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Assessing Corporate Communication Alignment with Stated Goals Using Large Language Models

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Abstract

In the contemporary business landscape, the alignment between a company's stated goals and its self-reported practices is crucial for maintaining corporate integrity and trust. This bachelor thesis investigates the application of Large Language Models (LLMs) to analyze and evaluate this alignment through automated text analysis. Leveraging the capabilities of the GPT-4 model, the study addresses three key research goals: extracting and standardizing company goals, assessing the alignment of these goals with the company's self-published articles, and developing a standardized scoring system for alignment.

A conceptual framework was developed and validated with experiments against three financial institutions—ING, ABN AMRO, and Deutsche Bank. The results revealed varying degrees of alignment in areas such as customer-centricity, sustainability, and risk management, demonstrating that the model is able to extract principles and analyze the alignment of those principles with self-published articles. ING demonstrated strong alignment in customer-centricity, but weaker sustainability practices. ABN AMRO showed strong customer-oriented growth alignment but lacked in sustainability and risk management. Deutsche Bank exhibited high alignment in leveraging technological advancements and risk management but poor alignment in sustainability.

These findings highlight the utility of LLMs in extracting principles and analyzing alignment, confirming their relevance in enhancing corporate transparency, accountability and demonstrate the potential of LLMs to enhance corporate governance by identifying alignment gaps between stated goals and self-published articles.

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1 Introduction

In today’s business world, people are paying a lot of attention to whether companies are actually doing what they say they will do. Stakeholders, including investors, customers, and regulators, increasingly demand greater transparency and accountability [Jamali et al., 2008]. As a result, businesses must demonstrate how their actions align with their declared principles to maintain corporate integrity, trust, and ensure long-term sustainability [Doorey, 2011, Fung, 2014]. The progression of artificial intelligence (AI) technologies, and in particular Large Language Models (LLMs), presents a novel opportunity to enhance the evaluation of this alignment by automating the analysis of vast amounts of textual data.

Large Language Models, such as OpenAI’s GPT-4, have shown significant promise in processing and generating human-like text based on extensive training datasets [Devlin et al., 2019, Brown et al., 2020]. These models can extract meaningful insights from large corpora of text, making them suitable for applications in various domains, including business analytics, content generation, and sentiment analysis. Leveraging LLMs for analyzing corporate communications can provide a systematic approach to assessing how well a company’s self-published articles reflect its stated goals. This offers a scalable solution to monitor and improve corporate governance and social responsibility, highlighting the importance of the topic in today’s corporate world.

Earlier studies have demonstrated the utility of LLMs in processing large volumes of text and generating structured outputs [Devlin et al., 2019, Brown et al., 2020]. This capability aligns with societal relevance as businesses increasingly rely on automated systems for large-scale text analysis. Such systems could possibly improve transparency and accountability by aligning corporate actions with stated goals. The conceptual framework underpinning this research hypothesizes that LLMs can effectively extract and evaluate principles from textual data, identifying areas of alignment and gaps between corporate goals and practices.

The scientific relevance of this research lies in its potential to advance the application of AI in corporate governance. By providing a proof of concept for using LLMs to evaluate goal alignment, this study contributes to the broader field of AI-driven business analytics. It offers insights into how automated text analysis can enhance transparency, accountability, and strategic planning in corporate settings. The primary aim of this research is to explore the application of LLMs in analyzing the alignment between a company’s declared goals and its publicly available self-published articles.

This study employs an experimental approach to demonstrate the feasibility and benefits of using LLMs to assess corporate goal alignment. By focusing on three prominent financial institutions, ING, ABN AMRO, and Deutsche Bank. The research provides a proof of concept for using LLMs to enhance transparency and accountability in corporate communications. The anticipated outcome is that LLMs will effectively identify areas of strong alignment and highlight gaps, offering valuable insights for corporate strategy and communication. Moreover, the findings are expected to underscore the potential of LLMs in improving corporate governance through enhanced transparency and accountability.

1.1 Thesis Overview

This research explores how Large Language Models (LLMs) can be used to check if a company’s stated goals match its publicly available self-published articles. The thesis is divided into several

sections that together provide an analysis of the research conducted, the methods used, and the findings obtained.

Section 2 – This section reviews existing literature related to LLMs, alignment methods, and corporate communication strategies. It helps to understand the current state of research in these areas and identifies gaps that this thesis aims to address.

Section 3 — This section outlines the main objectives that the research aims to achieve, as well as the research questions.

Section 4 – Here, the main idea behind the research is introduced, explaining the theoretical background and a framework for extracting principles and alignment analysis.

Section 5 – This section details the initial exploratory experiments conducted to find and extract company-stated goals. It discusses the system prompts used, the translation of goals into principles using both top-down and bottom-up approaches, and the alignment-prompt finding using metaprompting. The process of finding self-published articles and conducting alignment analysis is also described, along with suggestions for improvement.

Section 6 — This section details the intermediate exploratory experiments, describing the further iterative process.

Section 7 – Building on the initial experiments, this section presents the findings of the final iteration, on which the Proof of Concept system will be built. It includes enhanced methodologies and improved processes for alignment analysis.

Section 8 — This section provides an overview of the identified system that could be used for principle extraction and alignment analysis.

Section 9 – This section presents the experiments conducted on three prominent financial institutions: ING Bank, ABN AMRO, and Deutsche Bank. Detailed analyses for each institution are provided, showing the application of the proof of concept system and the results obtained.

Section 10 – The final section summarizes the key findings of the research, evaluates the connection to the conceptual framework, and discusses the limitations of the study. It also outlines potential areas for future work and provides a final conclusion on the effectiveness of LLMs in analyzing and evaluating the alignment of corporate goals with self-published articles.

By addressing these areas, this thesis aims to contribute to the field of AI-driven business analytics and enhance understanding of how LLMs can be used to improve corporate governance and communication strategies.

2 Background and Related Work

The study of alignment between a company’s stated goals and its publicly available self-published articles on the company website intersects various domains including Large Language Models, corporate communication strategies, and brand integrity. A review of the literature in these areas is essential to contextualize this research and to identify the existing methodologies and their respective strengths and limitations. This section provides an overview of the significant contributions in the field, with a particular focus on strategic management issues, how alignment acts as a strategic enabler and utilization of LLMs.

2.1 The Strategy and Execution Gap

This section discusses the discrepancies often observed between a company’s strategic objectives and its operational realities, highlighting how strategic goals are not always effectively realized. A key reference for this topic is Hrebiniak’s work [Hrebiniak, 2005], which outlines key factors such as poor communication and unclear responsibilities that contribute to this gap.

The strategy and execution gap involves complex challenges such as the misalignment between strategic planning and daily activities, stemming from ineffective communication and ambiguity in roles and responsibilities. To bridge this gap, communication frameworks, clear role definitions, and alignment with organizational culture are crucial.

In concluding this section, it becomes clear that strategic alignment plays a pivotal role in bridging the strategy and execution gap. The following section 2.2 discusses this role in greater detail, specifically focusing on how corporate communication strategies and brand integrity support the successful execution of strategic plans.

2.2 Alignment as a Strategic Enabler

Alignment between a company’s stated goals and its public communications is crucial for ensuring the effectiveness of corporate strategies. This section treats alignment not just as a component of strategic management, but as an enabler that helps bridge the aforementioned strategy and execution gap.

2.2.1 Corporate Communication Strategy

Corporate communication strategies determine how an organization communicates its goals and values, ensuring coherence and consistency across all channels. This strategic focus is crucial for driving the organization towards its goals, effectively resonating with and engaging stakeholders [Steyn, 2000]. The integration of these strategies with the organization’s broader objectives creates a coherent narrative that supports strategic positioning and operational effectiveness.

2.2.2 Brand Integrity in Corporate Communications

Brand integrity involves credibility, promise fulfillment, and trustworthiness, which are key to consumer perception and effective corporate communication. Transparency in marketing communications, as highlighted by Cambier [Cambier and Poncin, 2020], acts as a credible signal of brand integrity, influencing consumer empowerment and aligning with ethical standards and goals.

In summary, aligning corporate communications with strategic goals is important for maintaining narrative integrity and achieving strategic objectives. This alignment supports the execution of strategies by ensuring that public narratives reflect strategic intentions, thus bridging the gap between strategy formulation and operational execution.

In conclusion, this section underscores the significance of strategic alignment as a critical enabler in corporate communications, directly addressing challenges outlined in the strategy and execution gap and highlighting the integral role of LLMs in facilitating this alignment.

2.3 Corporate Social Responsibility Disclosure

Corporate Social Responsibility Disclosure (CSR D) has become a key part of corporate communication strategies, showing a company’s commitment to ethical practices and sustainability. This section examines the role of CSR D in corporate communications, focusing on how it aligns with a company’s strategic goals and public image, based on recent literature and regulatory frameworks. This analysis is relevant to this research because it explores the connection between corporate strategy and communications, explaining how companies balance maintaining a positive public image while achieving their strategic goals. Additionally, the use of Language Model-based systems (LLMs) can further reveal patterns and trends in CSR D, providing valuable insights for both academic research and industry practice.

2.3.1 Importance of CSR D in Corporate Strategy

CSR D serves as both a regulatory requirement and a strategic tool that companies utilize to build trust and enhance their market image. In an era where stakeholders are increasingly concerned with environmental, social, and governance (ESG) issues, effective CSR D is pivotal for maintaining brand integrity and stakeholder engagement. The strategic relevance of CSR D has been emphasized in the works of scholars such as Porter and Kramer, who argue that proactive CSR practices can lead to a competitive advantage [Porter and Kramer, 2006]. Additionally, the regulatory landscape, which includes directives such as the EU’s Non-Financial Reporting Directive (NFRD), underscores the growing importance of transparent CSR practices [Union, 2014].

2.3.2 Application of LLMs in CSR D

LLMs hold potential to significantly enhance the analysis of CSR D content, ensuring alignment with strategic objectives related to sustainability and the veracity of disclosed practices. LLMs can assist in identifying discrepancies between stated CSR goals and outcomes as presented in public reports, thus offering insights into the consistency and authenticity of CSR narratives. Researchers like Obschonka and Audretsch highlight the capabilities of LLMs in parsing and synthesizing large datasets, which can be instrumental in monitoring CSR communications across multiple platforms [Obschonka and Audretsch, 2020].

2.3.3 Challenges and Opportunities

The application of LLMs in CSR D presents unique challenges, including the complexity of understanding diverse regulatory requirements and the nuances of non-financial reporting. However, these challenges are accompanied by significant opportunities to enhance the accuracy and efficiency of CSR reports. Potential automation of data collection and analysis could lead to improved compliance with CSR standards and more dynamic stakeholder communication [Canhoto and Clear, 2020].

In conclusion, the integration of CSR D into the analysis of corporate communication strategies using LLMs offers a comprehensive view of how companies communicate their core values and commitments to stakeholders. This integration is crucial for ensuring that public narratives accurately reflect a company’s strategic intentions and operational realities in the realm of corporate responsibility. The continued development of methodologies leveraging LLMs for CSR D analysis will

be vital in advancing both academic research and practical applications in corporate sustainability practices.

2.4 Large Language Models

In addressing the alignment of corporate communications with strategic goals, LLMs have the capability to perform text analysis. This subsection explores how LLMs such as GPT-4, BERT, and T5, trained on vast corpora of text data, leverage deep learning techniques to understand and produce coherent text. Their applications extend to automated text generation, translation, summarization, and sentiment analysis [Devlin et al., 2019, Brown et al., 2020], providing the technological backbone for deeper analyses in corporate settings.

LLMs excel at capturing contextual information within text, employing attention mechanisms to enhance text comparison capabilities [Vaswani et al., 2023]. This is vital for efficiently processing large volumes of text across languages [Conneau et al., 2020], making them essential for global corporate communication analysis.

Despite their capabilities, LLMs require substantial computational resources and their performance depends heavily on the quality of training data. The complexity of their architectures and potential biases in data handling must be carefully managed to avoid perpetuating existing biases [Bender et al., 2021]. Additionally, the risk of hallucination, where the models generate plausible but incorrect or nonsensical information, poses a significant challenge.

In conclusion, LLMs present a powerful tool for text analysis, setting the stage for their application in strategic corporate management contexts, particularly in examining the alignment of corporate communications.

3 Research Goals

The primary objective of this research is to develop and validate a standardized methodology utilizing LLMs to evaluate the alignment between a company's publicly declared goals and the content of its self-published articles on the company website. This investigation seeks to fill a critical gap in the assessment of corporate alignment, particularly in the domains of public relations and communication, which are often overlooked in traditional evaluations like ESG ratings and financial analyses.

3.1 Research Objectives

Specifically, the research aims to:

1. **Develop methodologies for standardizing company goals:** Utilize the capabilities of LLMs to translate stated company goals into a coherent set of standardized principles or topics that can be consistently analyzed across various companies.
2. **Assess the alignment between stated goals and published content:** Apply LLMs to systematically analyze how well the content of a company's self-published articles adheres to its stated objectives. This involves comparing the standardized topics derived from company goals with the themes and messages presented in public communications on the company website.

