Business Intelligence Systems Accounting Integration in Romania. a Comparative Analysis.

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Abstract

Business Intelligence (BI) systems have penetrated the Romanian market, providing a real decision support by integrating and synthesizing a large variety of information available in real time, anywhere in the world, including through mobile terminals. This study examines the BI solutions promoted in Romania through Internet sites written in Romanian, in terms of how the accounting information integration is done. Our paper highlights the most used economic and financial indicators and most often selected tools by BI systems developers to assist decisions. The writing bring forward the lack of transparency of the analyzed sites towards of configuration details of economic instruments, which we consider likely to delay the managers from Romania in order to become familiar with BI solutions, and it represent a weakness of this products promotion.

Keywords

managerial accounting, knowledge-based systems, accounting systems, decision support systems, business intelligence

JEL Code: M41, M15, D81

Introduction

Using intelligent systems confer the ability to gain competitive advantages by wisely exploiting the information.[1]
From the CGI experience, who was quoted in 2008 as the largest Canadian information technology services company in the field, founded in 1976, the following issues are noteworthy:

●   one of the biggest problems of the organizations in order to ensure that operational performance and strategic vision have a common denominator is the need for the performance quantification, efficient and high accuracy analysis, both at strategic and tactical level;

●   can even speak of a struggle to provide, based on daily operations, the tools that can confer predictive capacity to the management team;

●   efforts to identify the necessary information to effectively lead the organization, to efficiency, can be minimized by using methods and systems capable to reduce time for this process and provide specialized support.[2]

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[1]   Velicanu, M., Matei, G., (2008), "A Few Implementation Solutions for Business Intelligence ", *Economic Informatics Review*, 3 (47), Bucharest, pp.139-146.

[2]   ***   CGI Group Inc., "Business Intelligence – Enabling Transparency across the Enterprise", *Microsoft Download Center Page*, Created 2004, <http://download.microsoft.com> . Accesed 2 Dec. 2009.

In the beginning of the twenty-first century, there are major changes in terms of how managers can use computer systems that support decision making; more and more computers are linked in a network, so that decision support systems can quickly become shared goods for the entire organization, organizations can now easily use the Intranet and Internet networks offering high-performance applications for the decision makers in any point on the globe, many organizations develop distributed systems, intranets and extranets, enabling the easy access to data stored in multiple locations and enabling the collaboration and the cooperation with the whole world; integrating systems performed even beyond within an organization. Managers can make better decisions because they have more precise information. [3]

Integrating applications in information systems, interlinking systems, with the development of networks, Internet, storage and data processing technologies has even created strategic advantages for some countries. (S.U.A., Japan). Using portals we can achieve integration of existing information systems to provide public services. For some users, these systems provide summary information and decision support[4]

Business Intelligence Systems (BI) can be defined as using data and information technologies in order to facilitate the cognition of the organization background and the knowing of its operations, aimed to improving decision making[5], and mission of this powerful sequence of analytical tools is to generate valuable knowledge to improve decision at all levels, leading to better products, services, logistics, or communications.[6]

BI solutions components assigned by the Commonwealth Scientific and Industrial Research Organisation from Australia, CSIRO, are:

- Extracting electronic information from text documents, databases, images, media files and web pages;
- Synthesising useful knowledge from collected data using data mining, text understanding and image analysis techniques;
- Linking the useful facts and inferences and filtering out irrelevant information;
- Identifying reasonable decisions or courses of action based on the expectation of risk and reward;
- Employing semi-interactive software to identify good decisions and strategies. [7]

The idea that economic modeling is a continuous process, because to reduce its costs, organizations are looking modeling techniques aimed at adapting the knowledge to specific problems, was developed by Bitkowska. [8]

In what stage are you? Where you going? We can not make these remarks without appropriate information required by managers. We can not direct without information,

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[3] Luban, F., (2001), "Tehnologii informaționale pentru modelare", *Economy*, Management Series, 1-2, Bucharest, pp.27-32.

[4] Lungu, I., Velicanu, M., Bara, A., Diaconita, V., Botha, I., "Portal Based System Integration – Foundation for Decision Support", *Journal of Economic Computation and Economic Cybernetics* Studies and Research, 1, (2009), Academy of Economic Studies, Bucharest, Accessed 24 Oct. 2009, <http://www.ecocyb.ase.ro/revista/Ion%20Lungu.pdf>.

[5] Curtis, G., Cobham, D., (2008), *Business Information Systems. Analysis, Design and Practice*, Pearson Education Limited, Prentice Hall, Essex, England, pp.227-258.

[6] Arinze, B., Amobi, O., (2004), "A Methodology for Developing Business Intelligence Systems", *Business Intelligence Techniques. A Perspective from Accounting and Finance*, Edited by Anandarajan, M. et al., Springer, New York, pp.181-196.

