



Team Problem-Solving with Agile Business Process to Improve Employee Performance Using NVIVO Analysis at PT XYZ

Arif Kuswanto*, Abida Qonita

Business Administration, Faculty of Business Economics, Telkom University, Indonesia

*Correspondence: Arif Kuswanto

Email:

arifkuswanto@telkomuniversity.ac.id

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must first identify and understand the challenges they will encounter in order to devise appropriate solutions. It is crucial to invest in employee competency development through targeted training and workshops and to support these initiatives with company policies that align with agile principles. PT XYZ utilize the Scrum Framework due to its rapid adaptability to change. The implementation of Agile Ways of Working at PT XYZ has been assessed as effective, enhancing collaboration, streamlining communication between individuals and departments, and proving suitable for application within the telecommunications sector.

Abstract: To achieve optimal performance, telecommunications companies, particularly PT XYZ, which are closely aligned with technological advancements, must develop strategic frameworks to address evolving market demands and sustain their operational viability. PT XYZ faces several collaboration-related challenges, including iterative redundancies, insufficient project transparency, inadequate cross-functional communication, and ineffective inter-departmental coordination. To address these issues and enhance organizational performance, PT XYZ has adopted Agile Ways of Working. This qualitative study aims to examine employee behavior at PT XYZ in relation to their experiences with the transition to Agile Ways of Working. The research involved interviewing six informants with relevant roles and experience in the Agile transformation, conducted online and recorded for data collection. The interview data were subsequently analyzed using NVIVO 12 Pro software. The findings suggest that for effective implementation of Agile Ways of Working, organizations

Keywords: Agile Ways of Working, Employee Performance, Project Management, Scrum

Introduction

PT XYZ is a telecommunications company in Indonesia that has identified several challenges impacting team collaboration, which are perceived to hinder the company's business processes. The Agile Transformation Subject Matter Experts (SMEs) at PT XYZ have identified the following issues in team collaboration: repetitive iterations, insufficient project transparency, suboptimal cross-functional communication, and ineffective inter-divisional collaboration. These issues have led to several negative impacts on employee performance, including delayed product launches, prolonged time required to gauge project progress visibility, and inconsistent translations between divisions, which have resulted in critical issues with the final product. To address these problems, PT XYZ has

adopted Agile Ways of Working, as it is considered to have principles that align well with the company's strategy for improving performance.

With Agile Ways of Working, employees are required to collaborate, prioritize transparency, adapt to changes, and create added value for the products delivered to consumers within a short timeframe. The Agile Ways of Working methodology enhances the ability to manage changing priorities, boosts team productivity, and improves project visibility (Eskola, 2018).

Strategies in framework selection are expected to help improve company productivity, especially for companies that depend on and are directly connected with technological advancements. Such companies must possess the ability to adapt and innovate to maintain their existence amidst technological developments and unforeseen changes (Grass et al., 2020). Recognizing the importance of choosing a framework that aligns with the needs and conditions of the company is crucial for achieving success.

This study aims to investigate employee behavior at PT XYZ based on their experiences with the transformation to Agile Ways of Working. The research focuses on understanding the challenges, changes in work culture, and significant impacts of implementing Agile Ways of Working as a foundation for business processes at PT XYZ.

Research Method

1. Approaches and Research Method

A research method is a systematic sequence of steps designed to obtain accurate understanding in a research study. This process begins with formulating a problem and developing hypotheses based on specific theoretical perspectives. By taking into account previous studies and existing research, the investigation can then be processed and analyzed, leading to the formation of final conclusions (Hafni Sahir, 2022). In this study, a qualitative methodological approach is utilized. Qualitative research is descriptive in nature and often involves in-depth analysis. Additionally, the process or procedures of qualitative research aim to collect, describe, and analyze descriptive data in the form of written text, expressions, and observed human behavior (Hidayaturrahman, 2021).

In critical theory, all research is aimed at understanding what currently exists (*das Sein*) and what should exist (*das Sollen*). The goal is to develop knowledge that promotes a better understanding of the situation, with the hope of creating positive change (Kaharuddin, 2021).

