A-ITIL, ITIL AND AGILE BASED ADVANCED FRAMEWORK FOR MANAGING SOFTWARE AND IT RELATED BAU: A SYSTEMATIC LITERATURE REVIEW

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Abstract

In today's rapidly evolving environment, two critical factors for organizations to maintain their competitive edge are speed to market and adaptability. Over the past ten years, a significant number of organizations have achieved success in delivering IT services by utilizing IT management frameworks. One widely adopted framework in this domain is ITIL, an abbreviation for the IT Infrastructure Library. ITIL serves as a guiding framework, facilitating the attainment of high-quality IT service management at an organizational level. When it comes to software development, it is crucial for managers and development teams to select an appropriate methodology that aligns with their project's needs. Agile software development is one prominent approach based on iterative and incremental development. It has gained significant prominence in the IT industry due to its ability to enhance project development processes. Combining ITIL and Agile methodologies has proven to be a valuable strategy for streamlining project development in the IT industry. This fusion results in what is known as the Agile-ITIL combined framework, often referred to as A-ITIL. This paper primarily focuses on the integration of ITIL processes with agile phases, shedding light on the amalgamation of ITIL and Agile with other frameworks and technologies. Furthermore, it examines the utilization of ITIL and Agile in various companies, offering valuable insights into how these methodologies can be applied effectively. Consequently, this publication is a valuable resource for researchers seeking comprehensive knowledge in the ITIL and Agile-related domains. It aims to identify potential avenues for future research and development in this dynamic field.

Keywords: Agile;A-ITIL;ITIL

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Introduction

Organizational management becomes much more crucial and complex due to the enhancement of the IT background, and it directly affects the capacity and complexity of its hardware and software applications. The IT management service requirement has emerged to enhance the scope's efficiency and effectiveness. Later, IT Service Management (ITSM) was introduced to incorporate various management strategies to shape and manage the organizational background. The study (Mesquida et al.,2012) says that IT service management (ITSM) is a platform that combines process management and industry best practices to improve IT services. Some ITSM standards have been established due to efforts made by academics and practitioners. Information technology infrastructure library (ITIL), ISO/IEC 20000, control objectives for information and related technology (COBIT), and distributed management task force (DMTF) are all well-known examples of these standards (Farmand, 2013). Implementing those standards is primarily about providing customers with high-quality IT services that can effectively meet their business needs. ITIL is the platform that provides ITSM best practices and guidance used most frequently among these standards.

Agile software development is a collection of software development techniques based on iterative and incremental development in which self-organizing and cross-functional teams collaborate to advance requirements and solutions (Moniruzzaman & Hossain, 2013). The agile software development manifesto was created in 2001 by seventeen developers to reduce product/service release delays, avoid project rework, and increase customer satisfaction through project completion on time and within budget (Hohl et al., 2018). Twelve principles of agile software as aligned with the business, including focusing on customer results, certifying ongoing customer value, comprehending and enabling business success, delivering high-quality IT services, restoring service soon, adapting to changing requirements, minimizing risks, being practical, efficient, making processes sustainable and repeatable, and meeting IT governance requirements, contribute to the strength of the agile manifesto. The underlying principles of service management are comparable to these.

Businesses as Usual (BAU) carried out by internal IT organizations require having software development teams to run the process management-related software applications. Software engineering entities often prefer Agile as a development methodology due to its adaptiveness and potential to respond to change. Agile is an iterative software development methodology based on incremental development concepts where the focus of ITIL in BAU is delivering the work at once. This fundamental mismatch between Agile and ITIL requires a framework to manage the BAU work transition between ITIL and Agile.

There is a precise alignment between the Agile Manifesto and service management's objectives (Groll, 2017). Unfortunately, end-to-end agility does not always result from that alignment. This research is carried out to verify and validate the requirement for a framework to manage ITIL-agile transition.

Background

BAU activities are IT operations that do not have budgetary requirements, are not impacted by personal information (PI), and do not require cross-functional attention (Ktata & Lévesque, 2009). BAU works are frequently unplanned and routine, necessitating focused business efforts to manage them efficiently (Pollard et al., 2009). Most IT organizations try to improve and standardize their BAU works by adopting supportive frameworks like ITIL, as efficient BAU handling is necessary for the business's success.

