E-Business Qualitative Criteria Application Model: Perspectives of Practical Implementation

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Abstract

Constantly changing business environment makes the traditional business switch to electronic. One of the main problems in the development and implementation of e-business is e-business qualitative criteria uncertainty. Quality is a very important objective for both – business and customers. But there are no e-business qualitative criteria centrally and systematically analysed and defined in the theory, the selection as well as the evaluation of these criteria are not clear. There is discussed and analyzed question of creating e-business qualitative criteria. In this paper. The aim of the paper is to create e-business qualitative criteria, to analyze the possibilities of their application and propose e-business qualitative criteria application model. The objectives are – to analyze theoretical aspects of e-business qualitative criteria creation and application; carry out a qualitative survey of e-business experts and analyze it’s data; analyze e-business qualitative criteria application model implementation possibilities and perspectives. Theoretical aspects of e-business qualitative criteria include e-business qualitative criteria formation guidelines. There were defined 4 e-business qualitative criteria: matching the value curve; orientation to the customer; information and data quality; creativity. The paper relies on scientific literature analysis, the qualitative research method and the method of dynamic modeling are applied as well. Also, there is carried out the theoretical narrative, systematic, comparative analysis. After analyzing theoretical aspects of e-business qualitative criteria, conducting e-business experts qualitative opinion survey and proposing e-business qualitative criteria, there was created a model of their application. E-business qualitative criteria application model includes the input – start of e-business, answering to added value curve questions, customer satisfaction analysis, the information, data quality analysis, level of creativity. After analyzing business in accordance with all e-business qualitative criteria, it can be seen what needs to be improved, and the direction in which to do so, because the output (high-quality e-business) will be achieved only when e-business in great extent or completely satisfy these criteria.

Key Words

E-business, E-business qualitative criteria, E-business qualitative criteria creation, E-business qualitative criteria application model.
I. Introduction

Retail market will change more in the next five years than have changed over the last twenty. These changes lead to full e-business development [6]. Over more than a decade e-business has become a rising phenomenon that has affected many industries structure [10]. Businesses simply must transform to e-business in order to survive in the knowledge-based economy and market [22]. For the companies in the age of the new economy it is important that elements of e-business system would be included in their management system [21]. Constantly changing business environment makes the traditional business switch to electronic. But there are not created e-business qualitative criteria, possibilities of their application are undetermined. In this article there will be discussed a little-analyzed question of e-business qualitative criteria creation and application.

Scientific issue. One of the main problems in the development and implementation of e-business is e-business qualitative criteria uncertainty. Quality is a very important objective for all business and customers. Quality is exclusivity, differentiation of e-business [19]. Without knowing the exact e-business qualitative criteria, it is difficult to develop the business itself, it is difficult to determine, what is needed to achieve and what criteria should be assessed by business. According to this, it is possible to determine the derivative problem – in academic sources and practice there are not generally set e-business qualitative criteria, there is no analysis of their application.

Object of the research. E-business qualitative criteria creation and application.

Purpose - after analyzing theoretical aspects of e-business qualitative criteria creation and application, to create e-business qualitative criteria, analyze the possibilities of their application and propose e-business qualitative criteria application model.

There have been set the following objectives for the above-mentioned purpose to be achieved:

1. To analyze theoretical aspects of e-business qualitative criteria creation and application;
2. To carry out a qualitative survey of experts and analyze its data, which, through expert knowledge, will let find out the main issues arising from the implementation of e-business, choose the criteria that can be used for measuring e-business quality;
3. To propose e-business qualitative criteria application model.

Methodology - the paper relies on scientific literature analysis, the qualitative research method and the method of dynamic modeling are applied as well. The work carried out theoretical narrative, systematic, comparative analysis. A qualitative expert opinion survey was carried out interviewing 9 e-business experts. The experts’ opinion was sought to analyze by a standardized interview or questionnaire form. Kendall’s concordance coefficient was calculated by Statistical Package for the Social Sciences (SPSS) program. After analysis of e-business qualitative criteria creation and application, there was created a model.