2. Research Instruments

In this study, interviews serve as the primary research instrument. As a key instrument, only respondents working at PT XYZ possess in-depth knowledge of all the issues being investigated. Furthermore, research instruments are essential for facilitating the research process by collecting, examining, and investigating the issues under study. The following tools were used by the researcher to conduct the interviews:

- a. A voice recorder using the researcher's mobile phone.

- b. An online conferencing application, namely Microsoft Teams.
- c. XYZ Transcription Software to convert audio to text.
- d. NVIVO 12 software as a supportive tool for analyzing the results of the conducted interviews.

3. Research Data Sources

The primary data sources for this research include text from interviews, audio recordings, and documentation from the interview process with all respondents, who are employees actively involved in frameworks utilizing Agile Ways of Working and those participating in squads at PT XYZ. The interview data consists of written text, verbal responses, and audio recordings obtained from conversations between the researcher and respondents. The interviews aim to gather information on the respondents' experiences, perspectives, and opinions regarding the questions posed.

4. Data Collection Techniques

Data collection techniques, based on the form of instruments, are methods or techniques selected to gather data in the field. In this study, the data collection technique utilized is the interview method. The interview instrument is a data format consisting of a question-and-answer exchange between the researcher and the respondents, aimed at providing information related to the research issues under investigation (Hafni Sahir, 2022).

This study employs the interview instrument, specifically using semi-structured interviews. In semi-structured interviews, the discussion begins with an overview of the research issues or topics of focus. Each question posed to the respondents may vary based on their previous answers, allowing for a more tailored and adaptive approach to gathering information (Hafni Sahir, 2022).

a. Research Subjects

In qualitative research, the sample consists of all individuals involved in the data collection process, including documents and specific events that are observed, examined, or interviewed, and are deemed relevant sources of information for the research objectives and problems (Hafni Sahir, 2022). Sampling in qualitative research is not governed by a specific formula; it can be determined directly when the researcher is in the field or research location. Researchers may also seek additional respondents if the initial sources are deemed insufficient to provide the necessary information relevant to the research focus. Qualitative respondents are expected to meet the following standards:

- 1) Possess and understand the issues being investigated.
- 2) Be involved in or engaged with the specific activities under study.
- 3) Be available during observation, examination, or interview sessions.

Based on the explanation provided, guidelines for determining the subjects of qualitative research have been established. In this study, the research subjects are:

- 1) An individual serving as an Agile Transformation Subject Matter Expert (SME) at PT

XYZ,

- 2) An individual with experience in Agile Ways of Working framework changes at PT XYZ, and
- 3) An individual who has experience or is currently part of the framework being studied.

b. Data Collection Media

In this study, the media used for data collection are as follows:

1) In-person interviews

The researcher conducted in-person interviews and recorded the respondents' voices using a mobile phone, with each recording lasting between 10 to 40 minutes. The interviews aimed to elicit detailed accounts of issues related to the framework experienced at PT XYZ.

2) Audio recordings on Microsoft Teams

The researcher records voice calls on Microsoft Teams using the Win+G keyboard shortcut on the laptop to capture the results of the interviews.

5. Data Analysis Technique using NVIVO 12

The technique chosen by the researcher for analyzing interview data to derive results and conclusions involves using NVIVO software. NVIVO is a tool designed to assist in analyzing textual data such as social media content, field notes, interview results, audio or video recordings, surveys, and journal articles. By using NVIVO, researchers can more effectively understand and visualize data. NVIVO enables the exploration of meanings, relationships, and differences between concepts or cases. The results of this exploration can be visualized through various formats, including word clouds, tree maps, hierarchy charts, concept maps, mind maps, or project maps, to illustrate the connections or differences between data concepts. NVIVO is commonly used for qualitative research or mixed methods. The following are the steps involved in using NVIVO software:

a. Import Data. In this study, the researcher imports data in Word and PDF formats as transcripts of the interviews conducted with the respondents.

b. The data analysis process involves coding, which means assigning codes to words, phrases, sentences, and paragraphs that represent specific themes or categories. This coding process consists of two stages:

1) First Cycle Coding: Codes that represent the field conditions or "as it is."

