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STRATEGIC E-SOURCING
AND A RESOURCE-BASED VIEW

Abstract: An essential problem for enterprises is the planning and the organization of the obtaining all types of resources process, defined as sourcing, and in the case of the utilization of web-based technologies, as e-sourcing. The article presents definitions of basic notions, such as: sourcing, e-sourcing, strategic sourcing and strategic e-sourcing, the concept of resource-based view and classification of resources. The analysis also included the development of supply processes realized on-line. The purpose of this paper is to use a resource-based view to answer management's questions: whether e-sourcing as the process of sources and means of planning supply into all resources of the enterprise is a process of a strategic meaning for the enterprise? How to organize this process and which web-based solutions technologies can be used in its effective realization? The organizational model for strategic e-sourcing was proposed in which for each of the four distinguished stages, the utilization of web-based technology solutions was suggested.

Keywords: strategic e-sourcing, resource-based theory, classification of resources, web-based technologies.

1. Introduction

The Resource-Based View (RBV) states that resources foster a company's success. Not only are the resources which the enterprise possesses important, but also the resources found under the current supervision of the enterprise. The planning and organization of the effective process of obtaining resources contributes to the attainment of the competitive position of the enterprise, e.g. within the range of price, quality or punctuality. The utilization of Internet technology solutions in the realization of the resources obtaining processes is an answer to the needs of business partners: suppliers and recipients. The Internet allows them to strengthen relations with suppliers and facilitates the quest for alternative sources of resources and improves the processes of negotiating contracts. The effective implementation of the Internet solutions in the realization of the resources obtaining processes enables treating them as processes with a strategic meaning for the enterprise.

Sourcing is the process by which a company obtains direct inputs used in the processing of its primary outputs.

e-Sourcing means identifying new suppliers for a specific category of purchasing requirements using Internet technology. e-Sourcing is a relatively new term to many businesses and organizations. The Aberdeen Group [Aberdeen Group 2002] defines e-sourcing as the use of web-based applications, decision-support tools, and associated services to identify, evaluate, negotiate, and configure purchases and supplier relationships that will effectively support supply chain and other business operations.

The Aberdeen report allocates the time spent in the sourcing cycle by individual companies as follows [Aberdeen Group 2002]:
–   identifying vendors (52%),
–   managing and communicating with preferred vendors (5%),
–   RFQ development (8%),
–   RFQ response/receipt (5%),
–   screening and sorting of proposals (20%),
–   contract negotiation (10%).

In further considerations it will be shown that the usage of Internet technologies may considerably shorten the realization time of every stage, especially the time sacrificed for the identification of salesmen (sources of resources), or negotiating of contracts.

Strategic sourcing can be defined as a sequence of actions to be performed in order to acquire goods or services that are of strategic importance to a company [Reyes-Moro et al. 2003, p. 347]. The important parts of sourcing are: identification, evaluation, negotiation, and configuration of the optimal groupings of trading partners into a supply chain network. The negotiation phase is crucial, where prices, product configuration and service conditions specified by the buyer are negotiated until the best possible agreement is reached. Recently, the application of on-line auction mechanisms as a way to resolve the negotiation phase has attracted numerous companies as they have been able to achieve enormous benefits [Reyes-Moro et al. 2003, p. 347].

The goal of any sourcing event should be to select the mix of products, services, and suppliers that offers the lowest total cost, which is the sum of price and non-price factors such as quality, brand, and warranty terms, etc. and to ensure that each sourcing decision supports business structures, objectives, and constraints [Aberdeen Group 2001]. Companies should also identify successful sourcing strategies that they can deploy across the enterprise.

2. Resources and their categorization

A management theory known as the resource-based view (RBV) has devoted considerable effort to explain how unique resources, as well as bundles of general resources, can create a competitive advantage for a firm [Barney 1991; Prahalad,

Hamel 1990; Krupski 2011; Czakon 2012; Krupski 2006]. Resources are the basis for one concept of management: flexible organization and management by opportunities [Krupski 2011].

