IT&C Impact on the Romanian Business and Organizations. The Enterprise Resource Planning and Business Intelligence Methods Influence on Manager's Decision: A Case Study

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The aim of the paper is to study the use of the advanced management methods in the 2010 year in Romania. The research results were obtained with the use of a questionnaire, and our purpose was to demonstrate some hypothesis concerning identify the effect that implementation of ERP and BI applications in all functions of an organization has over the management method and the IT&C based decision. The originality of this article consists in the study realized in computer based advanced management methods implementation. The study is limited to the SIVECO companies portfolio. The purpose of the study was to demonstrate some hypothesis concerning the relationship between the size of the organization, the management method used, and the role of IT&C in decision making. The practical value of this study consists in the measurement of the impacts of contingency factors, including size, and in the assessment of the ERP systems success. The results demonstrate that the relationship between firm size and ERP success is moderated by IT assets.
Keywords: *Enterprise Resource Planning, Business Intelligence, Management Methods, Balanced Scorecard*

1 Introduction

The success and competitiveness of an organization is determined to a great extent by the management quality and especially by the organizational, decisive, informational and last but not least by the methodical-methodological subsystems. The methodical-methodological subsystem involves the implementation of some efficient methods, tools and techniques which help to diagnose the activity of the organization and the elaboration of an adequate development strategy. An efficient management means well-prepared managers and managers who are familiar with the latest management methods.

My scientific and teaching activities over the past few years have attempted to point out certain essential elements of integrated information systems, used as decision and management instruments available for managers. Thus for more than seven years I have tried to induce to the managers of the organizations, with which we have collaborated, the awareness that the ERP systems are more than accounting applications. My earlier research (2004) were an attempt to investigate the IT field of the public companies, and that one was limited to business software implementation in 40 Romanian mining companies.

The methodology used is both quantitative and qualitative. The research results were obtained with the use of a questionnaire technique, and our purpose was to demonstrate some hypothesis concerning the size of the organization, the management method and the IT&C based decision. The questionnaire was operated with SPSS 17, through a linear regression analysis and a t test. The practical value of this study consists in the measurement of the impacts of contingency factors, including size, and in the assessment of the ERP systems success. The results demonstrate that the relationship between implementation of ERP and BI applications in all functions of an organization and the management method and the IT&C based decision.

Taking into consideration the market shares, the research focused on three companies, namely, SAP, Oracle and SIVECO, because they own more than 50% of the Romanian market of enterprise integrated applications.

We assessed another 7 Romanian companies that design enterprise soft affordable for small size enterprises, respectively thousands or ten thousands Euros compared to hundreds of thousands or even million Euros in case of SAP, Oracle and SIVECO, namely EBS, Total Soft, Wizrom, Senior Software, Alfa Software and Win Mentor, and we evaluated as well the worldwide leader of software Microsoft, that on the ERP and BI market has an average success, because the policy oriented towards masses (a large number of end-users), applied in the field of mono-post or office operating systems, does not work just within small size enterprises, to which Microsoft addresses differently anyway.

We have analyzed the level of implementing ERP applications in the functions of the enterprise through SIVECO Applications (JSC), and the implementation of analytical and managerial decisions tools through SIVECO Business Analyzer (SBA).

Another analysis was performed on seven main advanced decision management methods and we found that reports and queries that are not really traditional managerial decision tools are considered by our respondents decision tools, and the real advanced management methods such as dashboards, key performance indicators against targets related (BSC Balanced Scored Card) and OLAP technology have a less usage. Reports and queries are still mainly perceived as the basic methods in the decision, but surprisingly Excel does not have green lights (is not used very efficient). If we separately address to SIVECO Business Analyzer (SBA) Business Intelligence software considered as an advanced management method, and in this attempt we identify how to use specific tools such as scenarios, forecast analysis, "what if" type analysis or tracking aggregation and break down structures and levels, we point out some conclusions. We mark with a red traffic light the problems and there are not dominant, the forecast and the scenarios are well used, and "what if" type tests are unfortunately used rarely.

2 Advanced Methods Management used in the Romanian Organizations

Enterprise Resource Planning

Integrated information systems worldwide known as Enterprise Resource Planning represent a tool which integrate the economic processes of an organization and optimize its resources. Enterprise Resource Planning (ERP) represent a systems based on the architecture client/server developed to process transactions and facilitate the integration of all processes starting with the planning and development stage and reaching to the relations with the suppliers, customers and other partners [2].

