

The accounting dynamics of industrial companies and their relationship with them information and communication technologies

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Abstract. Current technological changes have allowed companies to make transformation of business accounting information regardless of distance, time or volume of data, therefore, this research aims to know the current relationship between accounting processes and the use of information and communication technologies in the industrial sector of the city of Ocaña, Colombia, through a quantitative methodological approach of cross-sectional descriptive type, using statistical software SPSS for processing and analysis of information from data obtained from the questionnaire type Likert applied to 83 micro small and medium sized enterprises in the industrial sector; where the results obtained show that local industrial companies face challenges, restrictions and paradigms against the use of information and communication technologies because they do not know many tools, programs and platforms that facilitate the systematization of data, bringing as a consequence the low speed of dissemination and processing, the lack of control of expenses and costs, the relevant errors before the delivery and substantiation of accounting reports and finally to the generation of barriers that prevent them from reducing the participation gap in the world of the information society.

1. Introduction

The flow of information, the electronic transmission of data and the centralization of the accounting processes through the information and communication technologies (ICTs) is one of the strategies of great interest and total attention for those who from the direction are worried about assuring the sustainability and the sustainability of the companies, because well, "the digital era and the society of the information" not only facilitate the decision-making process of the high managements, but also, they achieve a greater productivity and better results in function of sales, contracts, accounting evaluations, financial support and conformities on the part of the demands of the market and of the external clients.

Now, the ICTs in the accounting process of any company, offers multiple benefits and highly competitive strategies in the world of globalization, regardless of the size of the organization, because the accounting information systems allow an automated management that streamlines administrative-accounting operations, integrating all areas (treasury, payroll, purchasing, invoicing and others) in real time, quickly and efficiently [1].

On the other hand the challenge for industrial companies that operate in the market with vague or archaic processes is to act quickly with re-engineering processes, developing a set of principles, processes, designs and evaluation tools that undoubtedly serve to raise the business process



reengineering (BPR), that is, that the initiative of modern management is to carry out processes that underlie the discipline of operations management or the discipline of operations management (OM) to ensure that the activities and the flow of accounting data obtain a precise, causal, reasonable and defined language in analytical procedures to support business decisions in different contexts or cycles [2].

In this order of ideas and from a business perspective, from an applied research, the study of the existence and application of ICTs in the industrial companies of Ocaña, Colombia, that over the years have focused on designing more comprehensive operating systems, where they can evaluate the paradigms of technology and convert through different advanced tools reliable information of the economic facts presented by the entities.

Finally, the government of information technology, as a structure of relationships and processes necessary in the administration, management and control of the function of information technology of a company, aimed at achieving its objectives and obtain sustainability before other organizations [3]. In contrast to the referent mentioned above and through the use of the Likert scale and the systematization of data through the SPSS statistics program, the critical points are identified according to the average, pointing out that these organizations do not possess or conceive as government policy within their organization, the use of programs, technological tools and business management that guides the direct ones to make assertive and strategic decisions for the fulfillment of objectives and the assurance of competitive advantages against the organizations and the digital era.

2. Theoretic frame

Since the 19th century, the organization has been recognized as an open system capable of accepting and confronting the changes generated by the industrial era, which in recent years has brought with it the incorporation of digital technologies, but above all as an integrating entity that, from its accounting and administrative structures, can guide processes to a complete interrelation with the context [4] allude that from scientific and practical paradigms the system theory (ST) achieves a holistic perspective, where what is important are the relations and the sets that emerge from them, as well as their interrelation and the communication of specialties with the environment. On the other hand, the theory validates the components and attributes of the environment in spite of the complexity of cybernetics that emerge from the new information and communication technologies, for this reason, in [5] it is inferred through the ST theory that in all sciences there are systems and that at the same time the systems are similar or coincident in what is fundamental but they are not equal, in the same way, it extracts according to the main goals of the theoretical approach the evidence of general principles common to all the systems where their respective studies and considerations make possible the integration of the different sciences.

Industrial companies have the task of constantly working on their evolution and competitiveness through the appropriation of different systems generated from modern technologies that to date are immersed in a permanent acceleration of data, techniques, structures and complex, clear and specialized information, in this way, today the business fabric constructs one-way schemes to the use of advanced networks in information given the alterations suffered from globalization, therefore, it is noted that "information theory was adapted to the mathematical and cybernetic theorizations that were occurring of communicative phenomena" [6], as opposed to what has been described, the reception of standardized information by systems of logical and dynamic order, allows the decision making and the organization of transforming processes to be more flexible, assuming radical designs to achieve excellent productive, economic, financial and labor results.

In that order of ideas, the actions exercised by the company must be evaluated according to the principles and the economic and accounting realities of the same; Lefcovich quoted in [7] argues that Reengineering is a recreation and reconfiguration of the company's activities and processes, where the task is to create and radically configure it or the company's systems in order to achieve significant increases in profitability, productivity, response time, and quality, which implies obtaining competitive advantages in a short period of time.

