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## **Evaluating the performance of IT management under the implementation of the COBIT 2019 framework**

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**Abstract.** The study aims to identify the concepts and principles of the COBIT framework 2019 and its role in evaluating the performance of information technology management. Work efficiency, keeping pace with modern trends, and assisting in strategic decision-making This study was adopted to demonstrate the impact of the 2019 COBIT framework for evaluating the performance of information technology management on data obtained from the International Development Bank to link study variables and prove its hypotheses. The study reached several conclusions, the most important of which is that the COBIT 2019 framework is one of the most important control frameworks that can be integrated with the Balanced Scorecard (BSC) technology to enhance confidence and internal control procedures and fill gaps in the economic units that use information technology in their activities.

**Keywords.** COPT, Performance Evaluation, Information Technology, Balanced Scorecard

### **1. Introduction**

The great development in the business environment in the modern era has positively affected the work of the economic units in terms of their size and the economic activities they carry out. The volume of information and the degree of risks and procedures generated the need to issue laws, rules, and instructions to face these challenges and impose stricter control over the work of economic units, the most prominent of which was the COBIT framework in its various versions, the most recent updated version of which focused on information technology management and governance practices and their applications.

This framework is based on six main principles that bring together the objectives of governance and management. These principles help economic units build a framework that provides effective governance and management to protect shareholders' investments and generate management information that allows the economic unit to be employed in several areas, to evaluate its performance effectively and continuously through one of the management accounting techniques used. In this regard, the most important is the Balanced Scorecard (BSC)

technology, which, when integrated with the updated COBIT framework, contributes to the evaluation of information technology management in economic units.

The Iraqi business environment, especially the banking sector, suffers from a clear weakness in terms of performance evaluation due to its reliance on financial measures only in this regard, with the evaluation process not covering all bank departments, as well as the lack of application of modern control frameworks. Hence, the study problem can be formulated as follows: Is there an impact of information technology management on the performance of Iraqi banks? Does the application of the 2019 COBIT framework in Iraqi banks improve the evaluation of the performance of information technology management?

The importance of the study comes from the importance of Iraqi banks applying the COBIT 2019 framework as a methodological reference framework, as well as a guiding guide in evaluating information technology management to improve its performance, raise work efficiency, keep pace with modern trends, and assist in strategic decision-making. Thus, the current study seeks to achieve a set of goals, the most important of which are:

- A. Familiarize yourself with the concepts and principles of the COBIT Framework 2019.
- B. Statement of the role of the COBIT framework in evaluating the performance of information technology management
- C. Identify the most important modern trends in governance and IT management in light of the framework of COBIT 2019.

## **2. Theoretical review**

### *2.1 Information Technology Department*

#### *2.1.1 The concept of information technology*

Information Technology (IT) is an essential and important tool in enhancing the competitiveness of the economy of any country around the world, because of its significant impact on corporate productivity. However, these effects will not be fully realized unless the spread and widespread use of information technology (Martins, 2011) and Oliver can be continuously tracked to keep pace with the rapid technical changes, especially in the last two decades. They have to update or replace their old strategies with new, contemporary ones (Kaplan, 2014).

The term "technology" consists of two linguistic parts (syllables): "techno" means skill or application, while the other syllable, "logy," represents study and knowledge (science). The linguistic definition of this term is the science of studying ability and skills in a logical manner to achieve application. The systemic use of scientific knowledge to reach practical purposes (Al-Zubaidi, 2019), so when does Baalbaki & Baalbaki (2008) see that technology is the method of processing technical details by the person concerned in a purely artistic way to achieve the purpose for which he was found, by means that guarantee life to man Comfortable and achieve the required luxury, while the scientific definition of the term technology is a set of skills, experiences, and the main means that the economic unit seeks to reach its beneficial goals, for the purpose of adapting to its changing environment, whether these changes are physical, biological, social, or others? (Al-Shujairi, 2004), as defined by the International Federation of Accountants (IFAC) as the automated means to create, process, store, and deliver information, including recording and communication systems that contain hardware, software, data, and electronic devices. Others (IFAC: 2008), while (Roztocki, 2011) defined information technology as a new means of creating modern job opportunities.