Practical significance. Practical significance reflects analyzed and experts distinguished the most important e-business qualitative criteria, suggested model of e-business qualitative criteria application. This information can be used in the implementation of quality-oriented e-
business. E-business quality, qualitative criteria are little researched area, so the results can be the basis for more efficient e-business development.

II. E-BUSINESS QUALITATIVE CRITERIA FORMATION GUIDELINES

In terms of e-business quality (focusing on the purchase of goods and services in electronic shops) there could be identified two important questions [23]:

- What are the dimensions of quality, features that attract users to the website and make them come back again?
- What are the steps to carry out for the business to ensure, that their websites would differ from their competitors, so that users could be sure that they are getting greater value from them?

It is important to focus attention on the customer's perspective, highlight the key requirements to ensure customer satisfaction [23]. These requirements is defined in figure below (see Figure 1). It is argued that customer satisfaction is based on the following aspects:

- Easy to use (Website Design)
- How does the website look like?
- Customer confidence (How is guaranteed?)
- Direct resources (ability to offer and deliver products and services)
- Bridging services (how is interacting with customers and maintaining their loyalty?)

![Customer satisfaction diagram](image)

There are three types of requirements that must be met by e-business in order to fit the needs of customers. There are performance-expected, basic-must requirements that the customer immediately expect these requirements to be fulfilled by e-business and delight-excitement features, that creates an additional, more satisfaction to the customer. Currently, customer orientation is the basis for achieving business goals. It is believed, that interacting with customers helps to expand the profitable business opportunities [5].

In the rapidly growing e-business, organizations in the open environment are required to cooperate to achieve certain goals related to their business model. In such an open environment, the privacy of organizations becomes a critical challenge [1]. In terms of e-business quality, the quality of information is important, because it determines customer perception of goods or services quality. There are presented the data quality dimensions [18], (see Table 1).

**Table 1. Data quality dimensions. Source: Koronios, Xu, 2005, p.74.**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility</td>
<td>The extent to which data is available, or easily and quickly retrievable.</td>
</tr>
<tr>
<td>Appropriate amount of data</td>
<td>The extent to which data is appropriate for the task.</td>
</tr>
<tr>
<td>Believability</td>
<td>The extent to which data is regarded as true and credible.</td>
</tr>
<tr>
<td>Completeness</td>
<td>The extent to which data is not missing and is of sufficient breadth and depth for the task.</td>
</tr>
<tr>
<td>Concise Representation</td>
<td>The extent to which data is compactly represented.</td>
</tr>
<tr>
<td>Consistent Representation</td>
<td>The extent to which data is presented in the same format.</td>
</tr>
<tr>
<td>Ease of Manipulation</td>
<td>The extent to which data is easy to manipulate and apply to different tasks.</td>
</tr>
<tr>
<td>Free-of-Error</td>
<td>The extent to which data is correct and reliable.</td>
</tr>
<tr>
<td>Interpretability</td>
<td>The extent to which data is correct and reliable.</td>
</tr>
<tr>
<td>Objectivity</td>
<td>The extent to which data is unbiased, unprejudiced, and impartial.</td>
</tr>
<tr>
<td>Relevancy</td>
<td>The extent to which data is applicable and helpful for the task at hand.</td>
</tr>
<tr>
<td>Reputation</td>
<td>The extent to which data is highly regarded in terms of its source or content.</td>
</tr>
<tr>
<td>Security</td>
<td>The extent to which access to data is restricted appropriately to maintain its security.</td>
</tr>
<tr>
<td>Timeliness</td>
<td>The extent to which data is sufficiently up-to-date for the task at hand.</td>
</tr>
<tr>
<td>Understandability</td>
<td>The extent to which data is easily comprehended.</td>
</tr>
<tr>
<td>Value-added</td>
<td>The extent to which data is beneficial and provides advantages from its use.</td>
</tr>
</tbody>
</table>

These dimensions of quality are the main requirements to be met by the data, information in e-business – to be reliable, quick to find, easy to understand, helping to carry out the task. There can also be identified 3 dimensions of information quality [15] (see Table 2).