Information Technology Infrastructure Library (ITIL) is a widely used set of detailed practices for IT operations, such as IT Service Management (ITSM) and asset management, which supports aligning IT services with business requirements. The third version of ITIL is the most utilized framework, whereas the fourth version is the latest. ITIL is a lifecycle concept-driven framework that combines all the consecutive IT service and improvement-related activities into a few service lifecycle stages (Baker et al., 2020).

As per ITIL 4.0, this life cycle consists of 3 main stages: Service Design, Service Operations, and Service Transition; the Service Operation piece of the cycle focuses on BAU activities that keep service up and running by managing interruptions, changes, and improvements (Tan et al., 2009). The service Operation section of the Service Strategy described in ITIL 4.0 comprises Incident Management, Event Management, Problem Management, and Request Fulfillment as collaborative segments. BAUs handled by Service Operation are frequently subject to time-driven Service Level Agreements (SLA) and Key Performance Indicators (KPI) in order to speed up the delivery of BAUs and continuously enhance service quality (Fei & Shuang-Qing, 2012).

Methodology

The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) approach was used to perform this study (Page et al., 2021). We first created several research questions based on the goal of this study. A search technique was developed to find the completed studies that can be used to address our research concerns. At this point, the database usage and the inclusion and exclusion standards were also established. In order to find the studies attempting to address the developed research questions as the third stage, the study selection criteria were devised. Data extraction and synthesis, the fourth stage, is the process of using the studies gathered to assess and answer the research questions.

A. Research Objectives:

1. To identify the ITIL processes which trigger the ITIL-Agile combination
2. To analyze the behaviour of ITIL combined other frameworks/Technologies and Agile combined other frameworks/Technologies in order to build the Agile-ITIL combined framework
3. To identify the usage and the behaviour of ITIL and Agile in other firms

B. Research Questions:

RQ1- What are the ITIL processes which trigger ITIL-Agile combination

RQ2- How does ITIL combined other frameworks/Technologies and Agile combined other frameworks/Technologies behave in order to build the Agile-ITIL combined framework?

RQ3- How do ITIL and Agile apply to observe behaviour and usage in the firms?

C. Search Strategy

The most pertinent bibliographic sources and search phrases are outlined in the search strategy. In order to find studies, we primarily used a number of top research archives. They were Science Direct, Springer Link, IEEEXplore Digital Library, and ACM Digital Libraries. Other search engines like Google Scholar and Research Gate were also used to find research articles published in reputable journals. The following search phrases were included in the search string that we used to explore across research

repositories: ("ITIL") OR ("ITIL usage") OR (“ITIL combined frameworks”) OR (“Agile”) OR (“Agile usage”) OR (“Agile combined frameworks”) OR (“Agile ITIL combination”).

D. Study Selection Criteria

We only review relevant research from 2010 to 2022 based on the evolution of ITIL V3 and the popularity of Agile Software development methodology. Initially, by searching the top research repositories' research databases and other sources, 120 research papers were identified. From these 120 papers, 16 were excluded since these 16 papers were not related to the study, 12 were excluded because of duplicate entries, 28 were removed as they were published before 2010, and another 24 were not included in those 110 articles because they were not accessible to the general audience. This approach is shown in Figure1.