2.1.2. *Components of Information Technology*

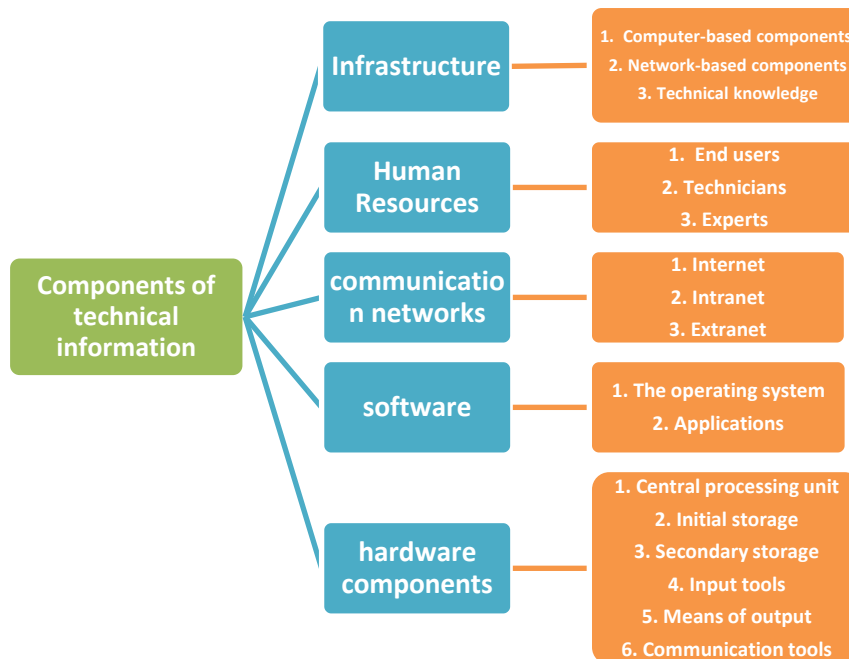
Information technology consists of several resources, namely:

1. Physical technical components.
2. Technical, human and technical skills.
3. non-material resources supported by IT such as knowledge and customer guidance.

Using the resource-based economic unit viewpoint, several studies have shown that the combination of information technology technical resources (such as infrastructure and business applications) and human resources (such as technical and administrative skills) gives economic units unique capabilities that help them increase efficiency, profitability, innovation, and gain a sustainable competitive advantage. (Dao et al., 2011)

The components of information technology can be summarized in (Figure 1) as follows:

**Figure .1**  
**Components of information technology**



Prepared by the two researchers, based on: (Al-Shammari, 2021: 20-23), (Al-Tamimi, 2021: 30).

2.1.3 *Dimensions of information technology*

Dimensions of information technology

Information technology is one of the most important and prominent resources of the economic unit in the era of technological development, and its dimensions can be identified in three main issues, which are:

First: The benefit of using information technology: It is one of the most important dimensions of information technology, and important benefits for the economic unit derive from it:

1. At the level of management: It is well known that information technology can reduce costs and increase accuracy and speed in completing transactions. This is for

management to reduce printing, reproduction, and transmission costs and replace them with the latest electronic technology. (Alouti, 2008)

2. At the level of human resources, The feasibility of using information technology in human resources is represented in the development and training of cadres working in the economic unit to use modern systems in managing and practising work with the least possible effort, which is reflected in the achievement of job satisfaction for workers and increases their productivity. (Baschab et al., 2007)

Second: Smoothness in the use of information technology: Smoothness is achieved through the use of remote communication techniques, such as e-mail and computer technology, in announcing and marketing available opportunities, in addition to presenting financial information to beneficiaries.

Third: Information Technology Infrastructure: It consists of: (Al-Zubaidi, 2019)

1. Physical Components: Components that have a physical presence represent devices, machines, equipment, documents and evidence that are difficult to access without the permission of their owners.

2. Non-material components: They represent the practical skills and knowledge that economic units possess, to carry out their work and achieve the goals for which they were found.

#### *2.1.4. The need for information technology*

The need for information technology has become very important, especially in the era of the information revolution, due to the dependence of most of the daily work on it, and its contribution to the completion of various activities, services and professions, in addition to increasing production in laboratories and factories in various sectors, and it also contributes to overcoming most of the administrative issues and establishing databases It is characterized by accuracy, speed, and reliability (Al-Taie, 2010). In what he sees (Al-Ta'i, 2021), one of the most important needs of information technology in economic units is preserving their assets, adhering to their policies, ensuring the accuracy of their records, as well as preparing financial statements that are characterized by accuracy and reliability, on which the users of the financial statements rely in making appropriate decisions at appropriate times. suitable.

Globally, economic units - whether public or private, large or small - increasingly recognize that information is a key resource and that technology is a strategic asset for economic units, both of which are critical to success. (COBIT, 2019)

As the economic units that fail to take advantage of the benefits of the underlying information technology systems, they can lose an important part of their market share in favor of their competitors and move them away from the circle of competition. (Al-Johar and Hamoudi, 2015)

#### *2.1.5. Importance of information technology*

Information technology is of great importance to economic units, their departments and employees, as well as their customers.

1. Information technology is an effective means in reducing the size of economic units and their administrative levels by adopting modern methods of organization, planning and management.

2. Developing workers' skills and giving them an opportunity to think "outside the box" to obtain creative ideas and actions that keep pace with development and progress in the information age.

3. Contribute to the expansion of business, achieving better returns and the lowest possible risk.

4. It contributes to enhancing the competitive advantage of the economic units by improving the quality of work, increasing the speed of response to customers, and improving it.

