BUSINESS INTELLIGENCE APPLICATIONS FOR HUMAN RESOURCE OUTSOURCING

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Abstract:
Business Intelligence(BI) is a concept that brings about fundamental changes within companies and, if correctly implemented turns into good account the information necessary to measure, administrate, make decisions, and optimize the performances. BI analysis solutions allow companies to gather strategic information from large, unstructured volumes of data, in the purpose of recognizing tendencies and defining business targets. The article presents a BI solution implemented by the means of QlikView application, for the analysis of salary costs. Since outsourcing services within human resources is a solution preferred by more and more Romanian companies I have taken as an example a company that provides these services to client companies.

Key words: business intelligence, QlikView, HR management, outsourcing, analisys

JEL classification: M12, M15

Any organization that records a business volume which cannot be administrated with the aid of the human factor only, has to implement a computerized management system for critical activities: the financial/accountancy activities – usually the first to be computerized, Enterprise Resource Planning (ERP), Customer Relationship Management (CRM) are only some of the most widely spread systems used by various companies nowadays.

Even though these systems allow data access by generating various reports and statements, this set of functions is limited and usually available only for those in charge with the management of those systems, people with technical training – programmers or database administrators. This is due to the fact that those who provide this type of solutions do not focus on report and analysis functions. Developing these functions poses problems at least as complex as those faced in developing operational systems. Providers of ERP and CRM systems often prefer partnership with business intelligence solution providers or even acquire them to enrich the range of functionalities they offer.

Even though in Romania the interest for this kind of solutions does not raise to the level of the developed markets, it seems that the situation has changed lately. At the world level there have occurred changes in the basic philosophy of the BI software solutions.

To exemplify I will consider a company that operates with payment analysis for five client companies since there is a tendency towards outsourcing services in the case of small and medium size companies.

Here are a few reasons for outsourcing human resource services:

1. Varied competencies. A team of employees is needed (each employee with a different level of knowledge and different salaries, proportional with their training) in order to meet all the competency levels necessary in the human resources domain. When a specialist in payment is hired, he will have a salary twice as big as it is necessary for administrating personnel documents. If a personnel inspector is hired to administrate the database and the personnel documents, he will not have the necessary competencies to calculate salaries or solve the difficult problems that inevitably occur in

any company. A specialized company will put at the customer's disposal its complete team made of specialists in human resources.

2. The human resource consumes other internal resources. The cost of an employee is given not only by his salary. Starting with the recruitment process, the initial training, the office and the computer he uses, and then the tax and other fees paid along with the salary. What is more, there is a need for continuous specialization due to the fast changes in the legislative system. All these are efforts that a company must make to have a productive employee who is permanently connected to the very fast changes. The provider of human resource services can administrate the above things more efficiently because it is his activity and it offers a more attractive working environment for a human resource specialist in the long term.

3. Availability is the key to success. If you have your own human resource department with one or more employees, it will not be profitable to hire more people with the same specialization, paid to be in stand-by to replace, when needed, an employee who is not available (sick leaves, vacation, projects etc). If you do not dispose of these resources, the activity will be blocked repeatedly and for unacceptable periods of time. The human resource service provider can manage better these shortages because it has more resources and whenever a problem occurs, there is always someone available to solve it.

4. The customer is more demanding than the employer. It is easier to ask more from a provider than from your own employee. And when the demands are not met it is easier to end a agreement with a provider than to fire an employee who no longer meets the requirements of his position.

5. Improving cost efficiency. If we take into account the costs necessary to administrate a human resource department that can be run by a well-trained man or two less efficient ones, with a simple service agreement which is a totally deductible expense with no movement of prices for a year, the advantages of outsourcing become obvious.

To implement a BI solution for payment analysis I have used the QlikView application that ensures connection to any data source (ERP, CRM, Microsoft Excel, logs, CSV files), thus gathering all information generated by the multitude of independent applications used within a company.

The benefits of QlikView application can be summarized as follows:

1. Turns to good account the user's intelligence. It allows its users to make the right decisions, at any time and no matter where they are. The results can be printed as reports, saved as PDF documents, sent to Microsoft Excel or copied to other Microsoft Office applications.

2. Fast to implement, easy to learn, user friendly. Final users can use QlikView applications in only a few minutes, which has as a result fast exploitation and low costs.

