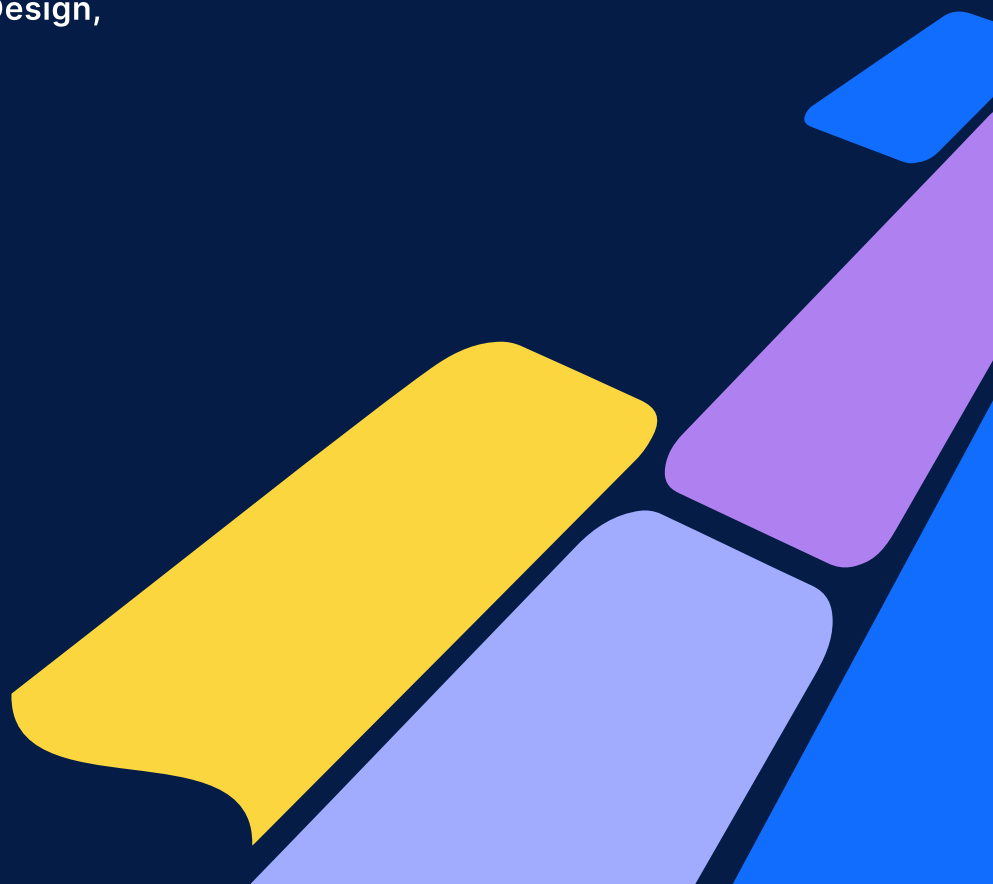


Enhancing Brand Consistency With Natural Language Search (NLS) In DAM

Graduation Project,
Msc Strategic Product Design,
Xiaoyi Ou,
July 2025



Master Thesis | Graduation Project

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March 2025 - August 2025

PREFACE

Dear Reader,

This master's thesis marks a milestone in a six-year design journey that began with a unique blend of Industry Design and AI. This background became the lens through which I viewed my six-month internship at Bynder, where I saw the gap between rigid artificial intelligence and the nuanced needs of a living brand. I realized that this is precisely where designers are essential, and this report is my exploration of how to build a bridge between these two worlds.

I am deeply grateful to my professor, Erik-Jan, for his insightful guidance, and to my mentor, Jorg, for helping me elevate my thinking and find my own rhythm in writing. At Bynder, my company mentor Silvia provided invaluable weekly feedback, and my colleagues generously shared their expertise, grounding this project in real-world relevance.

My two years living in the Netherlands have been a significant challenge for me. I flew from one end of Eurasia to the other to start a new life in a completely unfamiliar country. Here, I not only had the privilege of studying at a renowned university and honing my skills in various real-world company projects, but I also traveled to many different countries, made wonderful friends, and learned about diverse cultures.

Thank you to my Dutch friends Sophie, Sonali and Janik for helping me better integrate into this country. Thank you to my other friends, with whom I explored beautiful landscapes and who always cared for our mutual well-being. Finally, I must also thank my family. Even from the other side of the world, despite the time difference, they often adjusted their own sleep schedules to give me their unconditional encouragement and patience.

This journey has not only helped me find a newer, broader perspective on design, but it has also solidified my passion for this industry. I hope that this story of exploration is as inspiring to you as the journey was to me.

Xiaoyi Ou (Olive)
Rotterdam, August 2025

EXECUTIVE SUMMARY

This graduation report presents the results of my graduation project, as the final part of the **Master 'Strategic Product Design'** at the **TU Delft**. The project is conducted in collaboration with **Bynder**, a digital asset management company.

As the digital asset ecosystem at Bynder continues to expand, a strategic opportunity emerges to innovate and advance its brand governance tools. As more companies utilize Natural Language Search (NLS) features to find images and videos, differences have appeared between the words employees use, like 'sneakers', 'Pure White', and the system auto-generated tags that make retrieval possible. This situation presents an opportunity to enhance the user experience: for brand managers, by improving image consistency; for admins, by reducing manual re-tagging; and ultimately, for customers, by ensuring a cohesive brand story across all channels.

This graduation project asks:

How can Bynder turn NLS from a generic search feature into a brand-aware capability that strengthens brand consistency in DAM?

The research methodology integrated a four-phase double diamond framework (Design Council, 2005) with a Research-through-Design approach (Stappers & Giaccardi, 2024). Data was gathered via literature reviews, eight competitive analyses, eleven stakeholder interviews, and a co-creation workshop, culminating in a primary finding: while Bynder's taxonomy and metadata provide a strong foundation, they could be enhanced to better accommodate the dynamics of contemporary brand language.

A secondary finding from the competitive analysis points to a significant market opportunity for Digital Asset Management (DAM) systems that leverage advanced Artificial Intelligence (AI) to enforce and enhance brand governance.

The result is a **strategic design solution** made up of three parts that fit different users:

- **Brand Dictionary Configurator** – a tool that helps admins to add brand tone, persona, and proprietary terms in taxonomy onboarding, linking them to existing metadata fields
- **Guided Prompt Framework** – the lightweight UX patterns that let moderate users phrase NLS queries in brand-aligned language while preserving the simplicity and efficiency of the search bar
- **Brand-Language Feedback Loop** – a background service that lets users help the admin cluster used and unused search terms, score their relevance, and propose controlled additions to the metadata

From a strategic standpoint, this framework evolves the Bynder platform from its role as a powerful asset management solution to that of an active brand partner. Operationally, this provides clients with superior asset discoverability, ensures greater coherence in brand storytelling, and delivers a measurable decrease in the resources required for governance.

TERMINOLOGY

The interpretation of language, particularly specialized terminology and jargon, is highly contingent on contextual, cultural, and individual backgrounds (Bonvillain, N. ,2019). To provide clarity, this section provides definitions for key terms and abbreviations used throughout this report. Please note that some terms may have many different definitions and there is often no 'one truth', but these definitions serve as a guide to the scope of this report.

- **Digital Asset Management (DAM)**

A software system that stores, organises and distributes digital brand assets (images, video, documents) together with the metadata that describes them

- **Natural Language Search (NLS)**

A search capability that lets users phrase queries in everyday language instead of rigid Boolean keywords

- **Brand Consistency**

The discipline of maintaining a cohesive, recognisable brand identity and message across every customer touch-point (visuals, tone, values), so audiences always know what to expect

- **Brand Dictionary**

A machine-readable repository of brand-specific terms (core values, tone descriptors, audience personas, proprietary product names) used for brand

- **Brand Governance**

Policies, processes and tooling that keep visual and verbal brand expression consistent across all channels and markets

- **Brand Semantic Gap**

The core problem, which is the disconnect between a generic AI's literal interpretation of content and a brand's unique language, which is filled with subtle nuances, proprietary terms, and specific emotional tones.

- **Metadata**

Structured information (author, rights, creation date, subject, etc.) that describes an asset's properties and enables search, rights management and audit trails

- **Metaproperties**

Metaproperties are 'metadata properties', or categories of information used to classify and describe your assets in Bynder. Metaproperties contain values, or metaproperty options, that users tag assets with during upload to categorize and find the assets when searching or filtering. They are highly customizable and adaptable to various needs

- **Taxonomy**

A hierarchical classification framework that groups assets (e.g., by product line or audience) so users can browse or filter with precision

- **Prompt Engineering**

The craft of designing and refining the input prompts given to a large-language model to steer its output's style, scope and quality

COMMON ABBREVIATIONS

NLP — Natural Language Processing
CX — Customer Experience
SaaS — Software as a Service
B2B — Business-to-Business
B2C — Business-to-Consumer
CPG — Consumer Packaged Goods

