

CRITICAL SUCCESS FACTORS FOR INFORMATION TECHNOLOGY INFRASTRUCTURE LIBRARY IMPLEMENTATION IN PUBLIC SERVICE ORGANIZATIONS: AN EXPLORATORY STUDY

Tayfour Abdalla Mohammed

Department of Business Administration, Jubail University College, Jubail Industrial City,
Kingdom of Saudi Arabia

Abstract

In recent years, market competitions and internal efficiency requirements derived many Information Technology (IT) functions to shift their paradigms from IT asset management to IT service management (ITSM). Consequently, a growing number of public and private organizations are implementing the ITIL (IT Infrastructure Library) “best practice” as a framework for improving IT service management processes. This paper presents an exploratory in-depth case study of two public service organizations in the kingdom of Saudi Arabia deemed successfully implemented ITIL V3 processes. The case studies identify several critical success factors (CSF) associated with ITIL implementation success. These CSF are then compared with factors identified in the literature to shed light on success factors and challenges to offer a learning experience for organizations currently undergoing or planning ITIL implementation.

Keywords

ITIL, IT Service Management, critical success factors, Saudi Arabia, project, process.

1. INTRODUCTION

Recently IT senior executives in public and private organizations are continuously challenged to deliver value to internal and external stakeholders and to ensure working in harmony with the business strategy for the entire organization. This challenge presents a significant change in IT – business relationships from supporting business functions to enabling business processes cross functionally, and the integration rather than alignment of IT with the entire business strategy.

In 2016, Saudi Arabia announced its vision 2030 accompanied with a national transformation program 2020. At the heart of this vision is the adoption of the principles of performance measurement for the evaluation of all government agencies, units and their executives and the IT was identified to play an enabling role in this regard [1].

ITSM is concerned with the delivery and support of IT services to all business functions in the organization with the main focus on the continuous improvement of the quality of IT services and costs rationalization through performance measurement indicators [2]. It is a process and service-oriented approach to IT service provision from a customer perspective [3]. ITSM is usually implemented through a collection of ‘best practice’ in IT service provision commonly known as IT Infrastructure Library (ITIL) Framework. Despite, the recent growing interest of information

systems research community in western countries in researching and theorizing ITSM and ITIL implementation, processes and practices (e.g. [4], [5], [6], [7], [8], however, there is a dearth of research in this area in the Arab region in exception of few attempts by [9] and [10] in Morocco; [11], [12]and [13]in United Arab Emirates; and [14] in Egypt. The purpose of this paper is to contribute to this body of knowledge as well as highlighting the motivations, benefits, challenges and success factors for ITIL implementation by investigating the following research question.

- What are the critical success factors for implementing ITIL in Saudi context?

The paper is organized as follows: in the following section the ITIL and ITSM concepts and related literature on ITIL implementation and critical success factors is presented. Section three provides description of the case studies and methods of data collection. In section four, the data from two case studies is analyzed to identify the critical success factors as well as the implementation benefits and challenges. Section five is the discussion of the findings in the light of earlier findings from the literature. The final section presents the main limitations and implications for further research

2. CONCEPTS AND LITERATURE REVIEW

2.1 ITIL And IT Service Management

ITIL is widely known as a de-facto standard for the IT service management. It was developed by the Central Computer Telecommunications Agency (now called the Office of Government Commerce) in the United Kingdom during the 1980s [15]. ITIL was basically introduced to promote efficient and cost-effective IT service operations within government computing centers [16]. ITIL was first introduced with 10 IT service processes in two sets namely: service delivery and service support. The second version of ITIL added a function called the service desk to the service support processes [17]. In 2007 ITIL version 3 was launched with the introduction of 5 service lifecycle stages. Table1 below provides descriptions of ITIL V3 five IT service lifecycle stages:

Table 1: The five ITIL v3 lifecycle stages

Stage	Purpose
Service Strategy	Strategic planning for the alignment of IT service and business strategies to provide guidance on how to design, develop and implement service management, whilst providing direction of IT management as strategic asset.
Service Design	To design and develop IT service management processes with defined design principles and methods for converting strategic assets into portfolio of services and service assets of current and future services.
Service Transition	To provide guidance on how to develop and improve capabilities for transitioning new and changed services into operations and ensure requirements of service strategy and design are effectively carried out in service operation.
Service Operation	To provide guidance on how to achieve effectiveness and efficiency in the delivery and support of IT services to ensure value for the customer and the service provider.
Continual Service Improvement	To provide guidance on how to create and maintain value for customers through better design, introduction and operation of services and establish principles, practices and methods from quality management and capability improvement.

Source: Adapted from [18], p. 54.

IT service management is a philosophy for running IT organizations; it evolves around business process orientation, and represent a shift from functional and technology oriented to a cross-functional service oriented approach to IT management and governance [19] & [20]. This shift has been attributed to the rise of services oriented architecture, client server computing,

virtualization, distributed applications and increased adoption of enterprise resource planning (ERP) systems [21]. Therefore, IT managers in IT departments must prove to their senior management their ability to reengineer historically silo-based IT functions into value-based and end-to-end process-based service provider. ITIL processes were then prescribed by IT and business process consultants as a tool for effective and efficient ITSM.

Recently, many organizations have implemented ITIL processes as a framework for improving ITSM and like any implementation of a new or improved system or process, there are influencing factors that facilitate, challenge or jeopardize the implementation success and prevents the IT project from achieving its objectives [22]. The following section presents a review of critical success factors (CSF) concept in information systems (IS) research with particular emphasis on ITIL and ITSM implementation.

2.2. The Critical Success Factors In Information Systems Research

There is a wide body of knowledge and theories in IS research used to theorize and describe IS success. For example, [23] conducted a review of the taxonomies of IS success literature and proposed their model of IS success where user satisfaction, system use, perceived usefulness were proposed and key elements [24] & [25]. The model was revisited after 10 years [26] to incorporate quality dimensions. The technology acceptance model (TAM) by [27] and its subsequent variations and adaptation is another theme in IS literature for tracing factors such as perceived usefulness and ease of use and their association with the successful introduction of new technology. The diffusion of innovation (DOI) model theorized how new technology spread across time and space and why users demonstrate different levels of willingness to adopt and thereby contributing to the success of implemented innovations like ITIL processes [28].