In relation to the above and to finish, the accounting and financial structures in the XXI century, tend to assume transformations in their presentations and in their systematization of data, consequently, their dynamics are subject to the appropriate use of new technologies, that is to say, they assume an exhaustive and innovative change where the processes are restructured with the purpose of assuring leadership and competitiveness, in fact, in [8] it is identified that in order to achieve the above, management and society must focus on the enrichment of activities and processes that generate added value for end customers.

3. Methodology

According to the particularities of the study carried out, a research with non-experimental quantitative approach of transversal descriptive type was developed, being a quantitative research, because the study was measured in an objective way, by means of a questionnaire and without manipulating variables, investigating in a natural environment, and in a unique time, specifying features of the phenomenon to study [9]. As for the population under study, is made up of 105 companies in the industrial sector of the city of Ocaña, Colombia, according to the “Cámara de Comercio” of Ocaña, Colombia, 2016, applying according to the finite sample the technique to 83 companies (Equation (1)).

$$n = \frac{Z^2 * N * p * q}{e^2 * (N-1) + Z^2 * p * q} = \frac{(1.96)^2 * 105 * 0.50 * 0.50}{(0.05)^2 * (105-1) + (1.96)^2 * 0.50 * 0.50} = 83 \quad (1)$$

As previously established, the population is made up of 83 companies from the industrial sector of the city of Ocaña, Colombia, to which the survey was applied as a data collection technique. The questions were coded with five levels of presence of the variable, each of them with a quantitative score, constructed through a Likert scale with five (5) response options, the score being one (1) the highest value and five (5) the lowest. Finally, in order to certify the validity of the results obtained from the instrument applied to the 83 managers of industrial companies in the city of Ocaña, Colombia, it was established that the questionnaire proposed in the study was submitted to verification by two experts in the field of accounting dynamics and ICTs.

4. Results and discussions

The results of the research are presented in Table 1, where the answers issued by 83 managers of the different micro small and medium sized enterprises (MSMEs) of the industrial sector of the City of Ocaña, Colombia, object of study were analyzed.

Table 1. Implementation of computer programs (accounting software).

	Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	1.0	17	20.5	20.5
	2.0	5	6.0	26.5
	3.0	1	1.2	27.7
	4.0	25	30.1	57.8
	5.0	35	42.2	100.0
Total	83	100.0	100.0	

Based on the information obtained, it can be argued with concern that 72% of these organizations never and almost never use computer programs (accounting software) to perform their accounting processes, while only 27% use such programs or accounting software. In fact, it can be concluded that a large proportion of companies have delays in the disclosure of financial information for timely decision making by management and other functional areas of organizations, understanding that any accounting software is a computer tool that allows speeding up the recording of economic transactions made by organizations (see Table 2).

Table 2. Computerized accounting for fiscal, financial and administrative management.

	Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	1.0	10	12.0	12.0
	2.0	4	4.8	16.9
	3.0	4	4.8	21.7
	4.0	18	21.7	43.4
	5.0	47	56.6	100.0
Total	83	100.0	100.0	

In this sense, it can be evidenced that only 18% of the companies surveyed always and almost always manage tax procedures or processes such as the search for information, filling out forms for the filing of tax returns, provide accounting, financial and tax information through exogenous information reports to the “Dirección de Impuestos y Aduanas Nacionales (DIAN)”, while 75% of these organizations do not know or do not apply computer tools that allow them to reveal clearer, more reliable and timely information to government entities or public administration that requires it.

The ICTs, contribute considerably in the relation of the organizations with their internal and external users, in this sense in the manufacturing companies of the city of Ocaña, Colombia, it is observed as well as in the variables or aspects before evaluated a deficiency as it can be appreciated next:

Table 3. Electronic transfers for accounting processes.

	Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	1.0	2	2.4	2.4
	2.0	1	1.2	3.6
	3.0	2	2.4	6.0
	4.0	17	20.5	26.5
	5.0	61	73.5	100.0
Total	83	100.0	100.0	

According to the Table 3 it can be deduced that 70% of the companies surveyed do not carry out transfer processes and other tasks through the Internet with their external users, of course, it is observed that 23% use the tools of ICTs to carry out financial transactions with their strategic allies in the development of the social object of the industrial companies of the city of Ocaña, Colombia. This section shows that very few companies carry out electronic transactions with their customers and suppliers, thus ignoring the virtual channels that are available in financial institutions or of any kind, where it is safer and more agile transaction processes to perform.

Table 4. Disclosure of accounting information to functional areas through ICTs.

	Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	1.0	5	6.0	6.0
	2.0	1	1.2	7.2
	3.0	9	10.8	18.1
	4.0	22	26.5	44.6
	5.0	46	55.4	100.0
Total	83	100.0	100.0	

The organization as a system must support well defined and measurable processes with indicators of high competitiveness, however, for this it is necessary the appropriation and interrelation of different tools and modern technological elements that facilitate the processes and communicational strategies (written or verbal) to evaluate and control institutional activities based on expenses, costs, inventory, orders, investments, among others. Based on the foregoing, it is noted that 55% of companies in the industrial sector do not implement ICTs effectively and efficiently to achieve the dissemination of quantitative and qualitative accounting information to different functional areas,

which limits the different dependencies to evaluate the dynamics and accounting actions carried out in certain periods, but above all, present gaps in the systematization, transparency and verification of data, on the contrary, 6% establishes as a strategy to strengthen the information system through digital media and platforms in order to promote and sensitize the internal and external client on the conditions of the company.

