MSc Business Information Technology
Master Thesis

Community Platform Analytics Framework

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open social

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Abstract

Community platforms play a critical role in enabling user engagement, knowledge exchange, and brand loyalty. However, organizations that operate such platforms often struggle to define and measure Key Performance Indicators (KPIs) in ways that align with strategic goals, are technically feasible, and support data-driven decision-making. This thesis addresses this challenge by proposing the Community Platform Analytics Framework (CPAF), a structured, theory informed, and generalizable framework designed to translate business-driven KPIs into measurable metrics and enable continuous performance monitoring. The CPAF was developed following the Design Science Research Methodology (DSRM) and is composed of four sequential phases: KPI definition and prioritization, KPI-to-metric translation, data architecture and analytics setup, and monitoring and continuous improvement.

Keywords: KPI, community platform, metric, performance, data architecture

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Chapter 1

Introduction

The structure of this chapter is presented as follows; the research background is introduced in Section 1.1. The problem context is presented in 1.2. In Section 1.3, the scope, objectives, research question, and research methodology of the investigation are presented. Finally, Section 1.4 explains the research structure.

1.1 Context

Community platforms are digital environments that enable interaction, collaboration, and knowledge sharing among users with common interests. These platforms support a wide range of applications, from social networking and professional communities to customer support hubs and collaborative workspaces. Their success depends not only on functionality but also on the strength of engagement between the platform and its community [5].

Engagement is a key indicator of a healthy community. Reflects how actively members of a community participate, contribute and interact within the platform. A high level of engagement usually leads to network effects, where the value of the community increases as participation increases. For organizations, engagement can be directly related to community growth, retention, and strategic goals such as customer satisfaction, brand loyalty, and product feedback [25]. Engagement is typically quantified through metrics such as the number of active users, frequency of interactions (likes, comments, posts), average session duration, or participation in events or campaigns. These metrics provide a tangible way to monitor the interaction within the platform [32]; [4].

To analyze and understand engagement, companies should define Key Performance Indicators (KPIs) that help measure community success. This can help identify which features or activities contribute the most to the success of the platform. However, defining and measuring the right KPIs is only one part of the challenge, organizations also require an analytics infrastructure capable of collecting, processing, and interpreting data tied to these KPIs. As a result, this creates an interdisciplinary problem that involves both business and technical domains.

1.2 Problem Context

While KPIs are essential for evaluating the participation and health of community platforms, organizations operating community platforms struggle to define relevant KPIs aligned with their business objectives. This challenge is well documented in recent research, which higlights the lack of frameworks guiding the selection and application of metrics on digital platforms [4]; [13].

Defining KPIs is difficult because organizations must integrate multiple perspectives (strategic objectives, user behavior, and technical feasibility) while ensuring consistency and interpretability across tams. Business KPIs are often expressed in abstract terms (e.g., "increase engagement" or "retain members") without clear operational definitions or technical mechanisms to effectively measure them. Furthermore, each stakeholder group tends to focus on different indicators, resulting in fragmented measurement practices and siloed information [26].

Even when KPIs are identified, companies often lack the ability to translate them into measurable technical metrics that can be monitored through data analytics systems. This gap results in lost information, slower decision making, and uncoordinated platform development. It also limits the ability of the community platform to adapt to user needs or to evaluate the effectiveness of content, campaigns, or platform's feature.

Stakeholders such as customer success managers, product owners, and sales teams rely on data for planning and feedback, but without a shared, structured analytics framework, their interpretations can be contradictory. Product teams may look to understand the usage of features, while sales departments look for predictors of customer churn or upsell opportunities. Community managers focus on member engagement, and contribution. Without alignment, these different needs are not met, resulting in incomplete and inconsistent decision making [15].

While a variety of tools are available to support data analysis, organizations lack a scalable and practical architecture for monitoring KPIs. The absence of a structured link between business-oriented KPIs and the underlying analytical infrastructure hinders timely, accurate, and strategic decision making. In addition, this impacts end users, as their behaviors, preferences, and feedback are not always captured or integrated into platform improvements. Addressing this gap is essential to ensure community platforms evolve in ways that support both organizational goals and user experiences.

This thesis focuses on the dutch company Open Social as a case study to explore and validate the design of a KPI framework tailored for community platforms. Although the research is based in the context of Open Social, the resulting framework is grounded in theory and intended to be generalizable to other organizations facing similar challenges.

1.3 Research Design

1.3.1 Scope

The scope of this research is to design a structured framework to align business driven KPIs with measurable technical metrics for analyzing community performance. This framework will serve as a guide for community platform managers looking to make better data driven decisions.

The project will not include the full technical implementation of the proposed data architecture. Instead, validation will be carried out through structured sessions with stakeholders, including Product Owners, Customer Success Managers, and Sales representatives, who will assess the relevance and usability of the framework. The company Open Social plans to implement the entire project over the next two years; however, a pilot is being considered and will be included in this thesis.

1.3.2 Goal and Objectives

This research aims to design and validate a Community Platform Analytics Framework (CPAF) that translates business driven KPIs into measurable technical metrics to monitor community growth, engagement, retention, among other key aspects of platform performance. The proposed framework should be conceptually adaptable and extendable to different organizational contexts and stakeholder needs.

To achieve this, the thesis focuses on identifying relevant business KPIs for the community platform, translating these KPIs into measurable technical metrics and variables, reviewing and evaluating data analytics architectures that support metric tracking and analysis, designing an adaptable CPAF that aligns business KPIs with measurable technical metrics and supports data collection and analysis, and evaluation of perceived usefulness and applicability of the proposed CPAF through stakeholder feedback and case analysis.

1.3.3 Research Questions

Based on the research goal and objectives, the following Main Research Question is defined: How can business driven KPIs be translated into measurable metrics within a Community Platform Analytics Framework to monitor growth, engagement, retention, among other key aspects of community platform performance?

To answer this question, five sub-research questions (Sub-RQs) were defined. The formulation of these Sub-RQs follows the Design Science Research Methodology (DSRM) by Wieringa [30], which structures the research process into iterative cycles of problem investigation, treatment design, and treatment validation. Each Sub-RQ aligns with a particular DSRM phase and is addressed through specific research methods, as outlined below:

Sub-RQ1 (Knowledge Question): What are the most relevant KPIs for business stakeholders (Customer Success, Sales, Product Management) in community platforms?

Motivation: To identify and prioritize the KPIs used in literature and by various business units, which will inform the foundation of the framework.

DSR Phase: Problem Investigation.

Method: Systematic Literature Review (SLR) and exploratory interviews with business stakeholders.

Sub-RQ2 (Knowledge Question): How can business KPIs be translated into measurable technical metrics?

Motivation: To understand how abstract business goals can be operationalized into actionable, measurable variables suitable for analytics implementation.

DSR Phase: Problem Investigation.

Method: SLR and analysis of existing KPI to metric mappings in industry practice.

Sub-RQ3 (Knowledge Question): What types of data architecture are commonly used to support the collection and analysis of engagement metrics in community platforms?

Motivation: To analyze existing architectural patterns and technologies, ensuring the proposed framework is technically sound and implementable.

DSR Phase: Problem Investigation

Method: SLR and benchmarking of technical solutions.

Sub-RQ4 (Design Question): How can a Community Platform Analytics Framework be designed to align business KPIs with measurable technical metrics?

Motivation: To propose the actual structure of the framework, including components, relationships, and design principles based on insights from the knowledge questions.

DSR Phase: Treatment Design

Method: Design science approach using insights from prior Sub-RQs, iterative modeling, and feedback sessions with stakeholders.

Sub-RQ5 (Validation Question): To what extent do stakeholders consider the proposed framework useful and applicable for aligning KPIs with measurable metrics in the context of their community platform?

Motivation: This question aims to validate the perceived utility and applicability of the framework by engaging stakeholders in sessions focused on KPI identification, prioritization, and translation. Their feedback serves as the basis for assessing the framework's alignment with real world business needs, without requiring full technical implementation.

DSR Phase: Treatment Validation

Method: Case study with Open Social, including stakeholder workshops, evaluation interviews, and structured feedback collection.

1.3.4 Research Methodology

This research applies the DSRM as defined by Wieringa [30], which emphasizes the iterative design and evaluation of artifacts in a real world context. As mentioned in section 1.3.2, the goal is to design a framework (the artifact) that addresses the need to analyze the performance of the community platform.

The design problem can be formulated as follows.

Improve	the measurement and analysis of community platform performance
by	designing a CPAF
that	defines business aligned KPIs, translates them into actionable technical metrics, and outlines a scalable data architecture
in order to	empower organizations to track community platform performance and make data-driven decisions.

1.4 Research Structure

This thesis is organized in five chapters, each aligning with specific research questions and phases of the DSRM proposed by Wieringa [30].

Chapter 2 presents the methodology used in this thesis.

Chapter 3 presents the SLR, which forms the theoretical foundation for the study. It addresses Sub-RQ1, Sub-RQ2, and Sub-RQ3 by exploring existing knowledge on business driven KPIs, their translation into measurable metrics, and current data analytics architectures. These sections correspond to the Problem Investigation phase of the DSRM cycle.

Chapter 4 focuses on the Framework Design, where the insights from the literature are synthesized to develop the CPAF. This chapter addresses Sub-RQ4 and corresponds to the

Treatment Design phase of the DSRM. It presents the conceptual structure, components, and design principles of the proposed framework.

Chapter 5 details the Validation and Case Study, in which the CPAF is applied and evaluated within the context of Open Social, the case study organization. Through stakeholder engagement sessions and feedback collection, the utility and applicability of the framework are assessed. This chapter addresses Sub-RQ5 and represents the Treatment Validation phase of the research.

Finally, Chapter 6 provides the Conclusion and Future Work, summarizing key findings and contributions, discussing limitations, and outlining opportunities for future research and further generalization of the framework.

Chapter 2

Methodology

This chapter presents the methodology used to answer the main and sub-research questions.

2.1 Research Methodology

The research methodology used in this thesis is the DSRM by Wieringa. This methodology was chosen because it focuses on a systematic resolution of problems through the design, development, and evaluation of technological artifacts in specific contexts [30].The author of this methodology proposes this as an iterative and constant process of five key steps, as shown in Figure 2.1.

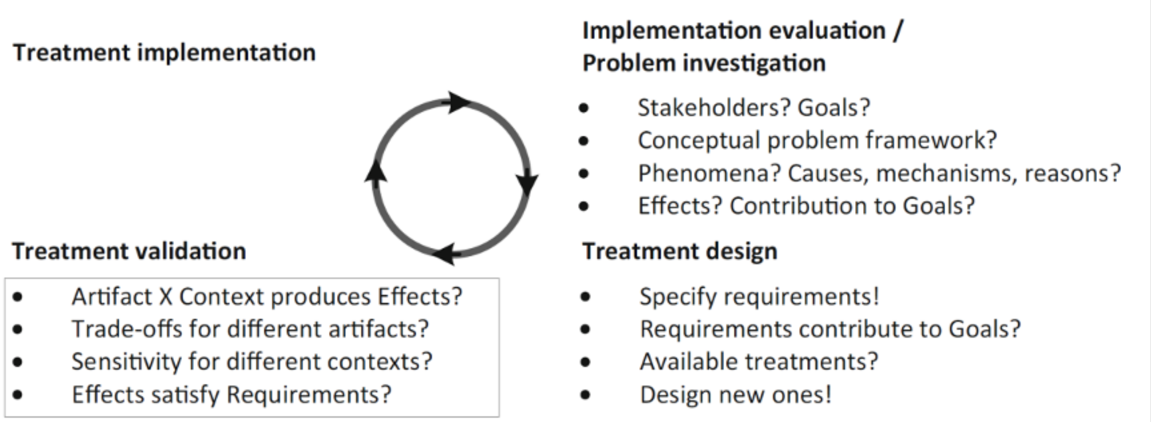

FIGURE 2.1: Design Science Engineering Cycle [30]

The problem investigation phase involved eliciting requirements through stakeholder interviews, workshops, continuous discussions, and document analysis within the Open Social context. These activities captured business goals, operational needs, and technical constraints. These requirements informed the subsequent treatment design phase, where the CPAF was developed to systematically address the identified challenges.

Figure 2.1 illustrates the iterative nature of the DSRM, where requirements, goals, and treatments are constantly aligned and refined based on insights gained throughout the process.

2.1.1 Problem Investigation

This first step of the design science methodology consists of identifying the problem(s) and the root cause. It also defines the research objectives. The objective of the SLR is to identify, analyze, and synthesize what exists in the academic world. This process is carried out by reviewing academic papers, articles, and publications. In this case, this review was conducted using the Kitchenham SLR [18].

The findings of the literature review are presented in Chapter 3. These findings offer an understanding of the problem and the different scenarios for its solution from an academic perspective.