3. It is the only architecture for analysis, applications and report. Through a careful control of the users' rights, the companies can provide ad-hoc analyses to key-persons, printed reports to distance users, dashboard metrics to executive managers and analytical applications to middle managers.

4. It always provides an answer. Any QlikView object – from lists, to charts and tables – is available with a «click». QlikView offers its users the power to find their own way to analyze and understand the things.

5. Integrates all available data for analysis. No matter if the data is stocked in the data warehouse or in operational systems, it is permanently available for usage in QlikView applications.

6. Fast ROI (return on investment) and low costs. With QlikView, a completely functional prototype application can be available in just a few hours. QlikView supports

an unlimited number of dimensions and procedures that can be added in a few minutes. QlikView implementations allow a quick return on investment.

An important characteristic in projecting the calculation pages with the aid of QlikView application is given by defining the dimensions which are set as representatives. Thus I defined as dimensions: the customer company, department denominations, employees' positions, the period of time, etc. these can be selected and modified on each page and combinations of these dimensions can be used by defining groups.

Used data is modified for tests, but real data ratio is preserved. The reports are varied and are obtained either by changing the type of charts or with the help of the multiple selection criteria: the time period, data on salary earners and salaries, on departments and the existent positions. The reports may take the form of a table or chart and can be visualized and printed directly from the application, by the means of a web-site, or can be exported to excel for further processing.

Part of the reports projected to make an analysis of the payment expenses specific to each of the chosen company are shown as follows:

1. Instrument panel – contains three types of charts that show, for all the five companies, with a view to carrying out comparison and analysis, situations referring to (see fig. 1):
- The employee fluctuation for each company over a five month period. This report also shows, if the features are changed, the number of sick leave days taken, the number of training days, the number of extra work hours and the bonus give to the employees;
- The total cost spent by each company on human resources as well as the gross cost for taxation;
- The observation on the salary earners' activity taking into account the number of sick leave days taken, the number of training days, the number of extra work hours and the total number of employees in the five client companies per month.
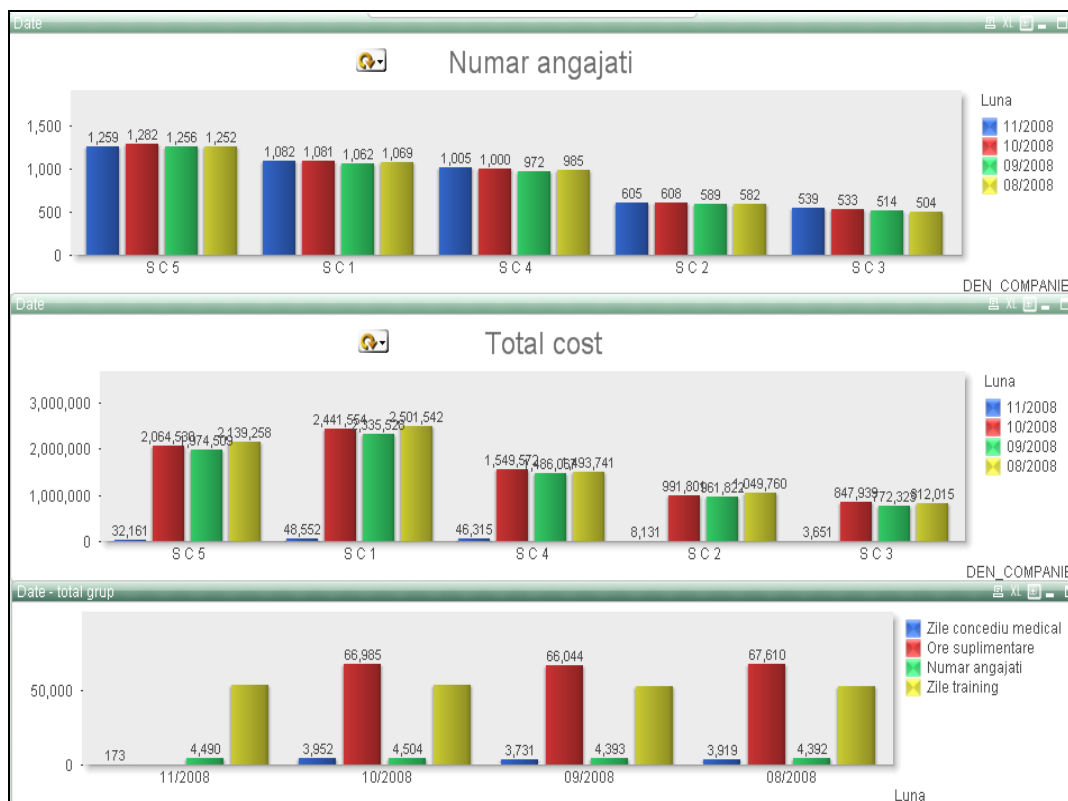

