Business Intelligence as a Modern IT Supporting Management of Local Government Units in Poland

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ABSTRACT

The paper has been devoted to Business Intelligence seen as a modern information technology that can support local government units. Ensuring order and consistency in the functioning of local government units (communes, districts and provinces) is now one of the most important problems the authorities of each agglomeration are facing. Attempts to achieve it are determined by the current investment decisions and already done upgrades. That is why it is so important to make commune transformation including the use of information technology and communication systems operating in harmony and in favor of the environment, and sustainable city development based on knowledge. The paper, aiming to show the necessity to further explore the Business Intelligence usefulness and efficiency, whereas this issue is still not appreciated enough, consists of six parts. After a short introduction into the subject, knowledge seen as a most valuable asset in modern economy has been characterized. Part three consists of a presentation of local government units in Poland and the challenges they face in information systems. Part four consists of BI characteristics in the management of local government units. Part five has been devoted to some examples concerning BI and ERP in decision-making process. Brief conclusions end the paper.

KEYWORDS

Business Analysis, Business Intelligence, Data Warehouse, Knowledge, Local Government Units

1. INTRODUCTION

Modern times are considered to be the era of information and knowledge, and the economy is becoming more and more the knowledge-based one. After the agrarian era, industrial era, there was a post-industrial era, also called a knowledge-based era. In the Knowledge-Based Economy (KBE), it is essential to have and use adequate managerial knowledge at the right time.

Knowledge is becoming one of the most valuable resources. Since about 80s of the twentieth century, we live in a time characterized by rapid acceleration of civilization, which manifests itself, inter alia, in disseminating the use of IT not only in business practice, but also in everyday life. This is possible due to progress in the fields of computer manufacturing and telecommunications, as well as the appropriate software, and is primarily the result of increasing demands associated with growing market requirements, and hence the need to meet these requirements. It is necessary to keep up in an increasingly competitive market. Meeting the demand for information and knowledge available at the right time for the decision maker who is able to take advantage of it, seems to be not an easy task to fulfill.

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Effective management of public institutions is currently one of the biggest challenges that modern economy is facing. Decision-makers of public sector entities have to meet the growing expectations of citizens, entrepreneurs, officials and employees. On the one hand, managers of public institutions need to focus on “proper goal setting and results monitoring, financial management, defining standards of the services provided, taking advantage of benchmarking solutions, a proper management of human resources imposed by the concept of the new public management” (Bobinska, 2012), and directing these actions to meet the needs of citizens, while, on the other hand, improving the efficiency of the decision-making process, supported by an intelligent IT solution, which allows to make multidimensional business analysis to ensure comprehensiveness of solving a given business issue.

Business Intelligence as a very modern technology using the latest innovations in the field of IT, seems to be the one that can provide the necessary information and knowledge.

Sources for the Business Intelligence technologies can be divided in two categories: internal – like databases, data files from the organization’s assets, and external – from the Internet. BI technology processes data from different data sources by OLAP analysis, data mining or reports. In most local government units, there are implemented such information systems as ERP, CRM, budgeting, financial analysis, sales analysis, marketing analysis, balanced scorecards, etc., to support their everyday work. These systems or rather their databases constitute the data sources for the BI processes. That is why we can say that the BI technologies occupy the central place among management information systems in an organization (Nycz, 2013).

2. LITERATURE REVIEW

The literature review indicated in the Bibliography shows that the managers in government units undertake the initiatives related to ICT systems. All those issues indicate, that they may become the driving force of the civilization transformation. What is more, it must also be noticed that knowledge outdates fast, which implies the necessity to implement new solutions in administration. A considerable amount of literature has been published on the significance of BI in supporting the management of local government units. Business intelligence is not a modern idea, Richard Millar Devens’ 1865 work, Cyclopaedia of Commercial and Business Anecdotes contains the first known usage of the term “business intelligence.” It is used to describe what allowed a banker, Sir Henry Furnese, to succeeded: he had an understanding of political issues, instabilities, and the market before his competitors (Heinze, 2014). In a 1958 article, an IBM researcher Hans Peter Luhn used the term “business intelligence”. He defined intelligence as: “the ability to apprehend the interrelationships of presented facts in such a way as to guide action towards a desired goal” (Cebotarean, 2015). In 1989 Howard Dresner (later a Gartner Group analyst) proposed “business intelligence” as an umbrella term to describe “concepts and methods to improve business decision making by using fact-based support systems” (D.J. Power,). It was not until the late 1990’s that this usage was widespread (Power, 2010), (Sherej Sharifi Azita, 2011). In the next years, a new evolution of BI emerged to deal with this challenge.

If the previous generation of BI is BI 1.0, this new strategically focused revision can be labelled BI 2.0, or Strategic BI (Intelligent Consulting, 2013). BI 1.0 refers to an era of BI that existed through the late 1990’s and early 2000’s. With the advent and development of data warehousing, SQL, ETL and OLAP, data was consolidated into a unified system and queries could be written to extract data from many tables at once, ultimately helping companies access and store their data more effectively (Furhaad Shah, 2014). The mid-late 2000’s marked a significant step forward for BI as it entered its acclaimed 2.0 phase; it went far beyond simple data and reporting by integrating near real-time processing, collaboration, self-service, discoverability, as well as offline and online access (Furhaad Shah, 2014). Web intelligence, web analytics, and the user-generated content collected through Web 2.0-based social and crowd-sourcing systems (Doan, 2011) (Doan et al., 2011), (O’Reilly, 2005) (O’Reilly, 2005) have ushered in a new and exciting era of BI&A 2.0 research in the 2000s, centred on text and web analytics for unstructured web contents (Chen et al., 2012). A seminal article by Thomas
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