The critical success factors (CSFs) concept is an IS project management and planning approach where CSFs are defined as the few key areas of the project where things must go right for the project to succeed, and if they are not accomplished well, it is unlikely that the project's objectives will be attained [22 & 29]. The CSFs concept is well grounded in IS literature in investigating different types of IS implementations, business process reengineering and other IT project management initiatives in various contexts. For example, [30] conducted empirical study of the CSFs in the ERP implementation process and identified 22 CSFs ranked in order of importance from top management support to the use of consultant. Also [31] investigated ERP implementation across countries and cultures and suggested CSFs that include top management support, project vision, goals and objectives, organizational readiness, conflict resolution mechanism, etc. (See table 2). ITIL implementation has many similarities with ERP implementations and both differ from traditional IS in scale, scope of system and organizational change, project management and need for business process re-engineering [30]. Despite the existence of respectful body of literature discussing the different angles of ITIL implementation, however, as suggested by [22] limited academic research on ITIL implementation has focused on reporting outcomes in terms of successes, failures and benefits realization and that research in CSFs for ITIL implementation at best can be described as embryonic. For example, [32] studied the most important factors for successful ITIL implementation from ITIL experts' point of view and the results revealed that management factors such as management support, leadership, training, communications with stakeholders, change management are considered as most important CSFs, while, the technological and methodological factors were ranked low. [22] identified three CSFs not report in previous mainstream literature to include process priority,

ITIL-friendly culture, and customer-focused metrics for performance measurement.[33] conducted a case study research on ITIL related business process change to compare successful with un-successful implementation. The study identified several CSFs related to ITIL implementation such as strategic alignment and customer focused, a contingency based approach, learning and knowledge management, planned and risk driven approach (see table 2).[13] conducted a study on CSFs for ITIL implementation in the context of United Arab Emirates to examine whether CSFs identified in one context can be transposed into a different context. The authors identified 84 success factors summarized into three domains of structures, processes and relational mechanisms.[12] undertook an ITIL implementation study to explore how different groups (i.e. Management, IT staff and users) rank selected CSFs in order of importance and concluded that different stakeholders have different construction of ITIL implementation success and/or failure. Table 2 below provides summary of important CSFs for ITIL implementation identified by previous studies. Based on this review, this study is intended to explore how ITIL framework for ITSM is being implemented in two public organizations in the Kingdom of Saudi Arabia as well as to explore the CSFs of ITIL implementation identified by the two organizations and compare the findings with the evidences from previous studies. With the lack of evidence of previous published research on ITIL implementation in Saudi context, this study also aims to contribute the body of knowledge by exploring the Saudi context and compare it with findings from other contexts.[13] summarized reasons for exploring ITIL implementation in this context in five factors namely: the increasing popularity of ITIL, lack of academic research in this domain, lack of studies from Asia-specially the Saudi context, issues and challenges in ITIL implementation and finally the lack of classification of success factors. The next section describes the data collection methodology used.

3. DATA COLLECTION & METHODOLOGY

The research aim and question in this study were addressed using two cases of public service organizations implemented ITIL framework for ITSM. The two cases were selected due to the opportunity offered to the researcher. At the first time the researcher approached the two organizations during a field trip with a group of students visiting the IT Departments at the two organizations. The purpose of the visit was to show students how IT project management is being practiced. After the initial discussion with respective ITIL project managers, the researcher developed an interest in further exploring their experiences and was given permission to interview the project managers at his convenient time.

3.1. Research Method

The underlying assumptions of this study follow the “interpretivism” approach. Interpretivism offers a good basis for conducting research based on case studies, ethnography and participant observation in the real organizational life to gain in-depth insights into social phenomena-such as ITIL implementation projects-in their social context [34]. Since the study is exploratory in nature, interpretive case study research design was chosen as a method to undertake “qualitative enquiry” [13]. In such type of case study design, the case study notes, interviews and documents record the views of participants and describe naturally occurring events. The data collected then needs to be organized, explained and interpreted to make sense of the case [35]. The two cases presented here deemed to have successfully implemented ITIL framework for ITSM

Table 2. Overview of CSFs identified in previous studies

THE CRITICAL SUCCESS FACTORS		STUDY & CONTEXT			
		SOMERS & NELSON (2001) - ERP IMPLEMENTATION	POTI ET AL (2011) - ERP IMPLEMENTATION	POLLARD & CATER-STEEL (2009) - ITIL IMPLEMENTATION	IDEN & LANGELAND (2010) - ITIL IMPLEMENTATION
1.	TOP MANAGEMENT SUPPORT /COMMITMENT/OWNERSHIP & LEADERSHIP	✓	✓	✓	✓
2.	PROJECT TEAM COMPETENCE	✓		✓	
3.	INTERDEPARTMENTAL COOPERATION	✓		✓	
4.	CLEAR GOALS AND OBJECTIVES	✓	✓		
5.	PROJECT MANAGEMENT	✓	✓		
6.	OPEN INTERDEPARTMENTAL COMMUNICATION	✓	✓	✓	✓
7.	MANAGEMENT OF EXPECTATIONS	✓			
8.	PROJECT CHANGE CHAMPIONS	✓			
9.	VENDOR SUPPORT	✓			
10.	CAREFUL ITSM SOFTWARE PACKAGE SELECTION	✓		✓	✓
11.	DATA ANALYSIS & CONVERSION	✓			
12.	DEDICATED RESOURCES	✓			
13.	USE OF STEERING COMMITTEE	✓			
14.	USER TRAINING ON SOFTWARE AND PERSONAL DEVELOPMENT	✓	✓	✓	
15.	EDUCATION ON NEW BUSINESS PROCESSES	✓			✓
16.	BUSINESS PROCESS REENGINEERING	✓			
17.	MINIMAL CUSTOMIZATION	✓			
18.	ARCHITECTURE CHOICES	✓			
19.	CHANGE MANAGEMENT	✓	✓		✓
20.	PARTNERSHIP WITH VENDOR	✓			
21.	USE OF VENDORS' TOOLS	✓			
22.	USE OF CONSULTANTS	✓		✓	
23.	INCENTIVES		✓		
24.	ORGANIZATIONAL READINESS		✓		
25.	CONFLICT RESOLUTION MECHANISM		✓		
26.	PROCESS PRIORITY			✓	

27.	ITIL FRIENDLY CULTURE			✓	
28.	CUSTOMER-FOCUSED METRICS AND MEASUREMENTS.			✓	✓
29.	SENIOR MANAGEMENT KNOWLEDGE OF PROCESS ORIENTATION				✓
30.	START WITH QUICK WINS				✓
31.	CONTINUOUS IMPROVEMENT				
32.	STRATEGIC ALIGNMENT AND CUSTOMER FOCUSED				
33.	A CONTINGENCY BASED APPROACH				
34.	PLANNED AND RISK DRIVEN APPROACH				
35.	INCREMENTAL IMPLEMENTATION PROCESS				
36.	HIGH QUALITY ITIL IMPLEMENTATION				
37.	LEARNING AND KNOWLEDGE MANAGEMENT				
38.	ITIL PROJECT FEASIBILITY				

The first case is a public health care service provider (HSP); it was officially inaugurated in 2002. It is considered one of the leading health care service providers in the region. It is part of a group of medical cities located across the Kingdom with a total manpower of 25000 employees of which 500 employees are working for the IT Department. HSP has 120 beds capacity, two intensive care units, four operation rooms and four delivery rooms all equipped with latest high quality medical devices. The IT department in HSP is responsible for development and support of all computer systems, hardware, software and applications (including ERP, human resource, and clinical information systems applications). The ITIL implementation project at HSP started during the first quarter of 2014 and completed early 2016.

