BSC-SI, A Framework for Integrating Strategic Intelligence in Corporate Strategic Management

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ABSTRACT

Integration of Strategic Intelligence with corporate strategic management is becoming of vital importance for modern and flexible organizations in the last few years. The main achievement of this integration is to help decision makers to systemically implement their corporate strategies, adapt easily to changes in the environment, and gain competitive advantages. This manuscript per the authors will extend the studies in this domain, and clarify the relationships between Business Intelligence, Competitive Intelligence with Strategic Intelligence. It will also explain the impact of Business Intelligence on Corporate Performance Management, Operational Business Process, Competitive Intelligence, and Strategic Intelligence. Finally, it will explain the new proposed framework BSC-SI that can facilitate the integration of Strategic Intelligence with Balanced Scorecard methodology.

KEYWORDS
Balanced Scorecard, Business Intelligence, Competitive Intelligence, Corporate Performance Management, Corporate Strategic Management, Strategic Intelligence

INTRODUCTION

Business Intelligence (BI) was introduced by Dresner in the year 1989, as an umbrella term that “describe a set of concepts and methods to improve business decision making by using fact-based support systems” (Power, 2007). BI is an IT framework that helps organizations managing, developing and communicating their information and knowledge. Thus, it can be considered as an imperative framework in the current knowledge-based economy arena (Alnoukari, 2012). BI is an environment in which ‘marrying’ between business knowledge with data mining would provide great results (Anand, Bell, and Hughes, 1995; Cody, Kreulen, Krishna, and Spangler, 2002; Weiss, Buckley, Kapoor, and Damgaard, 2003; Graco, Semenova, and Dubossarsky, 2007). Some researchers consider business intelligence as an umbrella that combines: architectures, tools, data bases, applications, practices, and methodologies (Turban, Aronson, Liang, & Sharda, 2007; Cody, Kreulen, Krishna, & Spangler, 2002; Rouhani, Asgari, & Mirhosseini, 2012). Weiss et al. 2003 defined BI as the: “Combination of data mining, data warehousing, knowledge management, and traditional decision support systems” (Weiss, Buckley, Kapoor, & Damgaard, 2003). BI systems can have multiple benefits including: faster access to information, particularly big data complexes, increasing revenue, better customer satisfaction and generate or improve competitiveness of enterprises (Brinkmann, 2015).
Dedijer considers that Knowledge Management emerges in part from the thinking of the “Intelligence Approach” to business. Dedijer thinks that “Intelligence” is more descriptive than knowledge. “Knowledge is static, intelligence is dynamic” (Marren, 2004). Luhn defines intelligence as: “the ability to apprehend the interrelationships of presented facts in such a way as to guide action towards a desired goal”. The main challenging part in any business intelligence solution is in its intelligence ability. This can be found in the post data mining phase where the system has to interpret its data mining results using visual environment (Alnoukari, 2012). We can measure the capability of any business intelligence solution by its ability to derive knowledge from data (Azevedo & Santos, 2009). The challenge in any BI solution is to meet with the ability to identify patterns, trends, rules, and relationships from volumes of information which is too large to be processed by human analysis alone (Alnoukari, 2012). In summary, BI is “the use of all the organization’s resources: data, applications, people and processes in order to increase its knowledge, implement and achieve its strategy, and adapt to the environment’s dynamism” (Alnoukari et al., 2008). Competitive advantage has shifted from companies that focus on implementing new technologies to those that employ technology to share, manage, and increase the level of knowledge inside the organization (Brinkmann, 2015). BI and analytics evolutions started by DBMS-based and structured content, evolved into web-based and unstructured content, and currently based on mobile and sensors contents (Chen, Chiang, & Storey, 2012).

Any BI solution can be divided into three layers (Azvine, Cui, & Nauck, 2005; Baars, & Kemper, 2007; Shariat, & Hightower, 2007): Data layer responsible for storing structured and unstructured data for decision support purposes. Structured data is usually stored in Operational Data Stores (ODS), Data Warehouses (DW), and Data Marts (DM). Unstructured data are handled using content and document management systems. Data are extracted from operational data sources, e.g. SCM, ERP, CRM, or from external data sources, e.g. market research data. Data are extracted from data sources that are transformed and loaded into DW by ETL tools. Analytics layer provides functionality to analyze data and provide knowledge. This includes: OLAP, data mining, and aggregations. The third layer is the visualization layer realized by some sort of BI applications or portals.

Data mining is the search for relationships and distinct patterns that exist in a set of data, but they are “hidden” among the huge amount of data (Jermol, Lavrac, and Urbancic, 2003; Turban, Aronson, Liang, & Sharda, 2007). Data mining application has important results in many areas (Alnoukari, and Alhussan, 2008; Watson, Wixom, Hoffer, Anderson-Lehman, and Reynolds, 2006) including: marketing (direct mail, cross-selling, customer acquisition and retention), fraud detection, financial services (Srivastava, & Cooley, 2003), inventory control, fault diagnosis, credit scoring (Shi, Peng, Kou, & Chen, 2005), network management, scheduling, medical diagnosis and prognosis. There are two main sets of tools used for data mining (Corbitt, 2003; Baars & Kemper, 2007): discovery tools (Wixom, 2004; Chung, Chen, & Nunamaker jr, 2005), and verification tools (Grigori, Casati, Castellanos, Dayal, Sayal, & Shan, 2004). Discovery tools include data visualization, neural networks, cluster analysis and factor analysis. Verification tools include regression analysis, correlations, and predictions. Knowledge discovered from data mining can enhance and improve organization’s decision making capabilities (Kerdprasop, & Kerdprasop, 2007).

A Strategy is a fundamental framework through which an organization can maintain its continuity in the market, and maintain its adaptability to environment changes to gain competitive advantages (Fries, 2006; Porter, 1996). Traditionally, strategy can be seen as a coherent and integrative view for decision making, or a long term objective with action plans and priorities for the corporate resource allocation. It can also be seen as a response to external opportunities and threats and internal weaknesses and strengths. It can be also seen as a logical system that differentiates between managerial tasks at the corporate different levels: corporate, business and functional (Global Intelligence Alliance, 2004).
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