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Business Performance Management for Competitive Advantage in the Information Economy

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Abstract

The article provides an overview of BPM (Business Performance Management) concepts and components and then benefits, challenges, and critical success factors. The results presented in this paper are based on a survey that was conducted in 2009 among 176 companies operating in Silesian region in Poland, as well as interviews with BPM experts, including end-user organizations, BI consultants, industry analysts, and report sponsors. Generally, the aim of the research was to diagnose competences (knowledge and experience) of various organizations in BPM and IT applications. The research was carried out by means of a standardized interview technique, using a survey questionnaire.

Keywords:

Business Performance Management, competences in BPM, BPM model, BPM software

Introduction

A critical component for the success of a modern enterprise is its ability to take advantage of all available information. This challenge becomes more difficult with the constantly increasing volume of information, both internal and external to a company. Many enterprises are becoming “knowledge-centric”, and therefore a large number of employees need access to greater variety of information to be effective. Enterprises have been investing in technology in an effort to manage the information glut and to glean knowledge that can be leveraged for a competitive edge (Cody, Kreulen, Krishna and Spangler, 2002).

The belief in power of information has led companies to deploy a wide range of applications, reporting tools and analytical technologies over the years. At first, the solutions were fragmented and implemented in various areas of business. This resulted in silos of information that hampered efforts to get comprehensive visibility into all business areas. So, over time, efforts were made to development of information technology infrastructure that represents a holistic approach to business operations, customers, suppliers, etc. (Wells and Hess, 2004). IT organizations have laboured to build Business Intelligence (BI) architectures that give decision makers insight into every area of the data stored across an enterprise. This trend has led to a substantial focus on data integration, analytical sophistication, and delivery of querying capabilities and reporting tools to the desktop, and other infrastructure-related issues. In fact, because of

its strategic value, BI has become a key concentration for today's IT organizations (Hyperion, 2005).

However, it's also evident that as BI implementations have progressed and matured, they no longer provide the competitive advantages they once promised. There are two reasons for this. First, BI has become pervasive – and companies cannot gain a competitive advantage by doing what everyone else is doing. Second, BI is exclusively focused on providing users with insight into stored data: it does not deliver the tools to make operational change. Insight without action cannot fundamentally impact upon business performance (Hyperion, 2009). Therefore, organizations to gain a competitive dvantage, should take next step: transforming BI into Business Performance Management (BPM). BPM provides a critical foundation for organizations to manage their businesses and empower individuals to make right decisions to maximize profitability. BPM links business intelligence to business strategies and processes via business metrics. This adds a top-down approach to the traditional bottom-up approach of BI, and it adds new processes to the traditional business intelligence processes. These new processes are in particular about publishing and distributing performance metrics and performance indicators to all the people that have responsibility to run and to manage business processes (Smith, Martin, 2003).

The article provides an overview of BPM concepts and components and then benefits, challenges, and critical success factors. The results presented in this paper are based on a survey that was conducted in 2009 among 176 companies operating in Silesian region in Poland, as well as interviews with BPM experts, including end-user organizations, BI consultants, industry analysts, and report sponsors. Generally, the aim of the research was to diagnose competences (knowledge and experience) of various organizations in BPM and IT applications. The research was carried out by means of a standardized interview technique, using a survey questionnaire.

The paper is addressed to business and technical executives who would like to learn more about BPM. The research findings may also prove useful of BPM in the development of competitive advantage in the information economy.

Promises to Business Performance Management

BI systems have been listed among the Top 10 Trends for last years. More and more companies realize that they can implement BI in a cost-effective manner, while acquiring the benefits of finding information "hidden" in the company and being able to perform complex "what-if" scenario planning in real-time (Hurbean, Fotache, 2006).