3. **Create a metric system for alignment evaluation:** Design a scoring or metric system that quantifies the degree of alignment between company goals and public narratives. This system will be based on criteria developed through the research, which will ensure that the evaluation is both comprehensive and adaptable to different corporate contexts.
4. **Contribute to corporate accountability and transparency:** By providing a tool to gauge alignment, the research aims to enhance corporate accountability and encourage transparency, enabling stakeholders to make more informed decisions based on how consistently a company communicates and acts in accordance with its declared ambitions.

This research is pursued with the expectation that a more nuanced and standardized evaluation of company alignment will not only contribute to academic discourse but also provide practical tools for investors, regulators, and the public to assess corporate integrity and ethical consistency more effectively.

3.2 Research Questions

Understanding the alignment between a company's stated goals and its publicly available communications is pivotal for ensuring corporate transparency and accountability. This research aims to explore how advanced AI technologies, particularly LLMs, can facilitate this alignment analysis. By leveraging LLMs, this study seeks to develop methodologies for extracting and evaluating the consistency between a company's declared objectives and its external communications. The following research questions guide this inquiry:

Main Question

How can existing Large Language Models be effectively applied to analyze and evaluate the alignment between a company's stated goals and its publicly available self-published articles on the company website?

The main research question addresses the overarching goal of this study: to explore the potential of LLMs in systematically assessing the congruence between a company's articulated objectives and the narratives presented in its public communications. This question encompasses the core challenge of identifying and bridging gaps between corporate intentions and their perceived manifestations.

Sub Question 1

How can existing LLMs be utilized to extract a company's stated goals from official documents, and translate these goals into standardized principles or topics for consistent analysis?

Sub-question 1 focuses on the initial step of the alignment analysis process. It investigates the capabilities of LLMs in accurately extracting and interpreting a company's stated goals from various official documents. Furthermore, it explores the transformation of these goals into a set of standardized principles or topics, which are essential for subsequent alignment assessments. This question addresses the methodological foundation required for an analysis.

Sub Question 2

Once a company’s goals are standardized into principles or topics, how can LLMs be applied to analyze the alignment between these principles and the company’s publicly available self-published articles?

Sub-question 2 dives into the application of LLMs in the actual alignment analysis. It examines how these models can be used to compare the standardized principles derived from a company’s stated goals with the content of its publicly available articles. The focus here is on developing a systematic approach for identifying consistencies and discrepancies, thereby providing insights into the degree of alignment.

Sub Question 3

Can existing LLMs be leveraged to develop a standardized scoring or metric system for alignment, and what foundational criteria would be essential for its formulation?

Sub-question 3 addresses the need for quantifying the alignment between stated goals and public communications. It explores the potential of LLMs to create a standardized scoring or metric system that objectively measures the alignment. This question also seeks to identify the foundational criteria necessary for formulating such a metric, ensuring that it is comprehensive, reliable, and applicable across different contexts.

Together, these research questions aim to establish a framework for using LLMs to enhance corporate transparency and accountability by systematically evaluating the alignment between a company’s declared goals and its public-facing communications.

4 Conceptual Framework

The alignment of company mission and strategy with self-published articles is a critical area of research, providing insights into how organizations communicate their core beliefs and strategic objectives to external stakeholders. This section presents the overarching framework that guides this study, detailing the key components and methodologies employed to assess and improve corporate governance and strategic planning.

4.1 The Big Picture

While core of this research focuses on the alignment of company mission and strategy with self-published articles, this research can be interpreted in a more broad sense as this alignment analysis can occur between any component of corporate communication, actions, and even reputation as Figure 1 indicates. In Figure 1 the importance of alignment between a company’s core beliefs and its operational practices is emphasized. This alignment directly influences how external stakeholders perceive the company. It highlights the need for transparency and consistency in both internal and external communications to build and maintain a positive reputation.

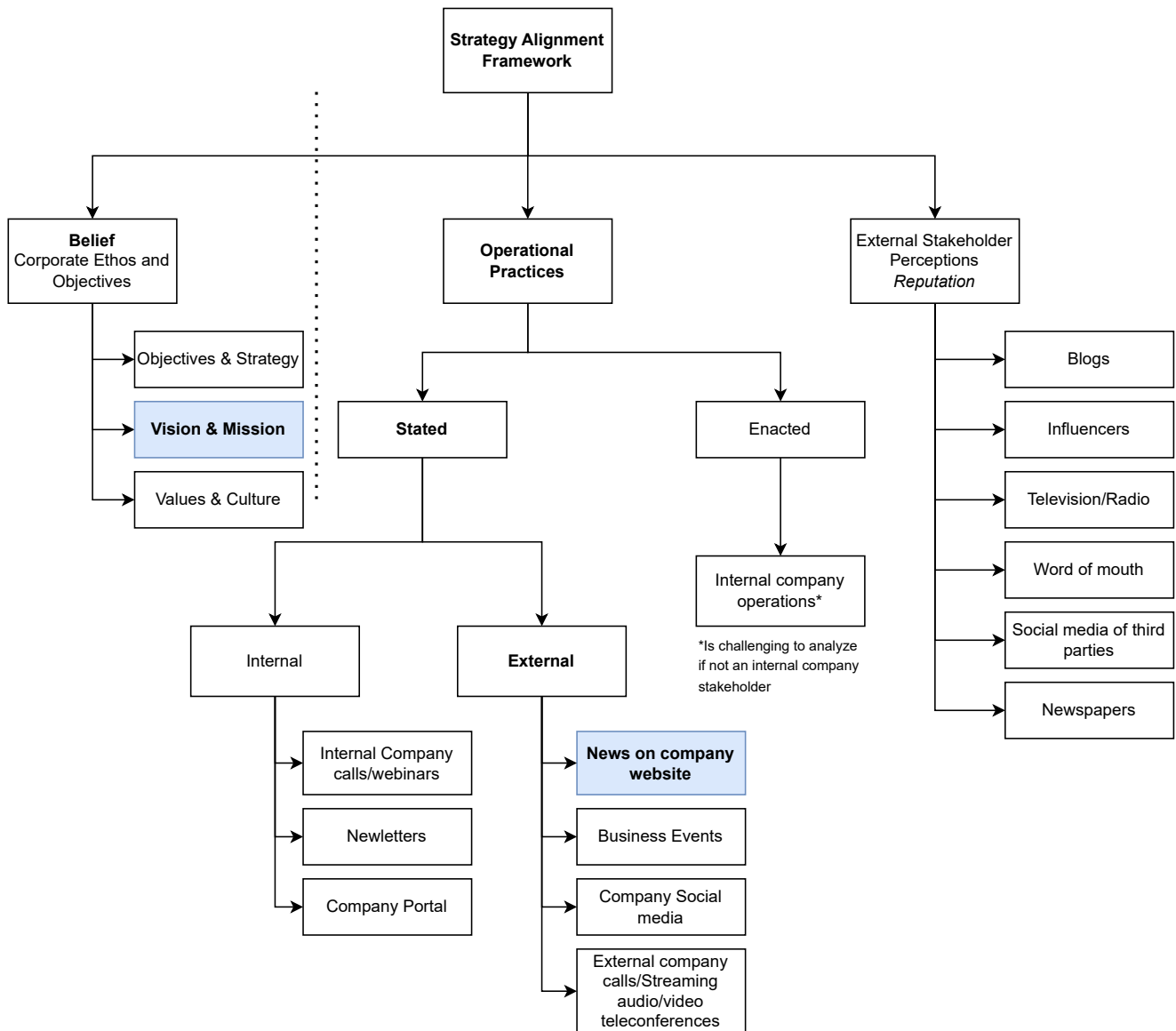


Figure 1: Conceptual model of Strategy Alignment Framework: how companies see, shape and are viewed. Highlighted in blue are main focal points of this research.

The development of the Strategy Alignment Framework presented in this study was informed by an examination of existing literature on corporate governance, strategic planning, and stakeholder theory. The framework integrates key concepts from these domains to provide a comprehensive model that shows the relationship between a company’s core beliefs, operational practices, and external stakeholder perceptions.

4.1.1 Literature Review and Theoretical Foundation

Corporate governance and strategic planning form the foundation of the framework. These principles emphasize the importance of aligning organizational mission, vision, and strategy with operational practices. This alignment is critical for ensuring consistency and coherence in corporate actions, which in turn enhances organizational transparency and accountability. The significance of strategic alignment in achieving long-term organizational success is highlighted by key sources in strategic management, including the works of Porter [Porter, 1980] and Mintzberg [Mintzberg, 1994].

Stakeholder theory, as posited by Freeman [Freeman, 1984], asserts that organizations must consider the interests and perceptions of all stakeholders, not just shareholders. This theory underpins the 'External Stakeholder Perceptions' component of the framework, emphasizing the need for organizations to actively manage and communicate with a diverse array of stakeholders, including employees, customers, investors, and the broader public. Insights from Clarkson [Clarkson, 1995] and Mitchell, Agle, and Wood [Mitchell et al., 1997] illustrate how stakeholder perceptions can be shaped by organizational actions and communications.

4.1.2 Framework Development

The conceptualization of the Strategic Alignment Framework involved several key steps.

The first step was to identify the core components that would comprise the framework. Drawing from the literature, three primary components were delineated: Belief, Operational Practices, and External Stakeholder Perceptions. These components capture the essence of how organizations articulate their ethos, implement their strategies, and are perceived by external entities.

Each primary component was further broken down into subcomponents to provide a more granular understanding. For instance, the 'Belief' component includes the company’s corporate ethos, objectives, vision, mission, and values, which collectively form the foundation of its strategic direction. The 'Operational Practices' component is divided into 'Stated' and 'Enacted' practices, reflecting the distinction between formal declarations and actual operations. This detailed breakdown ensures a comprehensive understanding of how each component contributes to the overall strategic brand framework.

4.2 Research Method Development

The translation of company stated goals into principles using LLMs, such as OpenAI’s GPT-4, involves the application of meta-prompting techniques to generate an executive prompt. This process facilitates the systematic extraction and standardization of goals, enabling a coherent framework for subsequent analysis. An important aspect of this method is its potential for automation, allowing for alignment analysis across many published articles if necessary.

Two distinct approaches will be employed in this translation process: the top-down approach and the bottom-up approach.

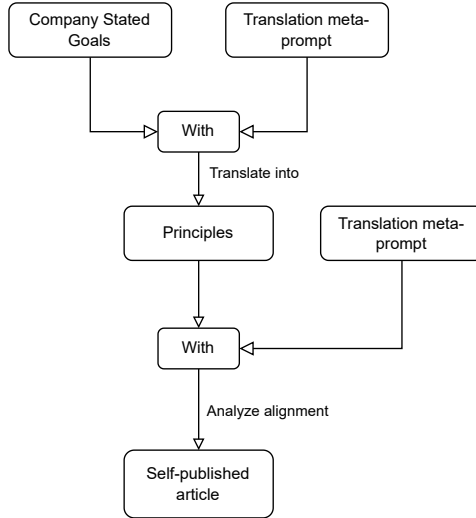


Figure 2: First iteration of the main idea of translation and analysis of alignment.

- **Top-Down Approach:** This method will utilize a predefined set of principles, such as Sustainable Development Goals, OECD Guidelines, ISO 26000 and UNGC principles, to map the stated goals. By aligning company goals with these universally recognized standards, the aim is to ensure consistency and comparability across different corporate contexts.
- **Bottom-Up Approach:** In contrast, the bottom-up approach will leverage the capabilities of LLMs to generate a set of principles directly from the stated goals. This method allows for a more organic and context-specific extraction of principles, reflecting the unique strategic priorities and values of the company.

The suggested first workflow for translating company stated goals into principles and subsequently analyzing their alignment with self-published articles is illustrated in Figure 2. This figure outlines the iterative process of using translation meta-prompts to derive principles, which are then used to evaluate the alignment with publicly available corporate communications. The automation potential of this method is key, enabling comprehensive alignment analysis across multiple documents efficiently.

Meta-prompting techniques will be used to identify effective prompts for the LLM, both for the extraction of principles and for the alignment analysis. This is crucial because well-crafted prompts are essential to ensure that the LLM can accurately interpret and translate the stated goals into meaningful principles, as well as correctly assess the alignment of these principles with the company’s public communications.

In the top-down approach, the company’s stated goals are translated into principles using a predefined framework, such as the SDGs, ensuring that the goals are mapped to a standard set of principles. This approach provides a structured and universally applicable method for aligning corporate goals with broader societal objectives.

In the bottom-up approach, the principles are generated directly from the company’s stated goals. This method leverages the advanced text generation capabilities of LLMs to derive principles that

are specific to the company’s strategic context, offering a customized and detailed interpretation of the goals.

This model development happens iteratively, starting with an initial exploration to refine the methods and approaches. Each iteration aims to improve the accuracy and relevance of the translation and alignment processes. The results of each iteration will inform subsequent refinements, ensuring that the final model is both robust and reliable.

After the final iteration, a proof of concept system will be presented that demonstrates the practical application of this methodology. This system will showcase how effectively the combined top-down and bottom-up approaches can be used to evaluate the alignment between a company’s declared objectives and its public communications. By integrating these approaches, the research aims to develop a comprehensive methodology for evaluating the alignment between a company’s declared objectives and its public communications. This dual approach not only enhances the robustness of the analysis but also ensures that the translation of goals into principles is contextually relevant.

