

Designing A Quality Costing System In Commercial Banks (Applied Research In The Investment Bank Of Iraq)

Dr. Mushtaq Kamil Faraj ¹, Assist. Prof. Dr. Alaa Jassim Salman ²

¹ University of Baghdad/College of Business and Economics/ Department of Accounting,
Mushtaqcpa@yahoo.com

² Al Rafidain University College/ Department of Accounting, alaa@ruc.edu.iq

Abstract

The aim of the research is to direct the attention of the bank's management to the types of expenses that are disbursed during the year and which are related to quality costs for proper planning of the disbursement process after categorizing them into its components and paying attention to the costs of compatibility (conformance) and reducing the costs of non-conformity (non-conformity) to the acceptable limit that enables the bank to increase the quality. The service marketed to customers and then increase its profits. One of the objectives of the research is to design a system for quality costs and its application at the research sample bank, and to achieve the objective of the research, the research sought in its practical aspect to choose the Iraqi Investment Bank as one of the commercial banks operating in Iraq as a field for research and application of the proposed system for quality costs, and the research reached a set of results, the most important of which were, The benefits of the proposed design that it provides to management are embodied in performance evaluation and may motivate it to take other measures aimed at improving performance. Improving performance leads to two-way effects. The first is to reduce quality costs, which in turn leads to a reduction in service costs for the bank and then increases productivity and increases profits. The other of the effects is improving the quality of the service, which is part of it by reducing the customer's waiting time and speed in providing service, accuracy and excluding errors, which leads to an increase in customers' frequency to the bank and an increase in the volume of their transactions and then an increase in deposits and an increase in revenues and finally an increase in profits. All these positive effects are considered benefits achieved by the system, and the proposed design showed that it reduces the cost of auditing or the cost of conformity and the cost of errors and elimination of them. This is in application of the philosophy of minor destruction in the industry, and this may be the most need in the banking service, if it is represented in the aim of eliminating errors, which means improving performance and reducing costs.

Keywords: Quality Costing, System In Commercial.

1.0 Introduction

In light of the challenges and risks facing organizations in general, and banks and financial institutions, in particular, and because of the fundamental and pioneering role of banks in the economic development, it has become imperative for them to work in the global competitive environment, face

the severity of global competition, and provide high- quality services with standard specifications. Those organizations need banking services that fit current era. In addition, the banking and financial agencies have gone beyond their role from being a basic and official means of collecting savings and directing them to investment to ensure the adequacy of their

use. The success of any economy depends to a large extent on the ability, adequacy and effectiveness of its banking and financial system. For the purpose of improving the level of service provided to customers and facing the intensity of competition and preservation. Furthermore, it is necessary to pay attention to the elements of quality and determine their costs, analyze them and manage them in a scientific and thoughtful manner. Quality costs are an important tool for many decisions as they are used in evaluation, research and development and are taken into account when preparing an expenditure budget in order to improve performance and provide high quality services. Given the importance of the banking sector and the need to provide services at a high level of quality, the researcher chose this topic. The objective of the research is to direct the attention of bank managements to the elements of quality costs and classify them into conformity costs and non-conformance costs and monitor them and work to increase the quality of service provided to customers and its impact on banking activity.

2.0 Research methodology

2.1 The research problem

The problem of the research is that despite the importance of the costs associated with quality, the measurement and determination of these costs are not accurate and do not achieve the basic objectives of measuring them effectively in many Iraqi commercial banks, including the research sample, and this is due to:

1. The failure of the applied cost system to provide detailed data on the main elements of quality costs, and then its failure to provide the necessary information to control and reduce these costs.
2. The process of evaluating quality performance in the research sample is limited to quantitative indicators that appear in quality control reports, while neglecting the importance of cost indicators and the role of the costing system in assessing quality performance.

3. Weak bank management by identifying and controlling quality costs and categorizing them into (Prohibition costs, evaluation costs, internal failure costs and external failure costs), which affects the bank's activity.

2.2 purpose of the research

The research aims to direct the attention of the bank's management to the types of costs that are related to quality for proper planning of the exchange process after classifying them into its components. This research aims to pay attention to the costs of (conformance) and reducing the costs of (non-conformance) to the acceptable extent that enables the bank to increase the quality of service marketed to customers and then increase his profit. Finally, the research aims to design a system for quality costs and apply it in the research sample bank.

2.3 Importance of research

The importance of the research is derived from the importance of the banking sector, and the importance of determining the elements of quality costs in banks. This costs effect on improving the competitive situation by meeting the needs and desires of customers by providing a distinguished service. This is in turn leads to an increase in the bank's customers and then improves deposits, investments, profits and the recovery of banking activity.

2.4 the research hypothesis

The research is based on a basic premise that defining the elements of quality costs and paying attention to the costs of Prohibition and evaluation costs and reducing the costs of internal and external failure leads to help in evaluating the performance of the quality of bank services.

2.5 The scope and duration of the research

The Investment Bank of Iraq has been selected as one of the commercial banks operating in Iraq as an area of research, and the research period has been set for the year 2020.

2.6 Data collection

To achieve the objective of the research and test its hypothesis, it required daily and accurate follow-up of all service transactions in the banking hall division, during the actual working hours of the bank for a period of one month, as well as collecting data from the bank records of the research sample.

3.0 Literature review

The modern approach to measuring quality costs adopts the philosophy of modern cost accounting systems based on the market, which emphasizes taking what. This section aims to present a review the literature that is related to the study.

3.1 Modern approach to measuring quality costs

The modern approach to measuring quality costs adopts the philosophy of modern cost accounting systems based on the market, which emphasizes taking what can be taken to achieve the desired level of performance under market conditions. Accordingly, the company's efficiency in producing a particular product is less important than its efficiency in producing the product himself to achieve the greatest possible success in the market. These systems play a major role in integrating the efforts of employees with the company's long-term objectives and policies through cost distribution systems that support production policies. (Kamel, 2014: 183).