- Descriptive coding: Nouns representing the specific content
- In-vivo coding: Vocabulary used by the informant (frequently occurring terms)
- Emotion coding: Adjectives or expressions of feelings.
- Process coding: Verbs describing processes.
- Values coding: Values or beliefs held by the informant.

2) Second Cycle Coding: Codes derived from the process of generalizing field conditions obtained.

- Categories/Themes: Classifying themes or issues into general or broad categories.
- Causes & explanation: Explaining the causes or effects of issues.

- Relationships: Identifying relationships between informants or types of informants, such as the relationship between a boss and employees as coworkers.
 - Theoretical Construct: Based on a specific theoretical framework.
- c. Identifying and categorizing parent and child nodes for coded words, phrases, sentences, or paragraphs. This stage assists the researcher in the process of generalization.
- d. Querying Auto-code Results and Visualization. This stage involves reviewing auto-coded results and visualizations to help the researcher identify trends, patterns, and interpret relationships or correlations within the literature review.

6. Data Validity

Qualitative research often involves varied interpretations by different researchers. To ensure high accuracy in data collection and interpretation, triangulation is essential. Triangulation is a technique used to enhance the credibility of research by verifying the truthfulness of the data. It demonstrates that the research has credibility. In this study, the credibility of the research findings will be validated through source triangulation. The researcher will conduct interviews with six respondents at PT XYZ, each with different job backgrounds:

- Senior Learning and Culture Development
- Head of Business Process Management – Non Commercial
- Product Owner Ritel Touchpoint
- Business Analyst (BA) – Business Relationship Management
- API Microservice QA Engineering & Tester

The results of the interviews will be analyzed using NVIVO 12 Plus. If the data analysis shows consistent findings across several respondents, it can be evidence that the research results have credibility.

Result and Discussion

1. Data Processing of Interview Results

After conducting research at PT XYZ using online interviews with six respondents, the research findings address the problem statements outlined in the introduction. The data sources for this research are based on the experiences, perspectives, and opinions of respondents who are employees of PT XYZ and are actively involved in shaping, pioneering, and implementing Agile Ways of Working in their daily work.

The researcher processed the data using NVIVO 12 Pro by coding the interview transcripts, which were converted from audio to text. After coding, the researcher conducted data exploration to obtain an overview of the data. Following the exploration,

	A : Narasumber
1 : Beradaptasi cepat	3
2 : Kemampuan untuk menyesuaikan diri	1
3 : Berpikir cepat	2
4 : Bertindak cepat	3
5 : Efisiensi	2
6 : Simplifikasi proses yang kompleks	1
7 : Fleksibilitas	2
8 : Kolaborasi	4
9 : Manajemen Proyek	2
10 : Metode	1
11 : Responding to change	2
12 : Thinking System	2

Figure 1. Definition of Agile According to Interviewees

the researcher presented the data by creating visualizations using Project Map, Concept Map, and Matrix Coding within NVIVO 12 Pro. The researcher classified the interview results into several codes according to the information needed for the study, with a total of 128 codes assigned with references from the respondents' data sources. These 128 codes were categorized as Parent & Child Nodes, with 10 Parent Nodes and 118 Child Nodes.

Based on the Matrix Coding diagram above, the researcher has assigned 12 codes to the definition of Agile. These codes represent sentences, words, or paragraphs from the statements provided by the respondents. The diagram shows that 4 out of 6 respondents defined Agile in their responses as "collaboration." Additionally, 3 respondents defined Agile as "acting quickly" and "adapting rapidly."

	A : Kerangka kerja yang dipakai
1 : Kanban	22.43%
2 : Lean Startup	11.22%
3 : Regulatory BAU	18.17%
4 : Scrum	48.18%

Figure 1. Percentage of Frameworks Used

The diagram above shows that the framework used at PT XYZ is the Scrum Framework, which received a score of 48.18%, equivalent to 305 mentions among all the frameworks referenced by respondents. This is followed by Kanban with a score of 22.43%, equivalent to 142 mentions, and Regulatory BAU (Business As Usual) with a score of 18.17%, equivalent to 115 mentions.

