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A CASE STUDY ON THE EFFECTS OF E-PROCUREMENT IMPLEMENTATION ON SUPPLIER PERFORMANCE

Abstract: The study will aim to understand the relationship of e-procurement implementation and supplier performance measurements (delivery period, price, response time, goods quality). This question is very practical since there are more and more companies transferring their procurement activities to electronic procurement platforms in order to achieve their goals: be more transparent, reduce costs and delivery time, think strategically, better manage the supply chain.

This study will be of interest of both buyers and suppliers as the direct participants of the e-procurement activities, as well as companies' supply chain managers. The results of this study will allow managers of the studied company to determine in more detail the advantages and disadvantages of e-procurement system implementation, and, if necessary, make the necessary amendments to the policies to improve the supply chain organization.

Keywords: procurement, e-procurement, supplier's performance

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Introduction

The procurement function is an essential part of any business or organization. Different organizations are increasingly starting to realize the importance of procurement especially in managing their organization and performance [1].

In the modern business, e-procurement plays significant role in improvement of procurement processes. Literature review shows that e-procurement implementation has two opposite effects to supplier's performance:

1. Positive – reduces paperwork and time for providing, revising the documents related to proposals, increase transparency, facilitate tracking of events and their results and other procurement processes [2]; [3].
2. Negative – decreases the number of suppliers that are ready to meet all organization's needs; working in innovative platform may be too complicated and time assuming for some of them [4]; [5].

The importance of procurement in organization's managing and performance

Businesses exist to create goods and services. A supply chain encompasses all the activities associated with the flow and transformation of goods and services from raw material to the end user, including the corresponding flows of monetary funds and information. These activities are typically performed by different business organizations identified as suppliers, manufacturers, distributors, and retailers. Supply-chain management refers to the management of all the activities in the supply chain, in order to minimize the total costs of the supply chain and to maximize the value of the product to the end user [6, p 329].

To remain competitive among other competitors in today's market, organizations have been compelled to lower their costs, increase revenue while maintaining highest quality of their products and services that are delivered to their customers [7]. One of the crucial functions of supply chain is procurement which includes sourcing, obtaining and paying for goods and services.

Procurement refers to events handled by a company for proper management of the supply chain [8]. Procurement management serves as an important strategy for organizations to remain competitive for both present and future [7].

Therefore, effective and efficient procurement systems and collaborative relationships are essential to the achievement of organizational goals, cost reduction and supply chain performance [9a].

The impact of globalization on supply chain

In an era of globalization of business and development of information and communication technologies, more and more companies switch their business to the internet.

According to Gaspar et al. [6], globalization provides supply chain, and procurement in particular, a lot of opportunities:

- obtaining information about innovations
- sourcing suppliers and customers all over the world without additional travel and communication expenses
- allowing fast and easy communication (e-mail, online meetings, documents sharing)
- providing real-time information about the orders through online platforms (expediting)
- making easier contract negotiations and signing
- making possible online transactions including payment

Enterprise resource planning systems

The coordination and collaboration required in successful supply chains has been made possible by information technologies, such as the Internet and enterprise resource planning (ERP) systems [6, p. 331]. ERP systems aim to:

- Store all information in a single database;
- Represent each business function by a module; and
- Design the system as a collection of business processes, and not functions.

ERP systems are now being used in more than 100 countries, and by nearly all major industries, which include [6, p. 332]:

- Oil and gas
- Automotive
- High-tech and electronics
- Consumer products
- Public sector
- Health care
- ICT (Information and Communication Technologies)

Electronic procurement

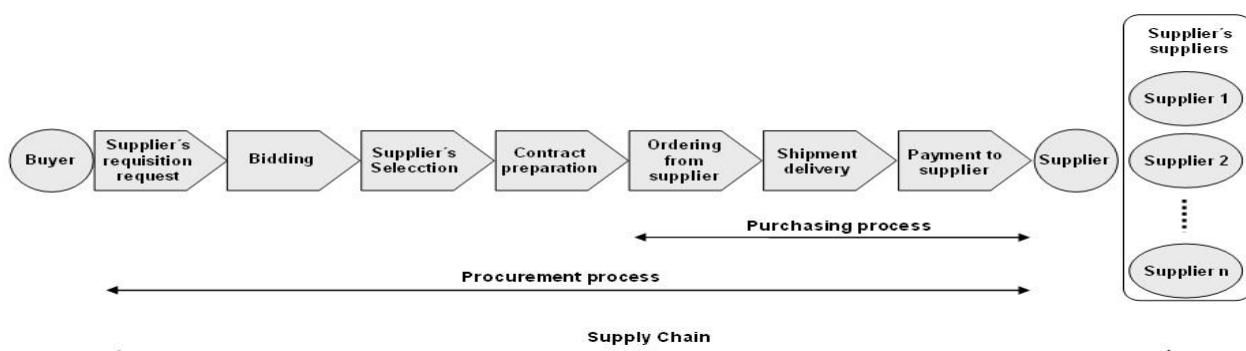
Electronic procurement (e-procurement or EP) systems designed to meet procurement needs. E-Procurement refers to the use of Internet-based (integrated) ICTs to carry out individual or all stages of the procurement process including search, sourcing, negotiation, ordering, receipt, and post-purchase review [10a].