<table>
<thead>
<tr>
<th>Dimension</th>
<th>Meaning</th>
<th>Constructs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>This dimension deals with the intrinsic information content issues that are geared toward providing users with accurate, relevant, and complete information, thereby addressing primarily problem of irrelevant information in e-business systems.</td>
<td><strong>Information Accuracy:</strong> Freedom from mistakes in the information content and hyperlinks provided within Web pages.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Information Relevance:</strong> Pertinence to users' interests of the information content and hyperlinks provided within Web pages.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Information Completeness:</strong> Availability as needed of the information content and hyperlinks within Web pages for users to complete specific tasks in an effective manner.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presentation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Form</td>
<td>This dimension deals with information presentation issues that are geared toward enhancing users' cognition, thereby primarily addressing the problem of cognitive overhead.</td>
<td><strong>Interface Structural Quality:</strong> Primarily comprises interface consistency and structural awareness. Interface implies consistency in the structural arrangement and style of information content and hyperlinks within an e-business application.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Information Packaging Quality:</strong> Refers to how effectively a variety of information in various media types is packaged within the Web interface for presentation to users. Includes the amount and cohesiveness of information content and hyperlinks presented within the interface, and semantic relationships among them.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Information Accessibility:</strong> Refers to the ease and efficiency with which a user can navigate within an e-business application to access and retrieve desired information.</td>
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</tr>
<tr>
<td>Time</td>
<td>This dimension deals with information delivery issues that are geared toward providing users' better control over temporal aspects of their actions thereby providing them with a sense of temporal orientation and, thus, addressing primarily the problem of disorientation in e-business systems.</td>
<td><strong>History Maintenance Quality:</strong> Refers to the flexibility and comprehensiveness of features that an e-business application provides to its users for specifying and maintaining history of user actions and data and system states of the application.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Information Delivery Quality:</strong> Refers to the flexibility and comprehensiveness of features that an e-business application provides to its users for specifying and controlling the temporal relationships among the various hypermedia components for effective delivery of integrated hypermedia information to users.</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Information Currency:</strong> Refers to the temporal accuracy of information content and links on Web pages.</td>
</tr>
</tbody>
</table>

*Table 2. Information Quality Dimensions. Source: Jin Kim et al., 2005, p. 78.*
Information quality dimensions is defined by the content, form, time, however, the composition of information quality dimensions reminds data quality dimensions.

The Internet has brought the free access to information. Information is obtained much faster, but there are problems related to information security and data quality maintenance [8]. In terms of e-business quality stressing the importance of quality, there could be added the system and the quality of services as an important element [28]:

- The quality of information - website content, the completeness, clarity, format. The user can get the right information about the product supplier.
- System quality - defines e-business systems desired characteristics: usability, reliability, feedback, availability, timeliness.
- Service quality - fast responsiveness, reliability, empathy, focusing on consumer in sales of goods or services.

There could be emphasized not only the information and data quality importance in e-business, but also the importance of safety and security [13]:

- Information security - a key tool to remain competitive against the other is to ensure the security, integrity and secure business communications and customer information. The basic principle is to ensure, that any sent information would reach its recipient. Information security is also important in order to gain a competitive advantage in an ethical and legal compliance. Unauthorized communication of content, malicious communication on behalf of organization is only some of the risks related to information security and can cause damage to business reputation, financial loss, loss of confidence and loss of information.
- Data protection – e-business must comply with all laws relating to data protection. It should ensure, that the data processing operations would be carried out in accordance with the law:
  - Fair and lawful processing of data;
  - Data collection and further processing only to the legitimate objectives of the case;
  - To maintain personal data collection and processing of the adequacy and appropriateness;
  - To maintain accuracy;
  - To store data for longer than is really needed;
  - Appropriate measures are taken to ensure data protection;
  - The data shall not be transferred to third parties, unless they ensure data security.

