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ASSESSING SCRUM'S EFFECTIVENESS IN AGILE PROJECT MANAGEMENT FOR COMPANY SERVICE ENHANCEMENT

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Abstract

Currently, various frameworks are used to implement Information Technology Governance (ITG). Due to the dynamic nature of ITG that is constantly evolving, there is an increasing demand for more efficient preparation, planning, and process development. In this context, having a supportive framework is a key priority. Therefore, the author intends to investigate how the integration of the ITIL framework into the Continual Service Improvement approach can enhance ITG. These efforts will be empowered by the implementation of a more adaptive and simplified operational approach in the form of Agile Project Management with the Scrum methodology. The goal is to accelerate the progress of ITG and make it more responsive and efficient in maximizing service quality across various organizations.

Keywords: *IT Governance Frameworks, Robust IT Governance, Agile Project Management, ITIL Framework, Ongoing Service Enhancement.*

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1. INTRODUCTION

Rapid progress in the realm of Information Systems and Information Technology is now considered an invaluable asset for companies (Hammer & Champy, 1993) [1]. Information Systems and Information Technology not only play a supporting role, but also become trusted partners in main operations, carry unlimited potential, play a strategic role, and increase standards of effectiveness, efficiency and productivity in the organizational context (Wheelan & Hunger, 2004) [2]. Companies around the world must continue to innovate, especially in strengthening IT Governance to provide superior public services, all driven by information and communication technology.

According to ITGI (2008), IT Governance can be thought of as the latest magic in business management. The main goal is to make information technology the foundation for victory by combining strategy, risk management, resource management, added value creation and performance measurement. All of these elements are essential parts that make up IT Governance from the perspective of an organization full of innovation.

Many implementations of IT Governance evolution are currently carried out in short and fast processes. However, research findings from Heeks (2013) regarding IT Governance projects in developing countries reveal significant failure rates. In facing this challenge, organizations in Indonesia need to create a framework that is not only strong, but also agile and responsive in its implementation.

Based on the results of a survey conducted by the Scrum community (Sutherland et al., 2007) [3], the Scrum framework has dominated the software industry for the past few decades. Large companies such as Fuji Xerox, Honda, Canon, Toyota, BMW, and others have embraced Scrum for its simplicity, reliable productivity, and level of flexibility. Therefore, we are determined to utilize Scrum implemented within the ITIL framework. This framework needs to be introduced in depth as an integral part of the IT Governance development process, with the hope that this will bring significant improvements in the successful implementation of IT Governance development. We will integrate more adaptive daily activities and shorter processes through design and development using Agile Project Management with the Scrum method.

2. RESEARCH METHODS

The evolutionary journey of strategic planning methods for implementing IT Governance is like a landscape that never stops changing. In this diverse world, one method that has emerged as a star is COBIT, as revealed by Najwa (2018). However, not only that, we also find a combination of methods that form a modern symphony involving COBIT, ITIL, ITBSC, SCRUM, VAL IT, and various others. Currently, we see COBIT version 5.0 which acts as a unification in the choreography of various existing frameworks, such as a collaborative work told by Jairak and Praneetpolgrang (2013).

In palm oil plantation companies, Sandfreni and Adikara (2017) [5] included COBIT 5.0 as an important component in a major IT Governance performance. They reveal the details of each dance movement to create extraordinary developments and present an inspiring story. Not only that, Kerr and Murthy (2013) [6] have held a COBIT 5.0 research show that has colored the world of IT professionals.

In this performance, they conducted a survey of IT experts, resulting in a valuable highlight: five processes on stage were named as the main actors. In this drama, we can also witness fascinating patterns of results, such as different occupational characters and geographical locations that coexist. However, as in any great show, there is always the potential for bias to sneak in, where some viewers may view COBIT in a different light, and this is part of the charm of this colorful life.

In a framework characterized by brilliant standards such as COBIT, ITIL has emerged as a fundamental pillar in the IT service management domain. However, the integration of ITIL V3 and COBIT 5 in a Governance framework has become an interesting innovation initiated by a number of researchers, including Ekanata and Girsang (2015), and Shalannanda and Hakimi (2016) [4].

