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EVALUATION AND ANALYSIS OF APPLICATION OF THE SCRUM METHOD TO INCREASE THE SUCCESS OF GO-LIVE PHASE IN SAP ANALYTICS CLOUD DASHBOARD IMPLEMENTATION PROJECTS (CASE STUDY OF MINING OWNER & MINING CONTRACTOR INDUSTRY)

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Abstract: To evaluate the company's business development carried out by the Board of Directors, an ERP dashboard system is needed that can provide information on business development in real time. So it takes the implementation of the SAP Analytics Cloud Dashboard system. However, company stakeholders engaged in the mining owner and mining contractor sector want the project to be monitored in every process. So that if there are errors or changes in the process of making a report on the dashboard, then this can be known earlier and changed as needed. Seeing the conditions of this need, a company engaged in consulting as a solution management service provider that initially proposed using the ASAP method, otherwise known as Accelerated SAP, is proposing to change the project method to the scrum method in the SAP Analytics Cloud implementation project in companies engaged in the mining owner and mining contractor industry. This research was conducted with the limitations and objectives to evaluate and analyze the effect of the application of the scrum method on the SAP Analytics Cloud Dashboard implementation project in increasing the success of the go-live phase of the project.

Keywords: Scrum, ASAP, SAP Analytics Cloud, ERP, Dashboard, Project, Mining Owner, Mining Contractor, Consulting

I. INTRODUCTION

In order to properly monitor a company's business development, a system is needed that can present and evaluate information regarding the company's activities and performance *real time*. By presenting information well *real time*, for *stakeholder* can easily make decisions correctly and quickly. One system that can present and evaluate company information well is SAP *Analytics Cloud* which is a product provided by SAP. SAP *Analytics Cloud* is a solution in the form of *Machine Learning* and artificial intelligence provided by SAP to help discover deep insights, simplify access to important information and empower informed decision making.[1]

SAP *Analytics Cloud* is also able to provide solutions that combine data analysis, planning and value prediction processes. SAP *Analytics Cloud* can help implement financial planning functions, research data and scale decisions in business effectively.[2] The company that will be part of the research is a multidisciplinary company at *contract mining*, *engineering*, *procurement* & *construction*, And *oil & gas service*. Over time, the company implemented the SAP ERP system on several specific modules, including: *Finance & Controlling, Material Management, Plant Maintenance, Project System & Fund Management*. The Scrum method in software development has a more flexible structure compared to traditional approaches such as SAP, which tend to be more rigid and oriented towards fixed procedures.[3] Scrum allows changes to requirements during the development process through iterative sprint cycles, whereas SAP is more structured with longer and strictly documented implementation stages.

ERP implementation strategies have become a critical success factor recognized by many researchers, with traditional approaches resembling the Waterfall model. Their research also highlights how Agile principles are starting to be adopted in ERP implementations to increase system flexibility and responsiveness.

Currently the company uses *eclipse* as a system *dashboard* used to present information on company activities. However, this system has not been integrated directly with the system currently used, namely SAP *S4HANA*, so the system is not yet able to display the data *real time*. *Stakeholder* want efficiency and effectiveness in order to display data effectively *real time* and is integrated directly with the current ERP system, namely SAP S4HANA. *Stakeholder* also wants the project to be monitored throughout each process. So that if there are errors or changes, these can be known early and changed according to needs.

Based on the problems and needs that have been explained, SAP implementation will be carried out *Analytics Cloud Dashboard* as a solution to the company's current problems and needs. In the implementation process, the company *consulting* as a solution management service provider

Volume 09, Number 02, Page 460-465
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will use the method *Scrum* which is one part *framework* of the method *Agile*. Basically, consulting companies will use the method *ASAP* or also known as *Accelerated* SAP. However, this method cannot cover the company's needs *mining owner & mining contratctor* to be able to monitor the process every day and *consulting company* have a lot *historical record* The delay in completing the project was due to several reasons. One of them is something that inhibits the phase *go-live* good from *client* or internal team *consulting company*. So the researcher provided input for the method *ASAP* not used in this project and recommend that to use the method *scrum*. The Scrum method in software development has a more flexible structure compared to traditional approaches such as SAP, which tend to be more rigid and oriented towards fixed procedures.[3] Scrum allows changes to requirements during the development process through iterative sprint cycles, whereas SAP is more structured with longer and strictly documented implementation stages.