Daft, considering a firm's resources described them as: all assets, capabilities, organizational processes, firm's attributes, information, knowledge, etc., controlled by the firm that enable it to conceive and implement strategies that improve its efficiency and effectiveness [Daft 1983].

Resources are also defined as anything that could be thought of as a strength or a weakness for a firm. Tangible and intangible assets tied permanently or semi-permanently to the firm are:
– an input into the production process,
– the basic unit for analysis,
– anything tangible or intangible that can be owned or acquired [Hafeez, Malak, Zhang 2002].

Specifically, a resource is capable of generating sustainable performance advantages when it satisfies four criteria. Barney [1991] made clear that resources should be:
– valuable (when they enable a firm to conceive or implement strategies that improve its efficiency or effectiveness),
– rare (valuable firm's resources possessed by large number of competing firms cannot be sources of either a competitive advantage or a sustainable competitive advantage),
– imperfectly imitable (because of {a combination of} three reasons; unique historical conditions, causally ambiguous, social complex),
– non-substitutable (there must not be strategically equivalent valuable resources that are themselves either not rare or imitable).

Resources that satisfy these criteria are called "strategic resources" and firms possessing such resources are able to provide a sustainable competitive advantage.

Teece, Pisano, Shuen [1997] establish the fact that firms are heterogeneous because of their resources/capabilities/endowments. Resource heterogeneity is the most basic condition of the resource-based view and it assumes at least some resource bundles and capabilities underlying production are heterogeneous across firms [Barney 1991]. The resource-based view suggests that heterogeneity is necessary but not sufficient for a sustainable advantage.

Resources cannot be evaluated in isolation, because one may not be valuable but a set of them – a unique combination – may. This may explain why companies might use, for example, the same technologies with different results.

The resource-based view has been extended to take into account so called dynamic capabilities, which can be described as a firm's ability to achieve new forms of competitive advantage [Teece, Pisano, Shuen 1997, p. 515]. Thus, there are essential elements of the RBV and the dynamic capabilities perspective that have to

be examined in more detail, starting with the sustainable competitive advantage. Barney and Mackey consider linking specific firm's resources and capabilities with the ability to create and implement these kinds of company strategies [Barney, Mackey 2005].

There is no single generally accepted classification of resources which has been adopted in the area of management. The current typologies of a firm's resources are very broad in scope. From the historical perspective, the most important resources were material ones. Nowadays, in the literature there are considered tangible and intangible resoures [Obłój 1998]. The tangible resources include land, buildings, materials and cash. The intangible resources are further subdivided into relational (relations and reputation) and competences (knowledge, abilities and attitudes).