Horngren identifies a set of steps by which quality costs are measured using the activity cost input: (Horngren, et.al, 2016: 796).

1. Defining the activities related to quality and activity cost pools, and includes the activities that the value chain represents for all the company's functions.
2. Determining the basis for charging the cost or the cost causes for each of the activities related to quality separately.
3. Determining a download rate for each load basis.
4. Calculating the costs of each quality-related activity.
5. Determining the total quality costs by aggregating the costs of all quality-related activities according

to the value chain for all company functions.

3.2 The foundations of measuring quality costs in accounting

Knowing the size of what quality costs represent is an insufficient indicator unless it is compared with another standard recognized in the company. Perhaps the use of financial indicators (bases) to compare them with quality costs achieves many purposes, as the indicator links quality costs with other cost elements that become the acceptable basis for comparison in the future. In addition, another purpose is performance evaluation and preparing budgets for quality costs. (Timonen et al,2017:6)

Quality cost indices mean the relative relationship by which the related quality costs are measured on a value basis, and these indicators are used to compare the performance achieved during two periods of time or between the performance of the production and service sections within the company.

There are many indicators that are used for the purpose of comparing them with quality costs, but the most important of these indicators are the following: - (Baum, 2012: 53)

1. Direct labor hours: It means the relative relationship between quality costs and direct labor hours; that is, it represents the working hours spent on producing a specific product in itself (number of workers x number of daily hours specified for work x number of working days in a year). This basis is characterized by ease of calculation (there is in accounting reports) as well as easily understandable, but it is criticized that it may be affected by technological developments that reduce the possibility of using workers in the long term.

2. Direct labor cost: It is represented by the cost of the labor used directly in the unit of the product (direct labor hours x cost per hour), and it is similar to the previous basis in its advantages and disadvantages.

3. Manufacturing cost: It means the relative relationship between quality costs and production costs, which are the cost of

direct materials, direct wages and indirect industrial costs. It is characterized by its ease of calculation from accounting reports.

4. Net profit: It is an indicator of the impact of quality costs on the company's profits. It is useful when quality costs are important to the company, but it is not necessary when comparing different types of production sections.

5. Sales: It represents the relative relationship between quality costs and total sales revenue. It is one of the commonly used indicators. It is a useful tool for the purpose of making decisions for higher management, although sales are subject to seasonal fluctuations, which makes the indicator weak for the purposes of short-term analysis.

6. Number of production units: It represents the relative relationship between quality costs and production quantity. It is a good indicator if the production units are similar. Comparing and achieving it becomes a difficult issue when the products are not homogeneous.

3.3 Estimating the costs of quality

Hidden quality costs constitute part of the external failure costs, and they are defined as the costs resulting from the occurrence of failure, such as the lack of market share as a result of product asymmetry and customer dissatisfaction as a result of the actual quality changing from the prescribed specifications and the additional costs resulting from moving away from the target values. Because of the importance of these costs, several methods have been used in their estimation, although the estimation process is not simple and may be subjective at times: (Yuan, et.al, 2012:13).

1. Multiplier Method

This method assumes that the hidden quality costs represent some multiples of the external failure costs measured and recorded in the books, ie:

Hidden Quality Costs = K [Measured External Failure Costs]

(k) it represents the multiplier effect, the value of which is determined based on the experience gained.

2. Market Research Method

This method is used to determine the impact of poor quality on sales and market share. Inquiries from customers through salesmen help provide a useful assessment of the amount of hidden quality costs incurred by the company.

3. Quality loss function (QLF) method:

This method is also called the Taguchi method, after the quality expert who introduced it (Genichi Taguchi). This method assumes that the hidden costs are related to the difference in the actual specifications of the products from the target value for quality, which Taguchi called

(Quality loss), which not only occurs when the product is outside the specifications, but also occurs in the presence of the product within the specifications, and this loss increases as the discrepancy between the actual value of the quality and the target value increases.

3.4 Report on quality costs

The report on quality costs is a continuous process between the various sections responsible for quality within the company, and the role of the accountant in it is to collect data and choose the appropriate method for presenting this data, taking into account the management's point of view in the form and content of these reports. (Cooper,2009:7)

The degree of benefit from these reports is summed up in communicating the necessary information about quality costs to decision makers in order to be able to bring the product to the lowest cost level. In this context, there are several advantages offered by quality costs reports that can be summarized as follows: (Kinney& Raiborn, 2011: 37)

1. It raises companies' awareness and focus on the quality of their products, so it acts as a catalyst for development.
2. Increase the degree of cooperation and coordination between the various sections through standard reports forms that are raised

- For the managements of those sections and during a specified period.
3. These reports help prevent overlap between productivity and cost measures within the functions of the accounting sections.
 4. Documenting quality costs provides a wide scope for following up on errors or preparing for corrective actions.
 5. Documenting quality costs helps higher management to use (Balanced scorecard) to sell products with a high profit margin and reduce products with a low profit margin, ie to use them in preparing the sales assortment. (Al-Shaabani, 108:2014).

3.5 Quality measures and customer satisfaction

Achieving specifications that match customer requirements must be based on analyzing customer requirements and then measuring internal performance by focusing on financial and non-financial measures of quality.

3.5.1 Financial measures of customer satisfaction

Financial measures of customer satisfaction are related to the costs of external failure, as these costs represent indicators of low customer satisfaction, and Horngren justified the lack of reliance on these indicators in measuring customer satisfaction as follows:

1. It does not indicate specific areas that need improvement.
2. It does not determine the future preferences of customers.
3. 3-There are hidden costs associated with the difference in actual specifications from the target values, which he called Taguchi (quality loss).

