

## Evaluation of Web Service Based Model for Cargo Delivery Management for e-Markets in Post Company

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### Abstract

According to research, physical transportation and distribution of goods is an infrastructural barrier to the development of e-commerce. In addition, lack of proper management can be a key factor in developing a dysfunctional cycle of e-commerce, increasing cost for the manufacturer, seller, as well as buyer and reducing efficiency of e-commerce. The main problem is the lack of timely and accurate information between the sellers and the middle men in transportation and distribution of goods. In order to facilitate communication between the parties involved in an electronic transaction, a model based on Web Service was designed and implemented. This model creates a single gateway to connect all the electronic market systems to the Post Company's cycle of transportation and distribution of goods through public data transmission media, such as the Internet. The implemented system was evaluated in accordance with the software quality evaluation standard, ISO 9126. The results of the evaluation validated high quality for the software and implementing the system led to an increasing throughput of executive units, rapid growth of postal traffic, full transparency of financial and executive processes and improvement of the quality of service.

**Keywords:** *cargo delivery management, web service based model, E-Commerce, B2B.*

### 1. Introduction

Intensifying global competition and customer demand for high quality and fast service causes that organizations cannot do everything alone and therefore requires resources and elements from outside the organization to avoid imposes enormous costs on the system by traditional methods [35]. In addition, the process of intermediaries' elimination enables companies to communicate directly with the customer, the cost of mediation/representations eliminate or reduce [24]. E-commerce increases the speed and volume of trade [27] and by reducing storage costs and better manage the supply chain, better supply of goods and services and ultimately reduce transaction costs, leading to improved performance [1]. According to the latest predictions of Forrester International Research Institute, the past decade has solidified the leading role of Asia and Oceania in the global economy, and e-commerce is no exception. These predictions outline the magnitude of the opportunities in the region. Today, total online retail revenues in just five markets in Asia and Oceania are close to the combined figure of online retail in the US and all of Western Europe. China will soon take over the United States' title as the world's biggest online retail market, while Japan's online retail market will remain larger than any other market in Europe except the United Kingdom. Meanwhile, the online retail sales in Asia and Oceania are only set to continue their rapid growth. In the markets included in this prediction — China,

Japan, South Korea, India, and Australia — the total online retail revenues will be more than doubled, from \$398 billion in 2013 to \$858 billion in 2018 [33]. Now different businesses around the world, promote their competitive advantage by focusing on its resources in cyberspace business [19] and more than 80% of the global e-commerce is B2B transactions [30]. Since many smaller firms lack formal mechanisms to undertake an intensive evaluation of investment decisions [11], E-commerce faces resistance and other problems from "small and medium-sized businesses<sup>1</sup>". For example, a study conducted by Verizon Institute, showed that only 36 % of small businesses have created websites to promote their business and only 9% have the possibility of on-line sales. Similarly, Pratt's survey of more than 444 small and medium business found that these businesses do not have a great interest in contracts through the INTERNET and more than 80% of these companies used Internet only for communication (e-mail and data collection). The issue indicates that the top managers and owners of small and medium-sized businesses have not understood the strategic value of e-commerce or facing with major obstacles in implementation [29]. In addition, small businesses<sup>2</sup> constitute about 75% of firms in manufacturing and nearly 30% of the added value created by these companies in Iran [29].

Companies as e-markets were created by using IT infrastructures created software systems for rent virtual stand and Owners of small businesses by renting this virtual space offering their goods and services. One of the Rings to complete E-Commerce, is the optimal physical delivery of goods or services to the customer, Transportation of goods from seller to buyer always been one of the most challenging steps in the process of e-commerce. According to a survey of owners of e-markets, a major obstacle to the development of Internet sales are described in infrastructure problems related to transport [25]. In the first decade of the 21st century, known as the dot-com fungal growth and decline of them, one reason for the lack of success of these businesses (trade), Non desirable delivery or effective tracking of goods ordered is detected. So if you create a system that can accurately control the distribution loop, in addition to eliminating unnecessary costs, will also provide customer satisfaction [22]. Islamic Republic of Iran Post Company has a wide range of facilities to transport and distribute goods in the country, after surveying the market and understanding the needs of the community, Since 2006 a new service called "Internet buying and selling service" launched. Using this service the acceptance operation of goods or parcels (from Dealer) and then transportation and distribution (to buyer) was conducted by Post Co., and as an additional service the goods cost received from the customer is returned to sellers. This service is known as Cache on Delivery (COD) in other Post companies in the world [4].

