

Examining the Relationship between the Benefits of using ITIL in E-Banking and its Role in Creating Value for Customers

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Abstract

Background/Objectives: Information Technology Infrastructure Library (ITIL) is a set of best guidelines for the definition, design and implementation of IT service management processes, and is currently the most widely accepted standard in IT service management. **Methods/Statistical Analysis:** In this paper, it is tried to examine the impact of ITIL based e-banking and the creation of customer value. For this research, 100 employees and managers of Iranian state banks that have used the standard ITIL were selected as sample. The regression and Spss software is used to investigate the test hypothesis. **Finding:** The use of regression analysis to analyze the relationships between independent variables and the dependent variable is possible in E-bookings. It is demonstrated that there was a significant relationship between the benefits of implementing ITIL and ease of use, being beneficial and reducing the costs; however there was no relationship between the advantages of implementing ITIL and automating the processes. **Conclusion/Application:** There exists a significant relationship between the e-banking and the creation of customer value. Finally, the effectiveness of the using ITIL in e-banking and improving customer's satisfaction are presented.

Keywords: Automate Processes, Benefits of Implementing ITIL, Customer Value, E-Banking, Regression

1. Introduction

In today's very competitive business environment, the effective and innovative use of Information Technology (IT) has a positive impact on organizational performance and will positively influence the transformational business. Studies have shown that intensive use of IT knowledge, especially with consistent business strategy can create many opportunities facing the organization and gave it a real advantage. A good and relatively unavoidable method for measuring IT performance should be along with a review of all aspects of IS and IT, including software, data, networks, organization and key business processes. The primary objective of audit Information System (audit IT) is the correct and systematic peer review of IT performance measurement to warn about the risks and possible omissions and check the quality of the company's information system. Companies can periodically examine

their IT performance standards established by global frameworks such as Control Objectives of Information and related Technology (CobiT), IT Infrastructure Library (ITIL), ISO 27001 and weigh¹. ITIL standard set of library management service that focuses on the IT industry. The framework of the Agency and the Central Computer (CCTA) created the Office of Government Commerce later (OGC) was combined by the British government in the 1980s. Although more than 20 years have passed from the development of ITIL and IT users have found great popularity, but little academic research in the field of ITIL and acceptance and use of it has been done. There are two main reasons to use ITIL. The first reason is the increased focus on customer service² and the second due to increased interest in effective and transparent control of information technology³. ITIL has proven that it can provide many benefits such as cost savings, manage risk and reducing the challenges of IT operations. Meanwhile,

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e-business is great force in today's global economy. Businesses and consumers are increasingly engaging with their e-business. Companies and institutions such as banks looking to add their e-business value chain⁴. Banks spend a lot of Internet penetration and conversion cost of traditional business to e-business in order to increase market share, superior customer service and broader access to customers in the geographical distances and create value for their customers. According to studies⁵, the basic foundation for all marketing activities of customer value. Customer value as a central competitive advantage and long-term success of the organization considered⁶. Creating value for the customer is one of the important issues which should be considered in making decisions about investment in e-business components⁷. An organization does not succeed without a good relationship with our customers and that the world today is quality-oriented, customer-centric. Customer, purpose and customer orientation will be the infrastructure for all the business and economic activities. The present paper is going to investigate the effect of applying the ITIL framework to examine the formation of customer value in the banking industry.

2. Background

2.1 The Concept of Customer Value and E-Banking

Customer value is defined as the "overall customer assessment of general characteristics of the product based on their understanding of what the product has received and what is the definition given to him"⁸. Thus, the formation of customer value is a trade-off stage which customers evaluate the benefit from the received product in return for what is lost. Early studies on product quality marketing as something that the customer receives the product price as what the customer loses focus. In^{9,10} stated that the quality of products or services as the primary benefits customers are considered, and they argued that the received benefits are considered as a combination of physical features, services and technical support, competence and market position and social rewards. In¹¹ stated that customer value is a multidimensional and complex structure and in looking to explore other factors that shape customer value left. It should be stated that beyond the quality/price product benefits there are different sacrifice for the use of a product, for example,

on can note the purchase experience and product risk¹². Customer value can be easily received by the customer through a comparison of what was received with what is conceptualized¹³ research studies in areas such as customer value based on the value chain, improve product and service concept research in the field of value, customer behavior, customer satisfaction and quality is formed¹⁴. Creating value for bank stakeholders groups, fast recognition of the competitors and more efficient response to the implicit and explicit needs of customers are among the fundamental and strategic principles of the future banks.