Seppanen and Makinen [2007] propose the categorization of resources built on existing theoretical structures in order to facilitate communication and understanding of the system as a whole and of its categories (see Figure 1). Although the categorization is two-level only, each resource category includes further sublevels and objects that are denoted with arrowheads.
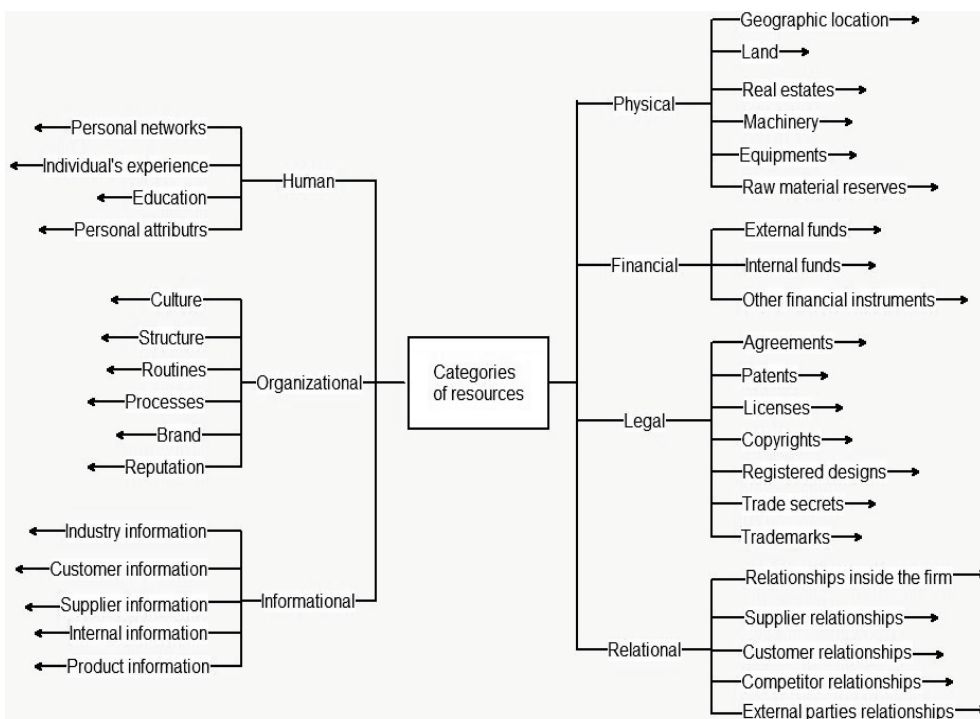

Figure 1. Classification of a company's resources

Source: [Seppanen, Makinen 2007].

Sirmon, Hitt, Ireland [2007] provided a theoretical framework for classifying the different ways that managers affect resource configurations. Three core resource management practices were identified:
– structuring the resource portfolio,
– bundling resources and capabilities,
– leveraging resources and capabilities to create customer value.

Organizing the resource set refers to identifying the resources that are needed to fulfill the firm's strategy and then making the necessary asset acquisitions and divestitures. Bundling involves integrating existing and newly acquired resources to form bundles of strategic resources. Finally, leveraging involves taking actions that mobilize, coordinate, and deploy strategic resources [Sirmon, Hitt, Ireland 2007].

3. The evolution from e-procurement to strategic e-sourcing

Strategic e-sourcing is the process of using Internet technologies to support all phases of this process. Strategic e-sourcing means the use of web-based technologies to automate and streamline the identification, evaluation, negotiation, and configuration of the optimal mix of suppliers, products, and services into a supply chain network that can rapidly respond to changing market demands [Aberdeen Group 2001].

Distinguishing components of e-sourcing solutions include some or all of the following capabilities [Aberdeen Group 2002]:
– online negotiations enabled by request for proposal (RFP), request for quote (RFQ), request for information (RFI), and reverse auction capabilities,
– collaboration tools that support cross-functional sourcing and interaction with suppliers,
– project management capabilities that establish, administer, and monitor sourcing processes,
– document management functionality that supports the exchange, modification, and recovery of documents,
– knowledge management capabilities that provide a central repository for the supplier, material, component, part, and market intelligence and supports the management and reuse of sourcing strategies and process flows,
– analytical tools that support spending, bid, and cost analyses,
– e-sourcing solutions and vendors are further differentiated by their ability to provide intelligence on commodities, suppliers, and markets; and to deliver sourcing expertise, methodologies, and services.

The Internet technologies can support automating and managing aspect of the sourcing process. The evolution from e-procurement to e-sourcing is shown in Figure 2.

