

# E-commerce and e-procurement: an outsourcing perspective

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**Abstract:** The make or buy dilemma has been largely analyzed in the field of Information Systems. The main reason for this type of literature thriving so much is that the Information Systems function was one of the first enterprise areas to be externalized. If traditionally only few activities, distant from the core business of the enterprises, have been externalized with the sole objective of gaining efficiency, in the late Nineties externalization of real company functions has started to be considered again, in some instances concerning activities that have always been considered core business. The role played by the management of organizational interdependencies was stressed and the fact that outsourcing was perceived according to solutions of organizational engineering was highlighted, steering enterprises towards new organizational design criteria. In fact, make or buy decisions require more and more that organizational variables be structured by processes and not by functions, precisely to ease the management of organizational interdependencies and make externalization decisions more transparent and objectively measurable. The research question of this paper aims at understanding how much can a particular form of electronic commerce, such as e-procurement, be categorized as a special form of outsourcing, intending this phenomenon as a hybrid organizational form, halfway between hierarchy and market. In order to categorize the outsourcing phenomenon from a theoretical standpoint, the Transaction Cost Theory (TCT) has been used, while the research method consists of a case study. In this paper the attention will be focused on a particular process only, i.e., procurement, in relation to the activities involved in the externalization process. The paper will analyze an outsourcing case applied to the entire macro-process of procurement. The conclusions will highlight the evolving trends in this research field, which appears to be affected by substantial changes and to be increasingly more volatile and influenced by multiple factors that are not always easily recognizable and measurable. The purpose of this paper in fact is to give a contribution to the formalization of an application subject, namely, externalization of procurement, largely diffused in practice although scarcely developed from a theoretical standpoint.

Keywords: e-commerce, e-procurement, outsourcing, Transaction Cost Theory, make or buy.

## 1. INTRODUCTION

The outsourcing phenomenon has oftentimes been studied in literature using the transaction cost theory [1]-[4]. TCT was developed by Williamson to explain the inconsistency between economic theory and enterprise reality. As early as his famous contribution "The Nature of the Firm", Coase had wondered about the boundaries of enterprises. In his contribution in fact Coase identified how the use of hierarchy represented an alternative to

the action of the invisible hand of the market in the governance of exchanges. The reason for that was connected to aspects of organizational efficiency.

When the marginal costs of the market use excessively rise, the invisible hand of the management [5] becomes more efficient in the management of the activities intended for the coordination of transactions. When the costs of the use of the market exceed the costs of the use of the organization, it is more convenient to change the governance form. A crucial point is that hierarchy economizes on the costs of information processing, which allow to absorb uncertainty throughout the various phases of the transaction. Coase's intuition was about the fact that, on one hand, enterprises and market are alternative, although complementary, governance forms, and on the other hand, that the methods whereby the information is managed influence the comparative efficiency of organizational forms [6], [7]. Organizational design, following a traditional approach, can therefore be related to the choice of the most efficient form of governance of transactions. Market and hierarchy represent the two extremes of a continuum, within which other different configurations of quasi market and quasi organization can be found [4]. The most efficient form of transaction governance that should be chosen therefore is the one that minimizes production costs as well as transaction costs. Hence, the make or buy dilemma. As a consequence, the decisions pertaining to the identification of the company activities that can be conveniently carried out internally and of those that should be outsourced, from a theoretical standpoint, become extremely important, since it is necessary to define the balance governing the transactions in the context of internal hierarchical structures and, at the other extreme, the market structure.

According to this approach, outsourcing may be conceived as the tool used to optimize the organizational structure, in order to make it more flexible, modular and slim. From the standpoint of organizational design, the make or buy decision requires that the organizational variables, the organizational structure and the operating mechanisms be structured by processes and not by functions, also in view of a correct management of interdependencies.

## **2. NEW FORMS OF COLLABORATION**

Mixed configurations between market and hierarchy, which are achieved through the use of external units, are actually being adopted more and more often not only with the purpose of reducing costs but also reaching a differential advantage on one hand and altering the value chain on the other [8]. From an organizational standpoint, the development of an enterprise through external maneuvers allows to jointly optimize the combination of the strengths of the respective partners [9]. The value chain of the enterprise "leading the group" changes, which frees itself from less remunerative activities, or those in which it has distinctive competences, delegating them to partners that are able to carry them out in conditions of greater efficiency. These activities may be related to design, manufacturing or services. The working methods of the enterprises organized in a network differ from those that have been adopted by traditional enterprises. The enterprises organized in a network require slim organizational structures, new management capabilities and specialized personnel able to work in specific teams using particularly flexible methods.

ICT promotes the transition to a network organization, since it enables the integration of the value chain of the various participating enterprises and allows, in an easier and more flexible way, the implementation of agreements that can even be particularly complex and difficult to manage on an operating level. The new technologies play a fundamental role not just and not only because they cut contact costs between different economic entities but also and foremost because they allow new relational and collaborative models and types between enterprises.