In Ekanata and Girsang's (2015) investigation, the focus was on the data center which is a vital core in the ministry of foreign affairs in Indonesia, while Shalannanda and Hakimi (2016) tried to combine elements of these two methods in the context of a hospital environment. The findings from these studies prove the elements that should be a solid basis for implementing IT Governance in various organizations.

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In research conducted by Lunardi et al. (2014), highlighted that many companies choose to adopt COBIT and ITIL as part of their strategy to improve performance in the field of IT Governance. The research also refers to the impact of IT Governance adoption on company financial performance as seen on Figure 1. In addition, the increasingly popular continuous improvement method, namely SCRUM, is also in the spotlight. The results of research by Mahnic et al. (2010) [7] shows that in the software development domain, Agile and SCRUM methods are the most widely applied.

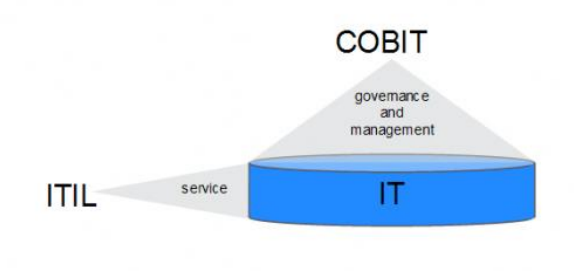

Figure 1. Combination Method of ITIL and COBIT

Apart from that, the application of the SCRUM framework has been implemented successfully by Arif and Dwi (2017) [8] in various companies throughout the world, including small and large scale companies. SCRUM emphasizes intensive collaboration between customers and development teams in each iteration of product creation, which in turn allows for continuous improvement and improvement. Despite facing several challenges, implementing SCRUM has been proven to increase productivity in software development.

3. RESULTS AND DISCUSSION

There are still a few individuals who believe that it is sufficient to use just one framework in building and developing an organizational structure. However, in the context of the world of Information and Communication Technology (ICT), Enterprise Architecture (EA) becomes a significant and holistic foundation. The application of Enterprise Architecture as a guide in the company restructuring process has the potential to tighten business competition, especially in the Industry 4.0 era which is marked by waves of technology and innovation that are disrupting the market.

One of the main challenges in today's industrial foundations is the change brought about by disruptive technologies. This concept was first introduced by Clayton M., who refers to innovative technologies that create new market sectors, disrupt established market sectors, and ultimately replace existing technologies. In the context of the Fourth Industrial Revolution, or what is often referred to as Industry 4.0, disruptive technology is one of the main elements. Nowadays, the measure of success for a company is no longer determined solely by its size. Even more important is the company's ability to adapt quickly to technological developments and changes in consumer behavior. Therefore, organizations need to undergo an adaptation process and carry out internal evaluations to remain relevant to developments in science and technology.

In facing competition in the Industry 4.0 era, companies need to be willing to adopt change. Markets can quickly change and be affected by disruptive innovations and technologies, which can create new markets, shake the existence of established markets, and ultimately, replace pre-existing technologies. Disruptive innovations often come as a surprise to the market, by pursuing different market segments or reducing prices in existing markets.

Real examples of disruptive innovation and its impact on the market include:

- Large companies are being shaken by innovation from start-ups.
- Traditional banking companies are being disrupted by advances in financial technology (FINTECH).
- The print encyclopedia market was disrupted by the emergence of Wikipedia.
- The telegraphy system was replaced by telephone technology.
- Mainframe computers were replaced by the development of personal computers (PCs).
- Minicomputers were replaced by advances in personal computers (PCs).
- The use of floppy disks has been replaced by the development of CDs and USB devices.
- CRT screens are being replaced by LCD screen technology.
- The use of metal and wood is being replaced by innovations in plastic materials.
- Radiography (X-Ray Imaging) is being replaced by ultrasound technology (USG).