In this method, the goods cost after sending and receipt at customer home delivery, and after deducting the cost of postage (shipping costs) will be returned to the vendor. Traditional and manual implementation of the service had brought up numerous problems for the parties to the transaction (seller, buyer, and Posts) and because of the success presences in Iran's e-commerce market as one of the strategic goals has been set in Post Co., a model based on Web service technology designed to quick, accurate and coherent informational communication with e-markets and a system as Cargo Management Based on the model was implemented. The present study aims to evaluate designed model and evaluate the quality of the system based on the model, Based on the ISO9126 standard quality assessment (as a key component in the success of the model). Results of research on the Evaluation of implemented system represents that the system quality is Desirable and on the Evaluation of model represents a huge increase in traffic and revenue volume, It also improves the quality indicators such as Ecommerce consensus, shorten distribution time of goods and reducing time to settle with markets. In addition, design and implementation of the model has several advantages, Such as make greater use of existing capacities transportation and distribution networks in the Post

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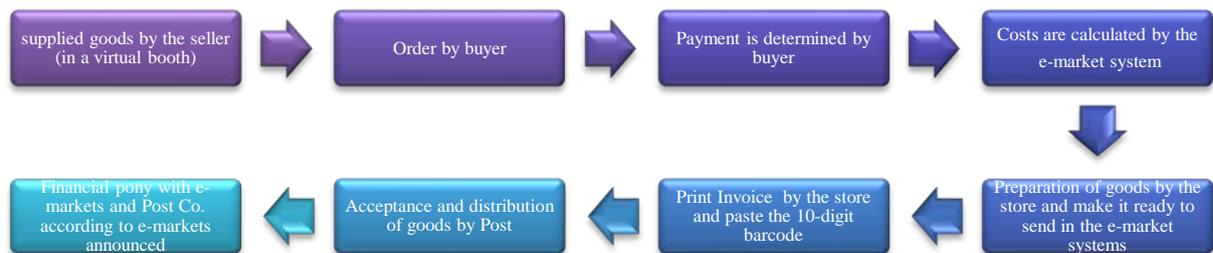
2. SMEs

3. According to the Ministry of Industries and Mines and the Ministry of Agriculture, Small company defined with fewer than 50 employees while the Ministry of Cooperatives consistent with the Census Bureau's definition of a small company is a company that has 10 employees [2]

Co., Tracking purchased goods from Acceptance to distribution, Increase the quality of acceptance, transportation and distribution of goods, Increase customer satisfaction and thus encourage them to make more use of e-commerce has provided. In addition with the creating a coherent and centralized database fast audited and improved financial cycles of service receiving many reports in order to take strategic decisions for the Post Co. managers and e-markets owners is possible.

## 2. Research background

According to the content, the Post Co. launched a service entitled "Internet buying and selling service". The service was launched to transport and distribute goods that are purchased in e-marketplaces. At the beginning the operational process of the service was according to the steps shown in Fig. 1.



**Fig. 1:** Steps of buying, transporting and distributing e- markets goods at the beginning

The most important hints in the initial designed process serving are briefly as follows:

- The only contact point of stores or goods owners and Post Co. (as a distributor of goods) were the companies or the e-markets.
- To calculate postal fare the e-markets using a fare list provided by Post Co. through its systems.
- Instead of 20-digit postal tracking codes<sup>3</sup>, 10-digit preprint barcodes available in e-markets and stores are placed.
- Getting the cost of goods and services from buyer in e-market system is set in two forms selected by the buyer. Online payment through debit card or payment after delivery, the final step in the process is changed according to customer's choice.