5. The economic unit departments assist in the timely decision-making process.

#### *2.1.6. Challenges of applying information technology systems*

Economic units face many challenges in applying information technology systems in an integrated manner, as without rational management to face these challenges and restrictions, these units will be subject to failure with a high probability. This is due to the common or individual challenges facing these units, perhaps due to the different systems. political, economic and environmental, and the constraints and obstacles they pose in the application of integrated information technology systems (Al-Ta'i, 2021) while integrating technology as an effective component in its functions and operations due to the gradual shifts in the environment, (Zahra et al., 2011) as pioneers can Businesses overcome these challenges through effective planning and practical innovation (Neneh & Zyl, 2012)

Small and Medium Enterprises (SMEs) in developing countries also face the same challenges in technological innovation due to their size and uncertain environments. Changes in the business environment have led them to rely increasingly on information technology to achieve and retain competitive advantage, improve productivity, as well as thrive in dynamic markets. Contemporary (Chege et al., 2020)

Among the most prominent challenges of adopting the application of information technology are the following: (Jonhariono et al., 2020), (Chi-Hoon-Lee & all, 2008).

1. Weakness or lack of clarity in policies to adopt the application of information technology in economic units.

2. Weak financial allocations or sufficient resources for the application of information technology in economic units.

3. Weakness or absence of compatibility and communication between senior and middle management levels.

4. The unwillingness of senior management to adopt information technology in the decision-making processes.

5. Weakness or absence of strategic alignment in the economic units.

6. Inadequate investment costs with the results obtained from the application of information technology.

7. Weak technical expertise, which led to a lack of optimal use of information technology.

#### **2.2 COBIT Framework:**

In light of the digital technical transformation, information and technology (I&T) have become a critical tool in supporting, sustaining, and growing economic units. Previously, boards of directors and senior management could delegate, avoid or ignore decisions related to information and technology (I&T) in most sectors and industries, but these attitudes are now unwise, as it is often here that creating value for stakeholders (i.e. achieving economic benefits at a cost) Optimized by reducing risk) accompanied by a high degree of digitization in new business models, successful innovation, efficient operations, etc. (COBIT, 2019)

COBIT is an open source framework, used to control information technology and internal control, that helps managers, users and auditors understand and interpret information technology systems in their economic units to develop a governance mechanism in them. (German & Eduardo, 2006)

### *2.2.1 Historical development of the COBIT framework*

The roots of the COBIT framework extend back to 1996, and this framework has evolved and gone through many stages, and as a result, it has transformed from a tool for auditing information systems into a tool for managing information and the most important means of supporting it, as follows: (Dhiab, 2019), (Al-Obaidi, 2019), (Thabit, 2021), De Haes & Van, 2015)

#### 1. The first stage 1996:

This version was issued in 1996 by the Information Systems Audit and Control Institution (ISACA), and it was called COBIT 1, and its objectives at that stage were the objectives of its audit, especially in the information technology systems environment.

#### 2. The second phase, 1998:

This version was issued in 1998, which witnessed many developments, most of which depended on the basis of information technology auditing, and it was called COBIT 2, and its objectives at that stage were control objectives, as well as administrative guidelines.

#### 3. The third stage, 2000:

This version was issued in the year 2000 with a significant change from the previous versions, and it included guidelines for management, and dealt with the main success factors and indicators, and it was called COBIT 3, and this version was considered a comprehensive and integrated version whose main goal was to manage information technology systems.

#### 4. The fourth stage 2005:

This version was issued in 2005, with attention to four areas: planning and organization, acquisition and implementation, delivery and support, as well as follow-up.

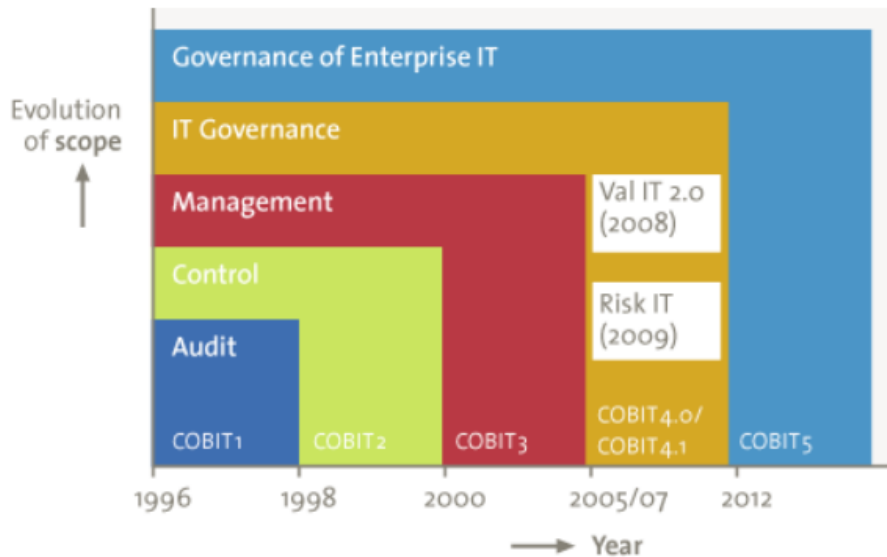
#### 5. The fifth stage 2012

This version was issued in 2012, and it was called COBIT 5, which is considered as an integrated version that helps economic units achieve the objectives of information technology management and governance, taking into account the interests of beneficiaries (internal and external) on the part of information technology. It also contributed to the assistance of information technology officials in Economic units in knowing the extent to which information technology governance is applied.