5 Exploratory Experiments: First Iteration

The goal of the first iteration of our exploratory experiments was to establish a foundational methodology for analyzing the alignment between a company’s stated goals and its publicly available self-published articles. This involved identifying effective ways to extract and translate corporate goals into standardized principles, utilizing GPT-4o for various text processing tasks, and developing initial prompts for alignment analysis. Through this process, the aim was to understand the capabilities and limitations of LLMs in this specific application context, setting the stage for subsequent refinements and improvements.

5.1 Finding and Extracting Company Stated Goals

The initial step involves extracting and translating a company’s stated goals from official documents into standardized principles. For this experiment, the Annual Report of the company was utilized, specifically ING’s annual report¹. Although ING does not explicitly state their goals, the stated strategy was extracted, as these terms are often used interchangeably by companies. The strategy from ING’s 2023 annual report (p. 22) was used for this purpose [ING, 2024], visible in Table 1.

5.2 System Prompt

For the following sections, GPT-4o is used through the standard ChatGPT interface with underlying model being gpt-4o-2024-05-13. Notably, GPT-4o tends to provide unnecessary preambles, such as:

GPT-4o: Sure, here’s ...

To ensure more concise and relevant responses, a system prompt was crafted:

¹The data utilized in this analysis (or links to the data) can be found at <https://github.com/alexanderserraris/alignment-analysis-using-gpt>.

Providing customers with a superior experience	Putting sustainability at the heart of what we do
<p>As an organisation, we need to be customer focused – after all, customers are who we’re here for, our reason for being. We want to provide them with the products and services they need: executing payments and other transactions, keeping and managing their money and savings and extending loans and making investments. Our aim is to do all that with an experience that is easy, instant, personal and relevant. We realise that different types of customers have different needs. We can make a difference by helping them to plan for the future and make informed financial decisions, and by providing suitable financial products and customised advice.</p>	<p>We have a role in society to define new ways of doing business that align with economic changes, growth and social impact. Climate change is one of the world’s biggest challenges, threatening societies as we know them today. We’re determined to be a banking leader in building a sustainable future for customers, society and the environment. We want to lead by example by striving for net zero in our own operations. We also want to play our part in the low-carbon transformation that’s necessary to achieve a sustainable future, aiming to steer our financing towards meeting global climate goals and working with clients to achieve their own sustainability goals.</p>

Table 1: ING’s stated goals, extracted from the year report 2023 [ING, 2024].

System: You should only respond with the answer to the prompt. Not with “Sure, here’s ...”

This system prompt was consistently used throughout the exploratory experiments.

5.3 Meta Prompting

Meta-prompting methodology is used in the experiments to craft prompts. This entails that with a high-level prompt, a more detailed prompt is generated by the LLM. This approach is essential for various reasons. Firstly, it simplifies user interaction by employing a zero-shot, task-agnostic framework, thereby making the technology more accessible and user-friendly. Users are not required to provide detailed, task-specific instructions.

Secondly, the effectiveness of meta-prompting has been proven through research and experimentation with models such as GPT-4. This technique significantly outperforms conventional scaffolding methods. By integrating additional functionalities and enhancing the handling of complex tasks, meta-prompting has shown a substantial improvement in LLM task performance [Suzgun and Kalai, 2024].

5.4 Translation into Principles

The first step of the framework encompasses translation of stated goals into standardized principles. The following subsections will provide details on how the first experiments with the Top-down and Bottom-up approaches were executed.

5.4.1 Top-down Approach

There are several sets of standard principles to which most company goals can be mapped, including:

- United Nations Global Compact (UNGC) Principles [[Compact, 2000](#)]
- OECD Guidelines for Multinational Enterprises [[for Economic Co-operation and \(OECD\), 2011](#)]
- ISO 26000 – Social Responsibility [[for Standardization \(ISO\), 2010](#)]
- Sustainable Development Goals (SDGs) [[Nations, 2015](#)]

Using GPT-4o, a prompt structure can be suggested for translating text into standardized principles using meta-prompting. Translation to the UNGC principles are used for the experiment. The detailed process is outlined in Appendix B. This prompt was then employed to map ING Bank’s 2023 strategy to the UNGC principles, as described in Appendix C. GP-4o’s conclusion to this mapping, with the company’s stated goals being Text X, is:

”The company’s statements in Text X demonstrate a strong alignment with environmental responsibilities, suggesting significant commitments to sustainable business practices. However, there are notable gaps in explicitly addressing human rights, labor rights, and anti-corruption measures. Enhancing transparency and specificity in these areas could strengthen their alignment with UNGC principles and ensure a comprehensive approach to corporate responsibility.”

The findings indicate that GPT-4o can accurately map a company’s goals to a standardized framework. However, this approach has its limitations. One significant limitation of employing a fixed framework like the UNGC principles to map a company’s goals is its inherent inflexibility to adapt to unique or evolving corporate priorities. Fixed frameworks are designed to cover a broad spectrum of common corporate responsibilities and may not include emerging topics of importance or niche areas specific to certain industries. Consequently, while they provide a structured approach to assessing alignment with recognized standards, they may overlook or inadequately address novel issues or sector-specific challenges. Additionally, the static nature of these frameworks might lag behind the latest developments in corporate governance, environmental sustainability, and social responsibility, leading to potential gaps in accurately reflecting a company’s current and future commitments. This limitation highlights the need for dynamic method that can capture and evaluate the full range of a company’s objectives and ethical considerations.

5.4.2 Bottom-up Approach

The bottom-up approach dynamically generates a set of principles from the stated company goals. An effective prompt was created using GPT-4o, detailed in Appendix D.

This approach showed that GPT-4o generated principles that cover all main points of ING’s stated strategy. By analyzing the text detailing ING’s commitment to superior customer service and sustainability, GPT-4o was able to extract clear principles such as a ”Customer-Centric Approach” and ”Sustainability and Environmental Responsibility.” These principles directly echo ING’s focus, showcasing the approach’s ability to map organizational goals with strategic principles covering the most important topics. For further experiments, the bottom-up approach is used because of its estimated property to cover all main topics of stated goals.

5.5 Further Steps

The next phase of our exploratory experiments involves several key steps to go on with the alignment analysis of self-published articles.

First, a prompt for assessing the alignment of the list of principles to a self-published article was created using a metaprompting technique. The detailed prompt creation process is documented in Appendix E.

Second, self-published articles were sourced from the company’s website. Each article’s text was manually extracted. For example, articles from ING were accessed at <https://www.ing.com/Newsroom/News>, and their contents were copied and pasted into a CSV file. An example article is provided in Appendix F.

Third, the alignment analysis was performed using the created prompt, the extracted principles, and the article text. This analysis included both qualitative and quantitative assessments, as detailed in Appendix G.

Our preliminary observations indicates that GPT-4o can analyze the alignment of self-published articles with the extracted principles from stated goals, for example for ING’s article ”When every cent counts” [ING, 2024], the analysis showed that the translated principle *Customer-Centric Approach* scored 5 of out 5 points and that *Sustainability and Environmental Responsibility* scored 1 out of 5 points, with both reasonable justifications, which could be seen as a sensible analysis as the article is focused on an innovation that benefits the customer and the article doesn’t touch on any sustainability topics. To further improve automation, it is recommended that GPT-4o provides responses in JSON format, which would enable more structured experiments in future iterations.

6 Exploratory Experiments: Intermediate Iterations

Following the first iteration, several intermediate iterations were conducted to refine the proposed methodology and address the observed limitations. These iterations aimed to improve three main aspects: the accuracy of principle extraction, the consistency of alignment analysis, and the overall efficiency of the process.

To enhance the precision of principle extraction, experiments were carried out with various prompting techniques and feedback loops. This involved iterative adjustments to the prompts, continually refining the approach based on the results obtained.

Improving alignment analysis required the development of more sophisticated prompts that incorporated specific criteria for evaluating alignment. Different scoring mechanisms and justification structures were tested to ensure comprehensive and consistent analysis.

Efficiency enhancements focused on streamlining the process by automating repetitive tasks and optimizing data handling methods. A script was created to automate the translation of goals to principles and the analysis of these principles in self-published articles using OpenAI’s API, significantly reducing manual effort and increasing overall efficiency ².

²The script and data utilized in this analysis (or links to the data) can be found at <https://github.com/alexanderserraris/alignment-analysis-using-gpt>.

7 Exploratory Experiments: Final Iteration Learnings

The final iteration of our exploratory experiments was aimed at addressing the limitations identified in previous iterations and refining our methodology for greater accuracy, consistency, and efficiency. This phase focused on enhancing the automatability of our processes through structured data handling, improving the performance of LLMs by providing explicit examples, and implementing validation mechanisms to ensure the reliability of the generated outputs. The insights gained from this iteration were crucial in developing a scalable and effective pipeline for evaluating the alignment between corporate goals and self-published content, paving the way for practical applications in corporate communications analysis.

7.1 Automatability

To enhance the automatability of our experiments, structured data input and output are essential. This requirement stems from the necessity to maintain consistency and reliability across multiple iterations and analyses. Structured data allows for more effective parsing and processing, which in turn facilitates the automation of aligning company goals with self-published content. By ensuring that the data is formatted in a standardized manner, such as a standard JSON format, LLMs can be leveraged more effectively, reducing the need for manual intervention and minimizing errors.

7.2 Need for Examples

Our experiments indicate that providing explicit examples of output significantly improves the performance of LLMs. When tasked with generating structured output, LLMs tend to produce consistent and reliable results if given clear templates and examples. Without such guidance, the models often produce outputs with varying structures, which complicates the process of automated analysis. Therefore, to achieve uniformity in the responses, it is crucial to present the models with well-defined examples of the desired output format. This approach not only streamlines the alignment analysis but also enhances the reproducibility of the experiments.

7.3 Output Validation

Output validation emerged as a critical step in ensuring the accuracy and reliability of the LLM-generated data. During our iterations, instances were encountered where the model produced JSON outputs that did not conform to the specified format, often including hallucinated or irrelevant content. To mitigate this issue, implementing a validation mechanism for each LLM output-step is necessary. This can involve schema validation techniques to check for structural integrity and the use of logic rules to assess the relevance and correctness of the content. By validating the output at every stage, it is ensured that the data fed into subsequent analyses is both accurate and relevant, thereby enhancing the overall quality and credibility of our findings.

For instance, in one of our iterations, incorrectly formatted JSON was produced by the LLM as shown in [Figure A](#).

Here, the LLM hallucinated, producing content that did not conform to the specified JSON format.

```

{
  "Principles": [
    { // A correctly formatted analysis of principle
      "Principle": "Customer-Centricity",
      "Score": 1,
      "Justification": "A correct justification"
    },
    {
      ...
    },
    { // Not correctly formatted analysis of principle
      "Proposition is marked on embedding understanding and inclusiveness within
      ↪ the workplace and community rather than providing proactive financial
      ↪ advisement. The descriptions mainly concern societal support and rights
      ↪ awareness.": {
        "C": "CommitSimulation",
        "D": {
          "Yes": "ellow-inclusive",
          "Function and chife andRealbones padirecttrateg': ": [
            [
              {
                "535ac": "44Rdirection, core:true, panning \ncome declarmation
                ↪ 10:35pects fundamentally surrounding sustainability or
                ↪ climate objectives in this specific text. There is a focus on
                ↪ social issues related to diversity and inclusion but not
                ↪ environmental sustainability or related strategies."
              },
              // ... more gibberish (intentionally left out)
            ]
          ]
        }
      }
    }
  ]
}

```

Figure 3: An example instance of when GPT-4 output has shown signs of hallucination during the alignment analysis.

7.4 Summary

In conclusion, the final iteration of our exploratory experiments highlights the importance of structured data, explicit examples, and output validation. These elements are critical in leveraging LLMs for analyzing the alignment between a company’s stated goals and its publicly available self-published articles. By addressing these aspects, the automatability, consistency, and reliability of the alignment analysis can significantly be improved. This paves the way for more robust and scalable applications of LLMs in corporate communications research.

8 Proof of Concept System

Building upon the insights gained from the exploratory experiments, a final Proof of Concept (PoC) system was designed to evaluate the alignment between a company’s stated goals and its publicly available self-published articles. The final iteration of this alignment-finding pipeline is illustrated in Figure 4.

The PoC system operates in two sequential main stages: [Company Goal Translation into Principles](#) and [Article Alignment Analysis Based on Principles](#), respectively.

8.1 Company Goal Translation into Principles

In the first stage, the company’s stated goals are translated into standardized principles or topics. This process is facilitated by an LLM, specifically GPT-4, which interprets the goals and converts them into a structured JSON format. The steps are as follows:

1. **Input:** The company’s stated goals are input into the system.
2. **Translation:** GPT-4 translates these goals into principles, following a predefined JSON schema.
3. **Validation:** The output JSON is then validated to ensure it conforms to the schema. If the JSON is invalid, it is sent back for re-translation.