Since at the beginning of the service, operation was done completely traditional and by hand, there were several problems between business parties, buyer, seller, e-market and Post Co. After launching the service, supervision units and executor of service in Post Co. (including the General Administration of Quality, Office of Evaluation and Inspections and the Administration of new Services) by using variety methods like field inspections or collect written comments, recognized and analyzed these problems briefly were as follows:

- The Post Co. operator should be referred to e-markets separately to notified if the parcel existence for acceptance. It was actually very time consuming and timing to refer to the e-market system could not be predicted. In other words, bring justice between markets was impossible.
- The Post Co. informational reference of service performance was only available reports provided through e-markets system. So the Post Co. as an executor of delivery and distribution

4. Two types of Postal Tracking code used in Post Co. 20-digit with tracking capabilities and 10-digit (Preprint) without tracking capabilities. Due to its complex structure and confidential of 20-digit tracking codes, it should be generated solely by the Post Co. systems

- operations in the country was not provided opportunity to monitor and control the performance of the services. The accuracy of received reports was sometimes doubtful as well.
- Due to lack of 20-digit barcode usage, recording the details of all operational and administrative services process steps was not possible.
  - Due to lack of centralized gateways to data entry, performing financial calculations and other controlling and monitoring the processes such as income and quality control of service was not possible.
  - Postal fare and other deductions were calculated by affiliated companies that were not under the control of Post Co.
  - Due to lack of using 20-digit tracking barcode, accurate and complete parcel tracking for customers or buyers as well as control and management of service quality for the Post Co. was not possible.

After summarizing and analyzing the issues that stated, the main problems were related to the lack of a comprehensive and centralized informational system. According to the research, dependencies between corporate and informational systems cause to enhance the efficiency and effectiveness of business operations [28]. Electronic contribution between the organizations is one of the most powerful factors in creating value and is the most important business tool, as today Inter-organizational collaboration in e-commerce has been one of the most important tools to manage business to improve the competitiveness of enterprises, especially in complex and chaotic environments [21]. So the Post C. has designed a model to overcome the above problems. In designing the model the basic concepts of supply chain management, single window of trade and business transactions are used. Table 1 has explained these concepts in summery.

**Table 1:** Basic concepts used in Cargo Delivery Management Model

The basic concept	Definition
<b>Supply Chain Management (SCM)</b>	Supply Chain Management is about managing the physical flow of product and related flows of information from purchasing through production, distribution and Delivery of the finished product to the customer. This requires thinking beyond the established boundaries, strengthening the linkages between the supply chain functions and finding ways to pull them together [25]. The necessity to coordinate several business partners, internal corporate departments, business processes and diverse customers across the supply chain gave rise to the field of supply chain management [16]. One of the key elements of collaborative supply chain is the electronic information exchange among members of the chain [15]. In addition, information management and information systems of the supply chain can be built on many decision making of different parts of the supply chain is effective [7].
<b>single window of trade and Business</b>	Single window of trade is a trade facilitator that facilitates activities of different sectors involved in trade and transport by placing standardized information from a single point. If data exist electronically, import only once and hereinafter used the same data [12].
<b>business transaction</b>	Business transaction is the information exchange exactly between trading partners. A business transaction covers commercial transaction meanings between two business partners. These meanings follow trade cooperation protocol. A business transaction is always a binary collaboration. A business transaction detected by sending request from one side and response selective answer to the other side [21].

### 2.1. Cargo Management Design model

In different studies that have been done around the world and on different groups several factors were effective on online purchases, which are summarized as follows: Data quality, trust, financial and information security, privacy, ease of payment, ease of use, the company's reputation, compatibility, trade and transactions security, the prices of products and services, attractive appearance, layout and performance [24, 20, 34, 10, 8, 18, 2, 31, 5]. Cargo delivery management model with the concepts expressed in Table 1 and considering these factors was designed. The main subject in design of this model is to have a single point to enter and register all transactions. With this single point the management and control over all the information and processes is possible.

