagers sold per contract</p> <p><u>Inter-departmental</u> Sales Order Forms returned from other departments for clarification.</p>
Operations Department	<p>Network and equipment inspection results Network faults Average call time per subscriber Messages dispatched by source Average number of Messages per subscriber Average call time per subscriber Average message duration Message duration by source Message revenue by type of pager. Stock positions, forecast and stock-outs Pager repairs by type of fault</p>
Customer Care Department	<p>Reported faults by type and source Enquires from clients to the customer care department Visits by clients to customer care centre Calls to customers with low usage, outcome Phone calls made by customer care personnel to clients, issues addressed Meetings held between personnel and clients, issues addressed Disconnections effected, reasons given</p>
Dispatch Bureau	<p>Daily number of Messages processed Messaging time per week Cumulative bureau calls Cumulative Messaging time Bureau and direct Messages per subscriber Bureau traffic per hour No reply and engaged calls.</p>

Table 1: Summary of Performance Measures per Department

MARKET DRIVEN, ACTIVITY BASED, PERFORMANCE MEASUREMENT: A TELECOMMUNICATIONS COMPANY EXAMPLE

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