

# THE DISTINCTION BETWEEN BUSINESS INTELLIGENCE AND CORPORATE PERFORMANCE MANAGEMENT – A LITERATURE STUDY COMBINED WITH EMPIRICAL FINDINGS

*Mika Aho*

Business Information Management  
Tampere University of Technology  
P.O. Box 589, 33101 Tampere, Finland  
mika.p.aho@tut.fi

## ABSTRACT

Corporate Performance Management (CPM) is often referred as the next generation of Business Intelligence (BI). Yet, not much academic research exists in the area, and especially in its relationships to other interrelated concepts such as performance management (PM), performance measurement, and data warehousing. The paper discusses the differences and similarities between BI, PM and CPM, and the new advancements that CPM brings to BI. It also introduces a pyramid that links the interrelated concepts together. The work is based on a literature study and action-oriented research. The findings of this study further extend the CPM research by providing a deeper understanding on how CPM relates to BI and PM. The paper also provides understanding to researchers and organizations about CPM and its potential value.

## 1. INTRODUCTION

### 1.1. Increasing needs for enhancing corporate performance

Business Intelligence (BI), analytics and performance management (PM) have been the top priority for Chief Information Officers for the fourth year in a row [1]. Enhancing corporate performance is important when the economic situation is tough: it can help organizations to find bottlenecks and inefficiencies or expose areas that are profitable. However, much confusion remains in what comprise CPM.

### 1.2. Research purpose, approach and methods

The paper discusses the differences and similarities between BI, PM and CPM, and the new advancements that CPM brings to BI. The work is carried out as a literature study and action-oriented research. The findings from the literature are combined with empirical findings in five case companies where the author participated into CPM development projects in various consultation roles. The

findings of this study further extend the CPM research by providing a deeper understanding on how CPM relates to BI and PM. The paper also provides understanding to researchers and organizations about CPM and its potential value.

The case organizations participating in this study are all manufacturing companies. Three of them are listed in a Helsinki Stock Exchange. Each of the company has multiple sites around the world. Of five companies, the number of employees ranged from approximately 300 employees to over 11000 employees. Total yearly revenue ranged from 75 to 2600 million Euros. In each case, the CPM deployments were done at a group level.

## 2. THEORETICAL BACKGROUND

### 2.1. Performance Measurement

The performance of an organization is ultimately how it is achieving its goals. The performance measurement refers to “a process used to determine the status of an attribute or attributes of the measurement object”. [2] Measurement is done by using measures - often called key performance indicators (KPIs) - which are used to quantify management objectives. They basically reflect to how an organization is doing in a specific aspect of its performance [3]. One characteristic for performance measurement is that the measurable items are predefined.

A KPI is one representation of a critical success factor (CSF) which is a key activity needed to achieve a given strategic objective [4]. The KPIs encourage enterprises to look beyond traditional financial metrics for an understanding how the enterprise is performing. Often a handful of CSFs are identified that comprise every strategic objective the organization has. In one of the case companies, the CSF for *customer satisfaction* was measured by using two KPIs: *availability* (can company say yes to customer requests) and *reliability* (does the company keep its promises). For example, the availability KPI was calculated by comparing a share of real delivery dates with the customer requested dates.

## 2.2. Performance Management

PM can be defined simply as “the transition of plans into results – execution” [4]. In this scenario, PM is the process of managing organization’s strategy which aims at the systematic generation and control of organization’s performance [4,5]. PM is about improvement to create value for and from customers with the result of economic value added creation to stakeholders and owners [4].

Earlier in much of the academic literature traditional PM has been financially biased by focusing only on the inside of the organization on cost and budget variance data. The balanced scorecard literature widened the concept of PM by making executives look externally. As a result, nowadays companies are focusing in a wider range of stakeholders to ensure they pay attention to all the important facets of performance [6].