In addition one of the requirements of e-commerce is legal framework for implementation and one of the most important strategies for removing barriers to e-commerce uses safety and high speed electronic data interchange standards [3]. As shown in Fig. 2, in this model by using a web-based system and a relational database, a single window is created and the e-market systems are connected to this single window by using a web service. After purchasing in e-market system, for every purchase a separate transaction (by calling the web service) is registered in the system. On the other hand, the Web Service contains other methods by which information related to the cost of services (Accordance with Post Co. price list) or 20-digit tracking codes are returned to the e-market system.

Also a method is embedded in the web service that returns the last status of parcel in the Post Co. network to the e-market system. In addition, the system includes another web service that sends parcel information (such as origin, destination, weight, and type of service) to the Post Co. tracking system then receives a corresponding 20-digit tracking codes for it and sends it to the e-market systems. According to the designed model, the operational and administrative process of service reformed and completed as follows. Operational phases of the proposed model are shown in Figure 3. Remarkably similar model has been developed in other countries. Of course in designing of such models, issues such as governance structure and trade method, policies and structure of industry is also effective. For example, in Taiwan, a model known as "e-Business Logistic Model" is designed [9].

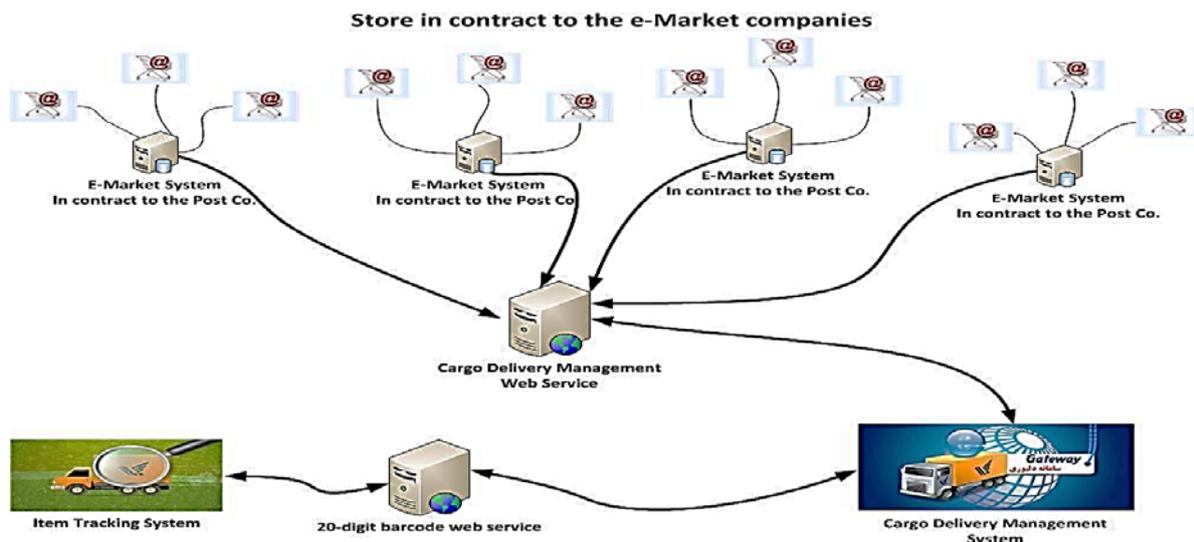


Fig. 2: The relationship between Post Co. cargo delivery management system components

This model has dimensions such as electronic markets, transportation, organizational analysis and information system.

