

DESIGNING THE ANALYSIS REPORTS BY MEANS OF THE BI INSTRUMENTS

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Abstract:

A business intelligence process offers to the management an overall picture over the situation of a firm at a given time, as well as average-term projections, allowing an accurate evaluation of the results in real time and adequate decision making. The great attention paid to the sales process means a higher market quota, a higher profit, an improved cash flow and a good image on the market. More than that, a solid function on sales offers to the business a real stability and realistic perspectives concerning the market tendencies. These are the reasons for which we developed a series of analyzing reports specialized for the sales process, with the help of BI QlickView. The QlickView application constitutes an extremely efficient management instrument allowing to realize a wide range of analyses.

Key words: business intelligent, sales analyze, QlickView, reports, management.

JEL classification: M11, M15

The traditional software designed to access high quantities of unstructured data, in order to analyze them, was available only for the persons with a lot of experience in storing and exploring data.

As regards the business environment permanently expanding inside of a company, the simple process of initiating an action- generating a result- reporting- is still insufficient. Best decisions making to generate the best results needs a constant interaction between analysis and reporting. The BI allows the organizations to make well-informed business decisions and thus, it can be the source of competitive advantages. This instrument is very useful especially to the managers within the company which have to make decisions rapidly, based on accurate information in order for them to be with a step forward the competition.

The goal of BI solutions is to offer customized analyses to the right users, at the right time, enabling them to make better business decisions. The companies need to implement analyses to hundreds or even thousands of users, assuring, at the same time, that they all have access to the latest operations.

The increasing competition in certain market sectors makes the implementation of BI solution become critical in Romania, too. The companies which deal with a real competition are interested in finding the best product on the market, the most profitable customer or in finding new products which they should attract in order to be competitive. Besides competitiveness, as a generic element, when regarding the implementation of BI solutions there are also other aspects which are considered important such as the necessity to optimize the processes and to improve the decisions or the high amount of data gathered within the operational systems as well as the European and international standards imposed to different industries.

As a rule, the sales teams have at their disposal some simple reports (static reports), which can not give them a sufficiently clear perspective over the decisions which they have to make so as to achieve their goals. However, a professional sales team should regularly have access to information, in order to be able to analyse the

products sales, the desired suppliers, the company's customers and the offers they propose to their new customers.

Over the years, valuable information has been recorded on the operational database, such as those of the financial informational system. However, most of the times, the use of these information is difficult, if not impossible. Why? Because the existing reporting systems do not manage to cover the area of interest necessary to a profound analysis of business processes. As a result, the cost of finding the useful information is high, requiring the allocation of time and of important human resources. By applying the QlikView software all the information hidden in the operational databases are highlighted.

In order to design the reports on sales analysis inside of a company we used the QlikView application, which is an excellent tool in analyzing the critical information on a business, such as sales. QlikView is a complex and powerful BI software package and data analysis which offers a better way to work with the data of a business. The graphic interface offers an increasing interaction to the users. With a few clicks on the mouse, they have immediate access to information that goes from the general level to the level of the slightest details. The organizations, thus, succeed in discovering still unsuspected information, in understanding better what is going on in their current activity and, as such, in making the best decisions for their development.

Some of the reasons that made me choose this BI application are the following ones:

- QlikView does not replace/modify the existing informational system, on the contrary, it comes to supplement it in the area of analysis and reporting.
- QlikView does not have a standard set of analyses, does not have modes. The analysis' applications are built according to the information on the databases and to the specific requirements.
- The time of implementation is much moderate comparing to that of other BI applications: it results in a spectacular application with different analyses within a few days, not months.

QlikView is regarded as a BI solution that brings twice a better value, with a twice low price, within a quarter of the necessary time, comparing to other applications. Practically, any information that exists in a company's database can be used by means of this application, stimulating its interpretation within an integrated context.

Starting from the analysis of the reports and graphics designed by means of the QlikView application, a manager can respond, in a short period of time, to the following vital questions for a company:

1. What customers bring me the highest/lowest value?
2. What parameters affect the sales?
3. What competitive advantages does the company offer to its customers comparing to the competition?
4. What are the products or industries where the company loses /earns money?