Figure 1 [11] shows the main steps in purchasing, procurement and supply chain

Each organization has its own structure of EP and ERP systems based on the companies' structure, internal procedures, processes and goals of systems itself.

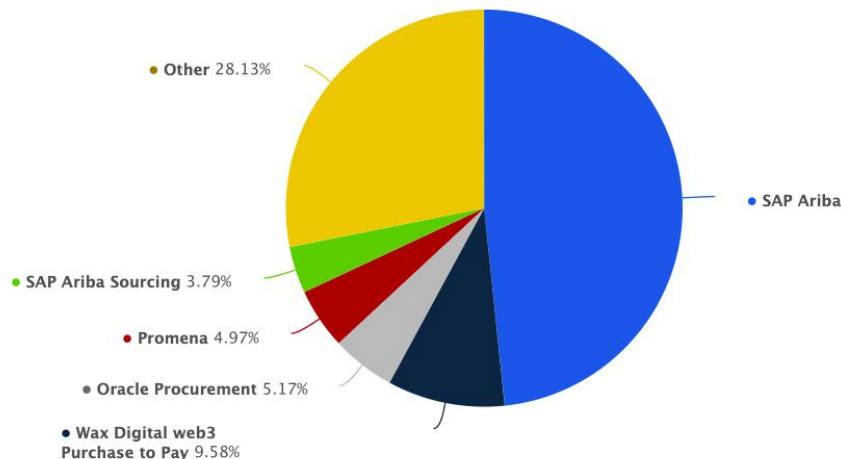
Usually, EP systems are located on company's servers or in cloud. Some systems are based on stand-alone e-sourcing platforms, like Promena. Other EP systems are built-in into company's

Figure 1. Main steps in purchasing, procurement and supply chain



ERP system, like Oracle or SAP Ariba. Stand-alone EP systems are faster and easier to use but they do not have connection with the whole company's database like ERP-based EP platforms.

Figure B [12] shows the leading vendors' share of the procurement software market worldwide in



2023.

Figure 2. Leading vendors' share of the procurement software market worldwide in 2023

Azerbaijan is an actively developing country, more and more adopting innovations and best practices of the global business.

The development of e-procurement in Azerbaijan began with the private sector of the oil & gas industry.

Procurement in a private sector is regulated by the company's management according to the company's internal procedures and the Law of Republic of Azerbaijan.

First state e-procurement platform in Azerbaijan was established by Decree of the President of the Republic of Azerbaijan No. 647 dated April 16, 2019 on approval of the "Regulations on the Single Internet Procurement Portal" (amended 25.02.20).

Based on statistical information provided by Statista GmbH [12a], in 2022, global sales through e-procurement channels exceeded one trillion U.S. dollars. That value appears in line with the steady increase recorded in previous years. As recently as in 2019, companies' e-procurement of supplies did not surpass 700 billion U.S. dollars.

Below graph shows estimated sales through e-procurement platforms worldwide from 2019 to 2022 (in billion U.S. dollars).

Figure C [12] shows estimated sales through e-procurement platforms worldwide from 2019 to 2022 (in billion U.S. dollars)