2. Scrum Framework

Scrum is a framework that assists individuals, teams, and organizations in addressing complex problems by delivering value through adaptive solutions (Ken Schwaber & Jeff Sutherland). Developed in the early 1990s by Jeff Sutherland, it was initially used for software development projects. Scrum is implemented in an iterative and incremental manner, focusing on progress and refinement through gradual steps to

optimize the work process.

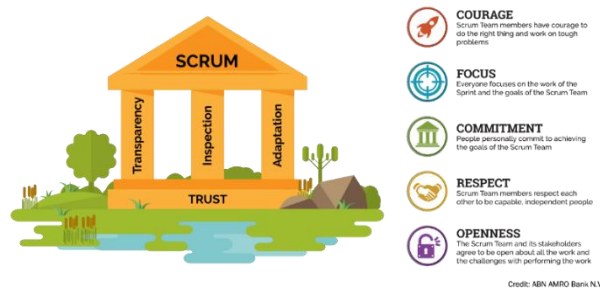


Figure 3. Scrum Framework's Pillar

Scrum is based on three pillars: transparency, inspection, and adaptation. Transparency requires that processes and work be visible to those performing the tasks and to all participants in the project. Within this framework, transparency encompasses the availability of information about the work being done, potential obstacles, and the progress achieved. Additionally, Scrum includes the pillar of inspection, which involves continuous and ongoing evaluation to facilitate the easy identification of issues and necessary changes. The final pillar, adaptation, pertains to the responses and adjustments made by those involved in the project.

3. Classification of Research Respondents

PT XYZ has been implementing Agile Ways of Working since 2017. The researcher sought to obtain respondents with three roles within the Scrum framework: Scrum Master, Product Owner, and Developers. Below is the background and distribution of the respondents' roles, as classified and analyzed by the researcher using NVIVO 12 Pro.

	A : Jabatan	B : Peran
1 : Narasumber 1	Head of Business Process	Scrum Master
2 : Narasumber 2	Product Owner: Ritel Touch	Product Owner
3 : Narasumber 3	Senior Learning and Develo	Stakeholder
4 : Narasumber 4	Business Analyst	Developer
5 : Narasumber 5	API Microservices: QA Test	Developer
6 : Narasumber 6	API Microservices: QA Engi	Developer

Figure 4. Classification of Research Participants

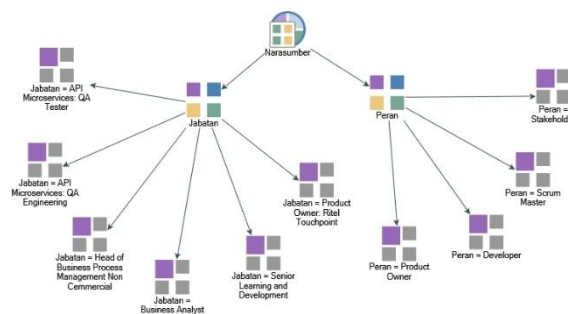


Figure 5. Job and Role Distribution

4. Challenges and Solutions for Implementing Agile Ways of Working

Based on the interviews conducted and data analyzed using NVIVO 12 Pro, information was gathered from 6 respondents regarding the challenges faced and the solutions that can help address these challenges for implementing Agile Ways of Working. This information is presented from various perspectives, roles, and positions. Below is the Project Map illustrating the interviews on the challenges and solutions adopted by PT XYZ.

