

Efficiency of Using IT Resources in Small Businesses

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Abstract: *The current economic and social context is characterized by an increase in the number of new entrepreneurs who have focused on funding from startup programs from national and European funds. These programs involved starting new businesses based on state-of-the-art technologies to provide the competitive advantage required for a startup. These types of technologies are most often found in the field of information and communication. The efficiency of using these technologies can make the competitive differentiation expected through their funding. This paper presents a study of small businesses in the metropolitan area of Bacau, where we analyzed a number of specific IT & C issues.*
Keywords: *efficiency, resources, information technology, small businesses*

Introduction

The resources of a business are its potential for achieving the objectives. Regardless of the type of resources, the efficiency of their use must be a primary concern for business administrators. Quality of raw materials and materials, production flow, qualification of the human resource, financial resources and their availability at the right time, logistics of supply and disposal, etc. is some examples of resources that need to be continually optimized so as to generate competitive costs, costs that support prices tailored to the market.

The IT & C resource, like any other business resource, represents a potential to be exploited to achieve the objectives for which it was acquired.

Although our country is globally recognized for the quality of IT human resources and infrastructure performance, there are still a number of shortcomings at small business level.

At small business level, access to the retail market is a real problem. Differentiation from competition on the market can be achieved through costs. Cost optimization can be done at several levels, one of which is to optimize the allocation of technological resources.

In this context, I conducted a study by which I analyzed at the end of year 2018, with a questionnaire and on-site analysis, a number of 24 small businesses from the Bacau metropolitan region. In this study, I have tried to identify a number of issues related to IT resources such as: correlating the size of the business with the level of specific investments, addressing security in the field, tracking the resource efficiency, qualifying the human resource, addressing new technologies in resource use, etc.

1. Selection and Structure of the Analyzed Sample

In selecting the sample, I was thinking of targeting small businesses. The business size classification was made according to the number of employees. According to the data provided by the National Statistics Institute, at the end of 2016, in Bacau County, 10.892 businesses were active, out of which 97.8% had up to 50 employees.

The 24 companies analyzed represent 0.22% of the total number of companies active in the county. Analyzing the statistical data regarding the size of the companies according to the number of employees, we can see the following weights (view Table number 1):

- between 0 and 9 employees – 9.595 from 10.892 – 88,09%
- between 10 and 49 employees – 1.061 from 10.892 – 9,74%
- over 50 employees – 236 from – 10.892 – 2,17%

In my study, companies with less than 50 employees have a weight of 95.8%. These were divided into three other types:

- Micro-enterprises with up to 3 employees have a share of 70.8%,
- Small enterprises with a number of employees ranging from 4 to 9 have a percentage of 16.7%,
- Medium-enterprises with the number of employees ranging from 10 to 50 have a weight of 8.3%.

Cumulative values for micro and small enterprises are valued weight at 87,5%. By weighting the values, I consider that from this point of view the chosen sample is representative.

Table no. 1 Business Structure in Bacau County, 2016

	0-9		10-50		over 50		Total	Weight
Industry	877	9,14%	232	21,87%	102	43,22%	1.211	11,12%
Trade	3.875	40,39%	352	33,18%	47	19,92%	4.274	39,24%
Services	4.843	50,47%	477	44,96%	87	36,86%	5.407	49,64%
TOTAL	9.595	100,00%	1.061	100,00%	236	100,00%	10.892	100,00%

The structure of the activity domains, aggregated on 3 categories, according to the statistical report provided by the National Institute of Statistics, is the following:

- Industry – 1.211 from 10.892 – 11,12%
- Trade – 4.274 from 10.892 – 39,24%
- Services – 5.407 from 10.892 – 49,64%

The same structure applied on the analyzed companies offers the following weights (Figure No.1):

- Industry – 8,3%
- Trade – 41,7 %
- Services – 50 %

The business field

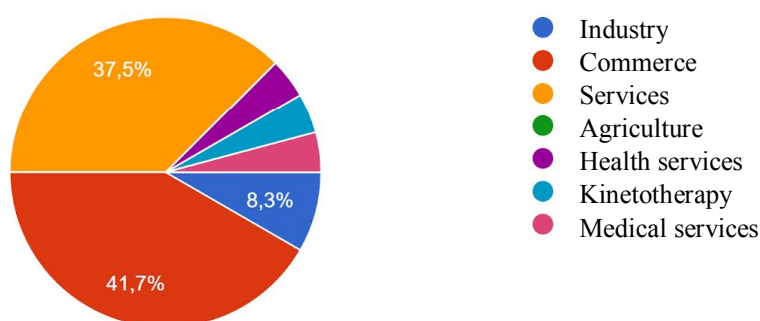


Figure no. 1 The business field

I consider that from this point of view the chosen sample is representative, even if I have reported data for the whole North East development region (view Table no. 2).