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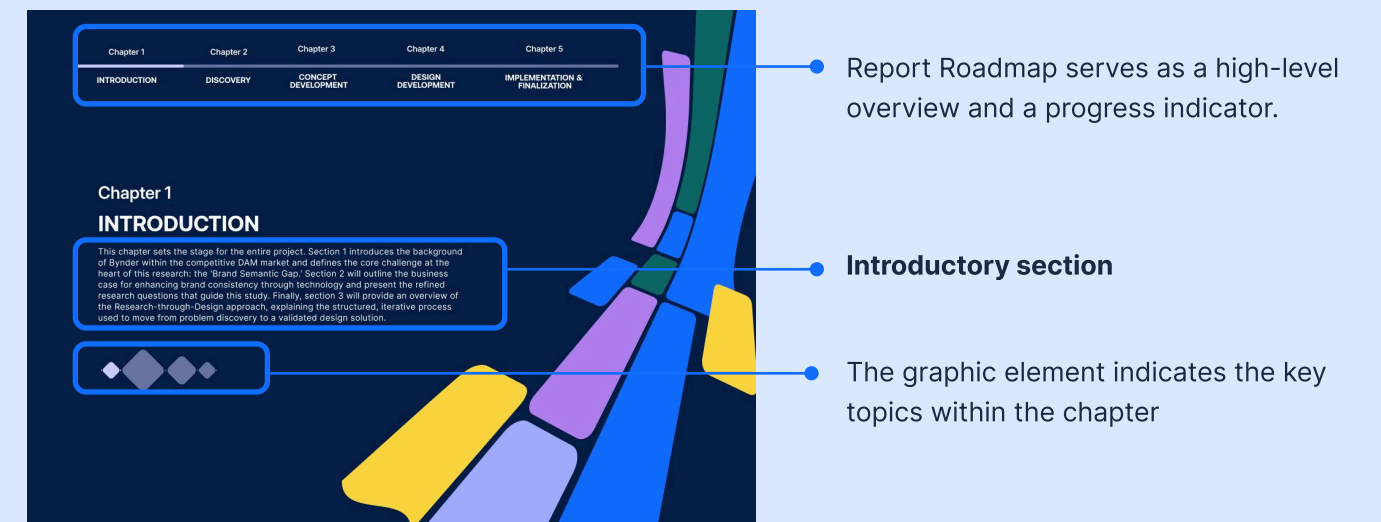
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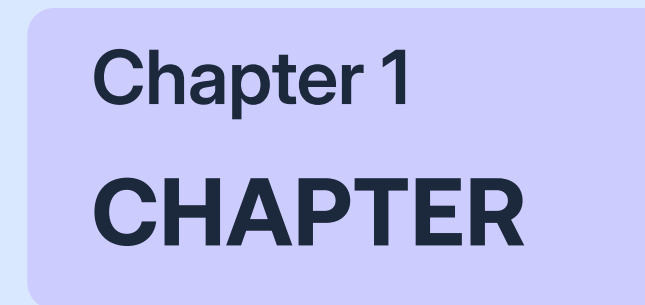
READING GUIDE

This report uses the following structure:

A full-page coloured pattern with large text marks the beginning of this phase



Within these phases is the following format:



Each Chapter is organized into Sections and numbered Subsections to structure the content. The hierarchy of Text Styles, such as Bold and SemiBold, is used to improve readability and guide the reader. Body text makes cross-references to chapters and sections. E.g. 'As described in Section 2.1.1'



Introductory section: Introduces the purpose of the chapter and outlines what to expect. It explains why the chapter is relevant and briefly describes its structure and key components.



Closing section: Summarises the main insights from the chapter, explains their significance, and introduces how these insights lead into the next chapter.

Figure 1.1.1:

Chapter 1

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INTRODUCTION

DISCOVERY

CONCEPT
DEVELOPMENT

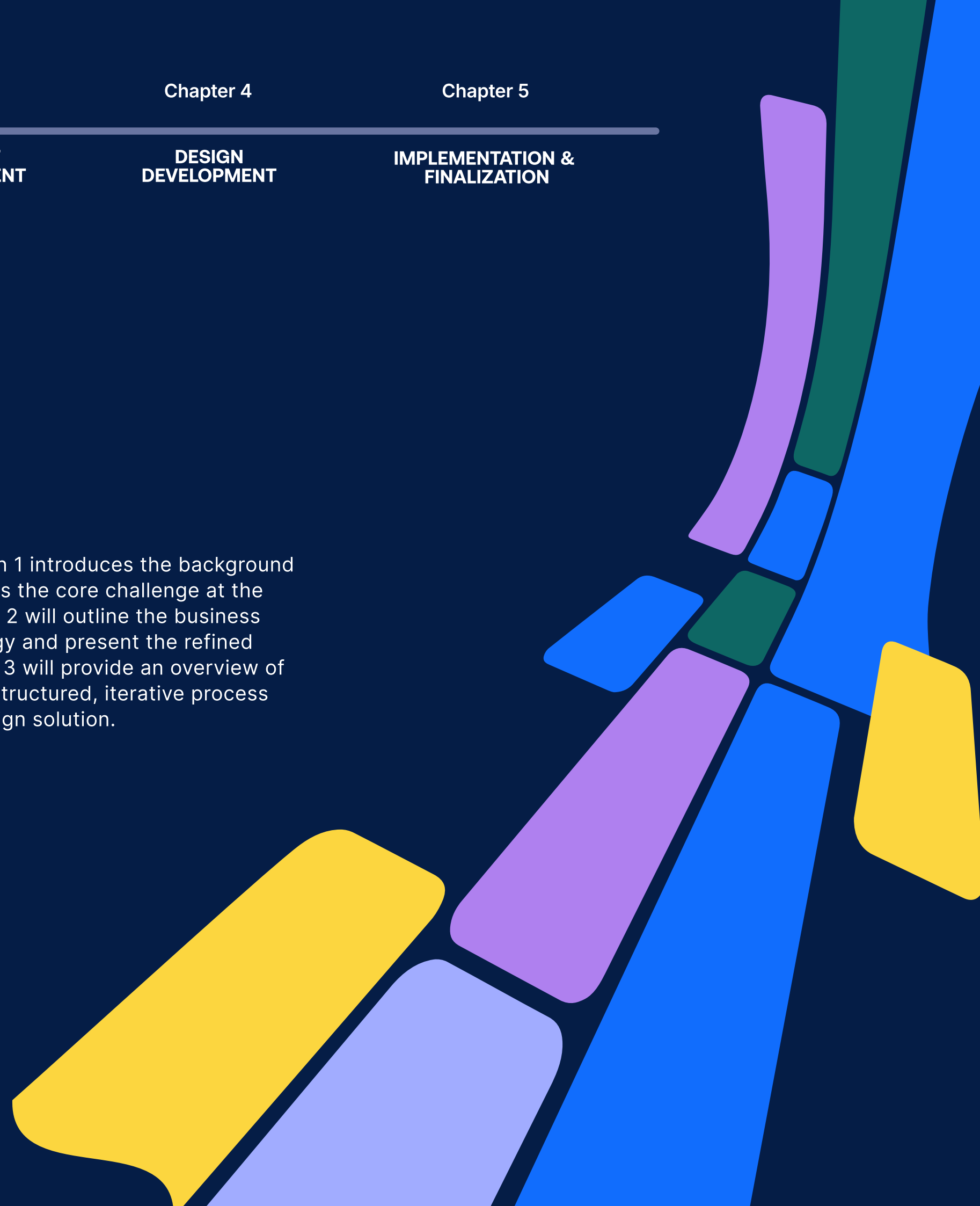
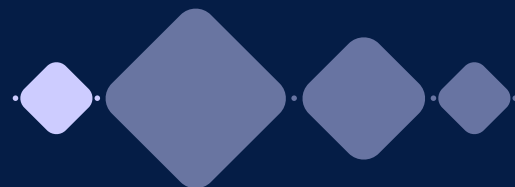
DESIGN
DEVELOPMENT

IMPLEMENTATION &
FINALIZATION

Chapter 1

INTRODUCTION

This chapter sets the stage for the entire project. Section 1 introduces the background of Bynder within the competitive DAM market and defines the core challenge at the heart of this research: the 'Brand Semantic Gap.' Section 2 will outline the business case for enhancing brand consistency through technology and present the refined research questions that guide this study. Finally, section 3 will provide an overview of the Research-through-Design approach, explaining the structured, iterative process used to move from problem discovery to a validated design solution.



Section 1

Project Background

1.1 Research Background

Due to the rise of the Internet, digital channels have developed rapidly. Different social media, short videos, and cross-border e-commerce have provided consumers with marketing from more dimensions, input brand stories, and displayed brand images.

According to research by Marq (Lucidpress), brand consistency has the potential to increase revenue by up to 10~20% (Marq, 2024). On the contrary, if brand information is biased, it will weaken consumers' trust in quality. As the digital assets produced by global brands increase exponentially every year, this 'cost of inconsistency' is being magnified into a business pain point that directly affects growth and market share.

Even more challenging is the cross-cultural and cross-regional scenario: teams in different cultural regions often rely on their own language habits to describe the same asset; in the high-speed iteration and fragmented collaboration, the brand's marketing assets and positioning are repeatedly disassembled and re-collaged, resulting in the phenomenon that different people have different brand images in their minds.

As a student of strategic product design, I have studied many brand-related courses. I believe that keeping the brand language consistent globally while responding quickly to the local market is a core issue that cannot be avoided in contemporary brand management. Finding a good strategy to deal with this issue is one of the motivations for my research.

1.2 Branding Context

To accurately address this issue, it is necessary to first define what 'brand' and 'brand consistency' refer to. Brand scholars generally regard brands as multidimensional structures that combine functional benefits and emotional symbols (Keller, 1993, Aaker, 1996). When talking about brand consistency, J. L. Aaker (1997) proposed the 'Five-Dimensional Model of Brand Personality', which quantifies this complexity into five psychological scales: Sincerity, Excitement, Competence, Sophistication, and Ruggedness. The model provides a quantifiable psychological baseline for evaluating brand consistency: when all touchpoints consistently present the same set of personality traits, consumers are more likely to develop trust and emotional belonging.

At a time when cross-cultural work has become the norm for staff of large brands, especially marketing teams, the difficulty of maintaining brand consistency has been greatly increased. For example, it is conceivable that if Patagonia wants to continue to output the image of 'toughness + sincerity', its marketing and creative teams must select assets from a vast repository of materials that align with this identity to achieve a uniform emotional impact across diverse cultural contexts.

Consequently, the core of brand governance is not limited to the logistics of digital asset volume and storage. Instead, it must ensure that **every digital asset—regardless of its origin or application—accurately maps to the established dimensions of the brand's identity.**

1.3 Digital Asset Management (DAM)

Digital Asset Management (DAM) systems have become very popular in the sector because of the rise in content. These platforms offer a single place to **store, organize, and share** brand resources. There are three stages in the development of DAM systems as the Figure 1.1.1 presents: first, there were simple media warehouses that focused on storage; next, there were collaborative workflow platforms that made it easier to approve content; and finally, there are systems of knowledge governance that make sure assets are utilized properly (Regli, 2016).