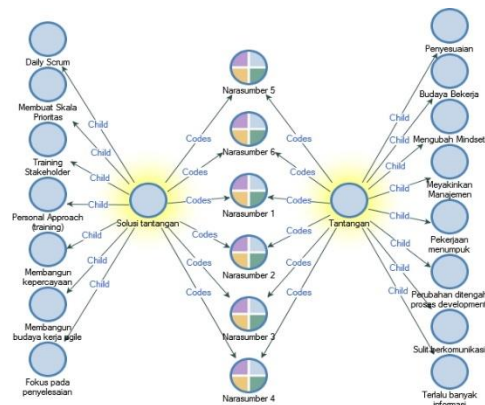


Figure 6. Comparison Map of Challenges and Solutions

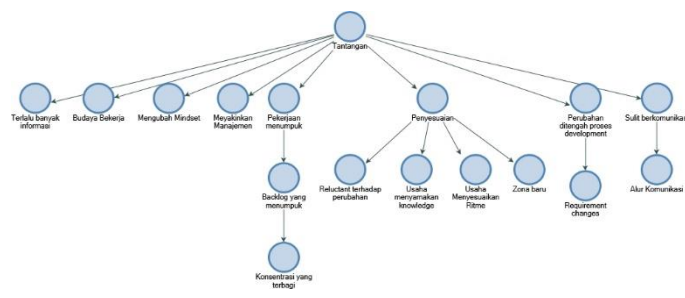


Figure 7. Project Map of Challenges of Implementing Agile Ways of Working

The researcher also categorized the challenges based on roles within the Scrum framework to provide a more detailed overview of the implementation. Below is the Project Map illustrating the distribution of challenges based on the respondents' roles:

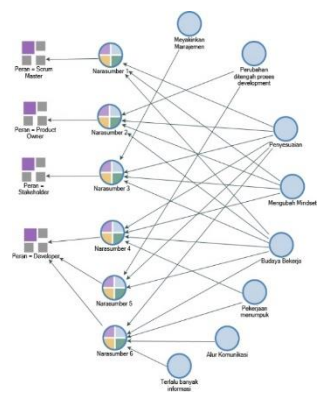


Figure 8. Project Map of Challenge Distribution by Role

After identifying and addressing the challenges described above, the respondents also provided the solutions they chose to overcome or address these challenges. Below is the Project Map illustrating the distribution of the solutions implemented:

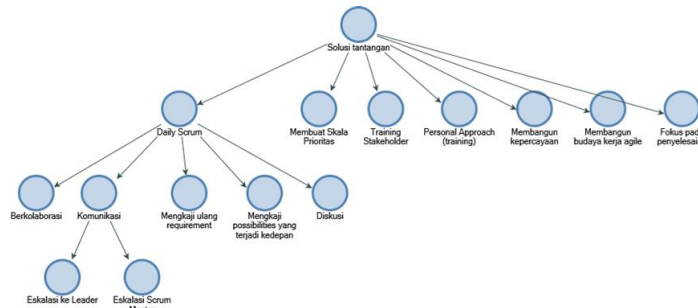


Figure 9. Project Map Distribution of Solutions to Challenges

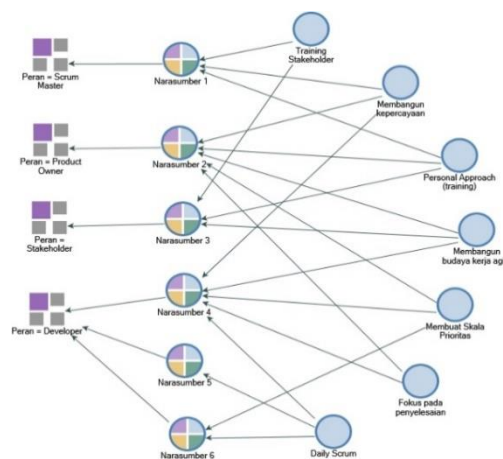


Figure 10. Project Map of Solution Distribution by Role

5. Considerations for Implementing Agile Ways of Working

Based on the interviews conducted and data analyzed using NVIVO 12 Pro, information was gathered from 6 respondents regarding key considerations for effectively and efficiently implementing Agile Ways of Working. These considerations include company policies and the competencies required by individuals or employees. This information is presented from various perspectives, roles, and positions.