- CD & DVD media have been replaced by the emergence of digital media (such as iTunes and Amazon).
- Film cameras have been replaced by digital camera innovations.
- Offset printing machines have been replaced by computer printer innovations.
- The traditional publishing industry is being disrupted by the development of computer (PC) based desktop publishing.
- Transportation by horse and train was replaced by the development of the automobile.

Within the scope of Enterprise Architecture, the use of the TOGAF Framework provides systematic guidance for implementing company restructuring in accordance with the approach established by TOGAF. This guide covers comprehensive planning in various aspects of corporate structure and implementation strategy, as reflected in the following illustration.

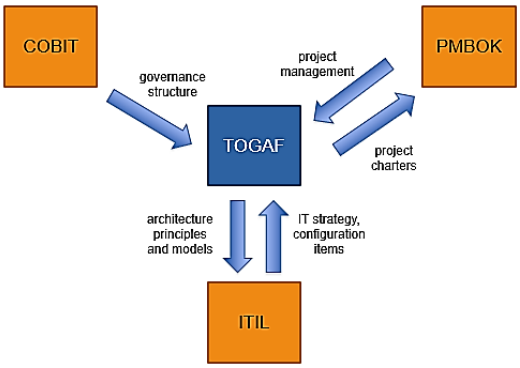

Figure 2. Enterprise Architecture, utilizing TOGAF

TOGAF includes a framework that is closely related to Information Technology Governance, which includes the following elements:

1. **COBIT**: COBIT supports TOGAF implementation within a Structural Governance framework. COBIT provides important organizational rules and standards. This standard, in the form of an Operational Standard Document (SOP), functions as a guideline for the implementation of Governance, enabling the measurement of implementation.
2. **ITIL**: ITIL, as a supporter of Governance implementation, focuses on IT Strategy and configuration of service items. ITIL adopted this structure as the ultimate guide in Service Management through architectural models and principles**.**
3. **Project Management (PM)**: Project Management has an important role in creating project implementation documents, such as the Project Charter Document. This document indicates that the activities associated with the development of TOGAF are temporary, resulting in unique products and services that differentiate it from other organizations. Therefore, Project Management is responsible for monitoring TOGAF implementation activities.

As a basis for meeting needs within the scope of initial implementation in the field, Enterprise Architecture provides inspiration. The next step is the planning stage which directly serves as a guide, using the Planning Method.

Figure 3. Enterprise Architecture, Planning Method

The Planning Method that will be implemented within the Enterprise Architecture framework, as depicted in the illustration above, includes the following elements:

1. **Strategic Planning:** The aim is to outline the organization's goals, the strategies to be adopted, as well as provide monitoring and feedback regarding opportunities that emerge as trends, while considering existing constraints (current environment).
2. **Project Management:** In this context, Enterprise Architecture provides input and recommendations regarding architectural activities, as well as integrating architecture in changes that arise as part of project development.
3. **Project Portfolio Management:** The duties involve receiving direction regarding the contribution, impact, and dependencies between projects. It also plays a role in supporting changes in architectural resource planning and management.

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Active involvement of all stakeholders in an effort to contribute to the success of Information Technology Governance is a significant strategic opportunity in organizational restructuring. Effective collaboration between various organizational functions has an even impact on the provision of services to the company. The implementation of Management Services must be integrated into a continuous and ongoing process cycle. This is implemented as an integral part of the Information Technology Governance process series, which involves a series of stages as shown in Figure 4.

Service Strategy

Building a series of services that contribute significantly to achieving business goals is the main focus in Service Strategy. Service Strategy provides guidance for implementing IT Service Management (ITSM) on how to view ITSM as more than just an organization's capabilities in providing, managing and operating IT services. ITSM is also perceived as a strategic asset that supports the entire company. This guide outlines the basic principles in the ITSM conceptual framework, as well as providing references and core processes that operate throughout all stages of the ITIL Service Lifecycle.