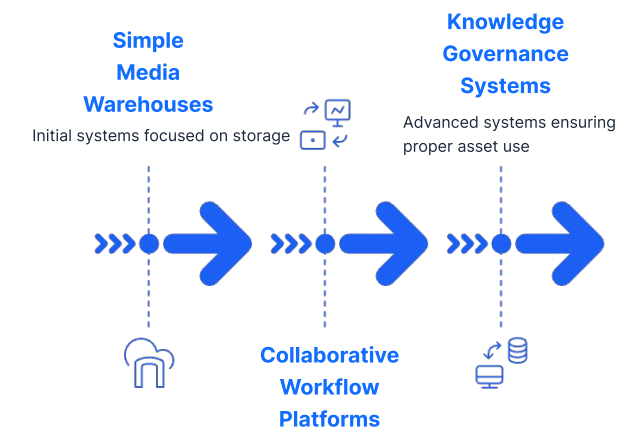


Figure 1.1.1: DAM History Overview

1.4 Bynder and the DAM Market

Bynder

In 2013, Bynder was founded in Amsterdam with the goal of helping brands grow through great content experiences.

It has set up offices in eight cities, including Amsterdam, Boston, and London, and has a network that covers seven data hosting areas in North America, Europe, and Asia Pacific. It provides digital asset management (DAM) services to more than **4,000** customers around the world using a **100% cloud SaaS** architecture (Bynder, 2025).

This distributed style shows that Bynder's main goal is to protect data sovereignty and compliance. It also lets Bynder balance the worldwide circulation and local landing of brand material while servicing global businesses.

Bynder's Clients customer

Based on an analysis of clients publicly listed on Bynder's website, Figure 1.1.2 shows that Bynder's customer groups span **6** different industries, with B2C consumer brands being the most prominent segment at approximately **29%** of the total. Bynder is used by well-known worldwide brands like IKEA and PepsiCo to handle complicated marketing materials around the world. The technology area comes in second with **16%**. Digital native companies like Spotify use Bynder to bring together visual assets with very quick product iterations.

Bynder wants to bring together brand experiences and enable large-scale content operations. It also sets the stage for Bynder to add further features, like AI search. At the same time, managing consistency can be challenging complicated clients industry.



Figure 1.1.2: A Selection of Bynder's Global Clients by Industry.

Bynder's Positioning

Figure 1.1.3 shows that Bynder is a SaaS service provider that first gives brands digital asset management and governance tools through B2B relationships. Then, brands use their own marketing, product, and service touchpoints to give end consumers a consistent content experience, which leads to B2C interactions.

Bynder's clients are different brands, but its platform performance will eventually show up in the customer experience. For example, it might speed up the process of finding marketing materials for brand staff or help customers make sure that all of their digital assets use the same brand language.

This is also why 'brand consistency' is the starting point for this project: we can only really open up this value chain from Bynder to the end audience and help Bynder reach its customers' business goals if the system can fully understand and absorb the vocabulary and context that brands are using and that consumers can see.

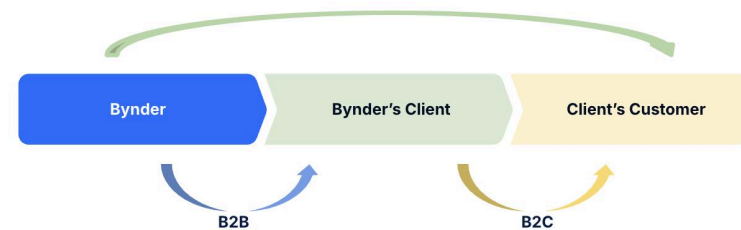


Figure 1.1.3: : Bynder's B2B2C (Business-To-Business-To-Consumer) Value Chain

Overview of the competitive landscape

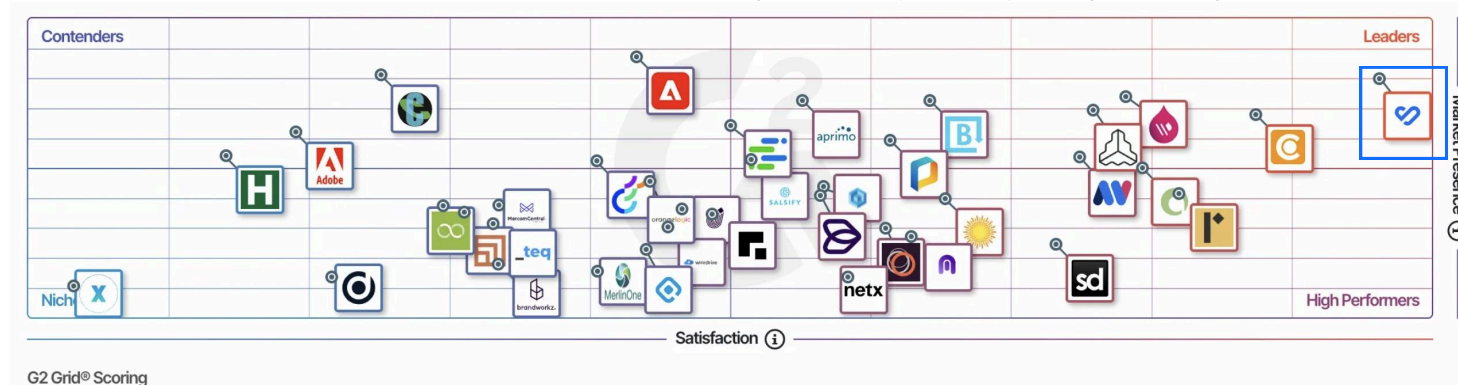
The digital asset management market is roughly divided into two poles: on one end are 'heavyweight' platforms such as Adobe and Aprimo, which have extremely deep functions and long implementation cycles, and on the other end are 'lightweight' tools such as Frontify, Brandfolder, and Canto, which are quick to use but have limited governance capabilities. There will be more details in Chapter 2 competitive analysis.

The mainstream SaaS marketplace G2 has also continuously rated it as the 'Leader', indicating that its strategy and product portfolio have differentiated advantages in balancing ease of use and scalability. If Bynder can strengthen its brand management strategy and fill the gap in brand consistency, it will have greater advantages.

However, it can be seen that Bynder holds a unique strategic position by combining the robust, enterprise-level functionality of heavyweight platforms with the agility and user-friendliness of lightweight tools.

The G2 Grid Report Is A Ranking System For Products And Companies Based On User Reviews And Ratings. Designed To Help Potential Buyers Make Informed Decisions About Which Products Or Services To Purchase, The Report Provides A Comprehensive Overview Of A Company's Offerings And Customer Experiences

Figure 1.1.4: G2 Enterprise Grid® Report For Digital Asset Management, Fall 2024



Key stakeholder overview

In this ecosystem, brand managers are the primary driving force, and they need to ensure that every material call is in line with the brand tone. Different brand managers have different responsibilities. The senior administrator who manages assets is usually the brand manager, who is responsible for the daily maintenance of the label system, permissions and workflows, and ensures that the system is constantly iterating as the brand context evolves.

Secondly, the most common users of DAM are marketing and creative teams, who rely on DAM to reuse materials in a short period of time and promote the implementation of activities.

In some brands who have design teams, designers also need to use assets in DAM for secondary editing before use; in addition, the IT/digital product department is responsible for seamlessly connecting Bynder product with other cooperative systems such as PIM and CMS to expand the reach of content.

The different users of DAM show the complexity of this system to meet the needs of different users. This project will focus on researching and interviewing these people during the design and research process.

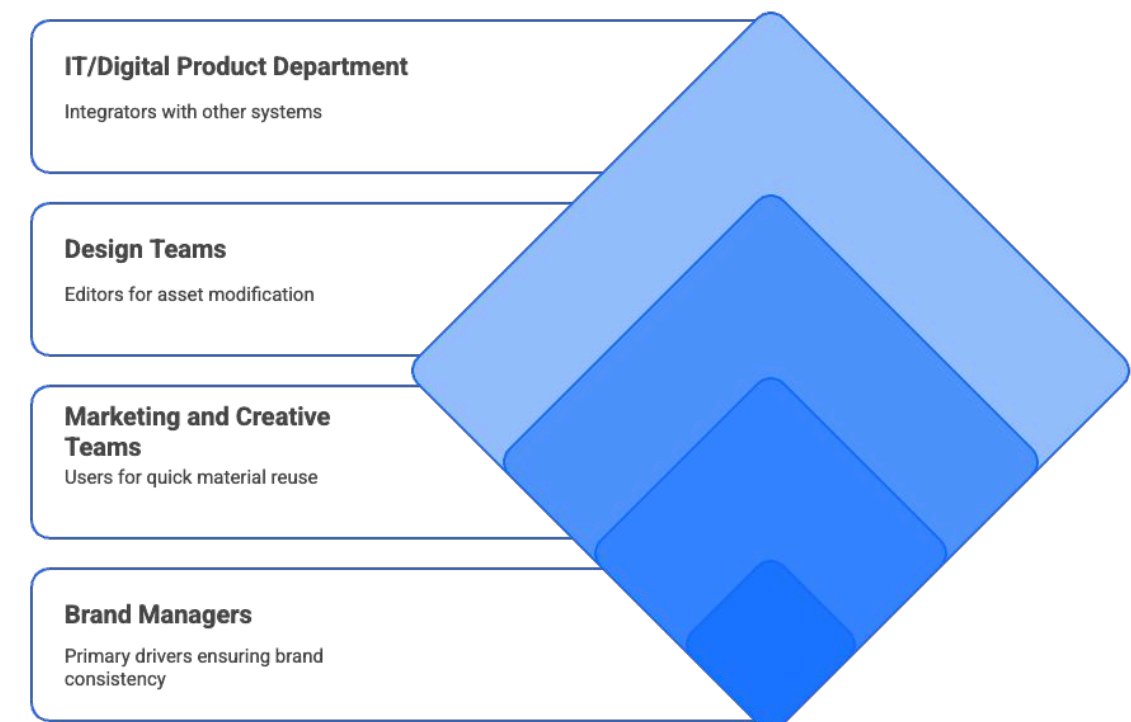


Figure 1.1.5: Stakeholder Ecosystem Of The Bynder DAM Platform

Section 2

Practice Context

2.1 Current Architecture and Process of Bynder DAM

Bynder's technology is built on AWS(Amazon Web Services). Assets are written to multi-copy object storage when they are uploaded. Assets are stored in the cloud when they are uploaded (Gorokhova, 2024). Metadata services are responsible for parsing asset description information, and search services are the core functions most commonly used by users.