The second case is an autonomous government services provider (GSP) offering industrial, engineering, health, education, and investment services. GSP has over 6000 employees distributed among seven sectors. The IT department belongs to Support Services sector and it employs over 200 IT professionals distributed between desktop support, network support, service desk, applications support, ERP team, and the data center. The ITIL implementation project at GSP started early 2010 and completed by mid of 2014. The two organizations implemented selected ITIL v3 processes as shown in table 3 which indicates almost similar size of ITIL implementation project.

Table 3. ITIL v3 Processes and functions implemented by case study organizations

The case study organization	ITIL v3 processes and functions implemented
HSP	<ul style="list-style-type: none"> • Incident management • Problem management, • Event management, • Request fulfillment management • Change management • Service catalog management • Service level management, • Service asset and configuration management, • Availability management • Capacity management, • IT service continuity management, • Information security management, • Continual service improvement processes • Service desk (function).
GSP	<ul style="list-style-type: none"> • Incident management • Problem management, • Request fulfillment management • Change management • Service catalog management • Service level management, • Service asset and configuration management, • Availability management • Capacity management, • IT service continuity management, • Release management, • Continual service improvement processes • Service desk (function).

3.2. Data Collection

During November 2015 in two separate meetings, the ITIL Project Management Office (PMO) managers in the two organizations in open discussion with the researcher and group of students responded to questions related to their experiences in implementing ITIL framework. The responses during group discussions provided information concerning the implementation process, challenges, benefits and CSFs. The discussion information and the researcher's observation were noted on a research diary which is used to develop themes for subsequent interviews. In 2016, in-depth semi-structured personal interviews were conducted with the two key informants in HSP & GSP; namely the ITIL PMO managers. As [30] noted that if only one key informant in an organization to be interviewed, attempt to identify the person most knowledgeable about the issue of interest. Therefore, ITIL PMO managers are considered to be the relevant informants. The ITIL PMO manager at GSP is ITIL certified, while his counterpart at HSP is ITIL & COBIT certified, ISO 20000 practitioner and Lean Six Sigma Black belt certified. The interviews lasted between One and One and half hour. Apart from CSFs, the interview themes include justification for implementation, the implementation strategies adopted, challenges faced and benefits realized. All interviews were audio recorded and transcribed immediately following the interviews so as not to lose the context. The transcribed interviews materials were emailed to the informants for further verification. The data generated from the interviews was triangulated with other information collected from the group discussions and observation notes as well as secondary data obtained from the organizations' official websites, vendors' websites and publicly available documents. By triangulating these multiple data generation techniques with the theoretical literature, the researcher reduces the limitations of using a single method and provides a possibility of cross-checking multiple perspectives from a variety of sources thereby contributing towards enhancing the validity of the research process([36] & [37]).

4. ANALYSIS AND FINDINGS

The amount of qualitative data generated through interview transcripts, field visit notes and official documents was further reduced by highlighting the emerging themes. [38] suggested that qualitative data can be reduced through summary or paraphrase summed up in a larger patterns or themes. The content analysis of the data collected was triangulated within each case organization and between the two cases. The cross-case analysis allows the researcher to compare answers to research question and highlight the important themes, similarities and differences; and that will further enhance the research validity ([22]). The themes developed were then compared to the list of CSFs identified in previous ITIL implementation literature. In this way the researcher will be able to test the explanatory power of the CSFs list derived from the case study, and further extend the list ([16]).

4.1. Motivation For Itil Implementation

The data analysis of the two case organizations revealed two different motives for initiating ITIL implementation project. The main reason at GSP centered on the increasing complaints from users for long resolution time and the persistence of informal processes as documented by the PMO Manager at GSP “...we need to find a solution to the accumulated and increasing customer complaints, employees are not happy with the service delivered and the long time it takes...there were no clear processes for managing IT, the blaming culture is widely spread and business users used to directly call a friend in the IT department for a favor”. For HSP the main reason was the need to break the cultural and communication gaps “...silo based work practices exist between departments and within the IT department...business users don’t understand IT technical jargons...we wanted to harmonize cultural differences, bridge communication gaps and optimize our resources...we discovered that ITIL is an excellent framework to be used”

4.2. The ITIL Implementation Approach

The ITIL implementation usually involves new or re-engineered business processes supported by ITSM software solutions prescribed by consultants and/or vendors. [22] pointed out that the implementation strategy adopted by any organization depends on the situation, strategic directions and budget available. Both GSP and HSP used phased approach to implementation where systems and processes are implemented incrementally. “In GSP we implemented these processes in phases, we started with incident management until we are sure that the process was stabilized then we moved to the next process”. On the same vein the ITIL project manager at HSP stated that “...ITIL has around 27 processes, we decided to start with only five processes and the service desk function, we used ISO 14405 for process capability evaluation and we realized that we cannot exceed these five processes in the first stage”. Therefore, it was evident that the specific situation in each organization mandates the use of phased approaches. Despite the fact that both organizations used incremental implementation, however, they follow different methods. GSP considered “the implementation was a top-down where senior management were extremely involved and push very hard”, while HSP ITIL project manager emphasized that “as project manager I should make sure that knowledge was transferred to people at the frontline and monitor that they learned the know-how, I shouldn’t force or push them...gradually I found that they are well scaled”

4.3. ITIL Implementation Challenges

Previous research on ITIL implementation has suggested that academic literature lacks a discussion of specific challenges faced during implementations ([22]). Moreover, the few empirical studies conducted in this regard revealed that ITIL implementation is a very challenging undertaking and that several individual and organizational competencies and skills are required for smooth transition ([39]). The major implementation challenges faced by GSP include resistance to process and cultural change and the technical issues associated with the move from the old helpdesk application to the new service desk software. Furthermore, the project manager at GSP suggested that “*we overcome most of these challenges by extensive training and better communications*”. The major challenges at HSP include lack of clarity of ITIL framework, negotiation of the service level agreement (SLA) and operational level agreement (OLA) and resistance to change. To overcome the challenges the project manager stated that “*all of it comes to your leadership style, closing communication gap and deliver appropriate training*”.

4.4. ITIL Implementation Benefits:

[8] contended that implementing ITIL may lead to several strategic and operational benefits to the organization. Moreover, it has been argued that organizations implementing ITIL framework may realize benefits in terms of increased customer culture and service as well as the efficiency and transparency of IT processes ([40]). In a survey of 441 firms, [41] examined the benefits of implementing ITIL as a framework for ITSM and provided a collection of nine key benefits at strategic and operational levels including: “service quality, standardization of service, customer satisfaction, return on investment, reduction of downtime, benefited from best practice experience of others, financial contribution control, first-call resolution rate, morale of IT” (table 1, p. 366). In our case study organizations, the ITIL project manager at GSP summarized the benefits realized from the implementations as “*...we were able to map and document our processes, the customer service culture has improved, now we carry out a satisfaction survey after closing every incident, resolving a problem or fulfilling a request, the average score we have is over 86% satisfaction rate*”. The GSP ITIL project manager also added “*after implementing ITIL the incident resolution time dropped to 45 minutes, we were able to overcome the communication problem, and the service desk has been established and widely advertised as a single point of contact*”. On the other hand, the HSP ITIL

project manager summarized his organizational benefit saying that “*ITIL implementation introduced a kind of new culture and work principle, also now we know the total cost of ownership for the IT services we deliver... benchmarking to measure our performance as IT department compared to others, and customer satisfaction survey*”. It is clearly evident here that the focus was on the customer service culture and customer satisfaction, and this can be partly explained by the recent move of many public service organizations to comply with the principles of the national transformation program (NTP 2020) and the Saudi vision 2030 which emphasized the deregulation of public service organizations.