## 2.3. Business Intelligence

The term BI was first coined by the Gartner Research Group in the early 1990s. It can be seen as a method of analyzing the business environment (markets, competitors and economic issues). On the other hand, BI refers to an analytical process that produces insights, suggestions, and recommendations for the management and decision-makers by transforming internal and external data into information. [7] For example KPIs can be monitored and represented by using BI techniques such as scorecards and dashboards. The data needed in to calculate the KPIs – like the real delivery date – also comes from a back-end BI solutions, namely from a data warehouse (DW). DW is a relational database in which data is aggregated from several operational source systems. DWs enable an effective reporting and analysis without affecting the performance and functionality of the operational systems.

Although BI offers the tools necessary to improve decision making within organizations, it is not linked to organization’s strategy. As such it provides no systematic means of planning, monitoring, controlling, and managing the implementation of strategic business objectives [8]. Merely reporting information does not equate to managing for better results [4]. Actions and decisions are needed to improve the organization’s performance.

## 2.4. Corporate Performance Management

CPM is a consolidation of concepts that companies have been practicing for some time already such as PM, DW, BI and total quality management. Still much confusion remains as to what comprise CPM. The most used definition is from Gartner [9] who defines CPM as an umbrella term used to describe the “methodologies, metrics, processes and systems used to monitor and manage the business performance of an enterprise”. CPM is targeted at the corporate level. Some researchers see CPM as a narrow

concept that applies to planning, scheduling, and budgeting practices in business, and some discuss it in the context of legislation such as Sarbanes-Oxley Act [8].

Often enterprises manage their business by analyzing financially oriented metrics. All of the case companies started their BI and CPM initiatives from financial reporting. Actually, the most used PM process was budgeting, often focused at the operational level around a single-year budget. However, CPM brings in new methodologies and concepts such as Balanced Scorecard, Activity-Based Costing and value-based management to broaden the view from a purely financial perspective.

## 3. THEORETICAL FINDINGS

### 3.1. Similarities and differences between BI and CPM

Although many use the terms BI and CPM synonymously, they are distinctly different [8,4]. CPM enhances BI in two directions: first, CPM is more targeted to support process-oriented organizations than BI. Second, CPM aims at providing a closed-loop support that interlinks strategy formulation, measurement, process design and execution with BI [5]. CPM also evaluates its progress over time toward goal attainment by using CSFs and KPIs [8,5].

CPM as a concept represents the strategic deployment of BI solutions, since BI provides the backbone to implement CPM. As CPM deploys the power of BI, the two are inseparable. BI involves the raw data from disparate source systems that is cleansed and integrated into DW. CPM is about leveraging that information [4,10]. Once the data is transformed into meaningful information, it can be used for decisions.

BI is an enterprise information platform for querying, reporting and analytics, making it the foundation for effective performance management. CPM drives the strategy and leverages all of the processes, methodologies, metrics, and systems that monitor, manage, and improve enterprise performance.

Fig. 1 illustrates the CPM concept as a whole. The mission and vision statements lead to business goals and a strategy. Strategy states how the goals should be reached, and CSFs define the prerequisites to reach the goals. The business goals and imposed strategy lead to objectives and a policy (business plan). KPIs define how the objectives will be measured. The imposed policy is stated with business rules. Within the BI environment, the KPIs are presented by scorecards, dashboards or other simple graphical readouts in a front-end web portal or similar interface, using metaphors such as traffic lights and gas gauges. From the dashboard, managers can drill down to study performance data in more detail. CPM requires underlying data systems which can share cleansed, consistent and reliable data in a flexible ways. The data

itself is aggregated to a DW from operational information systems or other data sources.

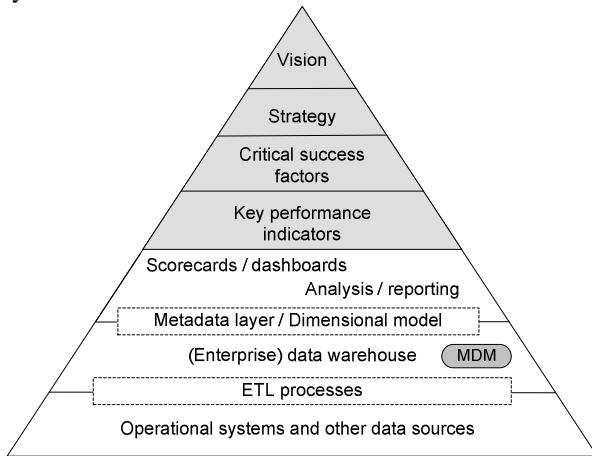


Fig. 1. The CPM pyramid, amended from [12]

The upper grey part of the pyramid in the Fig. 1 is how CPM is usually understood, while the bottom section of the pyramid is what encompasses BI. The bottom can also be divided into front-end and back-end BI, containing the reporting and analysis layer, and DW, respectively.