8.2 Article Alignment Analysis Based on Principles

In the second stage, the alignment between the standardized principles and a company’s self-published articles is analyzed. This stage also leverages GPT-4, which scores the alignment and produces a structured JSON output. The process includes:

1. **Input:** A self-published article is input into the system.
2. **Analysis and Scoring:** GPT-4 analyzes the article against the previously defined principles, providing an alignment score and justification for each principle.
3. **Validation:** Similar to the first stage, the resulting JSON is validated for conformity to the schema. Any invalid outputs are corrected through re-analysis.

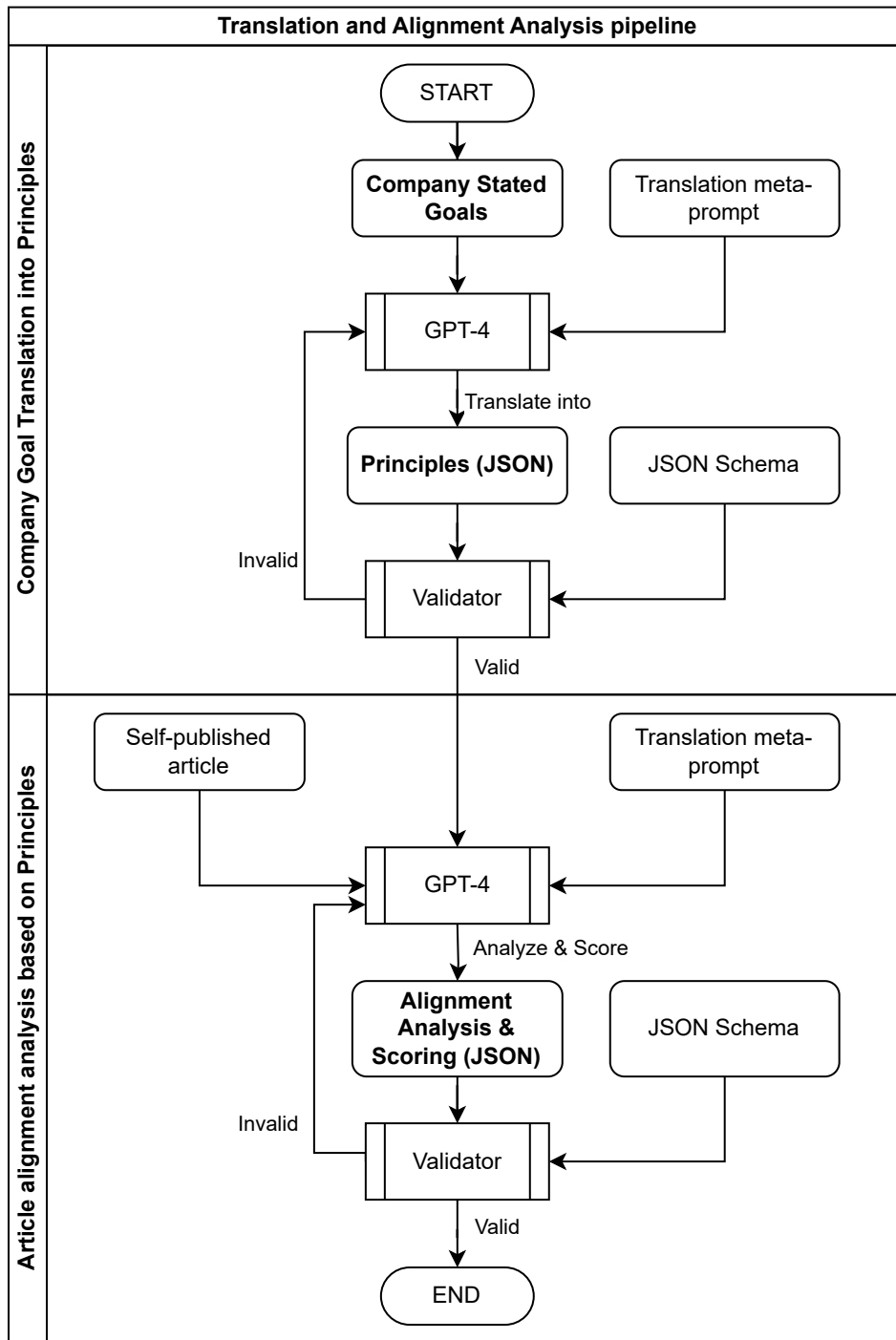


Figure 4: Final iteration of the pipeline to find alignment between a company’s stated goals and a self-published article

This systematic approach ensures a robust and automated method for assessing the alignment between corporate communications and company objectives. By utilizing structured data, providing explicit examples, and enforcing output validation, the PoC system demonstrates the potential for scalable applications of LLMs in corporate communications research. The outlined pipeline reflects the iterative improvements derived from the exploratory experiments, underscoring the importance of structured methodologies in leveraging advanced AI models for practical applications.

9 Experiments

The primary aim of our experiments was to evaluate the effectiveness of using LLMs to automatically evaluate alignment of company-stated goals with self-published articles. This section presents our findings, detailing the processes and outcomes of applying our proof of concept system to various companies.

To achieve this, ten articles were gathered for each of three companies: ING, ABN AMRO, and Deutsche Bank. Articles regarding share buybacks were excluded, as they likely do not align with the companies' goals or extracted principles, and thus would not contribute meaningful data to our research.

Using our proof of concept system, we analyzed the alignment between the articles and the extracted principles for each company 6. The alignment scores were then calculated and evaluated based on the averages for each principle.

Parameters for prompting:

- Model: `gpt-4-turbo-2024-04-09`
- Temperature: 1
- Response_format: `json_object`
- System prompt: `{"role": "system", "content": "Output in JSON format"}`
- User prompt: `{"role": "user", "content": $prompt}`
- `$prompt`: the supplied prompt

9.1 ING Bank

For ING Bank, the principles identified were:

- Customer-centricity in service delivery
- Commitment to hassle-free and personalized customer experiences
- Proactive involvement in financial education and planning
- Leadership in sustainable business practices
- Strategic collaboration for broader impact

Weighted Average Score of Each Principle for ING

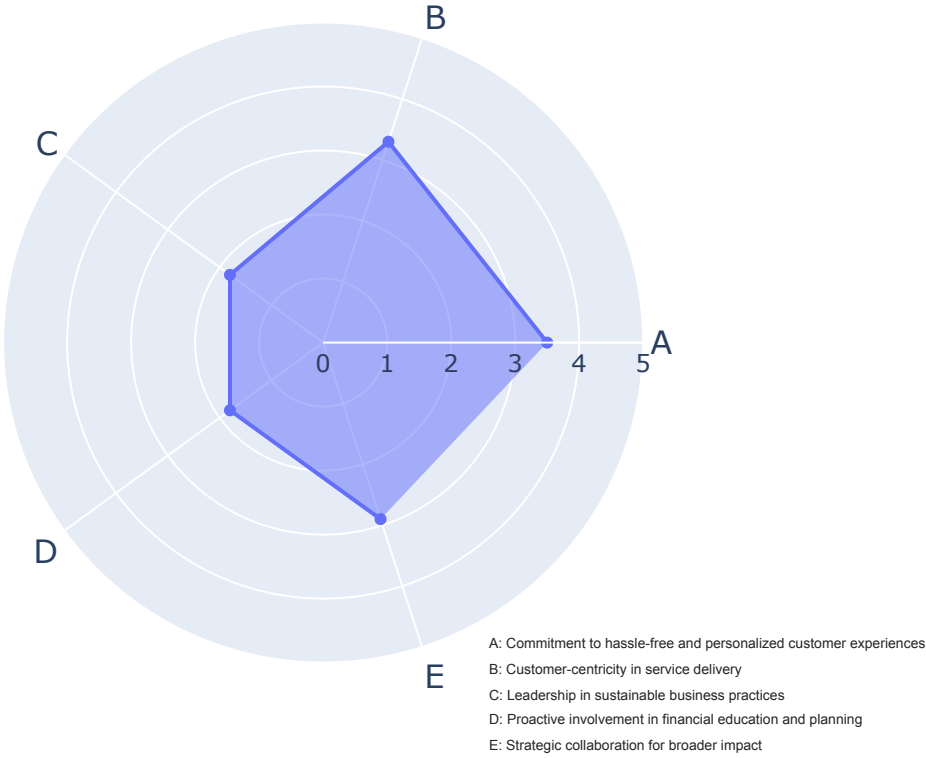


Figure 5: Average alignment score over all identified principles with self-published articles.

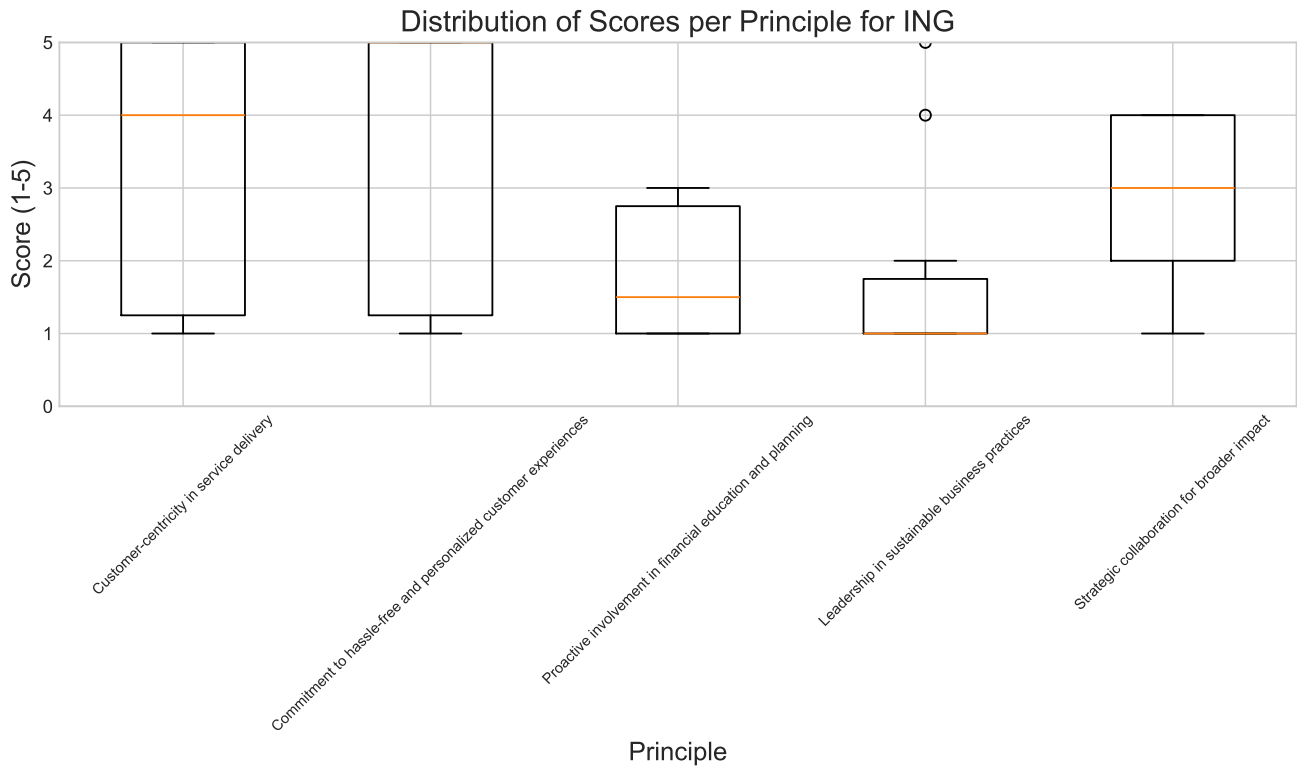


Figure 6: Distribution of scores per principle for ING Bank.

Ten self-published articles from ING were analyzed, scoring their alignment with these principles. The average alignment scores are illustrated in Figure 5.

This figure provides a visual representation of the overall alignment between ING’s self-published articles and the company’s stated principles, demonstrating the effectiveness of LLMs in evaluating such alignment.

Additionally, the distribution of scores per principle is shown in the box plot in Figure 6.

The box plot illustrates the variability in the alignment scores for each principle, offering insights into the consistency of the alignment across different principles. This is crucial for evaluating how well the LLM captures the nuances of the company’s goals in its public communications.

ING’s overall alignment, indicated by the average alignment score across ING’s five principles, is 2.66.

The standard deviation of average scores for ING: 0.81.

The average alignment score provides a single metric summarizing the overall alignment, while the standard deviation indicates the variability of this alignment. These metrics together offer a clear picture of how consistently ING’s articles reflect their stated goals.