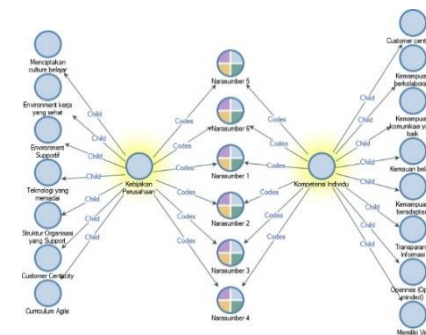


Figure 11. Comparison Map of Company Policies and Competencies Individu

a. Company Policies

Based on the data analysis from interviewing 6 respondents with experience in implementing Agile Ways of Working in their daily work and as a foundational approach, company policies are identified as a crucial and vital component. This is because company policies directly influence the culture and rules followed by employees. Therefore, attention must be given to company policies.

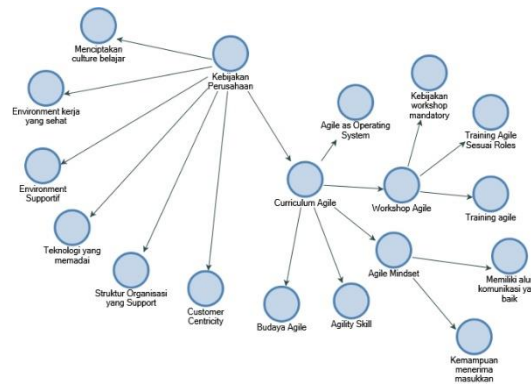


Figure 12. Project Map of Company Policy Distribution

b. Individual Competencies

In addition to company policies, another crucial aspect for the effective and efficient implementation of Agile Ways of Working is individual competencies. Employee competencies are foundational to supporting job activities at PT XYZ. This is because the success of Agile Ways of Working implementation reflects the competencies of each employee. Therefore, if all employees possess the necessary competencies for Agile, it will support the continuity and successful implementation of Agile Ways of Working within the company.

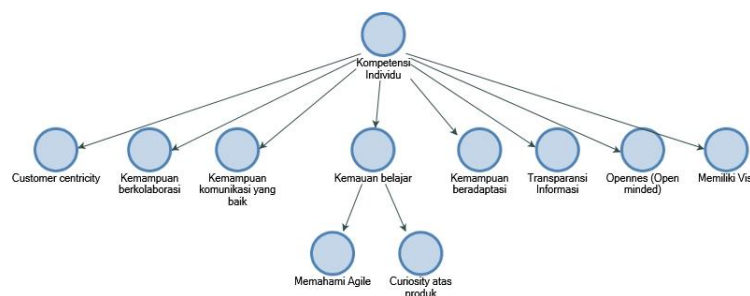


Figure 13. Project Map Distribution of Individual Competencies

6. Benefits of Implementing Agile Ways of Working in Business Processes

Based on the interviews conducted and the data analysis of transcripts using NVIVO 12 Pro, information was gathered regarding the benefits obtained from implementing Agile Ways of Working as a framework and as a solution to team collaboration issues.

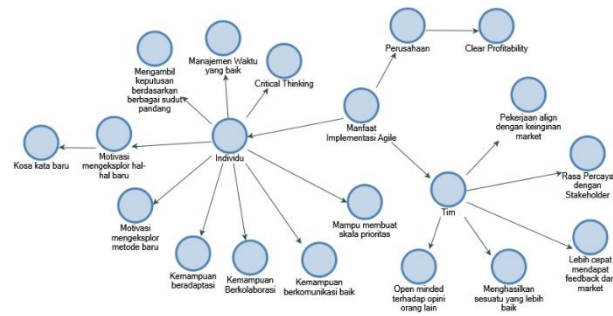


Figure 14. Project Map of the Distribution of Benefits of Implementing Agile Ways of Working