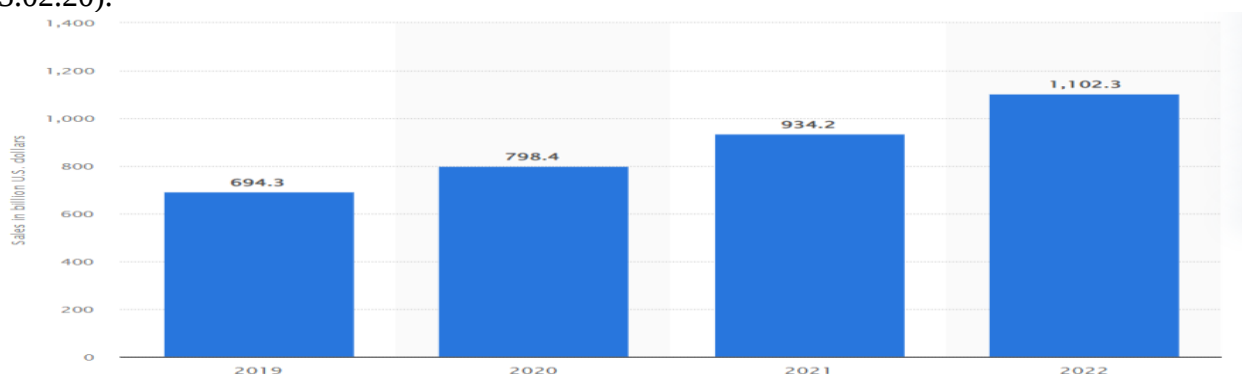


Figure 3. Estimated sales through e-procurement platforms worldwide from 2019 to 2022 (in billion U.S. dollars)

The impact of e-procurement implementation in supplier performance

Implementation of e-procurement systems in organization's processes impact all members of supply chain: requestors with process requisition for purchasing, supporting by budgeting, managing approvals, buyers' e-sourcing processes, suppliers with participating in e-bidding, audits for controlling of process, legal and financial department approving the purchasing itself, warehouse, logistics and expediting. All of these members of supply chain (within an organization or between different organizations) are affected by the EP platform configuration and activities of each other.

As e-procurement mostly related to buyer-supplier relationship, most studies research e-procurement implementation in suppliers' performance. Supplier performance evaluation includes the following indicators: price, quality, delivery time, response time, guaranties.

There are a lot of studies in e-procurement implementation which observed some significant points of impact on suppliers' and organization's performance.

Croom [13] and DeBoer [14] and some other researches emphasized the important contribution of e-procurement in reducing total purchasing costs. These benefits broadly arise through lower prices from suppliers and reduced costs in the 'requisition to payment' process. Croom [15] support the view that increased use of e-procurement and inter-organizational systems enhance opportunities tend to create more effective customer-supplier relationships over time.

Barratt and Rosdahl [16] argue that ease of search and transparency acts as an advantage to the buyer but may be a disadvantage for the seller, which further reinforces market-based relationships under e-procurement.

According to Arbin [17] and Croom & Johnston [18], implementation of e-procurement initiatives has turned out to be much more problematic and challenging than expected. Research of Brandon Jones & Carey [19] has shown that implementing e-procurement will not automatically lead to higher levels of efficiency or contract and system compliance.

Some studies mentioned the advantages of e-procurement: lower purchasing costs, achieving compliance to contract, improved communication, enhanced planning, reduction in transaction

costs, faster cycle times and improvement in procurement personnel efficiency [20]; [21].

Similarly, there has been discussion of the barriers or disadvantages in implementing e-procurement, which include technology immaturity, problems in implementing change, potential conflicts with suppliers, inability of SMEs to materialize savings, and cost of implementation [4]; [5]. Angeles & Nath [4] in particular explore the challenges to e-procurement and identify three important issues, namely lack of system integration and standardization, immaturity of e-procurement market services, and maverick buying/difficulty of integrating e-commerce with other systems.

Research Design and Methods

To conduct this study, a Case study research method with mixed research methodology will be implemented. The study will include a survey of large private company's suppliers to collect data on their experiences with e-procurement. Some of them have very little experience in using the e-procurement, the others have their own e-procurement platforms.

That is primarily deductive with quantitative survey research. Inductive inquiry will explore issues and challenges with qualitative open-ended questions and analysis.

Quantitative surveys (structured questionnaires) will be used to collect the data of key performance indicators (metrics) of supplier's performance such as: response period, delivery period, cost. The qualitative methods (open-ended questions and exploratory) will support to identify the gaps, challenges, benefits and barriers in e-procurement implementation.

Collected data will be analyzed using descriptive and inferential statistics. Secondary data will be gathered from business procurement performance reports within the sample companies to make the correlation analysis to represent the conclusion.

Hypothesis and objectives

The main objectives of the study are:

1. identifying the relationship between e-procurement implementation and level of KPIs of supplier's performance.
2. identifying the gaps, challenges, benefits and barriers in e-procurement procedures in order to

improve the supply chain management performance.

To achieve the first objective, this study will examine the following hypothesis:

Hypothesis 1 (H_1) – The implementation of e-procurement has an effect on supplier performance.

The theoretical population of the current study will be the Procurement department of private company in Azerbaijan. The surveys will be sent to their suppliers.

The population to sample for the survey questionnaires will be all the suppliers within e-procurement systems. The survey will be conducted via e-procurement platform or e-mail and can be sent to all registered suppliers automatically.