Scrum is a method in Agile Software Development that prioritizes flexibility and adaptation to changing user needs during the software development process. In this method, the project is developed through sprint that takes place over a certain period, allowing for rapid iteration and product refinement based on user feedback.[4] Pratama, Ibrahim, and Reybaharsyah (2022) also emphasize that Scrum has key roles such as *Product Owner, Scrum Master, dan Development Team*, as well as the main stages such as *backlog refinement, sprint planning, daily meeting, sprint review, dan sprint retrospective*.[3]

As supported by the ASAP method, it is an ERP implementation methodology developed by SAP AG to speed up the process of adopting the SAP system in various organizations. This approach focuses on *lifecycle implementation* with clear stages, starting from *project preparation, blueprint, realization, final preparation, hingga go-live dan support*.[5] ASAP is more structured than Agile methods such as Scrum, but has the advantage of standardizing processes and better documentation.

The other method, namely Lean, is an approach that originates from *Toyota Production System* (TPS) and focuses on waste reduction (*waste*) in software development.[6] In the context of ERP implementation, Lean helps organizations avoid unnecessary processes, increase efficiency, and ensure that each stage of development provides maximum value for users.

Extreme Programming (XP) is an Agile method that prioritizes test-driven development (*test-driven development*), continuous integration (*continuous integration*), as well as intensive communication between the development team and users.[7] XP is suitable for projects that require rapid response to changing business and technical requirements. Compared to Scrum, XP focuses more on technical practices such as *pair programming, refactoring,* And *automated testing.*

There are several other reasons researchers recommend using the method *Scrum*. The Scrum method is faster and more flexible than the Waterfall method because it prioritizes iteration and delivery based on software functionality.[8] In addition, Scrum is not only used for software development, but also plays a role in project management to increase efficiency in digital industries and organizations. Previously *consulting company* where the researcher is currently working has used the method *scrum* for SAP implementation projects *Analytics Cloud* in companies of the same industry, viz *mining owner* & *mining contractor*.[9] From this project, researchers were involved in it and felt that this method was very suitable for project implementation *technical.* Where this method can meet needs and minimize phase barriers *go-live* from the method that was often used previously, namely the method *ASAP*.[10] Then there are also reasons for using the method *scrum,* the Company *mining owner & mining contractor* can monitor *progress* project achievements every day through *daily scrum meeting* which is expected to save more time in finding *issue* in the project which can affect the project completion time in accordance with *timeline* specified project.

The stages of the Scrum method consist of 5 phases, namely *product backlog, sprint planning, sprint, sprint review,* And *retrospective process*. With 5 phases in the method *scrum* used for implementing SAP *Analytics Cloud Dashboard* at the company *mining owner & mining contractor,* then it will be seen what the impact is between the methods *ASAP* And *Scrum* which has 5 phases.[11] By using the scrum method where progress reporting is carried out every day through *daily scrum meeting*, then the project team will indirectly improve individual performance to complete *task* in the project. Apart from that, by using the method *Scrum* for *task* What needs to be done by the project team can be more focused for each stage with the hope that basic problems such as changes in logic or formulas will occur after the phase *blueprint*, discrepancies in the middle of the process *development*, rejection of the level *management* from the final results of the dashboard that has been developed, and others can be minimized so that the phase *go-live* can be well received from both parties *mining owner / mining contractor* And *consulting* by using the method *Scrum* on SAP implementation projects *Analytics Cloud Dashboard*.[12]

Based on the explanation above, this thesis research aims to evaluate and analyze previous projects regarding the influence of applying the method *scrum* on SAP implementation projects *Analytics Cloud Dashboard* in increasing success *fase go-live* between the two companies. So that it can produce information based on the comparison of methods carried out. Where method *scrum* can increase the success of the phase *go-live* for the project *technical* like SAP *Analytics Cloud* and ABAP *Development*. It is also hoped that it can provide the best results on the SAP implementation project *Analytics Cloud Dashboard* at the company *mining owner & mining contractor* which is currently implemented. Evaluation is carried out through an approach *Post-Implementation Review* to assess the success of the project after *go-live*, as well as a comparative analysis of the implementation speed of the two methods. It is hoped that the results of this research will provide insight into the extent to which Scrum is able to increase project efficiency, flexibility and success in achieving predetermined time targets compared to the ASAP

Volume 09, Number 02, Page 460-465
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method, as well as provide recommendations for companies in choosing a more effective implementation strategy.