In order to exemplify, we considered a company which deals with products delivery. The company has many warehouses situated in different locations and supplies products to a lot of customers around the country.

All the accounting papers can be easily modified, by a few clicks, by setting and changing the respective dimensions, such as: time, the warehouses location, the customers, the products, etc. These can be combined by defining certain groups.

In all the accounting papers, the following two important operations can be realized:

- The simple and multiple selection: for instance, if we select a certain product or more products at the same time, we can see information about the names, types or the customers' locations where the products have been delivered, about the groups of the

products they belong, about the warehouses, the delivered quantities and prices, about the invoices issued after selling these products –see Figure 1 (the white records are selected).

LocatD...	GrupaPro...	TipGrupa	Current Selections	Data
DB	MF1	Cafea	Fields	11.12.2007 00:00
AG	MF2	Zahar	TipGrupa	14.12.2007 00:00
BV	MF3	Carne pasare	Values	17.12.2007 00:00
CJ	MFA	Muschi		18.12.2007 00:00
GJ	MFG	Oteturi		19.12.2007 00:00
GR	MFO	Paine		20.12.2007 00:00
S	MFP	Pateuri		21.12.2007 00:00
TC	MGS	Preparate din carne		17.03.2007 00:00
VL	MGZ	Salamuri		

DenumireProdus	DenumireClient	Cantitate	Pret	Factura
CAFEA BOABE SELECTED 250 GR	SC SALTEMPO	18010	11,387	504764
CAFEA BOABE SELECTED 500 GR	SC SANIMA PROD	18020	11,4	1551192
CAFEA BOABE STEFAN 250 GR	SC SEMLUCA SRL	18360	11,4835	1550550
CAFEA BOABE STEFAN 500 GR	SC SUMA SRL	18420	11,5	1552621
CAFEA MACINATA ELITA 250 GR	SC TONELI SRL	19280	11,58	2901072
CAFEA MACINATA ELITA 500 GR	SC TUDOR SRL	19680	11,6	2900559
CAFEA MACINATA IACOBS 250 GR	SIMAVEX SRL	19700	11,8	505216
CAFEA MACINATA IACOBS 500 GR	STALMI IMPEX SRL	19920	11,9	1552593
CAFEA MACINATA LAVAZZA 250 GR	SUPER PROD COM SRL	20000	12	501555
CAFEA MACINATA LAVAZZA 500 GR	TAGAL SRL	20220	12,1	1552600
CAFEA MACINATA SELECTED 250 GR	VITASANA SRL	20260	12,2	1551064
CAFEA MACINATA SELECTED 500 GR	ZOOSAB SRL	20900	12,3	504216
CAFEA MACINATA SSTEFAAN 250 GR	ACHIMEX SRL	40620	12,5	20079
CAFEA MACINATA STEFAN 500 GR	ACORD IMPEX SRL	-79480	13	2402643
NES IACOBS 250 GR	AGROIMPEX SRL	-29880	16,299701319766	2402099
ZAHAR MARGARITAR	ALCAN SRL	-23490	120	502881
ZAHAR PUDRA	ALDI LIVI 2000 SRL	-22230	1129,05	20666
ARIPIOARE DE PUI	ALECU EXIM SRL	-21730	0	21901
CARNATI AFUMATI	ALIDAF IMPEX SRL	-21530	0,4	22020

Figure 1 – Multiple Selections (sugar and coffee)

- Searching: for instance, if we want to search for a group of products and see the information about it (products, invoices, prices, quantities, customers), the object corresponding to that group of products is selected and the respective name is introduced. As the letters are introduced, all the groups of products which have the respective values in their name, are thus, selected.

Further on, some reporting analysis on sales are presented:

1. The periodical evolution of the sold quantity. In this chart, it is presented a detailed analysis on sales by determining the evolution of the sold quantity from a group of products (coffee) every month of the year. The dimensions of this chart can be changed so that the sold quantities can be displayed on another period of time (on weekends, weekly, daily, yearly, etc.). At the same time, the evolution of sold quantities can also be displayed, from different groups of products or, simultaneously, from two or more groups.