Figure 1. Instrument panel

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2. Standard wage analysis: the departments within a company and the positions within the departments are shown in the form of a table (see fig. 2). The following information is calculated for each position, for a three month period: the number of employees with the same position, the total sum and the average of the monthly standard wage, as well as the minimum and the maximum standard wage given in a month.

This table can be modified, just with a few "clicks", to obtain the same statement for each employee, examining the differences in the salary for the same employee but also the differences in the salary for two employees with the same position. The monthly evolution of these parameters is easy to follow, and comparisons can be made between nonconsecutive months.

DEN_COMPANIE	DEP_NAME	FUNCTIE	Luna	NUME_PRENUME	Numar angajati	Tarifar mediu lunar	Medie	Minim	Maxim
S C 1	Administrare Retea Magazine	Revizor Gestiune	Total		1	1,500	1,500	1,500	1,500
			08/2008	Popescu Ion 3676	1	1,500	1,500	1,500	1,500
			09/2008	Popescu Ion 3676	1	1,500	1,500	1,500	1,500
			10/2008	Popescu Ion 3676	1	1,500	1,500	1,500	1,500
S C 3	Administrare Retea Magazine	Analist Date	Total		1	1,250	1,250	1,250	1,250
			08/2008	Popescu Ion 285	1	1,250	1,250	1,250	1,250
			09/2008	Popescu Ion 285	1	1,250	1,250	1,250	1,250
			10/2008	Popescu Ion 285	1	1,250	1,250	1,250	1,250
		Asistent Manager	Total		1	1,250	1,250	1,250	1,250
			08/2008	Popescu Ion 283	1	1,250	1,250	1,250	1,250
			09/2008	Popescu Ion 283	1	1,250	1,250	1,250	1,250
			10/2008	Popescu Ion 283	1	1,250	1,250	1,250	1,250
		Operator Date	Total		3	2,750	917	850	1,000
			08/2008	Popescu Ion 284	1	1,000	1,000	1,000	1,000
				Popescu Ion 286	1	900	900	900	900
				Popescu Ion 287	1	850	850	850	850
			09/2008	Popescu Ion 284	1	1,000	1,000	1,000	1,000
				Popescu Ion 286	1	900	900	900	900
				Popescu Ion 287	1	850	850	850	850
			10/2008	Popescu Ion 284	1	1,000	1,000	1,000	1,000
				Popescu Ion 286	1	900	900	900	900
				Popescu Ion 287	1	850	850	850	850
S C 5	Administrare Retea Magazine	Gestionar	Total		5	3,960	792	960	1,000
			08/2008	Popescu Ion 2738	1	1,000	1,000	1,000	1,000
				Popescu Ion 3289	1	1,000	1,000	1,000	1,000
				Popescu Ion 3291	1	1,000	1,000	1,000	1,000
				Popescu Ion 4801	1	960	960	960	960
			09/2008	Popescu Ion 2738	1	1,000	1,000	1,000	1,000
				Popescu Ion 3289	1	1,000	1,000	1,000	1,000
				Popescu Ion 3291	1	1,000	1,000	1,000	1,000
				Popescu Ion 4801	1	960	960	960	960
			10/2008	Popescu Ion 2738	1	1,000	1,000	1,000	1,000
				Popescu Ion 3289	1	1,000	1,000	1,000	1,000
				Popescu Ion 3293	1	1,000	1,000	1,000	1,000
				Popescu Ion 4801	1	960	960	960	960
		Operator Date	Total		4	3,365	841	165	1,200
			08/2008	Popescu Ion 2739	1	165	165	165	165
				Popescu Ion 3290	1	1,200	1,200	1,200	1,200
				Popescu Ion 3292	1	1,100	1,100	1,100	1,100
				Popescu Ion 4797	1	900	900	900	900
			09/2008	Popescu Ion 2739	1	165	165	165	165
				Popescu Ion 3290	1	1,200	1,200	1,200	1,200
				Popescu Ion 3292	1	1,100	1,100	1,100	1,100
				Popescu Ion 4797	1	900	900	900	900
			10/2008	Popescu Ion 2739	1	165	165	165	165