The Process Management has recently become an area of interest of Business Intelligence (BI) systems implementation, where the key drivers to continuous improvement of processes are constant monitoring of beforehand defined metrics and measurement of established goals and objectives accomplishment. Process-oriented systems, plans modeling and company's efficiency management are regarded as Business Performance Management (BPM). Not only do they allow to identify deviations from adopted plans and efficiency but also to distinguish the reasons for their existence.

It is believed that the term "Business Performance Management" was first introduced to the business language by scientific research centres and Information Technology companies designing and distributing software (Cockings,2007). Initially this notion was mainly equated with the planning, budgeting, reporting, forecasting and scenario-modeling software applications. Slightly later it became connected (associated) with operational reporting, key indicators – KPI (Key Performance Management) and

managerial dashboards i.e. the tools used for data visualization (Vasiliu, 2009).

BPMSG group (Business Performance Management Standards Group), responsible for maintaining standards within the frame of BPM systems, defines a BPM system as:

- a set of integrated, closed in cycles managerial and analytical processes, which are propped up by technical solutions, that in turn support an organisation in financial and operational activities,
- an activator allowing an organisation to define strategic objectives and supply mechanisms for measurement and management of their realization effectiveness,
- basic processes and activities referring to the financial and operational planning, data consolidation and reporting, modeling, analysis and monitoring of indicators, connected with a strategy of an organisation.

The core principles and goals of BPM are the following (Smith and Martin, 2003):

- efficiency: the ability to optimize operations and actions of an organization, individuals, and business processes to ensure that they result in defined goals and desired outcomes,
- quality: the ability to continuously improve the quality of relationships, processes and products or services to fully leverage practices or methodologies that maximize the value of resources and assets,
- value: the ability to create and manage assets to increase business throughput and deliver long-term ROI for maximizing stakeholder return.

In the literature on the subject as well as in the business practice such equivalent notions are also used: Corporate Performance Management (CPM), Enterprise Performance Management (EPM), Performance Management (PM). They mean the sum of the methodologies, metrics, processes and technologies used to carry out the subsequent tasks:

- clearly communicate organization's strategy and goals,
- meet all data access and information delivery requirements,
- involving as many people as possible in a closed-loop performance management process.

Business Performance Management Framework

Characterising BPM systems it is worth to stress that they are built of three main components (Hurbean and Forach, 2006):

- a metrics system, which enables a user to evaluate instantly achieved results in relation to adopted goals and objectives,
- a communication system, which is a key in a business analysis and based on proficient information exchange mechanisms among users,
- execution – constantly reminding the assumptions of the adopted operational strategy.

BPM creates a closed-loop of processes, which starts at the lowest level by creating a corporate objective and defining appropriate KPI, through up-to-date results measurement, their comparison with the plans and it ends with an amendment and readjustment of business processes in next cycle. In order to do that such methodologies are used: BSC (Balanced Scorecard), ABC (Activity-Based Costing), SixSigma, Economic Value-Add.

Four steps constitute the closed loop of processes : (1) strategy, (2) plan, (3) implementation and monitoring, (4) reaction and adjustment (see illustration 1).