[7] *** Commonwealth Scientific and Industrial Research Organisation Australia (CSIRO), "Business Intelligence - What is it?", *Mathematics, Informatics and Statistics Page*, Created 28 May 2003, <http://www.cmis.csiro.au/> . Accesed 6 Mar. 2010.

[8] Bitkowska, A., (2008), "Identification and Modeling of Business Processes at the Enterprise", *Economic Amphitheater Review*, Special 2, Academy of Economic Studies, Bucharest, pp.168-176.

mostly from the accounts. Managerial Accounting is a provider of information for the managers, general and detailed information. General side is assured of financial accounting, while the details are from administration accounting, where the preponderance of information is ensured by the costs. That is why Managerial Accounting is "created" by selection, based on objectives. [9]

Those IT (Information Technology) systems with Web services based architecture, on the vision of researchers Hagel and Brown[10], will overturn the existing opinions on IT management and will emphasize new strategy trajectory of information technology.

It is noted in their study that in the past, companies have looked at systems in terms of the owner. They bought the equipment and licensing applications, and also employed big teams for their use.

After years in which different parts of technology were purchased, companies end up with a "mishmash" of disparate systems spread in many units.

Research of both authors showed that large companies tendency effort is for invest large sums to interconnect applications owned, and put it in the unified database.

It is noted that web architecture is structured on Internet services and is open, and is not with property right.

Rather than build and maintain unique internal systems, companies can "rent" functionality needed (data storage, processing engines, specific applications) from service providers.

The foundation will be offered, according to the authors, by software and standard communication protocols such as XML and SOAP, which allow information to easily flow between different applications.

BI Solutions in Romania and Their Integration of Accounting

To shape the flow of information and accounting data used by intelligent systems in Romania to support decision makers, but also to determine how the existing BI solutions on the Romanian market capture that flow, our research examined 12 such solutions.

We assume that systems that are sold in Romania are in line with current global standards involving information integration and use of portals and was considered that the main channel of promotion adopted by IT companies is the Internet.

Selection of BI systems in our research was conducted by Yahoo search engine, using keywords "business intelligence", for written in Romanian sites. Search resulted in a number of 358,000 answers, 10 solutions per page, and from the first 25 shown pages, we extract only the sites of BI solutions developer companies that had either the economic indicators used, or only the embedded decision support tools that rely, as is customary, on economic and financial indicators or on accounting information.

Comparative analysis of the 12 intelligence system for economic transactions promoted in Romania, in terms of how its achieved the integration of the accounting information, was our **research method**.

Collection and collation of information provided on sites are presented in Table no 1.

Of the 12 companies, only 4 have chosen to detail the economic and financial indicators that have selected to give managers a detailed picture of economic performance, and other 3 have said only that the systems use *key performance indicators* (KPI), without nomination.

We believe that is due for trying to protect systems against piracy or because of products made at the request of customers, according to the specificities of each area of activity.

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[9]   Țânță, A.E., (2006), "Contabilitatea managerială între realitate și oportunitate", *Annals of Craiova University*, II, Craiova, pp.724-726.

[10]   Hagel III, J., Brown J.S., "Your Next IT Strategy", *Harvard Business Review,* (2001), Harvard Business Publishing, Accessed 21 Oct. 2009, <http://hbr.harvardbusiness.org/2001/10>.

All 4 detailed solutions use the ***development of turnover*** indicator or the ***sales trend***. ***Stock rotation or evolution*** is an indicator used by 3 of companies who have chosen to submit details on sites. The same number of proposals have met with regard to ***claims*** disclosure. Two nominations have been for the ***analysis of budgets*** and ***analysis according to different criteria***.

Table no 1. Features of the Main BI Solutions Romania Publicized

Company	BI Solution	Decision Support Tools	Economic Indicators
Acumen Integrat	Acumen Integrat (Source: www.acumenintegrat.com/ro/section/servicii)	- balanced scorecard; - dashboard.	- key performance indicators (KPI), no nomination
EBS Romania	Clarvision ERP (Source: www.ebsromania.ro/produse/clarvision5.htm)	- tables customizable by the user; - reports developed with Crystal Reports and reports editor; - export of data to other reporting tools; - management of tasks that allow to users execution of tasks assignment and tracking; - instant messaging application (integrated).	-changes in stocks quantity / value on groups of items; - changes in stocks; - evolution of the turnover; -development expenditure / income; - development of debt; - due changes; - development on the groups of the balances accounts; -development on the accounts groups of the turnover; - Analysis of budgets: ● forecasting reports; ● comparative reports for the deviations analysis.
EVO Xperience Software	Evo Manager (Source: www.arsson.ro/produs_evoxp_man.php)	- tree structure of cost centers and revenue; - budget of departments and subdivisions - manager dashboard; - cash flow analysis on the European model by days, weeks or months; - cash flow forecast for Over Due analysis to partners; - managerial analysis of balance sheet or profit and loss report; - top customers, top agents, top products; - complete graphics analysis of sales.	- sales trend; - gross margin; - days sales uncollected; - stock rotation; - fast-rate liquidity; - productivity; - working capital; -indicator of debts and penalties; -age of stock and partners debt.
Company	BI Solution	Decision Support Tools	Economic Indicators