At present, AI search is now part of Bynder offering. The most popular function is Natural language search, which is a function that can find assets without in-depth understanding of DAM and is very user-friendly.

As can be seen from the Figure1.2.1, the product team uses a **six-week iteration** to update related functions based on the needs from brands, whether new usage scenarios or customer permission requirements.

From the user's perspective, the content life cycle usually has three key nodes: upload-search-download/distribution. The creative team uploads the material on the desktop or portal system, and then the administrator manually or uses AI functions to fill in metadata such as categories and regions based on the template. After a few weeks or even months, the marketing colleague enters a phrase in the search box, and the system will immediately search on multiple channels, directly export files of different resolutions, sizes or formats on the result page, and download or push them to CMS or social media through the interface.

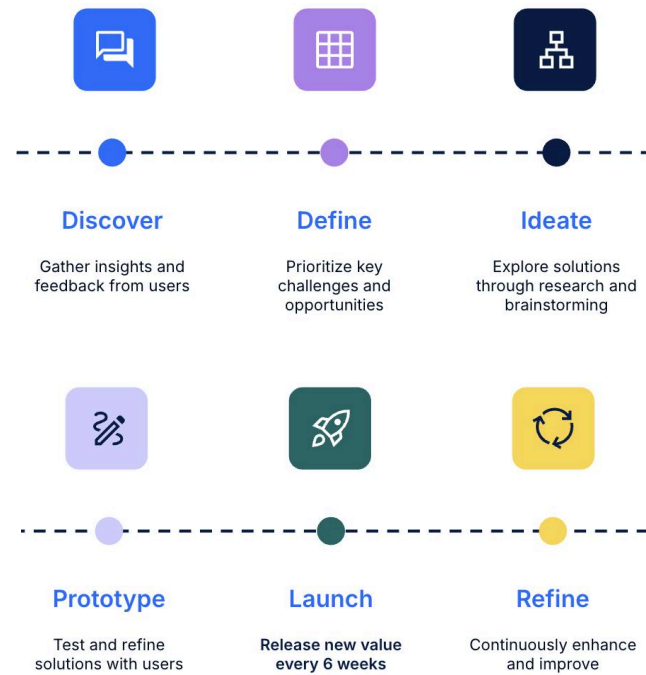


Figure 1.2.1: The Six-Week Iterative Development Cycle at Bynder

Bynder's agile and customer-centric development approach, which incorporates strong user demand into its rapid iteration cycles, provides the ideal foundation for developing these innovative, brand-aware solutions this project will focus on **the search function**. Currently, one of Bynder's most advanced AI search functions is Natural Language Search, which greatly improves search efficiency and reduces learning costs.

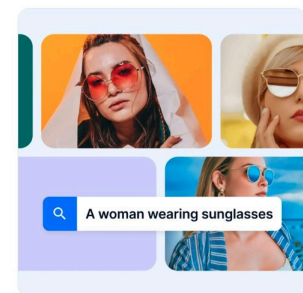


Figure 1.2.2: Example of Visual Asset Retrieval Using a Natural Language Search

2.2 Metadata Level: Metaproperties / Smart Filters / Tags

In the search process, understanding the classification of assets is a key component. Compared with the traditional folder-style hierarchy, Bynder uses three layers of metadata:

- **Structure layer:** composed of Metaproperties, configurable single/multiple selection fields (such as Product Family, Market, Usage Rights), written when uploading or batch importing (CSV/XMP)
- **Navigation layer:** fold multiple sets of Metaproperties into a drop-down facet of Smart Filters, reduce click paths and use counting prompts to filter efficiency
- **Description layer:** supplemented by tags generated manually/AI and rich tags such as OCR and visual recognition.

This combination of 'structure-navigation-descriptio' can improve the efficiency of the classification of fixed information, and administrators can also manage it based on permissions to ensure the privacy and security of data

However, during my internship at Bynder, I participated in product training and multiple customer interviews. To enhance the user experience for all skill levels, this project focuses on making powerful features even more intuitive, reducing the need for extensive training on advanced system functionalities. Analysis of customer feedback points to a clear opportunity to improve search accuracy and reduce manual work by enhancing the system's ability to understand emotional semantics, recognize proprietary SKUs, and provide more intuitive tools for governance and filtering.

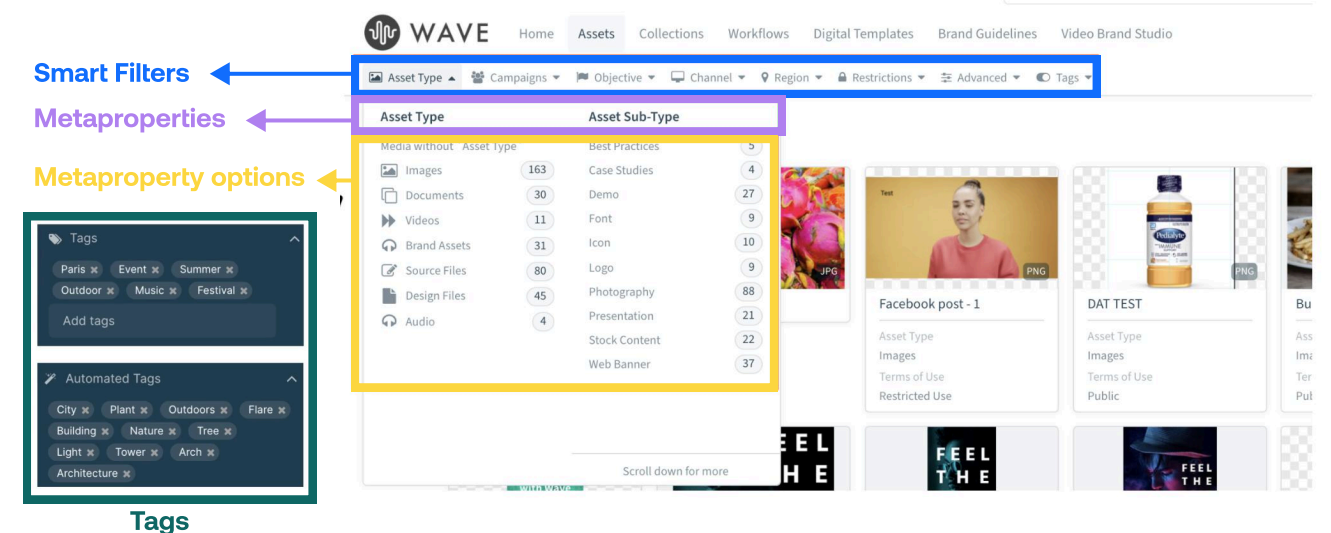


Figure 1.2.3: The Three Layers of Metadata in the Bynder User Interface

2.3 Bynder Brand Semantic Gap Case

While Natural Language Search (NLS) represents a significant advancement in Bynder's technology, and the combination of intelligent metadata structures and Smart Filters can help customers search for assets, the next step in search innovation is to enrich these models with brand-specific vocabularies and emotional nuances. General language models provide a powerful foundation for natural language search. This research explores how to enrich these models with brand-specific vocabularies and emotional nuances, representing the next step in search innovation.

This study defines this disconnect as the **'brand semantic gap'**. This gap emerges between an AI's interpretation, based on universal and literal data, and the particular language of a brand, which is imbued with subtle nuances, proprietary terms (e.g., product names, internal jargon), and specific emotional resonance.

The above insights and findings are all from my internship experience as a user experience intern in the Bynder Research & Design team from September 2024 to February 2025. To illustrate the subtle nuances of this gap, I will analyze the following two case studies observed during the internship.

P.S. According to Bynder's requirements, the names of relevant customers and important information involved are anonymized, and the images involved are generated using AI in accordance with the company's security requirements, but the intention of expressing the same as the original real experience is guaranteed.

Case 1: The Emotion Gap - Client C

This case comes from a luxury chocolatier, hereafter referred to as Client C. The core value of their brand is to capture and convey the feeling of "sophisticated romance and deep connection." For their annual Valentine's Day campaign, the marketing team needs to find assets that represent genuine, intimate moments between couples, which they use to support their "Timeless Love" advertising theme.

However, the brand's Digital Asset Management (DAM) system contains tens of thousands of images from numerous photoshoots. Many of these feature the same models in a single session, resulting in hundreds of similar photos where only the subtle emotional expression changes. The marketing team needs to select the perfect image that aligns with their specific, nuanced definition of romance.

When marketers search for assets using objective terms like "couple," "love," or "sharing chocolate" in the search bar, the system can quickly identify images with these elements. It successfully finds photos of two people with a box of chocolates.

This creates a challenge for the system to distinguish the specific emotional tone of the interaction based on objective data alone. The search results include a mix of playful, youthful couples, friends sharing a casual gift, and the deeply romantic, intimate partners the campaign requires. The system understands the objects ('couple', 'sofa', 'chocolate') but not the brand-specific emotion ('timeless love', 'intimacy', 'quiet connection').

Case 2: The Terminological Gap - Client V

The second case comes from a large shipbuilding company (hereinafter referred to as Client V). In its corporate culture and technical context, all ships are called 'Craft', and this term runs through internal documents, training and external communications.



Figure 1.2.4: Visual Representation of the "Emotion Gap" in Brand Assets
To protect client confidentiality, this representative image was generated by Gemini

For the "Timeless Love" campaign, Image B is perfect, while Image A feels too casual and doesn't fit the brand's tone. This creates a need for marketers to manually review near-identical photos to find the one that aligns with a specific emotional goal. They must visually evaluate each one to determine if the expressions and body language align with the campaign's specific emotional goal.

Bridging this 'emotional semantics gap' is a key opportunity to dramatically accelerate the campaign creation process and enhance the team's confidence in the DAM's ability to support nuanced brand storytelling.

Conclusion

These two cases highlight two opportunities to close the brand semantic gap: one in the emotional dimension, by teaching the system to understand brand-specific emotions and personality expressions; and another in the terminology dimension, by enabling the system to identify and prioritize brand-specific vocabulary.

Together, they show that the next frontier for advanced search is to master the complexities of brand governance. This research explores how to pioneer this brand-aware intelligence, building on the existing strengths of the platform's functionality.