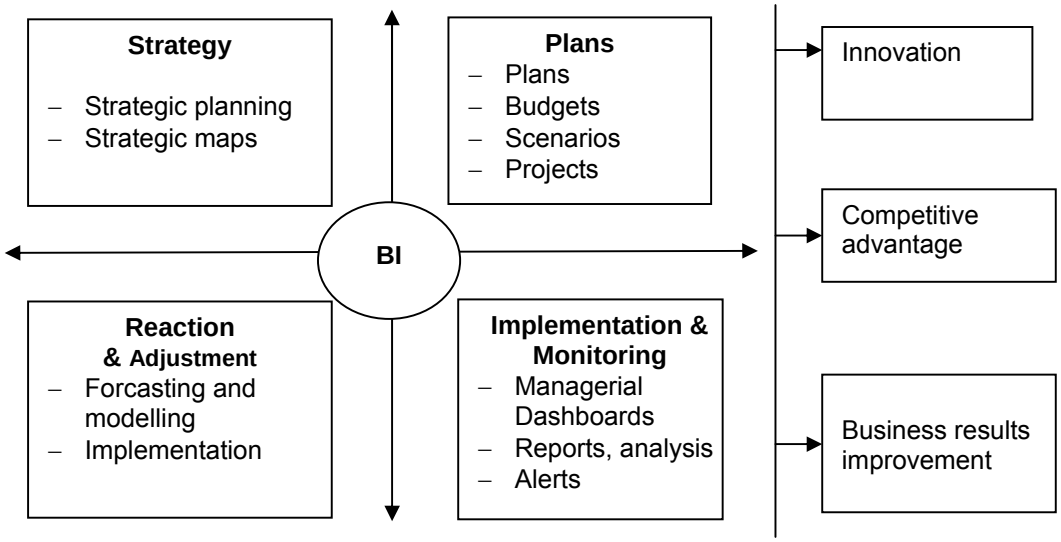

Illustration 1. BPM model concept.
Source: Own work based on (Eckerson, 2004).

The two primary steps are connected with creation of organisation's strategy and the following two refer to its implementation. Within the frame of each step an organisation has got different techniques and technologies at its disposal. At the first step above all its mission is defined, key objectives it wants to achieve and the means of measuring these objectives. For example these may be: high consumers satisfaction and a consumer satisfaction index or high product quality and a low number of defects. At next step the attention should be focused on creation of plans and allocation of resources, which will be used during the strategy implementation. The third step is connected with monitoring and analysis of carried out plans, and the last step refers to improvement of processes and implementation of new operations.

It is obvious that such a framework for BPM reaches further than traditional frames of single organisational divisions and goes in the direction of the whole decision making process management. It connects business strategy with planning, forecasting and efficiency management. Moreover, it gives an integrated outlook onto the whole organisation, especially onto the strategic goals and objectives implementation. In order to achieve the above aims a broad range of tools is used e.g. pre-defined reports, alerts, dashboards, analytical tools, KPI for monitoring and improvement of business processes (Olszak, 2009).

Business Performance Management Capabilities

BPM systems are recommended to implementation in operational activities as well as to the strategic planning (table 1). In the first case BPM can be used in defining indicators important from the angle of current company activities. They can refer to budgeting, planning and expenditure forecasting. Beneficiaries of these solutions are usually financial specialists. In the other case the BPM systems can be used to estimate expenditure, profitability, feasibility analysis, data analysis and process control. They are

used for predicative analysis which enables:

Table 1. Types of BPM systems

BPM	Business Needs	Opportunities	Addressees	Technologies
Analytical	Expediture and Profitability Estimates	BSC and Reporting	Organisation and its Partners	BI
	Basic Feasibility Analysis	Pre-defined Analysis	Organisation	BI
	Data Research	Transactions Analyses	Organisation	BI
	Prediction	Advanced Analyses and Statistics	Organisation	BI
	Monitoring	Alerts	Organisation and its Partners	BI
Operational	Results Calculation	Budgeting, Planning and Forecasting	Finance experts	ERP

Source: Own work based on (Hurbean and Forach, 2006).

- discovering relationships – relationships in KPS are discovered automatically (during and after a scheme implementation) and reasons for the inability of conducting the scheme are analysed,
- prediction of events – tools generating prediction show different scenarios of events,
- availability of data – the means are offered to transfer and present data to different users in an appropriate format.

As it can be seen the BPM systems are based on traditional BI, but the use of information in case of the former is much more wider (table 2). BPM contrary to BI has more in-build functionalities for conducted analysis automation. As it has already been pointed they refer to budgeting and planning, finance consolidation and reporting in different settings and from different perspectives, managerial dashboards, forecasting and modelling for many business scenarios as well as different key indicators (KPI). So, the field of interests of BPM can embrace: finance, marketing, service HR, supply chain management, ordering, manufacturing.