#### 6. The sixth stage 2019

In 2018, ISACA announced the issuance of an updated COBIT framework, which is a summary of nearly 25 years of research and development, called COBIT 2019. It was specifically designed to keep pace with the most important updates, contribute to the development of governance strategies with high flexibility, and adapt to modern and rapidly changing technical development This framework conducts continuous reviews to address sudden security changes in the information security and safety environment.

**Figure.2** Historical development of COB



**Source: de Meijer, P., & Bruyndonckx, D. (2015). COBIT 5: a bridge too far or a giant leap forward? p:42**

### 2.2.2 The 2019 COBIT Framework

This edition is the latest technologies and trends that address the work frameworks and security needs of economic units and banks, especially frameworks for information technology management, as the objectives of governance and management in the framework of COBIT 2019 were collected into five areas, which express the main goal for which it was established. The COBIT 2019 framework is based on six basic principles of information technology governance and management, which help economic units build a framework that provides effective governance and management to protect shareholders' investments. (Al-Shammari & Al-Kawaz, 2022)

COBIT believes that the governance of information and technology (EGIT) cannot happen in a vacuum. As this is implemented in different conditions determined by many factors in the internal and external environment, therefore, the implementation of EGIT varies from one economic unit to another. (COBIT® 2019 IMPLEMENTATION GUIDE)

### 2.2.3. COBIT 2019 Principles

COBIT® 2019 developed two sets of principles: COBIT® 2019 Framework,

A. Principles that describe the basic requirements for an enterprise information and technology governance system.

B. Principles of a governance framework that can be used to build a corporate governance system.

The basic group of the governance system included 6 basic principles, which are:

1. Meeting the needs of stakeholders: by generating value from the use of information and communication technologies that reflect a balance between benefits, risks and resources.

2. Building an organization's information and technology (I&T) management systems: It consists of a number of different components that work together in a comprehensive manner.

3. Dynamic governance system: It is characterized by the ability to change its design factors continuously, as in the factors of strategy and technology.

4. Separation of governance and management: The governance system must clearly distinguish between governance and management activities and structures.

5. Customized governance: A governance system should be customized according to the needs of the organization, using a set of design factors as parameters to customize and prioritize the components of the governance system.

6. A holistic governance system: The governance system should cover the organization from start to finish, focusing on all technologies and information processing that the organization puts in place to achieve its goals, regardless of its location in the organization.

#### *2.2.4. COBIT 2019 Objectives and Dimensions*

In order for information and technology to contribute to achieving the objectives of the economic unit, a number of governance and management objectives must be achieved. The objectives of governance and management in COBIT 2019 were grouped into five areas that reflect the main purpose for which it was established. (De Haes, et al., 2020:55)

Governance objectives are grouped in the area of Evaluation, Direction, and Control (EDM), for the Board of Directors to evaluate strategic options, guide senior management on the options chosen, and monitor the achievement of the strategy.

While the objectives of the Department were grouped in four areas, namely:

□ Alignment, Planning, and Organization (APO): Addresses the overall organization, strategy, and supporting activities of I&T.

□ Build, Acquisition, and Implementation (BAI): Deals with the definition, acquisition, and implementation of ICT solutions and their integration into business operations.

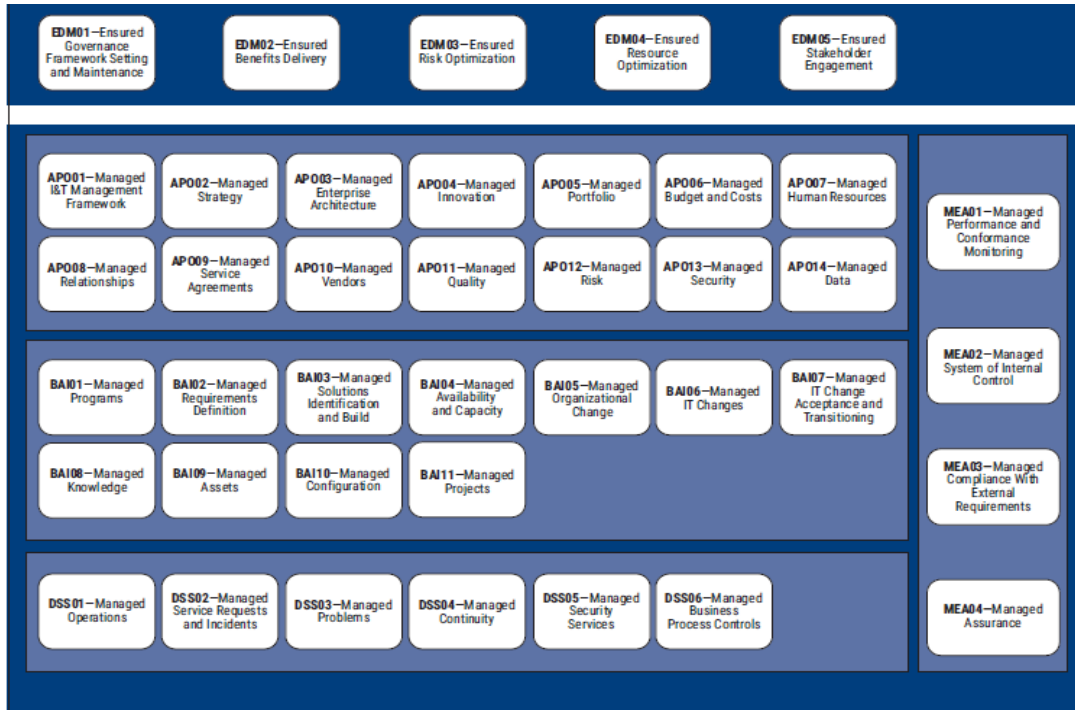
□ Delivery, Service, and Support (DSS): Handles operational delivery and support of I&T services, including security.