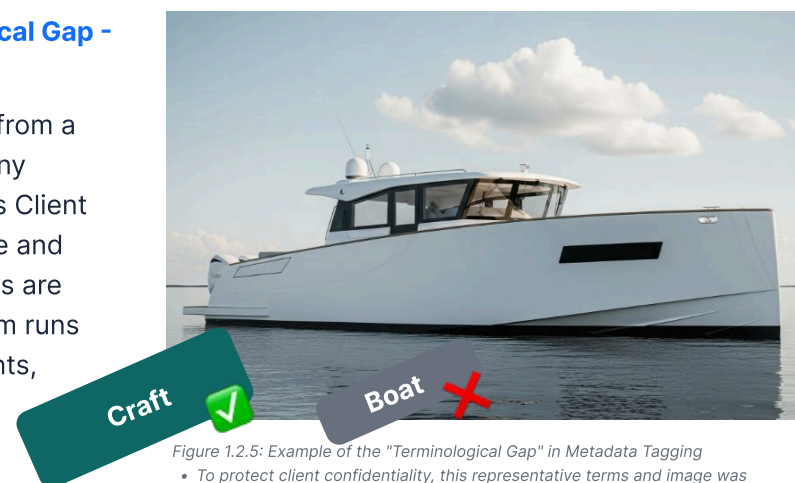


Figure 1.2.5: Example of the "Terminological Gap" in Metadata Tagging
• To protect client confidentiality, this representative terms and image was generated by Gemini

For all the DAM systems, the administrator needs high responsibility when uploading assets. Not every time this term is tagged on the picture. If a more traditional or generic search is performed, the system may record such pictures with general terms like 'boat' or 'ship', making them findable only through that vocabulary.

An opportunity exists to significantly reduce the manual workload for administrators by introducing more intelligent, automated tagging and vocabulary management.

Section 3

The Research Definition

1.1 The Research Problem: The Brand Semantic Gap

As mentioned before, NLS has made it easier to find assets, while it is based on general language models; these models learn from large, general datasets, so they don't really understand the distinctive, unique language that makes up a brand. There is a 'brand semantic gap' since the AI's general vocabulary and the brand's specific terminology don't match up.

When we did practical study in the Bynder environment, we saw this disparity in two main ways: company personality and emotion.

While the current NLS model excels at identifying objective subjects like a 'pet,' a significant opportunity exists to enhance its capabilities to also interpret subjective, brand-related emotional concepts like 'happiness.'

A shipyard client uses the brand-specific word 'craft' to talk about its products, but they don't know what it means. This word is part of the everyday language of their brand teams. An AI model, on the other hand, finds the product in a picture and puts the generic label 'boat' on it. This mislabeling makes it harder for internal users to search and overlooks the brand's unique language, which is an important part of its culture and identity.

Improving the system's accuracy and automation will not only reduce the need for manual review but also mitigate the risk of using off-brand assets, thereby strengthening brand consistency over time.

1.4 Research Aim and Questions

The goal of this study is to create and suggest a framework that fills in the brand semantic gap by methodically adding brand-specific language to the asset retrieval process of a DAM system. The idea is to make it easier for customers to find what they're looking for and for businesses to keep their brand consistent.

To reach this goal, the study will answer the following research questions (RQs):

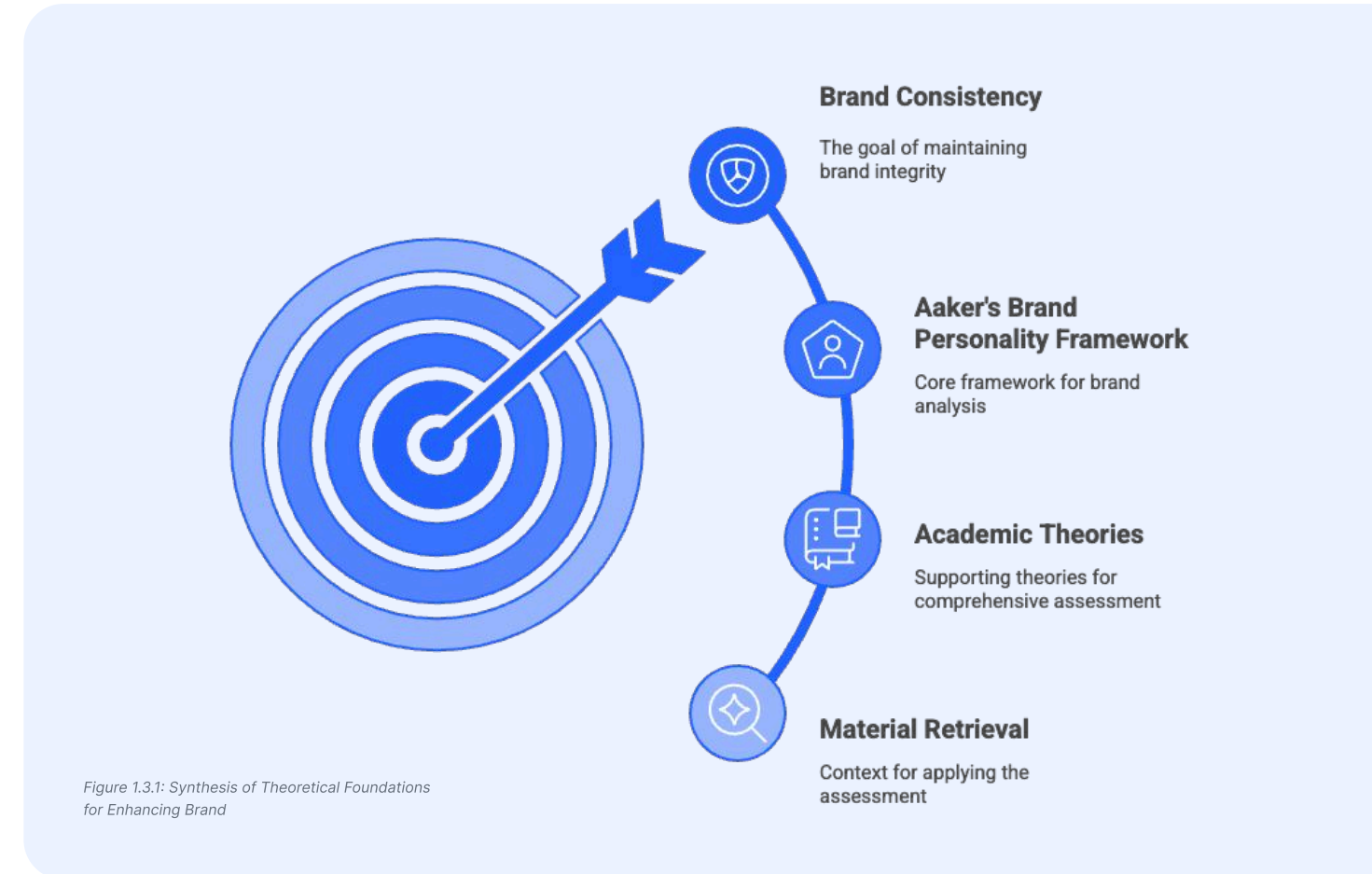
- **How can Bynder turn NLS from a generic search feature into a brand-aware capability that strengthens brand consistency in DAM?**

To make this research question clearer, I make three sub-questions to help define this topic:

RQ1: What are the theoretical foundations and practical manifestations of the 'brand semantic gap' in DAM systems, and what specific challenges does this gap create for Bynder's key user personas in maintaining brand consistency?

RQ2: Based on the identified challenges, what are the core principles for a brand-aware NLS, and how can these principles be translated into a tangible design framework to address the needs of each user persona?

RQ3: To what extent does the proposed design framework validate its potential to improve search efficiency, increase the retrieval of on-brand assets, and reduce the cognitive load for users?



1.5 The Scope and Contribution of the Research

The project is all about Bynder's Digital Asset Management (DAM) platform in a practical business setting, and it concentrates on the search functionality module of Natural Language Search (NLS). The decision not to build or retrain new language models, as Bynder is a SaaS provider that has to stay safe and vendor-neutral. This research will focus on existing language models because of business concerns like lead time, cost, or privacy concerns for clients. It will treat today's base models as stable technical 'givens' and look at how to improve the existing capabilities of these models by adding more design layers.

The research's main contribution is the improved architecture, which lets existing AI employ each customer's unique brand language without changing the model's weights.

Section 4

Project Approach

This study uses the practical logic of Research-through-Design (RtD) (Stappers & Giaccardi, 2024) and the Design Council's 'Double Diamond' model (Design Council, n.d.) to create four stages that are connected and verified in a circular way.

Compared to the original 'Double Diamond', RtD lets research, design, and verification work together in a spiral iteration. Almost every output will be sent back to the stakeholders right away for review and reinforcement. This keeps a balance between academic depth and commercial viability.

The first step of Discover Phase is literature review, comparing the best DAM solutions on the market, and conducting 11 semi-structured interviews with stakeholders. The information gathered here creates a strong problem statement and an initial set of design needs.

Concept Phase turns those needs into a first idea. By mapping out the main user groups and their journeys from start to finish. Then, I host a stakeholder co-creation workshop to come up with and rank possible solutions. Bynder's ongoing feedback will help me improve the idea over time.

Design Phase goes from an idea to a complete design and testing. I built some high-fidelity prototypes and tested it using more stakeholder interviews and scenario-based usability tests. This will let me make changes based on the evidence.

Implementation Phase 4 brings everything together by showing the completed solution, suggesting ways to improve it in the future, and ending with a critical look back.