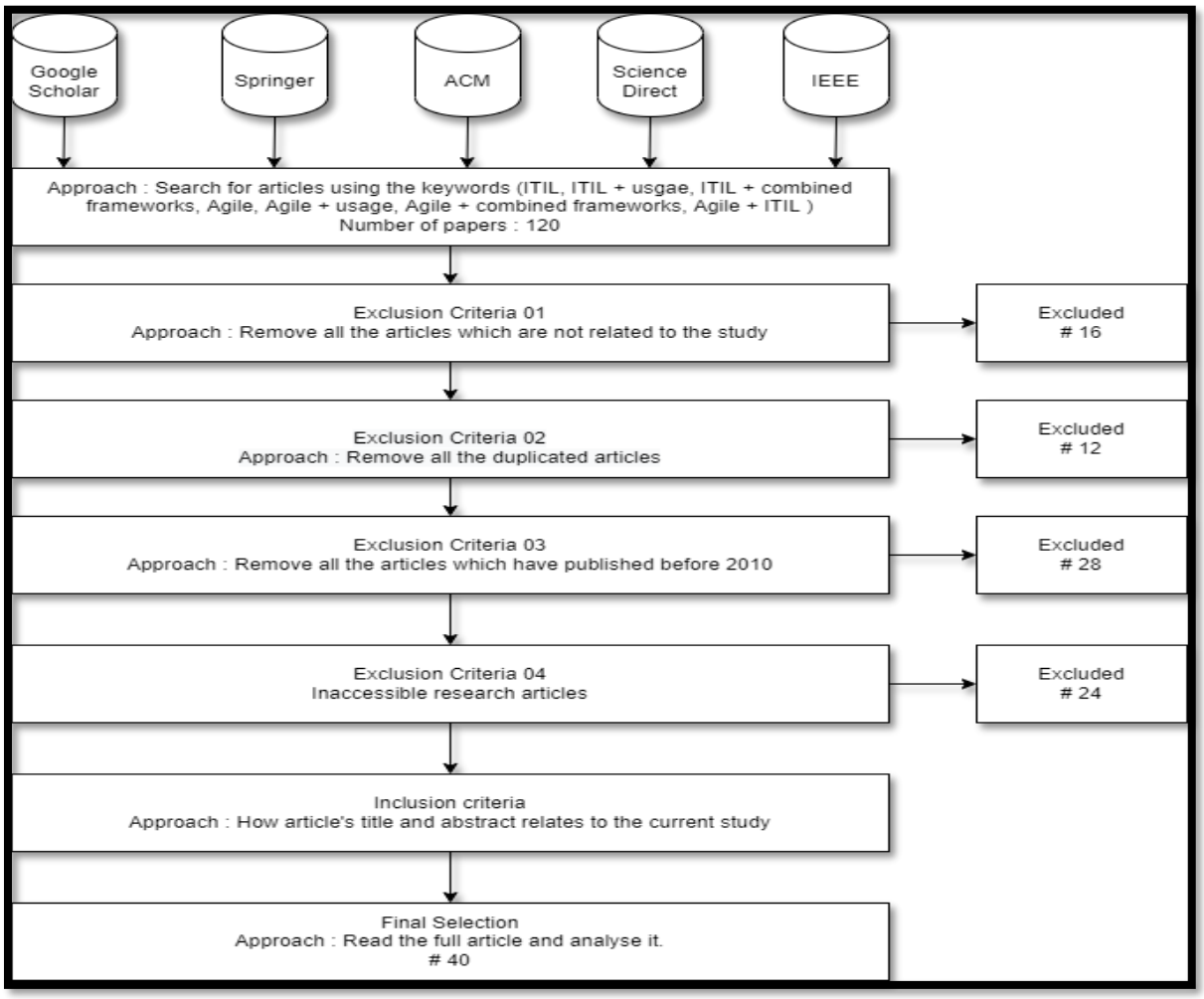

Figure 1: Methodology

Results

A comprehensive analysis is carried out on the selected body of literature. It begins with a brief descriptive analysis centred on the publication date. Following that, a comprehensive qualitative analysis of the literature in each category was carried out.

E. Quantitative Analysis

As mentioned in the section methodology, research articles were chosen based on the evolution of ITIL V3 and the popularity of Agile Software development methodology. So, after 2010, the selected

research articles were used to analyze the study. Fig.2 shows the number of publications within the selected literature reviews.