Table no. 2 Business Structure in North East Development Region, 2016								
	0-9		10-50		over 50		Total	Weight
Industry	4.740	9,93%	1.298	23,43%	476	41,54%	6.514	11,98%
Trade	18.542	38,86%	1.752	31,63%	221	19,28%	20.515	37,71%
Services	24.429	51,20%	2.489	44,94%	449	39,18%	27.367	50,31%
TOTAL	47.711	100,00%	5.539	100,00%	1.146	100,00%	54.396	100,00%

2. Analysis and Interpretation of Collected Data

The questionnaire was structured to address the following aspects of the electronic information system - EIS:

- Dimension of EIS - The correlation of the number of equipment and their value with the size of the firm and the field of activity is a problem specific to small businesses.
 - number of equipment - the average number of equipment is 3 desktop/laptop type, 1 printer and 2 mobile devices (smartphones or tablets);
 - value of equipment – 2/3 of the respondents invest less than 5.000 Euros in their equipment, ¼ between 5.000 and 10.000 euros and only 8,3% over 10.000 Euros;
 - network solutions – it is worrying that just 1/3 of the respondents confirm the using of a network solution.
 - software licenses – it is also worrying that just 2/3 of the respondents affirm that they buy software licenses in last 3 years.
- Software - The software is the component of the electronic information systems that offer solutions to solve business problems. Thus, the efficiency of business processes grows with the proper use of specific applications.
 - Business applications – only 4,2% said that they don't use this kind of applications. The rest of them are using Office Suites (91,7%), email application (75%), financial and accounting applications (66,7%), Project Management (16,7%), Document Management (12,5%) and Developing Software (4,2%) - Figure no.2.

Business software used

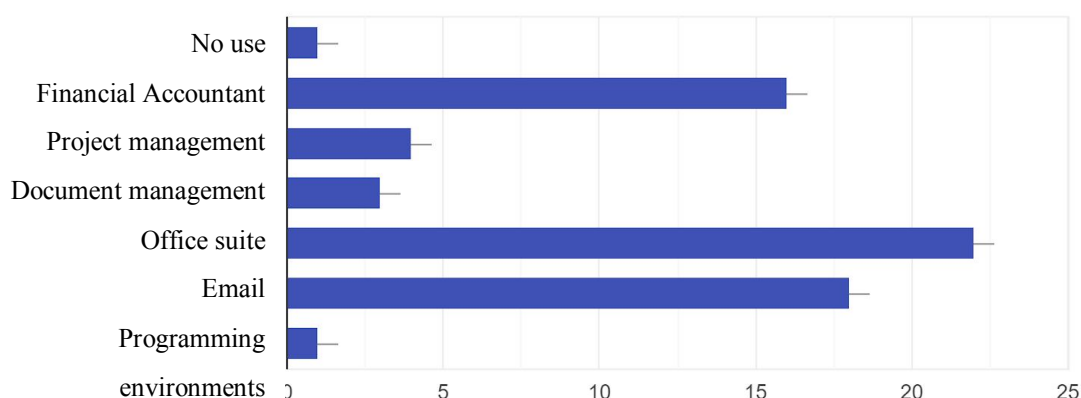


Figure no. 2 Business software used

- Client-server solutions – only 1/3 are using this kind of applications. Most of them – 33,3% are using file server services, 20,8% use Application servers, 20,8% - web servers and 25% - email servers.
- Cloud computing – almost 80% are not using this kind of services, the rest are using Google Drive (20,8%) and OneDrive (4,2%)

- Open Source alternatives – 2/3 are not using or not used Open Source alternatives.
- Security - Information security is a major goal of any business. The attention given to them in the analyzed business is as follows:
 - Security applications – 16,7% of respondents said that they don't use any security software, the rest use antiviruses (83,3%), firewalls (25%) and antimalware (12,5%).
 - Security incidents – 37,5% reported some security issues in their systems.
 - Access to IT resources – 87,5% consider that it is important to have non-stop access at their resources.
 - Procedural framework - Although a procedural framework sets out a number of security rules, 79.2% do not use it.
 - Data encryption – 58,3% do not use any encryption procedure.
 - Risk analysis – unidentified risk is a risk assumed, although 95.8% does not use risk assessment tools.
 - Access register – controlling access to information resources is an essential security tool, but 87.5% of respondents do not use it.
- Human resources
 - The level of training of the users – the level of training of the human resource in the use of information resources is an objective of efficiency and security. 54,2% of those surveyed assert that users have a basic level of knowledge of resource use and only 20,8% with an advanced level.
 - Training sessions - correlated with the low level of user training, 62.5% of respondents say they want to invest in their training, although 3/4 of them have never made this effort (Figure 3).