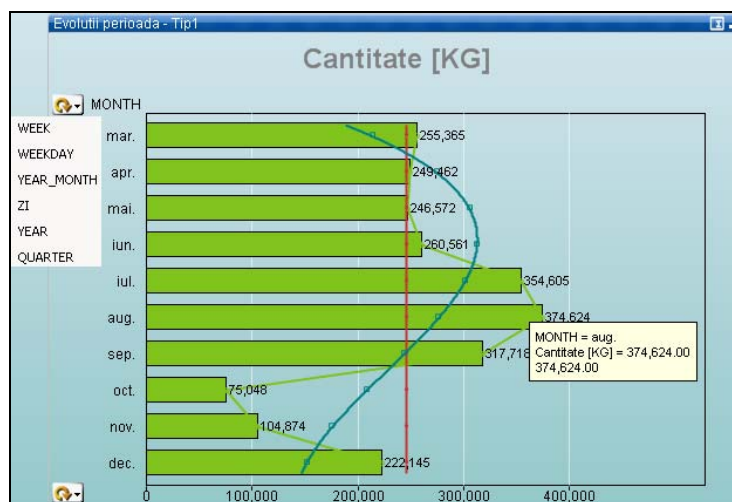


Figure 2 – The evolution of the sold quantity from a group of products(coffee)

2. Variations on sales. In this chart, there are determined the differences between two days in different months. Thus, to exemplify, I considered a day in August and at 20days' distance, a day in July (see Figure 3). There can be noticed the differences between the sold quantities, the products value, and the price for every product which is found in the existing group of products.

Variatii vanzari		To 8,2007	%8,2007	RON / TO8,2007	To 7,2007	%7,2007	RON / TO7,2007	Diferenta To	Diferenta RONto	Diferenta RON	Diferenta din cantitate	Diferenta din pret
GrupaProdus	DenumireProdus											
MF1	MUSCHI FILE ALDIS	538	0.01%	13.049	3,124	0.04%	9.700	-2,586	3.35	-23,282	-33,746	10,464
	MUSCHI FILE CAROLI	11,660	0.13%	12.660	12,812	0.14%	9.800	-1,152	2.86	22,060	-14,585	36,645
	MUSCHI FILE CRIS-TIM	32,800	0.37%	10.533	42,920	0.48%	8.487	-10,120	2.05	-18,783	-106,592	87,809
	MUSCHI FILE PRODA...	602,350	6.80%	9.583	610,320	6.89%	7.815	-7,970	1.77	1,002,770	-78,377	1,079,147
MF2	PATE ARDEAL PORC	16,130	0.18%	0.478	15,320	0.17%	0.400	810	0.08	1,576	387	1,189
	PATE ARDEAL PUI	4,700	0.05%	0.600	7,205	0.08%	0.600	-2,505	0.00	-1,503	-1,503	0
	PATE BUCEGI	3,868,800	43.65%	9.577	3,551,880	40.12%	7.841	316,920	1.74	9,204,066	3,035,254	6,168,812
	PATE SIBIU GASCA	71,590	0.81%	6.430	45,000	0.51%	5.899	26,590	0.53	194,894	170,980	23,914
MFP	PATE SIBIU PORC	630,070	7.11%	5.735	1,046,000	11.81%	5.138	-415,930	0.60	-1,760,497	-2,385,326	624,829
	PATE SIBIU PUI	2,452,780	27.68%	6.173	2,336,685	26.39%	5.570	116,095	0.60	2,124,999	716,668	1,408,331
	CARNATI AFUMATI	1,850	0.02%	9.245	300	0.00%	7.607	1,350	1.64	12,971	12,480	491
	CARNATI ARDELENE...	59,050	0.67%	9.100	84,303	0.95%	7.463	-25,253	1.64	-91,816	-229,792	137,976
MGS	CARNATI CABANOS	2,660	0.03%	10.792	1,900	0.02%	9.742	760	1.05	10,196	8,202	1,995
	CARNATI OLTENESTI	65,000	0.73%	8.941	45,000	0.51%	7.270	20,000	1.67	254,003	178,813	75,190
	CRENVUSTI DE PORC	155,175	1.75%	6.506	131,150	1.48%	6.101	24,025	0.40	209,380	156,302	53,078
	CRENVUSTI DE VITA	28,160	0.32%	10.897	31,720	0.36%	10.421	-3,560	0.48	-23,708	-38,793	15,084
MGS	RULADA DE PORC	30	0.00%	8.500	30	0.00%	7.500	0	1.00	30	0	30
	RULADA DE VITA	484,720	5.47%	9.173	533,400	6.02%	7.576	-48,680	1.60	405,058	-446,521	851,578
	CAFEA BOABE ELIT...	194,835	2.20%	6.137	219,125	2.47%	6.132	-24,290	0.00	-148,035	-149,064	1,029
	CAFEA BOABE IAC...	5,370	0.06%	8.761	2,800	0.03%	7.429	2,570	1.33	26,247	22,517	3,730
MGS	CAFEA BOABE IAC...	12,240	0.14%	8.734	12,400	0.14%	7.578	-160	1.16	12,937	-1,397	14,335
	CAFEA BOABE LAV...	1,420	0.02%	10.768	1,300	0.01%	8.250	120	2.52	4,565	1,292	3,273
	CAFEA BOABE SEL...	1,640	0.02%	12.301	840	0.01%	10.223	800	2.08	11,586	9,840	1,746
	CAFEA BOABE STE...	80,760	0.91%	9.000	39,920	0.45%	9.000	40,840	0.00	367,560	367,560	0
MGS	CAFEA MACINATA E...	14,920	0.17%	0.600	15,059	0.17%	0.600	-139	0.00	-83	-83	0
	CAFEA MACINATA I...	2,400	0.03%	6.959	5,360	0.06%	6.618	-2,960	0.34	-18,771	-20,599	1,829
	CAFEA MACINATA L...	51,400	0.58%	8.744	35,840	0.40%	7.469	15,560	1.28	181,773	136,061	45,712
	CAFEA MACINATA L...	400	0.00%	9.300	11,920	0.13%	7.720	-11,520	1.58	-88,299	-107,136	18,837
MGS	CAFEA MACINATA ...	9,239	0.10%	0.800	10,041	0.11%	0.800	-802	-0.00	-642	-642	-0