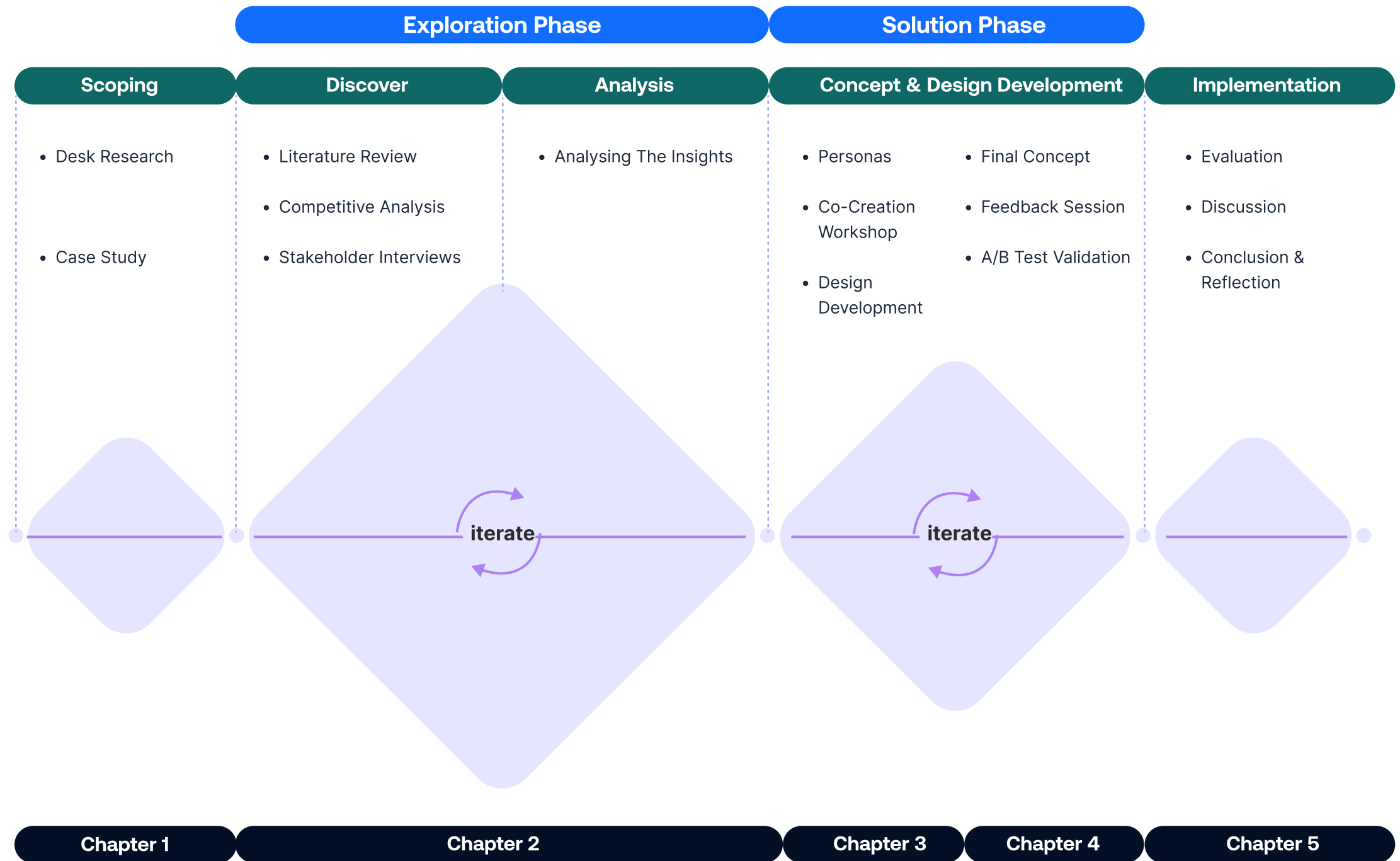


Figure 1.4.1: The Adapted Double Diamond Model for the Project Approach

Section 5

Conclusion

This chapter has established the foundational context for the project. Bynder has been positioned within the dynamic DAM landscape, and the central challenge has been defined as the 'Brand Semantic Gap.' The inquiry is guided by the main research question:

- *How can Bynder turn NLS from a generic search feature into a brand-aware capability that strengthens brand consistency in DAM?*

To navigate this complex question, the research follows a structured path defined by three sub-questions. The chapters that follow are dedicated to answering each of these in detail:

- *RQ1: What are the theoretical foundations and practical manifestations of the 'brand semantic gap' in DAM systems, and what specific challenges does this gap create for Bynder's key user personas in maintaining brand consistency?*

This question is addressed in Chapter 2. The theoretical foundations are established through the literature review, the practical manifestations are identified via competitive analysis, and the specific user challenges are uncovered through stakeholder interviews.

- *RQ2: Based on the identified challenges, what are the core principles for a brand-aware NLS, and how can these principles be translated into a tangible design framework to address the needs of each user persona?*

This question is answered across Chapter 3 and

Chapter 4. The core principles are derived from the co-creation workshop detailed in Chapter 3, while the design framework is presented in Chapter 4.

- *RQ3: To what extent does the proposed design framework validate its potential to improve search efficiency, increase the retrieval of on-brand assets, and reduce the cognitive load for users?*

This evaluative question is answered in Chapter 5, where the framework's potential is validated through the results of expert feedback.

Chapter 1

Chapter 2

Chapter 3

Chapter 4

Chapter 5

INTRODUCTION

DISCOVERY

CONCEPT
DEVELOPMENT

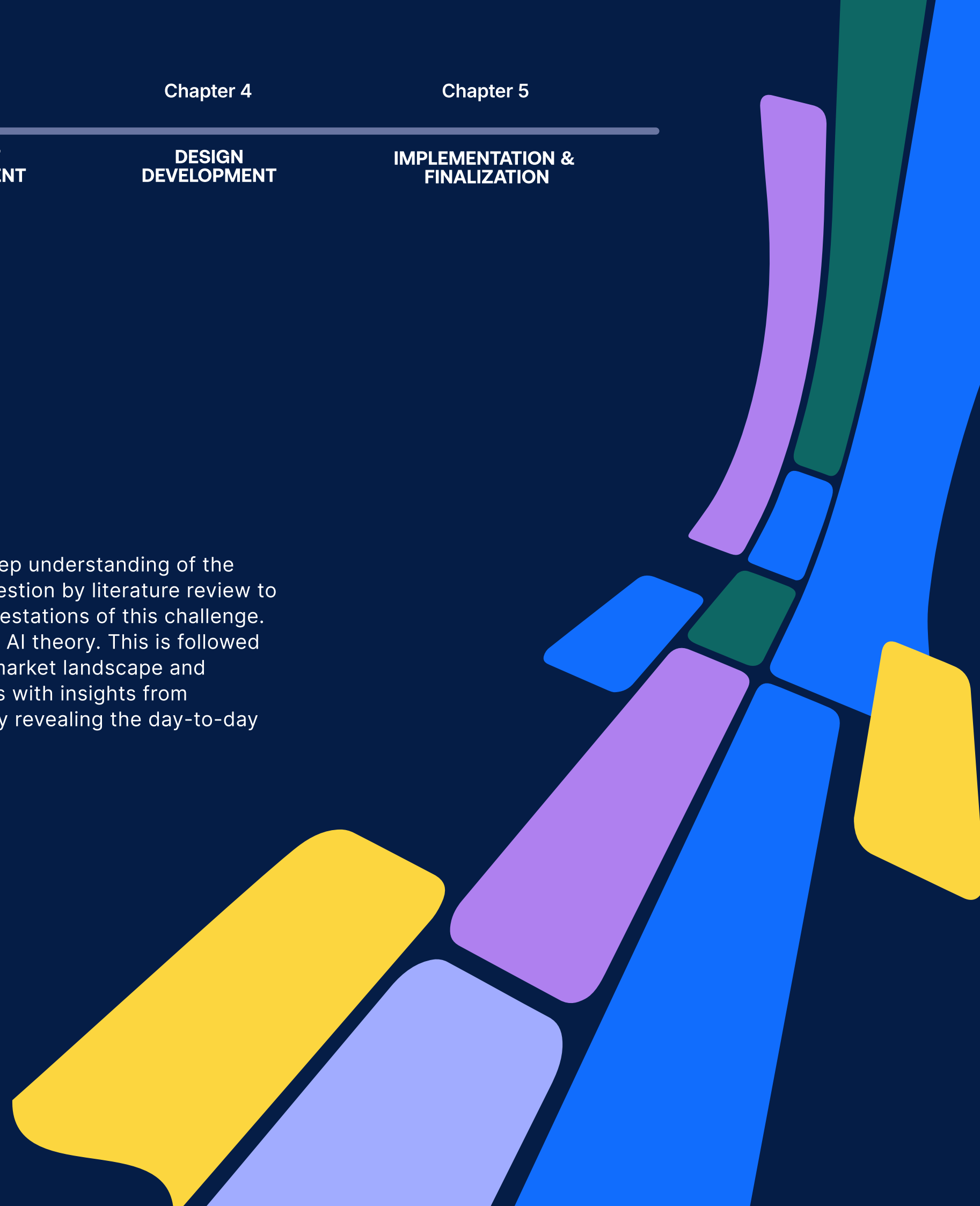
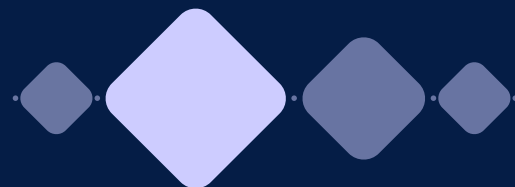
DESIGN
DEVELOPMENT

IMPLEMENTATION &
FINALIZATION

Chapter 2

DISCOVERY

This chapter delves into the problem space to build a deep understanding of the 'Brand Semantic Gap.' The goal is to answer first sub-question by literature review to exploring the theoretical foundations and practical manifestations of this challenge. Section 1 ground the project in established branding and AI theory. This is followed by section 2, a competitive analysis to map the current market landscape and identify strategic opportunities. The section 3 culminates with insights from stakeholder interviews, which bring the problem to life by revealing the day-to-day pain points and needs of Bynder's users.



Section 1 Methodology Overview

This section of the study explains the basic strategy it took, including how the research was set up to make sure the results are strong, trustworthy, and reliable.

1.1 Research Approach

The first chapter has locked the research focus from both macro and micro perspectives 'brand semantic gap', and sorted out the impact on both business and user experience through observation by sorting out cases and specific findings.

On this basis, this chapter further explains the research tools and methods to dive into it. I chose the method of literature review, competitive analysis and stakeholder interviews as the basis for the next step of design methods.

The reasons for its selection are due to two aspects: First, the strict requirements of the project company on data security and customer confidentiality make it difficult to implement large-scale quantitative analysis methods such as field experiments and log capture. Second, design practice needs to be quickly iterated within a limited semester and timely feedback to product decisions, so it must rely on methods that can be circulated at high frequency and save resources considering the company's practice background.