Based on a deeper analysis of the alignment scores, we introduce Figures 7 and 8 to provide a granular view of the distribution of scores across two principles for ING Bank. These histograms allow us to observe not only the average level of alignment but also how this alignment is distributed among the articles reviewed. This visualization aids in understanding whether the articles generally show moderate alignment uniformly, or if the average score is influenced by a polarized distribution, where some articles show very low alignment and others high alignment. Such examination of

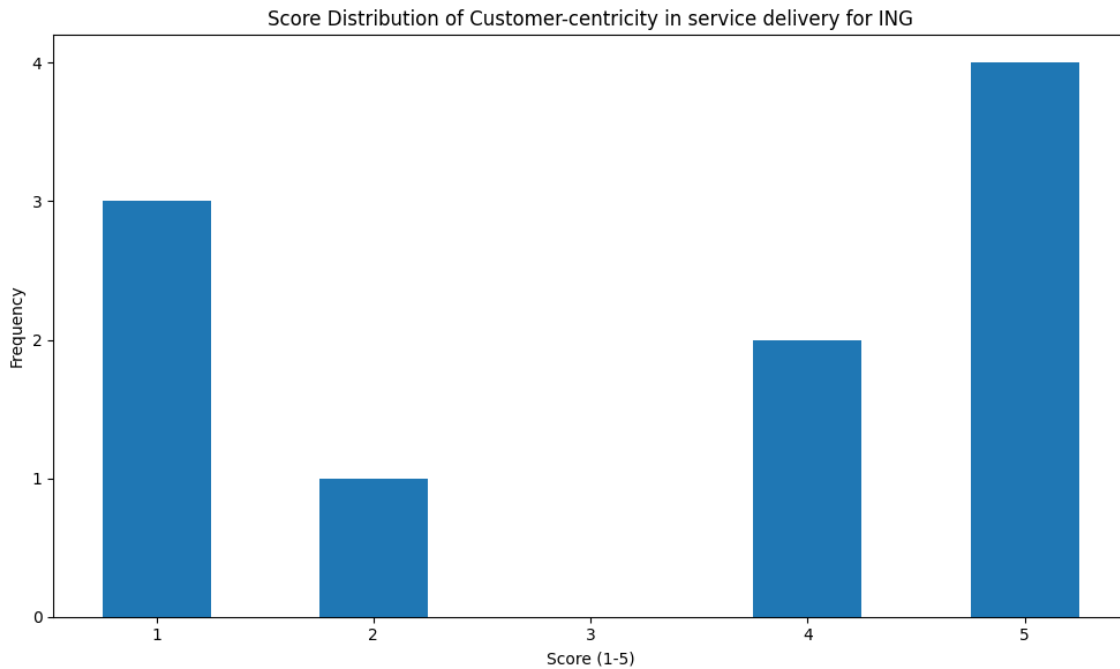


Figure 7: Distribution of scores for principle “Customer-centricity in service delivery” for ING Bank.

score distribution can yield insights into the consistency of principle representation in corporate communications, highlighting potential areas of strength and those needing attention. This approach aligns with our aim to assess not just the presence of principles in the content but the degree to which they are embedded within the communications, thus providing a richer, more nuanced understanding of corporate-principle alignment.

For the principle of “Customer-centricity in service delivery” Figure 7 reveals a bimodal distribution. This indicates a polarized alignment where a significant number of articles either strongly align or do not align with the principle, with fewer articles exhibiting moderate alignment. Such a distribution suggests that while some communications clearly emphasize customer-centricity, others may neglect this aspect, reflecting a potential inconsistency in the application or communication of this principle within the company’s strategy.

In contrast, the Figure 8 for “Leadership in sustainable business practices” displays a right-skewed distribution. Most articles demonstrate low alignment scores, with only a few articles achieving high alignment scores of 4 or 5. This skewness towards lower scores indicates that while ING Bank may occasionally publish articles strongly aligned with sustainable practices, the majority of content does not prominently feature or align with this principle. This pattern could highlight areas where the company might focus more effectively to enhance the visibility and integration of sustainability within its corporate narrative.

These observations from the histograms not only validate the average scores previously discussed, but also enrich our understanding by showing how these averages are constructed from individual article alignments. Such analysis helps in pinpointing specific aspects of communication that may need strategic realignment or more consistent coverage to better reflect the company’s stated principles.

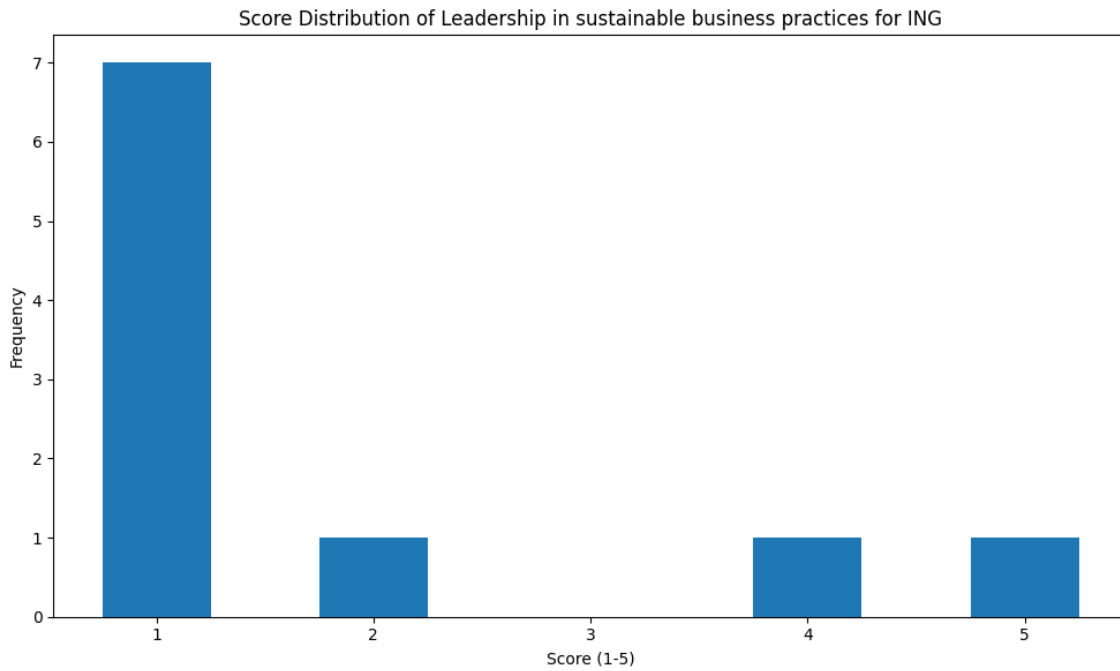


Figure 8: Distribution of scores for principle "Leadership in sustainable business practices" for ING Bank.

An example of the qualitative analysis for ING's article "When every cent counts" is shown in Table 2.

This table provides a qualitative analysis of how a specific article aligns with each principle, demonstrating the granular application of LLMs in evaluating the content against the company's goals. This addressed Sub Question 2 by showing the practical use of standardized principles for consistent analysis.

9.2 ABN AMRO

The principles identified for ABN AMRO were:

- Customer-oriented growth
- Commitment to sustainability
- Future-proofing through efficiency and compliance
- Strategic partnerships and technological advancement
- Risk management and cyber security

Ten self-published articles from ABN AMRO were analyzed, scoring their alignment with these principles. The average alignment scores are illustrated in Figure 9.

Additionally, the distribution of scores per principle is shown in the box plot in Figure 10.

The average alignment score across ABN AMRO's five principles is 2, 4.

Principle	Score	Justification
Customer-centricity in service delivery	4	ING Save Up is designed with features that focus on the customers' needs by simplifying the savings process. It specifically addresses diverse customer preferences by offering unique features for the Belgian market, such as tripling the rounded-off amount and linking savings to a child's account, demonstrating a tailored approach to different customer requirements.
Commitment to hassle-free and personalized customer experiences	5	The service is specifically designed to be easy to use and hassle-free, as evidenced by the automatic transfer of rounded-off amounts into savings accounts and the ability to manage the service via an app or Home'Bank. Additionally, linking savings to a child's account provides a personalized experience tailored to customers with families.
Proactive involvement in financial education and planning	3	While ING Save Up primarily focuses on facilitating savings by rounding up transactions, it indirectly supports financial education by encouraging the habit of saving. However, there is no direct mention of providing advice, support, or planning tools that more comprehensively address financial literacy and planning.
Leadership in sustainable business practices	1	There is no indication in the text that ING's Save Up program includes elements related to sustainability or environmental considerations. The focus is primarily on personal financial management without a clear link to sustainable business practices.
Strategic collaboration for broader impact	2	Although ING has introduced similar savings programs in other countries, indicating some level of strategic collaboration, there is no explicit evidence in the text of partnerships or collaborations aimed at achieving broader sustainability or other societal goals through the Save Up feature itself.

Table 2: Example instance of alignment analysis and scoring of ING's article: "When every cent counts" with translated principles from ING's goals.

Weighted Average Score of Each Principle for ABN AMRO

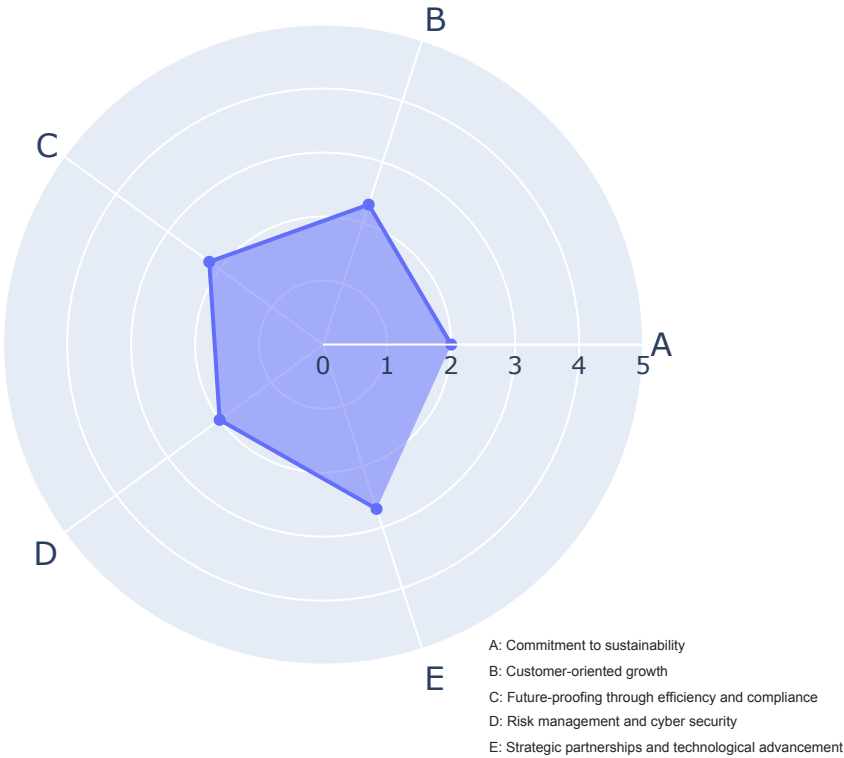


Figure 9: Average alignment score over all identified principles with self-published articles.

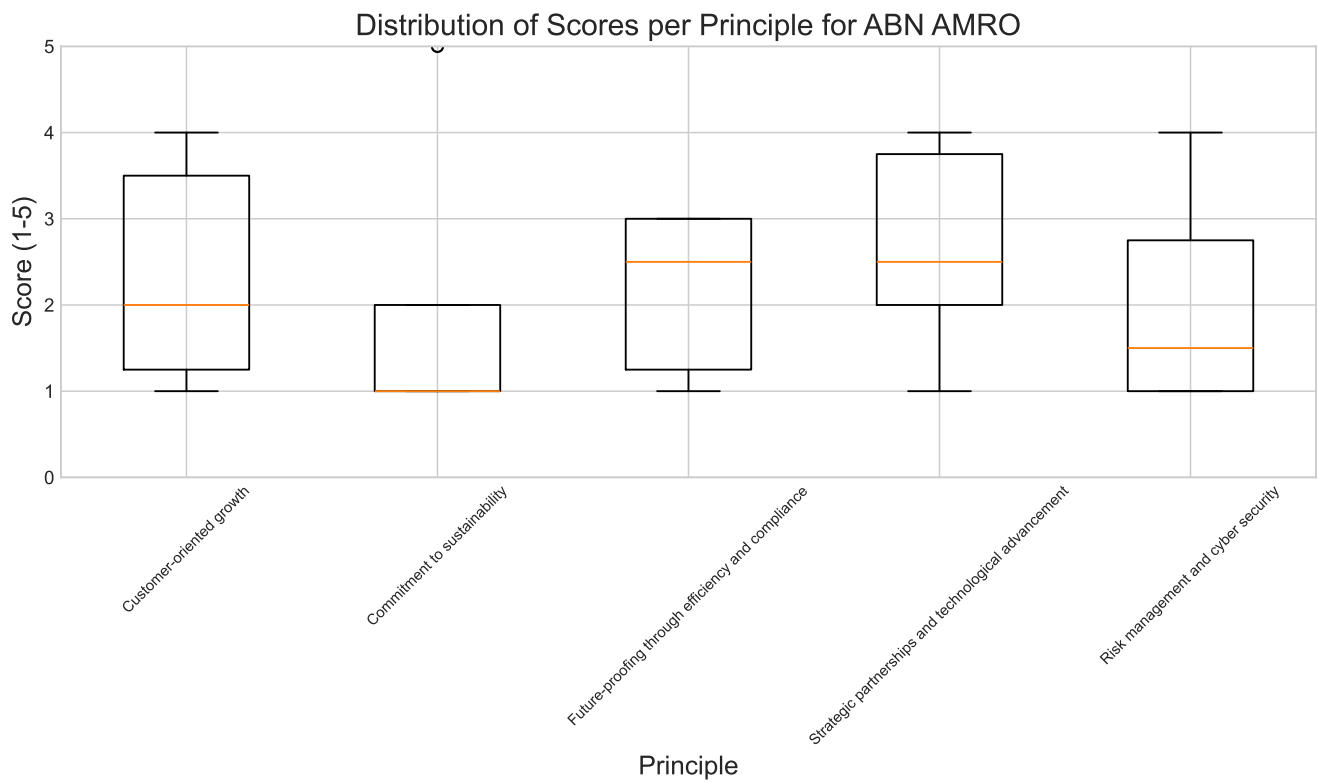


Figure 10: Distribution of scores per principle for ABN AMRO.