□ Monitoring, Evaluation, and Assessment (MEA): Address performance monitoring and matching ICTs to internal performance objectives, internal control objectives, and external requirements.

The COBIT 2019 framework works according to a guiding model to limit the processes and procedures related to information technology management, which were defined under this framework as 40 procedures divided into 5 dimensions.

**Figure.3** The COBIT 6 Framework Manual

The dark blue background represents the governance objective, and the light blue background represents the management objective



Reference: COBIT2019, GOVERNANCE SYSTEM AND COMPONENTS, P:21

### 3. Methodology

#### 3.1 study Sample

Current study tend to choose The International Development Bank as the study sample from 6/12/2022 to 12/20/2022, one of the distinguished Iraqi banks in the local and regional arena. It was established in 2012 with four branches with a capital of 100 billion Iraqi dinars. Lebanon and the United Arab Emirates, while the bank continued to gradually increase its capital to reach 250 billion Iraqi dinars at the end of 2015.

#### 3.2 Vision, mission, strategy and values

Our primary goal is to become the most innovative and technologically advanced bank in Iraq by providing the latest transaction technology and electronic banking services to our customers.

The bank, as one of the pioneering banks in using electronic banking services and transactions in Iraq, also seeks to facilitate banking dealings and make it accessible to all Iraqis inside and outside Iraq, as well as strengthening the national economy and contributing to the reconstruction of Iraq.

#### 3.3. Corporate Governance

Through the International Development Bank's commitment to the rules of corporate governance, the bank has followed a comprehensive program that meets the requirements of good governance and corporate governance according to the recommendations of the Organization for Economic Cooperation and Development OECD, the requirements of the Basel Committee, the instructions of the Central Bank of Iraq, the Iraqi Trade Law and the Iraqi Banking Law.

### 3.4. Developing indicators:

With regard to the relative importance of each dimension of the balanced scorecard dimensions of the study sample, it was determined according to their importance in the banking sector and based on the opinions of specialists in this field during personal interviews that took place with a group of specialists in the field of financial management, information technology, control And auditing, and risk management, in the International Development Bank, as the importance of the four dimensions of the card (financial, customers, internal operations, growth and learning) reached a rate of 20%, 30%, 30%, 20%, respectively. While the sum of the total scores for the four dimensions was 360 degrees, the special score was extracted for each of the four dimensions of the balanced scorecard according to the percentage of importance of each dimension of my agencies, the financial dimension ( $360 \times 20\% = 72$ ), after the clients ( $360 \times 30\% = 108$ ). After internal operations ( $360 \times 30\% = 108$ ), after learning and growth ( $360 \times 20\% = 72$ ), thus the sum of the four dimensions is (360 degrees).

For the purpose of determining the level of performance of each of the four dimensions of the balanced scorecard, (Al-Obaidi, Al-Johar, 2019) believes that the scale shown in Table (1) can be adopted to achieve this goal.

**Table.1**

performance of each of the four dimensions

	required guidance	level of performance	percentage of achieved performance
Performance	requires substantial adjustments	Weak	up to 49%
The performance	required major adjustments	acceptable	%59 - %50
Performance	requires necessary adjustments	Average	%69 - %60
Performance	requires constant control	Good	%79 - %70
Performance	requires more motivation and support	very good	%89 - %80
	Excellent performance	Excellent	and above %90

### 3.5 Applying the balanced scorecard to evaluate information technology management and analyze results

In this study, the balanced scorecard (BSC) will be applied to evaluate the information technology department to examine and analyze the extent to which goals are achieved by information technology in the study sample according to the indicators of each dimension of the card, as follows

*3.5.1: The financial dimension:* The financial dimension is one of the important dimensions in the balanced scorecard, and the relative importance of this dimension was determined at 20%, through personal interviews that took place with specialists, and a set of indicators were developed to be used in evaluating the performance of the information technology department according to the financial dimension. Based on the updated COBIT framework 2019, as well as the framework set by the Central Bank of Iraq (governance and

institutional management of information technology for the banking sector), and accordingly, the objectives related to information technology management, the indicators used, the evaluation scores for each indicator, and others can be summarized.