Many authors identify the data and information quality importance in terms of e-business quality. This may be one of the most important criteria for analyzing e-business quality.

Another very important aspect, which can be associated with e-business quality - creativity. In a broad sense, creativity can be defined as the ability to develop new ideas [14]. In e-business case analysis, there occur 3 possibilities for creativity to reveal [14]:

• Comparative analysis of domestic industry (through their culture) - there could be supposed, that e-business in Germany sells a variety of goods online and want to improve their performance. In particular, it will examine other similar e-business situation in Germany. A comparative analysis of their culture will let understand the level of competition, the business will find some creative ideas that enhance the competitive edge.

• Comparative analysis of domestic industry (within their own culture) - the same e-business in Germany is looking for new creative ideas and go out of their cultural boundaries. Perhaps looking to countries, where e-business development has more experience, where to find the model, options that are available to customize e-business.

• Inspiration that comes from other industries - most significantly more creative ideas comes analyzing e-business that specialize in other activities than the example e-business in Germany, which sells a variety of goods online. There can be analyzed a completely different e-business, such as financial services or media. Clearly adapt best practice in this case is more difficult, requires more effort.

All of these options appear in the figure below (see Figure 2).

FIGURE 2. SEARCH FOR NEW IDEAS WITHIN THE DOMESTIC INDUSTRY AND OTHER INDUSTRIES. SOURCE: JELASSI, ENDERS, 2005, P. 43
In 1998 W. Ch. Kim and R. Mauborgne had already written about new business opportunities to raise the quality. They introduced business value curve (see Figure 3), which is based on the answers to four questions [17]:

- What factors need to be reduced?
- What factors should be raised above the standard?
- What factors, which are considered to be granted, should be canceled?
- What should be created, that no one has not proposed so far?

Although the value curve has been introduced and adapted to the traditional business, it can be used to analyze the modern e-business [7]. The main value delivered from using the internet is improved brand and/or product awareness [30]. Electronic business has dramatically changed consumers' purchasing and buying behaviors [12]. For example, Amazon can be identified as the creator of the new value curve, because when analyzing Amazon online shop, following four questions can be answered [7]. Amazon has always been focused on providing high quality services to customers [16]. It has expanded the range of books. Amazon does not limit its strategic partnerships to suppliers and distributors, but also engages in alliances banks that offer Amazon a credit card which also adds value to customer relations [9]. Also, Amazon created helpful reviews system that offers greater potential value to customers [24]. Much of the company's success depends on the fact that it was able to create a strong name of Amazon company [11].

In terms of e-business systems the quality can be emphasized through the following criteria [26]:

FIGURE 3. VALUE CURVE. SOURCE: KIM, MAUBORGNE, 1998, P. 85
Activities - from e-business there is expected to respond quickly to user requests, despite the large number of transactions carried out. The activity will also determine the time at which all requests are served. It can be measured in performance, response time, turnaround time, efficiency.

Availability - system is able to provide continuous service to its customers. The term is related to system failures and how quickly the failure is removed.

Scale - this is the system's ability to expand its operations in accordance with the requests of customers, transactions, while maintaining the same performance. This is the system's ability to adapt to economic growth. It is important that the e-business model could be expanded, because there is a lot of growth potential in the online market.

Security - concerns the confidentiality, authentication, authorization, encryption and access control. E-business can apply different security policies depending on the service requests. There is a growing concern about security in e-business, where the service is delivered over the public internet.

Integrity - data plays an important role in e-business operations. Data integrity has gained considerable importance. Preserve the integrity of data is very important. Honesty is the system's ability to prevent unauthorized access or modification of data. Data integrity can be compromised when the system crashes, errors are committed by individuals, viruses or hackers.