Figure 2. Standard wage analysis

3. Bonus analysis contains for each department of the customer companies the sums in the incentive category (bonus) given to the employees every month (see fig. 3). The chart can be used for statistics on the bonuses given by a company to its employees in a month or over a certain period of time.

At the same time, the sums in the incentive category given by each customer company to its employees can be compared, for the whole company or for each department. By placing the mouse on a certain department in the chart (a certain color) detailed information on department, month and the incentives given to employees are shown.
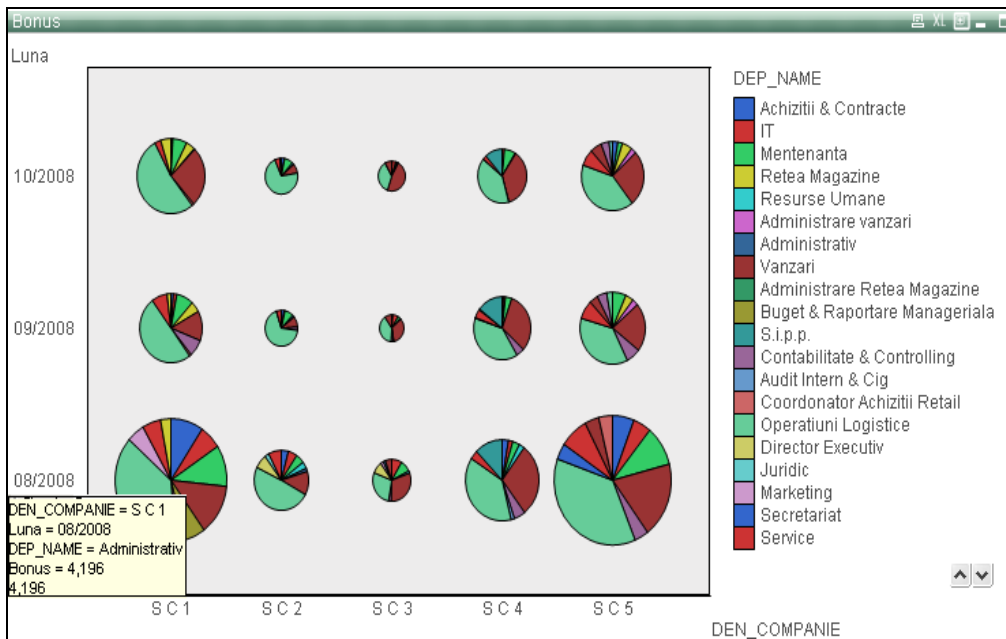
Figure 3. Bonus analysis