The aim of this contribution is to deeply analyze the methods by which enterprises today cooperate with each other along the entire Supply Chain (SC), externalizing a number of activities and processes that can no

longer be managed, from an economic standpoint, within the organizations. This enables the emergence of new forms of collaboration between enterprises which may enact closer and more personalized forms of collaboration in which bilateral approaches are realized, or forms that are more standardized and, in some respects, less strategic, in which multilateral relationships are developed. All of the above allow to generate real strategic networks among enterprises that collaborate. Following this approach, e-marketplaces can be considered real strategic networks, used by certain enterprises to externalize the processes that concern procurement.

In literature, the e-marketplace phenomenon is investigated and analyzed based on different theories. In this contribution, we will make reference to TCT and to the strategic networks theory to analyze how the evolution of the e-marketplaces and all phenomena connected to the deconstruction of company activities may be the object of organizational studies. In particular, the attention will be focused on the study of strategic outsourcing in procurement processes.

Digital markets are open electronic platforms that ease the activities connected to transactions and interactions between several enterprises [10]. The top priority of first-generation e-marketplaces was the creation of a more competitive market and a friction-less commerce. The limitations however are still many, and are especially due to a low number of participants.

With the purpose of creating a more sustainable business model, a few e-marketplaces are migrating towards what has been called second-generation e-marketplaces, whose primary objective is the execution of the entire transaction, from the definition and management of orders on line to – whenever possible – the organization of the logistics through the tools offered by the virtual place [11]. However many consumers are not willing to meet the high costs of all these services and the number of participants cannot guarantee the survival of the platform. The real problem therefore is the involvement of a high number of consumers. All this constitutes a problem especially for suppliers [12]. Moreover, long-standing and fiduciary inter-company relationships are relevant judgment factors for prospective newcomers. Most enterprises do not wish to give up their traditional lines of procurement and for this reason are more inclined to choose the e-marketplace that is able to offer new functions of a collaborative kind that are compatible with the need to maintain long-term relationships with strategic partners [13].

Despite the offer of collaboration services represents the direction to be followed, collaboration in the e-marketplaces is still to be correctly taken, to the point that oftentimes it represents a broad term able to take on different meanings in relation to different subjects [14].

### **3. PURCHASING EXTERNALIZATION: THE E-PROCUREMENT**

The organizational implications of e-commerce on a company business occur at two levels. The first one provokes restructuring and modifications in pre-existing processes and functions due to the adoption of the new technologies. On another level, we see instead the emergence of new actors within the supply chain, with the consequent need for companies to start and manage new relationships.

In an economy based on digitalization of information, the ability to operate in a limited time span becomes a key factor to gain competitiveness with respect to competitors. A network allows to dramatically reduce the time needed to complete a purchase and/or sale transaction, although it requires of the participants in the digitalized supply chain to acquire and govern the tools necessary to operate in a short time.

It is therefore possible to design new business systems that integrate the traditional and virtual value chains, where the content, the context relative to the access methods and the technological infrastructure typical of the e-marketplace take on a substantial economic value. This transformation process is affecting all sectors, and not just those characterized by a high information content. In this scenario, we see everyday the effort of all

organizations to improve their Supply Chain through processes of reengineering, activation of partnerships, etc. The objective therefore is the reduction in costs, improving the overall performance of the entire supply chain.

The outsourcing of procurement constitutes one of the possible ways that some particularly innovative enterprises have decided to undertake to reach practical results in a short time.

In particular, e-procurement may be defined as: one of the many services belonging to the e-business family and in particular to the business-to-business family. It includes all tools supporting the two fundamental activities of the procurement process: e-sourcing and e-catalog. The former may be defined as the process that starts with the search for prospective suppliers available on the Internet and also includes on-line auctioning and negotiations. The latter, be it related to goods or services, is defined as the process that starts with the management of purchase requests and ends with the transmission of the order to the supplier, including invoicing.

The main activities supporting e-sourcing may be divided into five basic phases (analysis of requirements, scouting, rating, Request For Quotation and negotiation). In the first phase, the data taken from the balance sheet and the procurement Data Warehouse (DWH) are re-processed to identify the “real” consumption model. Scouting serves to identify prospective sellers, dividing them by type of goods and reliability (pre-rating). In the rating phase, each seller is given a reliability score, whose value is correlated to the quality of the good/service, delivery time, courtesy, price and other independent variables. With a Request for Quotation (RFQ), each buyer may request proposals or quotes from the suppliers that were selected in the scouting phase. Finally, negotiation may be carried out through virtual auctions or through direct negotiations between buyers and sellers.

In the management of the e-sourcing platform two models apply: one within the company and one outside the company. The platform outside the company may be divided into external through ASP and external through outsourcer processes. In internal management, the organizations internally develop and manage the technological search platform or use the solution implemented by the group to which they belongs (insourcing). With external management through ASP, the technological platform is personalized and is made available by an external specialized company against the payment of a fee. In the methodology of external management through Outsourcer, the entire e-sourcing platform is assigned to an external operator thus obtaining improved efficiency in the search cycle. This solution is usually adopted by the enterprises that sell a few times per year large amounts of goods or services.