3.5.2 non-financial measures of customer satisfaction

These measures include the following: (Hussain, 2011: 302)

1. Marketing research information about the customer's preferences

- and convictions in the characteristics of the product.
2. The number of defective units shipped to the customer as a percentage of the total shipped units.
 3. The number of complaining customers.
 4. The percentage of products discovered early that have excessive failure.
 5. Delayed delivery (the difference between the delivery date specified in the schedule and the date requested by the customer).
 6. Time-delivery rate (percentage of shipments executed on or before the delivery date specified in the schedule).

3.5.3 non-financial measures and internal performance

To meet the customer's desires, companies need a permanent and continuous development of the quality of the work performed within the company. Companies can use Prohibition and evaluation costs and internal failure costs to measure the company's internal performance, expressed in financial terms. But most companies associate financial metrics with non-financial metrics to measure internal performance, such as the metrics that companies use (Horngren, et.al, 2016: 800).

1. The number of defects for each production line.
2. Process productivity (the ratio of good outputs to total inputs).
3. Labor turnover rate (the ratio of the number of employees who left the company to the total number of employees).

3.6 Quality performance evaluation

Measuring the financial costs of quality and the non-financial measurement of quality aspects achieve many benefits that can be identified as follows:

1. The objective of measuring quality costs is to determine the size of the costs that the company spends on quality activities and to clarify the role of management in trying to rationalize these costs using

- different methods and tools. (Atkinson & Kaplan, 2008: 563)
2. The measurement of quality costs helps in solving problems by comparing several projects to improve quality. (Hornngren, et.al, 2016:687)
 3. The measurement of quality costs serves as a general common basis for evaluating attempts to trade-off between the costs of Prohibition and the costs of failure.

As for the benefits of non-financial measures, they can be identified as follows: (Hornngren, et.al,2016:688)

1. Non-financial measures are often expressed quantitatively.
2. The non-financial measures direct attention to the physical processes, and then focus attention on precisely the problems that need improvement.
3. Non-financial measures provide short-term and immediate feedback on whether quality improvement efforts have been successful in this regard.
4. The non-financial measures provide future indicators in evaluating performance. Both

financial and non-financial measures are necessary to measure quality aspects, and one cannot replace the other.

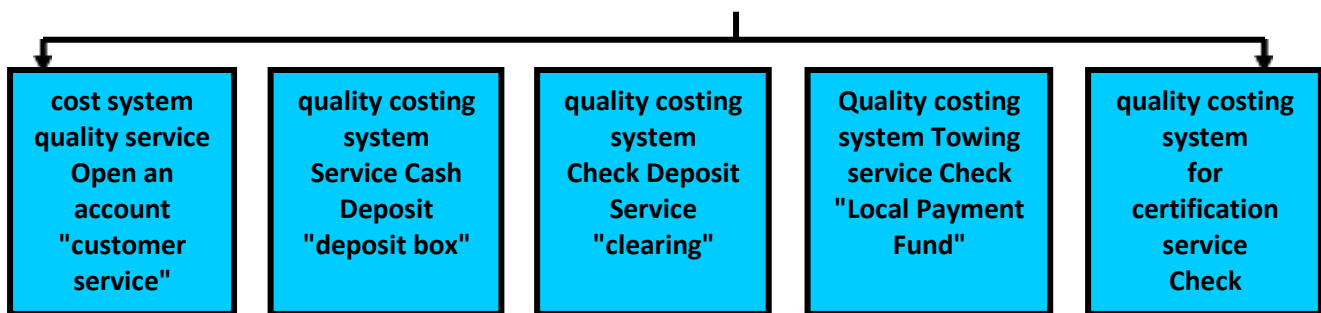
4.0 Designing and implementing a quality costing system in the Investment Bank of Iraq

Through the applied study, a quality costing system will be designed for the Investment Bank of Iraq, with the aim of using it in evaluating performance and improving the quality of services provided. The process of designing a quality costing system involves a set of steps, the most important of which are as quality system design, preparation of quality design specifications, and prepare quality system design report

4.1 Quality System Design

For the purpose of designing the quality cost system for the bank, the design of the sub-systems should begin, which collectively constitute the total system of quality costs for the Investment Bank of Iraq. The following is a figure showing the sub-systems of the bank:

Figure (1) Sub-systems of the Quality Costing System in the Investment Bank of Iraq



4.1.1 Outputs of the banking quality cost system

Quality cost reports are outputs of the bank's quality cost system, and since the latter consists of a set of sub-systems, a set of reports (or outputs) will appear

commensurate with the number of banking quality cost sub-systems.

The following presents the form and contents of reports on the quality of opening a current account provided by the bank.

Table (1) Quality Cost Report Form for Opening a Current Account

Cost category	Amounts
The cost of the Prohibition:	

The cost of using the training accounts	xxx
Evaluation cost:	
Audit and conformity costs	xxx
Cost of internal failure:	
Costs of document destruction and risks	xxx
External failure cost:	
cost the missed opportunity	xxx
Total	xxx

As for the form and contents of the quality cost reports for cash deposits submitted by the bank, they are described in the following table:

Table (2) Quality Cost Report for Cash Deposit

Cost categories	Amounts	
	Partial	Total
The cost of the Prohibition:		
Cost of using computers	xx	
Training cost	xx	xxx
Evaluation cost:		
Audit cost	xx	
matching costs	xx	xxx
Cost of internal failure:		
cost errors	xx	
Costs of document destruction	xx	xxx
External failure cost		
cost the missed opportunity		xxx
Total		xxx

As for Table (3), it shows the form and contents of quality cost reports for the check deposit service provided by the bank, according to the following:

Table (3) Quality Cost Report Check Deposit Service

Cost categories	Amounts	
	Partial	Total
The cost of the Prohibition:		
Cost of using computers	xx	
Training cost	xx	xxx
Evaluation cost:		
Audit and conformity costs		xxx

Cost of internal failure:		
Cost errors and corrupted documents		xxx
cost the missed opportunity		xxx
Total		xxx

As for the form and contents of quality cost reports for the check withdrawal service provided by the bank, they are shown in Table (4), as follows:

Table (4) Quality cost report for check withdrawal service

Cost categories	Amounts
The cost of the Prohibition:	
Cost of using computers	xxx
Training cost	xxx
Evaluation cost:	
Audit and conformity costs	xxx
Cost of internal failure:	
cost errors	xxx
Total	xxx

The costs of prohibition in most banking services consist of the costs of using computers and the costs of training.