4.5. The Critical Success Factors

The review of previous studies resulted in the identification of 38 CSF as presented in table 2 above. Empirical data derived from interview transcripts, notes and other relevant documents confirmed some of the CSFs from previous literature and revealed new case and context specific

CSFs. For example GSP case study confirmed 24 and revealed 2 new CSFs, while HSP case study confirmed 21 and revealed 1 new CSF. Tables 4&5 present the CSFs identified in each case study and supporting quotes from interview transcripts with ITIL project managers.

Table 4. Interview quotes supporting critical success factors identified in GSP case study

	CRITICAL SUCCESS FACTORS	SUPPORTING QUOTES
1.	TOP MANAGEMENT SUPPORT	<i>"THE FIRST THING WE DID IS GETTING TOP MANAGEMENT SUPPORT AND SPONSORSHIP"</i>
2.	PROJECT TEAM COMPETENCE	<i>"THE PROJECT TEAM CONSISTS OF SELECTED PEOPLE FROM THE IT DEPARTMENT, BUSINESS USERS AND THE ITIL CONSULTANTS"</i>
3.	INTERDEPARTMENTAL COOPERATION	<i>"WE SIT TOGETHER WITH THE BUSINESS USER DEPARTMENTS TO NEGOTIATE THE OLA"</i>
4.	CLEAR GOALS AND OBJECTIVES	<i>"I CAN SAY OUR PROJECT SCOPE MANAGEMENT AND CONTROL WAS EXCELLENT"</i>
5.	PROJECT MANAGEMENT	<i>"AS ITIL PMO MANAGER MY ROLE INVOLVES CAREFUL SUPERVISION OF THE WHOLE ITIL IMPLEMENTATION AS WELL AS COORDINATION WITH VENDORS AND CONSULTANTS"</i>
6.	OPEN INTERDEPARTMENTAL COMMUNICATION	<i>"WE USED EXTENSIVE COMMUNICATION TO SELL THE PROJECT ACROSS THE ORGANIZATION...WE CREATED A WEB PORTAL, BROCHURES, VIDEOS, MANUALS...ETC."</i>
7.	MANAGEMENT OF EXPECTATIONS	<i>"WE COLLECTED ALL SERVICES IN A SERVICE CATALOG, THEN AGREE WITH OUR IT EMPLOYEES REGARDING APPROPRIATE RESOLUTION TIME TO SET UP A KPI FOR EACH REQUEST. ONCE WE REACH AGREEMENT, THEN WE CREATED THE OLA...NOW WE ARE TRYING OUR BEST TO MEET THE SLA".</i>
8.	PROJECT CHANGE CHAMPIONS	<i>"A CHANGE CHAMPIONS TEAM WAS CREATED, WE SELECTED THE HIGHLY MOTIVATED IT SUPERVISORS FOR THIS TEAM, THEY WERE PLACED IN ITIL PROFESSIONAL CERTIFICATION TO BECOME ITIL EXPERTS"</i>
9.	VENDOR SUPPORT	<i>"ALL TECHNICAL ISSUES ASSOCIATED WITH THE SOFTWARE ARE REFERRED TO THE THIRD PARTY (THE VENDOR)"</i>
10.	CAREFUL ITSM SOFTWARE PACKAGE SELECTION	<i>"WE SELECTED A VERY FLEXIBLE AND EASY TO USE IT SERVICE MANAGEMENT SOFTWARE SOLUTION AS A TOOL TO HELP US IN ITIL IMPLEMENTATION AND TO REPLACE OUR CURRENT HELP DESK APPLICATION...IT IS A COMPLETE SOLUTION SUPPORTING ALL ITIL PROCESSES"</i>
11.	USER TRAINING ON SOFTWARE AND PERSONAL DEVELOPMENT	<i>"WE CONDUCTED EXTENSIVE TRAINING SESSIONS AND WORKSHOPS ON ITIL PROCESSES AND THE SOFTWARE"</i>
12.	EDUCATION ON NEW BUSINESS PROCESSES	<i>"ALL IT STAFF HAVE ATTENDED ITIL FOUNDATION COURSE CONDUCTED BY OUR CONSULTANT"</i>
13.	BUSINESS PROCESS REENGINEERING	<i>"THE IMPLEMENTATION REQUIRES A COMPLETE BUSINESS PROCESS RE-ENGINEERING, SINCE PRIOR TO ITIL WE DON'T HAVE CLEAR PROCESSES FOR SERVICE DELIVERY AND SUPPORT"</i>