Table 2. BI and BPM systems comparison

Criterion / characteristics	Traditional BI	BI for BPM
Scale	Departments	Enterprisewide
Focus	Historical Data	Current Data
Decisions	Strategic and Tactical	Strategic, Tactical and Operational
Users	Analysts and Decision Makers	Different employees
Orientation	Reactive	Proactive
Output	Strategic Analysis	Strategic Action
Process	Open-ended	Closed Loop
Measures	Metrics	Key Performance Indicators (KPI)
Views	General	Personalized
Visuals	Tables, Charts	Dashboards

Collaboration	Informal	Build-in
Interaction	Pull (ad hoc query)	Push (alerts)
Analysis	Trends	Reservations / Exceptions
Data	Numeric	Numeric, text

Source: own work based on (Eckerson, 2004).

The first research results show that BPM solutions bring about: company's quicker reaction to market changes, better consumer orientation, higher operational efficiency, improvement of correlation among budget, planning and strategy, risk reductions well as higher rate of return on IT investment (Hyperion, 2005).

The market of BPM software suppliers has recently developed. The well-known companies in this field are: SAS, Business Objects, SAP, Cognos, Hyperion Silutions, Applix, ThinkFast Consulting. They offer multi-module solutions that enable to:

- synchronise objectives with the undertakings, priorities, resources, budgets, reports, risk management and analytical processes in order to supply information indispensible in increase of productivity and elimination of discrepancies between a strategy and its implementation,
- access to information for different users, in an adequate context and often in real-time, that helps to establish areas requiring streamlining and evaluate strategic scenarios with the greatest impact on business operations,
- optimise business processes in order to shorten the efficiency management cycles,
- supply reliable data which accelerate communication, co-operation and realization of tasks on the basis of commonly comprehensive and defined schedules with a possibility of an adjustment to the needs.

The available BPM systems are used as an assistance to management of efficiency, measurement, analysis and evaluation of work results in business operations as well as in business strategy. They allow to prepare annual plans (budgets) and long-term strategies, compulsory reporting files, legal documents, scorecarding, controlling systems, work appraisal systems and system supervision processes. These systems are characterised by a great elasticity which is present in opportunities to:

- create multilevel hierarchical information structures (superior, inferior and parallel scorecarding), links: "affect or depend on" between different elements,
- evaluation of the achieved indicators and metrics,
- comparison of companies and legal departments,
- alert of discovered threats in the process of attaining planned values.

BPM tools available on the market can be regarded as two-way communication channels, which means that they allow to pass goals and objectives from the managerial personnel to lower levels and the other way around. For example, SAS SPM product is based on BSC methodology, where objectives are presented as Strategic Mappings, while metrics and parameters describing them as Scorecards. The application package can operate on the basis of other management effectiveness methodologies e.g. TQM, ISO, COBIT, European Foundation Quality Management.

As it has already been pointed the BPM systems patch a substantial gap between creating a strategy and its deployment. It improves:

- communication. They supply an effective mechanism to describe the strategy to management and employees through the access to planning models and metrics of completing particular plans;
- co-operation. BPM allows for bilateral exchange of ideas and information on both levels vertical within an organisation and horizontal (between departments);

- co-ordination. They improve the co-ordination between co-operating business units, groups etc.

Business Performance Management in Polish Organizations

Upper Silesia is one of the fastest developing regions of Poland. It is the most industrialized and the most densely populated region in the country. For the years to come in the voivodeship development strategy a lot of attention is paid into issues concerning creation of infrastructure for development of knowledge-oriented society and economy. Many proposals are undertaken in order to increase companies' innovation, implementation of e-services and creating Internet digital data basis. There are also numerous trainings, projects aiming at getting companies acquainted with information society technologies.

In 2009 a research was conducted in Silesian voivodeship in order to evaluate the level of knowledge-based society and economy development as well as to set further directions for work on innovative economy development. The research was conducted indirectly and by means of an Internet survey among 176 business entities from SME sector.

