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EMPOWERMENT ITIL PROCESSES BY USING COBIT FRAMEWORK TO STRATEGIC ALIGNMENT OF IT AND BUSINESS IN SOUTH PARS GAS COMPANY

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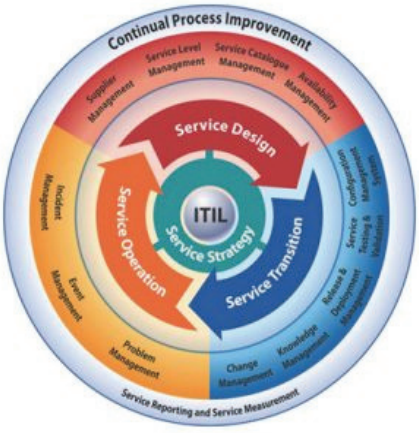
Abstract:
Latterly, organizations want to excessively align the information technology processes with the business objectives and to move the loyalty and customer orientation in the direction of the service-orientation. One of the most ordinary frameworks of the information technology service management is the information technology infrastructure library (ITIL). This framework has benefits like more adaptability and flexibility, costs productiveness and being service-oriented and it is able to present the quality development, an increase of the utilization, performance and risk reduction etc. For that reason, ITIL processes should be strengthened to realize the strategic objectives of business in the organizations. Accordingly, by using the COBIT framework which is a control framework for the information and technology and it brings into focus all the issues required for obtaining the accurate control and management and it has an integration role for the types of standards and guide principles, the ITIL advantages can be achieved which is one of the attractiveness of this framework. South Pars Gas complex which is one of the largest companies of the Middle East in the field of oil and gas has also tried to strengthen its processes in order to obtain the organizational objectives of its business and to align the business with the information technology using these frameworks in the information technology section and it was able to reach this objective with the help of the outstanding view in the competitive operations in the world positioning of the value creation by expanding the knowledge-based technical services.

Key Words: *Oil and Gas, ITIL, COBIT, Strategic Alignment*

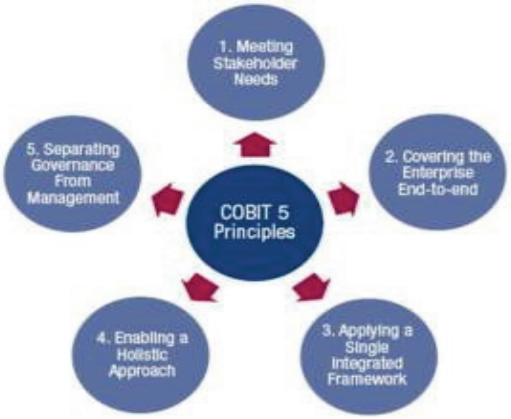
1. Introduction

ITIL framework is an applicable reference for the service management. For comprehending the nature of the service management, it is required to comprehend the service nature and how to make relationships between the service management and the service providers. The meaning of service is to create value to the customers which is provided by promoting the required results of the customers. Accessing to the services without consuming special costs and providing risks to the customers is profitable. (C. H. E. N. Hui, 24: 063, 2009) for utilizing these services, a set of special organizational capabilities are used in the service form which is called the service management. ITIL is a standard or a management framework which was established by the Office of Government Commerce (OGC) of Britain and in the field of information technology. ITIL is an abbreviation for IT Infrastructure Library and it is in the meaning of the information technology infrastructure library which answers to the norms as a Best practice in types of the general and partial management views. Presently, the third version of ITIL edited in 2011 is accessible and most of the managers and specialists of the information technology believe that this framework is the best management method in the field of the information technology services. This framework is generally and partially utilized and implemented in almost all the fields of the information technology management and the experiences have proved that using it can expand the productiveness of business in the information technology section. This growth in utilization can be achieved by leaning on four principles (4P) of the information technology service manufacturer i.e. the expert people, process arrangement, services or products and commercial partners. By focusing on all four mentioned elements, the IT managers try to increase the quality of presenting services to the customers in front of low costs and highest rate of return on the capital in the form of the following 5 steps, so the most value added is generated for the costumer and it is given to the customer with the lowest risk. These 5 steps are as follows .Service Strategy, Service Design, Service Transition, Service Operation, Continual Service Improvement. (Picture 1). (S. Taylor, vol. 1.2008)