The cost of using computers is represented in the disappearance, while the cost of training is represented in the cost of the training course.

As for the evaluation costs, they were represented in the audit costs and the matching costs, as the audit costs consist of the total audit procedures carried out by the authorized person (B), the authorized person (A), and sometimes the division manager on all the transactions that are completed in this division. The matching costs consist of the total matching procedures that take place at the end of each a Day that is carried out by the authorized person (B) and the employees who participate with them in order to ensure that all transactions that take place in one day are properly recorded. It includes the costs of internal failure and in most of the services provided by the bank, the cost of errors and the cost of corrupted documents, as the cost of errors is meant the cost of Processing all kinds of errors that occur during the performance of the service to the customer and at the various sites that the

service transaction passes through inside the bank. As for the cost of corrupted documents, it means the cost of the necessary documents to perform the service for the customer that is destruction because of the mistakes it contains, committed by the employees responsible for organizing it. As for the costs of external failure, they included the lost opportunity costs only, because other costs of this kind were not realized during the study period, which is one month, such as the costs of documents or reports that are destruction because of what they contain from errors discovered by a customer, complaints to customers, except in some cases in which they complain about the delay in completing their transactions and the length of their waiting period. From the total costs of each of the four categories of quality costs, for each of the services provided by the Customer Service Division consists of the quality costs of banking service At the Investment Bank of Iraq, the quality costs reports indicated previously are prepared on a monthly basis, provided that they are accompanied by statements showing the details of each category of quality costs contained in each report.

4.1.2 Banking Quality Costing System Inputs

The inputs are the data that should be obtained and on which processing operations are carried out in order to reach the required outputs. The process of collecting and processing data ends with determining the quality costs. For the purpose of compiling the data required by the system, it required daily and accurate follow-up of all service transactions in the banking hall division, during the actual working hours of the bank and for a period of one month.

The data collected from its sources fall under the following axes (arranged according to the sequence of categories of quality costs in quality costs reports).

1- The number of computers used in the performance of banking services, their costs and depreciation Prohibition:

It uses 11 computers and 10 employees operate it, 8 of whom are tasked with entering service transactions on the computer, and 2 of them are investigating, checking and passing the transactions entered by the entrants.

The total cost of these 11 computers amounted to (3675.415 dollars), and their annual depreciation amounted to (918853.75), while the depreciation of one month amounted to ((76,571 dollars)).

2- Costs and duration of the course

The training costs are represented by the salary and incentives of the employee who

is subject to it, and this is part of the Prohibition costs because the goal of this type of training is to maintain the provision of a good quality service. Although the purpose of the training course is to prepare an employee with an authorization degree (A) whose main task is to audit service transactions, which is part of the evaluation costs, the employee who undergoes this type of training has not yet practiced authorized work (A), so the costs of this training are part of Prohibition cost. The duration of the training course was (45) days, and the study period entered within these (45) days. Thus, the training costs consist of the salary and incentives of the authorized person (B), who underwent training for a month, and it amounted to ((105.750 dollars) and was obtained from the Investment Bank of Iraq.

3- The number of transactions completed in each type of service provided by the bank, the time required to conduct the audit by the authorized personnel for each type, and the average cost of work for the auditors:

First: Determining the number of transactions completed during the month and for each type of service provided by the bank: These data were obtained from the Investment Bank of Iraq by daily follow-up of the service transactions that it completes and then compiled on a monthly basis. Table No. (5) shows the details of this data.

Table (5) Number of transactions completed during a month and for each type of service

service type	number of transactions		Note
	partial	Total	
Open a current account	-	125	Customer Service Department
Cash deposit	-	3.337+635	Department of domestic receipt fund + foreign
check deposit	-	2892	clearing department
check withdrawal	-	2.438 + 635	Department of domestic + foreign payment fund

check endorsement	-	2542	Remittances Department
Total	-	11.334+ 1270	12604

It is noted from Table (5) that the check deposit service was carried out without detailing the number of its transactions. Deposit a check. The number of this type of transactions reached (2892), and the number of transactions completed in the bank at the time of auditing will be used, because these transactions may be subject to scrutiny by those authorized to take quality measures.