14.	MINIMAL CUSTOMIZATION	<i>"WE CUSTOMIZED THE SOFTWARE TO MEET OUR PARTICULAR INFORMATION NEEDS, WE REMOVED MANY UNNECESSARY THINGS" "THE CUSTOMIZATION INVOLVES RE-ENGINEERING OR THE REDESIGN OF SOME PROCESSES"</i>
15.	CHANGE MANAGEMENT	<i>"I BELIEVE THIS IS A RADICAL SHIFT IN MENTALITY WHICH REQUIRE A RADICAL CULTURAL CHANGE MANAGEMENT"</i>
16.	USE OF VENDORS' TOOLS	<i>"WE PROCURE A VERY EXCELLENT IT SERVICE MANAGEMENT TOOL"</i>
17.	USE OF CONSULTANTS	<i>"WE STARTED BY HIRING AN EXTERNAL CONSULTANT CALLED...WE HAVE A TEAM OF 8 CONSULTANTS STATIONED IN THE IT DEPARTMENT"</i>
18.	CUSTOMER-FOCUSED METRICS AND MEASUREMENTS.	<i>"BEFORE 2010 THE IT SERVICE DELIVERY AND SUPPORT WAS CARRIED OUT IN AN AD HOC WAY...THERE IS NO SLA TO SET THE TIME FRAME FOR INCIDENT RESOLUTION OR CLOSING A CHANGE REQUEST...IT MIGHT TAKE BETWEEN 3 DAYS TO 2 WEEKS. AFTER THE IMPLEMENTATION INCIDENT RESOLUTION DROPPED TO 45 MINUTES"</i>
19.	START WITH QUICK WINS	<i>"WE SELECTED THE MORE RELEVANT ITIL PROCESSES FOR IMPLEMENTATION"</i>
20.	STRATEGIC ALIGNMENT AND CUSTOMER FOCUSED	<i>"WE FOCUSED VERY MUCH ON CUSTOMER SERVICES AND THE RELATIONSHIP MANAGEMENT WITH THE BUSINESS"</i>
21.	PLANNED AND RISK DRIVEN APPROACH	<i>"WE SELECTED THE MORE RELEVANT ITIL PROCESSES FOR IMPLEMENTATION, WE FELT THAT THERE IS NO NEED TO COVER THE WHOLE PROCESSES IN ITIL V3"</i>
22.	INCREMENTAL IMPLEMENTATION PROCESS	<i>"WE IMPLEMENTED THESE PROCESSES IN PHASES, WE STARTED WITH INCIDENT MANAGEMENT UNTIL WE ARE SURE THAT THE PROCESS WAS STABILIZED THEN WE MOVED TO THE NEXT PROCESS"</i>
23.	HIGH QUALITY ITIL IMPLEMENTATION	<i>"CONSULTANTS HELPED US IN MAPPING THE AS-IS PROCESSES, BENCHMARKING THE AS-IS WITH ITIL V3 PROCESSES, IDENTIFY THE GAP, AND CARRY OUT NECESSARY CUSTOMIZATION IN ITIL V3 PROCESSES TO SUIT OUR NEEDS"</i>
24.	LEARNING AND KNOWLEDGE MANAGEMENT	<i>"THE KNOWLEDGE TRANSFER FROM OUR CONSULTANTS WAS A KEY FACTOR, WE HAVE 8 EXPERTS ONSITE WHO PROVIDED A FULL SUPPORT FOR ONE YEAR AS PER THE CONTRACT"</i>
25.	CASE SPECIFIC CSFs - USE OF LEGITIMATE POWER - EMPLOYEES EMPOWERMENT	<i>"WE USED A MIXTURE OF LEGITIMATE POWER AND EMPLOYEES EMPOWERMENT...IF WE FACE ANY RESISTANCE WE JUST WALK IN AND TALK TO CONCERNED SENIOR MANAGEMENT TO EXERCISE THEIR POWER". "WE ALSO EMPOWER OUR EMPLOYEES BY PROVIDING PROPER TRAINING".</i>

Table 5. Interview quotes supporting critical success factors identified by HSP case study

CRITICAL SUCCESS FACTORS		SUPPORTING QUOTES
1.	TOP MANAGEMENT SUPPORT	<i>"THE TOP MANAGEMENT IN IT AND NONE IT DEPARTMENTS IS VERY SUPPORTIVE...WITHOUT SUCH SUPPORT YOU CANNOT IMPLEMENT"</i>
2.	PROJECT TEAM COMPETENCE	<i>"WELL TO ME, THE CSF IS MANPOWER AND THE PROJECT TEAM IS ONE ELEMENT THAT MAKE THIS PROJECT A SUCCESS...I HAVE CREATED TEAMS FOR EACH AREA OF THE PROJECT SUCH AS GOVERNANCE TEAM, SECURITY AND RISK TEAM, BALANCE SCORE CARD TEAM, ETC."</i>
3.	INTERDEPARTMENTAL COOPERATION	<i>"WE HAVE AGREED WITH OTHER DEPARTMENTS REGARDING THE SLA, EVERYONE HAS A DIFFERENT OPINION, BUT WE ALMOST COME AN ACCEPTABLE AVERAGE"</i>
4.	CLEAR GOALS AND OBJECTIVES	<i>"IN THE PROJECT INITIATION DOCUMENT, WE IDENTIFIED OUR KEY OBJECTIVE AND STAKEHOLDERS, THE PROJECT CHARTER WAS ANNOUNCED STATING THAT I AM THE PROJECT MANAGER, SETTING THE START AND END PERIOD AND THE BUDGET ALLOCATED"</i>
5.	PROJECT MANAGEMENT	<i>"I AM THE PROJECT MANAGER AND AN ITIL EXPERT...IN OUR ITIL PROJECT MANAGEMENT WE ADOPTED PMBOK PRINCIPLES, WE USED MS PROJECT 2013 AS A TOOL"</i>
6.	OPEN INTERDEPARTMENTAL COMMUNICATION	<i>"THE PROBLEM IS NOT JUST THE LACK OF COMMUNICATION BETWEEN THE IT AND BUSINESS USERS, IT IS EVEN BETWEEN THE IT PEOPLE THEMSELVES, SO WE HAVE TO BREAK THIS"</i>
7.	MANAGEMENT OF EXPECTATIONS	<i>"I DID STATISTICS AND VARIANCE ANALYSIS TO COME UP WITH ACCEPTED TIME RANGE FOR SERVICE DELIVERY AND I ANNOUNCED IT. SO, WHEN YOU REQUEST ANY SERVICE I WILL TELL YOU THAT, IT WILL TAKE 10 OR 20 MINUTES DO YOU AGREE?"</i>
8.	VENDOR SUPPORT	<i>"THE VENDOR IS AN AMERICAN COMPANY AND HAS A LOCAL AGENT, IT IS AN AMAZING COMPANY. YOU WOULDN'T BELIEVE IT, THEY HAVE ANNUAL CONFERENCE BRINGING USERS FROM AROUND THE WORLD TO SHARE THEIR EXPERIENCES, I ATTENDED LAST YEAR CONFERENCE"</i>
9.	CAREFUL ITSM SOFTWARE PACKAGE SELECTION	<i>"THE MARKET IS FULL OF ITSM SOFTWARE VENDORS, WE STARTED BY WRITING RFP AND WE CAREFULLY DEFINED OUR REQUIREMENTS. WE RECEIVED 7 QUOTATIONS, IT WAS VERY EASY FOR US TO SELECT BECAUSE WE KNOW OUR REQUIREMENTS...THEREFORE WE SELECTED [THIS] SOFTWARE"</i>
10.	USER TRAINING ON SOFTWARE AND	<i>"MOST OF OUR IT STAFF ATTENDED ITIL"</i>