For the Romanian organizational environments which entered the game of integration, the implementation of the application packages for enterprises (Enterprise Resource Planning - ERP) means performance, efficiency and control of business. The current ERP systems perform the integration of all management functions of an organization, starting from planning, providing the stock of raw materials, defining the technologies, coordinating the production processes and last but not least, performing the financial-accounting management, the human resources, end products stock management and developing and maintaining the customers relations and the relations with the business partners.

Business Intelligence

Being one of the favorite themes of economics and management, economic intelligence or Business Intelligence as the Anglo-Saxons call it, has not yet been integrated in the organizational practices or institutional practices from Romania only with a certain timidity and discretion. There are many explanations; some are coming from the professional and competences area of such an activity other significant ones form the cultural specificity. Before starting to analyze some of the problems related to the Romanian economic intelligence we have to point out some of the most relevant aspects of this profession, job and activity from the enterprise or organizational, regional, local or national institution.

Business intelligence is a concept which refers to the way in which decision can be made faster and easier. In the current society the companies collect huge quantities of data daily: information about orders, inventories, and transactions from work sites and of course information about customers. Companies also collect data as demographic data and email lists from external sources. Unfortunately more than 93% of the data are not used in the decision making process.

Balanced Scorecard as a Decision Support System

In the category of managerial tools used to put the management processes into practice, the Balanced Scorecard (BSC), is one of the methods which every manager should have, irrespective of his hierarchy in the organization. The BSC represents the total number of current information displayed in a synoptic, preset form referring to the main results of the activities and the main factors which condition their efficient development. The BSC regroups and presents under a selective form the significant indicators also called key points or signals, which enhance the responsible of the assembly or of some part of the organization to control his own field of responsibility. [9]

3 Research over the Use of Advanced Management Methods in Romanian Organizations

In the virtue of the questionnaire I achieved the results and I was able to formulate and validate hypothesis. Thus I formulated a hypothesis that in the private domain there is a more efficient usage of money than in the public domain and we have reached the conclusion that providing with excessive hardware is not necessarily a useful thing to do, if that hardware is not correlated with the software applications. Another objective of this study was to test die impacts of contingency factors, including size, on die one hand, and ERP systems success, on the other. I demonstrate that there would be a relationship between firm size and ERP success; the relationship between firm size and ERP success will be moderated by IT assets, such diat success will be higher in larger firms and that the relationship between firm size and ERP success will be moderated by IT resources, such that success will be higher in larger firms. I have concentrated on public organizations because I believe that the adoption of ERP systems might be higher there than in private sector organizations. I have analyzed the data using SPSS 17.0, and the respective response rates, excluding the unusable questionnaires received, was 14 organizations.

I also used statistical techniques in order to define the differences between the groups, using t test. In order to analyze the statistical connections I used correlation analysis for the intensity of the connections between the variables and regression analysis to estimate the value of a dependent variable (effect) taking into account the values of other independent variables (causes). I have carried out a multiple regression analysis in order to identify the effect that implementation of ERP applications in all functions of an organization has over the the decision making processes of the organization.

Methodology

Questionnaire, the research instrument

The study set sights on Romanian organizations which implemented a Siveco ERP and BI software, and were collected in 2010 year. The instruments used for collecting data were a quantitative questionnaire, an qualitative one and an interview. The research based on the quantitative questionnaire was structured on 27 questions focused on hardware and software endowment (8 questions), implementation of the ERP business software for five business function such as manufacturing, SCM, financial, HRM and CRM (6 questions), other 6 questions were dedicated only to Human Resource Management function and the last 7 questions were dedicated to BI management methods.

Respondents

Even data were collected only from 13 organizations, these are representative for the 2010 Romanian economy, because in this

economical moment Romania has only 5,000 companies that need an ERP and a BI software instrument as a advanced management method. So we have only 2,000 big companies having more than 250 employees which can afford to implement a SAP, Oracle or Siveco ERP software. But these 2,000 companies generate incomes two times higher than the other 10,000 SMB, and equal those of the 500,000 small Romanian companies, that have under 50 employees. From these 2,000 big organizations most of them are branches from transnational companies, and have mostly implemented ERP existing in their main organization, usually SAP or Oracle. So, are likely to be investigated public organizations and private Romanian capital organizations. These two categories have a hundred percent Romanian management, and had to optimize it.