Second: Determining the time required to audit the authorized persons for each type of service transaction

For the purpose of obtaining time data, one of the work measurement techniques that was applied in the bank was used, which is the time study. If the standard time for the audit that the authorized person (B) and authorized (A) experiment with on the service transaction reaches the amounts indicated in Table No. (6)

Table (6) Standard times for auditing service transactions in the bank

service type	Standard time (minutes)		Notes
	authorized (b)	authorized (a)	
Open an account	2	1.50	Customer service opening services
Cash deposit	.50	.30	Domestic Receipt Fund Services + Foreign
check deposit	1	.50	clearing services
check withdrawal	1.30	1	Domestic + foreign payment fund services
check endorsement	1.50	1.20	Remittance department services
Total	6.30	4.5	

Third: Determine the average cost of work

Work cost data was obtained from the accounting records related to the salaries and incentives of employees in the bank. Here, all the salaries and incentives that the employee receives are considered a work cost, because these salaries and hooves are obtained by the employee in exchange for

the service he performs as well as the employee receives them on a regular basis, but the basis for their calculation is different. Therefore, the cost of work on which it depends in determining the cost of quality consists of the total salaries and incentives of the employees. As for the average cost of work for the employee who performs one of the procedures, it is calculated as follows:

- The cost of the work, the monthly employee = monthly salary +monthly incentives
- Average cost of one day's work = $\frac{\text{Monthly work cost}}{\text{Number of working days in a month (21)}}$
- Average cost per minute of work = $\frac{\text{Average cost per day work}}{\text{Number of minutes in a day}}$

The number of days of the month amounting to (21) days after excluding Fridays and Saturdays will be used in the calculations of the average labor cost for employees who practice quality procedures, because these procedures are achieved only on the days when services are provided to customers, that is, they are accompanied by the presence of customers in the bank to obtain services. Thus, the cost

Number of minutes per working day (315)

of work is related to those days in which services are provided to customers. As for the number of minutes per working day, it has been set at (315) minutes, which represents the time during which the employee works in the bank, starting from the first customer visit until the employee leaves the bank, i.e. a total of five and a quarter hours.

Table (7) Determining the average labor cost for the employees entering banking operations with the authorized persons

Section	authorized (a)	authorized (b)	input	Total
Opening a checking account	24.4	-	19.54	43.94
Cash deposit	-	18.30	14	32.30
check deposit	24.4	-	10.38	3478
check withdrawal	-	18.30	14	32.30
check endorsement	24.4	18.30	17	59.70

Fourth: The errors that were made during the provision of services to customers during the month, their number, the time required to Processing these errors, and the average cost of the work of those who Processing them:

The aim of this follow-up is to determine the types and preparation of errors that occur in all service transactions that are completed in a per day. Errors were made at two sites to complete the transaction in general, namely, the computer operator when entering the transaction data to the computer, and the front office employee who organizes the necessary documents to complete the service transaction. The errors that occur when entering the transaction data into the computer may occur in the amount of the transaction or the customer's account number or the type of transaction. In all cases, these errors are Processing in the same way, that is, the wrong transaction is canceled and its data is entered again correctly into the computer.

As previously mentioned about the clarification of the structure, the errors of the computer operators are mostly discovered by the authorized person (A),

and their correction requires that the transaction be returned to the computer operator to correct it, and the procedures that follow the computer stage are repeated again. Therefore, the wrong transaction will need time for correction by the computer operator and added to it. The time required to be audited by the authorized person (B), in addition to the time to be audited by the authorized person (A) as well. That is, the sum of the three times represents the time required to Processing a single error, and this time is accompanied by a cost represented by the average cost of the work of each employee involved in correcting the error.

It may be related to the cost of internal failure, to represent partly the cost of errors. The cost of single errors consists of the sum of the costs of the procedures that the wrong transaction goes through again with the aim of correcting it and structuring the entry to the computer correctly and the cost of submitting it to the authorized person (B) and the cost of auditing the authorized person (A), and the wrong transaction is considered A new transaction when it is corrected because it takes the same time to check the new transaction by the authorized

person (B) and the authorized person (A). As for the time of its correction on the computer, it was subjected to a time study where this time, i.e. the standard time, was approximately 1.51. As for the number of

errors made by computer operators and for each type Among the services provided by the banking hall during a month is shown in Table No. (8).

Table (8) The number of errors that occurred from the operators of the two entrances during one month in the Investment Bank of Iraq

service type	the amount
Open a current account	52
Cash deposit	333
check deposit	275
check withdrawal	146
check endorsement	77
Total	883

Fifth: The number and cost of corrupted documents in each type of service transaction during the month

a single service transaction requires a set of documents for the purpose of completion. During the completion of the transaction, these documents or part of them are destruction because of the errors they contain or for other reasons. The destruction of the document is part of the quality problems.

The costs of these documents that are corrupted due to the performance of the service must be determined for the purpose of preparing a quality cost report. It was noticed during the study phase that the documents are destruction after the errors they contain are discovered either by the front office employee or any other employee (may be one of the authorized or

the cashier) . When an authorized person or the cashier discovers the error in the document, he returns it to the front office employee who destruction it if necessary and organizes another correct one. Subsequent procedures are repeated a second time for him. But if the front office employee discovers the error in the document and destruction it and organizes another alternative, in this case no It requires repeating the subsequent procedures on the document because the error was discovered at the beginning of completing the transaction and before it was transferred to the next employee and whether the error in the document was discovered by the authorized or by the front office employee and then destruction, it is as a result a corrupted document when providing services to customers in the bank during the period

Table (9) The number of corrupted documents when completing transactions in the bank within one month

Type of service transaction	the number
Open a current account	32
cash deposit	390
check deposit	260
check withdrawal	-

check endorsement	130
Total	812

It is noted from Table No. (9) that the check withdrawal transaction does not include corrupted documents, because it does not require the use of documents when performing them. Rather, it is relied on the check presented by the customer for the purposes of withdrawing from his balance. And if it is replaced, the customer bears its cost. As for the costs of corrupted documents, they are obtained from the bank's store by following up the cost of each type of documents used in the performance of service transactions.

