## Financial accounting e-activities in the virtual enterprise

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*Abstract:* - Practitioners of finance and accounting can read more and more articles in specialized magazines about the virtual enterprise and the implications of the information digitalization of the field in which they will operate. However, few of them understand the challenges that they will have to face in the following 10-15 years. This is the reason why the present study aims to present a series of information scenarios corresponding to the financial and accounting activities in the future virtual enterprise. More precisely, we will focus on the conversion of the following financial and accounting activities: incomings, outgoings, payments, cash and financial audit.

Key-Words: - financial audit, e-activities, financial and accounting activities, virtual enterprise

### **1** Introduction

In its evolution, human society has undergone various stages of development. It is widely acknowledged that over the last two hundred years we have witnessed the most numerous and spectacular technological leaps [1]. After 1947, the year when ENIAC, the first electronic computer was created, human society entered the computer science era and thus, half a century later, it managed to set information to the fore by means of Information and Communication Technologies.

Broadly, we can say that the information society can be defined as the society based on information. In a modern understanding of the word, we can speak about a society based on information after 1970, when computers started to be used on a large scale in economy. Thus, Information and Communication Technologies are used at both individual and organizational level with high flexibility [2], which leads to an intensive use of a very large information pool with a direct impact on all human activities.

We can safely assert that the (global) information society represents the target towards which we head with quick steps, and its basic characteristics will be: digitization and interconnectivity.

Our discussion will take a conceptual approach to the virtual enterprise, to the e-activities operated in the information society and a presentation of the basic scenarios for a few e-activities in finance and accounting.

# 2 The Virtual Enterprise – a form of modern enterprise

The coming years have essential changes in store for us, at the level of daily life. Thus, the use of the electronic computer will be extended to all fields of activity, under the circumstances of the increase by nearly tens of thousands of times of its current performance. It will reach the performance level of the human brain, while its dimensions will be reduced to those of a chip. The name of this computer will be system-on-a-chip. At the same Communication time. the Information and Technologies, together with the discovery of new materials, will lead to the so-called Cyberspace, whose spinal bone is the INTERNET and virtual operations by digitization.

Under the circumstances, a strongly digitized and interconnected economy will bring about the modernization of the enterprise, whose flows will also be digitized. In other words, in parallel with the process of continuous digitization and the development of new communication techniques, a large number of enterprises will become virtual or simply enterprises on the Web, that will hold a significant part of immaterial assets and more than that. In the specialized literature [3, 4], virtual enterprise is understood as a group of enterprises that decide to make up a virtual community, mediated by the Internet, which allows the sharing of some resources (mostly information).

As a rule, a virtual enterprise is constituted on the suppliers-manufacturers-customers value chain. The schema of such a virtual enterprise is presented in figure 1.



**Fig. 1.** The organization of several enterprises in a virtual enterprise

Thus, in a virtual enterprise we can distinguish between: the cell enterprise, i.e. the enterprise that enters in the group and that allows the virtual network to use a part or its entire information system, the virtual network, which is not the property of any cell-enterprise, and the rights to access the network. Figure 2 presents the architecture of such a cell-enterprise in a virtual enterprise.

The current net-economy [5] that we all head to lays emphasis on the virtual enterprise and the organization of actors in the so called networks of prosumers. In these networks the intermediaries disappear, time and space barriers are eliminated and the only problem that is left to be solved is the smooth flow of values and materials (in case their "tele-transfer" does not become a general practice).

The information system of the virtual enterprise will be constituted by an assembly of information systems of the cell-enterprises, as a constituent part of the virtual enterprise. The information system of the cell-enterprise will be extended by a *user interface* and by *the global service system*. Both components will be taken over either in a communication information system separated from the existing information systems, or they will be included in the enterprise's information system.



Fig. 2. Informational architecture of a cell-enterprise

With respect to the development of virtual enterprises we have to delimitate two lines of action, namely:

- 1. Its relations with other enterprises mediated by the Internet, the Extranet and the Intranet;
- **2.** The digitization of the extant information flows in the cell-enterprise.

## **3** The new types of work and the eactivities of the global information society

In the terms of our discussion, many activities would become inefficient if they took place without modern information support. This leads us to the idea that they can unfold at any time without information support, but at much longer times and at higher costs.