Graphical results

I have analyzed the level of implementing of ERP applications in the functions of the enterprise through SIVECO Applications(SA), and that the implementation of analytical and managerial decision tools through SIVECO Business Analyzer (SBA).I have observed that in most cases there is a correlation between the number of the personnel and the number of computers in that organization. Only Aerostar Bacau and Romvag Caracal seem to except this correlation. Suggestive seemed a reporting between the number of computers and the number of personnel multiplied by 1000. In this case the average of 200 (231) is exceeded by the majority public firms (first 9 companies), for Hidroserv Hateg existing even a significant differences (two-fold). Also this average is greater than the average for the private sector (145).

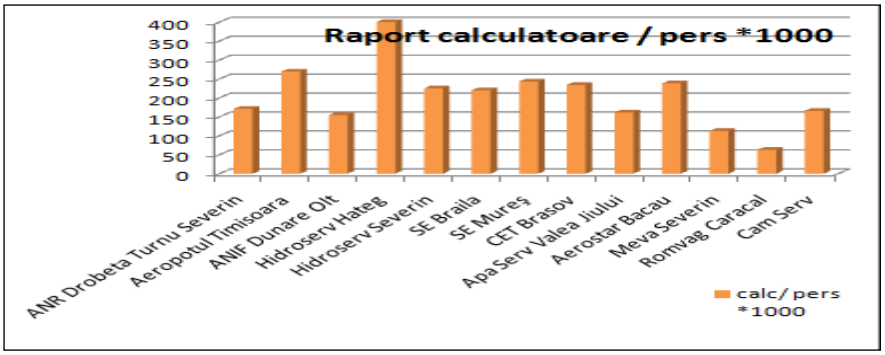

Fig. 1. Personel computer report multiplied by 1000

Because the answer given by respondents was not always gradual (I have not received the degree of importance given to the level of IT&C implementation for each function) I was forced to agree the 1 value for implementation and 0 value for non implementation.

Table 1. ERP implementation on the functions of the enterprise through SIVECO Applications (SA)

Organizatia	MP	MFC	MCG	MAD	MRU	MS	MIX_ERP
ANR Drobeta Turnu Severin	0	1	0	1	1	1	0,67
Aeropotul Timisoara	0	1	0	0	1	1	0,50
ANIF Dunare Olt	0	1	0	0	1	1	0,50
Hidroserv Hateg	0	1	1	1	1	1	0,83
Hidroserv Severin	0	1	1	1	1	1	0,83
SE Braila	0	1	1	1	0	1	0,67
SE Mureş	0	1	1	1	1	1	0,83
CET Brasov	0	1	0	1	0	0	0,33
Apa Serv Valea Jiului	0	1	1	1	1	1	0,83
Aerostar Bacau	1	1	1	1	1	1	1,00
Meva Severin	1	1	1	1	1	1	1,00
Romvag Caracal	1	1	1	1	1	1	1,00
Cam Serv	0	1	0	1	0	1	0,50

I have analyzed the level of implementing of ERP applications in the functions of the enterprise through SIVECO Applications(SA), presented in Figure 2, and the implementation of analytical and managerial decision tools through SIVECO Business Analyzer (SBA).

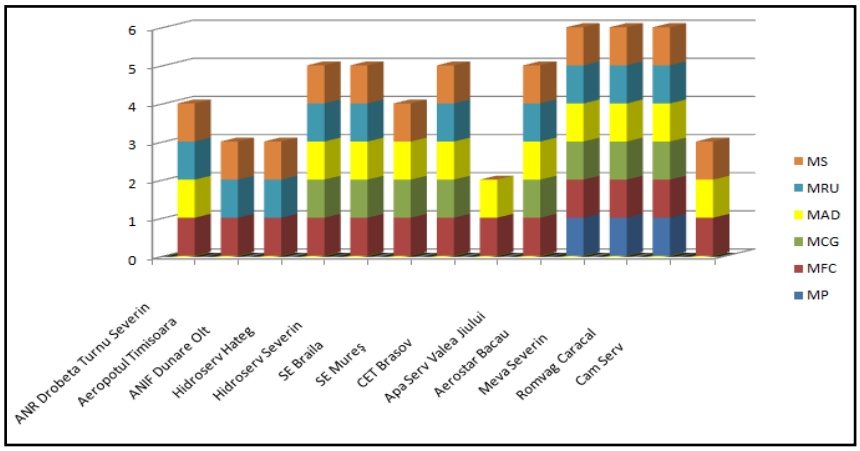

Fig. 2. ERP implementation on the functions of the enterprise through SIVECO Applications (SA)

The 6 investigated functions: production, accounting, management accounting, purchasing and sales, human resources and payroll are actually only 4, and I thoroughly investigate the financial accounting function. From Figure 2 I can observe a maximum implementation in most private firms (less CamServ which is a small organization), and an improved implementation for public company with some exceptions (CET Brasov). Please note that the field of activity may influence this interpretation.