II. RESEARCH METHODS

The research method in this research uses a case study approach and a comparative analysis framework to explore the application of the Scrum method compared to Accelerated SAP (ASAP) in the SAP Analytics Cloud implementation project. Data was obtained from implementation projects that have been running in companies in the mining owner & mining contractor sector, by comparing four projects using ASAP and three projects using Scrum. Data processing was carried out through direct observation, collection of historical project data, and document review to identify similarities, differences, and success factors for each method. Analysis using a comparative analysis framework allows evaluating the effectiveness of both methods based on parameters such as project timeline, team performance and output quality. With this approach, the research aims to determine whether the Scrum method can increase the success of the go-live phase in SAP Analytics Cloud implementation compared to ASAP, as well as provide recommendations regarding more effective methods for similar projects in the future.

III.RESEARCH RESULT

This chapter presents a comprehensive discussion of the research findings presented in the previous subchapter, with a focus on comparing the effectiveness of methods *Scrum* and ASAP in SAP implementation *Analytics Cloud Dashboard* in the company environment *mining owner* & *mining contractor*. This discussion involves an in-depth analysis of various aspects that influence successful implementation *dashboard*, including analysis of project completion time, team satisfaction level, communication and collaboration between members, output quality, and the complexity of the dashboard produced by both methods.

The discussion in this chapter is carried out using an approach *comparative analysis* to explore the significant differences between the two methods in various key aspects. Each sub-chapter will explore specific components such as Comparison of Project Completion Time, Team Satisfaction Level (Internal and External), Communication & Collaboration, as well as Dashboard Output Quality & Dashboard Complexity. This analysis not only focuses on measuring the end results of each method, but also considers the process and challenges faced by the team during the development cycle.

The main objective of this chapter is to gain a deeper understanding of the advantages and disadvantages of each method in the context of SAP implementation *Analytics Cloud Dashboard*. By understanding these aspects, it is hoped that valuable insights can be obtained to determine the most effective and efficient methods for companies in implementing technology *dashboard* in the future.

a. Results Comparison of Project Completion Times (All Phases)

Based on the method used, namely *comparative analysis*, there are striking interpretations between the use of methods *scrum* and ASAP throughout the project phase.

Method *Scrum* provides advantages in flexibility and efficiency, this can be seen from existing data which shows that projects use the method *Scrum* can be completed in less than 20 weeks. This approach allows teams to quickly manage and adapt tasks from each short sprint cycle.[13] In addition, change management in *Scrum* much better because of every process *sprint,* The team can accommodate feedback and changes made from *stakeholder* or *key user* concerned. This minimizes work delays. This represents a shorter project completion time compared to using the ASAP method, which tends to have a longer implementation phase and is less iterative.[14]

In contrast, the ASAP method tends to be slower and less flexible. The process seems rigid, with phases that are passed separately—from planning, design, development, to testing and go-live—which means that every change or new addition will take longer to implement.[15] The comparison chart shows clearly that *Scrum* allows faster project completion due to its iterative approach, while ASAP is more linear and sequential, which slows down the completion process.