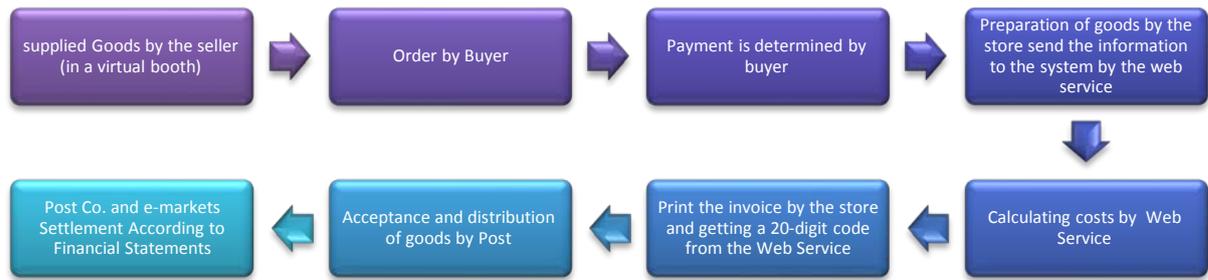


Fig. 3: Operational phases of the proposed Cargo Management System Model at a glance

### 2.2. Benefits of the model

Table 2 represents a gist comparison between the process of the old method and the corresponding process in designed model.

Table 2: Compares the proposed model with the traditional method

Features / functionality	Old method	Designed Model	Mechanism
Service Quality Management	Not possible	Possible	Since the request registered in the system from the beginning, So we can calculate the speed of service providing and duration of the parcel distribution.
Centralized Financial audit	For each market	Centralized	All financial transactions are registered in the system centralized and the full auditing for financial managers is possible. Financial management is done centralized by the system financial operators. For this purpose, two Special panels (financial operator and special supervising financial) were created in system. Pony criteria with contracting companies merely are system reports.
Customer Development	Limited	Unlimited	Because there is no need for Post Co. staff to visit the site of several e-markets in contract, we can increase the number of customers or e-markets indefinitely. In traditional methods the limitations to provide the service was the method to do it. But the new model will be limited to transportation and physical facilities.
Complete Parcel Tracking	Inaccurate	Accurate	Send information to the system when order register, and assign a 20-digit tracking code to the parcel, enabling full tracking from acceptance time by Post Co. until delivery time to the customer
Assigned Centralized 20-digit tracking code	Not possible	Possible	Generating 20-digit identification barcode just in time and assigned it to each parcel is possible by connect all markets centralized to the system.
Statistical and management reporting	Not possible	Possible	Due to the centralized database and registration all information in the system, the variety of statistical and management reports are provided to make strategic decisions.
Centralized database	Not possible	Possible	Since all requests sent to the system, a centralized database will be created to exploit.

### 2.3. Implemented Cargo Management System

After designing the model, a system base on it was implemented and operational. An important feature of this system is using Web service technologies for communication between e-market systems and the Post Co. cargo management system. This technology is a new generation of software production that allows programmer to create their programs as a service with different programming languages and publish on the Internet and Intranet. Web services are applications on the web, independent of their context, which can be called and executed [26]. Implementation of e-commerce systems using web services technology does not need high cost technical infrastructure [17]. Since this system is web-based, it is easy to take advantage of it on the public communication platforms such as the Internet, intranet and extranets. The only required communication protocol is Http 80 TCP port.

The system is made up of three main parts included:

1. Web application that makes up the main body of the program.
2. Centralized relational database that keeps all the information in the system.
3. Web services in order to communicate between e-market systems and cargo management system.

Also, the system to complete its processes used other web service to get the 20-digit tracking code. This web service was belonged to parcel tracking system. Parcel entity is the basic entity in the system that records movements and states of parcel in the country. Table 3 defines different states for this entity. Given that different users with different access levels work with the system, various panels have been implemented in the system, which included:

1. Province acceptance panel: Record Parcel destiny in relevant province areas of acceptance operation.
2. City acceptance panel: Record Parcel destiny in relevant city areas of acceptance operation.
3. Province distribution panel: Record Parcel destiny in relevant province areas of distribution operation and depositing receipt.
4. City distribution panel: Record Parcel destiny in relevant city areas of distribution operation and depositing receipt.
5. E-Markets panel: Recorded or extended stores, control parcel states and the demands of market.
6. Financial executor panel: Check the Receipt depositing of distribution units and settlement and billing for companies.
7. Financial observer panel: Control financial executor functioning.
8. Observer's panel: Overseeing the process of service operations from the perspective of the observer (Security, quality, inspection, and so on.).
9. Administrator panel: Record basic information (units, users, Prices, e-markets, stores and so on.), management of service performance in all units across the country.
10. Http service and web service: These two services complement each other. Doing operation such as cost calculation, generate and record order and report last state of the parcel status to contracting companies' site.