Table 2. ERP implementation in the accounting and commercial business modules

organizatia	CCMMF	CCMS	CCMB	CCMA	CCMV	CCMC	CCMFU	CCMFN
ANR Drobeta Turnu Severin	8	8	8	8	0	8	0	8
Aeropotul Timisoara	5	6	4	0	0	8	7	0
ANIF Dunare Olt	8	7	0	0	0	0	0	0
Hidroserv Hateg	8	8	0	8	0	8	0	0
Hidroserv Severin	8	8	0	8	0	0	0	0
SE Braila	8	7	6	5	0	5	0	0
SE Mureş	6	8	5	7	0	0	0	0
CET Brasov	5	6	0	0	0	0	8	7
Apa Serv Valea Jiului	8	8	0	8	0	8	8	8
Aerostar Bacau	8	8	8	6	8	6	0	0
Meva Severin	7	8	6	7	6	6	0	0
Romvag Caracal	7	5	0	6	0	8	0	0
Cam Serv	7	8	0	8	0	0	0	0

The main modules of business investigated were accounting MFC MCG and purchasing and sales MAD through SIVECO Applications 2011 implemented in the 13organizations. Their modules were CCMMF Fixed Assets Management, CCMS Inventory Management, CCMB Budget Management, CCMA Procurement Management, CCMV Sales Management, CCMC Contract Management, CCMFUCCMFN Billing Management and Cash Flow Management.

In the Table 2 I have highlighted those areas that have been awarded a maximum score after the use (8-blue), but also those who received a minimum score according to the same degree of use (0 - red flag).

The main modules in human resources management (Figure 3) with the highest degree implementation in organizations are personnel records, training, and the red flag should be put into the recruitment and selection, employee performance evaluation and follow-career employees.

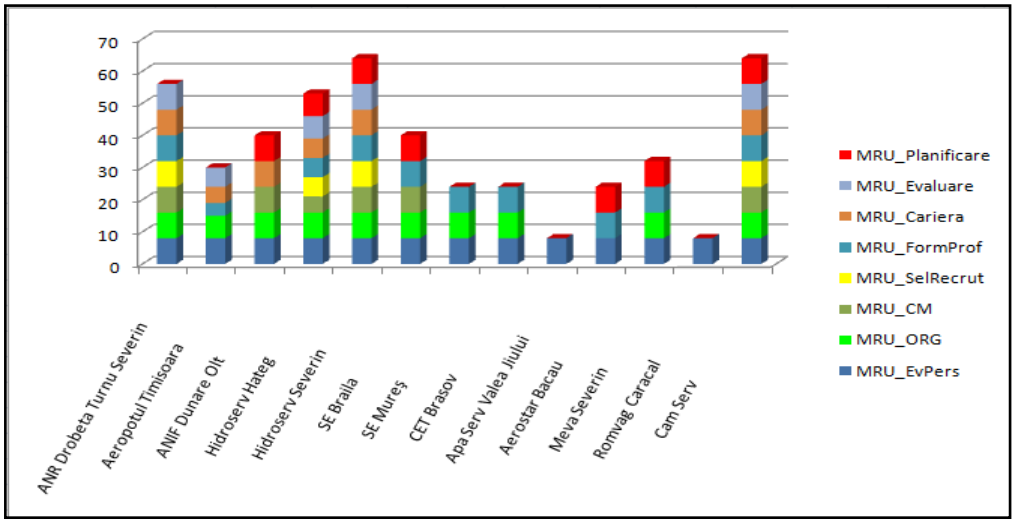

Fig. 3. Human resource management implementation

Another analysis was performed on seven main advanced decision management methods, as shown in Figure 4, and I found that reports and queries that are not really traditional managerial decision tools are considered by our respondents decision tools, and the truly advanced management methods such as dashboards, key performance indicators against targets related (BSC Balanced Score Card) and OLAP technology have a less usage.

Related to Balanced Score Card is possible that managers continue to perceive it incorrectly Even this is in fact the essence of management decision, allowing managers to select the appropriate measures for each objective, the translation strategy of the organization goals and objectives and assist organizations in implementing processes that support strategy management. Reports and queries are still mainly perceived as the basic methods in the decision, but surprisingly Excel does not have green lights (is not very efficient used).