From this analysis, it can be concluded that the method *Scrum* superior in speed and flexibility, making it more suitable for projects that require rapid adaptation to changes and feedback from *end-user*. On the other hand, ASAP may be better suited to projects that have fewer changes and require a more planned and stable phase structure. Thus, for projects that require rapid iteration and frequent changes or additions, Scrum provides greater benefits, while ASAP can still be used for projects with more stable processes and long-term planning, although at the cost of longer time.

b. Results Comparison of Project Completion Time (Phase *Mockup Design*)

If detailed per project phase, method *Scrum* demonstrated significant advantages in terms of time efficiency and response to changes, especially in the mockup design phase. By using short sprint cycles, *Scrum* enabling teams to complete tasks faster and without significant delays. Average completion time of the mockup design phase for projects using merode *Scrum* is 2.6 weeks, which is rounded to 3 weeks, much shorter than the ASAP method which has an average completion time of 4.5 weeks, or rounded to 5 weeks.

This speed is reflected in the analysis of the completion time of each project.[16] For example, project A and project C using the ASAP method took 5 weeks to complete the mockup design phase, which was due to the wide scope of implementation and the many mockup changes required to reach agreement in the blueprint document. Project B and project F, also using the ASAP method, took 4 weeks, even though the scope of implementation was not as large as projects A and C. The time spent was still longer due to revisions that occurred during the design process.

Volume 09, Number 02, Page 460-465
e-ISSN: 2598-120X; p-ISSN: 2598-117X

In contrast, project D and project E apply the method *Scrum* it took only 3 weeks to complete the mockup design phase, indicating a higher speed of completion compared to ASAP projects. Project G, which also uses the method *Scrum*, only takes 2 weeks. This speed of completion was due to the simple project scope and not too many reports, allowing the team to be more focused and efficient in carrying out revisions.[17]

One of the main advantages of the method *Scrum* is the ability to respond quickly to change, especially when *user* or *client* give *feedback* design for changes or additions. In the ASAP method, the design process tends to require formal approval at each step, which inhibits responsiveness to feedback.[18] With a more linear workflow, each phase must be completed before moving on to the next, so each revision can take longer.

In *comparative analysis* this, it looks like that *Scrum* excels at completing the mockup design phase quickly. This is important because this phase is the foundation for continued development of the process in the future. If the project requires many design changes or input from the client during the mockup phase, method *Scrum* providing greater advantages in terms of efficiency and adaptability. Meanwhile, although ASAP is still suitable for projects with a more stable design and requiring a more formal flow, this method carries the consequence of a longer completion time. So, overall the analysis of data that occurred in the field supports the claim that the method *Scrum* more effective in managing projects with dynamic design requirements and rapid adaptation.

c. Discussion of Risk Analysis & Change Management (Scrum Vs ASAP)

On project implementation by method *Scrum* and ASAP, there are several differences in terms of risks and change management strategies that need to be considered to achieve successful implementation. risk analysis shows that the method *Scrum* more susceptible to risks such as frequent scope changes, sprint process delays, and low internal team satisfaction. This is due to its iterative nature *Scrum* which requires teams to follow fast and intensive sprints, so constant changes or adjustments can be challenging for internal teams. To mitigate these risks, the Scrum method adopts approaches such as a well-defined backlog, daily stand-ups, and retrospective sessions to ensure communication is effective and each team member can immediately address problems that arise in each case *sprint*.[19]

On the other hand, the ASAP method shows high risks in technical aspects such as data migration errors and errors in mass transport. Because this method is more structural and relies on a detailed blueprint at the start, major risks often arise when changes are not recorded in the blueprint or when there are technical obstacles that require post-implementation adjustments.[20] At ASAP, detailed blueprint documentation and comprehensive migration testing on the QAS server are key mitigation measures to reduce this risk. In addition, dependence on key personnel for certain aspects is a challenge for ASAP, because unavailable expertise can hamper the project.[21] To overcome this, the ASAP method applies knowledge transfer and comprehensive documentation as part of the mitigation.