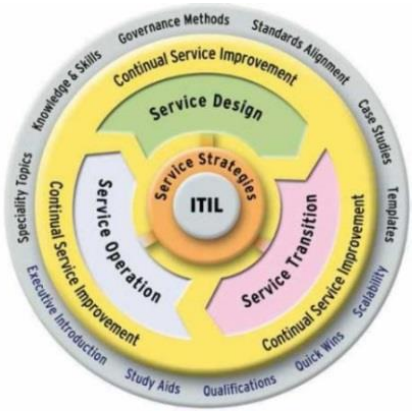

Figure 4. ITIL Framework System Cycle

Service Design

Service Design is the stage that handles service design from a technical and business perspective. In this stage, guidance is provided to IT organizations to systematically design, build and implement IT services and follow best practices in IT Service Management (ITSM). Service Design involves the application of design principles and methods designed to transform the strategic objectives of an IT organization and business into a portfolio or collection of IT services. Apart from that, this stage also focuses on managing service assets, such as servers and data storage.

Service Transitions

Service Transition is the stage of infrastructure change and service launch, describing the journey from concept to realization. As an important part of the IT service management cycle, this stage guides the IT organization in developing the capacity to translate IT service designs, including new and changing ones, into operations. This is a key step in the journey from determining requirements in Service Strategy, through designing in Service Design, to effective implementation in Service Operation.

Service Operations

Service Operations is the main stage where day-to-day IT business takes place, and it is the right place to start your ITIL journey. This stage is the heart of the IT service life cycle involving all daily operational activities. It contains guidelines that guide us on how to manage IT services with efficiency and effectiveness, and ensure that the level of performance promised to customers is maintained. All of this includes maintaining the operational stability of IT services, as well as managing changes in the design, scale, scope and performance objectives of IT services.

Continuous Service Improvement

Continuous Service Improvement (CSI) has a sharp focus: evaluating and improving services continuously to support business goals. CSI provides essential guidance in developing and maintaining service quality throughout the life cycle, including design, transition and operational processes. CSI integrates various quality management principles and methods, such as Plan-Do-Check-Act (PDCA), which is known as the Process Improvement Cycle that never stops, like a circle that keeps turning.

Within the framework of collaboration between Project Management and Information Technology Governance, especially in the context of preparing and restructuring company organizations to improve services and competitiveness in the world of business and industry, Project Management plays a role as a guide for implementing activities.

To ensure the smooth running of information technology governance programs and the fulfillment of stakeholder expectations, a cycle is needed that can be applied in all business domains. This cycle includes:

- Initiation
- Planning
- Execution
- Control and Monitoring
- Closing

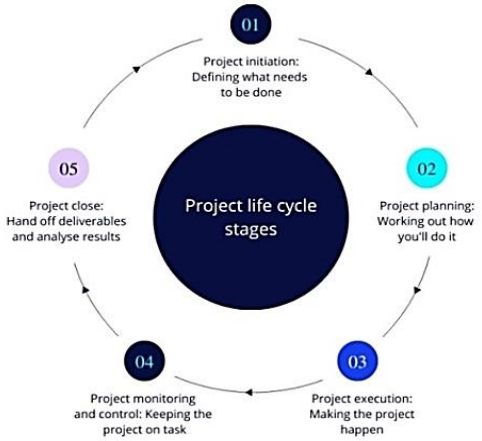

Figure 5. Project Management Life Cycle

- ***Initiation*** marks the first step in preparation for implementing information technology governance. Through the creation of a Project Charter Document, this stage begins the journey towards implementing information technology governance. Initiation is not only the first step, but also the foundation in starting service management activities in a corporate organization, which is the beginning of the organization's preparation to provide superior services to customers. This is the first step that drives the journey towards providing superior services.
- ***Planning*** is the next step, where the implementation team carries out comprehensive planning with coordination across all units, including key stakeholders. In this planning stage, 10 knowledge areas are identified and designed to ensure the implementation of activities runs smoothly according to user expectations. Planning requires a significant investment in time and resources, as successful execution relies heavily on careful planning. The execution stage will run well if the planning stage has been carried out well and minimal errors occur.
- ***Execution*** begins after the overall planning in all knowledge areas has been well organized. This stage kicks off with a meeting involving users and key stakeholders. This is the stage where all activities that have been carefully arranged during planning are carried out, showing that every step implemented has gone through detailed and thorough planning.
- ***Monitoring and Control*** is a continuous stage throughout the entire execution process. This is part of the Quality Assurance Team's responsibilities and is monitored until near completion. The focus is to ensure that each stage of the process and activity is in accordance with the established plan. On the other hand, the Quality Control Team is tasked with ensuring that the products to be launched meet user needs.
- ***Closing*** is the final stage in the Project Management Cycle and involves the final administrative activities. The goal is to ensure that no small aspect is overlooked when completing all stages in Project Management.