The progression to e-sourcing involved three primary waves of technology:
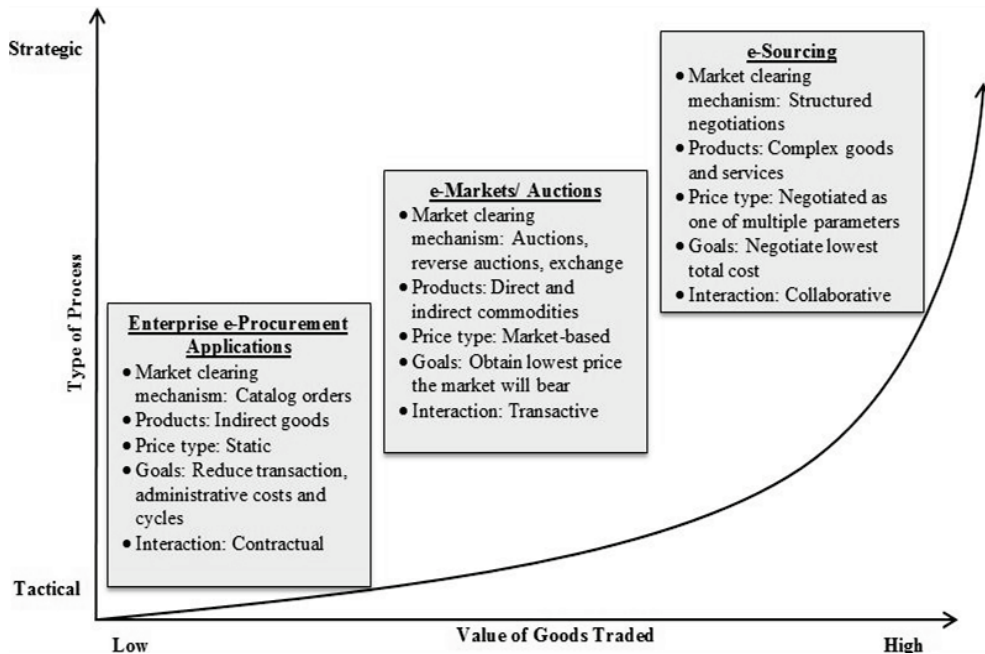– e-procurement,
– reverse auctions,
– e-markets.

Figure 2. The evolution of online procurement

Source: [Aberdeen Group 2001, p. 18].

e-Procurement was the initial phase of Internet-based procurement automation which focused on automating the tactical processes and workflow associated with non-strategic purchases that are already on contract [Aberdeen Group 2001, p. 17].

Reverse auctions support the negotiation, derive the lowest price and they are effective at matching buyers and sellers for highly perishable and highly standardized products.

e-Markets enhanced the impact of dynamic trading solutions by providing a single web-based hub in which multiple buyers and sellers can engage in highly competitive negotiations.

4. The model of the organization of strategic e-sourcing process

The e-sourcing process may be composed of a variety of stages that depend on different factors, on the purpose of the process, etc. A conventional model of the process of material resources acquisition was presented by Prahalad and Krishnan [2008]. The following stages have been emphasized:
1. Design and planning.
2. Development of a strategy for acquisition of resources.
3. Identification of suppliers.

4. Creation of the market (price/quality/value added).

5. Making transactions.

If we consider strategic e-sourcing we should be thinking about new, unique, valuable, uninitiated resources and the bundle of resources. Creating strategic e-sourcing as a process may be composed of the following stages:

1. Creation of ideas. What resources does the enterprise need?

2. Planning and designing of the strategic e-sourcing (the process of acquisition of resources).

3. Implementation of the strategic e-sourcing.

4. Improvement of the strategic e-sourcing.

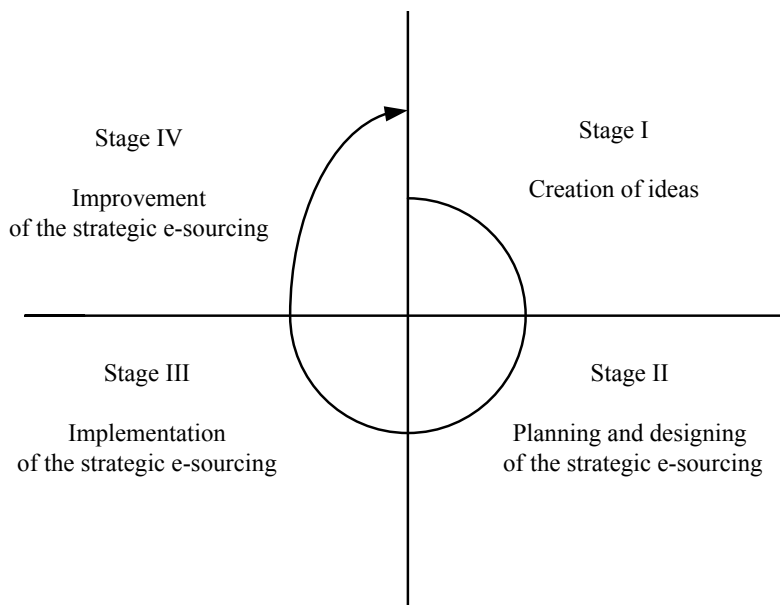The model of the organization of strategic e-sourcing process is presented in Figure 3.

Figure 3. The model of the organization of strategic e-sourcing process

Source: own elaboration.

As shown in Figure 3, the model of the organization of strategic e-sourcing process should be a continuous process. After the end of stage IV and the effective obtaining of given resources, the process already should be driven to stage I and creating ideas of "which new resources are needed by the company?"

Support from web-based technologies for stages in the strategic e-sourcing process of acquisition of resources is shown in Table 1.

In the resource approach. the enterprise is treated as the bundle of unique resources which decide about its competitive advantage in the market. The first stage

Table 1. Support from web-based technologies for stages in strategic e-sourcing

Stages in the process of strategic e-sourcing	Support from web-based technologies
Creation of ideas. Which resources does the enterprise need?	Websites as inspiration Sector-based portals and vertical portals Extranet Virtual community Social media Virtual organizations Semantic networks and ontological solutions
Planning and designing of the strategic e-sourcing	Websites used for resources and partners searching Sector-based portals and vertical portals Electronic data interchange (EDI) On-line auctions On-line catalogues RFx module supports the execution of the purchase process with the utilization of every from three kinds of the question to the supplier: – RFI (Request For Information), – RFP (Request For Proposal), – RFQ (Request For Quotation). SOA SaaS MRP/ERP in Cloud GIS in Cloud VPN BPML, BPMN e-Banking for financial planning
Implementation of the strategic e-sourcing	Websites owned by business partners On-line auctions On-line catalogues Electronic markets MRP/ERP in Cloud GIS in Cloud VPN Website of Virtual Organization e-Banking for financial settlements
Improvement of the strategic e-sourcing	Business analytic tools e-Benchmarking and e-testing Automation in the domain of goods marking: – RFID (Radio-Frequency Identification), – EPC (Electronic Product Code). BPML and BPMN Virtual organizations Websites as sources of knowledge Sector-based portals and vertical portals

Source: own elaboration.

of strategic e-sourcing embraces the quest for creative ideas on unique resources or bundles (unique connections) of different resources which improve the functioning of the enterprise at present, but can also decide about the future of the enterprise in the market. The enterprise can use the ideas of its own customers, business partners, virtual communities, including a forum of experts and also crowdsourcing.

The stage planning and designing of the strategic e-sourcing embraces, first of all, assignments connected with the identification of the best sources of sought-after resources and with the settlement of the best forms of contract with suppliers and the means of the management of relations with suppliers in the most effective manner. These tools embrace e.g. electronic catalogues of suppliers and electronic offer tools. Electronic catalogues can be sent via electronic mail, placed on the websites or made available by the server of the file transfer (ftp).

Applications are also used supporting the evaluation of offers, e.g. spreadsheets and conducting negotiations with suppliers, e.g. audio conferences and videoconferences. Internet supporting technologies are also electronic auctions and systems which support activities connected with the management of contracts.

Technological support is also constituted by solutions of electronic questions eRFx. This module supports the execution of the purchase process with the utilization of every form of three kinds of the question to the supplier: RFI, RFP, RFQ.