The research carried on degree of knowledge-based society and economy development in Silesian region also referred to implementation of information technology by companies. A lot of attention was paid to the diagnosis and projection of effective usage of analytical- decision-making systems e.g. Business Intelligence, Customer Relationship Management, Supply Chain Management, Executive Information Systems, Business Performance Management, MRP II and ERP. First of all the areas of the greatest need for data analysis and control for companies were to be identified. The research results have shown that the companies would expect a support in the field of:

- market (63.5%)
- macro-environment (economic, political and social factors) (54.8%),
- products / services (59.7%),
- investment undertakings (38.5%),
- business processes (23.9%),
- quality control (19.6%).

The research results also proved that companies most often implement analytical solutions in the business operations such as: supply – 61.7%, sales - 57.4%, warehouse services – 43%, HR – 58.7%, remuneration – 67.3 %, marketing – 71.2%, finance and accounting – 69.4%, production – 20% and transport – 19.3%. The most often used tool in this respect is a spreadsheet (91.9%) and database (46.8%). Only 5% of the companies in question said that they use specialistic software of BI or BPM type, and the reasons for such steps were that BPM allow for:

- gain "greater visibility into business" (50%),
- better execution of strategy (30%),
- more efficient processes (20%),
- faster reaction to events (30%),
- better strategic planning (20%),
- better coordination among groups (10%).

About 10% of respondents declared that in the near future they are going to implement BPM solutions in their company. Nearly 50% said that they have insufficient knowledge of BPM as to start using such solutions within 2 – 3 years perspective. The remaining companies conditioned the implementation of BPM solutions subject to their

financial standing and support from European funds for informationalization. The companies operating BPM systems prized and prioritized:"what if" scenario, modeling – - 50%, scorecarding – 30%, forecasting – 30%, planning – 20%, financial reporting – 20%, budgeting – 15%, business intelligence – 10%, data integration – 10%. In the researched companies the users of the BPM systems were most often top executives and business analysts. The research has proved that the most significant obstacles in deployment of the analytical systems are:

- lack of financial means (36%),
- lack of information on appropriate services (36%),
- lack of appropriate services (33%),
- lack of employees' skills (27%),
- lack of technological conditions (21%),
- others (21% lack of need, lack of trust, fear of data loss, accoustomation to traditional methods).

The conclusion coming from the conducted research allows to state that BPM for Polish SME (small and medium enterprise) sector is a fairly new and not fully recognized idea. In this respect the companies' knowledge is rather limited. Analytical systems are usually build on the basis of Excel software and in general they enable standard reporting. Modules for data analysis and control (most often chosen financial indicators) are directed at supporting present company's operations. Companies, which implemented BPM systems, have already had experience of introducing systems such as MRP II, CRM and SCM and of course BI.

Conclusions and Future Research

Summing up, Business Performance Management systems aid forecasting, budgeting or planning and provide access to balanced scorecarding and managerial dashboards clearly showing every bit of information concerning company's operations. What is more, they supply information about effectiveness indicators thanks to which the users can follow the results of particular units as well as individual projects and compare them with company's goals and objectives. Some companies operate BPM systems along with advanced managerial technologies, such as a balanced scorecarding. Certainly BPM systems give an opportunity for effective company management, whereas their implementation and effective use within an organization requires from analysts, designers and users high business, information technology and corporate culture.

The results of conducted cognitive, methodological and empirical research allow to state that there is a need for conceptualizing necessary recommendations for effective construction and deployment of BPM system in organizations. First of all these recommendations should take into account the need for awaking the BPM awareness, moulding appropriate corporate culture and creating managers' and employees' behaviour. Moreover, it is necessary to pay attention to business strategy convergence with a BPM idea. The methodology of building and implementation of BPM systems is a great challenge. These are the issues that require broad and multidisciplinary work and for the authors of this paper set the direction for future research.

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