Table 5. Improvement of the administrative and accounting management of the industry with the use of ICTs.

	Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	1.0	15	18.1	18.1
	2.0	4	4.8	22.9
	3.0	6	7.2	30.1
	4.0	18	21.7	51.8
	5.0	40	48.2	100.0
Total	83	100.0	100.0	

The accounting principles and administrative processes continuously subject and validate the obligation that the organization has to face the alterations of globalization and ensure that future changes generate high impact to it. According to what has been explained and from the local realities, the directors of the industrial companies of Ocaña, Colombia, are unaware of and evade the new information and communication technologies. For this reason, the administrative management is defined in a traditional and very simple scheme, which shows that the processes have not improved and have not generated a great impact within them, it is recognized that only 18% positively emphasize the value and importance of the use of ICTs in the promotion of a modern business culture, which is defined in a flexible accounting scheme that guides and facilitates the decision-making process, however, the oscillation of the perception of the entrepreneur is that due to the absence of new technologies it is difficult to evaluate improvements and make recognition of errors or internal failures of the company on the delivery of accounting supports.

It can be synthesized that, on average, the industries of Ocaña, Norte de Santander, Colombia, present critical aspects regarding the implementation and use of information technologies in their accounting dynamics. With regard to the acquisition of office equipment and software, they invest relatively little capital, preventing them from being competitive in the global market. In this sense [10], express that today, organizations and governments require information technologies for their proper functioning and development, making enormous efforts and investments in TI to become more efficient and secure institutions and thus achieve strategic objectives and fulfill its mission and vision.

This is how we can highlight the premise of [11], where they express that in the MSMEs of Colombia, the degree of availability of ICTs is very low, generating competitive disadvantage in a globalized environment that requires and obliges organizations to be prepared to participate in a more interconnected market nationally and internationally, which makes it unavoidable that entrepreneurs understand the advantages generated by the use of technology in their processes and the need to participate in programs created by the government or other entities as support for the implementation and use of technological tools. In view of the theoretical references where the accounting systems through BPR and with the strengthening of the discipline of operations (OM) the structure of the information and the exchange of accounting data are more truthful and explicit to the conditions and interests of those who are interested in knowing the behavior of the company in economic and financial matters, for that reason, [12] emphasize that accounting processes through ICTs are the result of a combination of policies, procedures and processes that are lived on a daily basis.

The existing managements of the industrial companies of the locality recognize the value and the incidence that has to sustain the companies in the market with the use of the technologies, nevertheless, exists on the part of them, very little worry so that their generations or their company in the time acts and works according to the innovations and the developments that the digital world generates permanently, causes of the fear and of the basic level of knowledge, added to it, the distrust

and the uncertainty of subjecting so advanced accounting processes within the field of the society of the information, now, analyzing antecedents in many localities of different countries (Venezuela, Chile, Mexico and Colombia) it is necessary that within the business and academic field training actions are carried out related to the transformation of accounting information, where the managers assume different processes with the use of programmers, so much so that companies require more functional, reliable, efficient, portable and dynamic software to build their ERP [13]. However, the main problem is centered and defined from the proposed contributions in [14] where it concludes that one of the limitations that MSMEs have for the use of ICTs is the prevailing culture since it does not visualize the impact of its benefits.

5. Conclusions

The current environment requires organizations to include information technology in all its functional areas as a corporate strategy, to generate relevant data that allows them to properly ensure the accounting, financial, administrative and operational management of the company, regardless of its size and business activity, being this an element of strategic value, good governance and management actions. Of course, the application of ICTs in accounting processes must be conceived by entrepreneurs as an investment and not as an expense. Therefore, academic, business and private entities in Ocaña, Colombia, must provide training to the industrial sector in order to create a culture of integral foresight where the advantages of a sector are recognized at the time of acting in the digital world, since these not only contribute to overcome the obstacles faced by organizations but also promote productivity, cost reduction, the generation of profitability, the good image of the company and other internal factors that contribute to social, business and economic development of them, However, the research showed that companies in the industrial sector have had little interest in implementing actions aimed at the adoption of ICTs as an essential element of their business processes.

Synthesizing the findings, it can be deduced that the study sample presents weak points regarding the use of the Internet to make electronic transfers, make payments with third parties and use the virtual channels of financial entities, however, it is unavoidable to point out that many resort to internal collaborators, mostly with an accounting profession, to accompany such processes. Since the previous proposal, it is considered that the MSMEs of the industrial sector should incursion into the use of technological processes and the design of institutional policies framed in the implementation of good practices in ICTs, so that they obtain benefits, optimize risks and can access the demanding globalized markets.

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