Picture 1: ITIL Life Cycle:



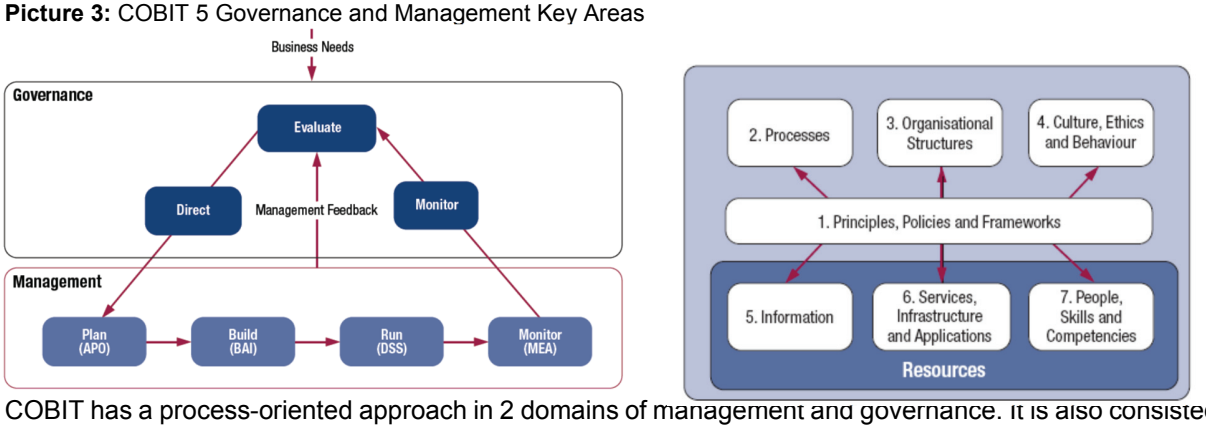
Picture 2: COBIT5 Principle



The business dimension of COBIT is consisted of providing relationship between the business objectives and the information technology objectives, providing the measurements and maturity models for measuring the success rate and recognizing the duties of the business owners and the information technology processes. COBIT is a framework for the expansion, implementation, supervision and improvement of the information technology governance and the management method. The COBIT framework has been released with the help of the IT Governance Institute (ITGI) and the Information Systems Audit and Control Association (ISACA). The aim of this framework was to present a common language for providing communications among the business managers about the purposes, objectives and the results. COBIT is an abbreviation for “Control Objectives for Information and Related Technology”. COBIT 5 is consisted of 5 principles to govern and manage the information technology organization (firm): (Picture 2)

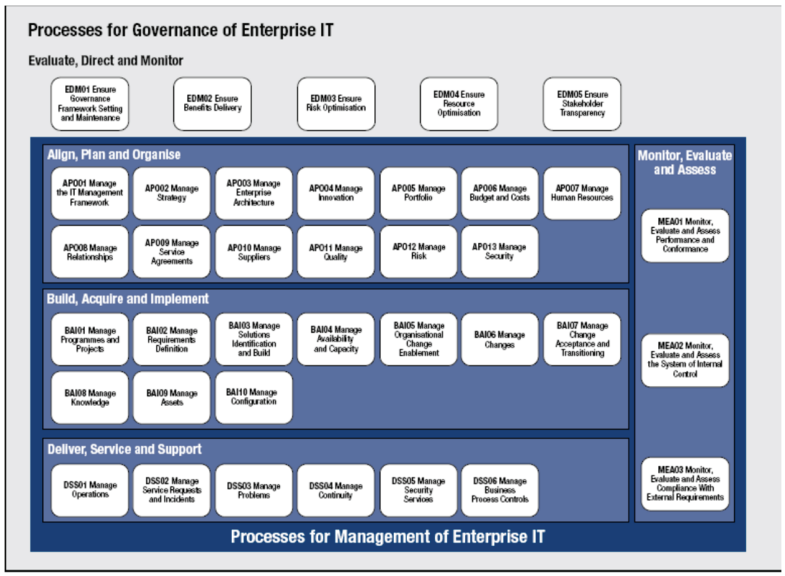
Principle 1. Providing the stakeholders requirements
Principle 2. Global coverage of the business (organization)
Principle 3. Using an integrated and unit framework
Principle 4. Activating a holistic approach
Principle 5. Detaching the management from the governance. (Alison Cartlidge, 2010)