In addition to the literature review, empirical data was collected through stakeholder interviews, workshops, continuous discussions, and internal document analysis at Open Social. These empirical activities helped validate the description of the problem and elicited concrete business and technical requirements for designing the solution.

2.1.2 Treatment Design

In this next step, the artifact (treatment) designed to solve the identified problem is developed. This design must be theoretically grounded and adapted to the specific characteristics of the context studied.

In alignment with Figure 2.1, the treatment design phase utilized the requirements elicited during problem investigation. Based on stakeholder goals, identified challenges, and operational constraints, the CPAF was developed. This design process involved iterative validation with stakeholders to ensure the artifact will meet the critical needs of Open Social.

The detailed design and description of the CPAF are presented in Chapter 4.

2.1.3 Treatment Validation

In this phase, the designed treatment is assessed for compliance with requirements and objectives defined. Techniques such as workshops, stakeholder feedback sessions, and analysis of practical alignment are used to verify the effectiveness of the design [30].

Rather than formal interviews, targeted meetings were organized with key functional areas at Open Social, including Customer Success, Product Management, Sales, and Technology teams. The primary goal of these meetings was to discuss the framework structure, gather initial reactions, and refine the list of relevant KPIs based on each department's operational focus and provide feedback on the CPAF design regarding its clarity, relevance, and feasibility.

To ensure alignment across departments, collaborative workshops were conducted. These workshops used dynamic discussion techniques to identify the most critical KPIs according to stakeholders. Participants were encouraged to propose, discuss, and prioritize KPIs based on strategic relevance, feasibility, and alignment with business objectives in order to select and prioritize a shortlist of KPIs recommended for initial implementation.

Summaries of the meetings and workshops, including the resulting prioritized KPI list and stakeholder feedback highlights, are provided in Appendix A.

2.1.4 Systematic Literature Review and Case Study Methodology

To provide a solid theoretical foundation for the framework design, a SLR is conducted following the guidelines by Kitchenham [18]. The objective of the SLR is to systematically identify and synthesize academic contributions related to community platform, KPIs, digital platform analytics, and user retention strategies. The SLR process involved defining research questions, search strings, inclusion and exclusion criteria, and thematic analysis of findings.

Moreover, a case study methodology was employed to validate the CPAF in a real world context. Open Social served as the case organization. Data were collected through semi structured interviews, workshops, and document analysis. The case study enabled contextual evaluation of CPAF's utility, feasibility, and relevance in addressing actual business challenges. This practical validation step aligns with Wieringa's emphasis on grounding artifacts in empirical contexts [30].

Chapter 3

Systematic Literature Review

This section outlines the structure and coverage of this research, focusing on the SLR based on Kitchenham's SLR [18]. This SLR was chosen because it provides a solid basis for the identification and analysis of relevant literature, while also ensuring a critical assessment of the quality of the included studies.

The SLR is divided into three main phases: the planning phase, where the review protocol is defined; the review phase, where the actual literature analysis is conducted; and the reporting phase, where the findings are documented and presented. In the planning phase, a protocol review must be defined in order to identify and select the studies that will be part of this research. In the second phase, the literature selection is carried out in compliance with the evaluation protocol defined in the previous phase. Finally, in the reporting phase, the information is extracted from the selected studies.

3.1 Background

Community platforms are digital environments designed to enable interaction, collaboration, and knowledge sharing among a group of users. They can be used by a wide range of organizations, including NGO's, software communities, and membership based entities.

One of the primary goals of these platforms is to foster meaningful engagement between users, support peer-to-peer interaction, and create value through network effects. Research shows that well-managed communities can improve customer retention, encourage brand loyalty, and generate insights for product development [32]; [4].

This literature review aims to explore how KPIs are defined and operationalized in the context of community platforms, identify architectural patterns that support their measurement, and uncover existing frameworks for aligning business goals with data analytics practices. These insights inform the design and theoretical foundation of the CPAF proposed in this thesis.

3.2 Review Protocol

As part of the SLR, a review protocol must be developed. This protocol consists of defining the review work plan, ensuring rigor, transparency, and reproducibility. The review protocol includes information sources and search strategies, as well as inclusion and exclusion criteria and the findings that answer the research questions.

3.2.1 Information Sources

Four academic repositories were used to perform the search. Web of Science, Semantic Scholar, IEEE Xplore, and Scopus. Search queries are a combination of terms related to the SRQs, as shown in Table 3.1.

SRQ	Database	Query	Results
1	Web of Science	("community platform" OR “community platform” AND “KPIs” OR "Sales KPIs" OR "Sales metrics" AND "Product owner KPIs" OR "product management metrics" AND "community analytics" OR "user engagement metrics")	18
	Semantic Scholar	("community platform" OR "community engagement" OR “community platform” OR “online community” AND “KPIs” AND "Sales KPIs" OR "Sales metrics" AND "Product owner KPIs" OR "product management metrics" AND "community analytics" OR "user engagement metrics")	4
	IEEE Xplore	("community platform" OR "community engagement" OR “community platform” AND “KPIs” AND "Sales KPIs" OR "Sales metrics" AND "Product owner KPIs" OR "product management metrics" AND "community analytics" OR "user engagement metrics")	6
	Scopus	("community platform" OR "community engagement" OR “community platform” AND “KPIs” AND "Sales KPIs" OR "Sales metrics" AND "Product owner KPIs" OR "product management metrics" AND "community analytics" OR "user engagement metrics")	17
2	Web of Science	("KPI translation" OR "business to technical metrics") AND ("community analytics" OR "online platform metrics") OR "technical metrics" AND ("user engagement" OR "user retention" OR "community growth") AND ("KPI implementation") OR "Metric operationalization" AND ("business KPI" OR "performance indicators") AND ("community platform")	18
	Semantic Scholar	("KPI translation" OR "business to technical metrics") AND ("community analytics" OR "online platform metrics") OR "technical metrics" AND ("user engagement" OR "user retention" OR "community growth") AND ("KPI implementation") OR "Metric operationalization" AND ("business KPI" OR "performance indicators") AND ("community platform")	4
	IEEE Xplore	(("KPI translation" OR "business to technical metrics") AND ("community analytics" OR "online platform metrics") OR "technical metrics" AND ("user engagement" OR "user retention" OR "community growth") AND ("KPI implementation") OR "Metric operationalization" AND ("business KPI" OR "performance indicators") AND ("community platform")	6

	Scopus	("KPI translation" OR "business to technical metrics") AND ("community analytics" OR "online platform metrics") OR "technical metrics" AND ("user engagement" OR "user retention" OR "community growth") AND ("KPI implementation") OR "Metric operationalization" AND ("business KPI" OR "performance indicators") AND ("community platform")	17
3	Web of Science	"Data architecture" AND ("analytics platform" OR "community platform analytics") AND ("metric tracking" OR "real-time analytics") OR "Data warehousing" OR "Data Lake" AND ("user engagement metrics" OR "community management") OR "Analytics infrastructure" AND ("metric collection" OR "metric monitoring") AND ("community platforms" OR "user metrics")	18
	Semantic Scholar	"Data architecture" AND ("analytics platform" OR "community platform analytics") AND ("metric tracking" OR "real-time analytics") OR "Data warehousing" OR "Data Lake" AND ("user engagement metrics" OR "community management") OR "Analytics infrastructure" AND ("metric collection" OR "metric monitoring") AND ("community platforms" OR "user metrics")	4
	IEEE Xplore	"Data architecture" AND ("analytics platform" OR "community platform analytics") AND ("metric tracking" OR "real-time analytics") OR "Data warehousing" OR "Data Lake" AND ("user engagement metrics" OR "community management") OR "Analytics infrastructure" AND ("metric collection" OR "metric monitoring") AND ("community platforms" OR "user metrics")	6
	Scopus	"Data architecture" AND ("analytics platform" OR "community platform analytics") AND ("metric tracking" OR "real-time analytics") OR "Data warehousing" OR "Data Lake" AND ("user engagement metrics" OR "community management") OR "Analytics infrastructure" AND ("metric collection" OR "metric monitoring") AND ("community platforms" OR "user metrics")	17

TABLE 3.1: Search queries

3.2.2 Inclusion and Exclusion Criteria

The study selection criteria serve to identify those studies that provide direct evidence about the SRQs previously defined [18]. Table 3.2 shows the selection criteria applied to identify and select the studies that better fit this review.

Inclusion / Exclusion	**Criteria**
Inclusion	Only studies where the full text is available.
	Articles published in English.
	Articles discussing community platform engagement, sales metrics, community KPIs.

	Studies that evaluate KPIs related to user engagement, participation rates, retention, active users, interactions, etc.
	Articles describing KPIs for measuring community platform engagement.
	Studies addressing architectural components such as data tools used for collecting, aggregating, and analyzing metrics.
	Studies evaluating architectural designs based on performance metrics like speed, scalability, reliability, and accuracy in KPIs data collection.
	Case studies or practical implementations of data analytics systems designed for KPIs data collection.
	Research exploring the relationship between architecture design and the efficiency, accuracy, or scalability of KPIs data collection.
	Studies using quantitative, qualitative, or mixed-method approaches to evaluate engagement metrics.
Exclusion	Articles published in languages other than English.
	Studies focusing on individual user performance KPIs without considering community engagement.
	Studies focused on KPIs unrelated to engagement (e.g., KPIs for revenue, churn clients, etc.).
	Studies not related to KPIs data collection (e.g., image recognition, or other unrelated tasks).
	Studies that do not evaluate or measure the effectiveness of KPIs data collection.
	Studies based on outdated or obsolete technologies unless they provide seminal insights.

Table 3.2: Inclusion and Exclusion Criteria

During the selection of studies, the above criteria were applied rigorously and systematically to ensure the validity of the selected studies. The previously defined protocol was followed and applied in two stages. In the first stage, irrelevant studies were eliminated based on the title and abstract. In the second stage, a detailed evaluation of the full text of each previously selected article was performed. During the selection of studies, it was necessary to adjust part of the queries to obtain a greater range of studies.

3.3 Overview of Results

Figure 3.1 shows the selection process. During the selection phase, from the 58 articles discovered, 22 papers were included in the review for full-text extraction, given that they fell within the scope of the research.

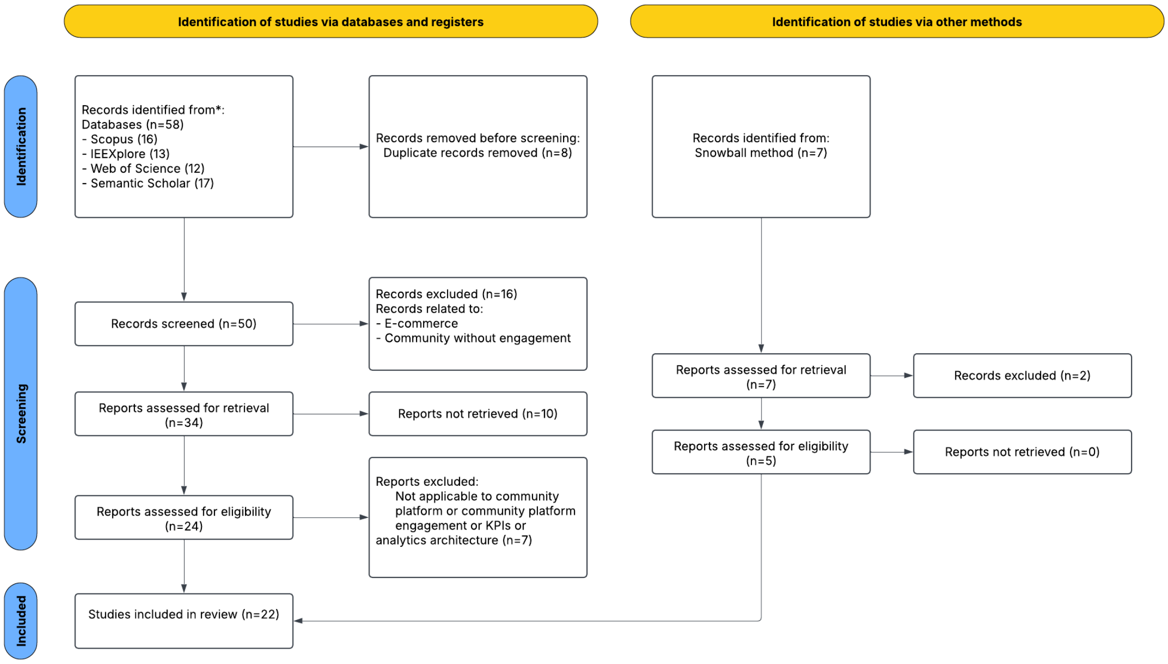

FIGURE 3.1: Selection Process

Initially, the queries returned 16, 13, 12, and 17 results from Scopus, IEEE Xplore, Web of Science, and Semantic Scholar databases. By filtering out the duplicated records, analyzing abstracts of the results, and reading the full text, a final selection was made. In addition, the snowball method was used to ensure that the research results fully comply with the selection criteria previously defined. Additional papers were found by looking at the references used by authors. This method consists of finding new articles by checking citations from the original article [20].

