

THE ROLE OF THE E-PROCUREMENT IN THE PURCHASING PROCESS

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This article aims to examine the role of the E-procurement forms in the six phases of the purchasing process. The paper starts with an introductory part about the purchasing process. Next, based on a literature review we selected and defined the most important forms of E-procurement. Furthermore, we develop a theoretical framework that suggests what form of E-procurement is best to use in every phase of the purchasing process. At the end of the paper we draw conclusions and we set some ground rules for managers regarding to the implementation of an E-procurement form.

Keywords: purchasing, E-procurement; management, supply chain management, optimization

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1. Introduction

It appears that during the past few years purchasing has begun to play an ever more important role in the strategy of the firm (Weele, 2010). In order to survive, managers have begun to rethink their competitive priorities and their value chain. Increasing numbers of organizations have recognized that E-procurement holds the potential to transform their competitive performance for the better.

E-procurement has made substantial technological advantages over the past few years and is expected to continue improving efficiency and productivity in the future. Lederer, Mirchandani and Sims (2001) proposed that an organization could use the E-procurement forms to create strategic advantage through improved customer relationships resulting from greater business efficiency and better information access and flexibility.

A large number of E-procurement applications are available on the market and it could be hard for companies to know what application to choose and implement. Companies may answer the following questions regarding E-procurement:

- if they should implement E-procurement?
- it is really beneficial for them to implement E-procurement?
- what is the impact of implementing a form of E-procurement over the company?
- which form should they choose?
- how they should use E-procurement in every phase of the purchasing process?

The paper starts with an introductory part about the purchasing process. We provide several definitions of purchasing and we describe the phases of the purchasing process. Next, based on a literature review we present the main well known forms of E-procurement.

Furthermore, we present a theoretical framework that indicates what form of E-procurement is best to use in each of the six phases of the purchasing process. At the end of the paper we draw conclusions and we present some guidelines for managers regarding to the implementation of E-procurement.

2. The purchasing process

Over the time many definitions have been done for purchasing management. At the beginning, purchasing has been seen as an administrative and operational activity. Thus, it has been defined as follow as “buying the right materials, in the right quantity, at the right moment, at the right price and from the right supplier” (Heinritz, Farrwell and Smith 1986: 15).

Over the last decades, the definition of purchasing management became wider and purchasing has become a strategic activity for organizations. That is why it is defined as “the behavior of an organization towards its suppliers” (Gadde and Hakkansson, 1993: 8).

Van Weele (2010) defines the purchasing process as obtaining from external sources all the goods and services that are needed for maintaining and developing direct and indirect production activities in the best conditions. The author divides the purchasing process in two parts:

-*tactical purchasing*;

-*operational purchasing*

Each of these parts comprises three specific phases, resulting the following six phases of purchasing process:

1. *Specification* – this is the phase where all the needed materials and services for maintaining and developing direct and indirect production activities are identified.

2. *Selection of suppliers* – this phase consists in identification, evaluation and selection between different suppliers.

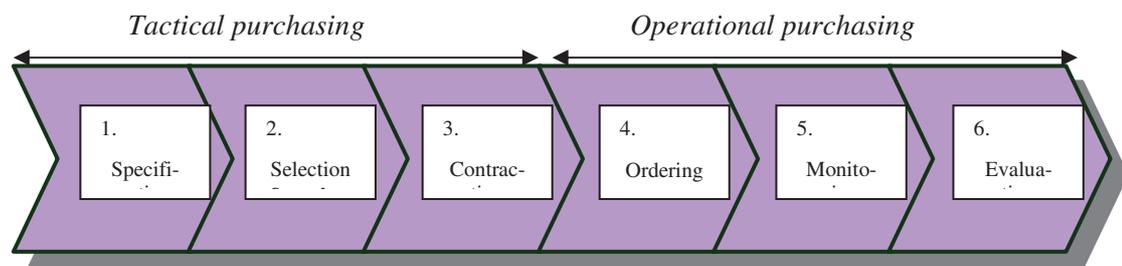
3. *Contracting* – in this phase the prices are negotiated and the contracts are concluded with the suppliers.

4. *Ordering* – in this phase goods and services are ordered from the selected suppliers with whom contracts have been done before.

5. *Monitoring* – this phase consists in tracking deliveries of goods and services that must be in accordance with those set in the contract.

6. *Evaluation* – in this final phase, the analysis of the purchasing process is done.

All of these phases are presented in the framework of the purchasing process (figure 1).



Source: Weele, A. J. van, *Purchasing and supply chain management*, Thomson Learning Business Press, London, 2010

In our view, the purchasing process consists in exploration, discovery and exploitation of markets and organizations that provide resources to obtain and use products and services in the best conditions.