Microsoft	Microsoft Business Intelligence (Source: http://office.microsoft.com/ro-ro/products)	- evaluation and dashboard; - analysis; - planning; - budgets.	- key performance indicators (KPI), no nomination
Oracle	Oracle Business Intelligence (Source: www.oracle.com/technology/products/bi/pdf/OracleBI%20SE1%20Business%20WP.pdf)	- interactive web dashboard.	- no nomination
Romsym Data	Business Objects (Source: www.businessobjects.ro/produse.php)	- dashboard; - intuitive scorecard; - predictive analysis; - rules-based alerts; - performance / target analysis.	- no nomination
SAP	SAP Business Objects Edge BI (Source: www.sap.com/romania/solutions/pdf/SAP_BOBJ.pdf)	-dashboards; - hypothetical analysis; - custom reports; - planning; - budget.	- no nomination
Sistec	Cogito BI (Source: www.sistec-sbsol.ro/solutii_servicii.php?fid=85&sbsol=5bvuc1lcvd1oavvlpmkp7546i4)	- reports; - analysis.	- no nomination
Siveco	SIVECO Business Analyzer (Source: www.siveco.ro/web/content.js	- Analysis using graphs and tables; - Database analysis.	- key performance indicators (KPI), no nomination

Company	BI Solution	Decision Support Tools	Economic Indicators
	p?page=72&language=1)		
Soft Consult	QlikView 9 (Source: www.tlgsoft.ro/index.html)	- complete visual control panels; - update data in real time; - PDF reports; -detailed graphics features and spark lines, whiskers, trellis graphics and customizable backgrounds in real time; - visual highlighting exceptions.	- analysis of cash flow; - analysis of cost, price; - analysis of sales trends; - identify problem areas and their cause; - focusing on customers, suppliers and important articles (Pareto); - analysis of new customers vs. lost; - sales map; - vendors price analysis; - comparison of global conditions (cost, delivery, payment terms, discounts, ...) - departments necessary estimate; - analysis of stock rotation; - optimizing stock deposits (freight relocation suggestions) ; - intelligent stock alerts; - what-If analysis; - highlight claims using dynamic period; - analysis of income, payment habits, payment delays (share, trends, ...); - building and tracking budgets.
Soft Net Consulting	AsiS (Source: www.softnetconsulting.ro/asis_descriere.html)	-dashboard; -resource management; -economic and financial analysis.	- economic and financial indicators without nomination
Total Soft	Charisma Analyzer (Source: http://www.charisma.ro/pagina-produse-16.html)	- dashboard; -analysis, tables, graphs.	-performance indicators defined by the company, various defined criteria analysis (growth – decreasing trends, position / target, etc.); - detailed analysis: monthly

			sales trends, ranking first 10 sales people in the company, analyze the areas of sales, etc.. - Analysis (drill down) to lower level, even to the level of item.

Among the tools used to give managers an overview information, including accounting information, we observe detachment of **dashboard,** used by 9 of the 12 systems.
More often, **various financial and economic analysis** (7 cases), **reports**, **tables**, **graphs** (5 cases), **budgets** (4 cases), **balanced scorecard** and **predictive analysis** (3 cases), are used.

Conclusions

In contemporary society, knowledge optimize timely access to information, it open the way to the right decision, or, in many cases, to the successfull decision. Most researchers believe that modern information technology integrates more and more applications, trying to gather information, communications, rules, habits, and even proposals for decisions.
Although we can not certainty determine the general features of how accounting information is integrated in BI systems on the market in Romania, because there is a lack of transparency regarding decision-support configuration, our study has the merit to point most used indicators or financial and economic tools general represented in these solutions.
We wish also to emphasize the idea that promoting BI products in more detailed way would be, in our opinion, likely to familiarize managers in Romania with BI specific, which would lead to increased demand in this area, especially considering the fact that portals of companies with a long tradition of these solutions, such as Oracle, SAP or Microsoft does not provide evidence to guide the potential buyer from Romania to a clear answer regarding the approach to the economical-financial indicators or to the accounting information.
This study is, once again, confirming the view of Herbert A. Simon, winner of 1978 Nobel Prize in economics for pioneering research into economic decision making in organizations: "Computers today can share the work of thinking with us, and there is plenty of work - and will continue to be - for both of us." (1997).[11]

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