Interoperability - measures the degree to which e-business service can interact with clients and servers and to be implemented in different languages and/or on different platforms.

Fault tolerance - it is the system's ability to operate at partial failure. For operations workloads, it is the system's ability to recover from failure without loss of data or updates of recent transactions.

Competitiveness - it is the system's ability to carry out several independent consumer orders simultaneously. Competitiveness is the capacity of the system to withstand various types of applications of varying load conditions.

Reliability - is the system's ability to keep the load of sequels, working an acceptable level of performance. Reliability depends on various factors, such as memory usage, performance and response time. Reliability is a common tool for the system to maintain quality of the service and is associated with failures per unit of time.

Resistance - measures the degree to which e-business is still able to process properly in the face of misleading input.

E-business is constantly changing and improving, the quality can be assessed with a variety of aspects. There is presented the 10 trends that will affect e-business in the future [3] (see Table 3). Most are specifically targeted to the user's satisfaction.

<table>
<thead>
<tr>
<th>No.</th>
<th>Trend</th>
<th>What is the Trend?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Collective intelligence</td>
<td>When a customer visits a site - a shopper's persona is defined within a few interactions.</td>
</tr>
<tr>
<td>2.</td>
<td>Social network integration</td>
<td>Integrating a &quot;share&quot; button enables users to share content to their social networking site.</td>
</tr>
<tr>
<td>3.</td>
<td>Mobile sites</td>
<td>A dedicated mobile site experience is a must.</td>
</tr>
<tr>
<td>4.</td>
<td>Location based tie-ins</td>
<td>GPS capabilities of mobile devices usher in a new era of exciting cross-channel promotion capabilities.</td>
</tr>
<tr>
<td>5.</td>
<td>Experiential user interface</td>
<td>Beyond simply being easy to use, modern ecommerce sites for innovative brands can be experiential and immersive.</td>
</tr>
<tr>
<td>6.</td>
<td>Contextual visualization</td>
<td>Shoppers increasingly expect to visualize how a product will fit into their life and style.</td>
</tr>
<tr>
<td>7.</td>
<td>Dynamic grid expansion and liquid layouts</td>
<td>Utilize liquid layouts to automatically size your product display based on the shoppers' resolution.</td>
</tr>
<tr>
<td>8.</td>
<td>Minimize UI cruft</td>
<td>Shoppers come to your site to see your products, not your fancy navigation systems.</td>
</tr>
<tr>
<td>9.</td>
<td>Rich DHTML and AJAX</td>
<td>Instead of having to reload a page every time the shopper clicks, these technologies enable a world of rich interactions (instantaneously).</td>
</tr>
<tr>
<td>10.</td>
<td>Get textual</td>
<td>With the advent of HTML5 and font-serving technologies such as TypeKit, the web designers' typographic palette has been opened up as never before.</td>
</tr>
</tbody>
</table>

Various authors often write about e-business quality. In summary, the most frequently mentioned criteria relating to e-business is customer orientation; information, data quality; creativity. These criteria in one way or another usually encounter in analyzing the scientific literature related to e-business quality. It is hard to understand, which could be the most important criteria, so in experts survey, they will be asked to pick out, which criteria is the most important.

III. Research on E-Business Qualitative Criteria Creation and Application

A. Research Methodology

An expert qualitative opinion survey was carried out in which nine e-business experts were interviewed. There has been chosen qualitative research method, because qualitative research adopters argue that in this way the data obtained further information about the object rather than from quantitative studies [29]. The experts have personally been given a questionnaire, there was a direct interaction about the form-related issues.