3. E-procurement forms

The concept of E-procurement has many different meanings ranging from shopping on the internet (through reverse auction) to collaborative initiatives taking place in virtual meetings. There are more definitions given to the E-procurement. Van Weele (2010) considers that “E-procurement includes web technology-based purchasing solutions aimed at simplifying commercial transactions within and between organizations and information technology solutions for ordering, logistics and handling systems as well as for payment systems”. E-procurement is defined by de Boer, Harink, Heijboer (2002: 120) as “using Internet technology in the purchasing process”.

A large number of E-procurement forms can be distinguished in the literature. In this article we choose to focus on the following forms of E-procurement (mentioned by Boer, Harink, Heijboer, 2002): *E-ordering*, *Web-based ERP*, *E-sourcing*, *E-tendering*, *E-reverse auction*, *E-informing*.

E-ordering

E-ordering focus on the process of creating and approving purchasing requisitions, placing the orders and receiving the goods and services ordered using a software system based on internet technology. An E-catalog is used by all the employees from the organization for ordering items that are needed. In the case of E-ordering the goods and services ordered are non product related (indirect goods and services).

Web-based ERP (Enterprise Resource Planning)

Web-based ERP is similar with the E-ordering, the only difference is that in the case of web-based ERP the goods and services ordered are product related.

E-sourcing

E-sourcing allows identifying new suppliers for a specific category of purchasing requirements using internet technologies across spatial boundaries. Most important benefits of E-sourcing are increased decision making flexibility and lower prices.

E-tendering

E-tendering is the process of sending RFI (request for information) and RFP (request for proposal) to suppliers and receiving their response using internet technologies. Often e-tendering is supported by an e-tendering system that can analyze the responses received from the suppliers.

E-reverse auction

E-reverse auction enables the purchasing organization to buy goods and services needed from the supplier that has the lowest price or combination of lowest price and other conditions as well using internet technologies.

E-informing

E-informing does not involve transactions but it handles gathering and disseminating purchasing information both from the internal and external parties.

4. The theoretical framework for the use of the E-procurements forms in the six phases of the purchasing process

Because of the variety of the E-procurement forms available on the market it is difficult for organizations to know which one to choose and how is best to use them during the purchasing process. Based on the E-procurement forms and on the phases of the purchasing process that we have presented earlier in this article, we created a theoretical framework that indicates what E-procurement form is best to use in each purchasing phase (see figure 2).

	<i>Specification</i>	<i>Selection</i>	<i>Contracting</i>	<i>Ordering</i>	<i>Monitoring</i>	<i>Evaluation</i>
E-ordering				* Cost savings Increased efficiency	* Cost savings Increased efficiency	* Cost savings Increased efficiency
Web-based ERP				* Cost savings Increased efficiency	* Cost savings Increased efficiency	* Cost savings Increased efficiency
E-sourcing	* Increased competitive force Cost savings					
E-tendering		* Time savings				

		Less labor consuming				
E-reverse auction			* Cost savings Time savings			
E-informing	* Increased purchasing power Improved commercial relationships with suppliers Improved control over the purchasing process	* Increased purchasing power Improved commercial relationships with suppliers Improved control over the purchasing process	* Increased purchasing power Improved commercial relationships with suppliers Improved control over the purchasing process	* Increased purchasing power Improved commercial relationships with suppliers Improved control over the purchasing process	* Increased purchasing power Improved commercial relationships with suppliers Improved control over the purchasing process	* Increased purchasing power Improved commercial relationships with suppliers Improved control over the purchasing process

Figure 2: The theoretical framework for the use of E-procurement forms in the purchasing process

As you can see in this framework we indicate through an asterisk in which phase of the purchasing process is best to use the E-procurement forms. Beside this, we mention the major benefits that an organization can achieve using each E-procurement form.

So, for example, E-ordering and Web-based ERP can be best used in the last three phases of the purchasing process (operational purchasing) and they can provide cost savings and improved efficiency of the purchasing process. E-sourcing is best to be used in the specification phase and can offer to the organizations increased competitive force and cost savings. E-tendering can be used in the selection phase and the major benefits that can provide are: time savings and less labor consuming activities. E-reverse auction is best to be used in the contracting phase and can offer cost and time savings. The last form of E-procurement, E-informing may be used in all six phases of the purchasing process and can provide the following benefits: increased purchasing power, improved commercial relationships with the suppliers and improved control over the purchasing process.

5. Conclusions

The framework that we presented in this paper is theoretical and it hasn't been tested yet. We have to test it in a number of organizations and to compare the practical results with the theoretical ones. Based on the practical insights we will be able to draw conclusions and to improve the framework.

The theoretical framework can be used by managers as the starting point in the process of adopting and implementing E-procurement in their organizations. Managers have to analyze carefully what are the advantages that they can provide and what form of E-procurement is best to use in each phase of the purchasing process. They have to take into account also the main barriers that they have to overcome in the implementation process of the E-procurement. Only after this analysis they should decide if they will implement an E-procurement form and if yes what form to choose.

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