#### Types of Work

Information and Communication Technologies will have a major impact on the enterprise in light of the mutations concerning the new types of work and the activities that they can generate. In the category of the new types of work the specialized literature includes [2] the telecommuting, the virtual office and the tele-work. Under the specific conditions of the new types of work, activities such as teleeducation, tele-medicine, tele-center, cybermarketing, tele-shopping, virtual communities will become increasingly apparent.

#### e-Activities of the virtual enterprise

One might think that the e-activities in an enterprise are particularly complicated and hard to identify. On the contrary, all activities considered traditional will exist in the virtual enterprise as well, but they will be converted to the information level and they will unfold with the adequate support of Information and Communication Technologies.

We may say, therefore, that the e-activities in the virtual enterprise will constitute sub-divisions of e-work as a form of its concrete manifestation in the enterprise's life.

In a direct manner, both e-activities and e-work in the enterprise of the future will contribute to the digitization of the information flows in the enterprise, which will lead, finally, to turning the traditional enterprise into a virtual enterprise.

# 4 Work scenarios for financial and accounting e-activities

A first reason why we wish to discuss about work scenarios for financial and accounting e-activities is the fact that the term virtual enterprise is very intensely used, yet without the operational explanation of how activities will unfold in such a work environment. The concept "virtual" becomes even harder to understand if the practitioner in question is not a specialist in Information and Communication Technologies, as it is the case of the specialist in finance and accounting.

Another reason why we wish to concretize a few such scenarios is the need to create and explain the actual work environment of the virtual enterprise.

In our analysis we will start from the following *set of hypotheses*:

a. All documents in the virtual enterprise will be electronically managed (there is software for the management of electronic documents);

b. When an electronic document is generated, it will be assigned a single code as a barcode or as a figure code, which will be displayed each time the documents are printed, in an identification area;

c. Each employee (including the accountant professional) from the enterprise will have an e-Pen equipped with an interface to access (by scanning) the identification information on the operated documents;

d. When a document is being processed, its identification code will be read and the information written on that document will be registered digitally;

e. Subsequently, the data written and registered in the form filled in by the employee will be transferred to the electronic document through the enterprise's wireless network. Thus, what is written on paper also exists in digital format (including the signature);

f. In the case of documents outside the enterprise, the informational content of the received document can be accessed and transferred by authentication according to the rules of the virtual enterprise;

g. The enterprise's e-mail box will allow the document from outside the enterprise to be redirected to recipient addresses inside the enterprise, using only one address. In other words, the virtual enterprise must have an inbox for virtual electronic mail with multiple users;

h. It will be necessary to implement, in the integrated work and collaborative soft, an automaton to manage daily tasks, where the leader of a workgroup generates work tasks (e-activities), whose operators and deadlines are clearly established. Thus, upon the daily authentication of the staff in the wireless network of the enterprise, they will receive a list of tasks to be performed. There can be tasks that suppose the printing of a document and the performing of an action, such as: periodic travels outside the enterprise, obtaining a visa, organizing a reception.

We will present below a few work scenarios for some categories of financial and accounting eactivities.

*a. Various operations*: This could be the work scenario for the e-activities to be performed in the case of traveling:

• Three days before the actual journey, the employee who will travel will be notified on the task list that he or she will have to go to another town or city;

• On the eve of the departure he or she receives (automatically printed) the traveling order and the payment order for the cashier's office, that are already signed and approved;

• He or she presents these documents to the cashier's office in the unit where, on the basis of the payment order, he or she receives money as payment in advance;

• The cashier scans the code on the traveling order with an e-pen and fills in, on the back of it, the amount of money given as payment in advance;

• At the same time all information written by the cashier is transferred to the enterprise's data base.



**Fig. 3**. The stages of the e-activity "granting the *OK* to *Pay*"

**b.** Cash-in and payment operations: In the case of cash-in or payment operations it is necessary to mark the decision of OK for pay/cash in. We are exemplifying this e-activity in the case of the decision "OK for Pay":

• The document against which payment will be made is presented to the person who will make this decision. In the case under discussion, this document is an invoice that must be paid (frame 1 in figure 3);

• The employee that must make the decision scans the document code with an e-pen. After scanning it, he or she will access the electronic document in the enterprise's wireless network;

• "OK for Pay" is written on the invoice and it is signed with the code of the decision maker (frame 2 in figure 3).