#### 4. EMPIRICAL FINDINGS

Many case organizations used the terms BI and CPM synonymously. Every company had a DW in place, which was an important part of the BI/CPM solution. In one case company the acronym CPM was used to complement the BI solution in terms of budgeting and financial planning solutions. Another case company used systematically the term BI even though it had defined a variety of CSFs and KPIs. Of the five key companies only two had KPIs in place which were used to monitor the performance of the company. In other companies the developed BI/CPM solution was used to produce information to decision-makers in terms of reporting and analytics.

Interestingly, many case companies used the vendor offering (CPM suite/application) to define what does the CPM acronym stand for. Often the components included were planning, budgeting, financial consolidation, reporting, strategy planning and business scorecards. One case company used the Gartner's definition for CPM to represent its BI solution.

#### 5. CONCLUSIONS

It seems the terms BI and CPM are widely used but also generally misunderstood. In fact, no other terms were used in the case companies to represent the concept. Even though no generalizations can be done from such a small sample size used in this study, it seems the terms BI and CPM still needs further academic definition. Even in the literature the

two concepts have different meanings. As such, CPM is still very commercial term. In general, BI is a subset of CPM, and CPM brings in new concepts and areas where traditional BI falls short. Both are needed: BI is more targeted at transforming data into information while CPM provides a means of combining business strategy and technological structure to direct the entire organization towards accomplishing common organizational objectives. Together, BI and CPM form the bridge that connects data to decisions. [4]

The topic could be further investigated for example by accomplishing interviews in the case companies, or creating a large survey for BI/CPM practioners.

#### 6. REFERENCES

- [1] Gartner, 2009. "Gartner EXP Worldwide Survey of More than 1,500 CIOs Shows IT Spending to Be Flat in 2009 ", Press Release.
- [2] Lönnqvist, A. 2004. "Measurement of Intangible Success Factors", Doctoral dissertation. Tampere University of Technology.
- [3] Kaplan, R. 2009. "Measuring Performance (Pocket Mentor)", Harvard Business Press, Boston, Massachusetts.
- [4] Cokins, G. 2009. "Performance Management: Integrating Strategy Execution, Methodologies, Risks, and Analytics", John Wiley & Sons, Hoboken, New Jersey.
- [5] Melchert, F., Winter, R., Klesse, M. 2004. "Aligning Process Automation and Business Intelligence to Support Corporate Performance Management", in Proc. 10th Americas Conference on Information Systems, New York, Aug 2004.
- [6] Bourne, M., Franco, M., Wilkes, J. 2003. "Corporate Performance Management", *Measuring Business Excellence*, Vol. 3, no 3, pp. 15-21.
- [7] Pirttimäki, V. 2007. "Business Intelligence as a Managerial Tool in Large Finnish Companies", Doctoral dissertation. Tampere University of Technology.
- [8] Frolick, M., Ariyachandra, T. 2006. "Business Performance Management: One Truth", *Information Systems Management*, Winter 2006. pp. 41-48.
- [9] Geishecker, L., Rayner, N. 2001. "Corporate Performance Management: BI Collides With ERP", Gartner Research Note, Strategic Planning, SPA-14-9282.
- [10] Miranda, S. 2004. "Beyond BI: Benefiting from Corporate Performance Management Solutions", *Financial Executive*, Vol. 20, No. 2, pp. 58-61.
- [11] "Business or Corporate Performance Management". 2003. Featured article. *International Journal of Productivity and Performance Management*, December 2003, Vol. 52, Issue 7
- [12] van Roekel, H., Linders, J., Raja, K., Reboullet, T., Ommerborn, G. 2009. "The BI Framework: How to Turn Information into a Competitive Asset", Published by Logica.