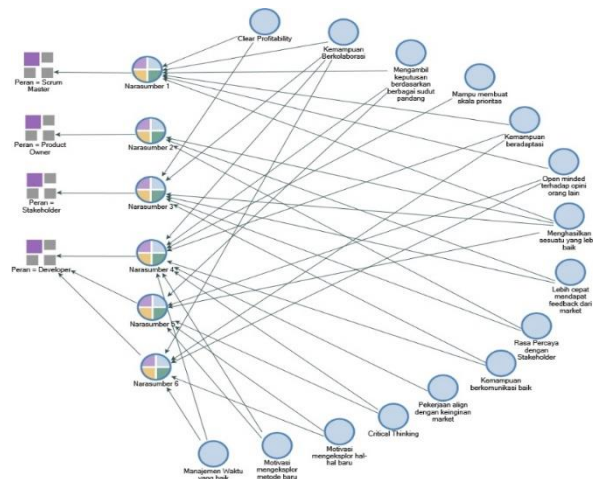


Figure 15. Project Map of Benefit Distribution by Role

7. Suitability of Agile Ways of Working Framework for PT XYZ

Based on the interview questions posed to the respondents, the researcher asked, "Do you believe Agile Ways of Working is effective and suitable for enhancing collaboration and facilitating communication between individuals or across departments, and is it appropriate for implementation in a telecommunications company?" The question was answered along with the reasons for either agreeing or disagreeing provided by the respondents. The following is a Matrix Coding of the respondents' answers:

	A : Persetujuan
1 : Narasumber:Jabatan = Head of Business Process Management ...	Yes
2 : Narasumber:Jabatan = Business Analyst	Yes
3 : Narasumber:Jabatan = API Microservices: QA Tester	Yes
4 : Narasumber:Jabatan = API Microservices: QA Engineering	Yes
5 : Narasumber:Jabatan = Senior Learning and Development	Yes
6 : Narasumber:Jabatan = Product Owner: Ritel Touchpoint	Yes

Figure 16. Matrix Coding of Interviewee Agreement with the Framework

8. Research Results in Flowchart Form

After conducting research by interviewing respondents at PT XYZ, the researcher has developed a framework of conclusions. This framework summarizes the methods and key considerations necessary for implementing Agile Ways of Working, particularly in telecommunications companies or businesses that are involved in and dependent on technological advancements.

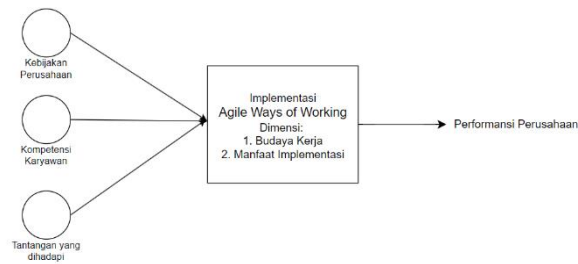


Figure 17. Conclusion Framework Diagram of Agile Ways of Working Implementation



Figure 18. Illustration of Research Results

9. Data Validity (Credibility)

To establish the credibility or validity of the data, the researcher employs a source analysis technique. Each document from the interview transcripts is analyzed using NVIVO 12 Pro by conducting data exploration through visual diagrams, specifically Cluster Analysis. The researcher will examine the similarities in the interview results as depicted in the diagrams and evaluate the similarity scores using the Pearson Correlation Coefficient and word similarity measures.