	PERSONAL DEVELOPMENT	FOUNDATION COURSE
11	EDUCATION ON NEW BUSINESS PROCESSES	"WHAT WE DID IS, WE EDUCATED PEOPLE ON THE NEW PROCESS FOR REPLACING THE TONNER, WE DESIGNED A TRAINING COURSE TO SHOW PEOPLE HOW TO REPLACE THE TONNER BY THEMSELVES AND THIS HAS SAVED US MONEY"
12	BUSINESS PROCESS REENGINEERING	"ACTUALLY WE RE-ENGINEERED MOST OF OUR IT SERVICES, WE STARTED WITH FLOWCHARTING LOOKING AT OUR IT SERVICES AS PROCESSES. I DISCOVERED THAT THE TIME CONSUMED IN DELIVERING OUR SERVICES IS VERY LONG AND NEED TO BE REVISED"
13	CHANGE MANAGEMENT	"ACTUALLY THE LEVEL OF RESISTANCE WAS VERY HIGH, PEOPLE WERE USED TO FILE REQUESTS THROUGH PHONE AND EMAILS AND TRY TO NEGOTIATE INFORMALLY...CHANGE MANAGEMENT WAS SO DIFFICULT EVEN WITHIN THE IT DEPARTMENT"
14	USE OF VENDORS' TOOLS	"WE SELECTED [THIS] TOOL, WE DIDN'T SELECT THE HP TOOL EVEN THOUGH IT IS A BIG COMPANY"
15	PROCESS PRIORITY	"FOR EXAMPLE SOMEONE WILL MEET YOU IN THE RESTAURANT AND SAY I HAVE SENT YOU A REQUEST, PLEASE HELP. THIS IS VERY DIFFICULT AND PUT PRESSURE ON US."
16.	CUSTOMER-FOCUSED METRICS AND MEASUREMENTS.	"WHENEVER A TECHNICIAN CLOSE A REQUEST, A CUSTOMER SERVICE SATISFACTION SURVEY WILL BE FORWARDED TO THE USER TO EVALUATE THAT TECHNICIAN, WHEN THE SCORE IS BELOW 80% I USED TO INTERVENE"
17.	STRATEGIC ALIGNMENT AND CUSTOMER FOCUSED	"YOU CANNOT JUST GO AND IMPLEMENT ITIL AS SUCH, YOU NEED TO KNOW THE STRATEGY OF YOUR ORGANIZATION, THE VISION OF THE ORGANIZATION, THE MOST CRITICAL PROCESSES, AND HAVE A CLEAR DEFINITION OF THE MAIN KPIS"
18.	PLANNED AND RISK DRIVEN APPROACH	"WE DID THE REGULAR PLANNING, WE PLANNED THE HUMAN RESOURCES, THE QUALITY, THE RISK, THE PROCUREMENT, WE EVEN PLANNED THE PROJECT SCOPE AND THE INTEGRATION"
19.	INCREMENTAL IMPLEMENTATION PROCESS	"WE STARTED WITH 5 MAIN PROCESSES, I SIMPLIFIED THINGS AND BY TIME WE DISCOVERED THAT WE ARE COVERING OR EXCEEDING 20 PROCESSES WITHIN THE SELECTED 5 PROCESSES"
20.	HIGH QUALITY ITIL IMPLEMENTATION	"WE FOLLOWED BEST PRACTICE IN ITIL PROJECT MANAGEMENT, STARTED WITH PROJECT INITIATION, THEN PLANNING, EXECUTION, MONITORING & CONTROL, AND FINALLY THE CLOSURE STAGE AND THE LESSONS LEARNED MEETINGS"

21.	LEARNING AND KNOWLEDGE MANAGEMENT	"AS PROJECT MANAGER I SHOULD MAKE SURE THAT KNOWLEDGE WAS TRANSFERRED TO PEOPLE AT THE FRONTLINE AND MONITOR THAT THEY LEARNED THE KNOW-HOW"
22.	NEW CASE SPECIFIC CSFs - COMBINE ITIL WITH ADDITIONAL QUALITY STANDARDS.	"FRANKLY SPEAKING YOU CANNOT DEPEND ON ITIL ALONE, YOU HAVE TO USE ISO 14405 TO MEASURE PROCESS CAPABILITY, THE GOVERNANCE TEAM APPLIED COBIT STANDARDS TO ENSURE THAT WE DID NOT VIOLATE ORGANIZATIONAL POLICIES AND REGULATIONS"

- *PMBOK = Project Management Body of Knowledge; KPIs = Key Performance Indicators; RFP = Request for Proposal*

The above section outlined and described the major findings from the previous studies and the case studies data. The next section is a discussion of the above research findings.

5. DISCUSSION OF FINDINGS

The analysis of the case study data suggest that strong support to previously identified CSFs was found as evidenced in the quotes of ITIL implementation project managers. In table 6. below, and in line with CSFs reported in previous studies, the *top management support, ITIL project team competency, project management skills, interdepartmental communication and cooperation, training, planning, implementation process and customer focused orientation* are the managerial factors that are unanimously identified as CSFs by previous and current study. Despite the fact that ITIL project implementation was seen by both organizations as a radical change intervention in which many organizations seek help from consultants; supervising HSP relied very much on its in-house capabilities without the use of external consultants as explained by the project manager *"it is done in house, actually I did some research and I discovered that, they are not qualified"*.

This could be partly explained by the high level of expertise, and the ITIL training and professional certification of the HSP project manager. On technical issues, both case studies and previous studies have identified business process reengineering, selection and use of vendor tools, and education on the new processes and software as CSFs for ITIL implementation. Surprisingly, the HSP project manager did not mention change management or the use of change champions as CSFs. It might be implied that change champions are used by external consultants to facilitate communication and implementation processes to avoid the "outsider" syndrome. It has also been argued that many IT service providers maintain a technology rather than customer focused culture where technology is always prescribed by software vendors and business process consultants as a panacea to organizational problems ([22]).

Table 6. Comparison with CSFs identified in previous studies

THE CRITICAL SUCCESS FACTORS		PREVIOUS STUDIES	GSP CASE	HSP CASE
1.	TOP MANAGEMENT SUPPORT /COMMITMENT/OWNERSHIP & LEADERSHIP	✓	✓	✓
2.	PROJECT TEAM COMPETENCE	✓	✓	✓
3.	INTERDEPARTMENTAL COOPERATION	✓	✓	✓
4.	CLEAR GOALS AND OBJECTIVES	✓	✓	✓
5.	PROJECT MANAGEMENT	✓	✓	✓
6.	OPEN INTERDEPARTMENTAL COMMUNICATION	✓	✓	✓
7.	MANAGEMENT OF EXPECTATIONS	✓	✓	✓
8.	PROJECT CHANGE CHAMPIONS	✓	✓	X
9.	VENDOR SUPPORT	✓	✓	✓
10.	CAREFUL ITSM SOFTWARE PACKAGE SELECTION	✓	✓	✓
11.	DATA ANALYSIS & CONVERSION	✓	X	X
12.	DEDICATED RESOURCES	✓	X	X
13.	USE OF STEERING COMMITTEE	✓	X	X
14.	USER TRAINING ON SOFTWARE AND PERSONAL DEVELOPMENT	✓	✓	✓
15.	EDUCATION ON NEW BUSINESS PROCESSES	✓	✓	✓
16.	BUSINESS PROCESS REENGINEERING	✓	✓	✓
17.	MINIMAL CUSTOMIZATION	✓	✓	X
18.	ARCHITECTURE CHOICES	✓	X	X
19.	CHANGE MANAGEMENT	✓	✓	X
20.	PARTNERSHIP WITH VENDOR	✓	X	X
21.	USE OF VENDORS' TOOLS	✓	✓	✓
22.	USE OF CONSULTANTS	✓	✓	X
23.	INCENTIVES	✓	X	X
24.	ORGANIZATIONAL READINESS	✓	X	X
25.	CONFLICT RESOLUTION MECHANISM	✓	X	X
26.	PROCESS PRIORITY	✓	X	✓
27.	ITIL FRIENDLY CULTURE	✓	X	X
28.	CUSTOMER-FOCUSED METRICS AND MEASUREMENTS.	✓	✓	✓
29.	SENIOR MANAGEMENT KNOWLEDGE OF PROCESS ORIENTATION	✓	X	X
30.	START WITH QUICK WINS	✓	✓	X
31.	CONTINUOUS IMPROVEMENT	✓	X	X
32.	STRATEGIC ALIGNMENT AND CUSTOMER FOCUSED	✓	✓	✓
33.	A CONTINGENCY BASED APPROACH	✓		
34.	PLANNED AND RISK DRIVEN APPROACH	✓	✓	✓
35.	INCREMENTAL IMPLEMENTATION PROCESS	✓	✓	✓
36.	HIGH QUALITY ITIL IMPLEMENTATION	✓	✓	✓
37.	LEARNING AND KNOWLEDGE MANAGEMENT	✓	✓	✓