The activities concerning obtaining an actual supply can be realized on electronic markets. Generally we can distinguish three types of electronic market:
– private,
– public,
– consortia.

Private electronic markets are on-line markets owned by a single company, either on the sell side or the buy side. Public electronic markets, B2B markets, usually owned and/or managed by an independent third party, include many sellers and many buyers. Consortia are electronic markets that deal with suppliers and buyers in a single industry.

A large improvement of e-sourcing has been the automation in the domain of goods marking, e.g. EPC (Electronic Product Code), RFID (Radio-Frequency Identification), and the monitoring of its flow through networks of deliveries, e.g. EPC global Network.

Electronic auctions are used by competing participants in the process of obtaining the given resource. They increase the efficiency of e-sourcing, save time, and sometimes reduce shipping charges. It uses both traditional auctions – the winner is the site which proposes the higher price, and reverse auctions – this is the party interested in obtaining the given resource and makes a purchase offer and waits for sale offers. The winner of the auction is the site which proposed the lowest price. Auctions are usually used in B2C and C2C models; however, reverse auctions are used in the B2B model.

5. Conclusion

Effectively deploying and using a strategic e-sourcing framework can streamline the sourcing cycle, improve negotiations, and provide enhanced access to supplier intelligence and decision support for more informed purchase decisions. Specifically, organizations using Web-based sourcing technologies have been able to do the following [Aberdeen Group 2001]:
– identify and negotiate with a broad range of qualified suppliers,
– reduce sourcing process costs,
– shorten their sourcing cycle time by 25% to 30%,
– negotiate 5% to 20% unit price reductions,
– extend the technology's capabilities to a wider range of products and services,
– develop levels of collaboration with supply chain partners.

Experts also estimate that even a saving of 2% in cycle time can snowball into a whopping 14% reduction in the end cost of a new product. The Aberdeen report indicates that companies implementing strategic e-sourcing capabilities can experience savings of 5% to 20% in unit price reductions, in addition to cutting the time-to-market of their products by 10% to 15% [Aberdeen Group 2001].

Therefore, it should be underlined that for enterprises, not only the resource allocation or ensuring an access to resources, but ensuring the efficiency for the whole process of gaining resources and the care for the resources development in building key-competences are of paramount importance. Strategic e-sourcing can be the basis for defining the business model in which, in compliance with the resource approach, resources (tangible and intangible) and key-skills are perceived as factors of the potential creation of the organization.

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STRATEGICZNY E-SOURCING A PODEJŚCIE ZASOBOWE (RBV)

Streszczenie: Istotnym zagadnieniem dla przedsiębiorstw jest planowanie i organizacja procesu pozyskiwania wszystkich typów zasobów, określanego jako *sourcing*, a w przypadku wykorzystania technologii internetowych jako *e-sourcing*. W artykule przedstawiono definicje podstawowych pojęć, takich jak: *sourcing*, *e-sourcing*, strategiczny *sourcing* i strategiczny *e-sourcing*, koncepcja teorii zasobowej oraz klasyfikacja zasobów. Analizie poddano także rozwój procesów zaopatrzenia realizowanych online. Celem artykułu jest wykorzystanie założeń teorii zasobowej w udzieleniu odpowiedzi na pytania: Czy *e-sourcing* jako proces planowania źródeł i sposobów zaopatrzenia we wszystkie zasoby przedsiębiorstwa jest procesem o znaczeniu strategicznym dla przedsiębiorstwa? Jak organizować ten proces i jakie rozwiązania technologii internetowej wykorzystać w jego efektywnej realizacji? Zaproponowano model organizacyjny dla strategicznego procesu pozyskiwania zasobów, w którym dla każdego z czterech wyróżnionych etapów zaproponowano wykorzystanie rozwiązań technologii internetowych.

Słowa kluczowe: strategiczny *e-sourcing*, zasobowe podejście, klasyfikacja zasobów, technologie internetowe.