3.3.1 Data Extraction

This step is designed to obtain information from primary studies, helping to address review questions and study quality criteria [18]. Table 3.3 illustrates which information will be captured and how it is linked to each SRQ.

Category	**Description**	**SRQ**
Business KPIs	Identifies relevant KPIs to Customer Success, Sales, and Product Management in the context of community platforms.	SRQ1
KPI Translation	Explores how business level KPIs can be mapped or translated into measurable technical metrics (e.g., session data, user activity).	SRQ2
Data Architecture	Investigates common data architectures and tools that support the collection, aggregation, and analysis of community engagement metrics.	SRQ3
Framework Design	Proposes a Community Platform Analytics Framework to align business KPIs with technical metrics through design principles and architecture.	SRQ4

Framework Validation	Evaluates how useful and applicable the proposed framework is according to stakeholders from various business areas.	SRQ5

TABLE 3.3: Data extraction

3.4 Answer to Sub-Research Questions

3.4.1 Community Platforms

The SRQ1 aims to investigate the most relevant KPIs for business stakeholders. The use of community platforms has transformed the way organizations interact with their communities, prospects, and users, generating a rich source of data and behaviors that can be measured and used strategically. In this context, KPIs allow for evaluating the effectiveness of these communities based on the specific objectives of different business areas. This section presents a segmented approach by stakeholder: Customer Success, Sales, and Product Management.

According to findings in the literature, from a Customer Success perspective, KPIs are primarily oriented toward user retention, loyalty, and satisfaction. The most relevant KPIs are presented in Table 3.4.

KPI Name	**Formula**	**Description**
Retention Rate	$\text{Retention Rate} = \frac{\text{Users retained after period}}{\text{Users at start}} \times 100$	Percentage of users who return after a set period [11]; [31].
Churn Rate	$\text{Churn Rate} = \frac{\text{Users lost during period}}{\text{Users at start}} \times 100$	Percentage of users who stopped using the platform [11]; [31].
Engagement Rate	$\text{Engagement Rate} = \frac{\text{Total Interactions}}{\text{Active Users}}$	Average number of interactions per active user [3].
Average Session Duration	$\text{Avg. Session Duration} = \frac{\sum \text{Session Time}}{\text{Number of Sessions}}$	Time spent per session across all users [3].
Customer Lifetime Value	$\text{CLTV} = \text{Avg. Value per User} \times \text{Retention Time}$	Estimated total value generated by a user over time [3].

TABLE 3.4: Key Community KPIs, Formulas and Descriptions

From a sales perspective, communities allow generating qualified leads and strengthening relationships with potential customers. The most relevant KPIs in this area are shown in Table 3.5.

KPI Name	Formula	Description
Conversion Rate	Conversion Rate = $\frac{\text{Transactions}}{\text{Interactions}} \times 100$	Percentage of interactions that result in business actions or outcomes [12].
Lead Generation Rate	Lead Rate = $\frac{\text{Leads Generated}}{\text{Community Users}}$	Measures leads generated from community activity [7].
New Customer Acquisition	Acquisition Rate = $\frac{\text{New Customers}}{\text{Visitors or Invites}}$	Rate of new customers obtained via community [16].
Ecosystem Connectivity	Based on criteria such as collaboration, value sharing, co-creation, etc.	Qualitative/quantitative score of community integration with ecosystem actors [9].

TABLE 3.5: Acquisition and Ecosystem KPIs with Formulas and Descriptions

Finally, for product teams, the community is an invaluable source of feedback, participatory innovation, and validation of development decisions. In this group, the most relevant KPIs are:

KPI Name	Description
Feature Request Volume	Allows demand to be detected directly from the user database [21].
Knowledge Sharing Frequency	Measures the exchange of ideas, solutions, or improvements among users [3].
Content Creation and Innovation Metrics	Related to the generation of ideas or contributions that can be scaled to new features or services [31].
Responsiveness to User Feedback	Evaluates the team's ability to react to requests, errors, or suggestions from the community [9].

TABLE 3.6: Engagement and Innovation Oriented KPIs

3.4.2 Measurable technical metrics

One of the recurring challenges in data driven management is the effective translation of strategic business KPIs into actionable technical metrics that can be monitored, interpreted, and used by key teams. This alignment is crucial to ensure that technical efforts directly impact business objectives, such as user retention, active users, or product innovation.

Studies have addressed this problem from complementary perspectives. For example, an iterative customer acquisition model uses technical behavioral data (interactions, clicks, shared content) to predict the conversion of prospects into customers. This approach allows linking technical metrics such as click through rate, engagement events, or session duration with strategic KPIs such as lead conversion rate or customer acquisition cost. The underlying logic of this type of model is that the usage data (technical) directly feed into the business impact indicators [7].

Similarly, exploring how technical metrics related to user behavior in virtual communities, such as interaction frequency, session duration, or contribution volume, can act as proxies for KPIs such as Customer Engagement, Knowledge Contribution Level, or Customer Retention, suggests that technical measurement can, within a conceptual framework, directly inform the status of success indicators in the Customer Success area [11].

On the other hand, there is talk of establishing a basis for linking an organization's technical dimensions, such as process digitalization, responsiveness, or ecosystem connectivity, with strategic outcomes such as operational efficiency, speed of market response, and customer experience. These dimensions can be broken down into technical metrics, such as average system response time, data flow volume, or digital service uptime [9].

Although the reviewed works do not directly address a universal model for translating KPIs between business and technical metrics, few writers have been able to draw on any systematic research into propose approaches that allow for building this bridge based on predictive models, behavioral indicators, and digital capability frameworks. This evidence supports the possibility of designing metric maps where, for example:

KPI	**Associated technical metrics**
Customer Retention Rate	Session recurrence, churn events, login frequency [11]; [31].
Customer Acquisition	Click behavior, onboarding completion rate, lead form submissions [16].
Process Efficiency	System response time, task automation rate, API success rate [9].

TABLE 3.7: Relationship between KPIs and technical metrics

Therefore, the key is not only to collect technical metrics, but also to interpret them based on business logic and needs to transform operational data into strategic knowledge.

3.4.3 Data architecture to support community platform metrics

According to the literature, many architectural frameworks have been proposed to support the collection, processing, and analysis of large-scale data. In the context of community platforms, which generate high volumes of user activity data, such as posts, comments, and session logs, it is crucial to adopt architectures that enable real-time ingestion, processing, and insight generation. A common characteristic across these architectures is their emphasis on scalability, low latency, real-time responsiveness, and the ability to process heterogeneous data at high volume. Among the most prominent architectural paradigms discussed in the literature are event-driven architectures, stream processing architectures, Lambda and Kappa architectures, edge-cloud hybrid architectures, as well as broader data management frameworks such as Data Lake, Data Mesh, Enterprise Data Warehouse (EDW), and the Modern Data Stack (MDS).

Event-Driven and Stream Processing Data Architectures

These paradigms are designed to process data as it is generated, making them well suited for real-time monitoring of user engagement metrics. Event-driven architectures (EDA) rely on the production, detection, and consumption of events to enable asynchronous, loosely coupled systems. Stream processing frameworks such as Apache Kafka, Apache Flink, Apache Storm, and Apache Spark Streaming are commonly used to implement these architectures, allowing throughput and low-latency processing of continuous data streams.

For instance, the RAM3S framework provides a real-time analysis model based on Spark, Storm, and Flink, demonstrating that stream based architectures offer high scalability and responsiveness when processing large-scale user-generated or multimedia data [1]. Similarly, Zhou et al. [33] present a Kafka-based real-time monitoring system that significantly improves data throughput and latency in sensor rich environments.

Lambda Data Architecture

These architectural models are widely adopted for systems that require both historical and real-time analytics. The Lambda architecture combines batch and stream processing layers to provide comprehensive and fault tolerant data analytics. In contrast, the Kappa architecture simplifies the design by relying solely on stream processing, facilitating reprocessing through immutable logs.

Such architectures are particularly useful in use cases that demand low latency while handling continuous streams of heterogeneous data, including user interactions on social or community platforms [2].

Edge-Cloud Hybrid Architectures

These architectures integrate localized edge computing with centralized cloud-based storage and analytics. Edge processing reduces data transmission latency and supports real-time responsiveness, while the cloud provides scalable infrastructure for long-term storage and analytical capabilities. This hybrid model is beneficial for platforms aiming to balance real-time insights with global data accessibility.

Data Lake Architecture

A Data Lake architecture enables the storage of raw, unstructured, semi-structured, and structured data in a centralized repository. It follows a schema-on-read approach, which allows flexibility in data modeling and supports diverse analytics workloads, such as machine learning and ad hoc exploration. This architecture is especially relevant for platforms collecting heterogeneous data types without predefined schemas [10].

Data Mesh

Data Mesh introduces a decentralized and domain oriented approach to data architecture. It promotes data ownership by individual teams (or domains), treating data as a product, and encouraging federated governance. For community platforms with multiple functional areas, such as moderation, engagement, and content creation, this model offers scalability both technically and organizationally [6].

Enterprise Data Warehouse (EDW)

The EDW is a traditional architecture focused on the centralized integration of structured data. It relies on Extract-Transform-Load (ETL) pipelines and dimensional modeling techniques (e.g., star and snowflake schemas) to enable consistent business intelligence and reporting. While less flexible for unstructured or rapidly evolving data, EDWs offer high reliability for predefined, repeatable metrics [14].

Modern Data Stack (MDS)

The Modern Data Stack represents a contemporary architecture built on cloud-native, modular components. It typically involves automated data ingestion tools, cloud data warehouses, transformation tools (e.g., dbt), and embedded analytics platforms. Its plug-and-play flexibility and ease of integration make it attractive for fast growing platforms aiming to scale analytics with minimal infrastructure overhead [19].

3.4.4 Framework for KPI Alignment

Designing a CPAF that aligns high-level business KPIs with measurable technical metrics requires architectural and semantic coherence. This alignment is essential to ensure that strategic goals, such as engagement, growth, and retention, can be monitored and acted upon using reliable platform data.

Literature suggests that such alignment is best achieved by integrating three key components: decoupled data architectures, semantic abstraction layers, and interactive visualization interfaces. Architectural modularity, where data processing is decoupled from application-specific logic, enables the flexible translation of raw data into meaningful indicators [1]. Although originally developed for multimedia systems, frameworks like RAM3S illustrate that these architectural principles are transferable to digital communities, where user interaction events are abundant and time-sensitive.

Rather than prescribing specific technologies (e.g., Kafka or Spark), recent research advocates for real-time, fault tolerant architectures that can ingest and process heterogeneous telemetry data in a scalable manner [33]. These systems enable the transformation of low-level technical metrics, such as event frequency, latency, or session length into higher-level KPIs through semantic mapping mechanisms. The importance of introducing abstraction layers that map raw telemetry to strategic dimensions, making analytics outputs interpretable across both technical and non-technical domains, has also been emphasized [2].

A further enabler of KPI alignment is the implementation of real-time dashboards and visual analytics interfaces. These tools act as the presentation layer of the analytics framework, providing an intuitive bridge between backend metrics and executive level decision-making. They also allow business stakeholders to monitor key community indicators and rapidly respond to emerging trends [1]; [33].

In sum, the literature points toward a layered architectural approach for analytics frameworks in community platforms. It combines scalable data ingestion, semantic translation of metrics, and real-time visualization to align technical indicators with business relevant KPIs.

3.4.5 Framework Relevance in Context

The perceived usefulness and applicability of a community platform analytics framework by stakeholders are largely dependent on its ability to align KPIs of the business with measurable technical metrics in a meaningful and actionable way.

In a large scale empirical study of almost 1,704 B2B networks, business associations, chambers of commerce, and also employer's unions were involved; furthermore, a proposed Digital Multisided Market Platform was evaluated through interviews and demonstrations in addition to structured stakeholder feedback [24]. The findings reveal that stakeholders consider the framework more useful when it provides various intuitive interfaces such as dashboards, participation rankings, and topic specific analytics, along with features that allow for direct tracking of engagement metrics and organizational activity. These features enabled decision makers to now link technical results, such as forum activity, frequency of interactions, and member responsiveness, with strategic goals related to collaboration, business generation, and knowledge sharing [24].

Furthermore, the study identified key barriers to perceived applicability, such as lack of digital readiness, misalignment with existing organizational priorities, or limited awareness of the platform's capabilities, all of which led to rejection of the proposed framework in some cases. This emphasizes that successful KPI alignment is not only a technical achievement but also a matter of stakeholder perception and contextual fit. In addition, broader information from community research suggests that stakeholder evaluation of platform effectiveness is inherently multidimensional, involving factors such as growth, user retention, and long-term sustainability [29]. These dimensions reflect the varied expectations and performance indicators prioritized by different user groups, reinforcing the need for analytics frameworks to be flexible and adaptive to the diverse KPI structures present within community ecosystems.