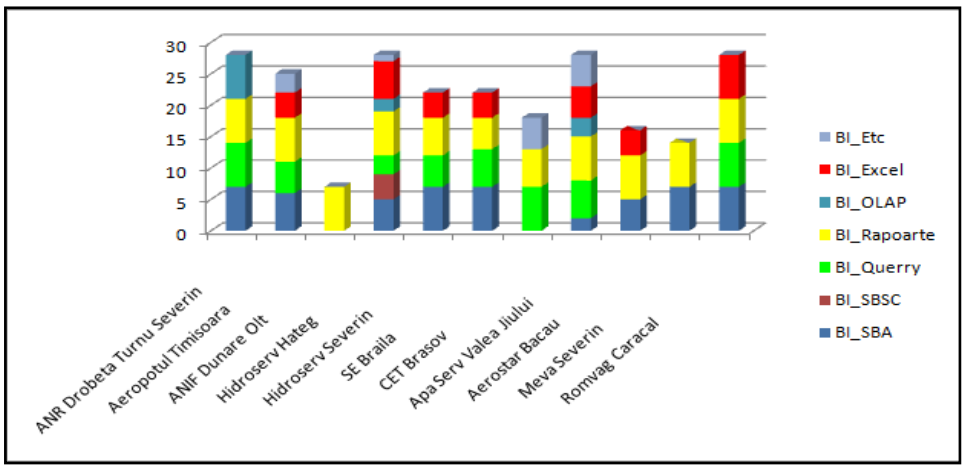

Fig. 4. Seven main advanced decision management methods

Some organizations seem to use at least 4-5 of the seven proposed methods as real management methods. They are Hidroserv Hateg, ApaServ Petrosani, Romvag Caracal, ANR Severin and Timisoara Airport.
If I separately address to SIVECO Business Analyzer (SBA) a Business Intelligence software considered as an advanced management method, and in this attempt I identify how to use specific tools such as scenarios, forecast analysis, "what if" type analysis or tracking aggregation and break down structures and levels, I point out some conclusions. I mark in table 3 with a red traffic light the problems and there are not dominant, the forecast and the scenarios are well used, and "what if" type tests are unfortunately seldom used.

Table 3. Implementation of analytical and managerial decision tools through SIVECO Business Analyzer(SBA)

organizatia	SBA_Scenarii	SBA_Previziune	SBA_What_If	SBA_Drill_Up
ANR Drobeta Turnu Severi	0	0	0	0
Aeropotul Timisoara	0	4	0	0
ANIF Dunare Olt	4	4	4	0
Hidroserv Hateg	3	4	2	1
Hidroserv Severin	4	0	0	3
SE Braila	4	3	1	2
CET Brasov	0	0	0	0
Apa Serv Valea Jiului	4	0	0	0
Aerostar Bacau	0	0	0	4
Meva Severin	4	4	0	4
Romvag Caracal	4	4	0	4

If I try highlighting the analytical managerial decision tool for the investigated companies I found two private companies, those in charge of production of railway wagons and three energy companies seem most advanced in this field.

I then tried to point out which are the main indicators monitored through the use of management decision support system methods and I observed that organizations focus on financial and economic indicators and less on the performance. We can see the result in figure 5.

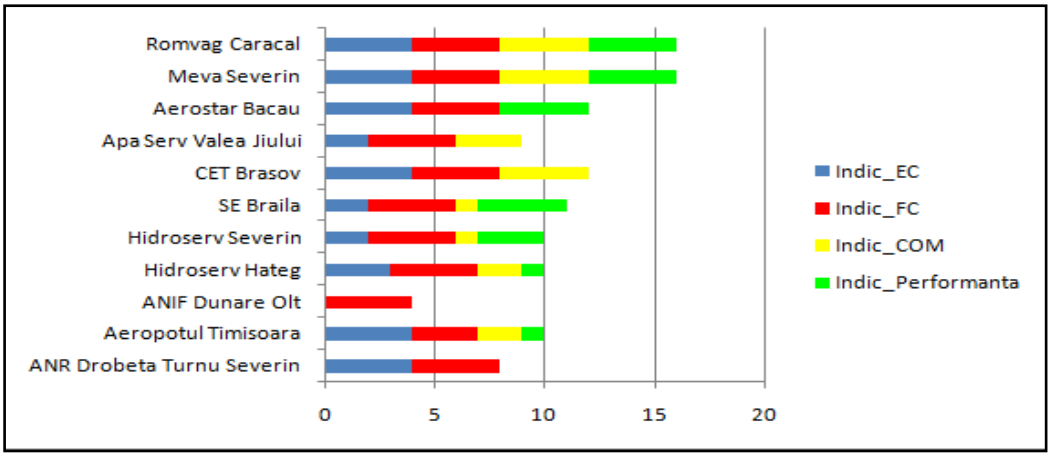

Fig. 5. Indicators monitored by SBA as an analytical and managerial decision tool