Potential barriers, limitations

As in any research, there several potential barriers and limitations of the current study:

- Case studies have received criticisms. Yin [22] discusses three types of arguments against case study researches: lack of rigors, little basis for scientific generalization, too long, difficult to conduct and producing a massive amount of documentation.
- Readiness of suppliers to participate in the survey.
- Time and human resources needed for conducting research.
- This work will not include the study of the influence of external factors on suppliers' performance.
- In order to be able to obtain additional information and study the subject in detail, suppliers that are not registered in e-procurement platform of the studied company will not participate in the survey.

Preliminary Suppositions and Implications

The result of the study can either confirm Hypothesis 1 (H_1) – The implementation of e-procurement has an effect on supplier performance or deny it. Understanding the impact of e-procurement implementation on supplier's performance based on suppliers' performance KPIs is only one part of the result required. The second part is to determine whether there are gaps in e-procurement, how suppliers have mastered this system, and whether there are factors that affect the work in the supply chain in general.

The output of this study will be limited to a case study of one company. Therefore, it cannot be generalized to all other companies at this stage. But the result obtained may be of interest to other companies in conducting similar studies. After conducting additional studies in several companies and comparing the results obtained, it will be possible to draw conclusions about the generalization of the results.

Also, the result of this study will be of interest to companies that have not yet started using e-procurement platforms. Given the cost, as well as the time and knowledge required to implement and use e-procurement platforms, managers of many companies still doubt the need to implement these platforms in procurement activities. They need to clarify whether the e-procurement implementation will bring the desired benefits or only complicate the supply chain work process. In the current study statistical significance can be achieved by making surveys in as many suppliers as possible and conducting the study in as many companies as possible. Practical significance of the current study is in applying the results to help Supply Chain Management leaders in many decision-making processes related to e-procurement activities.

Conclusion

The modern world cannot be imagined without digitalization of processes. Therefore, companies that do not yet use or that already use e-procurement platforms will be interested in conducting research data for achieving the efficiency and effectiveness of procurement and supply chain performance.

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ELEKTRON SATINALMALARIN TƏDARÜKÇÜLƏRİN FƏALİYYƏTİNƏ TƏSİRİ İLƏ BAĞLI NÜMUNƏ TƏHLİLİ

Xülasə

Məqalə elektron satinalmaların həyata keçirilməsinin əlaqəsini və təchizatçının performans ölçülərini (çatdırılma müddəti, qiymət, cavab müddəti, malların keyfiyyəti) başa düşmək məqsədi daşıyacaq. Bu sual çox praktikdir, çünki məqsədlərinə çatmaq üçün satınalma fəaliyyətlərini elektron satınalma platformalarına köçürən şirkətlər getdikcə daha çox olur: daha şəffaf olur, xərcləri və çatdırılma müddətini azaldır, strateji düşünür, təchizat zəncirini daha yaxşı idarə edir.

Araşdırma elektron satınalma fəaliyyətlərinin birbaşa iştirakçıları kimi həm alıcılar, həm də təchizatçılar, eləcə də şirkətlərin təchizat zəncirinin menecerləri üçün maraqlı olacaq. Bu tədqiqatın nəticələri tədqiq olunan şirkətin menecerinə elektron satınalma sisteminin tətbiqinin üstünlüklərini və çatışmazlıqlarını daha ətraflı müəyyən etməyə və zəruri hallarda təchizat zəncirinin təşkilini təkmilləşdirmək üçün siyasətlərə lazımi düzəlişlər etməyə imkan verəcəkdir.

Açar sözlər: *satınalma, elektron satınalma, təchizatçının fəaliyyəti*

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ПРАКТИЧЕСКИЙ ПРИМЕР ВЛИЯНИЯ ВНЕДРЕНИЯ ЭЛЕКТРОННЫХ ЗАКУПОК НА ЭФФЕКТИВНОСТЬ РАБОТЫ ПОСТАВЩИКОВ

Резюме

Данное исследование будет направлено на понимание взаимосвязи внедрения электронных закупок и показателей эффективности работы поставщиков (срок поставки, цена, время ответа, качество товаров). Этот вопрос очень практичен, поскольку все больше компаний переводят свою закупочную деятельность на электронные закупочные платформы, чтобы достичь своих целей: быть более прозрачными, сократить затраты и сроки поставки, мыслить стратегически, лучше управлять цепочкой поставок.

Данное исследование представит интерес как для покупателей и поставщиков как непосредственных участников деятельности электронных закупок, так и для менеджеров цепочки поставок компаний. Результаты данного исследования позволят менеджеру исследуемой компании более детально определить преимущества и недостатки внедрения системы электронных закупок и при необходимости внести необходимые изменения в политику по совершенствованию организации цепочки поставок.

Ключевые слова: *закупки, электронные закупки, деятельность поставщика*

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