The study was conducted by interviewing a variety of e-business experts. There were interviewed 9 following experts:

- JSC "Exacaster" Chief Data Analyst;
- "Adbox" CEO;
• “Metasite Business Solutions” Data Analyst;
• “Metasite Business Solutions” Sales Manager;
• JSC “Pigu.lt” Marketing Project Manager;
• “Getjar Inc” Advertising Sales Manager;
• JSC “Antigravity Payment Systems” Marketing and Communications Specialist;
• JSC “Antigravity Payment Systems” Corporate Manager;
• JSC “EVP International” Development Manager (for foreign markets).

Selected exactly this number of experts, because it is an acceptable number of experts in the methodological assumptions formulated in classical test theory. The theory states, that the aggregate decisions reliability and decision-making (in this case, the expert) number links quickly extinguishing a nonlinear relationship (see Figure 4). There is evidence that the aggregate expert assessment modules with equal weights in small group of experts, judgments and assessments do not yield high expert group decision evaluation and accuracy [20, 4].

There could be seen that the accuracy of the estimates and judgments are sufficiently large, when the number of experts reaches 9. After this number, rising of accuracy is slight so 9 experts is enough to get precise information.

Before analyzing the obtained data there was clarified expert opinions compatibility. Two experts can assess the compatibility of quantitative correlation. If the number of experts are more than two, the group of experts compatibility level indicates Kendall’s concordance coefficient [25]. With Statistical Package for the Social Sciences (referred as SPSS) program Kendall’s concordance coefficient was calculated. If the opinion of experts is coordinated, concordance coefficient W value is close to the 1, if they differ W value is close to 0 [25]. Since resulting figure is closer to 1 than 0, it is concluded that the expert opinion is sufficiently coordinated. The resulting Kendall coefficient of concordance: W = 0.707 (see Table 4).
TABLE 4. Top 10 Kendall's coefficient of concordance

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>Friedman's Chi-Square</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between People</td>
<td>4.259</td>
<td>8</td>
<td>.532</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within People</td>
<td>46.759</td>
<td>5</td>
<td>9.352</td>
<td>34.030</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>15.074</td>
<td>40</td>
<td>.377</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>61.833</td>
<td>45</td>
<td>1.374</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>66.093</td>
<td>53</td>
<td>1.247</td>
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</tbody>
</table>

Grand Mean = 2.8704

Since the resulting figure is closer to one than zero, it is concluded that the expert's opinions are fairly coordinated.

B. Research Data Analysis

In 1998 W. Ch. Kim and R. Mauborgne has already written of new business opportunities to raise the quality. They introduced business value curve (see Figure 3), which is based on the answers to four questions [17]. The experts were asked whether they agree with the statement that in order to develop e-business and seek for the highest quality, there would be able to use the value curve and create e-business primarily answering to these four questions (see Figure 5).

![Figure 5](image)

**FIGURE 5. EXPERTS OPINION IF THERE WOULD BE ABLE TO USE THE VALUE CURVE IN ORDER TO DEVELOP E-BUSINESS AND SEEK FOR THE HIGHEST QUALITY**

There could be seen that the 5 experts agreed with this statement, 4 partially agreed.

Another relates to the previous question - what else questions should be answered (excluding that 4 in value curve) in order to develop e-business and seek for the highest quality.
Experts declare that in order to develop e-business and seek for the highest quality, there should be answered and these following questions:

- **Encouraging.** How to make the purchasing process more enjoyable and create natural feeling to the buyer? There have been distinguished a great example of Apple's AppStore or Google PlayStore, where applets acquisition is resolved incredibly easy and comfortable, while the Amazon multisite is still missing it.
- **Does it solve some kind of problem?** Is there a high human cost? Could this be a solution, which will use most people?
- **How to reduce people's fears?** For example, Lithuanians is still afraid to buy online, do not trust e-shops, do not believe that the goods will be delivered on time.
- **How to make payment convenient?** It was emphasized that e-stores that use the One-Click, or Single-Click buying (Amazon, Apple) make the buying more convenient for customers. Also important is the method of procurement and security. Usually customers will choose a store, which allows pay through PayPal.
- **Educate - how to ensure that the audience understands the value and to eliminate the fear barrier that prevents the audience from buying in e-shop?**
- **Present - how to make everything so attractive, that users cannot resist and purchase product/service?**

After considering expert answers, there can be added more questions to the value curve that should be answered in order to develop e-business and seek for the highest quality (see Figure 6).