38.	ITIL PROJECT FEASIBILITY	✓	X	X
	<i>NEW CSFs NOT IDENTIFIED IN PREVIOUS STUDIES</i>			
39.	USE OF LEGITIMATE POWER	X	✓	X
40.	EMPOWER EMPLOYEES	X	✓	X
41.	COMBINE ITIL WITH ADDITIONAL QUALITY STANDARDS	X	X	✓

Moreover, table 6 above highlighted three new critical success factors not previously identified in the literature. These factors are *Use of legitimate power, empowerment of employees and combine ITIL with additional quality standards*. These factors, explain the struggle of many public sector organizations in the Kingdom of Saudi Arabia in their attempts to align with the broader discourse of customer focused services, performance measurement and employees empowerment brought about by the National Transformation Program of 2020. The two public service organizations GSP and HSP are trying to adopt these new practices, but public culture of using position power tends to surface from time to time. ITIL project manager at GSP emphasized that they used legitimate power of senior managers to ensure compliance and move the project forward. [42] described such act as “legitimate domination” where social agents like senior managers and supervisors use their personal influence, skills, expertise, facilities, and available resources at their disposal to achieve recognition and approval of other actors while maintaining existing codes of work practice. Empowerment of employees has different forms such as training, autonomous groups and decision making. HSP ITIL implementation project manager found that combining ITIL with other service quality and governance standards such as ISO standards, COBIT framework and Balance Score Cards have contributed to the project success. [43] suggested that COBIT and BAI06 is an essential combination for change management process. The synergy of such frameworks might prove to be useful; however, the different emphasis in each may result in lack of focus.

6. CONCLUSIONS

The implementation of ITIL as IT service management framework is a paradoxical intervention. On the one hand, it is deemed essential for integrating IT and business processes for cost and performance efficiency, yet the radical change and paradigm shift it brought pose serious challenges to both IT and business managers. With the recent introduction of performance measures in Saudi public organizations through selected key performance indicators (KPIs), ITIL was seen as an attractive tool for adoption in many IT departments. Managers considering ITIL implementation may benefit and learn from reported managerial and technical success factors, however, sensitivity to internal organizational culture, professional expertise and technical skills and knowledge are so critical to the success of such undertakings.

7. STUDY LIMITATIONS AND IMPLICATIONS

Despite the fact that, our study has highlighted several important CSFs for organizations implementing ITIL framework for the improvement of IT service management, and presented analysis of the benefits and challenges faced by these organizations, it has some limitations. First, the study focused on describing the implementation success factors from management perspective, telling the story of the powerful actors. Therefore, it falls short in providing multi-perspective and multi-level accounts of the implementation success. The accounts of IT service employees at the “shop floor” on the implications of the project on their work life may reveal a

different story of the same project. Second, although we used multi case studies to enhance the validity of our research findings, the generalization of the above findings to other cultures may be difficult. For example, the private sector in Saudi Arabia has a different culture where such generalization should be handled with caution.

Future research may focus on comparative studies of CSFs between public and private organizations; further research may also be conducted on how actors at different level of organizations produce their social construction of the ITIL project success or failure.

REFERENCES

- [1] Saudi Vision 2030 available at: www.vision2030.gov.sa
- [2] Tayfour A. Mohammed. (2008), "The Art of Existence and the Regimes of IS-enabled Customer Service Rationalization: A Study of IT Service Management in the UK Higher Education", in proceedings of ICIS 2008, 2008, Paris, France.
- [3] J.Beachboard, S. Conger, S. D. Galup, A. Hernandez, J. Probst, and R. Venkataraman. "AMCIS 2007 Panel on IT Service Management: IT Service Management in the IT Curriculum", Communications of the Association for Information Systems, 2007, Vol. (20), pp. 555-566.
- [4] Mauricio Marrone, Francis Gacenga, Aileen Cater-Steel and Lutz Kolbe. "IT Service Management: A Cross-national Study of ITIL Adoption," Communications of the Association for Information Systems: 2014, Vol. 34, Article 49. Available at: <http://aisel.aisnet.org/cais/vol34/iss1/49>
- [5] Z. Binders and A. Romanovs. "ITIL Self-assessment Approach for Small and Medium Digital Agencies" Information Technology and Management Science, 2014, Vol. (17), PP. 138-143.
- [6] L. Lema, J. Calvo-Manzano, R. Colomo-Palacios and M. Arcilla. "ITIL in small to medium-sized enterprises software companies: towards an implementation sequence", Journal of Software Evolution and Process, 2015, Vol. (27), PP. 528-538.
- [7] S. Karkoskova1 and G. Feuerlicht. (2015), "Extending MBI Model using ITIL and COBIT Processes", Journal of Systems Integration, 2015, Vol. (4), PP. 29-44.
- [8] J. Iden and T. R. Eikebrokk. "The impact of senior management involvement, organizational commitment and group efficacy on ITIL implementation benefits", Information Systems and E-Business Management, 2015, Vol. (13), PP. 527-552.
- [9] M. S. Benqatla, D. Chikhaoui and B. Bounabat. "IT Governance in Actor-Network Mode of Collaboration: Cost Management Process Based on Game Theory", International Journal of Computer Science Issues, 2016, Vol.13 (1), PP. 42-46.
- [10] S. Sebaaoui and M. Lamrini. "Implementation of ITIL in a Moroccan company: the case of incident management process", International Journal of Computer Science Issues, 2012, Vol. 9 (4), PP. 30-36.
- [11] N. Ahmad, T.N.Amer, F. Qutaifan and A. Alhilali. "Technology adoption model and a road map to successful implementation of ITIL", Journal of Enterprise Information Management, 2013, Vol. 26 (5), PP. 553 - 576.
- [12] N. Ahmad and Z. Shamsudin. "Systematic Approach to Successful Implementation of ITIL", in Proceeding of Computer Science,(2013), Vol. 19, PP. 237-244.
- [13] M. Nicho and B. AI Mourad. "Success Factors for Integrated ITIL Deployment: An it Governance Classification", Journal of Information Technology Case and Application Research, 2012, Vol.14 (1), PP. 25-54.
- [14] M .M AlShamy, E. Elfakharany and M. Abd ElAzim. "Information Technology Service Management (ITSM) Implementation Methodology Based on Information Technology Infrastructure Library Ver.3 (ITIL V3)" International Journal of Business Research and Management, 2012, Vol. 3 (3), PP. 113-132.
- [15] CAI (2008), "ITIL V3 Application Support", available at: www.compaid.com.
- [16] W. G. Tan, A. Cater-Steel and M. Toleman. "Implementing IT Service Management: a Case Study Focusing on Critical Success Factors", The Journal of Computer Information Systems, 2009, Vol. 50(2), PP. 1-12.
- [17] Pink Elephant (2011) "Definitive ITIL 2011 & 2007 Edition Process & Function Lists" available at <https://www.pinkelephant.com/>.