**Table.2**

The goals related to information technology and the results of performance evaluation according to the indicators of the financial dimension for the year 2021

alignment target	Metrics	Evaluation scores for each indicator	Pointer categories	score for each class
<b>balanced scorecard for information technology The financial dimension of the</b>				
1 Bank compliance with IT practices and support compliance business with external laws and regulations	The number of information non-compliance technology reports, including fines and settlements, and their impact on the loss of the bank's reputation	8	%100-81	8
			%80-61	6.4
			%41-60	4.8
			%21-40	3.2
			%01-20	1.6
	non-compliance cases Number of related to contractual agreements providers with IT service	8	8or more	8
			8-6	6.4
			6-4	4.8
			4-2	3.2
			2-0	1.6
Number of issues related to bank non-compliance in the IT application reported to the Board	8	8or more	8	
		8-6	6.4	
		6-4	4.8	
		4-2	3.2	
		2-0	1.6	
2 Information technology risk management	Percentage of enterprise risk including IT-related ,assessment risks	8	%100-81	8
			%80-61	6.4
			%41-60	4.8
			%21-40	3.2
			%01-20	1.6
	critical IT-related Number of incidents not identified in the risk assessment	8	8or more	8
			8-6	6.4
			6-4	4.8
			4-2	3.2
			2-0	1.6
3 Benefits from enabled IT investments and services	The percentage of IT-enabled meet or exceed investments that the benefits claimed in the feasibility study	8	%100-81	8
			%80-61	6.4
			%41-60	4.8
			%21-40	3.2
			%01-20	1.6
	services for Percentage of IT which expected benefits are being level realized (as stated in service (agreements	8	%100-81	8
			%80-61	6.4
			%41-60	4.8
			%21-40	3.2
			%01-20	1.6
4 The quality of financial information related to technology information	The percentage of information services to specific technology operational costs and expected benefits	8	%100-81	8
			%80-61	6.4
			%41-60	4.8
			%21-40	3.2
			%01-20	1.6
	8	%100-81	8	

The percentage of satisfaction of stakeholders with regard to key the level of transparency, accuracy of understanding and information technology financial information	%80-61 %41-60 %21-40 %01-20	6.4 4.8 3.2 1.6
<b>Total financial perspective</b>	72	60.8

It is clear from the above table the results of applying the indicators of the financial dimension, which are related to evaluating the information technology department in the International Development Bank in terms of achieving the goals related to this dimension. Information technology related to the objectives of this dimension is very good, which needs more support and motivation.

*3.5.2 Customer dimension:* The customer dimension is one of the important dimensions in the balanced scorecard, and the relative importance of this dimension was determined at 30%, through personal interviews that took place with specialists, and a set of indicators were developed to be used in evaluating the performance of the Information Technology Department according to the customer dimension, depending on On the updated COBIT framework 2019, as well as the framework set by the Central Bank of Iraq (governance and institutional management of information technology for the banking sector), and accordingly, the objectives related to information technology management, the indicators used, the evaluation scores for each indicator, and others can be summarized.

**Table.3**

The goals related to information technology and the results of performance evaluation according to customer dimension indicators for the year 2021

	alignment target	metrics	Evaluation scores for each indicator	Pointer categories	score for each class	
<b>the balanced scorecard of IT dimension customers for</b>						
<b>1</b>	Providing information technology services in line with business requirements	percentage of stakeholder satisfaction in providing services information technology that meets the agreed service levels	The	15	%100-81	15
					%80-61	12
					%41-60	9
					%21-40	6
					%01-20	3
	IT services	Percentage of business disruption resulting from incidents	16		%100-81	16
					%80-61	12.8
					%41-60	9.6
					%21-40	6.4
					%01-20	3.2
	Percentage of users' satisfaction quality of information with the technology services provided to customers	15		%100-81	15	
				%80-61	12	
				%41-60	9	
				%21-40	6	
				%01-20	3	
<b>2</b>	The smoothness of the bank's procedures in converting business	level of satisfaction of businessmen with the response of technology to the new requirements	The	16	%100-81	16
					%80-61	12.8
					%41-60	9.6
					%21-40	6.4
					%01-20	3.2

requirements into operational solutions	The average time to market for IT services and introducing new applications	15	4.21-5.00	15
			3.41-4.20	12
			2.61-3.40	9
			1.81-2.60	6
			1.00-1.80	3
	The average time required to IT objectives convert strategic into agreed initiatives	15	4.21-5.00	15
			3.41-4.20	12
			2.61-3.40	9
			1.81-2.60	6
			1.00-1.80	3
The number of important business supported by the bank's operations infrastructure and modern the applications in providing service	16	8or more	16	
		8-6	12.8	
		6-4	9.6	
		4-2	6.4	
		2-0	3.2	
customer Total perspective		108	83.4	

It is clear from the above table the results of applying indicators of the customer dimension, which are related to evaluating the information technology department in the International Development Bank in terms of achieving the goals related to this dimension. Information technology related to the objectives of this dimension is good, which requires continuous monitoring of performance.