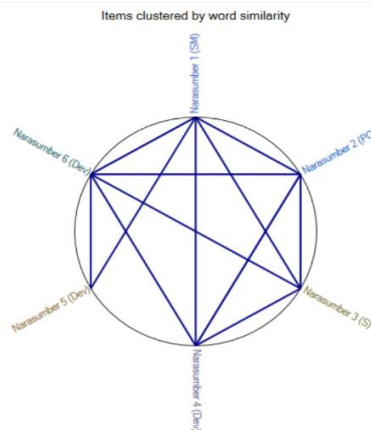


Figure 19. Diagram Cluster Analysis

File A	File B	Pearson correlation coefficient
Files\\Narasumber 4 (Dev)	Files\\Narasumber 2 (PO)	0,815475
Files\\Narasumber 6 (Dev)	Files\\Narasumber 2 (PO)	0,80243
Files\\Narasumber 6 (Dev)	Files\\Narasumber 1 (SM)	0,800005
Files\\Narasumber 3 (S)	Files\\Narasumber 2 (PO)	0,780321
Files\\Narasumber 2 (PO)	Files\\Narasumber 1 (SM)	0,777491
Files\\Narasumber 4 (Dev)	Files\\Narasumber 1 (SM)	0,764488
Files\\Narasumber 6 (Dev)	Files\\Narasumber 4 (Dev)	0,763244
Files\\Narasumber 4 (Dev)	Files\\Narasumber 3 (S)	0,750439
Files\\Narasumber 3 (S)	Files\\Narasumber 1 (SM)	0,74412
Files\\Narasumber 6 (Dev)	Files\\Narasumber 3 (S)	0,742448
Files\\Narasumber 6 (Dev)	Files\\Narasumber 5 (Dev)	0,736342
Files\\Narasumber 5 (Dev)	Files\\Narasumber 1 (SM)	0,717683
Files\\Narasumber 5 (Dev)	Files\\Narasumber 4 (Dev)	0,683759
Files\\Narasumber 5 (Dev)	Files\\Narasumber 2 (PO)	0,674508
Files\\Narasumber 5 (Dev)	Files\\Narasumber 3 (S)	0,662578

Figure 20. Pearson Correlation Coefficient Score Research Results

No	Coefficient	Correlation Coefficient Classification
1	0	No correlation
2	0-0.2	Very weak
3	0.21-0.40	Weak
4	0.41-0.60	Moderate
5	0.61-0.80	Strong
6	0.81-0.99	Very strong
7	1	Perfect

Figure 21. Pearson Correlation Coefficient Classification
Source: (Eddy Roflin & Ferani Eva Zulvia, 2021)

Based on the results of data triangulation or data validation using source techniques with NVIVO 12 Pro, the researcher determined that there is data accuracy, as evidenced by the scores illustrated between informant 1, informant 2, informant 3, informant 4, informant 5, and informant 6. In Figure 4.9.2, the lowest score is observed between the transcript documents of informants 5 and 3, with a score of 0.6625, classified as "Strong." Thus, based on the Pearson correlation coefficient scores obtained through NVIVO 12 Pro, and with the lowest score in Figure 4.9.2 still falling within the "Strong" classification, it can be concluded that the data collected and the findings of this research are credible.

Conclusion

1. Conclusion

The conclusions drawn from this study are that PT XYZ faces issues in collaboration and problem-solving, including recurring iterations, project transparency, inter-departmental communication, lengthy requirement processes, and perceived gaps in inter-divisional collaboration. To address these issues, PT XYZ has implemented Agile Ways of Working as a solution. The researcher interviewed respondents to understand how Agile Ways of Working could resolve these challenges by identifying the obstacles to be addressed, solutions to overcome these challenges, requirements such as company policies and individual competencies necessary for successful implementation, and the benefits experienced after adopting Agile Ways of Working from the perspectives of individuals,

teams, and the organization. After analyzing the interview data, the researcher concluded that Agile Ways of Working effectively and efficiently improves collaboration and facilitates communication between individuals and departments, making it a suitable approach for implementation in a telecommunications company.

2. Recommendations

Based on the research findings, the recommendations are divided into two categories: recommendations for the company and recommendations for future research.

a. Recommendations for the Company

The recommendations for PT XYZ are to enhance the use of Agile Ways of Working across all business processes that are suitable and require speed, as well as being customer-centric, to maximize the company's potential and profitability by improving employee performance. This approach should be continuously developed, as Agile Ways of Working has proven to enhance employee performance through effective collaboration and communication to address issues in ongoing projects.

b. Recommendations for Future Research

- Future researchers are encouraged to validate frameworks for implementing Agile Ways of Working, particularly focusing on the Scrum framework, in other telecommunications companies or organizations directly involved with technological advancements. This research could provide valuable insights into the effectiveness and adaptability of Scrum in various technological and business environments.
- Future researchers are encouraged to conduct quantitative testing of the findings from this qualitative study regarding the implementation of Agile Ways of Working in telecommunications companies or organizations directly involved with technology. This approach would provide empirical evidence and enhance the understanding of Agile's impact in these specific contexts.
- Future researchers are encouraged to conduct similar studies with other technology-oriented companies to provide a basis for comparing the implementation of Agile Ways of Working. This comparative research can offer deeper insights into how Agile practices perform across different technological environments.

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