The findings of this SLR highlight the foundational requirements and design principles necessary for aligning business KPIs with technical metrics in the context of community platforms. First, there is a need for modular and scalable data architecture that support real-time data. Second, the literature emphasizes the importance of semantic abstraction layers to map low-level metrics to business relevant indicators. Third, frameworks should incorporate visual analytics interfaces to make insights accessible to technical and non-technical stakeholders. Finally, KPI alignment requires organizational structures that assign ownership and support change governance to ensure metric relevance over time.

These high-level requirements, taking from theoretical models and applied studies, form the conceptual basis for the CPAF proposed in this thesis. The next chapter presents the treatment design, outlining its steps, and alignment with the challenges and requirements identified in this review.

Chapter 4

Treatment Design

4.1 Introduction

In this chapter, the design of the CPAF is detailed. It provides guidance for defining relevant KPIs, systematically translating these KPIs into measurable metrics, designing an appropriate data and analytics infrastructure to support these metrics, and establishing continuous monitoring and feedback mechanisms.

4.2 Requirements Elicitation

The requirements for the CPAF were derived from theoretical insights from the SLR performed and practical input gathered through stakeholder engagement in a real-world community platform context. This combination ensured that the CPAF is both theory and grounded in the challenges faced by organizations managing community platforms.

Following Wieringa's classification, the requirements are structured into two categories: functional, which define the capabilities the framework should deliver, and non-functional requirements, which represent the quality attributes and constraints under which it should operate [30].

The non-functional requirements define the conditions necessary for the framework's adoption and sustainability. These include **Consistency** in KPI definitions and methodology, **Technical Feasibility** to ensure the framework is adaptable to diverse infrastructures, **Scalability** to support organizational growth, and **Usability** for non-technical users. These attributes reflect general concerns across organizations implementing analytical frameworks, regardless of their specific platforms or tools.

Some requirements may naturally present tensions. For instance, prioritizing usability and flexibility for stakeholders may conflict with the need for consistency across departments. Similarly, ensuring feasibility within constrained infrastructures may limit analytical complexity. These trade-offs are addressed in the framework design by incorporating governance mechanisms and modular architecture principles, which balance adaptability with control.

Overall, the requirements presented are not tailored to a specific organization but are generalized to reflect the needs of a wide range of entities aiming to enhance their community platform analytics. Tables 4.1 and 4.2 summarize these functional and non-functional requirements.

Functional Requirement	Description
Strategic	Provide support for defining and agreeing upon strategic business KPIs across departments.
Metric Translation	Facilitate a systematic approach for translating strategic KPIs into technically measurable and operational metrics.
Integration	Enable the integration and utilization of data from multiple sources to support KPI measurement and analytics.
Monitoring and Feedback	Support ongoing monitoring, assessment, and continuous refinement of KPIs and related practices.

Table 4.1: Functional Requirements for the CPAF

Non-Functional Requirement	Description
Consistency	Ensure uniformity and standardization in KPI definitions and measurement methodologies across the organization.
Technical Feasibility	Guarantee that KPI-to-metric translations and analytics approaches are realistic and technically implementable within the organization's existing infrastructure.
Scalability	Ensure the proposed data and analytics infrastructure is capable of scaling with organizational growth and evolving analytical needs.
Usability	Design user-friendly and intuitive processes and tools that facilitate stakeholder engagement and ease of adoption across different teams.
Open Source Technology Usage	Leverage open-source technologies where feasible to ensure cost effectiveness, flexibility, community support, and to avoid vendor lock-in.

Table 4.2: Non-functional Requirements for the CPAF

4.3 CPAF Design

The framework is composed of four logical steps that guide organizations from defining business goals to continuously monitoring performance. Figure 4.1 shows what each phase consists of.

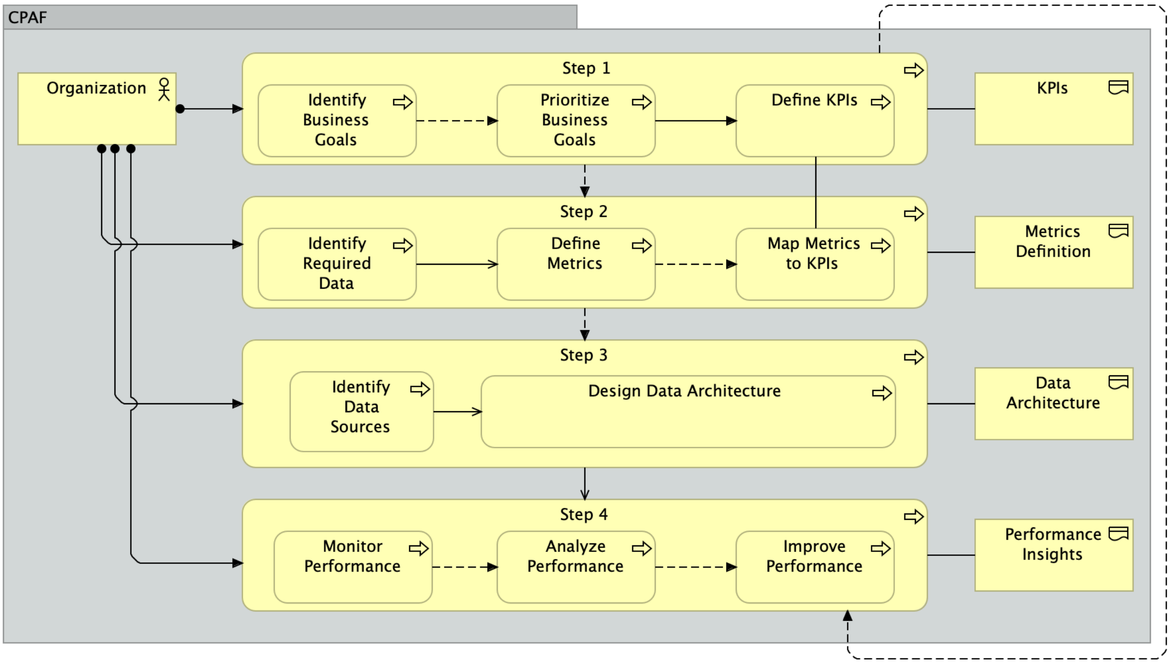

FIGURE 4.1: CPAF Diagram

In the following subsections, each step of the framework is described in detail, including its purpose, and expected outcomes.

4.4 Step 1: Definition and prioritization of KPIs

The first phase of the CPAF focuses on identifying and prioritizing business driven KPIs that reflect the strategic goals of the organization. This phase is essential to ensure that all subsequent analytical efforts align with what stakeholders value most in terms of platform performance.

4.4.1 Purpose

Academic literature emphasizes the importance of involving stakeholders in KPI identification to improve relevance, adoption and trust in measurement systems [32]; [4]. Co-creating KPIs fosters greater trust in data and improves decision-making in different areas of organizations [23]. In addition, clear definitions of stakeholder roles and responsibilities help mitigate risks related to information misuse and data governance concerns [8].

4.4.2 Guidelines for KPI Definition and Prioritization

This step includes the following activities:

1. **Goal mapping**
   Stakeholders begin by identifying key strategic objectives related to the community platform (e.g., growth, retention, engagement). The columns are mapped to the initial KPI candidates. Literature recommends that KPI selection is grounded in strategic value and organizational relevance [22].

2. **Categorization of KPIs**
   KPIs are grouped into thematic dimensions such as growth, engagement, retention or

performance. Classifying these KPIs helps to simplify interpretation and maintain focus between different stakeholder groups [4].

Table 4.3 presents a list of KPIs categorized by business objective. This list serves only as a reference and should be customized per organization.

KPI Name	Category	Business Objective
Monthly Active Users	Growth	Track platform usage over time
New User Registrations	Growth	Measure acquisition effectiveness
Engagement Rate	Engagement	Understand average user interaction
Average Session Duration	Engagement	Estimate depth of user engagement
Retention Rate	Retention	Assess user loyalty over a period
Churn Rate	Retention	Identify drop-off in user activity

TABLE 4.3: Example of KPIs Categorized by Business Objective

3. **Prioritization Matrix**
Once KPIs are defined, these shall meet basic validation criteria: Stakeholders must evaluate each KPI based on its business impact and the technical complexity required for its implementation, technical team must be involved in order to discuss the feasibility of this implementations. Moreover, they must be measurable based on available data, interpretable by business users, and relevant to one or more organizational objectives. The outcome shall be a list of high priority KPIs as shown in Table 4.4.

KPI Name	Category	Priority Level
Login events	User Onboarding, Adoption & Retention	High
New Users	User Onboarding, Adoption & Retention	High
Content View	Content Performance	Medium
Retention Rate	Network Health & Community Activity	High
Contribution Frequency	Network Health & Community Activity	Medium
Content created	Content Performance	High
Performing Topics & Discussions	Content Performance	Medium
Popular search terms	User Flow	Medium
Feature Usage Frequency	User Flow	High

Campaign Traffic Sources	Campaign Performance	Medium
Click Through Rate	Campaign Performance	Medium
Devise Usage	System Performance & Security	Low
Email sent	System Performance & Security	Low

Table 4.4: KPIs Table

Collaboration in this phase is key to ensure strong alignment with real business needs, which increase the likelihood of adoption and relevance of the framework in the organization.

4.5 Step 2: Translating KPIs into metrics

Once the KPIs are defined and prioritized, the next phase focused on translating these KPIs into measurable and technically feasible metrics. This translation is important to ensure that what is considered important can actually be tracked and acted upon within the organization's data ecosystem.

4.5.1 Purpose

Business KPIs are often formulated at a high level, such as "increase engagement" or "active users", but this lack of clarity on how they should be measured technically. Literature highlights that this abstraction creates misalignment between business expectations and data outputs, particularly in data environments like community platforms [13]; [2]. Without standardized metric definitions, teams can interpret the same KPI differently or use inconsistent data sources to measure them, leading to unreliable information.

To mitigate this problem, the CPAF proposes a systematic KPI-to-metric translation process grounded in semantic alignment and collaborative interpretation. This ensures that each KPI is not only conceptually meaningful but also implementable through existing or enhanced data pipelines.

4.5.2 Guidelines for KPI-to-Metric Mapping

This step includes the following core activities:

1. **KPI Decomposition**
   Break down each selected KPI into its essential components: what is being measured (e.g., activity), who is being measured (e.g., users), and in what context (e.g., 30-day retention). This activity ensures clarity and consistency across metrics.

2. **Metric Formula Definition**
   Develop clear formulas in close collaboration between analytics and business stakeholders using available data fields and event structures. For example, "Engagement Rate" can be defined as:

$$\text{Engagement Rate} = \frac{\text{Total Interactions}}{\text{Monthly Active Users}}$$

3. **Documentation and Review**
   Each metric shall be documented, including its formula, required data, responsible owner, and business interpretation. A review cycle ensures that definitions remain aligned with evolving business needs.

   Table 4.5 shows a selection of representative KPIs and their corresponding metric equations, illustrating how strategic priorities were operationalized into measurable data points.

KPI	**Metric Equation**	**Required Metadata/Events**
Active users	Count of distinct users who performed any tracked activity during a period of time	User ID, Timestamp, Event Type
Engagement Rate	Total number of interactions divided by the number of active users	User ID, Event Type (e.g., comment, like, share, post), Timestamp
Retention Rate	% of users who return 30 days after sign up	User ID, Sign up date, Last activity date
Average session duration	Duration between session start and session end per user	User ID, Session start/end timestamps
Churn Rate	% of users who were active in the previous period but inactive in the current period	User ID, Activity Logs over multiple time periods

Table 4.5: KPIs Events

4.5.3 Output

The output of this step is a metric definition sheet that converts the KPIs into measurable and technically implementable formulas. This serves as a bridge between business goals and data engineering, ensuring that platform analytics are accurate, consistent, and aligned with decision-making needs.

4.6 Step 3: Data Management and Analytics Setup

Once KPIs have been translated into measurable metrics, the third step involves designing a data infrastructure that supports the collection, processing, storage and visualization of these metrics. This step is important to ensuring that the technical implementation of the CPAF is sustainable, scalable, and adaptable to the evolving needs of community platforms.

4.6.1 Purpose

Modern analytics systems require flexible architectures capable of ingesting high-volume, heterogeneous data from multiple sources. In community platforms, user interactions such as logins, posts, reactions, and session durations occur continuously and must be captured in real-time. Literature on digital platform analytics underscores the importance of data architecture oriented around event-based analytics and visualization that separate data collection, processing, and presentation layers [1].

Rather than prescribing specific technologies, the CPAF promotes technology agnostic data architecture composed of four core components:

1. **Event Collection Layer**
   This layer captures user-generated data in the form of structured events (e.g., page, views, comments, clicks). Events should include metadata such as User ID, timestamp, and contextual attributes (e.g., page, topic, session).