The use of electronic banking for customers with benefits that lead to the formation of its customer value, such as saving time by automatically making process of banking services, the introduction of an easy way to keep customers' money, reduce costs in access to banking services, increase comfort, offering 24-hour service without the need for physical interaction with the bank, fast and continuous access to information, better management of the liquidity¹⁵.

2.2 ITIL Method

When the management perceives the importance of Information Technology (IT) for the core business the demand increases for a high quality regulatory model or framework such as 6 Sigma, Total Quality Management (TQM) and Business Process Reengineering (BPR). However, many of these models have limited functionality and are designed primarily for goods, not services. To overcome these limitations, researchers and government forces such as the framework of IT process Maturity Model Integration (CMMI), IT and IT Infrastructure Library (ITIL) and Control for Information and related Technology (COBIT) they introduce¹⁶⁻¹⁹. Control information between the three models, ITIL could consolidate its top spot for IT Service Management.

ITIL itself is not a standard, but the best processes promoted in ITIL by ISO 20000 of the International Organization for Standardization is supported, which is currently the only standard in the field of IT service management is (along with the equivalent of BS 15000 from Standard and Great Britain). When organizations claim that the use of ITIL usually means that the process followed in their 11-class support services and service delivery are handled. Here ITIL best performance means that their IT service processes at the operational level (support services) and technical level (of service)

may have improved and gained the probability strategic interests, such as:

- Reduce costs and improve the efficiency of IT service provision.
- Improve the quality of IT services through the use of proven best process performance.
- Customer satisfaction is improved through the use of a more professional approach in service delivery.
- Improving the delivery of third party services through the privatization of ITIL or ISO 20000 (BS 15000) to serve as a standard for providing services in preparation.

Therefore it is essential that a wide range of key performance indicators are determined so that the quality of business process are changed or preferably improved^{19,20}.

2.3 ITIL Success Factors

In³ extracted the success factors of ITIL by examining 5 of Australian organizations who are successfully implementing IT service management with ITIL upgrade. In another study²¹ studied ITIL adoption in the northern European countries.

They also in the last article examined the ITIL barriers instead of the success factors for implementing ITIL better. In²² introduced their study of 17 factors for the success of ITIL which are briefly explained in Table 1.

2.4 ITIL Adoption Benefits

Applying ITIL can have several benefits at the operational level and strategic to have. For example²³ found to increase the use of ITIL, business-IT maturity level increases. However, the operational benefits can be obtained more benefits. Research shows that the increase in the development of ITIL, customer satisfaction increases. In a study conducted in²⁴ the context of implementing ITIL in six German Company, found that by documenting and monitoring processes, improve IT service quality, efficiency and improving due to increased standardization, transparency and comparability increase. In²⁵ conducted a study in 12 companies Australia, England and New Zealand and found that the use of ITIL to the formation of more predictable infrastructure, improvements have been made in consultation with the IT team within the organization and smoother negotiations on the agreements made at the level of services and integration in the customer service. In general, studies show that

ITIL has various interests such as improving customer satisfaction and users, increasing the central service for Staff IT, increasing professional standards through superior performance and lower cost and transparency organizational rules.

2.5 Conceptual Framework

According to the above mentioned issues, the conceptual framework is shown Figure 1.



Figure 1. Conceptual framework of E-banking.

According to the conceptual framework, the proposed hypotheses are as follows:

H1: There is a significant relationship between the benefits of implementing ITIL and ease of use of banking services.

H2: There is a significant relationship between the benefits of implementing ITIL and benefits of e-banking.

H3: There is a significant relationship between the benefits of implementing ITIL and reduce the cost of banking services.