**Table 3:** Parcel status in cargo delivery management system

<i>Status</i>	<i>Description</i>
<b>Suspended in the store</b>	Parcels registered in the system and receive 20-digit bar code.
<b>Ready to Send</b>	Parcels that mark ready to send by stores and postman must go to collect them.
<b>Accepted</b>	Parcels collected from stores and acceptance unit registered them in its panel.
<b>Mistakes in ready to send</b>	When stores make mistake to change the parcel state to "Ready to Send"
<b>Absence</b>	When the postman go to the store but the store manager absence.
<b>Not Accepted</b>	Parcels accordance with the postal laws of the country is not distributable.
<b>Distributed</b>	COD and Online paid Parcels that delivered to buyers and deposit receipt recorded for them.
<b>Approved</b>	Parcels that cash receipt registered for them and financial unit accept them and financial admin sow them in its panel.
<b>Pony</b>	Parcels that financial admin pay its cost to the e-markets.
<b>Linger</b>	Parcels that postman two times try to distribute them and five days left in the distribution unit.
<b>Pre Returned</b>	Parcels that distribution unit returns to the acceptance unit.
<b>Final Returned <sup>4</sup></b>	Parcels that acceptance unit returns to the store. Pre Returned is a prerequisite for this state.
<b>Undecided</b>	Parcels that past 12 days of its acceptance, but did not change the status.

5. A state that set by the acceptance unit. After parcels delivered to the stores (sellers) state changed to "Final Returned". This state is a very important and Determinant for the financial calculation of the system.

In order to monitor and analyze data and make decisions about the status and performance of the system, various reports are designed and implemented. Reports for each panel with different access levels (the city, state and country) are included in each panel. In addition, you can filter reports according to the e-market, province, city, postal service, date and state of the parcel in the system. Some system reports included:

- Number of parcels in each state
- Calculation of parcel delivery duration (System quality report)
- The debit/credit status of e-markets
- the amount of incoming/export traffic to/from each province (for planning activities in each province)

Also monitoring the performance of the Post Co. operators in each unit is provided and physical inspection of the unit is no longer needed by analyzing these reports. This will save money and improve the overall performance of the executive.

### **3. Research Methodology**

The aim of the present research is functional development and the nature of research method is descriptive. In order to evaluate Post Co. web-based cargo delivery management system, extensive studies in the e-commerce fields, especially the B2B type, dimensions of designed cargo delivery management model and system implemented based on it in Post Co. was done. Also variety of software quality evaluation models was investigated then by selecting ISO 9126 model as the base model, the components and dimensions were thoroughly studied. At the third branch the strategic plan of the Post Co. [32], upstream document in Post field and as well as documentation of the universal postal union [14] in e-commerce were studied. Since the ISO 9126 quality model is a general model, evaluation criteria should be used based on the type of software.

So after a full understanding of the implemented system (as an effective component in evaluation of the model), the questionnaire was prepared. After knowing the implemented system completely (as an important component for evaluation the model) questionnaires were prepared. The questionnaire was developed from previous studies in this area and expert opinions were used as well. In order to evaluate the model in terms of improving processes and working conditions and increasing throughput, the data contained in a database system is used. In order to classification and information extraction, several indicators such as qualitative indicators, Indicators in the strategic plan of the Post Co. and also indicators of the universal postal union have been considered.

### **4. Evaluation of the model and implemented system**

This part will evaluate the designed model and its role in changing the service. As mentioned in section 3, this evaluation was carried out in two directions: 1-Cargo management system evaluation based on the designed model; 2-Analysis of existing data in the system database based on quality indicators and gauges of the strategic plan of the Post Co.