4. The net salary per employee. The chart points out the average value of the standard salary, of the net salary and of the gross salary and the total cost for each company over a four month period. To compare certain functions, months, etc the data will be selected on the „Filter" page. A bigger difference between the standard and gross salary is given by the type of payment in the company.
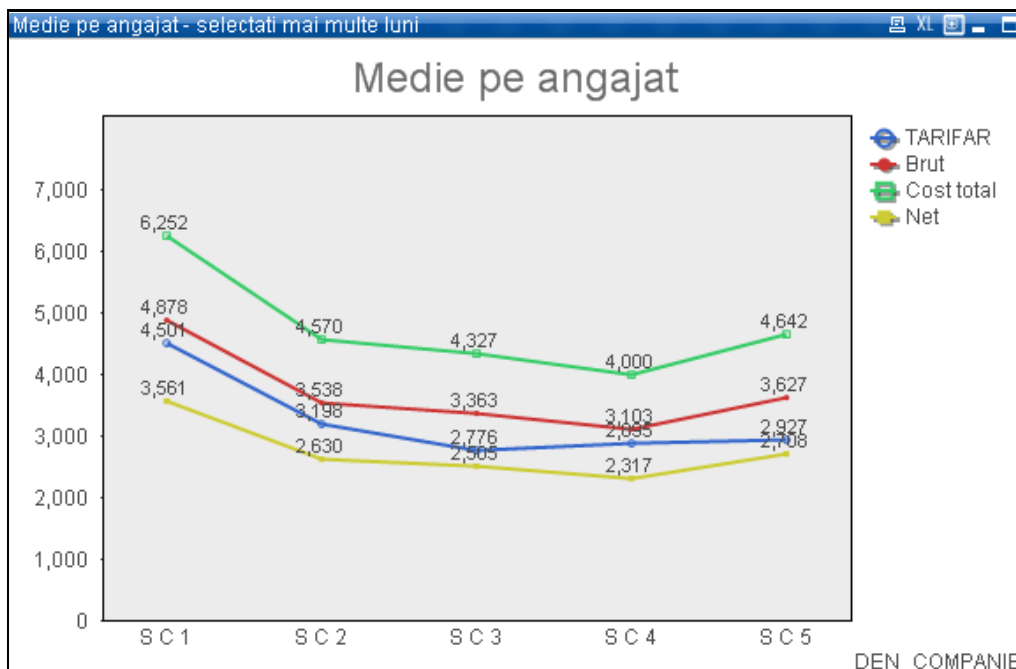

Figure 4. The average salary per employee

5. Leave records contains information regarding the average number of vacation days taken by the employees of each company over a three month period. A simple click can change the chart to visualize information on sick leaves and the number of meal tickets per employee or change the period of time (one month on nonconsecutive months). The same information on leaves can be displayed in a chart but grouped on a department, on positions or on budget groups.
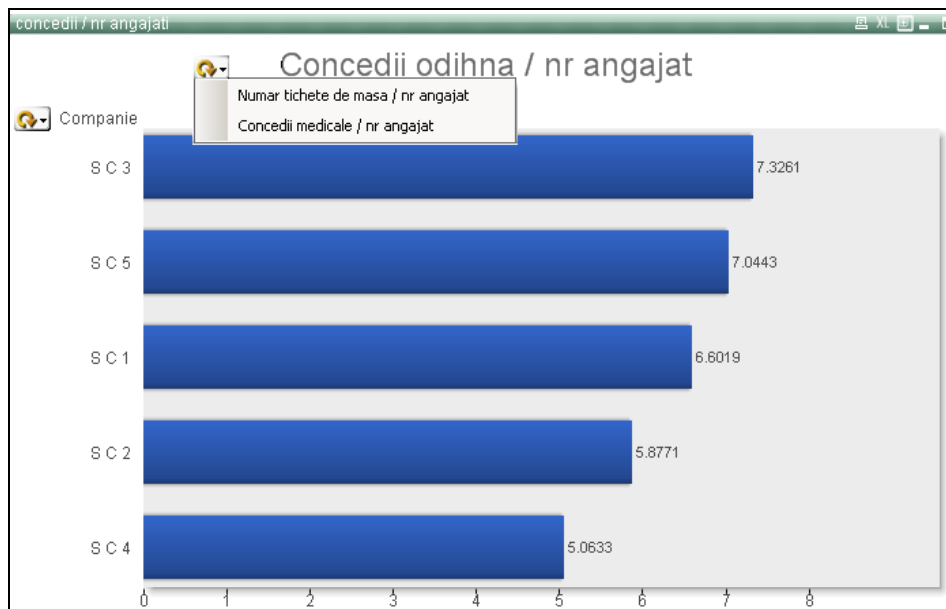
Figure 5. Leave records

CONCLUSION

The implementation of a BI solution in human resource administration influences the business process, both from financial and operational point of view, and offers the informational support for financial analysis, predictions and decision making in according the salary rights to the personnel. Even though human resource administration services have been outsourced, the manager of the client company has online access (account and password) to all the reports projected for his company by the provider company. At the same time it receives a fast feedback from the service provider company through the analysis conducted by this on salaries, extra work hours the number of days taken off for the same position in different companies.

The need for business intelligence systems can be easily explained: in order to survive on the competitive market, a company must try to develop a success strategy; to develop a success strategy the ability to anticipate the future conditions is necessary; understanding the past is the best way to predict the future. Business intelligence does this.

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