Figure 3 – Variations on sales

This chart can be modified easily by changing the dimensions, in this way, visualizing the same information grouped differently. For instance, we can find differences in the quantities, values and prices for a group of products (see Figure 4), or for other customers or types of customers (partners or non-partners), or from certain warehouses, or from a locality, etc. Selections can also be made, for example, we can choose to draw a statistics only for a certain group of products, for a certain customer, a certain geographic area or for a certain group of customers etc. In fact, these selections can be made in all accounting papers built by means of this QlikView application.

Variatii vanzari		To 8,2007	%8,2007	RON / TO8,2007	To 7,2007	%7,2007	RON / TO7,2007	Diferenta To	Diferenta RONto	Diferenta RON	Diferenta din cantitate	Diferenta din pret
GrupaProdus	TipGrupa											
MF1	Muschi	647,348	4.08%	9.689	669,176	4.63%	7.905	-21,828	1.78	982,765	-211,502	1,194,267
MF2	Pateuri	7,044,070	44.40%	7.989	7,002,090	48.41%	6.643	41,980	1.35	9,763,536	335,398	9,428,138
MF3	Salamuri	130,035	0.82%	9.006	109,579	0.76%	7.509	20,456	1.50	348,275	184,237	164,038
MFA	Uleiuri	324,512	2.05%	10.039	181,280	1.25%	8.518	143,232	1.52	1,713,824	1,437,962	275,862
MFG	Paine	1,097,740	6.92%	9.155	1,149,340	7.95%	7.418	-51,600	1.74	1,523,566	-472,378	1,995,944
MFO	Carne pasare	5,109,929	32.21%	9.638	3,751,986	25.94%	7.405	1,357,943	2.23	21,466,269	13,087,775	8,378,495
MFP	Oteturi	340,320	2.15%	9.863	417,840	2.89%	8.318	-77,520	1.55	-118,949	-764,548	645,599
MFS	Preparate din carne	796,445	5.02%	8.695	827,803	5.72%	7.428	-31,358	1.27	776,115	-272,662	1,048,777
MGS	Cafea	374,624	2.36%	6.935	354,605	2.45%	6.343	20,019	0.59	348,838	138,839	209,999