H4: There is a significant relationship between the benefits of implementing ITIL and automation of banking services.

H5: The e-banking has a positive effect on the formation of customer value.

The present study is based on an applied descriptive correlational research design. In this paper, it is tried to examine the impact of ITIL based e-banking and the creation of customer value. For this research, 100 employees and managers of Iranian state banks that have used the standard ITIL were randomly selected as research sample.

The Research Instrument is a questionnaire which is designed in the form of Likert scale. Reliability using Cronbach's alpha for all variables were above 0.7 in order to ensure the validity, the initial questionnaire distributed among a group of experts were consulted. Spss software

Table 1. Key success factors ITIL21

| The key success factors | Significance |
|---|--|
| Management support | - Approved policies and conformance with the implementation of new standard processes employed - Guaranteed Investment for advice, tools and training - Launch of communication between stakeholders |
| Knowledge of ITIL and education | -Contact Efficiency of stakeholders - Knowledge of ITIL documentation as a means of quick wins - Reduction of staff strength - Increased cooperation and acceptance of new processes |
| Intersectoral cooperation | - The maximum knowledge sharing and communications - Smoothing correction of cross-functional processes, as well as minimize the risk to the deployment project begun its implementation over time |
| Prioritize processes | The exact definition of the selection process is a priority tool |
| Selection Tools | -Refusal of the application of the tool in use -Simplify the configuration process -Mandy perceived impact on profits |
| change management | It is vital in revolutionary situations (big bang) |
| Customer orientation | Provides proactive IT process rather than firefighting (to mirror preventive measures before the operation was carried out, instead of after the fact do) |
| Counseling and consultant | It is vital for the full implementation of the transfer of knowledge to permanent staff |
| Strategy deployment | Providing use of strategies using ITIL |
| Campaign Project | Support and promotion of ITIL |
| The IT staff to accept change | Involving staff in the application of ITIL process from start to finish is critical in helping them to accept change |
| Quality IT staff dedicated to ITIL | If positively ITIL training on communication and cooperation in the application of ITIL affect the deployment process, it can be concluded that merit is critical in the implementation of ITIL easier |
| Monitor and evaluate the implementation of ITIL | - Finally, the tendency to affect - For continuous improvement programs that should be used is essential for ITIL |
| Feasibility study before actual deployment | To help plan the deployment process |
| Project management and continuous improvement services | Business needs analysis, the stakeholders involved, to set goals and manage the change process |
| Goal setting through a process maturity framework | -Helps companies identify when and where to start implementing ITIL - An understanding of the needs of the organization to mature frameworks such as CMMI or COBIT provides |
| Continuous reporting and control through quality management framework | Ensures a step-by-step close eye analysis of the implementation process of ITIL |

is used in order to analyze the data and study the relationship between variables. To assess the relationship between independent variables and the dependent variable regression analysis was used to analyze the main hypothesis and auxiliary hypotheses.

3. Data Analysis

The results of analysis of the demographic characteristics of respondents are shown in Table 2.

Table 2. The demographic characteristics of the respondents answering the questionnaire

| gender | percent | Number |
|---------------------|---------|--------|
| female | 0.65 | 65 |
| male | 0.35 | 35 |
| age | Percent | Number |
| 21-30 | 0.2 | 20 |
| 31-40 | .26 | 26 |
| 41-50 | .42 | 41 |
| Over 50 | .13 | 13 |
| education | Percent | Number |
| High school diploma | .15 | 15 |
| and college degree | .45 | 45 |
| Bachelor | .4 | 40 |
| Master and Ph.D. | | |

In order to test the secondary research hypotheses, linear regression analysis was used. Using regression analysis involves several assumptions which may include:

- Dispensing errors should be based on a normal distribution with mean zero.
- There is no correlation between the errors of the model.

In order to examine the first case, the standard errors should be calculated and normal graph should be drawn and then a comparison should be made between the two charts

And Durbin-Watson also used to assess independence from each other's mistakes. Items listed for each of the four sub-hypotheses were tested and the results are presented in Table 3.