2. **Data Processing Layer**
   Raw events are cleaned, transformed, and aggregated into metric structures. This can involve stream or batch processing engines depending on the organization's infrastructure and latency needs.

3. **Storage Layer**
   Processed data is stored in a database or data warehouse. Storage solutions should support historical queries, scalability, and integration with dashboarding tools.

4. **Visualization Layer**
   Dashboards and visual reporting interfaces are built on top of the data layer, allowing stakeholders to explore trends, and monitor platform performance over time.

This layered data architecture supports both real-time and historical analytics, allowing for flexibility in how insights are delivered. Importantly, it enables a clear separation of concerns, which simplifies governance, scaling, and future expansion [27]. This architecture proposal is intended as a guideline that can be adapted depending on each organization's existing stack and maturity level.

4.6.2 Output

The primary output of this phase is a blueprint for an analytics data infrastructure that supports the measurement of the previously defined KPIs. This blueprint ensures that once metrics are captured, they can be seamlessly integrated into both real-time and periodic reporting processes. It serves as a bridge between design of KPIs and the generation of actionable insights, forming a critical foundation for the final phase of CPAF implementation.

4.7 Step 4: Monitoring, Analysis, and Continuous Improvement

The final phase of CPAF focuses on ensuring that KPI measurement remains relevant, accurate, and actionable over time. Monitoring is not a one time activity, but rather a continuous process that enables the organization to reflect on platform performance, identify trends or anomalies, and adapt metrics and practices as conditions evolve.

4.7.1 Purpose

Academic research underscores the importance of continuous improvement loops in digital analytics. The optimization depends on integrating user feedback and performance monitoring into iterative review cycles [26]. In addition, long-term engagement requires organizations to remain responsive to data patterns and behavioral shifts through regular evaluation and adjustment [13].

Continuous improvement in CPAF is supported by three key practices: real-time visibility through dashboards, scheduled performance reviews, and refinement protocols for KPI and metric updates.

4.7.2 Guidelines and Activities

The following activities are recommended in this phase:

1. **Dashboard Monitoring**
   Metrics defined in earlier phases should be visualized using dynamic dashboards. These dashboards allow business and technical teams to track platform performance across KPIs, detect unexpected patterns, and support faster response to emerging issues.

2. **Review Cycles and Stakeholder Check-ins**
   Regular review meetings should be scheduled to interpret KPI trends, assess whether current metrics remain aligned with evolving goals, and identify required updates. These reviews foster cross-functional alignment and promote analytical maturity within the organization.

3. **Refinement and Change Governance**
   Any changes to KPI definitions, thresholds, or visualization components should follow a structured approval workflow. This ensures traceability and consistency across versions. Section 4.7.3 expands on the governance model and role-based ownership structure proposed in the framework.

4. **Feedback Integration**
   Stakeholder and user feedback should be incorporated when evaluating the relevance of metrics. This includes feedback from internal roles (e.g., Product, Marketing, Customer Success) as well as community members when possible.

As a result, this phase proposes a design that organizations can adopt to ensure that the framework remains actionable and adaptable over time by the effectiveness of iterative loops involving platform users and developers to regularly refine and adapt the platform functionalities based on real world use and evolving stakeholder needs [26].

4.7.3 Governance and Ownership

To support long-term adoption and accountability, the CPAF incorporates two key structural components: KPI ownership and a change governance process. These elements ensure that the metrics defined and implemented remain aligned with strategic goals over time, while supporting organizational clarity and continuity.

KPI ownership refers to the clear assignment of responsibility for each metric to specific roles or teams. This accountability helps maintain the quality, relevance, and interpretability of KPIs across departments. Assigning KPI owners promotes data management, encourages continuous review, and reduces ambiguity in reporting responsibilities [22].

KPI	Responsible Role	Responsibilities
Monthly Active Users	Community Manager	Weekly trend review and stakeholder reporting
Engagement Rate	Data Analyst	Metric computation, validation, and dashboard update
Retention Rate	Customer Success Manager	Investigate churn drivers, coordinate improvements

Table 4.6: Roles and Responsibilities for Key Community KPIs

In addition to ownership, the CPAF includes a governance process for managing metric related changes. This process is particularly useful when teams propose new KPIs, change metric definitions, or modify dashboards and data pipelines. Inspired by data governance principles [15], the CPAF encourages a lightweight but structured workflow to ensure transparency and consistency in implementation.

Stage	Description
Initiation	A change request is submitted (e.g., by a Product Owner or Data Analyst).
Impact Review	Technical and strategic feasibility is assessed by a data or platform lead.
Stakeholder Approval	Relevant departments or steering groups review and approve the change.
Implementation	Updates are made to event tracking, ETL logic, or dashboard components.
Documentation	Metric definitions and responsibilities are updated accordingly.

Table 4.7: Example of Change Governance Workflow

The workflow is designed by the author based on synthesized best practices in data governance and the recommendations of Parmenter [22] and DAMA International [15]. This structure balances flexibility with control and enables the CPAF to evolve responsively without compromising metric integrity.

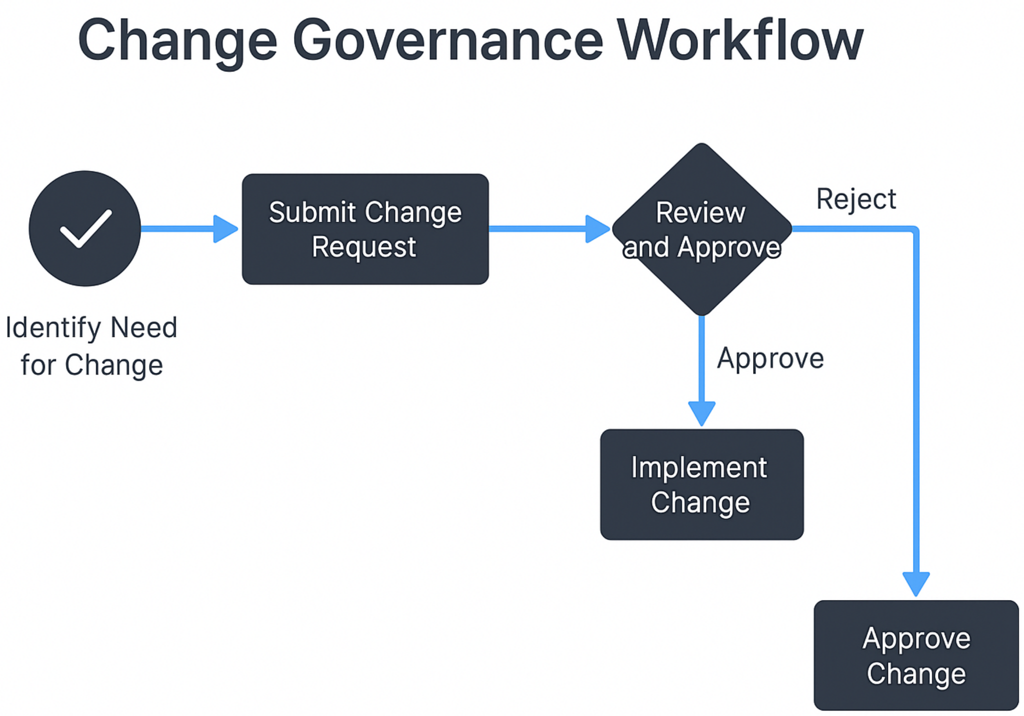

FIGURE 4.2: Change Governance Workflow [22];[15].

4.7.4 Output

This phase results in a documented model for how organizations can institutionalize continuous improvement in KPI monitoring. It provides guidance for future iterations even if no implementation has yet occurred. Moreover, by incorporating monitoring strategies and stakeholder engagement practices into the framework design, CPAF is an adaptable tool for performance measurement and decision-making.

The progressive introduction of complex metrics and analytics tools to users, thus preventing cognitive overload and enhancing long term user adoption and data driven decision making [17]. The four phase of the CPAF presented in this chapter responds to the functional and non-functional requirements identified through literature. Each phase addresses an aspect of the KPI lifecycle, from initial definition to iterative review, while maintaining scalability and organizational adaptability.

The next chapter focuses on the validation of this treatment design, exploring whether the framework meets its intended objectives and is perceived as useful and applicable in a real-world context.

Chapter 5

Treatment Validation

5.1 Introduction

Following the DSRM proposed by Wieringa [30], this chapter evaluates the utility, feasibility, and alignment of the proposed artifact with the needs of its intended users. The validation process focuses on understanding whether organizations such as Open Social can apply the framework effectively.

5.2 Case Study: Open Social

5.2.1 Context

Open Social is a software company specialized in providing community collaboration platforms to organizations worldwide. Their core business revolves around empowering clients to create and manage thriving online communities, enhancing user participation, facilitating meaningful interactions, and supporting long terms member retention.

Open Social has grown in recent years, expanding its customer base and the functionality offered by its platform. However, it identified significant challenges in systematically defining, measuring, and monitoring community performance metrics. These challenges limited its ability to clearly demonstrate value to customers and the potential for strategic product improvements.

5.2.2 Motivation for the project

Open Social expressed the need to improve how they define, monitor, and communicate community platform performance. High-level strategic goals such as improving user engagement, retention, and community health were difficult to translate into measurable indicators that could guide product development, inform customer success strategies, and justify platform improvements.

The CPAF aligns with Open Social's strategic ambitions to strengthen their product offering through enhanced analytics capabilities. By clearly defining and effectively tracking business driven KPIs, Open Social can provide their customers with valuable insights into community growth, user engagement, and retention patterns.

The decision to collaborate on this graduation project was driven by the recognition that structured analytics could significantly improve user experience, enabling data informed product development and better tailored features for clients. Open Social viewed this project as a strategic opportunity to address internal measurement gaps and improve the effectiveness of their platform.

5.2.3 Step 1: KPI Selection and Prioritization

In Open Social, this step was conducted through collaborative workshops with departments including customer success, sales, product, and technology. Stakeholders were first invited to propose KPIs relevant to their team's strategic goals. This was followed by group discussions and a structured prioritization exercise, in which KPIs were evaluated based on their business impact, feasibility, and alignment with the short and long term. The structure of the workshops is shown below.

Workshop: Co-Creation of Insights and KPIs

The goal of the workshops is to identify critical insights, define relevant KPIs, and interpret how these metrics could support decision making in the context of product design and user participation. As mentioned in Chapter 4, workshops are an important tool that can help you learn more about the needs of each stakeholder.

The workshop followed a dynamic structure consisting of three sequential activities. In the first activity, participants shared insights based on their strategic goals and observations from their respective domains. These insights reflected real business needs, such as understanding feature adoption and the progression of users through product paths. In the second activity, participants contributed key performance indicators that could help quantify or validate the previously collected insights. The third and final phase focused on collectively analyzing and interpreting the information gathered. This included grouped insights, recurring themes were identified, and priorities for data tracking were aligned.

The group of participants included individuals from product management, data analysis, business strategy, and design. Their contributions represented a cross-functional perspective and added significant value to the interpretation of results.

Meaningful patterns emerged from the session. Stakeholders expressed a strong interest in understanding how users interact with product features over time and emphasized the importance of tracking adoption rates and retention by user segments. There was particular emphasis on identifying moments of activation and measuring the time it takes for users to derive value from the product. Additionally, participants highlighted the need to tailor analytics tools and dashboards to different roles within the organization, reinforcing the idea that data must be contextual and actionable.

Through this workshop, information was collected on what is important for each area. This demonstrated how tools such as workshops can help gain a deeper understanding of the needs of each stakeholder. It provided a foundation for aligning metrics with stakeholder expectations and emphasized the value of co-creating measurement strategies with end users in mind. A visual summary of the workshop is included in the Appendix 6.4. In addition, Table 5.1 presents the list of metrics resulted after the workshop was conducted.

Category	KPI	Definition	Complexity	Business Value	Score
User Onboarding, Adoption & Retention	Active Users	Users who accessed the platform during a selected time period by logging in, starting a session, or performing actions.	4	9	2.25
User Onboarding, Adoption & Retention	Contributing Users	Users who actively participated in the community by engaging with content during the selected time period.	4	9	2.25
User Onboarding, Adoption & Retention	New Registrations	Users who completed the account registration during the selected time period.	3	9	3.00
User Onboarding, Adoption & Retention	User Churn Rate	Percentage of previously active users who became inactive.	3	9	3.00
User Onboarding, Adoption & Retention	User Cancel Rate	Percentage of users who cancelled or deactivated their accounts.	3	9	3.00

User Onboarding, Adoption & Retention	Reactivation Rate	Percentage of previously inactive users who returned.	4	8	2.00
Network Health & Community Activity	Activity Frequency	Average number of days or sessions a user returns to the platform within a time period.	3	8	2.67
Network Health & Community Activity	Contribution Frequency	Frequency of user participation during a selected period.	3	8	2.67
Network Health & Community Activity	Retention Rate	Percentage of users who return after initial engagement.	3	8	2.67
Network Health & Community Activity	Key Influencers	Identification of highly connected and influential users.	3	8	2.67
Engagement Pyramid	Group & Subcommunity Activity	Breakdown of engagement by group or subcommunity.	6	9	1.33

Table 5.1: KPIs, Definitions, and Assessment for Community Platform Analytics

It is important to note that during the sessions with the various stakeholders, their comments and objectives were taken into account. In collaboration with the Open Social CTO, this table was developed to consider the needs of the sales teams, success managers, and the product team, while also considering the complexity of implementation. For this first phase of the project that Open Social plans to carry out, it was crucial to prioritize KPIs based on two factors: the complexity and time required by the technical team to implement each initiative, and the impact it would have on Open Social's business objectives. Taking a practical approach, only the most relevant metrics were selected based on the company's priorities. This approach is also recommended for any organization looking to initiate a similar project and use the CPAF.