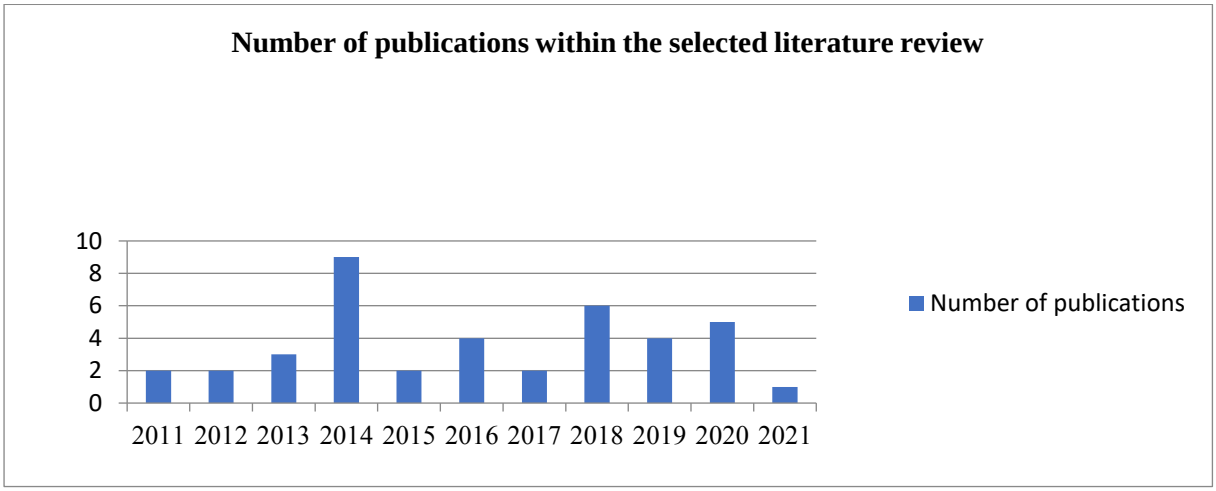

Figure 2. Number of publications within the selected literature reviews

F. Qualitative Analysis

Compared to the descriptive analysis, the qualitative analysis focuses on each category's content. The summary of the qualitative analysis is as follows (Table 1)

Table 1. The Summary of the Qualitative Analysis

No	Category Name	Identified literature
01	ITIL processes to trigger ITIL-Agile combination	(Rasa & Banu, 2019) (Imroz, 2019) (Sekhara et al., 2014) (Saarelainen & Jäntti, 2015) (Kaloyanova & Mitreva, 2012) (de Andrade et al., 2016) (Sebaaoui & Lamrini, 2012) (Jalagat, 2016).
02	ITIL combined other frameworks/technologies	(Verlaine et al., 2016) (Verlaine et al., 2014) (Almeida et al., 2018) (Pedersen et al., 2010) (Bahsani et al., 2011) (Karkošková & Feuerlicht, 2014) (McCarthy et al., 2015)
03	ITIL usage in other firms	(Binders & Romanovs, 2014) (Himi et al., 2011) (Andry & Christianto, 2018) (Mohammed, 2018) (Ramakrishnan, 2014) (Esteves & Alves, 2013) (Page et al., 2021) (Tanovic et al., 2014) (Orakzai, 2014)
04	Agile combines other frameworks/technologies.	(Galup et al., 2020) (Serrano et al., 2021) (Koutsoumpos & Marinelarena, 2013) (Raj & Sinha, 2015) (Sahid et al., 2018) (McKenna & Whitty, 2013)
05	Agile usage in other firms	(Ouriques et al., 2019) (Lowry & Wilson, 2016) (Ilyés, 2019) (Fuchs & Hess, 2018) (Stare, 2014) (Kekkonen, 2020) (Verlaine, 2017) (Abdelkebir et al.,2017)

I. ITIL processes to trigger ITIL-Agile combination

ITIL processes to trigger the ITIL-Agile combination, presented in the research article, are as follows.

The researchers (Rasa & Banu, 2019) provide background information on ITIL and IT service management. In addition, it describes the ITIL Release Management Process and identifies the

difficulties associated with its implementation. Finally, the ITIL Release Management Process's roles and responsibilities were created and characterized. Some studies (Imroz, 2019) created dashboards to display the most important metrics of an IT service provider group's request fulfilment process and examined the group's perceptions of those metrics. There were 12 metrics that the group thought were the most important. iDashboards was used to create three dashboard pages.