Table 3. Results of normality and lack of correlation between errors (the independent variable of interest, applying ITIL)

| Variables | mean | SD | Sig. | Durbin-Watson |
|--------------|------|-------|------|---------------|
| Ease of use | 0.00 | 0.997 | .000 | 1.59 |
| Usefulness | 0.00 | 0.997 | .000 | 1.964 |
| Reduced cost | 0.00 | 0.997 | .000 | 1.727 |
| Automation | 0.00 | 0.997 | .000 | 1.924 |

According to Table 3, the average error for the dependent variable (ease of use, usefulness, cost reduction and automation) and the independent variable (the benefits of using ITIL) are near zero and standard deviation approximates 1, so it was concluded that errors

are normal distribution. In addition to proving the absence of correlation between errors Durbin-Watson value should be between 1.5 to 2.5 according to the information is provided in Table 4 and there is no correlation between the errors. The results show that the use of regression analysis to analyze the relationships between independent variables and the dependent variable in this case is possible.

Table 4. Results of normality and lack of correlation between errors (independent variable e-banking)

| | mean | SD | Sig. | Durbin-Watson |
|----------------|------|-------|------|---------------|
| Customer value | 0.00 | 0.997 | .000 | 1.983 |

Also according to the data in Table 4, the average error for the dependent variable (customer value) and the independent variable (E-banking) was close to zero and standard deviation is also approximates one. So, it is concluded that the errors are normal distribution also in base Durbin-Watson should be between 1.5 to 2.5 according to the information provided in Table 4 are well established and there is no correlation between the errors. The results show that the use of regression analysis to analyze the relationships between independent variables and the dependent variable in this case is possible. Table 4 shows the results of the regression analysis between the interests of the adoption of ITIL and E-banking and customer value as well as regression analysis between shows, the results of the analysis hypotheses suggest that the relationship between positive and significant benefits to implementing ITIL and ease of use is significant ($\beta = 0.49$, sig < 0.05), so the hypothesis 1 is accepted. On the other hand there is a significant relationship between the advantages of implementing ITIL and usefulness ($\beta = 0.46$, sig < 0.05) and second hypothesis is also accepted. It's repeated on Reduced cost ($\beta = 0.44$, sig < 0.05), then third hypothesis verified. Considering the relationship between automation and advantages of implementing ITIL, since a significance coefficient of higher than 0.05 was obtained, there was no significant correlation and the hypothesis is rejected.

The last hypothesis test that examines the relationship between E-banking and customer value according to the level of significance is less than 0.05 this relationship is significant and the H5 has also been confirmed (Table 5).

Table 5. Linear regression analysis of the benefits of using ITIL (independent variable) on e-banking (dependent variable) and customer value

| Independent variable | Dependent variable | S_e | Coefficient β | t statistics | Sig. |
|------------------------|--------------------|-------|---------------------|--------------|------|
| Benefits of using ITIL | Ease of use | 0.818 | 0.49 | 7.754 | 0.00 |
| | usefulness | 0.866 | 0.46 | 7.264 | 0.00 |
| | Reduced cost | 0.67 | 0.44 | 6.81 | 0.00 |
| e-banking | automation | 0.545 | 0.43 | 6.589 | 0.70 |
| | Customer value | 0.754 | 0.46 | 6.92 | 0.00 |

4. Conclusion

Today, one of the key issues for all organizations and businesses worldwide is the IT resource management and development in order to achieve the organization's goals. Consistent with the evolution of business in the world and the development of information technology, attitudes and different organizational and managerial solutions have been emerged, the main goal of all of which is the effective and efficient management of information technology for business success and survival. Library is the infrastructure of the Information Technology which is established a comprehensive framework on management of Information Technology services based on global best practices. In this study, the benefits of implementing ITIL and its impact on E-banking and customer value are examined. Results have been analyzed by regression analysis using software Spss and indicated that the use of ITIL has a positive impact on ease of use, so the first hypothesis was confirmed. The benefits of using ITIL had a positive impact on the usefulness and cost reduction and hypotheses 2 and 3 were confirmed. The results indicated no significant relationship between the advantages of implementing ITIL and process automation. The results also confirmed the relationship between the E-banking and customer value.

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