#### **4.1. Analysis of the questionnaire data**

Evaluation of the cargo delivery management system was done based on ISO 9126 software quality evaluation model. To do this, two types of questionnaires were prepared and presented to interviewees. The first questionnaire was answered by the system supporter group and the second questionnaire was answered by users of the system in the whole country. The first questionnaire (the system developer or supporter level) has 34 questions for the quantitative measurement of 25 sub qualitative characteristics (level II), The second questionnaire (system expert user-level) has 25

questions for the quantitative measurement of 15 sub-qualitative characteristics (level II) were designed. For quantitative determination of sub-characteristics five levels as LIKERT response set, which are calculated based on a scale of zero to four. The numerical value of each quality attribute (first level) based on the corresponding values from the calculation of the corresponding sub-characteristics are obtained. At the end, the ultimate quality of the system obtained based on the values of the six main qualitative characteristics. After sending questionnaires, 5 numbers of types I and 49 numbers of types II questionnaires were collected and analyzed. In addition, based on previous researches that have been done in this issue, the importance and weight of each of the six main characteristics of the ISO 9126 was survey from expert in two-levels, developer and user [6]. By taking into consideration the weight of each characteristics and applying the results of questionnaires collected, the final results shown in Table 4 were obtained. The results indicate that the system quality is acceptable.

**Table 4:** Final amount of the qualitative characteristics of the model from user and developer perspective

The main qualitative characteristics	The final amount of questionnaire	Developer perspective		Skilled user perspective	
		Weight	final amount	Weight	final amount
Functionality	3.06	0.25	19.13	0.3	24.64
Reliability	2.95	0.28	20.68	0.19	13.7
Usability	2.56	0.14	8.95	0.22	15.34
Efficiency	3.25	0.19	15.44	0.18	13.05
Maintainability	2.78	0.08	5.57	0.06	4.35
Portability	2.78	0.06	4.16	0.05	3.63
The system ultimate quality:	-	1	73.92	1	74.70

#### 4.2. Qualitative data analysis

Designing and launching cargo delivery management systems by Post Co. have several reasons. Perhaps the main reasons are the rapid development of the system and increasing throughput in the transportation and distribution of parcels. In table 5 a statistical comparison has been done on the functional level of the main parameters of service such as increasing the number of stores, number of e-Markets, parcel traffic and cash amount of parcels that accepted by Post Co. Since the possibility of detailed analysis and comparison of parameters before launch the system is practically impossible due to the lack of accurate and reliable information. Therefore in Table 6 these parameters have been compared from the first month of launching the system to the time of writing this paper. Contents arrangement presentation is based on the main indicators of quality as well as the Post Co strategic plan.

**Table 5:** Summary statistics comparing at service performance level

	Before launch	After launch	Description
Number of stores	2,460	6,435	Number of registered stores that its parcels will be collected by the post office
Number of e-Markets	8	33	Number of e-market companies that have contracts with the Post Co.
Number of Parcels	1,865,000	5,710,627	Acceptance parcels (of e-markets) by the Post Co.
Turnover (*1,000,000)	364,570	2,169,765	The total value of accepted parcels in RIALS by the Post Co.

**Table 6:** Indicators of evaluation model and cargo delivery management system

indicator	1 <sup>st</sup> . month	Written month	Description
Traffic growth rate	150,175	487,214	Growth of traffic and revenue in different month is related to conditions and factors such as holidays and economic and political conditions of the country. That must be considered in order to apply the right policies when data analysis.
Percentage	324%		
Revenue growth rate (*1,000,000)	48,480	197,110	
Percentage	406%		
Average of parcel acceptance time (days)	1.32	1.00	Average time from converting the parcel status to Ready To Send by the store until acceptance by Post Co.
Average of parcel distribution time (days) <sup>5</sup>	15.5	13.02	Average time from accept the parcel by post until deliver it to the customer
Uncertain parcels <sup>6</sup>	78	65	This is a qualitative indicators and use to control operational units. Now 2-month interval has been considered to determine these parcels by administrative units.
Percentage	0.05%	0.013%	
Receipt of funds (days)	26.01	16.01	The amount of time that the stores receive goods cost from Post Co. (distribute to settle). This is a quantitative indicators and use to transfer any cost received by the postman from the buyer in COD service quickly. Also record and confirm receipt of deposit by the financial operator of the system. As a result, electronics market companies and consequently stores will achieve their money sooner.
Register and send parcels in acceptance Panel	9,132	5,563	This is a qualitative indicators and use to control operational units' performance. Lack of proper done cause inability to correct track the movement of parcel, the impossibility of measuring quality parameters such as travel speeds of parcel.
Percentage	6%	1.1%	
Number of returned parcels <sup>7</sup>	8,776	185,076	These indicators are operational and qualitative indicators that very important role in the oversight of the system operation to prevent potential infractions and should be carefully monitored.
Percentage	5.8%	37.9%	
Returned registration	3	5,886	
Percentage	0%	1.2%	