#### **4. A CASE STUDY: BRAVOSOLUTION**

BravoSolution was established in 2000 by an initiative of Italcementi Group, which held more than 80% of the shares, as a company specialized in e-procurement solutions. The choice of creating a company specialized in e-procurement was part of the general program of recovery of efficiency in the field of procurement implemented by Italcementi Group, by means of centralization, rationalization and homogenization of procurement processes of all enterprises belonging to the group. Later on, BravoSolution offered the platform and procurement services, based on Internet technology, to all the enterprises that subscribed to one of the five portals specialized in a particular business (manufacturing, building, government, food industry and transportation). Inside the portals, the company offered e-sourcing and e-catalog services to the customers, usually the buyers, providing them with the best technical/logistic support in the procurement processes.

Through a continuous selection and control of the suppliers and buyers existing in the platform, in 2005 the portals turned from simple e-marketplaces for “spot” purchases of low added value goods/services into real “strategic networks” along the entire Supply Chain of “customer companies.”

BravoSolution therefore integrated the e-sourcing and e-catalog solutions with those of Supply Management (SM), offering them according to SaaS (Software as a Service) methods.

An SM platform contains all functions of: sourcing, Vendor Management, Spend Visibility, Contract Management and Program Management, supporting the entire value chain of customers. Through the Vendor Management function, buyers may control all suppliers, viewing “prospective” and checking “actual” through the integration of the information inside the two Information Systems. Spend Visibility supports decisional processes orienting tactical/strategic procurement policies and providing the tools for a full support to the procurement process. With Contract Management, the products indicated in the contract and those actually received are checked for consistency. Finally, through Program Management tools, each function manager can monitor and assess, based on rigorous pre-defined process phases, the progress of projects within the field of “procurement” outsourced to various suppliers.

Each day BravoSolution is able to support, through the use and development of the e-procurement platform, the Supply Chain of more than 400 companies all over the world. Over 200,000 buyer and seller companies are present in the platform. Expected turnover in 2008 is in the approximate amount of 50 million Euros.

## 5. CONCLUSION

Outsourcing has always been considered as an operating mechanism aiming at managing secondary processes or in any case processes that do not pertain to the core business of enterprises, where the primary decisional lever is cost containment. Today, externalization of company activities has become a decision that is not only tactical or operational but also strategic, as it is bound to alter the structural balances within individual organizations and within the industries to which they belong. A further typical characteristic of outsourcing processes – shared in literature – is that it is a long-term choice that implies continuing relationships and consequently strong integration and collaboration between the parties. All this alters company boundaries, introducing strong relationships [15] between the parties.

Among the tactical motivations that emerge in the case at hand, the subject of a difficult management and control of the procurement function is one of the main reasons for turning to externalization. In fact even for a core function such as that of procurement it is necessary to proceed to a rationalization of the process and to its formalization and control. These activities are however complex, costly and in need for specific competencies as well as continuous monitoring and update.

In the analyzed case study, the use of a web-based platform solves in part, or in some instances even in whole, these problems, since the procurement process has been parceled out and modularized in order to allow the use of a partial (a single activity such as e-scouting or digital catalogs only) or global (the entire procurement process) outsourcing. In both cases, we observe a deconstruction of the process, where technology takes on an enabling role not only intended for its support but also for the design of the process and its manifestation.

The reduction in operating costs, which is an objective that has always been present in many organizational choices, is one of the typical reasons of those facing a make or buy choice. Reduction is not effected by the company downsizing carried out through the redefinition of boundaries, but through the rationalization of operating processes and the related externalization of the critical phases for the portal. Regarding the strategic aspects, the reasons actually found in the case study seem to be related to the need to reduce risks, the pursuit of a greater specialization and an international approach of the selected provider along with the need to use a greater know-how of the provider to optimize the core business intended as an object of the procurement process. The risk of running into the wrong partner is a luxury that most subscribers cannot afford.

In this environment, investments in sophisticated or highly innovative technologies are hindered by the excessive financial and cultural effort required. Turning to outsourcing, whether by means of a web-based technology or by *ad-hoc* agreements with suppliers of specific technologies, allows the opening towards competitive scenarios that before were unthinkable due to the level of complexity typical of global markets.

The technology implemented by the BravoSolution platform not only provides an answer to the question “How can we manage to improve the procurement process?” but also helps understand “What am I doing within the procurement process?”, making explicit the phases of the organizational processes or even providing the manifested behavioral model through the use of specialized ontological engines. In this way the marketplace implemented by BravoSolution favors the emergence and development of strategic networks between the customers (buyers) and suppliers belonging to the Supply Chain, converting the “weak” bonds [15] existing in traditional marketplaces into “strong” [15] and long-lasting bonds.

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