Open Social was previously developed a pyramid model, figure 5.1, to illustrate the relationship between the intensity of user engagement (represented on the vertical axis) and the number of users involved (represented on the horizontal axis). This model helped the organization visualize and assess the relative importance of different types of community interactions. Based on this framework, Open Social was able to prioritize its business goals more effectively, aligning them with the levels of engagement most critical to its platform strategy. A brief explanation of the pyramid model is provided below.

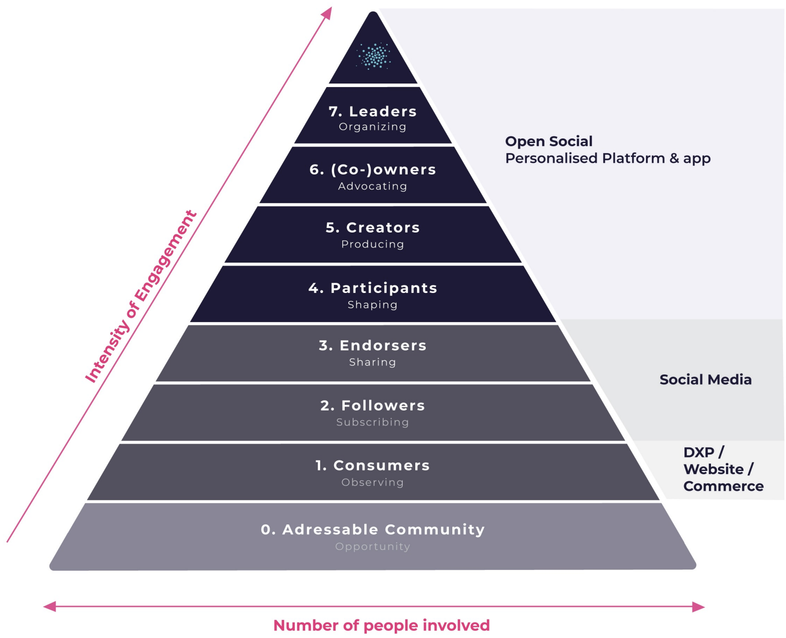

Figure 5.1: Open Social Engagement Pyramid
[28]

As mentioned above, the score column of Table 5.1 was calculated by considering the complexity and an estimate of the time required by the technical team to implement each initiative and the impact it would have on Open Social's business objectives. The impact was calculated based on the pyramid, complexity, and time, in consultation with the technical team.

Community Role	Description
Base of the Pyramid (0. Addressable Community)	This is the largest group. It represents the potential audience or community that could be engaged—people who are simply an opportunity.
Consumers (Observing)	These people are starting to engage. They consume content by observing without actively interacting.
Followers (Subscribing)	They go a step further by subscribing to updates or channels, showing a bit more commitment.
Endorsers (Sharing)	These individuals begin to share content with others, helping to spread the message.
Participants (Shaping)	Participants actively contribute by giving feedback, participating in discussions, and helping shape the community.
Creators (Producing)	Creators take on an even more active role by producing content themselves.
Owners (Advocating)	These are highly engaged individuals who advocate for the community and may act as co-owners of the community's success and mission.
Leaders (Organizing)	At the top, leaders take on the role of organizing, leading initiatives, and driving the community forward.

Table 5.2: Community Participation Pyramid: Roles and Engagement Descriptions

The Pyramid shows that lower levels (0-2) interact mainly through Digital Experience Platforms, Websites, and Commerce platforms, while middle levels (3-4) engage through Social Media, and higher levels (5-7) use Open Social personalized platforms and apps for deeper, more customized engagement. This pyramid served as a starting point for Open Social calculating the score.

5.2.4 Step 2: KPI-to-Metric Translation

During this step, shared definitions were established to ensure consistent interpretation across all stakeholder groups. For example, terms such as "retention" were collectively clarified to avoid ambiguity and ensure alignment in understanding. Collaborative sessions were conducted to evaluate the feasibility of the prioritized KPIs from both technical and architectural perspectives. Each KPI was deconstructed into its necessary data components, specifying what should be tracked, how frequently the data should be collected, and the systems from which it should originate. Once these elements were identified, metric definitions were formalized to guarantee that measurements would remain consistent across different teams, thereby promoting organizational alignment and clarity.

As part of this phase, each selected KPI was carefully analyzed to determine its technical requirements. This involved identifying specific data points, metadata attributes, and event types necessary for an accurate computation. These activities were carried out in close collaboration with Open Social's CTO and the product analytics team. For instance, the "Engagement Rate" KPI was operationalized as the ratio of user interaction events, such as likes, comments, and posts, to the total number of active users within a given time period. Likewise, the "Monthly Active Users" KPI was defined using unique user identifiers combined with timestamp activity logs.

The outcome of this phase was a mapping table, detailing how each KPI could be translated into measurable technical metrics. Table 5.3, provides a reference for implementation and ensures alignment between business goals and the platform's analytical capabilities.

KPI Name	**Definition**	**Metric Formula**	**Required Data / Events**
Active Users	Users who accessed the platform during a selected time period by either logging in, starting a new session, or performing an action that indicates an active session is ongoing (e.g., page view, content view, search, etc.)	Unique active users	User ID, Session/Event Timestamps
Engagement Rate	Measures how frequently users interact with the platform.	Interactions / Active Users	Event Type (posts, comments, likes), User ID
Average Session Duration	Tracks time spent per user session.	Total session time / Number of sessions	Session Start and End Timestamps
Retention Rate	The percentage of users who return to the platform and remain active over time after their initial engagement	Returning users / Users registered within a period of time	User ID, Registration Date, Activity Logs
Churn Rate	The active users who became inactive over a defined time period	Inactive users in a period / Total users at start of period	User ID, Last Seen Timestamp
New Registrations	Users who completed the account registration or sign-up process during the selected time period, thereby creating a new user profile in the system.	Count of new user accounts	Event type, User ID, Time, Actor ID, Product (CSM, Web tracker), Platform

TABLE 5.3: Core KPIs with Definitions, Metric Formulas, and Required Data

5.2.5 Step 3: Data Infrastructure and Architectural Planning

The current Open Social architecture shown in Figure 5.2 is based on a distributed containerized infrastructure deployed across three availability zones. Each zone includes core components such as incoming gateways, API coordinators, and agents. Data and data coordination management systems are hosted within customer project containers, and the platform relies on components such as Redis, MYSQL, Sols, and Kafka, and RabbitMQ for real time and content delivery capabilities.

While this setup supports robust delivery of content and real time interaction, it lacks an integrated analytics layer designed for community KPI tracking.

Currently, performance measurement is fragmented and does not systematically track engagement, retention, or growth KPIs in real time. There is also limited capacity to translate business goals into actionable metrics using existing infrastructure components.

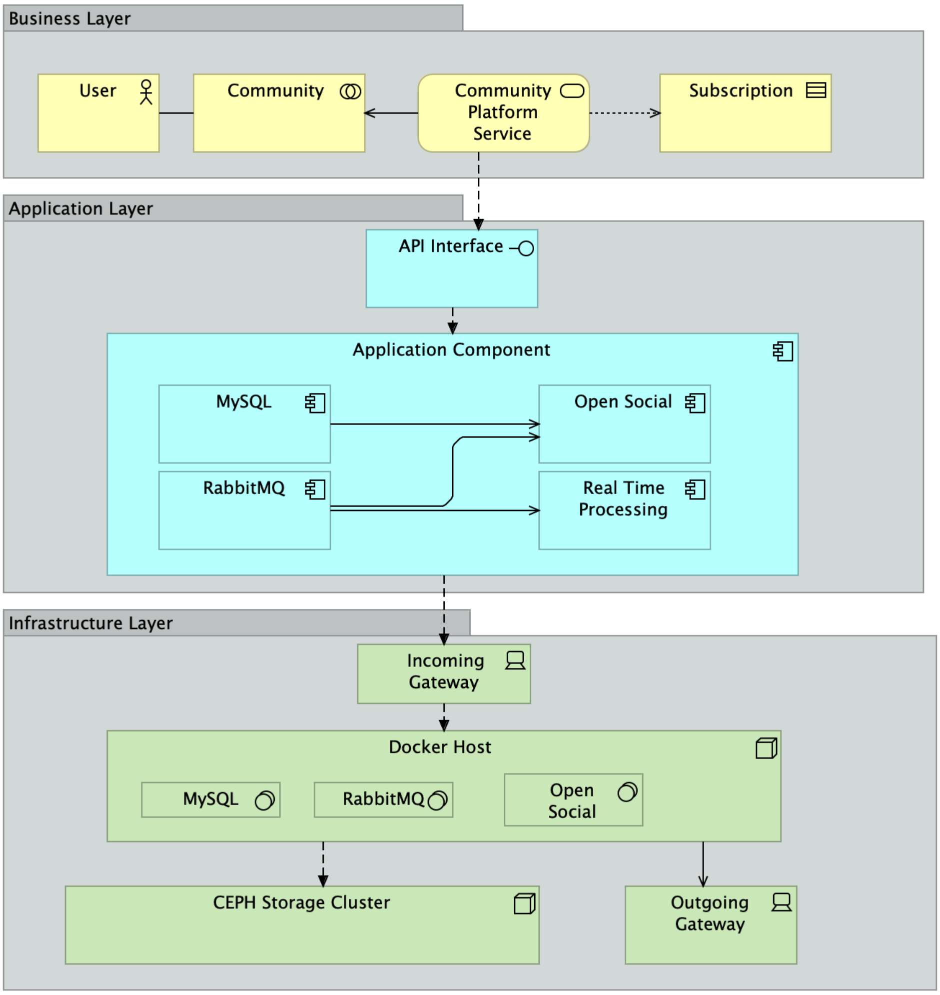

FIGURE 5.2: AS-IS Architecture

Target Architecture (TO-BE)

Through collaborative sessions with technical stakeholders at Open Social, a conceptual architecture was designed to support the implementation of the CPAF. The proposed architecture takes into consideration both the functional and non-functional requirements outlined in Chapter 4, particularly the need for scalability, technical feasibility and support for real time KPI monitoring. The use of open-source technologies was an Open Social requirement.

The architecture introduces a structured data flow that begins with the collection of platform events related to user interaction, such as logins, contents creation, collaboration, and engagement behaviors. These events are captured in real time through an event driven model and ingested directly into a database.

ClickHouse was selected as the database engine due to its performance in processing large volumes of event data. It provides scalable querying capabilities and supports computation of historical metrics.

For visualization, Grafana was chosen to serve as the primary dashboard tool, integrated with ClickHouse, it enables stakeholders to monitor real time activity, explore historical trends, and interpret insights aligned with business objectives. Grafana's flexibility and open-source nature also support customization across different user roles and reporting needs.

Although not yet implemented, the architecture anticipates the future integration of Apache Flink to enhance real time stream processing and dynamic metric aggregation. This addition would enable more advanced analytical capabilities, such as anomaly detection and low latency continuous metric updates.

The overall architecture ensures coherence between the CPAF and the existing Open Social infrastructure, while also offering a clear path for future scalability. Using open-source components and aligning with clearly defined business and technical needs, the TO-BE architecture not only supports the measurement of KPIs, but also establishes a robust foundation for continuous improvement in community platform analytics.