Picture 3: COBIT 5 Governance and Management Key Areas



COBIT has a process-oriented approach in 2 domains of management and governance. It is also consisted of seven strengthening factors which are demonstrated in the following picture 3. (ISACA, 2009)

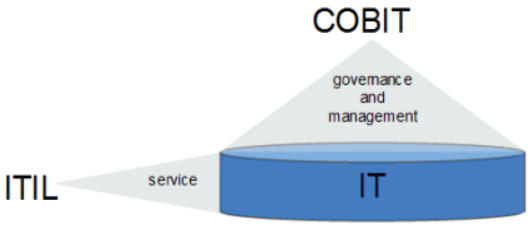
Picture 4: 37 Processes for Governance of Enterprise IT



37 processes have been collected in the field of the information technology governance and management and they provide a set of measurements, indexes, processes and better methods to assist the managers, auditors and the users of the information technology in maximizing the advantages obtained by using the information technology and expanding the supervision and appropriately controlling it in the organization. (Picture 4). (M. Salle, 2004)

2. COMPARISON OF ITIL WITH COBIT

The COBIT standard is consisted of what works should be done and the ITIL framework thoroughly Describes that how these works should be done. The strength of the ITIL is the mechanism that the processes were expressed with different diagrams and activities to be used for the objective implementation. When COBIT is utilized to select the management consequences, it acts stronger than ITIL. When ITIL is compared to COBIT, it will be determined that they are strongly related to each other due to the fact that the COBIT processes like its newest version are based on ITIL. In spite of different words used for similar problems, both of them cover the similar problems. Only for the event management in ITIL that there is not any equal word for this management in COBIT. Therefore, for designing an integrated standard, concepts or the process of activities, profit cost and planning, it is better to use the ITIL standard for the implementation and the COBIT standard for the supervision. (M. Salle, 2004)

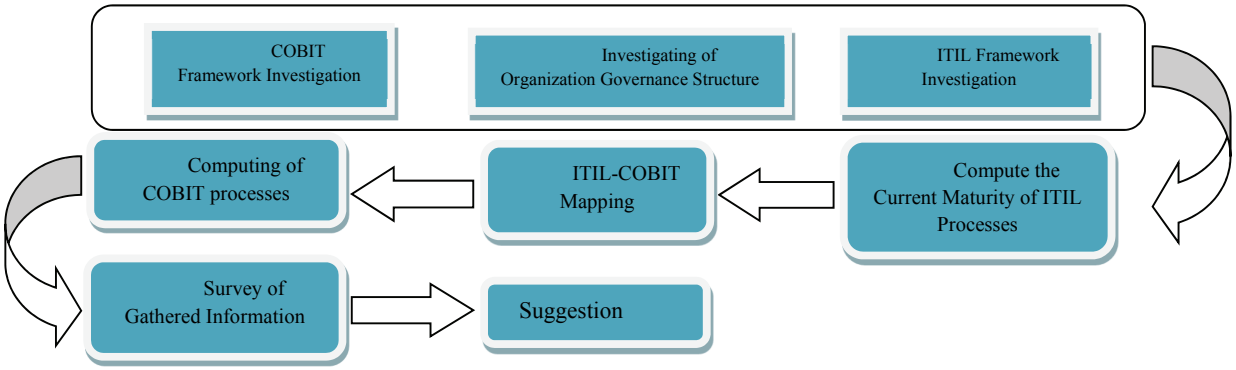


Picture 5: ITIL vs. COBIT perspectives

3. CONCEPTUAL MODEL OF RESEARCH

The information technology governance is a part of the organizational governance which is provided in terms of reaching the task and great objectives of the organization and increasing the value added with the approach of expanding the satisfaction level of the customers about collecting the strategy perspective and the objectives of the information technology. Because of the success of the information technology in the organization and the alignment of the information technology with the business needs, the management should implement a suitable internal control framework or system. The reports demonstrate that the companies and organizations which used ITIL in the IT management acceptably obtained more positive results in the cost and speed of responding to the customers and rate of return and giving profit. South Pars Gas complex as one of the largest companies of the Middle East in the field of oil and gas has tried to use these frameworks in order to obtain the organizational objectives and to align the business with the information technology processes and it was able to reach this objective with the help of the outstanding view in competitive operations in the world positioning of the value creation in company with expanding the knowledge-based technical services. First, the ITIL and COBIT frameworks and the governance structure of the organization were analyzed. After studying and comprehending the concepts and extracting the processes with the ITIL priorities, the current maturity of the ITIL processes was estimated and then, the mapping actions of the processes of these two frameworks were provided to strengthen the ITIL processes using the COBIT-ITIL Mapping table and afterwards we analyzed the processes of the COBIT framework extracted from the overlapping investigations and consequently the solution was proposed. (COBIT, 2013)