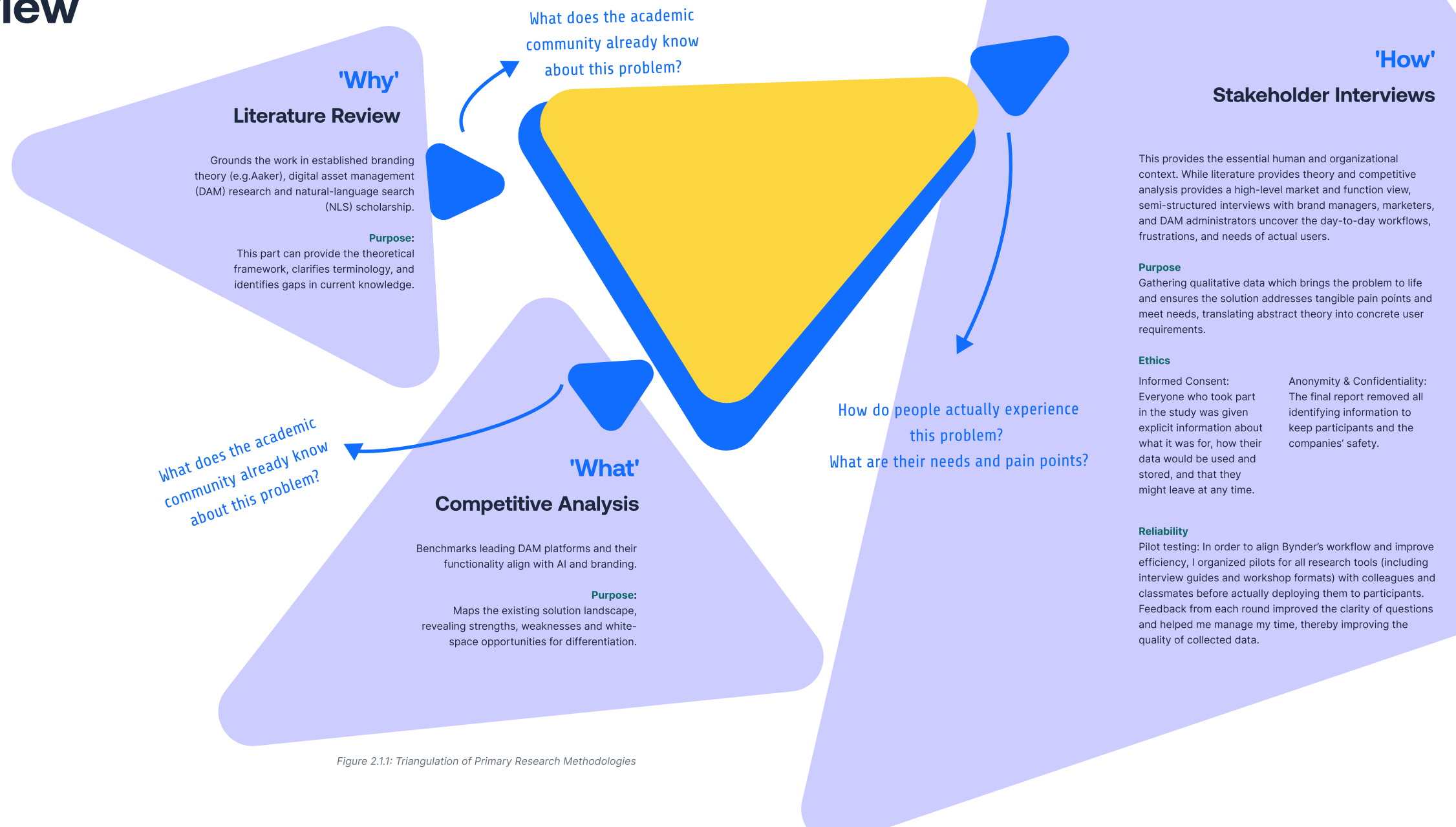
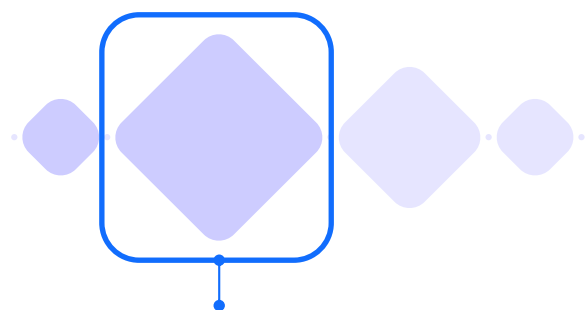


Figure 2.1.1: Triangulation of Primary Research Methodologies



RQ1: What are the theoretical foundations and practical manifestations of the 'brand semantic gap' in DAM systems, and what specific challenges does this gap create for Bynder's key user personas in maintaining brand consistency?

1.2 Research Positioning and How it Support Each Other

This study will move from a broad understanding of the problem space to specific, actionable design interventions. This is achieved by complementing and discovering evidence from three different sources. Specifically, the literature review provides a theoretical basis, helps define evaluation indicators and conceptual boundaries, and especially understands the current research status of the problem in academia and the market, and determines the research value and gap of the problem; the competitive product analysis will focus on the gap, which is the practical background between the industry and the project, and gain insight into the current status of the industry and the gap with other companies, especially in specific functions; semi-structured interviews directly contact internal and external stakeholders with the authorization of the company to capture the pain points and demand-related details in the usage scenarios.

These three methods were selected to enrich the data sources of the research, reduce deviations and biases through more data in accordance with the company's requirements, and hope to ensure that the final solution is not only theoretically reasonable, but also relevant to the market and meets actual user needs.

Section 2

Literature Review

2.1 Introduction: Positioning the Study in Branding & Natural Language

As mentioned in Chapter 1, a brand is an organization's promise to a customer, delivering not just functional benefits, but also emotional and self-expressive value. A critical component of this promise is the verbal brand identity, which, for this study, is defined as the unique linguistic fingerprint of a brand. It features a specific tone of voice, a distinct verbal style, and a controlled vocabulary that includes proprietary terms and phrases.

This thesis focuses specifically on preserving this verbal identity within a Digital Asset Management (DAM) system, rather than addressing the initial creation of brand strategy. The core challenge is that the nuances of a brand's language are often lost or misinterpreted by the generic models powering Natural Language Search (NLS).

This review of the literature will therefore examine the major academic and business innovations within three disciplines: the fundamental theory of branding, brand consistency via DAM platforms, and Natural Language technologies. The review concludes with a synthesis identifying the need for brand-governed NLS systems, setting the stage for further research into how such systems can preserve verbal brand identity at scale.

The overview is presented in Figure 3.2.1.

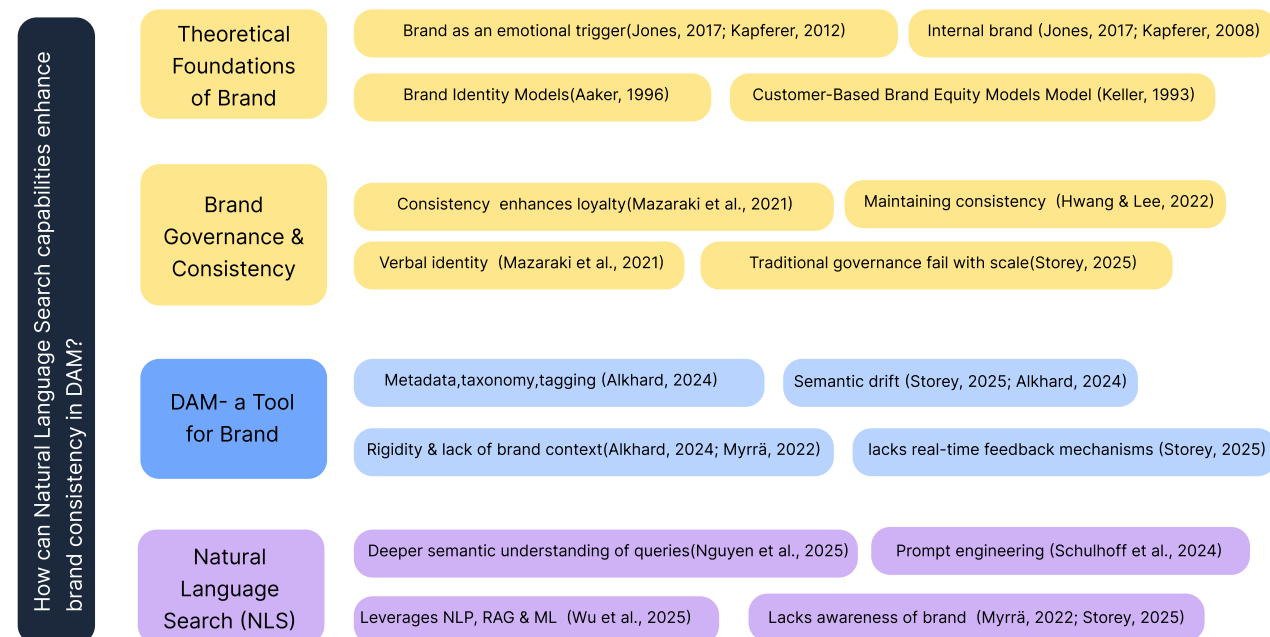


Figure 2.2.1: Literature Overview

2.2 Theoretical Foundations of Brand Language & Governance

The brand theoretical support is essential to understand how the communication of a brand and a digital method using Natural Language Search (NLS) can help create brand consistency in Digital Asset Management (DAM) systems.

What is brand?

The concept of a brand is not new. Historically, the process of marking property to show ownership (Keller, 2012) was the basis for the term. The American Marketing Association (2017) provides a clearer definition of a brand: "a name, term, sign, symbol, or design, or a combination of them intended to identify the goods and services of one seller or group of sellers and differentiate them from those of competitors." In practice, a brand transcends its functional role as a simple identifier. It serves as an "emotional trigger for a consumer to create a relationship" by connecting products to larger ideas and giving them meaning (Jones, 2017). This emotional connection is precisely what separates powerful brands from weak ones. As Kapferer (2012) argues, a strong brand has an emotive relationship with its consumers which enhance brand loyalty. The trust and loyalty of the consumer will reduce their effort and risk while enabling self-expression through their purchasing choices (Barwise, 2010; Burmann et al., 2017).