![Added Value Curve Diagram](image)

**FIGURE 6. ADDED VALUE CURVE**

After analyzing theoretical aspects of e-business quality, there were defined 4 e-business qualitative criteria:
- Matching the value curve (see Figure 3);
- Orientation to the customer;
- Information and data quality;
- Creativity.

The experts were asked to distinguish, which e-business qualitative criteria is the most important (see Figure 7).

![Figure 7](image_url)

FIGURE 7. EXPERTS OPINION ABOUT WHICH E-BUSINESS QUALITATIVE CRITERIA IS THE MOST IMPORTANT

There could be seen, that most experts (5 experts) believe, that the most important e-business qualitative criteria is orientation to customer, 3 experts believe that it is also important information and data quality.

The experts survey helped to define, if there would be able to use the value curve in order to develop e-business and seek for the highest quality, what else questions should be answered (excluding that 4 in value curve), which e-business qualitative criteria is the most important.

**IV. CREATION OF E-BUSINESS QUALITATIVE CRITERIA APPLICATION MODEL**

**A. Modeling Methodology**

After proposing e-business qualitative criteria, it is useful to create a model of their application. Models can be divided into the mathematical, statistical and qualitative [27] (see Figure 8).
In this case, there will be created a qualitative model using the qualitative process descriptions. In developing any model there is certain rules. Each model’s performance is independent, but can work with other processes. Each process consists of a number of resources, activities and information. It is important to determine the pattern of the input and output. No activity will not begin without the inputs, while the output is the result of the model [2] (see Figure 9).

Described rules has been used in creating e-business qualitative criteria application model.
B. Model Analysis

E-business qualitative criteria application model (see Figure 10) starts from the input - in this case the entrance is starting e-business. When launching e-business, after forming some idea, firstly it is important to answer to added value curve questions. After answering to these questions there will be clear, how e-business will differ from others, what value will create for the customers and so on. Further there should be carried out customer satisfaction analysis. It is best to do this analysis after creating e-business website, analyzing, how it is focused on the customer. The website should be analyzed by using 24 customer-oriented criteria. Moreover, the information, data quality analysis can be done. Finally, it is important to determine e-business level of creativity. The highest level of creativity is reached only after a longer e-business existence, but it can be used as a guide to help develop e-business. After analyzing business in accordance with all e-business qualitative criteria, it can be seen what needs to be improved, and the direction in which to do so, because the output (high-quality e-businesses) will be achieved only when e-business in great extent or completely satisfy these criteria.
Input: start of e-business

Output: high quality e-business

Answers to added value loop questions

Orientation to customer

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content</td>
<td>Information Accuracy</td>
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<td></td>
<td>Information Completeness</td>
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<td>Appropriate amount of data</td>
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<td>Understandability</td>
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<td>Form</td>
<td>Interface Structural Quality</td>
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<td>Time</td>
<td>History Maintenance Quality</td>
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<td></td>
<td>Information Currency</td>
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</table>

Information, data quality

Creativity

FIGURE 10. E-BUSINESS QUALITATIVE CRITERIA APPLICATION MODEL. SOURCE: COMPILED BY THE AUTHORS
C. Model application possibilities and perspective

E-business qualitative criteria application model (see Figure 10) possibilities occurs when there is a wish to build as much as possible to the quality oriented e-business. Since there is no universally accepted e-business qualitative criteria, which can be used as a guide through the launch of e-business, this e-business qualitative criteria application model could be used for the development of quality-oriented e-business.