Picture 6: Conceptual Model of Research



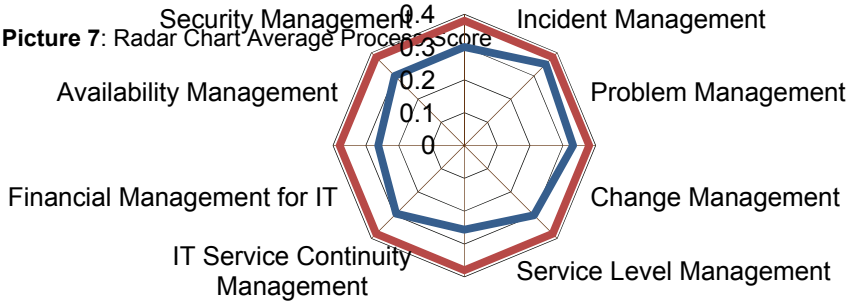
4. RESEARCH METHOD

ITIL framework is currently used as a strategic framework in terms of the organizational objectives in South Pars Gas complex, but it has some deficiencies that this research tries to determine the present weaknesses using the COBIT governance processes because COBIT has processes similar to the ITIL processes, but it has stronger management consequences than ITIL and we will finally strengthen the running ITIL processes using COBIT. Because of the extensiveness of the ITIL processes, after investigating the running processes, by holding meetings with the stakeholders of the information technology and using the processes with the priorities in the first phase, it was determined that completely implementing these processes has some deficiencies and the required maturity can be reached after defining the project of strengthening the ITIL processes using the COBIT framework. After measuring the current maturity of the running ITIL processes, the calculations of the current maturity average and the desirable average were represented in the following table. Because the maturity average of the processes was obtained up to 0.35, after performing the overlapping and strengthening the ITIL processes, the desirable number of 0.38 is contemplated in the next phase.

Table 1: Process Area Average score all participants, all questions

Process Area Average score all participants, all questions	Average Score	Desired Score
Security Management	0.3	0.38
Incident Management	0.35	0.38
Problem Management	0.331	0.38
Change Management	0.3	0.38
Service Level Management	0.256	0.38
IT Service Continuity Management	0.293	0.38
Financial Management for IT	0.262	0.38
Availability Management	0.3	0.38

Picture 7: Radar Chart Average Process Score



The chosen processes with their current maturities are represented in the radar chart above.
The next step uses the MAPPING table presented by the ISACA Company. The overlapping operations of the ITIL processes were determined with the COBIT processes. As it can be observed above, after determining the processes with the priorities, the overlapping operation was provided between the processes and the COBIT-ITIL Mapping table and the processes related to the COBIT framework were extracted. The current maturity of the COBIT processes determined in the overlapped table should be estimated in the next step. After distributing a questionnaire which is consisted of the overlapped processes in the mentioned figure (the questionnaire was presented by ISACA to estimate the COBIT processes), the results of the presented table are provided. The computational range presented by ISACA is as shown below: N: (Not Achieved …0% -15%), P: (Partially Achieved… 15%- 50%), L: (Largely Achieved….50%-85%), F (Fully achieved…85%-100%). (P. Yamakawa, 8-8, 2012), (Haes, S.D, 2016)