4.1.3 Processing processes in the quality cost system for the banking terminal service

The processing operations that will be implemented in the bank's quality cost system are of two types, namely, calculation and distribution. The calculations include, ie, the calculations, reaching the amounts of the categories of quality costs, after the data of these costs have been collected from their sources. As for the distribution operations, they include the distribution of quality costs after calculating them on the services that were

A reason for its emergence, with the aim of preparing quality cost reports for each of the services provided by the bank, and the following are the processes of calculating and distributing the categories of quality costs arranged according to their sequence in the quality costs report:

4.1.3.1 Prohibition costs:

4.1.3.1.1 The costs of using computers: These costs are represented by the extinction of the computers used in the bank for a month. The amount of depreciation is distributed to the bank's services as a Prohibition cost by approving the number of transactions whose data is entered into the computer in each of the services. The number of transactions consists of the total of actually completed transactions in addition to the transactions in which an error occurred and their correction necessitated re-entering them into the calculator correctly, because the wrong transaction It is a new transaction in terms of procedures. Table (10) shows the total number of service transactions whose data has been entered into the computer.

Table (10) The number of service transactions entered during the period in the designated sections of the bank

service type	Number of transactions actually completed	The number of errors that occurred	Total
Open a current account	125	52	177
Cash deposit	3972	333	4305
check deposit	2892	275	3167
check withdrawal	3073	146	3219
check endorsement	20542	77	2619
Total	12604	883	13487

Thus, the amount of depreciation can be distributed to the services depending on the number of transactions entered into the computer in each of the banking terminal services for example, the share of the cash deposit service from the depreciation, which represented the costs of Prohibition, is as follows:

$$\text{Prohibition cost} = \text{depreciation value} \times \frac{\text{Total number of services}}{\text{Service transaction number}}$$

Table No. (11) shows the cost of using computers in each of the bank's services, distributed using this method

Type of service transaction	Cost of using computers in dinars
Open a current account	1.005
cash deposit	24.441
check deposit	17.980
check withdrawal	18.275.50
check endorsement	14.869.50
Total	76.571

4.1.3.1.2 Training costs: The training costs during the month amounted to (1005,750) dinars, which is part of the Prohibition costs. These costs are distributed to all bank services. The number of transactions actually completed is used,

column No. (1) of Table No. (10) in each of the current account opening service Cash deposit, check deposit, check withdrawal, and check certification as a basis for distributing training costs on these services. For example, the cash deposit's share of training costs is as follows:

$$\text{Cash Deposit Service Training Cost} = \text{Training Cost} \times \frac{\text{number of transactions}}{\text{Total Transactions}}$$

Table (12) Cost of training in banking services per day

Type of service transaction	The cost of training in dinars
Open a current account	1388
cash deposit	33755
check deposit	24832
check withdrawal	25240
check endorsement	20535
Total	105750

4.1.3.2 Commissioned Conformity Assessment:

Conformity assessment costs are divided into audit costs and corrupted documents costs as follows:

First: Audit costs: The costs of auditing each service transaction shall be from the sum of the audit costs of the authorized person (A), the authorized person (B), and the manager, in cases where it is required to be audited by him. The cost of the audit is

reached by any authorized person or manager using the following equation:

$$\text{Audit costs} = \text{number of completed transactions} \times \text{audit costs}$$

The matching costs may be required from the sum of the matching cost that is accomplished in the five services of the bank (which was previously indicated) per day multiplied by the number of days of the month.

Table (13) The cost of evaluation and conformity of the bank's services

service type	The number of executed transactions	The cost of auditing and conforming	Total in dinars
Open a current account	177	43.94	7777.38
Cash deposit	4305	32.3	139051.50
check deposit	3167	34.78	110148.26
check withdrawal	3219	32.30	103973.70
check endorsement	2619	59.70	156354.30
Total	13487	203.02	517305.14

4.1.3.2 The costs of internal failure:

4.1.3.3.1 Error costs: It is the costs needed to correct errors, which consists of the sum of the cost that is realized at each site or employee through which the wrong transaction passes in order to correct it. Errors arise at two sites, the operators of the

two inputs. Each of the computer operator and the authorized person (B) and the authorized person (A), taking into account the time that each of them takes to process it, and this applies to all service transactions in which errors occur with the computer operator

Error cost = number of errors x cost of processing one error

Table (14) The cost of processing the error arising from the two operators of service transactions in the bank

service type	the number	cost per unit	Total
Open a current account	52	43.94	2.285
Cash deposit	333	32.3	10756
check deposit	275	34.78	9.565
check withdrawal	146	32.30	4.716
check endorsement	77	59.70	4.597
Total	883	203.02	31,919

4.1.3.3.2 The costs of corrupted documents: The costs of documents that are destruction during the provision of the service to customers due to the errors they contain consist of the number of documents that are destruction in each of the services multiplied by the cost of each type of such

vouchers as the same on the cash deposit during the period:

$$\text{Cost of corrupted_document} = 390 \times 2 = 780$$

By adopting this method, the costs of the documents that were destruction when providing each of the banking hall services during the period were determined in that table (15)

Table (15) The cost of corrupted documents in the bank

service type	the number	The cost of processing a single error	Total cost in dinars
Open a current account	32	50	1600
Cash deposit	390	20	7800
check deposit	260	20	5200
check withdrawal	-	-	-
check endorsement	130	50	6500
Total			2.1100

4

.1.3.4 External failure cost

The costs of external failure are represented by the opportunity cost, which is the interest income from loans that are lost on the bank due to the difference in the balance of deposits of current accounts of the private sector over another bank the cost of the lost opportunity was distributed to the

bank's services related to the collection of deposits, ie, the service of opening a current account, the cash deposit service, and the check deposit service only. The number of transactions actually completed from each of these services is used as the basis for the distribution.

Table (16) The opportunity cost of bank services

service type	The cost of lost opportunities in dinars
Open a current account	72,895
Cash deposit	2316288
check deposit	1686482

Although the cost of lost opportunities is not shown in the bank's records, its calculation and display within the categories of quality costs indicates the management's interest and motivates it to seek to attract public deposits in order to employ them in profitable investment areas After the categories of quality costs and all their items have been defined at the level of each of the bank's services, it becomes possible to prepare reports of quality costs in amounts at the level of these services.