*3.5.3. Internal Operations Dimension:* The internal operations dimension is one of the important dimensions in the balanced scorecard. The relative importance of this dimension was determined at 30%, through personal interviews that took place with specialists, and a set of indicators was developed to be used in evaluating the performance of the Information Technology Department according to the operations dimension. According to the updated COBIT framework 2019, as well as the framework set by the Central Bank of Iraq (governance and institutional management of information technology for the banking sector), and accordingly, the objectives related to information technology management, the indicators used, the evaluation scores for each indicator, and others can be summarized.

**Table.4**

Objectives related to information technology and performance evaluation results according to indicators after internal operations for the year 2021

	alignment target	metrics	Evaluation scores for each indicator	Pointer categories	score for each class
<b>dimension the internal processes of the IT balanced scorecard</b>					
<b>1</b>	Information security, addressing applications, and infrastructure and privacy	number of confidentiality incidents that caused financial loss, disruption, or public business embarrassment	7	8or more	7
				8-6	5.6
				6-4	4.2
				4-2	2.8
				2-0	1.4
	The number of downtimes that cause loss, business disruption, or financial public embarrassment	7	8or more	7	
			8-6	5.6	
			6-4	4.2	
			4-2	2.8	

			2-0	1.4	
			7 8or more	7	
			8-6	5.6	
			6-4	4.2	
			4-2	2.8	
			2-0	1.4	
<b>2</b>	Enable and support business applications operations by integrating and technology	right time to perform business The services or operations	7 4.21-5.00	7	
			3.41-4.20	5.6	
			2.61-3.40	4.2	
			1.81-2.60	2.8	
			1.00-1.80	1.4	
			7 8or more	7	
		The number of IT-enabled business has incurred additional software that costs due to IT integration problems		7 8or more	7
				8-6	5.6
				6-4	4.2
				4-2	2.8
				2-0	1.4
				7 4.21-5.00	7
<b>3</b>	Deliver programs on time within budget and meet requirements and quality standards	ratio of the number of programs The to projects required on time and budget within	7 4.21-5.00	7	
			3.41-4.20	5.6	
			2.61-3.40	4.2	
			1.81-2.60	2.8	
			1.00-1.80	1.4	
			7 8or more	7	
		Number of applications or critical infrastructures that run separately and are not integrated due to IT integration issues		7 8or more	7
				8-6	5.6
				6-4	4.2
				4-2	2.8
				2-0	1.4
				6 %100-81	6
<b>4</b>	Information quality in information technology management	level of user satisfaction with the The quality, timeliness, and availability of administrative information related to information technology, in relation to the available resources	6 %80-61	4.8	
			%41-60	3.6	
			%21-40	2.4	
			%01-20	1.2	
			7 %100-81	7	
			%80-61	5.6	
		The percentage of stakeholder the quality of the satisfaction with program achieved to the targeted project		%41-60	4.2
				%21-40	2.8
				%01-20	1.4
				7 %100-81	7
				%80-61	5.6
				%41-60	4.2
<b>5</b>	IT compliance with internal policies	of incidents related to non- compliance with IT policies	6 %21-40	2.4	
			%01-20	1.2	
			7 %100-81	7	
			%80-61	5.6	
			%41-60	4.2	
			%21-40	2.8	
		The percentage and extent of decisions in which incorrect business incorrect or unavailable IT-related major factor information was a		%01-20	1.4
				7 %100-81	7
				%80-61	5.6
				%41-60	4.2
				%21-40	2.8
				%01-20	1.2
	Percentage of information that meets standards in the bank quality		7 %100-81	7	
			%80-61	5.6	
			%41-60	4.2	
			%21-40	2.8	
			%01-20	1.4	
			7 8or more	7	
			7 8or more	7	
			8-6	5.6	
			6-4	4.2	
			4-2	2.8	
			2-0	1.4	
			6 8or more	6	

	8-6	4.8	
The number of exceptions from the internal policies bank's	6-4	3.6	
	4-2	2.4	
	2-0	1.2	
Frequent review of the bank's internal and the possibility of policies updating them	7 8or more	7	
	8-6	5.6	
	6-4	4.2	
	4-2	2.8	
	2-0	1.4	
internal operations perspective Total	108		72.8

The above table shows the results of applying the indicators of the internal operations dimension, which are related to evaluating the information technology department in the International Development Bank in terms of achieving the goals related to this dimension. The overall average performance for this dimension was 72.8 out of 108 degrees, which represents 67%. Information technology management related to the objectives of this dimension is medium, which requires necessary adjustments to performance

*3.5.4 The Growth and Learning Dimension:* The growth and learning dimension is considered one of the important dimensions in the balanced scorecard. The relative importance of this dimension was determined at 20%, through personal interviews that took place with specialists, and a set of indicators was developed to be used in evaluating the performance of the Information Technology Department according to the growth dimension. And learning, based on the updated COBIT framework 2019, as well as the framework set by the Central Bank of Iraq (governance and institutional management of information technology for the banking sector), and accordingly, the objectives related to information technology management, the indicators used, the evaluation scores for each indicator, and others can be summarized.