This paper (Sekhara et al., 2014) uses the advantages of agent technology to make implementing and using ITIL processes more efficient, starting with the incident management process. The architecture consists of two layers: a reactive layer and a deliberative layer. The reactive layer consists of reactive agents (simple processing units that perceive and react to changes in their environment). In this architecture, the user agent is reactive. The deliberative layer is composed of other cognitive agents. The ITIL-based Multidimensional Incident Analytics Method is discussed by some researchers(Saarelainen & Jäntti, 2015). The following is the study's research issue: In addition to supporting ITIL-based (IT Infrastructure Library) continuous service improvement, what kind of incident and root cause categorization model would be effective? The results of the study fall into two categories: First, there is the software incident and root cause categorization model, which helps an IT organization classify incidents and their causes and figure out where IT services are lacking; secondly, the lessons learned for improving incident measurement and categorization procedures. The paper (Kaloyanova & Mitreva, 2012) focuses on Change Management procedures, covering the scope, key objectives, roles, politics, and processes. It also compares three change management methods: CMMI, ITIL, and Project Management. The primary steps for change implementation include receiving a change, deciding on accepting or rejecting a change request (CR), and related activities such as CR evaluation, approval, risk and impact assessment, risk classification, change scheduling and prioritization, planning, development, rollback procedures, modification preparation, and implementation coordination. Documentation and modification closure are also addressed.

This paper (de Andrade et al., 2016) aims to demonstrate the advantages and outcomes of implementing a process for managing and controlling changes in the information technology environment of a large Brazilian government company through a case study. The implementation process was motivated by the following anticipated benefits: the improved connection between IT services and business by exercising greater control over the implementation of the changes, greater visibility into the changes, a reduction in the negative impact of the changes, a better assessment of the cost-benefit ratio of the change prior to its implementation, a reduction in cost, time, and rework, more stable services, and an increase in user productivity.

The initial objective of this study is to assess the organization's effectiveness in achieving corporate goals and objectives through change and change management. (Sebaaoui & Lamrini, 2012) Discuss the various types of change, including organizational change, and the benefits and drawbacks of change. The causes of the change can be internal or external forces. It will also go into great detail about how to implement good change management, analyze any potential benefits that change management may have for the company, and clarify the ideas behind and applications of change management with the assistance of several change models.

This paper focuses on implementing the ITIL framework by implementing the Incident Management procedure in a Moroccan business (Jalagat, 2016). There are several phases to the proposed method. Each phase has a set of tasks that need to be done and some deliverables. The following are the results of this study: The technician evaluates the impact of the incident, diagnoses, treats, or redirects it to the employee who is able to handle it, regardless of whether the issue is a request for assistance, a hardware issue, office automation, messaging, network, or application. However, no solution has been identified

that can capitalize on unresolved incidents. There are two possibilities: Currently, no indicators can accurately reflect the number of incidents handled by the IT department; however, the staff estimates that the daily average is approximately ten applications and thirty infrastructure-related incidents. The absence of traceability harms incident management and results in the loss of some queries.

II. ITIL combined other frameworks/technologies

ITIL combined with other frameworks/Technologies are mentioned in this section.

The researchers provided recommendations for bridging ITIL and agile project management. They (Verlaine et al., 2016) suggested allowing modifications to the Service design package during implementation and parallel execution of service design and service transition phases. Incremental creation of the Service design package alongside software development and testing was advised. Service managers should release IT services in sync with software implementation. In some research papers (Verlaine et al., 2014), the service provisioning model steps were aligned with ITIL V.3 processes, facilitating the integration of the ICT layer (SoS) and the business layer (ITIL V.3) for organizations and IT teams. Combining ITIL and an SoS offers a full-service orientation, yielding significant benefits for companies.

Ontology to describe ITIL was proposed here (Almeida et al., 2018). Three activities are carried out simultaneously throughout the life cycle of the ontology, each of which has an intra-dependency relationship: activities related to management, growth, and support. The critical success factors for implementing an IT Infrastructure Library (ITIL) are the subject of this article. It employs a BPC-based case study methodology to contrast an unsuccessful ITIL implementation with a successful one. In two organizations, interviews were conducted at various levels to gather data. The study identifies quick wins, continuous improvement, marketing campaigns, management support, training, and personnel development as key success factors related to ITIL implementation (Pedersen et al., 2010).

This research paper (Bahsani et al., 2011) makes a case for combining ITIL and COBIT. This paper compares the two references and projects ITIL processes and their structures onto COBIT to improve information technology governance. When used together, COBIT and ITIL offer a top-down approach to IT governance and services management. A comprehensive strategy for managing IT activities' objectives and priorities is provided by the COBIT management guide. The effectiveness of both approaches is increased when used in conjunction, leading to a greater likelihood of management support and direction and more effective utilization of resources for implementation.