Picture 8: ITIL-COBIT Mapping

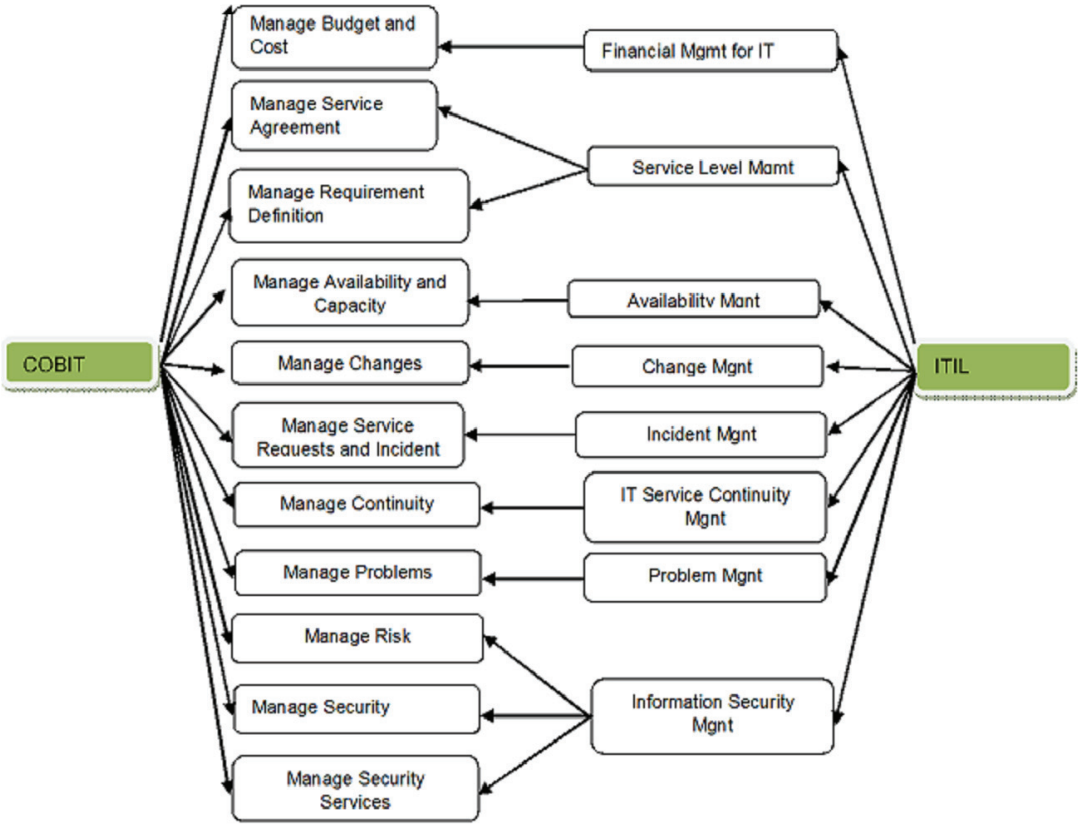


Table 2: COBIT PROCESS ASSESSMENT RESULTS

Process ID	Process Name	Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
Processes for Governance of Enterprise IT - Evaluate, Direct and Monitor							
Align, Plan and Organize							
APO06	Manage Budget and Costs		P				
APO09	Manage Service Agreements		P				
APO12	Manage Risk		P				
APO13	Manage Security		P				
Build, Acquire and Implement							
BAI02	Manage Requirements Definition		P				
BAI04	Manage Availability and Capacity		P				
BAI06	Manage Changes		**L**	P			
BAI07	Manage Change Acceptance and Transitioning		P				
Deliver, Service and Support							
DSS02	Manage Service Requests and Incidents		**L**	P			
DSS04	Manage Continuity		P				
DSS05	Manage Security Services		**L**	P			

5. ANALYSIS OF THE EXTRACTED DATA

During the research of strengthening the ITIL processes using the COBIT framework, in the phase of recognizing the present situation of the information technology from the point of ITIL framework and also presenting a method to measure the maturity of these processes in South Pars Gas Company were estimated. Because of the extensiveness of ITIL processes and consuming time to completely implement the ITIL processes, before the strengthening operations, the processes which had priorities and they were more functional were chosen and executed, but for completely implementing and achieving the complete maturity, it is needed to recognize the deficiencies and rectify these deficiencies using the strengthening project. For extracting the current maturity of the ITIL processes, (using a questionnaire furnished by ISACA), the results were estimated, the maturity average is between 0.25 and 0.35 and we anticipate to get a number equal to 0.38 after proposing this research in the form of a project. For reaching this number, the overlapping operations with the COBIT framework have to be implemented and the related processes have to be recognized. The current maturity of the COBIT processes determined in this overlapping should be clarified to perform the project. Once more, the results were estimated by the evaluation questions of the COBIT maturity presented by ISACA. In the field of Align, Plan and Organize, all the determined processes are at Level 1. In the field of Build, Acquire and Implement, one process is at Level 2 and the remained processes are at Level 1. In the field of Deliver, Service and Support, two processes are at Level 2 and one process is at Level 1. Accordingly for accurately implementing this project, the sub processes of the processes which are at Level 1 should be revaluated and they should be implemented again that finally, after implementing the sub processes, COBIT can strengthen the ITIL processes.