**Table .5**

	alignment target	Metrics	Evaluation scores for each indicator	Pointer categories	score for each class
<b>Following the growth of the IT balanced scorecard</b>					
1	Personnel competence in understanding and analyzing technology and business	of IT-savvy entrepreneurs (i.e. those who have the knowledge and understanding required of IT to direct, direct, innovate and see IT opportunities in their area (of expertise	12	%100-81 %80-61 %41-60 %21-40 %01-20	12 9.6 7.2 4.8 2.4
		.Percentage of business-savvy IT people (i.e those who have the requisite knowledge and areas to understanding of relevant business direct, direct, innovate and see IT opportunities (for business	12	%100-81 %80-61 %41-60 %21-40 %01-20	12 9.6 7.2 4.8 2.4
		Percentage of businessmen with experience in managing information technology in the bank	12	%100-81 %80-61 %41-60 %21-40 %01-20	12 9.6 7.2 4.8 2.4
2	Knowledge, and experience		12	4.21-5.00 3.41-4.20	12 9.6

initiatives for business innovation	level of business executive awareness and understanding of the possibilities in information technology		2.61-3.40	7.2	
			1.81-2.60	4.8	
	Number of approved initiatives resulting from innovative IT ideas	12	1.00-1.80	2.4	
			4.21-5.00	12	
	The number of recognized innovation terms of award-winning champions in employees in the field		12	3.41-4.20	9.6
				2.61-3.40	7.2
				1.81-2.60	4.8
				1.00-1.80	2.4
				4.21-5.00	12
				3.41-4.20	9.6
2.61-3.40				7.2	
1.81-2.60				4.8	
view of growth and development	Total	72		67.2	

The goals related to information technology and the results of performance evaluation according to the growth and learning dimension indicators for the year 2021

It is clear from the above table the results of the application of indicators for the growth and learning dimension, which are related to the evaluation of information technology management in the International Development Bank in terms of achieving the goals related to this dimension. Information technology management related to the objectives of this dimension is extensive, which requires the continuation of this approach in the future.

Accordingly, the results of applying the Balanced Scorecard (BSC) to evaluate the performance of the Information Technology Department in achieving the goals of the International Development Bank can be summarized as in the following table

**Table .6**

The summary of the results of the balanced scorecard

The ratio of achieved performance to the targeted total performance	The average performance represented by the achieved scores	Total target scores for each dimension	The dimension	
18.0%	64.8	72	Financial dimension	1
23.2%	83.4	108	dimension of customers	2
20.2%	72.8	108	The internal operations dimension	3
18.7%	67.2	72	Learning and growth dimension	4
80.1%	288.2	360	Total	

Based on this, the study hypothesis was tested that the use of the Balanced Scorecard (BSC) technique helps the economic units in conducting the process of evaluating the strategic performance of the bank and highlighting the strengths and weaknesses, as this technique is uniquely distinguished on financial and non-financial scales.

#### **4. Conclusions and recommendations**

##### *4.1 Conclusions*

1. The COBIT 2019 framework is one of the most important control frameworks that can be integrated with the Balanced Scorecard (BSC) technology to enhance confidence and internal control procedures and fill gaps in economic units that use information technology in their activities.

2. The integration of the COBIT 2019 framework with the Balanced Scorecard (BSC) technology contributes to supporting the corporate governance system, risk management, and activating information technology control.

3. The development of generations of the COBIT framework historically led to the successive development of the desired goals, as the first version in 1996 focused on auditing information systems, while the last version in 2019 focused on information technology management.

4. The application of the Balanced Scorecard (BSC) technique in evaluating the information technology performance of COBIT 2019 contributes to increasing the effectiveness of the precautionary measures for internal control, and thus enhancing the credibility of the financial statements of the economic units.

5. Through the results obtained from the balanced scorecard analysis, it was found that the performance of the Information Technology Department at the International Development Bank was rated (very good), which requires more support and motivation to evaluate performance on an ongoing basis.

##### *4.2 Recommendations*

1. The need for economic units, including banks, to apply the balanced scorecard to evaluate the performance of the information technology department in the unit, to ensure the achievement of its strategic objectives, and to diagnose weaknesses in order to take action to address them in a timely manner.

2. Urging economic units to set strategic objectives that govern control procedures and are consistent with the procedures of the COBIT 2019 framework to increase confidence in the Information Technology Department.

3. Developing human resources in economic units by engaging them in training courses specialized in information technology systems and managing them, as well as introducing them to the COBIT framework and its importance in internal control and governance, especially after it has become a requirement of the Central Bank of Iraq.

4. Encourage researchers to pay attention to modern control methods, combat corruption, manage information technology, and present their efforts to the concerned authorities to preserve public money and limit waste of economic resources.

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