Figure 4 – Variations on sales for the groups of products

3. Customers' Evolution. In this chart, , for every type of customers, there are presented the groups of products and the values corresponding to them, for quantity and value, as well as the evolution of prices (how many times the price has been modified), the low, average and high price for sale of the products from the respective group and the standard deviation. (see Figure 5). All these information can be displayed for every customer partly, for every product or warehouse, or by means of selection, for different values.

Evolutie client - valori pret pe bucata											
TipGrupaClient	TipGrupa	Valoare RON	Cantitate BUC	Cantitate KG	Numar preturi	Pret maxim	Pret minim	Pret mediu	Pret KG	Abatere standard	
Non Parteneri	Cafea	1,138,217,229	137,536,726	137,541,314	373	1,129.0500	0.0000	8.2757	8.2755	7.2984	
Parteneri	Cafea	13,301,784	2,073,125	2,073,125	60	120.0000	0.6000	6.4163	6.4163	6.6972	
Parteneri	Cafea	2,894,027	388,099	387,849	51	1,129.0500	0.8000	7.4569	7.4617	70.3701	
Parteneri	Carne pasare	283,218,731	31,873,428	31,870,135	58	28.0000	6.7123	8.8657	8.8666	1.9755	
Non Parteneri	Carne pasare	50,324,460	5,820,968	5,820,340	43	12.5000	5.5000	8.6454	8.6463	1.4838	
Non Parteneri	Muschi	19,481,694	1,943,499	1,943,523	40	26.0000	7.0000	10.0240	10.0239	1.5635	
Parteneri	Muschi	6,538,474	701,437	710,172	34	31.6000	6.9479	9.3215	9.2069	5.3502	
Non Parteneri	Oteturi	28,161,029	2,894,180	2,894,180	47	12.8000	7.4000	9.7302	9.7302	1.7172	
Parteneri	Oteturi	3,608,085	385,950	385,950	26	12.0000	6.7150	9.3486	9.3486	1.5307	
Parteneri	Paine	63,036,901	7,280,711	7,280,711	57	10.8080	6.6283	8.6581	8.6581	1.4588	
Non Parteneri	Paine	22,789,789	2,537,115	2,537,115	52	12.1000	4.2000	8.9826	8.9826	1.8452	
Non Parteneri	Pateuri	438,766,715	57,515,541	57,515,541	142	12.8000	0.4000	7.6287	7.6287	2.3347	
Parteneri	Pateuri	118,223,664	14,307,485	14,307,485	92	11.0975	0.0000	8.2631	8.2631	2.1887	
Non Parteneri	Preparate din carne	24,176,516	2,890,248	2,890,248	52	16.0000	6.0000	8.3649	8.3649	2.0358	
Parteneri	Preparate din carne	16,725,977	1,945,035	1,945,035	45	10.9045	5.7000	8.5993	8.5993	1.1608	
Parteneri	Salamuri	9,556,077	1,092,004	1,092,004	78	19.3000	4.8250	8.7510	8.7510	2.1145	
Non Parteneri	Salamuri	4,005,182	370,310	370,310	49	18.0000	5.0000	10.8158	10.8158	2.6393	
Non Parteneri	Uleiuri	8,784,916	794,443	794,443	57	14.3000	6.8000	11.0580	11.0580	1.9058	
Parteneri	Uleiuri	24,622,964	2,723,133	2,723,133	54	11.8695	6.9619	9.0421	9.0421	1.7192	

Figure 5 – Customers' Evolution

4. The Key Performance Indicators (KPI). The key performance indicators are important for the teams, managers, or businesses in order to evaluate rapidly the progress to measurable objectives. Every business area can choose to follow other types of KPIs, according to the objectives which are to be fulfilled. For instance, in order to increase the customers' satisfaction, a calling centre can have as its goal to settle to answer to a specific number of telephone calls in a shorter period of time. Another possibility is for the sales department to use KPIs in order to settle performance objectives, such as the number of the new products sold every month. Other example of such indicators could be defined:

- the average income on customer;
- sales versus target for every employee of the sales department;
- the success rate (the number of contracts signed of the total).