4.2 The use of quality costs in evaluating and improving performance

Quality cost information in banking service can be taken aside in evaluating and improving performance, and this is done by adopting the efficiency and effectiveness indicators whose formulation is based on

quality costs. And what is consistent with the bank's directions:

4.2.1 Efficiency

Efficiency refers to the optimal use of material, human, financial, information and time resources. Reducing the percentage of waste to a minimum. The performance of the banking service is efficient if the resources necessary to complete the service transaction are properly used. In other words, the performance is efficient if the service transaction is completed without loss, which leads to high costs of completion. Single transaction and within the framework of quality costs in the banking service, competencies mean eliminating or reducing the costs of failure, detailing the costs of evaluation and inefficiency, which means an increase in the costs of failure and evaluation, and the

existence of ineffective Prohibition costs. Quality-related work costs mean the categories of quality costs that require the work component, which are the costs of training, auditing, conformity and errors. As for the total work costs, they are the cost of the two elements of work that are included in the calculation of current account service costs on this basis. This indicator can be divided into the following:

Labor efficiency = quality-related labor cost ÷ total labor costs

Training Efficiency = Training Cost ÷ Total Labor Costs

Audit efficiency = audit costs ÷ total labor costs

This indicator may be detailed on the basis of the employees who perform the audit, such as the authorized person (B), the authorized person (A), and the bank manager.

Matching Efficiency = Matching Costs ÷ Total Labor Costs

Error Efficiency = Error Cost ÷ Total Labor Costs

This indicator is separated by employees who make mistakes such as computer

operators and front office employees. These indicators can be calculated on the basis of each of the services provided by the current accounts or on the basis of the total current accounts. This indicator shows, in a standard case for several successive periods, the trend of the quality costs of work in relation to the total costs of work in the current accounts section. This can be done through this Indicator: Comparing the quality costs of services provided by the current accounts department that require work only if this indicator is detailed according to the types of services it also helps in following up the performance of the employee concerned with quality procedures and his control as well. The process does not belong to just calculating the indicators and making a comparison. Rather, it becomes a basis for making decisions, depending on what the indicators reveal. The purpose is to improve performance, which takes several forms. It may be by reducing the cost of auditing or the costs of conformity and reducing the costs of errors And eliminating them completely, in application of the philosophy of minor corrupted in the industry, and this may be the most needs in the banking service, if it is represented in the aim of getting rid of errors, which means improving performance and reducing costs.

Table No. (17) shows the current account balances, which amounted to (8626635.4) dinars during the work phase for the year 2020.

Quality cost categories	Amount in dinars	Ratio to total labor costs
Training cost	105750	%1.23
The cost of checking and matching cost mistakes	517305.14	%6
Quality cost group	21943	%0.25
	644998.14	%7.5

1- Efficient use of documents =

The cost of corrupted documents represents one of the costs of the internal failure. As for the total costs of documents, it is the cost of the documents that were destruction in addition to the costs of the documents

Cost of corrupted documents —

total document costs

that were actually used in the provision of bank services. This indicator can be detailed on the basis of the type of service. It was possible to determine the cost of the documents actually used in providing

services This is based on the number of completed transactions from each type of service during a month, multiplied by the cost of the documents needed for a single transaction. The costs of these documents amounted to (21,100) dinars. The total costs of the documents were (385810) dinars. Thus, the cost index of the documents used in the provision of services in the banking hall becomes as follows: This indicator must be monitored, measured and compared over a period of time in order to reduce and completely eliminate the costs of corrupted documents, depending on the percentage revealed by this indicator.

The above shows that this high rate of quality costs indicates a defect in the bank's efforts to control costs, as it reveals that these costs may reach large sums if they are calculated for all branches of the bank for a whole year, which means inefficiency, and this may require reducing these costs at all. To be in accordance with clarification plans after providing the requirements for its success in order to achieve the objectives of the minor corrupted (Zero Service Quality Cost)

4.2.2 Effectiveness of quality costs: It expresses the ability of the bank to achieve

its goals and within the framework of quality costs, performance is effective when the goal is achieved from spending some quality costs. The costs of Prohibition and evaluation are spent with the aim of preventing or reducing the costs of failure and that preventing or reducing the costs of failure is with the aim of achieving more Revenues to reach more profits, and that is after achieving customer satisfaction. On this basis, the effectiveness in the banking service can be measured in light of the quality costs in two stages, the first stage to be at the level of the quality cost categories among them.

The effectiveness of Prohibition and evaluation costs affects profits and then revenues. When these costs achieve their goal, reduce or prevent failure costs, this ultimately leads to profits. This on the one hand, on the other hand, is that reducing or preventing failure costs leads to achieving customer satisfaction, which is followed by a chain of effects that ends By achieving more revenue and then more profits. On this basis, quality costs are effective costs of Prohibition and evaluation when they achieve their goal of increasing revenue and then profits, and the two indicators are a measure of the effectiveness of performance using the cost of quality.

$$\text{(Firstly)} = \frac{\text{Prohibition and evaluation costs}}{\text{Current account service}} = \frac{623131.711 \text{ dinars}}{915076175} = 1.12\%$$

After calculating and comparing this percentage over several periods of time, it is possible to determine the effectiveness of document performance, ie, quality costs.

$$\text{(secondly)} = \frac{\text{Prohibition and evaluation profit}}{\text{profit}} = \frac{623131.711}{59909000} = \dots \%$$

These indicators can be divided on the basis of the categories of quality costs and on the basis of each of the bank's services, provided that the profit for each service is determined. These indicators help determine what quality costs contribute to the bank's revenues and profits.