6. To evaluate the quality of service this parameter measured at various stages of quadruplet (accept, exchange, travel and distribution) parcel movement in the Post Co. This criterion distinguishes the postal service (such as Normal, Custom, Pioneer, and so on.). Whatever this time is shorter the cost increases. In the definition of e-commerce one of the factors that influence the acceptance and success of e-commerce are discussed, more shorten travel time of parcel.

7. Parcel that after 12 days of accepting will not determine the final status. In this case, the parcel status turned to the "uncertain" and placed in a distribution panel.

8. After setting up the system and observed a high rate of return parcels, Subject was investigated by regulatory units and it became clear that the business model for some companies sending unsolicited parcels for customer, in some competitions such

<b>Number of parcels in Waiting counter before return<sup>8</sup></b>	898	53,415	This is a qualitative indicators and use to control operational units. Whatever this value is larger and closer to 100% indicates better performance of the operational units.
<b>Percentage</b>	0.59%	10.9%	
<b>Number of waiting counter parcel referred</b>	0	1,043	Number of parcels in the waiting counter that the buyers refer to receive them.
<b>Percentage</b>	0%	0.21%	

## Conclusions

As mentioned, the purpose of this study was to evaluate the web service based model for cargo delivery management of Iran's e-markets. This model of e-commerce is classified in business to business. As the performance of the B2B application is one of the key success factor in inter organizational e-commerce, the results of the analysis are presented in Table 4, showed that the implemented system has a good quality match with the ISO 9126 software quality evaluation standard. Since at time of system implementation, most attention was focused on throughput and rapid scalability, some items such as customization, of the second level feature of efficiency of the main feature, is not considered and has a low priority. Correct, accurate and timely information is expressed as another factor affecting the success of B2B e-commerce. Creating a coherent and centralized database enables fast auditing and improves financial cycle of the service, receiving multiple reports in order to take strategic decisions for the Post Co. managers and e-markets. The results of Tables 5 and 6 which have been presented in accordance with qualitative indicators of the Post Co. the significant increase in traffic and consequently the revenue can be observed. More important, higher financial value growth rate compared to traffic of goods that will be absorbed and transmitted by the system, and reflects the fact that customers purchase more expensive goods than in the past, in other words, trust and acceptance of e-commerce increased through the use of a system that gives them accurate data on the status of their purchasing. In addition, analyzing the reports and the information contained in the system represents another positive impact on the implementation of the model that included: Improve the travel time of acceptance and distribution, perform faster pony with e-markets and consequently to the store, observing the law of waiting counter and increasing not return parcels fast for maximum distribution, improving the situation of distribution and reducing the number of returns and reducing undeliverable parcels in the postal network, full parcel tracking from acceptance to distribution and control and optimization the parcel travel time for the time commitment in sending a parcel.

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as SMS. In this way, the buyer without seeing the goods and just because of seller advertise request it and after shipping and see it to get refuse.

9. Waiting Counter is a postal term refers to the point or place of distribution. After the two time attempting to distribute the parcel and unable to deliver it to customers, the parcel is delivered to the Waiting Counter. At the beginning of launch the service parcel was directly back but for now parcel put in the Waiting Counter 5 days, if the buyer did not refer to get it, the parcel will be returned to the seller.

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