PMBOK® Guide / ITIL	Initiating	Planning	Executing	Monitoring & Controlling	Closing
Service Strategy	Service Portfolio Review to check alignment with strategy, portfolio balance, financial value maximization, and the suitable priority. (Chartering)			Reconsideration within regular Service Portfolio Reviews	
Service Design	Service Catalog Management Service Level Management and generating SLAs and OLAs (Contracting)	Capacity Management Availability Management IT Service Continuity Management Information Security Management Supplier Management (Procurement)		IT Service Continuity Management	
Service Transition		Transition Planning and Support Release and Deployment Management	Release and Deployment Management Service Validation and Testing	Change Management Service Asset and Configuration Management Knowledge Management	Evaluation
Service Operation			Event Management Incident Management Request Fulfillment Access Management Problem Management		
Continual Service Improvement				Continuous improvement of all activities during all stages of the service lifecycle whenever the opportunity exists	

Figure 6. Correspondence Between *PMBOK® Guide* Processes and ITIL® V3 Processes

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As depicted in Diagram 7, the execution phase requires the largest investment of resources and costs in the project. Then, the planning stage is the next stage which also demands significant resources and costs, followed by the Monitoring and Control stage. In terms of implementation duration, the Monitoring and Control stages are the most time consuming.

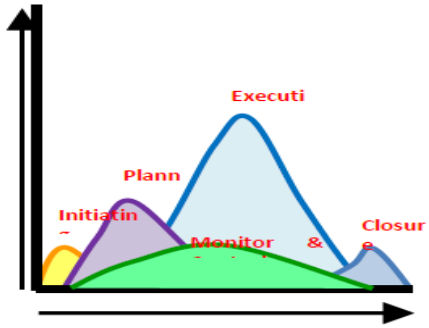

Figure 7. Graph of Effort & Cost VS Time

The Service Management Cycle which consists of Service Strategy, Service Design, Service Transition, Service Operation, and Continual Service Improvement (CSI) is a unit that is closely related, integrated, and mutually supportive. To carry out Information Technology Governance processes that comply with these five Service Cycles, corporate organizations need to integrate Project Management into their framework. In this case, Project Management will identify and document activities that have similarities or links to the Agile approach.

A project, as a time-term activity that has a starting and ending point, is produced in the form of a product or service that is unique and different from other similar activities. Services go through a series of phases during their life cycle, while continuous improvement and support form the backdrop to all these activities. This creates the synergy necessary to support ongoing development and maintenance in information technology governance.

Some of the essential characteristics of projects are their temporary nature, uniqueness, and the ability to undergo progressive elaboration. The execution process in the project is iterative and continuously evolving, so it can respond to changes with parallel improvements in services and continuous service transition, in accordance with the ITIL® V3 framework.

By implementing this Project Management framework, it is hoped that all activities that support information technology governance in the restructuring of company organizations can run effectively in accordance with user needs. Especially, in the midst of the industrial revolution 4.0 era which is marked by rapid technological developments and market disruption, the Scrum method within the Agile Project Management framework is a very relevant choice. This is an important key for companies that are carrying out organizational transformation to provide superior service to customers.