After presenting the most important indicators that can be used in evaluating

performance based on quality costs in the banking service, it becomes appropriate to consider them as part of any system for evaluating performance in banks so that an axis is allocated to them in this system under the title of quality costs.

5.0 Conclusions and recommendations

5.1 Conclusions

1. The importance of identifying and measuring quality costs through the modern concept of quality control, which makes it an management tool that will achieve significant savings for economic units by improving the quality of products and controlling them to meet considerations related to costs, profits and risks by meeting the needs and expectations of customers.
2. Although the cost of lost opportunities is not shown in the bank's records, its calculating and showing it within the categories of quality costs indicates the management interest and attends it to seek to attract public deposits in order to employ them in profitable investment fields, and after the categories of quality costs and all their items have been determined at the level of each service The bank, according to the proposed system design, it becomes possible to prepare reports of quality costs in amounts at the level of these services.
3. The quality costs system aims at evaluating information related to the quality costs of the bank, whose benefits are determined by its uses, those benefits that ultimately flow into the bank's objectives of profitability and present the system in a way that serves the purpose and this is what was presented by the design of the proposed system and for which it was found Provides the required information in details related to it.
4. The size of the costs incurred by the bank as a result of designing and operating the system depends on the entity that is used for that. In the event of an agreement with one of the agencies specialized in designing accounting information systems, specifically manual systems, the costs will consist of items, costs of designing and operating the system, and training costs. Assign allowances paid to employees.
5. The benefits of the proposed design that it provides to management are embodied in performance evaluation and may motivate it to take other measures aimed at improving performance, as improving performance leads to two-way effects. The first is to reduce quality costs, and this in turn leads to a reduction in service costs for the bank, and then increases productivity

and increases profits. As for the other direction of the effects, it is improving the quality of service, part of which is to reduce the waiting time for the customer and the speed in providing service, accuracy and excluding errors, which leads to an increase in the frequency of customers to the bank and an increase in the volume of their transactions and then an increase in deposits and an increase in revenues and finally an increase in profits. All of these effects are considered Positive benefits from the system.

6. The proposed design shows that it reduces the cost of auditing or the cost of conformity and the cost of errors and eliminating them completely, in application of the philosophy of minor corrupted in the industry Perhaps this is the most needed in the banking service, if it is represented in order to get rid of errors, which means improving performance and reducing costs.

5.2 Recommendations

1. It is necessary to pay attention to the analysis and measurement of quality costs and to control them and to show their impact on costs in general according to the design of the proposed system.
2. The necessity of having a cost accounting system in the bank that is consistent with the conditions and requirements of the bank's work in order to establish an information base for calculating and controlling quality costs.
3. Preparing an integrated structure for the bank according to the design of the proposed quality cost system, which facilitates and reduces the costs of quality services.
4. Replacing automated electronic systems (ATMs - smart cards - Internet - SMS) to reduce the error rate, speed up service effectiveness, improve performance and quality, and reduce cost for the quality of services provided.
5. Using the system (queues) and modern electronic systems to reduce the specific cost and speed up the effectiveness and accuracy of the service and to gain customer satisfaction.
6. Holding training courses for the bank's employees to raise their efficiency, especially since the bank lacks the

accounting specialties of those with higher degrees.

7. Deepening the cost awareness among employees and at some management levels, especially the direct levels and quality monitors, and notifying them of the impact of quality failure on costs, and linking the incentives offered to them directly to reducing spoilage and improving quality.

The References

- 1- Hussein, Ahmed Hussein Ali, (2011), "Advanced Management Accounting", Faculty of Commerce, Alexandria University, Egypt.
- 2- Al-Samarrai, Manal Jabbar Sorour, (2021), Strategic Cost Management, third edition, Baghdad, Al-Jazeera Office for Printing and Publishing.
- 3- Salih Ibrahim Al-Shaabani, 2014, "Qualitative costs, causes and methods of managing them with the aim of reducing," Future Research Journal, issue (9).
- 4- Kamel El-Sayed, 2014, "Linking the Technological Development Strategy and Operations Management Methods in Improving Productive Efficiency: The Japanese Experience", The Arab Journal of Management, Volume Sixteen, Issue One.
- 5- Horngren, Charles T.& Datar, Strikant M.& Rajan, Madhav V.,(2016), "Cost Accounting", fourteenth Edition, United States of America, courier/ Kendall Ville.
- 6- Timonen, Karetta&Harrison, Eric& Katajajuuri, Juha-Matti& Kurppa, Sirpa,"(2017)," Environmental cost accounting methodologies" Copyright: Natural Resources Institute Finland (Luke), Printing house and: publishing sales: Juvenes Print, <http://luke.juvenesprint.fi>.
- 7- Baum, Markus B.,(2012),Service Business Costing; Cost Accounting Approach For the Service Industry, England, Springer Gabler.
- 8- Kinney, Michael R. & Raiborn, Cecily A., (2011), Cost Accounting: Foundation and Evolutions, Eighth Edition, USA, South-Western Cengage Learning.
- 9- Chung Yuan , chee cheng , ching show ,2012, "Cost Effectiveness Based Performance Evaluation For Suppliers and Operations" , Quality Management Journal , Vol.9, Issue(4) , (www.asq.com) .
- 10- Albright T.L , H.P.Roth, 2009 "Managing Quality Through Quality loss Function" , Journal of Cost Management, www.maaw.info/indexx.
- 11- Cooper, Robin & Slagmulder, R. (2009) "Target Costing and Value Engineering", Institute of Management Accountants.
- 12- Joseph M.Juran,2019, "Quality planning and analysis" Mc Graw-Hill book , Co,Inc., Newyourk .
- 13- Robert S. Kaplan, Anthony A.Atkinson,2008, "advanced Management accounting" Printic-Hall International , Inc