Trainig sessions

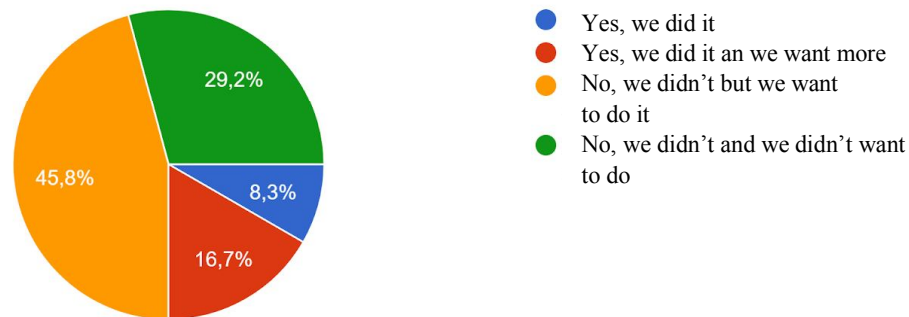


Figure no. 3 Interese in training sesion

- Involvement in the procurement process - the acquisition of IT resources requires both the management and accounting department, as well as the specialists who manage these resources. Only 20.8% also count on system administrators, while 83.3% consider it the leading entity while financial accounting departments are not involved at all.
- Efficiency
 - Business objectives – the main objective of a business is to get profit. To increase its value there are 2 variants, involving the two components of the profit - the revenues and the costs. So you can increase your income or reduce your expenses. The majority of respondents (75%) reported a revenue growth option by increasing turnover or diversifying products, while only one-fourth approached the cost reduction option (Figure 4).

Short-term goals

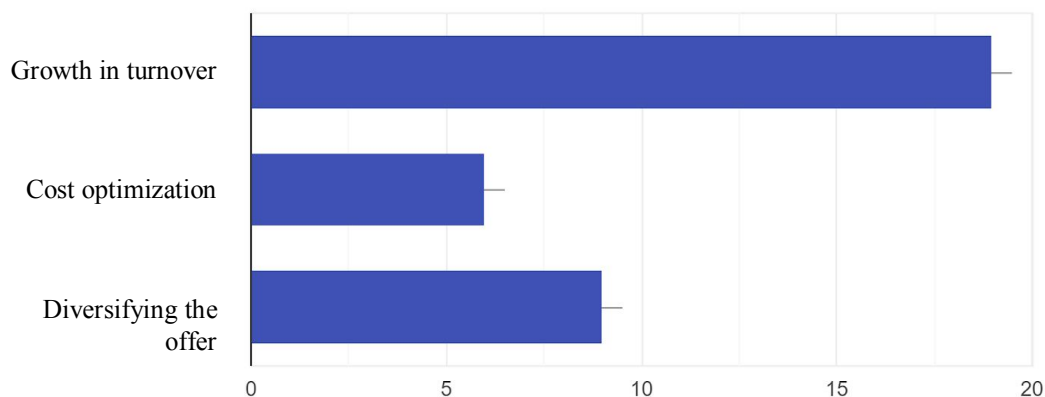


Figure no. 4 Short-term goals

- Online advertising – taking into account that most respondents claim that revenue growth can be supported by an acceptable return, only 50% of respondents are interested in web advertising and only 29.2% of social network advertising.
- Performance indicators – 83.3% do not use a set of indicators to measure the performance of the use of information resources
- IT Strategy – 87.5% did not define a strategy on information resources.
- Evidence of malfunctions - evidence of hardware and software malfunctions is an efficiency assessment tool, and 91.7% do not use it.
- Cost-benefit analysis - 91.7% did not make such an analysis, which confirms the lack of interest in reducing costs.
- Evaluation of efficiency – the same result as cost-benefit analysis, which is another confirmation of reducing costs strategy.

Conclusions

The number and value of IT equipment is both average and punctual correlated with business size. In general, purchases were made for each employee, but it is worrying that a large majority of companies surveyed did not configure a computer network. Through it, it is possible to optimize many information flows, both by sharing hardware and software resources and by controlling their use.

The lack of a computer network within the company justifies the absence of local client-server or cloud computing solutions - these can not function without network infrastructure. These solutions can increase the efficiency of using information resources, but above all help to protect and secure data.

Although the level of reporting of security incidents is relatively low, the interest in security solutions is also low. There are a significant number of companies that do not use any security tools, and those who have such tools use mostly only antivirus systems in the conditions that computer viruses are no longer the main cyber security problem.

All other aspects of security, procedural framework, data encryption, risk analysis, or resource access control outline an overview of the superficial way in which information security is handled in small businesses.

Human resources involved in the use of information resources generally have a basic level of training, but there is interest in attending training sessions in order to increase their competencies. Regarding the procurement process, the lack of interest in consulting the specialized personnel and direct

orientation to the firm's management in the decision-making process is a fact that confirms the lack of orientation towards cost-effectiveness in the field. This approach can lead to unnecessary and expensive purchases or can not meet the demands, in which case the acquisition is useless.

On the whole, we can see a profit-oriented general approach without taking into account the information resources, leaving aside all the aspects regarding the efficiency of their use.

In the case of small businesses, I consider IT purchases, with the exception of specialized firms, simply a necessity to be there. This statement is justified by the lack of interest in security and the cost efficiency of processing information.

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