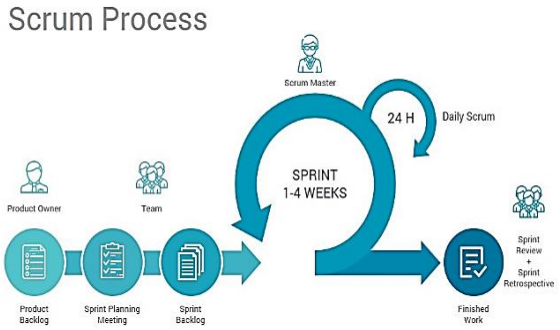

Figure 8. ITIL VS SCRUM Scheme

In the context of the Information Technology Governance Framework, the link with Scrum becomes very relevant. Scrum is not just a tool or technique in Agile projects, but an Agile project management framework supported by the Scrum method. The Scrum framework provides individuals and teams with the ability to overcome challenges in developing complex products or services and deliver high-value products.

Scrum establishes rules and principles that guide adaptive and rapid development. The role of a Scrum Master becomes central in a Scrum team , serving as a service leader aimed at ensuring a strong understanding and proper implementation of Scrum rules by the entire team. In addition, the Scrum Master is also responsible for ensuring that the Scrum team consistently follows Scrum principles and implements Agile implementation and Scrum rules thoroughly.

In figure 8 which illustrates the comparison between ITIL and Scrum, the relationship between these two frameworks can be explained as follows:

1. **Service Strategy:** This concept is an important element in understanding Scrum teams . Service Strategy ensures that the final quality of the product is defined in the form of a "Definition of Done." The Scrum

Master's role is to ensure holistic cross-functional collaboration within the Scrum team .

2. **Service Design:** The Scrum Team supports Service Design when the Product Backlog has been agreed and priority milestones identified. This helps the Scrum team understand their role in achieving the goal.
3. **Service Transition:** This stage has significant relevance in the context of Sprint Planning, the core of the Scrum methodology. The sprint continues until it reaches the "Definition of Done." Daily Standup meetings are held during the Sprint, the results become evaluation material in the Sprint Retrospective which then becomes material for the Sprint Review.
4. **Service Operation:** Implementation of the results produced in the Sprint Review becomes the focus in the Sprint Retrospective after the end of the Sprint 1-6 weeks. Retrospective becomes a platform where the Scrum team can discuss experiences during the Sprint without having to detail technical or functional aspects. The Scrum Team works together to evaluate their experience during the Sprint.

The synergy between ITIL and Scrum represents a strong collaboration in order to achieve business goals and provide superior services to customers within an information technology governance framework.

4. CONCLUSION

Findings

From the previous explanation, it appears that combining the Agile Project Management framework with the Scrum method in implementing Information Technology Governance which adopts the ITIL framework can make it easier to reorganize the company. By utilizing flexibility in the development, construction and implementation of Information Technology Governance to improve customer service, the Scrum method has the potential to have a significant impact on implementation results.

The implementation of Project Management, with a focus on setting Predictive Strategies in terms of Scope, Schedule and Cost, supported by an Adaptive approach in the development and implementation stages in the field, becomes a unique combination that produces service products that meet customer expectations. In particular, the existence of a Single Point of Contact in customer service is key in ensuring customer satisfaction by meeting SLAs and resolving problems efficiently.

The roles and objectives of ITIL and PMP have significant differences. ITIL is focused on providing best practices in IT Service Management for professionals, while PMP provides specific guidance for project managers in various industries. Their philosophies are also different, with ITIL emphasizing efficiency in IT projects and providing added value to customers, while PMP focuses on processes, tools, and methodologies that support project success.

The scope of work of the two is also different, with ITIL covering service management and other aspects of IT, while PMP applies to project management in a variety of industries. PMP is more universal because it can be applied to projects of various levels of complexity and size in various sectors.

Thus, although ITIL and PMP represent different methodologies in different industrial contexts, they complement each other in the implementation of Information Technology Governance for restructuring corporate organizations and improving customer service.

Suggestions

The concrete suggestion that can be taken from this research is to immediately consider and implement the integration of Agile Project Management and Scrum within the ITIL framework as part of the company's restructuring strategy. Take advantage of flexibility in development, combine Predictive Strategy with an Adaptive approach, and ensure the existence of an effective Single Point of Contact in customer service. Additionally, evaluate and implement ITIL and PMP frameworks simultaneously, considering their potential in improving IT Governance and customer satisfaction.

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