In terms of respondents I have note that private firms have an advantage, and in this case there are follow by the public energy firms.

4 Statistical Assumptions on Testing Links Between Management Decision and Information Technology Research Hypothesis

Hypothesis 1. Implementation of ERP applications in all functions of an organization can lead information technology in a strategic resource of the organization [8]
I used regression analysis, as a statistical method to evaluate the relation between one independent variable (ERP_Mediu, BI_Mediu and BI_ERP_Mediu) and another continuous dependent variable (PN-effect and CA_efect given to the ERP and BI level of implementation). With this analysis tool I have performed a linear regression analysis using the method of the least square in order to plot a line by a set of observations. Thus I have perform the analysis of the dependence and I have appreciated the extent to which the independent variable influence the dependent. With linear regression I output the regression coefficients necessary to predict one variable PN, CA from the other ERP, BI

To prove this hypothesis I have started to quantify the effects induced by the implementation of ERP applications in all functions of an organization. Thus have used data on turnover and clear profit for eight organizations (six public capital organizations were exempted from this investigation as part of organizations like the ANR or Termoelectrica). I took additional data that were not in the quantitative questionnaire from http://www.doingbusiness.ro/financiar/ site and http://www.siveco.ro/web/.
Then I gathered the information related to the increase of turnover and clear profit for the year following the implementation, and data on the average ERP implementation in organization business functions. I have used five variables for this purpose (Table 4).

Table 4. Variables used in proving Hypothesis 1

organizatia1	ERP_Mediu	Proprietate	CA_efect	PN_efect
Aeropotul Timisoara	0,50	0	1,15	0,52
ANIF Dunare Olt	0,50	0	1,13	0,42
Hidroserv Hateg	0,83	0	1,07	0,70
Apa Serv Valea Jiului	0,83	0	0,98	0,84
Aerostar Bacau	1,00	1	1,37	1,98
Meva Severin	1,00	1	1,71	2,65
Romvag Caracal	1,00	1	2,14	3,13
Cam Serv	0,50	1	1,77	1,45

I used a t test and F test. By means of a t-test, I have tried to test the media for the implementation of ERP systems and the effect induced on the clear profit organizations, for public and private case (two populations- Table 5).

Table 5. Independent t test environments for testing equality

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
ERP_Mediu	Equal variances assumed	,130	,731	-1,336	6	,230	-,21000	,15716	-,59456	,17456
	Equal variances not assumed			-1,336	5,606	,233	-,21000	,15716	-,60121	,18121
PN_efect	Equal variances assumed	8,487	,027	-4,405	6	,005	-1,68399	,38226	-2,61935	-,74863
	Equal variances not assumed			-4,405	3,378	,017	-1,68399	,38226	-2,82708	-,54091

Significance level 0.027 Sig is small for PN_efect (0,027<0.05), and higher for ERP_Mediu variable. The conclusion is that the average growth in clear profit is equal to the type of property.

I have conducted a regression analysis to determine the link between the degree of implementation of ERP applications on the functions of the organization and profit growth effect induced by these organizations, and I noticed that there is a good link (with a significance of correlation R = 0.73> 0.63 for 7 degrees of freedom) (table 6). F-test also has a high enough value (6843), and the Sig. corresponding F statistics is slightly less than 0.05 (0.04) which gives significant linear relationship between two variables. Because both F that has a high level, and significance Sig. is reduced, can be concluded that the results are not coincidental [12].

Table 6. Linear regression analysis between ERP implementation in organization functions and the effect on profit growth

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,730[a]	,533	,455	,76035

a. Predictors: (Constant), ERP_Mediu

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3,956	1	3,956	6,843	,040[a]
	Residual	3,469	6	,578		
	Total	7,425	7			

a. Predictors: (Constant), ERP_Mediu

b. Dependent Variable: PN_efect

Hypothesis 2. Implementation of ERP and BI applications in all functions of an organization increases the influence of the advanced management methods in the decision making processes of the organization [1]. Hypothesis 2 will be tested in particular from the perspective that BI applications influence the organization's performance management processes and less in terms of ERP applications.