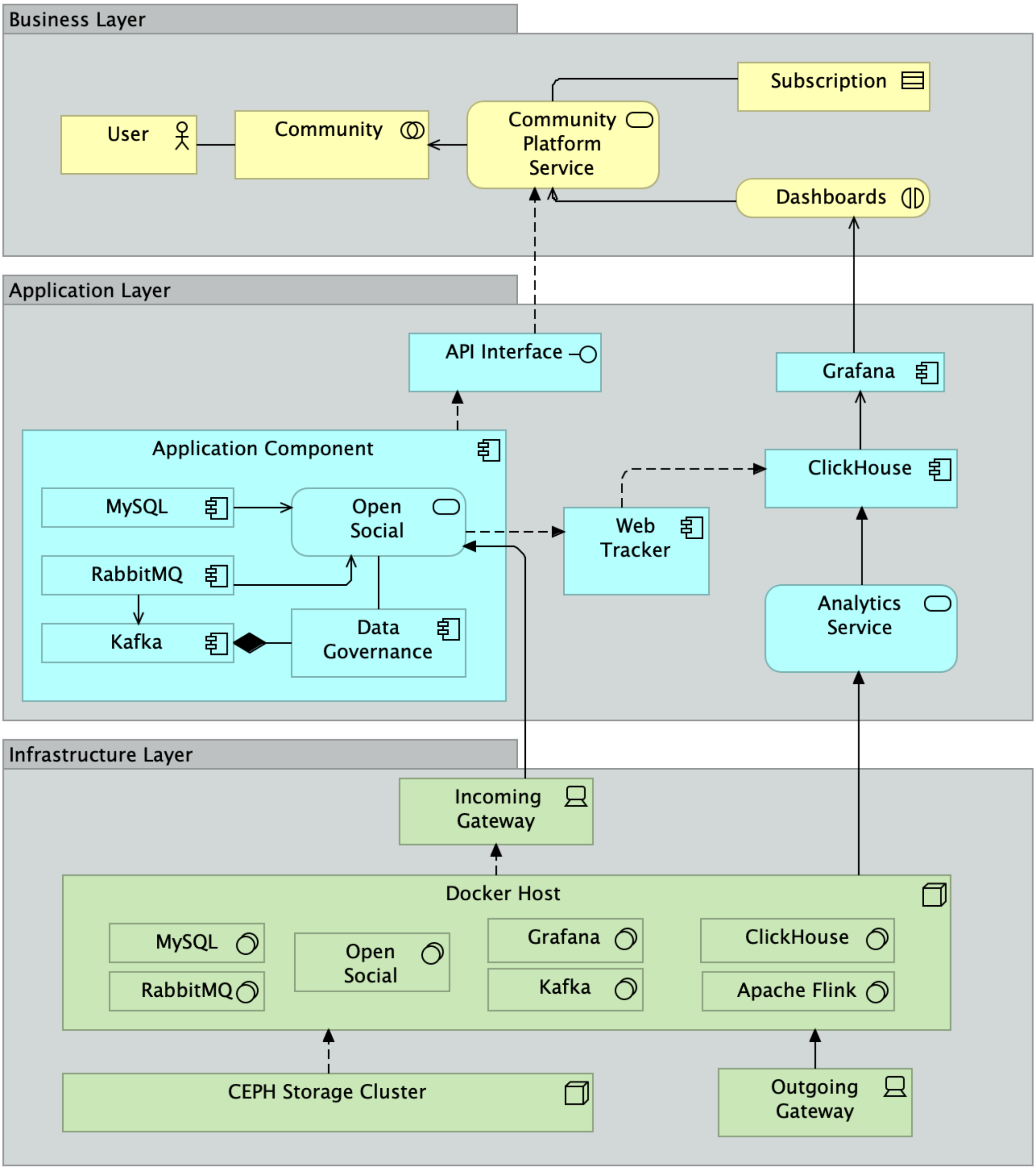

FIGURE 5.3: TO-BE Open Social Architecture

5.2.6 Step 4: Monitoring, Analysis, and Continuous Improvement

The final phase of the CPAF proposed a continuous loop of KPI monitoring, metric refinement, and feedback integration. This last phase was validated through practical activities and tools implemented in the organizational context, each mapped to the recommendations outlined in Section 4.7.2.

Dashboard Monitoring (Prototype)

A dashboard prototype was developed using Grafana to visualize potential KPIs. While the dashboard structure is still evolving, this initial prototype served to demonstrate the feasibility of real-time metric visualization and stakeholder accessibility. An illustrative snapshot of the dashboard interface displaying KPIs is shown in 5.4.

FIGURE 5.4: Prototype Grafana Dashboard for CPAF Monitoring

Review Cycles and Stakeholder Check-ins

To support continuous check-ins and performance updates, a dedicated Slack channel was created to share project milestones, metric revisions, and deployment updates with cross-functional stakeholders. Figure 5.5 shows part of the content shared in this channel. This channel also served as a space to gather ongoing feedback and questions, enhancing transparency and reinforcing the participatory aspect of the CPAF.

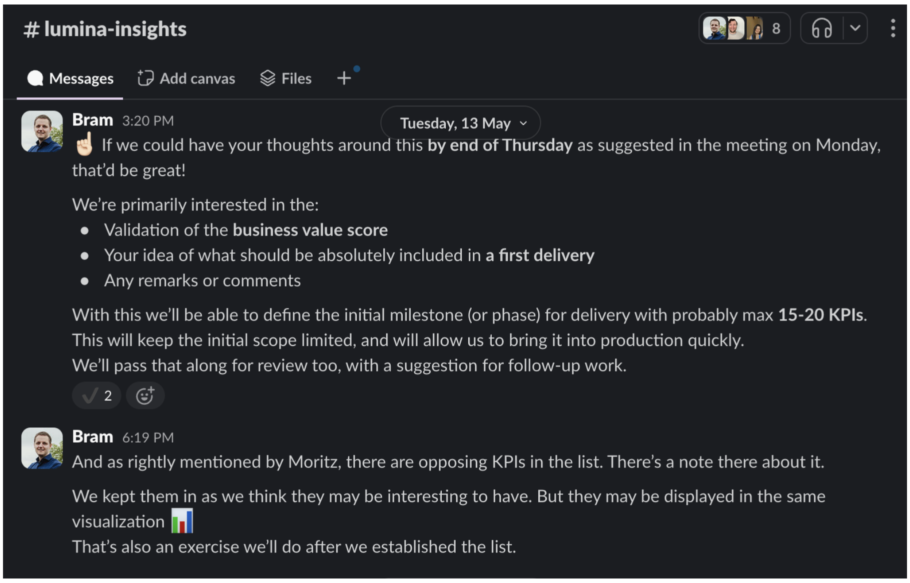

Figure 5.5: Internal Slack Channel

Refinement and Change Governance

Metric and dashboard related changes were documented and tracked following the organization's internal governance process. Change requests were submitted and managed through Jira tickets, including descriptions of the proposed changes, rationale and approvals. Figure 5.6 shows complementary documentation maintained in Slite, offering more extensive narrative records and implementation context. This structure supports traceability and reinforces the governance and ownership principles embedded in the CPAF.

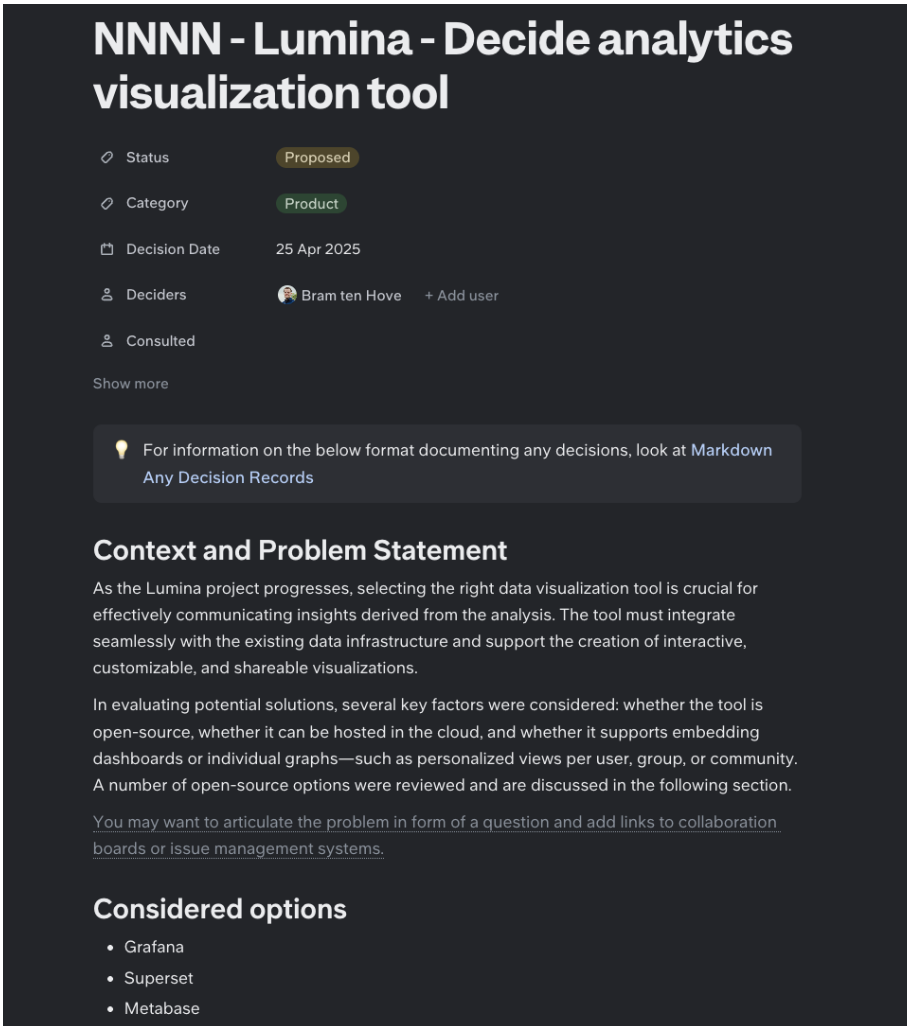

Figure 5.6: Example Change Governance Structure on Slite

Feedback Integration

To integrate external user perspectives, a short survey was distributed to clients using the Open Social Community Platform. The survey explored which metrics clients consider most relevant for evaluating community health, engagement, and content effectiveness. As shown in Figure 5.7, clients tend to prioritize metrics centered on user engagement, interaction with content, and recurring usage. This insight validated the need for flexible dashboards and meaningful, context-based metric definitions.

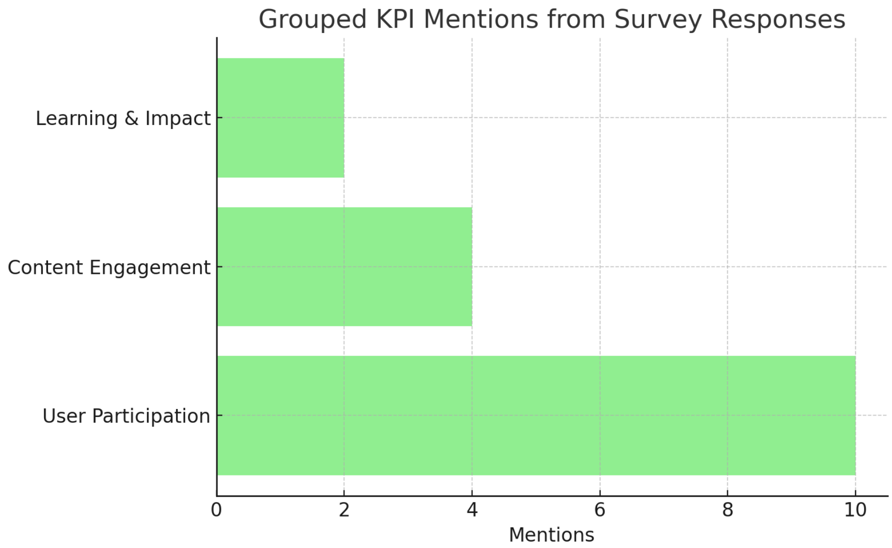

FIGURE 5.7: Summary of Client Survey on Community Metrics

The combination of visual monitoring, structured change workflows, and feedback contributes to a sustainable and adaptive analytics system. Notably, the existence of a formal documentation and approval process already in place suggests that the governance and ownership model required by the CPAF is realistically attainable and, in this case, already institutionalized.

5.3 Validation of Treatment Objectives

This section evaluates the extent to which CPAF meets the treatment objectives defined in Chapter 4, based on stakeholder feedback and the framework validation activities performed in Open Social.

Objective 1: Provide a structured, practical, and scalable approach to defining, translating, and monitoring KPIs for community platform engagement, growth, and retention.

Stakeholders from across departments (Customer Success, Product, and Sales) confirmed that the CPAF offered a clear and structured process for defining KPIs aligned with business goals. The phased approach helped teams organize and prioritize performance indicators relevant to user growth, engagement behavior, and retention dynamics. Its modular structure also allowed for flexible adaptation depending on the maturity level of the community or client project, making the framework scalable in real-world applications.

Objective 2: Translate KPIs into measurable metrics through a systematic and technically feasible method.

The second objective was addressed in Phase 2 of the framework, where abstract KPIs were translated into concrete, measurable metrics. Technical stakeholders (CTO and technical staff) validated the proposed formulas and data requirements as realistic and actionable. The use of mapping tables made this process transparent and reproducible across different KPI categories allowing a closely collaboration among teams.

Objective 3: Create a scalable and open analytics infrastructure based on open-source technologies.