In terms of change management, methods *Scrum* integrate changes more responsively through the next sprint process. Any changes identified during the sprint review can immediately be evaluated for their impact on the backlog and prioritized for implementation in the next sprint. In this way, Scrum provides greater flexibility in dealing with urgent changes. In contrast, the ASAP method has a more structured change management approach and takes longer. Each change must go through blueprint review, stakeholder approval, and a more in-depth development process, which makes the response to change tend to be slower.[22]

Overall, the Scrum method tends to be more dynamic and adaptive in dealing with risk and change, suitable for projects that require fast response and high flexibility. Meanwhile, the ASAP method provides stability and a stronger structure, but is less responsive to unplanned changes. The choice of method depends on the needs of the project; Scrum is more suitable for projects with a high rate of change, while ASAP is suitable for projects that require long-term planning and tighter control of technical and process risks.

d. Communication & Collaboration Discussion (*Scrum* Vs ASAP)

Based on the results of *comparative analysis,* in terms of communication and collaboration, The Scrum and ASAP methods demonstrate significantly different approaches in managing meeting frequency, team involvement, and level of satisfaction with the collaboration process.[23]

1. Meeting Frequency: Scrum prioritizes daily communication through *daily stand-ups* and regular meetings for *sprint revie*In And *retrospective*, which enables rapid response to changes. In contrast, the ASAP method holds meetings on *milestone* major projects at the end of each phase, resulting in less frequent but longer duration and intensive meetings.
2. Effectiveness of Communication and Engagement of External Teams: *Scrum* provides a more interactive and collaborative environment for external teams, with satisfaction rates reaching 90% because it allows teams to provide feedback and input directly. On the other hand, ASAP has a more moderate level of satisfaction (70%) due to infrequent meetings which can delay response to changes or identification of problems.
3. Internal Team Satisfaction Level: The ASAP method achieved a higher level of internal satisfaction (78%) than Scrum (62%). This is due to the ASAP approach which is more linear and stable, so it is easier to predict and does not require intensive adjustments. On the contrary, *Scrum* demands rapid adaptation and iterative work cycles which can increase pressure on internal teams.

Overall, *Scrum* is more effective in rapid collaboration and adaptation to change, while ASAP is superior in providing a stable structure and *predictable* for internal teams.[24] Thus, choosing the right communication and collaboration method

Volume 09, Number 02, Page 460-465
e-ISSN: 2598-120X; p-ISSN: 2598-117X

needs to be tailored to the project needs and team preferences to achieve optimal results.

e. Output Quality *Dashboard* & Complexity *Dashboard* (Scrum Vs ASAP)

Based on the method used, namely *comparative analysis,* comparison between methods *Scrum* and ASAP become very relevant, especially in terms of output quality and the complexity faced in dashboard development.[25]

From the results *comparative analysis* from the data previously described, in aspects output quality, method *Scrum* superior in terms of adaptability and responsiveness to needs *user*. *Scrum* allows for quick revisions that ensure *dashboard* remains relevant and meets expectations from *end user*. On the other hand, the ASAP method produces output that is more consistent with the initial design and is more stable, but is less flexible for changes midway. In aspect complexity *dashboard*, method *Scrum* more suitable for projects that require fast iteration and gradual addition of complex features. Meanwhile, ASAP is more effective for dashboards that require detailed planning and strong stability without many major changes during development.

IV. CONCLUSION

The results of this study indicate that mThe Scrum method is superior in aspects of flexibility, adaptability, and response to change compared to the ASAP method. With an iterative approach and a sprint process that allows for regular evaluation, Scrum accelerates project completion times and increases the likelihood of success in the go-live phase. External team satisfaction levels reach 90% in Scrum-based projects, compared to 78% in the ASAP method. However, ASAP still excels in project stability and predictability, making it more suitable for projects with a more rigid scope. In the context of project team roles, Scrum improves work dynamics between internal and external teams and improves communication with management. Scrum allows internal teams to be more collaborative and responsive to user needs, although they need to adapt to a more dynamic work rhythm, external teams (clients/stakeholders) feel more involved in development because they can provide continuous feedback and management gets better visibility into project progress through daily stand-ups and sprint reviews, so risks can be mitigated earlier compared to the more linear ASAP approach. The quality of the final results of dashboards developed using the Scrum method tends to be higher in terms of features and flexibility, because it allows adjustments throughout the development cycle. Meanwhile, the dashboard developed using the ASAP method is more stable and in accordance with the initial blueprint, but less flexible in responding to changes. These findings suggest that Scrum is better suited to projects with evolving needs, while ASAP is better suited to projects with a clear scope from the start.

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