Table 7. Variables used in proving the hypothesis 2

	organizatia	ERP_Mediu	Proprietate	CA_efect	PN_efect	BI_Mediu	BI_ERP_Mediu
1	Aeropotul Timisoara	0,50	0	1,15	0,52	0,25	0,71
2	ANIF Dunare Olt	0,50	0	1,13	0,42	0,75	0,14
3	Hidroserv Hateg	0,83	0	1,07	0,70	1,00	1,00
4	Apa Serv Valea Jiului	0,83	0	0,98	0,84	0,25	0,86
5	Aerostar Bacau	1,00	1	1,37	1,98	0,25	0,43
6	Meva Severin	1,00	1	1,71	2,65	0,75	0,29
7	Romvag Caracal	1,00	1	2,14	3,13	0,75	0,57

Table 8. Linear regression analysis between BI implementation and effect on profit growth for private organizations

Model Summary

Model	R Proprietate = 1 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1	,908[a]	,825	,650	,34347

a. Predictors: (Constant), BI_Mediu

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,556	1	,556	4,717	,275[a]
	Residual	,118	1	,118		
	Total	,674	2			

a. Predictors: (Constant), BI_Mediu

b. Dependent Variable: PN_efect

c. Selecting only cases for which Proprietate = 1

I have conducted a regression analysis to determine the link between the degree of implementation of BI applications such specific BI tools and profit growth effect

induced by these organizations, and noticed that it is a very good (with a significance of correlation R = 0.908> 0.63 for only two degrees of freedom). Due to the low number of degrees of freedom F ratio is small and value Sig. is greater than 0.05 (0.275), and although the linear relationship between two variables which is very good (R = 0.908) is not necessarily explained by the influence of variable change on the dependent variable PN_efect and independent variable BI_Mediu for private organizations [12] (Table 8). In public organizations R is 0.19, so there is no correlation.

I have conducted a regression analysis to determine the link between the degree of implementation of the mix type BI and ERP applications and profit growth effect induced by these organizations, and noticed that it is a very good correlation with a significance of R = 0.908 > 0.63 for only two degrees of freedom). Due to the low number of degrees of freedom, F ratio is small and value Sig. is greater than 0.05 (0.2), linear relationship between two variables that is good (R = 0.8), so this is not necessarily explained by the influence of variation in the independent variable on the dependent variable PN_efectBI_ERP_Mediu for public organizations [12] (Table 9). In private organizations R is 0.418, so there is no correlation.

Table 9. Linear regression analysis between ERP & BI implementation and the effect on profit growth in public organizations

Model Summary

Model	R	Proprietate = 0 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1		,800[a]	,641	,461	,13682

a. Predictors: (Constant), BI_ERP_Mediu

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,067	1	,067	3,567	,200[a]
	Residual	,037	2	,019		
	Total	,104	3			

a. Predictors: (Constant), BI_ERP_Mediu

b. Dependent Variable: PN_efect

c. Selecting only cases for which Proprietate = 0

Hypothesis 3 The number of employees in an organization influences the role of the ERP applications within the respective organizations. The organization dimension is directly connected with the role of the ERP applications within the respective organization.

For this hypothesis I used regression analysis, as a statistical method to evaluate the relation between one independent variable (personal - size of organization) and another continuous dependent variable (ERP_BI given to the ERP and BI level of implementation). With this analysis tool I have performed a linear regression analysis using the method of the least square in order to plot a line by a set of observations. Thus I have performed the analysis of the dependence and I have appreciated the extent to which the independent variable influences the dependent. With linear regression I output the regression coefficients necessary to predict one variable ERP_BI from the other personal. The model has been confirmed to be valid because the F test value were 49,35, with significant sig. <0,05 (0,02).