In the present case, I considered as performance indicators: the products value, the sold quantity, and the average price and I took into account the days of the current month and the days of the last month till the same day.

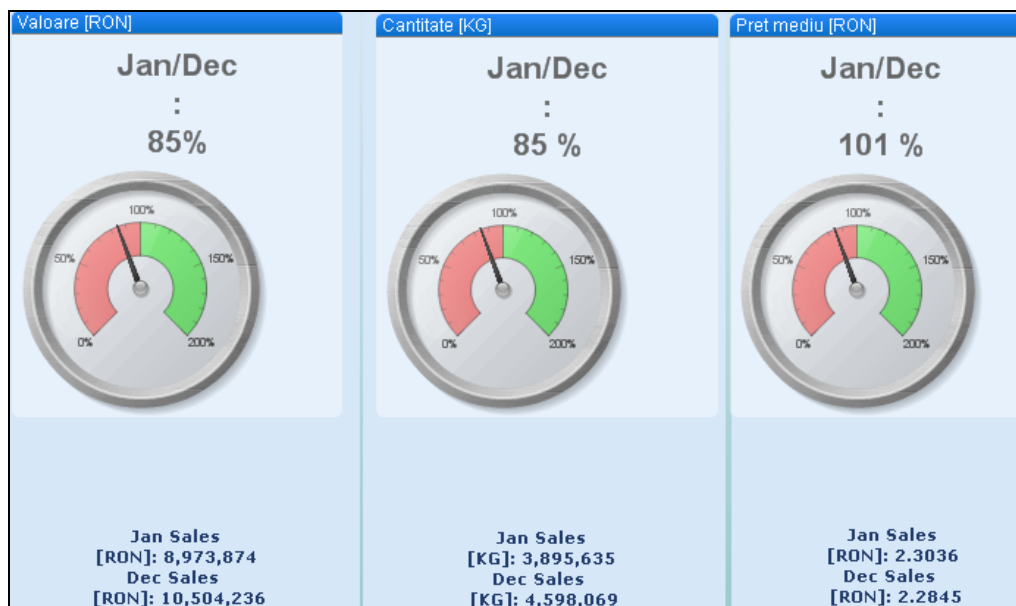


Figure 6 - KPI

CONCLUSIONS

A BI system does not replace the ERP system or the current CRM system. It represents a device for management, not for data operators. The QlikView application loads the data from the operational system and offers the possibility to analyse them. If a report specifies the fact that the sales decreased by 80% comparing to the last month, an analysis specifies WHY and WHEN decisions should be made.

The advantages that results from using BI instruments are the following:

- shortcut of the searching time for huge amounts of data in order to find the right piece of information, necessary to solve a certain situation;
- getting complex analyses of the activity, represented by various formats (tables, graphics, maps and others);
- the data analysis in order for them to be used with a view to improve the relations with the customers and the business partners;
- the automatic revealing of some hidden and critical information, with a strong impact on decision making process;
- the improvement of communication, planning, efficiency, and productivity;
- the decrease of costs;
- the increase of profitability and of business value;
- the assurance as to the visibility of the entire business;

The set of the BI reporting devices offers the access to the information that we need, when we need, in order to make the right decisions in the shortest period of time. Today, all the companies know the fact that their pieces of information are valuable/reliable. The most intelligent of them already invest in BI instruments and they offer the necessary visibility in the decision making process at all the levels of the organization.

Just because of the world crisis, the companies should become more efficient to survive. And it should be taken action right now. A BI system is included at the defensive investments and its role became very important under the circumstances.

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