The initial proposal to modify the ITIL framework for managing the lifecycle of cloud-based services is described in this paper (Karkošková & Feuerlicht, 2014). It has redefined ITIL processes for the various lifecycle phases from a consumer's perspective to reflect cloud service customers' requirements. It has proposed mapping on-premise and cloud IT services to ITIL service lifecycle stages and adapting ITIL to include cloud services. The outcomes of ITIL adaptation for cloud environments are the changes to ITIL processes and the application of ITIL principles to implementing and managing cloud services.

This paper discusses the limitations of ITIL's current definition of the "Definitive Software Library" (DSL) in the context of infrastructure, application, and service virtualization and the evolving technology landscape (McCarthy et al., 2015). In summary, the DSL definition in ITIL needs expansion to accommodate agile infrastructures and their alignment with ITIL practices. It should encompass the "one application" perspective and the reality of "service orientation," incorporating relationships, dependencies, and interfaces. The goal is to enable service deployment and management using agile

infrastructure patterns to enhance operational effectiveness. The extended DSL (eDSL) encompasses all application/service life cycle aspects and tightly integrates with operational processes and models.

III. ITIL usage in other firms

ITIL usage in other firms is described here.

Based on the procedure results, the business requirements, and the guidelines provided, the authors of this paper (Binders & Romanovs, 2014) propose a method for locating and evaluating ITIL implementations tailored to small businesses. It reveals FitSM, a standard family designed to facilitate the implementation of lightweight service management. FitSM is designed to meet the requirements for service management outlined in the International Standard ISO/IEC 20000-1 (ITIL).

An approach to putting the ITIL IT service management best practices repository on the enterprise value chain is proposed in this paper (Himi et al., 2011). ITIL is able to provide the necessary processes for this stage of business development because the strategic aspect of the value chain is devoted to studying and listening to the needs of the customer as well as taking into consideration the competition in the market in order to define a solution that will be suitable for the customer.

This study (Andry & Christianto, 2018) used the ITIL framework with a focus on Service Desks to conduct a case study on the Jakarta-based Freight Forwarder Service (FFS). Observation, questionnaires, interviews, document review, and other methods were used to gather the data. The company FFS received an average service desk score of 1.94, with the highest score in Process Capability and the lowest in Customer Interface, according to the analysis of the collected data using the ITIL maturity level. Company FFS has good service desk management, but more user experience on the front end of service is needed, according to this paper.

This paper (Mohammed, 2018) provides a comprehensive case study of two Saudi Arabian public sector organizations that successfully implemented ITIL V3 procedures. A number of key success factors (CSF) associated with successful ITIL adoption are highlighted in the case studies. The current study universally identifies the following managerial elements as CSFs: support from top management, ITIL project team competency, project management abilities, interdepartmental collaboration and communication, training, scheduling, implementation phase, and consumer orientation.

This report explores a case study examining the IT strategy of a company in the Bangladeshi telecom industry. The approach involved following sequential strategies to achieve this goal. The study (Ramakrishnan, 2014) was conducted for BL, taking into account feedback and recommendations from the IT Auditor. It included data collection from various secondary and unpublished sources, such as media, the internet, articles, and papers, to assess the situation, its impact, and implications in the telecom sector in Bangladesh. Experts from the case company's Technical and Service Support and IT infrastructure departments were also interviewed. The study also encompassed the development of service-related components.

The preliminary findings of 2012 academic research on the implementation of an Information Technology Infrastructure Library (ITIL) process in Portugal's Culture, Tourism, and Transport Regional Department of Madeira are presented in this paper (Esteves & Alves, 2013). According to this study, ITIL can be used to improve delivery, productivity, and overall quality of IT services while also cutting costs and increasing customer satisfaction. However, it discovered a natural resistance to change, especially in the public sector. Because formal and bureaucratic procedures are ingrained in organizations' culture, this resistance is the most critical issue for implementing ITIL practices in the public sector.

This research article proposes a management model based on the methodology that the Infrastructure Library of Information Technologies (ITIL) raises throughout the service's life cycle (Page et al., 2021). The intricate connection between technology and business is met by areas, groups, interdisciplinary tools, and research. This study's methodology included conducting a bibliographic inquiry and analyzing operational experiences related to the ITIL methodology's suggested alternatives and disciplines for the subject at hand. The investigation revealed a management model that links areas, roles and functions in an organizational team oriented toward the quality of the service in information.