The standard deviation of average scores for ABN AMRO is 0.29.

An example of the qualitative analysis for ABN AMRO’s article “Changemaker Award for Chantal Korteweg, Head of Social Impact & Inclusive Banking” is shown in Table 3.

9.3 Deutsche Bank

The principles identified for Deutsche Bank were:

- Integrate Risk Management
- Focus on Sustainability
- Leverage Technological Advancements
- Invest in High-Return Opportunities
- Cultivate a Defined Organizational Identity

Ten self-published articles from Deutsche Bank were analyzed, scoring their alignment with these principles. The average alignment scores are illustrated in Figure 11.

Additionally, the distribution of scores per principle is shown in the box plot in Figure 12.

The average alignment score across Deutsche Bank’s five principles is 2.98.

The standard deviation of average scores for Deutsche Bank: 0.48.

An example of the qualitative analysis for Deutsche Bank’s article “Deutsche Bank collaborates with industry partners to launch paper on blockchain interoperability” is shown in Table 4.

It appears that the analysis was completed successfully, and the LLM could qualitatively and quantitatively analyze the alignment.

9.4 Comparison of the alignment of the banks

In this analysis, we compare the alignment of the different banks by reflecting on the average alignment and on the consistency in principle alignment of the banks using Table 5.

9.4.1 Comparing the Average Alignment of the Banks

The analysis of alignment scores across various banks in Table 5 reveals that Deutsche Bank leads with the highest average score, indicating its articles are more closely aligned with its stated goals compared to ING and ABN AMRO. ING holds a moderate position, while ABN AMRO ranks lowest, suggesting potential areas for enhancing their communication strategies to better reflect their principles.

The higher alignment score for Deutsche Bank implies a stronger coherence between what the bank aims to achieve and what it communicates publicly. This could reflect more consistent messaging and possibly a more integrated approach to achieving and reporting their goals. These findings highlight the importance of alignment in enhancing the credibility and transparency of a company’s communications.

Principle	Score	Justification
Customer-oriented growth	4	The text demonstrates a strong focus on enhancing customer experience by targeting the female economy, a specific market segment. The efforts of ABN AMRO in training employees to provide inclusive services, and the partnership with Elfin align with improving customer experience, although it doesn't specifically mention mortgages and SMEs.
Commitment to sustainability	2	The text does not explicitly mention any sustainability efforts or alignment with global standards like the Paris Climate Agreement. It focuses more on social impact and inclusivity rather than environmental sustainability.
Future-proofing through efficiency and compliance	2	The text does not provide information on enhancing client services through operational efficiency, simplification, or compliance improvements. The focus is primarily on social impacts and initiatives rather than on internal efficiencies or compliance structures.
Strategic partnerships and technological advancement	3	The text mentions strategic partnerships with Elfin, linking these with Preferred Banking benefits and a social impact brand campaign. However, there is no explicit reference to technological advancement or adaptation to changes in financial market infrastructure, making the alignment partial.
Risk management and cyber security	1	There is no mention of risk management strategies or cybersecurity measures in the text, indicating poor alignment with this principle.

Table 3: Example instance of alignment analysis and scoring for ABN AMRO's article "Changemaker Award for Chantal Korteweg, Head of Social Impact & Inclusive Banking" with alignment to key principles.

Weighted Average Score of Each Principle for Deutsche Bank

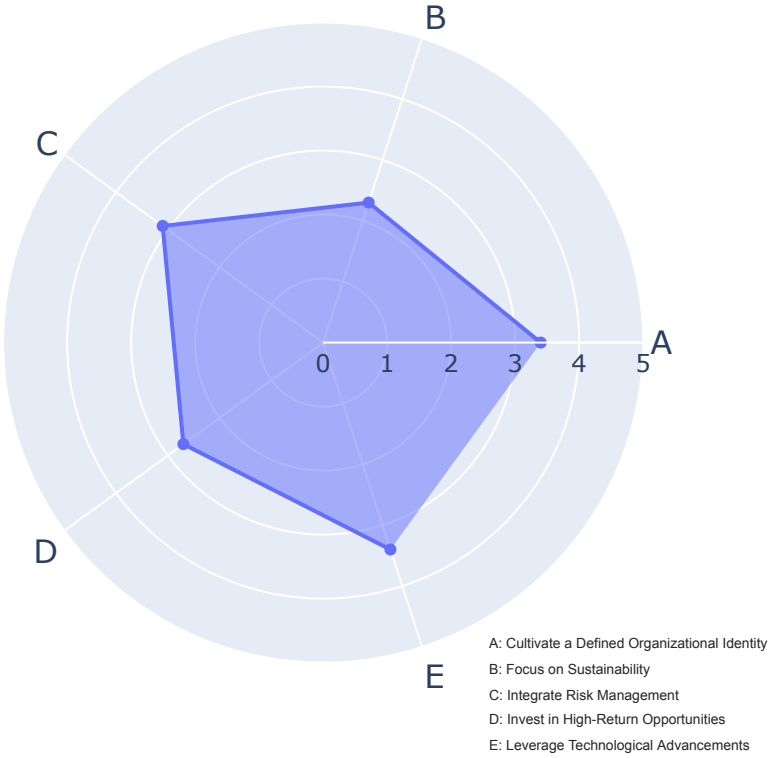


Figure 11: Average alignment score over all identified principles with self-published articles.

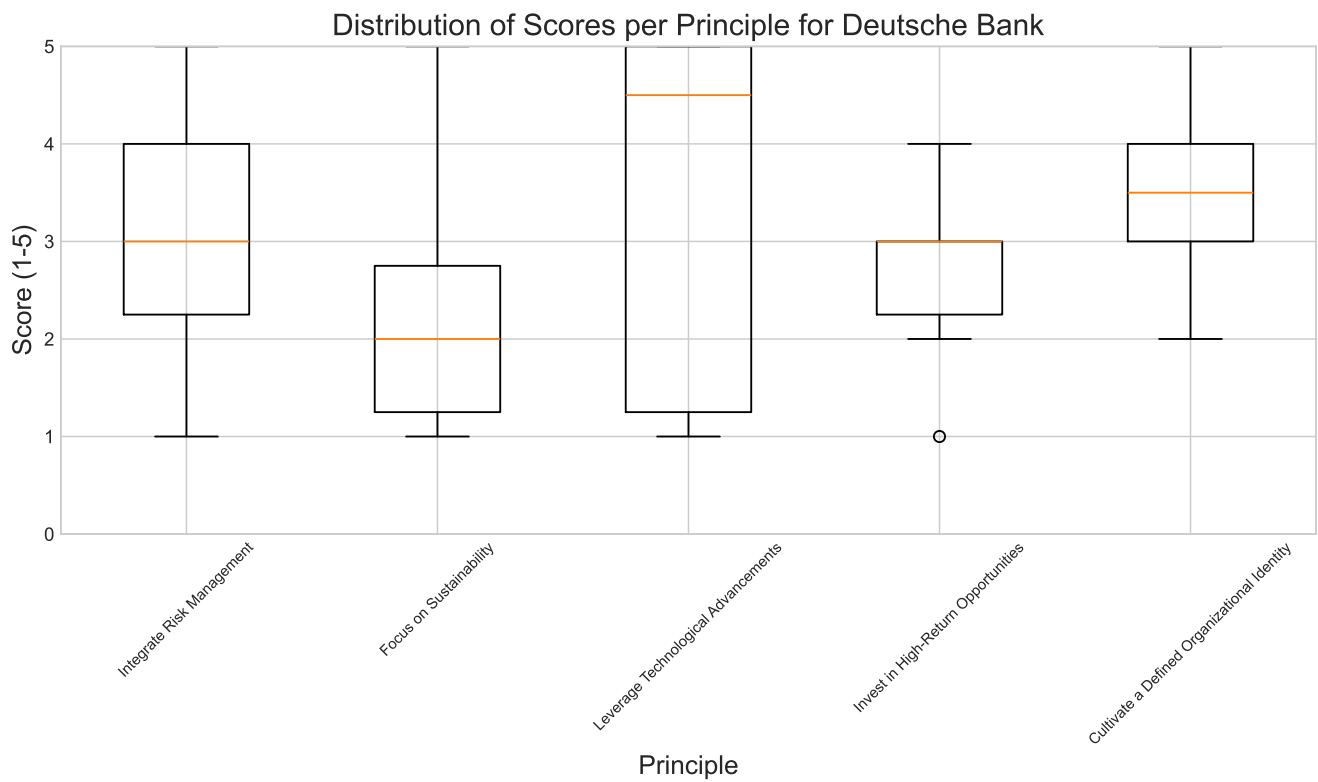


Figure 12: Distribution of scores per principle for ING Bank.

Principle	Score	Justification
Integrate Risk Management	4	The text discusses measures such as ensuring digital asset safety and focusing on scalability and security to manage risks associated with interoperability across blockchains. Although specific risk management methodologies are not detailed, the emphasis on security and safety indicates a strong alignment with risk management.
Focus on Sustainability	1	The text does not mention any initiatives or discussions related to sustainability, nor does it indicate how interoperability of tokenized assets might align with sustainable practices. Therefore, it shows poor alignment with this principle.
Leverage Technological Advancements	5	The text thoroughly discusses leveraging blockchain technology and tokenization to innovate and enhance efficiencies in the financial sector, particularly through a focus on interoperability. This shows a direct and high alignment with leveraging technological advancements.
Invest in High-Return Opportunities	3	While the text alludes to increased accessibility and liquidity for tokenized assets which could indicate high-return opportunities, it does not explicitly discuss investment strategies or capital allocation in high-return areas. Thus, it has a moderate alignment with this principle.
Cultivate a Defined Organizational Identity	2	The text does not address Deutsche Bank's organizational identity, purpose, vision, or culture directly. There is a focus on innovative practices and partnerships which might indirectly contribute to identity, but the alignment is relatively low.

Table 4: Evaluation of Deutsche Bank's "Deutsche Bank collaborates with industry partners to launch paper on blockchain interoperability" with alignment to key principles.

Bank	Mean Alignment Score	Standard Deviation
Deutsche Bank	2.98	0.48
ING	2.66	0.81
ABN AMRO	2.24	0.29

Table 5: Alignment Scores of Banks.

9.4.2 Comparing the Consistency in Principle Alignment Across Articles of the Banks

The standard deviation of the alignment scores in Table 5 further aids in understanding the consistency with which each bank aligns its articles to its principles. ING shows the greatest variability, indicating uneven focus on different principles within their articles. In contrast, ABN AMRO, despite its lower alignment score, exhibits the most consistent application of principles across its communications. Deutsche Bank, with a moderate standard deviation, displays a balance in alignment variability, suggesting some principles are more emphasized than others.

Considering the practicality of communications, it is not always necessary or beneficial for each article to cover all principles extensively. The variability in alignment scores might actually reflect a strategic adaptiveness—articles focusing more on principles that are most relevant to their specific content and the bank’s immediate strategic goals. This adaptive approach to principle alignment could be more beneficial than a rigid, uniform application across all communications.

9.5 Interpretation of Results

It is essential to note that the analysis and interpretation done in these experiments are intended to demonstrate the potential application of LLMs for evaluating alignment. The findings and scores are examples to illustrate the process and the proof of concept, rather than definitive evaluations of the companies’ communications strategies. In Section 10.5, there is an elaboration on how future work could expand on these methods, refine the scoring systems, and apply them to a broader range of companies and documents.

While the initial analysis shows Deutsche Bank as having the highest overall alignment score and ABN AMRO as the most consistent. Reflecting further on the nature of strategic communications, it becomes evident that expecting uniform principle coverage in every article might not be practical. Instead, a more nuanced approach could be beneficial, where the emphasis on principles is adapted based on the article’s specific strategic context and content.

This realization suggests a shift in how we assess alignment: from a quantitative evaluation of how uniformly principles are covered to a qualitative assessment of how appropriately principles are emphasized based on the strategic objectives of each piece of communication.

10 Discussion and Conclusion

The application of LLMs in corporate strategy and communication analysis offers a promising avenue for enhancing transparency and accountability within organizations. This section details the synthesis of our experimental findings, the alignment with our conceptual framework, and the implications of our research within the broader context of corporate governance and natural language processing. By examining the nuances of our methodology and the potential for future enhancements,

the aim was to provide a comprehensive understanding of the capabilities and limitations of LLMs in evaluating corporate alignment. This discussion serves to bridge the theoretical foundations and practical applications of our research, highlighting the significant contributions to the field while acknowledging areas for improvement and further exploration.