E-business qualitative criteria application model possibilities can be divided into two parts:

- To rely on this model in early stages of e-business. Then the model becomes applicable from the input. When launching e-business, after forming an idea firstly it is important to answer to added value curve questions. Further there should be carried out customer satisfaction, the information, data quality analysis. Finally, it is important to determine e-business level of creativity. After all the analysis, it will be clear what to do, what requirements must be met in order to further develop a high quality e-business.

- To rely on this model improving an existing e-business. Then e-business analysis based on all e-business qualitative criteria should be done in order to find the requirements that e-business does not meet and improve it. The highest quality will also be achieved when e-business will meet all e-business qualitative criteria requirements.

Any model perspective gets the answer to three basic questions: what is done? How is done? Who does? [2] (see Figure 11). When applying e-business qualitative criteria application model (whether it applies in early stages of e-businesses or in existing business in order to improve it), there should be answered the following questions.

![Figure 11. Modelling Perspectives. Source: Aytulun, Gunerı, 2008, p. 2746.](image)
The most common answer to the question what is done? (this is the object) is what you need to improve. In e-business qualitative criteria application model case, this would be e-business qualitative criteria and its requirements, which analyzing e-business does not fit. The answer to the question of how is done? (this is an activity, that needs to be carried out) in this case it would be activities that should be carried out in order to meet e-business qualitative criteria and its requirements. The answer to the question who does? (this is the role of the person who will perform the work) in e-business qualitative criteria application model case this would be the person who will carry out the activities necessary to make in order to meet e-business qualitative criteria and its requirements.

In summary, it can be concluded, that e-business qualitative criteria application model possibilities reveal in two ways - when it is applied in early stages of e-businesses or in existing business in order to improve it. When analyzing e-business qualitative criteria application model perspectives there should be answered 3 basic questions: What is done? How is done? Who does? After answering to these questions, it becomes clear e-business qualitative criteria application object, activity and role.

V. CONCLUSION AND RECOMMENDATIONS

1. Theoretical aspects of e-business qualitative criteria include e-business qualitative criteria formation guidelines. After analyzing theoretical aspects of e-business quality, there were defined 4 e-business qualitative criteria: matching the value curve; orientation to the customer; information and data quality; creativity. It is important to focus attention on the customer’s perspective, highlight the key requirements to ensure customer satisfaction. In terms of e-business quality, the quality of information is important, because it determines customer perception of goods or services quality. Creativity can be associated with e-business quality. In e-business case analysis, there occur 3 possibilities for creativity to reveal.

2. An expert qualitative opinion survey was carried out in which nine e-business experts were interviewed. Before analyzing the obtained data there was clarified expert’s opinions compatibility. The survey data analysis showed that in order to develop e-business and seek for the highest quality, there would be able to use the value curve and create e-business primarily answering four questions defined in this curve. Experts declare that in order to develop e-business and seek for the highest quality, there could be added more question to the value curve. Also, the survey data analysis showed that the most important e-business qualitative criteria is orientation to customer.

3. After proposing e-business qualitative criteria, there was created a model of their application. The model was created using the qualitative process descriptions. E-business qualitative criteria application model starts from the input - start of e-business. When launching e-business, after forming some idea, firstly it is important to answer to added value curve questions. Further there should be carried out customer satisfaction, the information, data quality analysis. Finally, it is important to determine e-business level of creativity. After analyzing business in accordance with all e-business qualitative criteria, it can be seen what needs to be improved, and the direction in which to do so, because the output (high-quality e-business) will be achieved only when e-business in great extent or completely satisfy these criteria. E-business qualitative criteria application model possibilities occur when there is a
wish to build as much as possible to the quality-oriented e-business. E-business qualitative criteria application model implementation possibilities can be divided into two parts: to rely on this model in early stages of e-business or rely on this model improving an existing e-business. Any model perspective gets the answer to three basic questions: what is done? How is done? Who does? The answers to these questions would help to clarify finally the e-business qualitative criteria application object, activity and role.

REFERENCES


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