The Sarajevo School of Science and Technology (SSST) University's Service Desk solution for insurance companies is described in this paper (Tanovic et al., 2014). The purpose of this paper is to compare and contrast the results achieved by one insurance company in Bosnia and Herzegovina following the implementation of the Service Desk solution with those achieved prior to its implementation. Six ITSM processes are included in the newly developed Service Desk solution: Management of suppliers, change management, events, incidents, and requests, as well as management of problems.

The comprehensive alignment of ITIL, COBIT, and ISO/IEC 27002 suggested in this paper (Orakzai, 2014) is one that any business can use to handle IT Governance and Information Technology Management effectively. The ITIL methodology ought to be used to define the processes, ideas, and strategies; the critical success factors should be evaluated using COBIT, and the IT should follow the ISO/IEC 27002 standard for IT management and security.

IV. Agile combines other frameworks/technologies.

Agile combines other frameworks/Technologies, which are highlighted in research articles described in this section.

This paper compares DevOps to Agile, lean, and ITSM (Galup et al., 2020). To that end, there is a growing consensus within the information technology community that DevOps = Agile + Lean + ITSM. DevOps is about good development practices that consistently deliver product features (Agile) effectively with minimal wasted attempts (Lean), which are overseen by good governance controls (Information et al., or ITSM). Small and medium-sized businesses (SMEs) working in ITSM require more specific and costly Software Process Improvement (SPI) methods, according to some research papers. The DSR approach is suggested to propose an agile ITSM self-assessment method for resolving the issue. In the SPI context, it has been demonstrated that DSR is a crucial success factor when combined with action research.

The IT service organization that emphasizes the "start small, then scale up" strategy is created when ITIL, other ITSM frameworks, and agile practices are combined. It means to concentrate first on ITIL processes like incident management, change management, or application management that are heavily influenced by shifting customer requirements. The ITSM trend radar shows which agile method can help bring agility to the design of a future IT service process landscape and which ITSM framework should be evaluated first (Serrano et al., 2021).

The key Agile and SPI maturity models used by SMEs will be identified in this study (Koutsoumpos & Marinelarena, 2013), along with the methodologies used in conjunction with one another and potential outcomes. The bulk of Agile techniques and SPI maturity models are aimed at large or very large businesses. The SPI maturity model and the Agile approach are frequently tried in the early stages of experimentation. A number of advantages for SMEs may also result from this combination, it has been

noticed. CMMI and XP, CMMI and Scrum, CMMI and Six Sigma, PRINCE2 and DSDM are the most widely used pairings.

This paper investigates the effects of Agile and DevOps on team dynamics and project management procedures in software development projects (Raj & Sinha, 2015). This study reveals that project management practices are affected by the Agile and DevOps methodologies' effects on scope management, quality management, and estimation. The literature examination also shows that Agile and DevOps approaches impact shared responsibility, automation, and feedback, which arrange team structure. This article (Sahid et al., 2018) suggests a practical agile framework to improve IT service and asset management procedures using a case study of the firm. With the findings' help, organizations could evaluate their capacities and address the procedural, technological, and human aspects of IT service and asset management.

The study (McKenna & Whitty, 2013) examines the role of Agile methodologies going back nearly a century. It demonstrates how modern Agile project management has combined tools and procedures from activities that supported the rapid economic expansion of the twentieth century. The four components of this research approach are the socio-cultural evolution, non-biological phylogenetic analysis, and Agile phylogenetic tree. The third component has multiple memes and memeplexes included by researchers. The work breakdown structure, the "PERT," the "Critical Path Method," a bar chart, and the "Critical Path Method" are all historically distinct concepts that are utilized in project management tools like Microsoft (MS) Project. All of these could be considered "memes." Similar to this, Scrum's ceremonies (such as the "daily stand-up" and "sprint") and procedures, as well as its artefacts and tools (such as the burn-down chart and product backlog items), may all be considered memes and memeplexes.

V. Agile usage in other firms

Agile usage in other firms is described in this section.