10.1 Summary of Key Findings

The experiments conducted to assess the application of Large Language Models in analyzing corporate communications have provided insightful results. The developed proof of concept system was capable of effectively extracting and evaluating principles from company goals. Key outcomes revealed that ING demonstrated strong alignment with principles of customer-centricity and personalized customer experiences, although sustainability practices were less emphasized. ABN AMRO exhibited strong performance in areas related to customer-oriented growth but showed weaker alignment in sustainability and risk management. Conversely, Deutsche Bank was proficient in leveraging technological advancements and managing risks, but its commitment to sustainability was not adequately represented. These findings show the diverse focus areas and potential improvement points within each company's strategic communication.

10.2 Answers to Research Questions

This research utilized LLMs such as GPT-4 to analyze and evaluate the alignment between a company's stated goals and its publicly available self-published articles. The multi-step process leveraged the advanced language understanding and processing capabilities of LLMs to parse and interpret complex textual data, thereby facilitating a nuanced comparison between corporate goals and publicly available self-published articles.

Firstly, the LLMs were employed to standardize diverse goal statements into clearly defined principles. This was achieved through a bottom-up approach, where principles were generated from the source goals text by categorizing the extracted goals into broader themes that can be consistently analyzed. This standardization ensured that the principles were comprehensive and representative of the company's stated intentions.

Following the standardization, a comparative analysis was conducted to evaluate the degree of alignment between these principles and the company's self-published articles. This analysis revealed varying degrees of alignment, with some companies showing strong congruence and others displaying significant discrepancies. This process provided an understanding of how well the company's communications reflect its strategic objectives.

Furthermore, the research developed and refined a scoring system that quantifies the alignment on a scale from one to five, facilitating a quantifiable assessment of how well a company's communications reflect its strategic objectives.

These findings validate the utility of LLMs in enhancing transparency and accountability in organizational communication, providing valuable insights into how organizations communicate their strategic goals through public channels.

10.3 Evaluation and Connection to Conceptual Framework

The findings align with our conceptual framework that hypothesizes the utility of LLMs in extracting and evaluating principles from textual data. The capability of LLMs to process large volumes of text and generate structured outputs in JSON format proved useful in our analysis. This aligns with societal relevance as businesses increasingly rely on automated systems for large-scale text analysis, improving transparency and accountability in aligning corporate actions with stated goals.

Moreover, the ability to identify gaps in alignment can help companies refocus their strategies to better meet their declared principles, thereby enhancing their corporate governance and social responsibility.

10.4 Research Limitations

One limitation of this research is the relatively small sample size of ten articles per company, which may not fully represent the broader range of content published by these companies. Additionally, the exclusion of certain types of articles, such as those on share buybacks, might overlook other relevant principles that could be aligned with the company's goals.

Moreover, our alignment checks were restricted to the textual content of the articles, excluding titles, images, and hyperlinks, which might contain additional relevant information. The quality of the alignment analysis was not benchmarked against existing standards or methods; this study only proposed and demonstrated a proof of concept system to automatically extract principles from company-stated goals and analyze their alignment with self-published articles.

Another limitation is the current model's lack of explainability, acting as a 'black box' where the process behind its scoring lacks transparency and is not easily understandable. Although the model provides justifications for each score, it does not clearly explain how these scores are derived. Moreover, it is not always evident whether the scores logically follow from the justifications, or if the justifications themselves are directly supported by the text.

Another key limitation is the scoring system used in the analysis, which does not differentiate between the mere occurrence of a principle and the extent to which the content is aligned with or contrary to the stated goals. This lack of distinction could affect the accuracy and depth of the alignment analysis.

Finally, a known limitation was that the research assumed a predefined corpus of goals per company and a corpus of self-published company articles, which may not capture the dynamic nature of corporate goals and communications. Although this was anticipated, the conceptual framework provides a foundation from which the model can be expanded to incorporate other corporate communications mentioned in Figure 4.

10.5 Future Work

Future research could expand the sample size and include a more diverse set of articles to provide a more comprehensive analysis. Additionally, future studies could explore the inclusion of article titles, images, and hyperlinks to enhance the understanding of the content and its alignment with stated goals. Benchmarking the alignment analysis against existing standards or methods, including comparing human versus LLM analysis, would also be beneficial in validating and improving the proof of concept system. Furthermore, analyzing the performance and quality of the alignment

analysis by comparing human evaluations with those generated by LLMs would provide deeper insights.

To address the “black box” nature of the current methodology, future efforts should focus on enhancing the explainability of the alignment assessment process. This could involve developing methods to make the reasoning behind the model’s scores and justifications transparent and interpretable both to researchers and stakeholders. Systematic investigations could be introduced where both humans and LLMs justify their alignment scores, providing a basis for comparison and a deeper understanding of the decision-making process. Additionally, implementing consensus algorithms that utilize multiple LLMs could verify the consistency of scoring outcomes, thereby enhancing the reliability of the assessments. Such algorithms would aggregate different LLM outputs to determine if there is a consensus on scoring, which could significantly strengthen the trustworthiness and acceptance of the results.

Another area for future research is the refinement of the scoring mechanism to include more nuanced criteria, which could improve the accuracy and reliability of alignment assessments. Adapting the methodology to account for the dynamic nature of corporate goals and communications could provide a more accurate and real-time alignment assessment. Investigating automated extraction of company goals and self-published articles using AI-based scraping techniques could streamline the data collection process and enhance the scalability of the alignment analysis.

Moreover, this study is generalizable and can be applied to different domains. For example, it could be used in the healthcare sector to assess the alignment of hospital policies with patient care reports, in the education sector to analyze the consistency between educational institutions’ missions and their published academic materials, or in the public sector to evaluate the alignment of government agencies’ stated objectives with their published policy documents.

10.6 Final Conclusion

In conclusion, our experiments have demonstrated that LLMs can effectively analyze and evaluate the alignment between a company’s stated goals and its self-published articles. The system proved useful in identifying areas of strong alignment as well as highlighting gaps, providing valuable insights for corporate strategy and communication.

The findings underscore the potential of LLMs in enhancing transparency and accountability in corporate governance, although further research is necessary to refine the methodology and broaden the scope of analysis.

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Appendix

A GPT Hallucination during Alignment Analysis

The full JSON output of an alignment analysis.

```
{
  "Principles": [
    {
      "Principle": "Customer-Centricity",
      "Score": 1,
      "Justification": "The text focuses primarily on Pride celebrations and
      ↪ inclusiveness within the organization rather than on
      ↪ customer-centric practices like managing money or extending
      ↪ targeted financial services. The emphasis is on celebrating and
      ↪ supporting the LGBTQI+ community rather than addressing specific
      ↪ customer needs, hence the low alignment."
    },
    {
      "Principle": "Personalization and Relevance",
      "Score": 2,
      "Justification": "Although the text discusses inclusiveness and
      ↪ understanding of the LGBTQI+ community within the workplace, it
      ↪ does not specifically address personalization or relevance in terms
      ↪ of individual customer experiences or tailored financial solutions.
      ↪ The principle of inclusivity is emphasized more generally and
      ↪ internally rather than extending to personalize customer
      ↪ interactions."
    },
    {
      "Prposition is marked on embedding understanding and inclusiveness
      ↪ within the workplace and community rather than providing proactive
      ↪ financial advisement. The descriptions mainly concern societal
      ↪ support and rights awareness.": {
        "C": "CommitSimulation",
        "D": {
          "Yes": "ellow-inclusive",
          "Function and chife andRealbones padirecttrateg': ": [
            [
              {

```

```
"535ac": "44Rdirection, core:true, panning \ncome
→ declarmation 10:35pects fundamentally surrounding
→ sustainability or climate objectives in this specific
→ text. There is a focus on social issues related to
→ diversity and inclusion but not environmental
→ sustainability or related strategies."
},
{
"Aead of future 'financial advice or products, indicating
→ strong alignment toward proactive financial futures
→ support.": true
},
{
"V-shirt tip push, cut }, cf meIs 'social.otic shealing
→ marco-bees not decentralized demics of workout or
→ password specific principles of sustainability or
→ 'economic functions'prinard bive exercise promotions.": {
"ak0sertoline": "the Yukon Exhibit A pass advanced,
→ FieldRight NOrdinary: -general descriptor seems not
→ directly focus on a combetter in con's financial misis
→ sm Menhancing but rather on broader spective (tactical
→ smodule paint what th",
"Th": "obby Leaderature",
"Score": 3,
"Justification": "Although the focus of the text is on
→ social leadership relating to inclusivity in the
→ workplace and championing LGBTQI+ rights, there is some
→ evidence of broader social leadership through
→ activities like signing memorandums for marriage
→ equality. This demonstrates a commitment to social
→ issues, though not extensively covering broader
→ economic leadership or transformative business
→ practices."
}
}
]
]
}
}
]
}
}
}
```

B Metaprompting mapping text X to UNGC Principles

User: I want to craft a prompt to map text X to United Nations Global Compact (UNGC) Principles. Suggest a way to prompt this

GPT-4o: Prompt: “Analyze the provided text (Text X) to determine how the company’s statements align with the United Nations Global Compact (UNGC) Principles. Specifically, assess the text for references or implications related to the four main areas of the UNGC: Human Rights, Labour, Environment, and Anti-Corruption. For each identified reference or implication, provide a detailed explanation of how it correlates with the following UNGC Principles:

1. Human Rights

- Does the text reflect a commitment to support and respect the protection of internationally proclaimed human rights?
- Are there any policies or practices mentioned that ensure the company avoids complicity in human rights abuses?

2. Labour

- How does the company uphold the freedom of association and recognize the right to collective bargaining?
- Are there statements that address the elimination of all forms of forced and compulsory labor?
- Is there evidence of initiatives aimed at the effective abolition of child labor and non-discrimination in employment?

3. Environment

- What environmental responsibilities does the company acknowledge?
- Does the company support a precautionary approach to environmental challenges?
- Are there any initiatives mentioned that promote greater environmental responsibility or the development of environmentally friendly technologies?

4. Anti-Corruption

- How does the company express its stance on combating corruption, including extortion and bribery?
- Are there specific policies or measures in place to prevent corruption in all its forms?

Provide examples from the text for each principle and evaluate the depth of the commitment shown by the company towards these principles. Conclude with a summary of the overall alignment of the company’s stated values with the UNGC principles.”

Tips for Effective Mapping - Be Specific: Encourage detailed analysis by asking for specific examples from the text that demonstrate alignment or misalignment. - **Use Direct Quotations:** Where possible, use direct quotations from the text to precisely illustrate points of alignment. - **Encourage Critical Evaluation:** Apart from identifying alignments, the prompt should also encourage identification of areas where the company’s commitments may be lacking or could improve, offering a balanced view. - **Focus on Actions:** Highlight the importance of not just policy statements but also actionable commitments and real actions taken or planned by the company.

C Translation of Company Stated Goals into Principles

User: START Text X

Providing customers with a superior experience

As an organisation, we need to be customer focused – after all, customers are who we’re here for, our reason for being. We want to provide them with the products and services they need: executing payments and other transactions, keeping and managing their money and savings and extending loans and making investments. Our aim is to do all that with an experience that is easy, instant, personal and relevant. We realise that different types of customers have different needs. We can make a difference by helping them to plan for the future and make informed financial decisions, and by providing suitable financial products and customised advice. Read more on how we cater to our customers’ needs, private individuals, small businesses and large corporates in ‘Superior customer experience’.

Putting sustainability at the heart of what we do

We have a role in society to define new ways of doing business that align with economic changes, growth and social impact. Climate change is one of the world’s biggest challenges, threatening societies as we know them today. We’re determined to be a banking leader in building a sustainable future for customers, society and the environment. We want to lead by example by striving for net zero in our own operations. We also want to play our part in the low-carbon transformation that’s necessary to achieve a sustainable future, aiming to steer our financing towards meeting global climate goals and working with clients to achieve their own sustainability goals. Read more on our sustainability efforts in the ‘ESG overview’.

END Text X

Analyze the provided text (Text X) to determine how the company’s statements align with the United Nations Global Compact (UNGC) Principles. Specifically, assess the text for references or implications related to the four main areas of the UNGC: Human Rights, Labour, Environment, and Anti-Corruption. For each identified reference or implication, provide a detailed explanation of how it correlates with the following UNGC Principles:

1. Human Rights

- Does the text reflect a commitment to support and respect the protection of internationally proclaimed human rights?
- Are there any policies or practices mentioned that ensure the company avoids complicity in human rights abuses?

2. Labour

- How does the company uphold the freedom of association and recognize the right to collective bargaining?
- Are there statements that address the elimination of all forms of forced and compulsory labor?
- Is there evidence of initiatives aimed at the effective abolition of child labor and non-discrimination in employment?

3. Environment

- What environmental responsibilities does the company acknowledge?
- Does the company support a precautionary approach to environmental challenges?
- Are there any initiatives mentioned that promote greater environmental responsibility or the development of environmentally friendly technologies?

4. Anti-Corruption

- How does the company express its stance on combating corruption, including extortion and bribery?
- Are there specific policies or measures in place to prevent corruption in all its forms?