• All data written with the e-Pen are transferred in the electronic document and in the enterprise's data base.

After processing the document and marking the OK for Pay visa, the information related to the identification of the payment document, to the supplier to be paid, to the payment term, to the amount, as well as the code of the person who has approved the payment, is transferred in the enterprise's data base.

*c. Incoming operations*: For each incoming operation there is at least one document that constitutes the information support of the economic phenomenon under analysis. By observing the rule that derives from hypothesis a) (all documents are assigned a code when they are printed), the scenario of the e-activities corresponding to the in-comings runs as follows:

• The document corresponding to incomings is received in the supplies compartment in the cellenterprise of the virtual/partner enterprise, via the Internet;

When the carrier enters the unit, a copy of the incoming document is presented to the janitor. He or she scans with an e-Pen the code of the document presented by the driver and the data base is searched for confirmation of the existence of the document sent by the supplier. In case the document exists, the date of the arrival of the goods will be filled in the entry in the database. In case such a document does not exist, an intelligent agent requests the supplier, via the Internet, to send the document in electronic format;

• At the storehouse, the carrier presents the document approved by the janitor and the reception procedure starts. Reception is done by readers specialized in taking over product codes;

• When e-reception is completed the results are compared and the Incoming - Reception -Difference Statement Note is printed and signed. Simultaneously the codes of the employees that took part in the reception are transferred in the database, together with data from the Note of Inventory and Reception;

• The supplier is automatically notified about the reception and its results;

• Optionally, it is possible to plan payment by the automated update of the company's Cash-Flow, while simultaneously notifying the supplier about the scheduling of the payment;

*d. Outgoing operations*: Similarly to incomings, the initiating document is the contract or order in electronic format. The operations specific to these outgoing e-activities are:

• Receiving the order in electronic format via the Internet;

• Processing the order by the distribution compartment, by assigning internal codes for the products that have been ordered. In parallel the enterprise's database is being updated;

• Printing the delivery order/accompanying note with the corresponding codification and handing it to the representative sent by the customer;

• The representative's arrival at the storehouse for finite products;

• The storehouse person scans the code of the e-document presented by the representative and facilitates the delivery of the corresponding products;

• When the representative signs the e-document it is confirmed that the products have been delivered from the storehouse. In parallel the invoice is drawn, which is sent to the customer via the Internet, together with other accompanying documents, after it has been signed and the database in the enterprise is updated.

Note: One can raise the following question: what documents must the representative or carrier have on them while traveling? The answer is very simple: The representative can have any legal document issued by the supplier. Upon the routine check of the authorized bodies he or she will present the edocuments which, by code scanning, will allow the connection to the global network where it is requested that the control organ is identified/authenticated and that the operation is visualized.

*e. Financial Auditing*: If all the operations that occur in an enterprise constitute the object of e-work or e-activities, it follows that in the accounting database of the virtual enterprise there is almost Just-in-Time all information necessary for financial and accounting auditing. Thus, the financial auditing e-activity of the virtual enterprise becomes much more simplified, because:

• All tables resulting from preceding eactivities are scanned with a specialized soft; • The signification threshold is calculated;

• Critical points are listed by comparison with basic rules of financial auditing;

• Specific work documents are prepared for each audit section;

• Intervention on each work sheet is allowed to express, add to or confirm an opinion.

## 4 Conclusion

We can rightfully state that under the circumstances of the extension and generalization of e-activities in finance and accounting, financial auditing will become increasingly easier to approach by a practitioner in the field who is knowledgeable in Information and Communication Technologies. Listed below are the minimum advantages brought about by the virtualization of finance and accounting activities:

• Eliminating or limiting fiscal evasion. In a virtual enterprise all operations will be registered and therefore they can be controlled;

• Eliminating human errors. The resort to information and communication technologies will implicitly lead to a higher standardization of procedures and it will make it impossible not to observe the problem solving algorithms;

• The standardization of procedures by informatisation will lead to a smoother standardization at the level of quality management and accounting harmonization;

• Intern control and financial audit will constitute attractive and efficient activities from all points of view.

We cannot finish without emphasizing the most important conclusion of this study, namely: by extending and generalizing e-activities in finance and accounting e-Accounting will be implemented as a foundation basis of a virtual enterprise, which will implicitly lead to approaching the concept of real-time accounting.

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