Here, the question for the study is: Does adopting the Agile methodology affect trust in the organization, supervisory trust, knowledge sharing, and teamwork (Ouriques et al.,2019)? The questionnaire results show that adopting Agile positively enhanced collaboration and knowledge sharing. However, it did not significantly increase the public's faith in the company. When compared to those who worked in non-Agile environments, those who worked in an Agile environment had a lower trust in supervisors score.

This article (Lowry & Wilson, 2016) examines the benefits of Agile for businesses and provides a case study of a small consulting firm that attempted to adopt an Agile methodology. The four tenets of agility, awareness, personalized service, and responsiveness must be addressed for organizations to survive in an increasingly hostile environment. Building flexibility into the workforce, technology, workplace, and structure will enable organizations to respond to changes in the market, test the market for non-core activities, utilize the knowledge and services offered by contingent sources, listen for weak signals, transform into a learning organization, and protect intellectual property and resources, and more.

This study (Ilyés, 2019) presents considerations for developing agile methodologies in R&D teams, with feedback highlighting key areas of improvement when applying txtUML's agile methodology, such as enhanced team communication, precise goal-setting, a positive work environment, improved teamwork, and efficient onboarding of new members as project knowledge spreads. Additionally, the feedback suggests opportunities for growth, including introducing agile training to reinforce agile values. The study (Fuchs & Hess, 2018) takes a socio-technical systems theory perspective and employs

a qualitative research approach, featuring two in-depth case studies. It views large-scale agile transformation as an episodic change process with multiple transformation phases, encompassing significant and minor changes and encountering new challenges as boundaries.

The paper's (Stare, 2014) primary objective is to showcase how agile project management can benefit product development, emphasizing four key distinctions from traditional approaches: requirements and specifications, project planning, teamwork, and client collaboration. The selected methodology combines Scrum and Extreme Programming (XP) for comprehensive coverage and guidance in the software development lifecycle. An extended Scrum approach with two additional sprints, each lasting two weeks, is implemented, replacing daily Scrum meetings with weekly status report meetings during the sprints. After two sprints, a review meeting raises questions about product ownership as a potential agile vulnerability. Team member differences also pose challenges to agile adoption.

According to this paper, IT agility can only be achieved if operational and development teams use agile thinking and practices. DevOps is made up of agile software development and agile service management. It went over two aspects of Agile Service Management and the twelve principles of the Agile Manifesto: Designing and enhancing agile processes. This framework (Kekkonen, 2020) demonstrates that service design and service transition are the primary phases in which Scrum artefacts and events are added. The processing backlog takes the place of the product backlog when it comes to Scrum artefacts.

It (Verlaine, 2017) suggests six (06) Agile practices for ITSM, including the following: employees work in self-organized teams that are accountable for a variety of tasks that have been cooperatively defined; employees usually meet to discuss the performance results of their team and the entire organization; value is provided directly to customers rather than indirectly; the business and IT sides of organizations must collaborate; teams are self-organized and work together to achieve goals.

It (Abdelkebir et al., 2017) exhibits the design of the suggested IT service centre for the company. The approach includes knowledge management, self-service, service level management, configuration management database (CMDB), change management, problem management, incident management, and problem management. The quality department has implemented several strategic initiatives in addition to an agile framework based on DevOps. Four DDAO stages are present: Learn about Do, Act, and Optimize to create a superior continuous IT improvement plan.

Conclusion

This research examined the behaviour of ITIL and Agile based on integrating other frameworks/technologies and using Agile ITIL in firms to ensure the requirement of integrating ITIL with Agile in BAU activities. The research purpose was accomplished by obtaining responses for three research questions: "What are the ITIL processes which trigger ITIL-Agile combination?", "How ITIL combined other frameworks/Technologies and Agile combined other frameworks/Technologies behave to build the Agile-ITIL combined framework?" and "How do ITIL and Agile apply in the firms for observing the behaviour and usage ? ". A comprehensive literature review was used to answer the questions. The literature does not provide an adequate framework or process to integrate ITIL with Agile in business-as-usual activities. However, there is an industry requirement to cope with ITIL with Agile. Further literature review analysis will be done to identify the relevant software and IT-related entities, processes and scenarios within BAU activities which deal with both agile and ITIL and to determine the compatibility points in software and IT-related Business as Usual (BAU) activities when combining the agile and ITIL.

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