6. RESEARCH RESULTS

According to the extracted maturity and the position of the information technology in South Pars Gas complex, it is required to make a common comprehension between the business and the information technology about the potential capabilities of the information technology in the business problems to align the business with the information technology which is one of the most important macro organizational objectives. This common comprehension can help to recognize the vital resources and the key dependencies of the information technology in the best way. Additionally, it can realize the business requirements which are consisted of presenting value and returning the capital from the costs consumed for the technology. As it is obvious from the COBIT evaluation table, in the field of Align, Plan and Organize, all the selected processes are at Level 1. In the field of Build, Acquire and Implement, one process is at Level 2 and the other processes are at Level 1. In the field of Deliver Service and Support, two processes are at Level 2 and one process is at Level 1. For accurately implementing the ITIL processes, these processes should be promoted from Level 1 to Level 2, hence in the field of Align, Plan and Organize, some groups should be determined to precisely and apparently plan the budget of the IT processes. The information technology financial resources should be prioritized based on the organizational requirements and the service costs should be accurately and equitably allocated and the budgeting should be compared to the real cost. Agreements should be clear because the services reflect the organizational requirements and information technology capabilities. Also, the risks related to information technology should be recognized, analyzed, managed and reported and all the risk management proceedings should be adequately provided. In the field of Build, Acquire and Implement, all the tests of the executive programs must be confirmed by the stakeholders because all the facets of the implementation and execution must be contemplated. The knowledge transfer and the registration of the documentations must be provided in an accurate manner to exploit them as a suitable reference in the next documentations. We have an appropriate situation in the field of Deliver, Service and Support but the performance management should be reviewed for getting developments and facilitations in excellently executing the running processes because it is a better criterion for measuring the management of the processes. Currently, the product management is being performed in the organization but for developing and changing from Level 2 to Level 3, the processes of the product production management should be investigated again to completely realize that how much the products have been produced and whether they were produced and managed based on correct processes or not. Meanwhile, all the processes should be periodically measured to contrast the results together and investigate them again if there is not any matching and the deficiencies should be removed to finally implement the processes in an accurate manner and determine them based on the target processes. After upgrading the mentioned sub processes, the ITIL processes will be finally upgraded as well and certainly by increasing the maturity of the COBIT processes, the ITIL processes will be matured as well and the maturity amount which has been contemplated as the target point will be equal to (0.38).

7. SUGGESTIONS

This paper has been completed with the help of South Pars Gas Company and it presents the ways of strengthening the ITIL processes using the COBIT framework to align the business with the information technology in the company. The results signifies that the maturity level of the information technology governance and accordingly the information technology processes in South Pars Gas Company do not have a proper situation and this maturity level signifies that this company has sensed the necessity of the strategic alignment between the business and the information technology for creating the competitive benefit and obtaining more market share because of its structure and the implementation of the information technology governance in South Pars Gas Company is still proceeding its first steps and there is a long way to achieve a complete result. Because by properly evaluating the capability of the information technology processes based on the maturity model, the most significant executive section of the technology governance can be achieved and present gaps of recognition and recognizing the weaknesses can be simply determined and managed and the executive plans can be expanded and the processes can be upgraded to the desired level. The organization requires to be sure that the information technology can be considered as a value for the organization and by managing the risks related to the information technology and increasing the requirements, it tries to control as much information as possible because the information security is the key facet of the governance in the organization. Also, South Pars Gas Company can support the organization in recognizing the present situation and designing a proper situation using this project to utilize this model as a framework for controlling and evaluating the processes of this organization in the future, in spite of the fact that using this framework and the process model have reflected the discouraging results of this organization but we can hope that the mentioned company gets major successes in providing its strategies and information technology objectives using the alignment-based approach between the information technology and the business which is the fundamental basics of this framework.

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