The architecture proposed in CPAF was recognized as scalable and well aligned with Open Social's technical stack. Stakeholders noted that the framework's emphasis on modular components such as event tracking, processing pipelines, and open source visualization tools ensured flexibility and cost efficiency. The open source first approach was seen as a strategic advantage for long-term sustainability and easier integration.

Objective 4: Enable continuous monitoring and iterative improvement of community analytics practices.

The final objective was validated through stakeholder feedback on the monitoring phase. Teams appreciated the inclusion of dynamic dashboards, review cycles, and stakeholder involvement loops. The framework's emphasis on iteration and feedback allowed for dynamic tracking of community metrics and enabled responsive adjustments over time, which was considered essential for evolving platform and user needs.

Stakeholders at Open Social found the framework applicable and relevant, particularly due to its modular design, and ability to connect strategic goals with measurable outcomes. While the validation was limited to one organization and a conceptual scope, the results suggest that CPAF holds promise for broader implementation and future refinement.

Although the validation remained conceptual and organizational, it demonstrated that the CPAF is well positioned for future implementation and iterative refinement. The next chapter presents a broader synthesis of findings, outlines recommendations, and identifies the direction for future research and development.

Chapter 6

Conclusions

This thesis presented the design and validation of the CPAF, a structured approach to help organizations define, translate, and monitor KPIs related to community platform performance. Developed using the DSRM, the framework responds to the strategic and technical challenges identified in the SLR and in the context of the company Open Social.

The CPAF was built around four phases: KPI definition and prioritization, KPI-metric translation, architecture design, and continuous monitoring. The validation results showed that CPAF is perceived as practical, scalable, and adaptable. It provides a guideline to help align business goals with technical analysis. While the framework has not been implemented in production, it sets a foundation for doing so in future stages.

6.1 Answers to Research Questions

Main Research Question

How can business driven KPIs be translated into measurable metrics within a CPAF to effectively monitor growth, engagement, and retention in community platforms?
The CPAF provides a structure, phased approach to translate strategic business goals into operational metrics that can be implemented and monitored through a scalable analytics data infrastructure. The framework addresses this challenge by guiding stakeholders through KPI definition, metric translation, architecture design, and continuous monitoring. The validation chapter shows that CPAF is perceived as useful and adaptable for real-world applications.

Sub-RQ1: What are the most relevant KPIs for business stakeholders in community platforms?
Through a literature review and workshops with stakeholders from Customer Success, Sales, and Product, many key KPIs were identified. These include Active Users, Engagement Rate, New User Registrations, Retention Rate, and Churn Rate. These KPIs were prioritized collaboratively to reflect strategic priorities and were used as the foundation for metric translation in later phases of the framework in the case of Open Social.

Sub-RQ2: How can business KPIs be translated into measurable technical metrics?
The project demonstrated that abstract KPIs can be translated into operational metrics by identifying specific data points, and metadata. This was achieved through mapping exercises involving business and technical stakeholders. For example, "Engagement Rate" was translated into a ratio of total interactions per active user, supported by event data on posts, likes, and comments.

Sub-RQ3: What types of data architecture are commonly used to support the collection and analysis of engagement metrics in community platforms?
A review of architectural patterns revealed that modern analytics pipelines typically involve event-driven data collection, stream/batch processing, centralized storage, and dashboard layers. The proposed architecture in CPAF reflects these principles by integrating tools for analytical storage and for visualization.

Sub-RQ4: How can a Community Platform Analytics Framework be designed to align business KPIs with measurable technical metrics?
The CPAF was designed using insights from prior research questions and validated iteratively with stakeholders. Its four phases KPI Definition, KPI-to-Metric Mapping, Architecture Design, and Continuous Monitoring together create a repeatable process for aligning strategy with measurement.

Sub-RQ5: To what extent do stakeholders consider the proposed framework useful and applicable?
Stakeholder validation showed that CPAF is perceived as both relevant and actionable. Feedback from multiple departments highlighted the value of its structure, the clarity of activities in each phase of the framework to help in defining KPIs, and metrics, and the flexibility of its technical components. While not yet fully implemented, the framework is seen as a strong foundation for improving KPI monitoring and supporting strategic decision-making in community platforms.

6.2 Contribution

This thesis project contributes, from a scientific perspective, to the development of a theoretically grounded framework that addresses a documented challenge in community platform management: alignment of strategic KPIs with measurable technical metrics. Based on a SLR and following the principles of DSRM, the CPAF expands existing knowledge on how organizations can bridge the gap between business objectives and operational data analysis. Furthermore, CPAF demonstrates how semantic alignment, governance mechanisms, and a modular architecture can be combined into an applicable design artifact that can be adapted to empirical validation.

On a practical level, the framework provides organizations with a structured framework to define, translate, monitor, and continuously improve their KPIs, strengthening transparency, collaboration, and data-driven decision making. By integrating real-time dashboards, assigning accountability roles, and a defined change governance flow, the CPAF lays the foundation for a sustainable and adaptable analytics ecosystem. This practical tool makes it easier for organizations to effectively track the growth, engagement, and retention of their community, directly supporting customer satisfaction and product development goals.

6.3 Limitations

While the validation of the CPAF provided insights and confirmed its alignment with stakeholder needs, there are several limitations to acknowledge:

Limited External Validation: Primary validation activities were conducted within a single organizational context (Open Social). Although feedback was collected from internal stakeholders and a survey was designed for clients, a larger validation would be necessary across multiple organizations to generalize the applicability of the framework.

No Technical Implementation: This research did not include the full technical implementation of the framework. Although feasibility was discussed and validated in concept, real-world deployment could uncover integration challenges or unforeseen constraints.

Subjective Feedback: Much of the validation relied on qualitative feedback from workshops and meetings. While insightful, this feedback can be influenced by organizational culture or stakeholder bias.

Time constraints: The duration of the project limited the opportunity for longitudinal evaluation. Consequently, the impact framework on long-term community performance, adoption, and sustainability remains untested.

Evolving Platform Needs: Community platforms and stakeholder expectations evolve rapidly. Some requirements or priorities identified during this project can change over time, requiring future adaptation of the CPAF.

Despite these limitations, the framework establishes a foundation for structured KPI management and provides a foundation for future implementation and improvement efforts.

6.4 Future Work

Future work may focus on several directions. First, full technical implementation of the framework would provide deeper insights into its operational feasibility, integration challenges, and real-time performance. A pilot deployment within Open Social or a similar organization could help evaluate dashboards, data flows, and review loops in a live setting.

Second, expanding the validation across different organizations using the Open Social platform would provide more generalizable evidence of the relevance of the framework. The results of the survey and the interviews with external users could offer broader insight into which KPIs are the most valued in different sectors.

Finally, further research could focus on automating KPI suggestion or personalization based on community context or user behavior, making CPAF even more adaptive and intelligent over time.

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Appendix Additional Data Tables

Category	KPI	Data Source	Query Natural Language	Product	Tool	Event(s)
User Onboarding, Adoption & Retention	Active Users	Community Management	How many users accessed the platform during the selected time period, based on login events?	CMS	Web Tracker	User login, Page view
User Onboarding, Adoption & Retention	Contributing Users	Community Management	How many users actively contributed to the platform during the selected time period by creating or interacting with content?	CMS	Events	Post created, Comment added, Reaction given, Content uploaded
User Onboarding, Adoption & Retention	New Registrations	Community Management	How many new users completed the registration process during the selected time period?	CMS	Events	User registration completed, profile created, timestamp
User Onboarding, Adoption & Retention	User Churn Rate	Community Management	What percentage of users who were previously active have not returned to the platform within a set time window?	Kafka	Events	Last activity timestamp, No login after defined time window
User Onboarding, Adoption & Retention	User Cancel Rate	Community Management	What percentage of users manually deactivated or cancelled their accounts?	Kafka	Events	Account deactivation, cancellation event, status change logs
User Onboarding, Adoption & Retention	Reactivation Rate	Community Management	What percentage of users previously marked as inactive returned to the platform?	CMS	Events	Login or activity event after inactivity
Network Health & Community Activity	Activity Frequency	Web Tracker	How often do users return to the platform, based on distinct active sessions or login events?	CMS	Web Tracker	Login events, timestamp differences, repeat session logs

Network Health & Community Activity	Contribution Frequency	Community Management	How frequently are users contributing content over time, based on timestamps?	CMS	Events	Post created, comment added, file uploaded, timestamped events
Network Health & Community Activity	Retention Rate	Community Management	What percentage of users return after their initial engagement?	CMS	Events	User login, session start, session end, user ID tracking.
Network Health & Community Activity	Key Influencers	Community Management	Who are the users with the highest influence based on engagement metrics?	CMS	Events	Post engagement, follower count, shares, comments, reactions.
Engagement Pyramid	Group & Subcommunity Activity	Community Management	How active are different groups or subcommunities based on participation and content creation?	CMS	Events	Group activity, content posted in groups, membership actions

TABLE .1: Data Sources, KPIs, and Queries for Community Platform Engagement

Appendix Survey: Community Analytics Survey for Open Social Platform Clients

Section 1: General Information

1. What type of organization do you represent?
2. How long have you been using the Open Social platform?

Section 2: Understanding Your Community Goals

1. What are your main goals for managing a digital community platform?
2. What type of insights would help you determine if your community is successful?
3. How important is it for you to track the following aspects of your community?
   - Member growth
   - Engagement
   - Content effectiveness
   - Retention / churn
   - Event participation
   - Community health overall

Section 3: Content and Engagement

1. What signals help you understand whether your content resonates with the community?
2. What content related insights would you like to receive on a regular basis?

Section 4: Feedback on KPIs

1. If you could track only three metrics to guide your community strategy, which would they be?
2. Would you like to customize your dashboard based on your preferred KPIs?
3. Is there anything else you wish you could measure or better understand about your community?

Appendix Stakeholder Workshop Visual Summary

The following figure presents a visual summary of the stakeholder workshop conducted during the validation phase of this thesis. It captures the structure of the three main activities, insight collection, KPI identification, and interpretation of results, and documents the contributions made by participants. The collaborative map reflects the diversity of perspectives by professionals from product, analytics, and sales team.

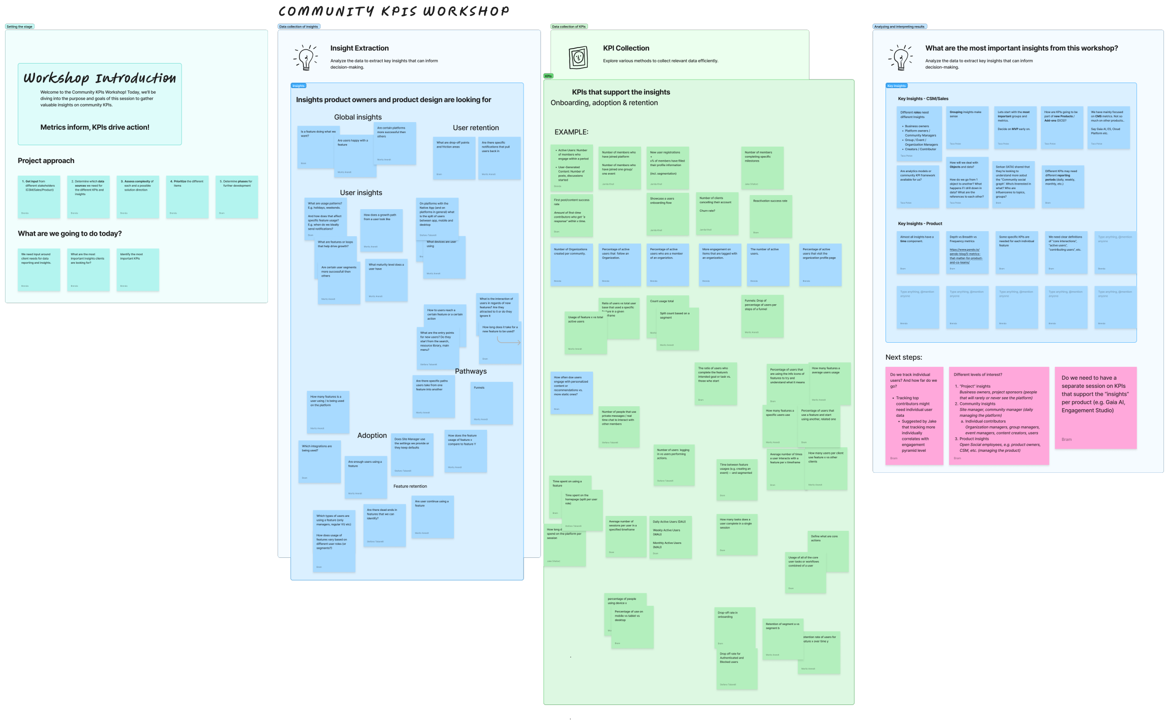

Figure 1: Collaborative board generated during the stakeholder workshop