- [18] H. Gil-Gómez, R. Oltra-Badenes, and W. Adarme-Jaimes Wilson. (2014), "Service quality management based on the application of the ITIL standard", *Dyna*, 2014, Vol. 81(186), pp. 51-56.
- [19] Tayfour A. Mohammed. "The Dynamics of Implementing Business Process Innovation with IT: Insights from an IT Service Management Field Study", *Journal of Management and Business Research*, 2011, Vol. 1(1), pp. 47-65.
- [20] A.J.Keel,M. A. Orr, R. R. Hernandez, E. A. Patrocinio and J. Bouchard. "From a Technology Oriented to a Service-Oriented Approach to IT Management", *IBM Systems Journal*, 2007, Vol. 46(3), pp. 549-564.
- [21] P. C. Chan, S. R. Durant, V. M. Gall, and M.S. Raisinghani. "Aligning Six Sigma and ITIL to Improve IT Service Management", *International Journal of E-Services and Mobile Applications*, 2009, Vol.1 (2), pp. 62-82.
- [22] C. Pollard and A. Cater-Steel. "Justifications, Strategies, and Critical Success Factors in Successful ITIL Implementations in U.S. and Australian Companies: An Exploratory Study", *Information Systems Management*, 2009, Vol. 26 (2), pp. 164–175
- [23] W. H. DeLone and E. R. McLean. "Information systems success: The quest for the dependent variable", *Information Systems Research*, 1992, Vol. 3(1), pp. 60-95.
- [24] S. Y. Hung, C. Chen and K. H. Wang. "Critical Success Factors for the Implementation of Integrated Healthcare Information Systems Projects: An Organizational Fit Perspective", *Communication of the Association of Information Systems*, 2014, Vol. 34, pp. 775-96.
- [25] A. Zaied. "An Integrated Success Model for Evaluating Information System in Public Sectors", *Journal of Emerging Trends in Computing and Information Sciences*, 2012, Vol. 3(6), pp. 814-825.
- [26] W. H. DeLone and E. R. McLean. "The DeLone and McLean Model of Information System Success: A Ten-Year Update", *Journal of Management Information Systems*, 2003, Vol. 19(4), pp. 9-30.
- [27] F. D. Davis. "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology", *MIS Quarterly*, 1989, Vol. 13(3), pp. 319 – 340.
- [28] T. Oliveira and M. F. Martins. "Literature Review of Information Technology Adoption Models at Firm Level" *The Electronic Journal Information Systems Evaluation*, 2011, Vol. 14(1), pp. 110- 121, available at www.ejise.com.
- [29] B.McNurlin, R. H. Sprague and T. Bui.*Information Systems Management in Practice*, 8th edition, New Jersey: Prentice Hall, 2009.
- [30] T.M.Somers and K. Nelson. "The Impact of Critical Success Factors across the Stages of Enterprise Resource Planning Implementations", in *Proceedings of the 34th Hawaii International Conference on System Sciences-IEEE*, 2001.
- [31] S.Poti, S. Bhattacharyya and T. J. Kamalanabhan. "Social and Cultural Challenges in ERP Implementation: A Comparative Study across Countries and Cultures", *International Journal of Information Systems and Social Change*, 2011, Vol.2 (4), pp.44-67
- [32] J. Iden and L. Langeland. "Setting the Stage for a Successful ITIL Adoption: A Delphi Study of IT Experts in the Norwegian Armed Forces", *Information Systems Management*, 2010, Vol. 27, pp. 103–112.
- [33] K.Peddersen, P. Kraemmergaard, B. C. Lyng and C. D. Schuo. "ITIL Implementation: Critical Success Factors a Comparative Case Study Using the BPC Framework", *Journal of Information Technology Case and Application Research*, 2010, Vol. 12(2), pp. 11-35.
- [34] H. K. Klein and M. D. Myers. "A Set of Principles for Conducting and Evaluating Interpretive Field Studies in Information Systems", *MIS Quarterly*, 1999, Vol. 23 (1), pp. 67-94.
- [35] M.D.Myers. "Hermeneutics in Information Systems Research", in, *Social Theory and Philosophy for Information Systems*,J. Mingers and L. Willcocks (eds.), Chichester: John Wiley & Sons Ltd, 2004, pp. 103-128.
- [36] R. K. Yin. *Case Study Research: Design and Methods*, 3rd edition, Thousand Oak: Sage Publication, 2003.
- [37] M. D. Myers. "Investigating Information Systems with Ethnographic Research", *Communications of the Association for Information Systems*, 1999, Vol. 2(23), pp. 1-19.
- [38] M. B. Miles and A. M. Huberman.*Qualitative Data Analysis*, 2nd edition, Thousand Oaks:SAGE Publications, 1994.

International Journal of Advanced Information Technology (IJAIT) Vol. 8, No.1/2, April 2018

- [39] J. Iden and T. R. Eikebrokk. "Using the ITIL Process Reference Model for Realizing IT Governance: An Empirical Investigation", *Information Systems Management*, 2014, Vol. 31(1), pp. 37-58,
- [40] P. Yamakawa, C. O. Noriega, A. N. Linares and W. V. Ramirez, W. V. "Improving ITIL compliance using change management practices: a finance sector case study", *Business Process Management Journal*, 2012, Vol. 18(6), pp. 1020-1035.
- [41] M. Marrone and L. M Kolbe. "Uncovering ITIL claims: IT executives' perception on benefits and Business-IT alignment", *Information Systems and E-Business Management*, 2011, Vol. 9(3), pp. 363-380.
- [42] Z.I.Hussain and N. Cornelius. "The use of domination and legitimation in information systems implementation", *Information Systems Journal*, 2009, Vol. 19, pp. 197-224.
- [43] P.R.de Andrade, A. B. Albuquerque, W. D. Teofilo and F. A.da Silva "Change management: implementation and benefits of the change control in the information technology environment", *International Journal of Advanced Information Technology*, 2016, Vol. 6(1), pp. 23-33.

Author

Tayfour Abdalla Mohammed holds PhD and MSc in Information Systems and MBA degree. His main research focus is on IT Governance with emphasis on ITIL, Cobit, BPR and Critical Social Theory in Information Systems. He has extensive teaching experience in UK, Sudan and Saudi Arabian universities. He also worked as a consultant with the United Nations Development Program (UNDP).