Table 10. Linear regression analysis between an independent variable called personal and a dependent variable called ERP_BI for private cases (proprietate=1)

Model Summary

Model	R	proprietate = 1 (Selected)	R Square	Adjusted R Square	Std. Error of the Estimate
1		,980[a]	,961	,942	,05897

a. Predictors: (Constant), personal

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,172	1	,172	49,352	,020[a]
	Residual	,007	2	,003		
	Total	,179	3			

a. Predictors: (Constant), personal

b. Dependent Variable: ERP_BI

c. Selecting only cases for which proprietate = 1

The regression coefficient R=0,980 shows a very strong link between the variable ERP_BI given to the ERP and BI level of implementation and the independent variable personal showing the size of the organization, for the private sector. The model explains 96,1% from the total variation of the variable personal (R^2= 0,961). The rest of 3,9% is influenced by other residual factors not included in the model. (Table 10). In conclusion hypothesis has been confirmed. But in BI methods I found a weak link (R=0,167) and also for the private sector I found R=0593<063. This regression coefficient R=0,593 shows an intermediate link in these case. (Table 11)

Table 11. Linear regression analysis between an independent variable called personal and a dependent variable called BI for private cases (proprietate=1)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	proprietate = 1 (Selected)			
1	,593[a]	,352	,028	,36973

a. Predictors: (Constant), personal

ANOVA[b,c]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,148	1	,148	1,086	,407[a]
	Residual	,273	2	,137		
	Total	,422	3			

a. Predictors: (Constant), personal

b. Dependent Variable: BI

c. Selecting only cases for which proprietate = 1

5 Elaborating a best practice guide for advanced management methods implementation

Based of a 20 years experience achieved in the field of analysis, design and implementation of informational systems I tried to elaborate a best practice guide dedicated to Romanian organizations. I elaborated this guide as a response to the following question: *"Does the culture of business application implementation exist? Do Romanian managers understand the utility of such a solution?"* For elaborating this guide I identified the three possible options for implementing these integrated systems in organizations and afferent to this options the advantages and the risks of implementation.

The best practice guide elaborated was based both on the benefits and the several risks previously highlighted, in the idea of avoiding the last mentioned, and I considered that it should be focused on 6 main strategies.

Strategy number 1. Design a new approach of the informational and functional infrastructure (a virtual structure) within an organization, starting with its approach as a business, by defining the primary data and placing the accent on obtaining the output reports acting on the business requests.

Strategy number 2. Ensure a complete approach (end to end) of the processes of a business, through a strong integration on horizontal of the processes and by definitely influencing the results of its appliance.

Strategy number 3. Ensure the informational support necessary for taking the decision at operational management level by performing a background restructuring of the business, business process reengineering type.

Strategy number 4. Ground the activity by combining the business, statistic and engineering methodologies, falling back upon the interdisciplinarity within any field of activity.

Strategy number 5. Choosing the most appropriate informational integrated system by consulting the offer (see the ample market analysis I performed), on the advices of the consultants but as well on the experience own personnel within the IT department.

Strategy number 6. The integrated business tools must respond to the necessities and expectations of the managerial teams and allow the use of advanced management methods for achieving the business objectives.

6 Conclusions

In the case of Hypothesis 1 I have concluded that the increasing of average clear profit is equal to the type of property. Regarding the link between the degree of implementation of ERP applications on the functions of an organization, and the effect induced by the increase in profit in these organizations have noted that there is a good link. F-test also has a high enough value, and value Sig. corresponding F statistics is slightly less than 0.05 which gives significant linear relationship between two variables. So the Hypothesis 1 is confirmed. In the case of Hypothesis 2 because of the low number of degrees of freedom (I received responses on the issue of BI only from 6 organizations, 3 public and 3 private), and although because the linear relationship between variables that quantify the implementation of BI type applications and the effect induced in profit organization, this relationship is not necessarily explained by the influence of variation in the independent variable. So the Hypothesis 2 is not confirmed. As a general conclusion I would say that public organizations successfully implement ERP applications and the private one are already focused on the implementation of BI applications. For Hypothesis 3 I have found out that only the dimension off the organization and the number of installed computers are of equal average according to the type of property (independent samples t test); There is also a good link between the above mentioned characteristics. One the other hand concerning the role played by the ERP applications, in the private sector, considered by us more performing, their isn't a strong link between dimension and the role of the ERP applications, although the correlate coefficient is good. When using advanced methods, of BI type, and analyzing their effect on organizations management the situation is discouraging as there is no good connection even in the private sector, but on the other hand there is an strong link between dimension and the implementation of the ERP an BI mix in private organizations. Therefore the hypothesis is only partial confirmed.

In this context the basic concepts of computer system provides the technical and behavioral foundation that helps applications such as ERP and decision-making process for building a company's strategic advantage over competitors. IT systems are reflected by the structure and IT hardware equipment and base software. Using the IT systems and their applications in operational management, can develop a competitive advantage for the organization at local, national and up to forms of electronic commerce and information exchange level.

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