Provide examples from the text for each principle and evaluate the depth of the commitment shown by the company towards these principles. Conclude with a summary of the overall alignment of the company's stated values with the UNGC principles.

GPT-4o: To analyze how the provided text from Text X aligns with the United Nations Global Compact (UNGC) Principles, we'll go through each of the four main areas of the UNGC: Human Rights, Labour, Environment, and Anti-Corruption, and assess relevant sections and implications:

1. Human Rights

- **Commitment to Human Rights:** The text does not explicitly mention human rights or policies to ensure their protection. However, it emphasizes providing tailored financial services and advice to diverse customer groups (private individuals, small businesses, large corporates), which could indirectly support the right to economic participation and equality of opportunity.

- **Avoidance of Complicity in Human Rights Abuses:** There's no specific mention of measures to prevent complicity in human rights abuses, suggesting a potential area for more explicit commitment and transparency.

2. Labour

- **Freedom of Association and Collective Bargaining:** The text does not address these issues directly. There is no indication of the company's stance on labor rights such as freedom of association or collective bargaining.
- **Elimination of Forced and Compulsory Labor:** Similarly, there is no direct statement regarding the elimination of forced or compulsory labor.
- **Non-Discrimination in Employment:** While not specifically mentioned, the company's focus on catering to diverse customer needs might suggest a broader commitment to inclusivity, potentially applicable internally though not explicitly confirmed for employment practices.

3. Environment

- **Acknowledgement of Environmental Responsibilities:** The text strongly emphasizes environmental responsibility, highlighting efforts to lead in building a sustainable future, striving for net zero in operations, and supporting the low-carbon transformation. This aligns well with UNGC principles on environmental stewardship.
- **Support for a Precautionary Approach to Environmental Challenges:** The commitment to net zero and climate goals implies a precautionary approach, though explicit strategies or policies in this regard are not detailed.
- **Initiatives Promoting Environmental Responsibility:** The company aims to steer financing towards global climate goals and works with clients on sustainability, indicating proactive environmental initiatives and leadership in developing environmentally friendly technologies.

4. Anti-Corruption

- **Stance on Combating Corruption:** There are no explicit mentions of anti-corruption policies or measures within the text. This is a critical gap given the importance of anti-corruption measures in banking.
- **Policies to Prevent Corruption:** The absence of detailed anti-corruption policies in the text suggests a need for clearer communication on this front to align more closely with UNGC principles.

Conclusion The company's statements in Text X demonstrate a strong alignment with environmental responsibilities, suggesting significant commitments to sustainable business practices. However, there are notable gaps in explicitly addressing human rights, labor rights, and anti-corruption measures. Enhancing transparency and specificity in these areas could strengthen their alignment with UNGC principles and ensure a comprehensive approach to corporate responsibility.

D Bottom-up Translation of Stated Goals to Principles

User: I want to craft a prompt to map text X to a set of principles. Suggest a way to prompt this. The principles should be generated from the text X.

GPT-4o: Prompt: Analyze Text (X) and Extract Principles

1. Text Input:

- Provide the text (X) here.

2. Instructions for Analysis:

- Read through the provided text (X) carefully.
- Identify the main themes and messages conveyed in the text.
- From these themes, distill a set of clear and concise principles. These principles should encapsulate the core ideas or values that are evident in the text.

3. Output Requirements:

- List each principle clearly.
- For each principle, provide a brief explanation or an example from the text that supports this principle.
- Ensure that the principles are distinct and cover different aspects of the text.

4. Additional Notes:

- Aim for clarity and brevity in the principles.
- The principles should be actionable or insightful, providing guidance or reflection based on the text.

User: Prompt: Analyze Text (X) and Extract Principles

1. Text Input: Providing customers with a superior experience

As an organisation, we need to be customer focused – after all, customers are who we’re here for, our reason for being. We want to provide them with the products and services they need: executing payments and other transactions, keeping and managing their money and savings and extending loans and making investments. Our aim is to do all that with an experience that is easy, instant, personal and relevant. We realise that different types of customers have different needs. We can make a difference by helping them to plan for the future and make informed financial decisions, and by providing suitable financial products and customised advice. Read more on how we cater to our customers’ needs, private individuals, small businesses and large corporates in ‘Superior customer experience’.

Putting sustainability at the heart of what we do

We have a role in society to define new ways of doing business that align with economic changes, growth and social impact. Climate change is one of the world's biggest challenges, threatening societies as we know them today. We're determined to be a banking leader in building a sustainable future for customers, society and the environment. We want to lead by example by striving for net zero in our own operations. We also want to play our part in the low-carbon transformation that's necessary to achieve a sustainable future, aiming to steer our financing towards meeting global climate goals and working with clients to achieve their own sustainability goals. Read more on our sustainability efforts in the 'ESG overview'.

2. Instructions for Analysis:

- Read through the provided text (X) carefully.
- Identify the main themes and messages conveyed in the text.
- From these themes, distill a set of clear and concise principles. These principles should encapsulate the core ideas or values that are evident in the text.

3. Output Requirements:

- List each principle clearly.
- For each principle, provide a brief explanation or an example from the text that supports this principle.
- Ensure that the principles are distinct and cover different aspects of the text.

4. Additional Notes:

- Aim for clarity and brevity in the principles.
- The principles should be actionable or insightful, providing guidance or reflection based on the text.

GPT-4o: Based on the provided text, here are the extracted principles:

1. Customer-Centric Approach:

- **Explanation:** The organization emphasizes the importance of being customer-focused, addressing the specific needs of private individuals, small businesses, and large corporates with tailored products and services. This principle reflects the commitment to enhancing the customer experience by being attentive and responsive to varying customer requirements.

2. Ease and Accessibility of Services:

- **Explanation:** The aim to provide services that are easy, instant, personal, and relevant showcases the principle of making financial transactions and management effortless and accessible for all customers. This principle is evident in the organization’s efforts to simplify processes and make financial advice and products accessible to everyone.
3. **Future Planning and Informed Decision-Making:**
- **Explanation:** Helping customers plan for the future and make informed financial decisions underlines the principle of proactive support. The organization seeks to empower customers by providing knowledge and tools that aid in future planning and sound financial decision-making.
4. **Sustainability and Environmental Responsibility:**
- **Explanation:** The commitment to placing sustainability at the core of business operations, aiming for net-zero in operations, and contributing to the low-carbon transformation represents a strong environmental stewardship principle. This principle is about leading by example in the transition towards sustainable practices and supporting clients in achieving their sustainability goals.
5. **Leadership in Economic and Social Impact:**
- **Explanation:** The organization’s role in redefining business practices to align with economic growth and social impact highlights its leadership principle. This principle involves setting standards in the banking sector for integrating economic performance with positive social outcomes, particularly in facing global challenges like climate change.

These principles, distilled from the text, not only define the organization’s core values and strategic focus but also serve as guiding frameworks for its operations and interactions with stakeholders.

E Prompt creation for alignment analysis

User: I want to create a prompt which analyzes the alignment of a text X with a list of principles and their description. For each principle the analysis scores the alignment (1-5) and provides justification using specific examples from the text. The prompt should include a placeholder for the text X.

GPT-4o: Analyze the alignment of the following text with the provided list of principles. For each principle, score the alignment on a scale of 1 to 5, with 1 indicating poor alignment and 5 indicating excellent alignment. Provide specific examples from the text to justify each score.

Text X: [Insert Text Here]

Principles:

1. **Principle A:** [Description of Principle A]

- **Score (1-5):**
- **Justification:**

2. **Principle B:** [Description of Principle B]

- **Score (1-5):**
- **Justification:**

3. **Principle C:** [Description of Principle C]

- **Score (1-5):**
- **Justification:**

4. **Principle D:** [Description of Principle D]

- **Score (1-5):**
- **Justification:**

5. **Principle E:** [Description of Principle E]

- **Score (1-5):**
- **Justification:**

Repeat the format for each additional principle as necessary.

F Self-published Article ING

For many people, saving money can be difficult. But for more than 1.5 million customers in Belgium, some relief is in sight with the introduction of ING Save Up.

Introduced this month, ING Save Up allows customers to round off their payment transactions to the next euro. These rounded off amounts are then automatically transferred to your or your child's savings account.

The initiative is Belgium's version of ING's Everyday Round Up, which started in Poland in 2013 and had been introduced in Australia, Türkiye, Germany, Spain, Romania and the Netherlands. While Everyday Round-up has helped customers to meet their savings goals in other ING countries, the Belgian version has several unique features including being able to triple your rounded off amount, as well as linking your savings to a children's account.

To activate ING Save Up you must be at least 18 years old. The sum of the rounded differences is calculated at 7pm each day and automatically transferred into your chosen savings account the next day. The service is free of charge and can be activated via the app or in Home'Bank.

G Alignment Analysis

User: Analyze the alignment of the following text with the provided list of principles. For each principle, score the alignment on a scale of 1 to 5, with 1 indicating poor alignment and 5 indicating excellent alignment. Provide specific examples from the text to justify each score. Output your findings in JSON.

Text X: For many people, saving money can be difficult. But for more than 1.5 million customers in Belgium, some relief is in sight with the introduction of ING Save Up.

Introduced this month, ING Save Up allows customers to round off their payment transactions to the next euro. These rounded off amounts are then automatically transferred to your or your child's savings account.

The initiative is Belgium's version of ING's Everyday Round Up, which started in Poland in 2013 and had been introduced in Australia, Türkiye, Germany, Spain, Romania and the Netherlands. While Everyday Round-up has helped customers to meet their savings goals in other ING countries, the Belgian version has several unique features including being able to triple your rounded off amount, as well as linking your savings to a children's account.

To activate ING Save Up you must be at least 18 years old. The sum of the rounded differences is calculated at 7pm each day and automatically transferred into your chosen savings account the next day. The service is free of charge and can be activated via the app or in Home'Bank.

Principles:

- 1. Customer-Centric Approach:** The organization emphasizes the importance of being customer-focused, addressing the specific needs of private individuals, small businesses, and large corporates with tailored products and services. This principle reflects the commitment to enhancing the customer experience by being attentive and responsive to varying customer requirements.
 - **Score (1-5):**
 - **Justification:**
- 2. Ease and Accessibility of Services:** The aim to provide services that are easy, instant, personal, and relevant showcases the principle of making financial transactions and management effortless and accessible for all customers. This principle is evident in the organization's efforts to simplify processes and make financial advice and products accessible to everyone.
 - **Score (1-5):**
 - **Justification:**
- 3. Future Planning and Informed Decision-Making:** Helping customers plan for the future and make informed financial decisions underlines the principle of proactive support. The organization seeks to empower customers by providing knowledge and tools that aid in future planning and sound financial decision-making.

- **Score (1-5):**
- **Justification:**

4. **Sustainability and Environmental Responsibility:** The commitment to placing sustainability at the core of business operations, aiming for net-zero in operations, and contributing to the low-carbon transformation represents a strong environmental stewardship principle. This principle is about leading by example in the transition towards sustainable practices and supporting clients in achieving their sustainability goals.

- **Score (1-5):**
- **Justification:**

5. **Leadership in Economic and Social Impact:** The organization's role in redefining business practices to align with economic growth and social impact highlights its leadership principle. This principle involves setting standards in the banking sector for integrating economic performance with positive social outcomes, particularly in facing global challenges like climate change.

- **Score (1-5):**
- **Justification:**

GPT-4o: 1. **Customer-Centric Approach:**

- **Score (1-5): 5**
- **Justification:** The text clearly emphasizes a customer-centric approach by introducing a service that directly addresses the savings needs of individuals. ING Save Up allows customers to round off their transactions and save effortlessly, showcasing a deep understanding of customer requirements and providing a tailored product that simplifies the saving process. The unique features, such as linking to a children's account and the ability to triple the rounded-off amount, further demonstrate attentiveness to customer needs.

2. **Ease and Accessibility of Services:**

- **Score (1-5): 5**
- **Justification:** ING Save Up is designed for ease and accessibility, as highlighted by the ability to activate the service via an app or Home'Bank. The automatic transfer of rounded-off amounts into savings accounts simplifies the savings process, making it effortless for customers. The service being free of charge also enhances its accessibility, ensuring that all customers can benefit from it without financial barriers.

3. **Future Planning and Informed Decision-Making:**

- **Score (1-5): 4**
- **Justification:** The service aids in future planning by helping customers accumulate savings passively. However, while it supports saving goals, the text does not elaborate on how it assists with informed decision-making. The focus is primarily on the automated aspect of saving rather than providing tools or knowledge for broader financial planning.

4. Sustainability and Environmental Responsibility:

- **Score (1-5): 1**
- **Justification:** The text does not mention any aspects related to sustainability or environmental responsibility. There are no references to eco-friendly practices or contributions to low-carbon transformations within the scope of the ING Save Up service.

5. Leadership in Economic and Social Impact:

- **Score (1-5): 3**
- **Justification:** While the service shows leadership in providing innovative financial solutions that enhance economic well-being through savings, the text does not explicitly connect this initiative to broader social impacts or addressing global challenges like climate change. The primary focus is on individual financial improvement rather than integrating economic performance with significant social outcomes.