Additionally, a brand's influence is not solely external. It is "just as important as a force that guides and energizes employees" (Jones, 2017, p. 2). From an internal perspective, the brand is a "plan, a vision, a project" (Kapferer, 2008, p. 189) that can unite teams, improve productivity, and foster a shared sense of purpose.

Therefore, for this thesis, a brand is defined as both the internal brand identity—the strategic vision and set of values that guide the organization—and the external brand image—the perception, reputation, and relationship formed in the minds of consumers (Jones, 2017; Kapferer, 2008; Percy, 2003).

Understanding how to manage the consistency between this internal identity and external image is fundamental to brand success.

2 Models of Brand

Building on the difference between internal identity and external image, two foundational models are relevant for this study: David Aaker's Brand Identity Model and Kevin Lane Keller's Customer-Based Brand Equity (CBBE) model. These frameworks provide a structure for analyzing how brand language can bridge the gap between company strategy and customer perception.

First is Aaker's (1996) Brand Identity Model. It offers a structure for defining the brand identity that an organization aims to project. He posits that a brand is more than a name or logo; it is a strategic identity system composed of core and extended elements that communicate the brand's essence. These components, such as "brand as a symbol," "brand as an organization," and "brand as a person," are directly associated with verbal identity and brand language. Brand language—as a set of tone-of-voice, verbal identity, and controlled vocabulary—serves as a primary vehicle for expressing this identity consistently across all touchpoints. According to Aaker, failure to linguistically align with this core identity results in confusion and a brand equity.

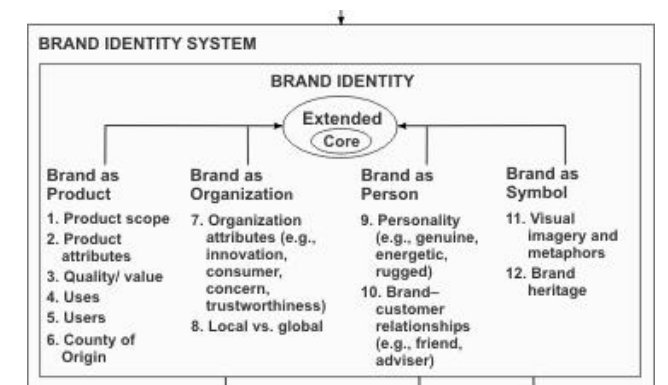


Figure 2.2.2: Aaker's Brand Identity Model

In contrast, Keller (1993) CBBE model focuses on the other side: the brand image and equity built in the consumer's mind. The model is structured as a pyramid, illustrating the stages a consumer goes through to form a strong brand relationship, moving from simple awareness (salience) at the base to intense, active loyalty (resonance) at the apex. Verbal identity is crucial in this journey, as consistent and familiar messaging (Zia et al., 2021) helps build the positive performance and imagery associations that lead to positive judgments and feelings. Keller's model emphasizes that a lack of cohesion between various aspects of customer-scaling coping can hinder the chances of achieving brand resonance. The challenge lies in ensuring that the assets and language used in every interaction consistently build toward the brand resonance.

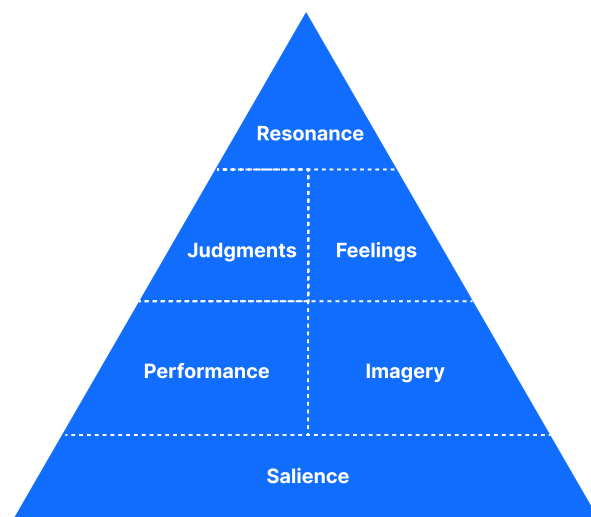


Figure 2.2.2: Keller's brand pyramid

Moreover, the differentiated verbal identity, according to Mazaraki et al. (2021), performs similarly to a logo, as it assists brands to cut through the competitive context. In this digital era, when it is not uncommon to communicate with customers in automated systems, having a collective voice has become not a luxury but an essential tool. The case study by So and King (2010) highlights how inconsistent external brand image and internal brand identity, as a result of confusing messaging, may harm the brand value. These frameworks underscore the strategic purpose of language that not only shapes but also maintains brand identity.

Bynder Context

While the models from Aaker and Keller provide a strategic foundation, brand governance translates these abstract principles into daily practice. This is particularly critical for Bynder's primary client base: large, global B2C consumer brands like IKEA and PepsiCo. For these organizations, managing brand consistency is a significant operational challenge. They operate vast content ecosystems, with marketing and creative teams distributed across different departments and cultural regions.

2.3 Theme 1: Brand Governance and Consistency

Brand governance is a vital part of strategic brand management, especially in defining consistency within ever more diverse and multimodal brand environments. Although visual aesthetics of the brand, i.e., logos, typography, and color palette are often in the spotlight, the latest sources also highlight the crucial importance of verbal identity, i.e., brand language, tone-of-voice, and a restricted vocabulary, in preserving consistency and ensuring brand sustainability (Zia et al., 2021).

DiMarco (2024) characterizes brand language as the combination of verbal identity, tone of voice, and controlled vocabulary. Verbal identity is the particular language signature of a brand, not only the language of the brand, but the language about the brand and the language that the brand is about. Tone-of-voice encapsulates the uniformity of emotional talking-up in communications, friendly, authoritative, mischievous, formal, etc. and controlled vocabulary encompasses garnered words and style conventions to standardize communications across mediums. These various parts come together and create a cohesive verbal persona that will keep the customers feeling the same brand personality as they read a product description, encounter the customer service team, or use a mobile application.

Brand consistency across all communication channels is essential since it enhances consumer loyalty and trust. As Mazaraki et al. (2021) emphasize, a specific and consistent brand voice can contribute to building a clear identity as well as distinguish a brand in a highly competitive market. In equal measures, Zia et al. (2021) posit verbal coherence as aiding brand equity, such that it promotes mental availability and emotional connectivity amongst consumers. Coherent communication creates the impression of professionalism and trustworthiness, which builds customers confidence in the brand.

However, consistency in words across departments, platforms and technologies is a major challenge. The typical approach used by companies to stay aligned involves the use of brand style guides, toolkits, and employee training (Vallaster & De Chernatony, 2006). They are the tools that code grammar preferences, tone rules, and authorised terms to achieve uniformities. Style guides, as an example, might mandate spelling (British or American English), contraction or formal language use or how a brand defines its values or benefits. Writing aids and toolkits are frequently facilitated through AI-powered templates that enable non-expert workers to follow brand guidelines even when working without supervising editors.

Governance mechanisms do not always work in digital-first environments, even with these efforts. The emergence of AI-enhanced systems and algorithmic creation of content complicates the previous governance arrangements that have been formed, with the assumption of human interpretation. As Storey (2025) acknowledges, the more human-compatible brand language systems cannot necessarily be smoothly converted into machine thinking, particularly in settings dominated by generative technologies. Such a transition requires more than new tools; it requires fundamentally new paradigms to ensure the coherence of the brand within automated workflows.

Scale is another challenge. As businesses deal with a larger amount of content and share roles along international teams, brand voice becomes harder to maintain consistency. Discrepancies may be occasioned by differences in lingual interpretations, cultural variations, and local adaptations. These discrepancies, however, slight, can build up and weaken the integrity perceived of the brand.

2.4 Theme 2: Digital Asset Management (DAM) as a Tool for Brand

Enterprise brand environments have continued to rely heavily on Digital Asset Management (DAM) systems, particularly as companies have continued to run more complex and distributed content systems. As brand expand across media and market, DAM platform are centralized repository that organizes, retrieves and distributes digital content including, but not limited to, images, videos, documents, and other brand assets. Primarily, these systems are intended to establish consistency, simplify processes, and maintain brand integrity (encoded information architecture and metadata structure). However, despite these advantages, current DAM implementations face significant limitations, particularly in preserving the semantic depth and context of brand language and identity (Alkhard, 2024; Myyrä, 2022).

At a structural level, modern DAM systems rely heavily on metadata, which refers to descriptive, administrative, and technical information attached to digital assets. Metadata fields often include attributes such as file type, author, date of creation, and usage rights (Alkhard, 2024). To enable retrieval and categorization, these systems employ taxonomies, hierarchical classification schemes, and tagging, which allows assets to be assigned multiple descriptive labels. These mechanisms are designed to ensure that assets can be located efficiently and used appropriately across departments and campaigns.

However, this metadata-driven infrastructure is inherently rigid and reductionist. According to Alkhard (2024), since granularity of brand language to a high level, the tone and the meaning of story and subtlety of context are not simple to be represented in pre-defined metadata schemes. These limitations become particularly evident when users attempt to search for content that aligns with brand-specific expressions or campaign semantics.

Additionally, the manual entry of metadata and tags often contributes to inconsistencies, outdated labels, and low semantic resolution. In many organizations, tagging is performed by different individuals or teams with varying levels of brand knowledge, which exacerbates inconsistencies. Over time, static taxonomies become misaligned with the evolving semantics of the brand, especially as new campaigns, products, and cultural trends introduce fresh vocabulary and tones that the system was never designed to accommodate (Alkhard, 2024). In such scenarios, DAM systems cease to reflect the brand's actual communicative posture, rendering them less effective as tools for governance.

To address these constraints, more organizations are turning towards automated tagging services and AI-assisted classification methods. Technologies like MAAM (Media Asset Annotation and Management) utilize machine learning and deep learning techniques to identify objects, create captions, and tag in bulk (Schinas et al., 2023). These systems can compute through enormous volumes of content with a speed that is incomparable to manual systems. Nevertheless, these AI-powered systems do not always capture brand nuances, as Myyrä (2022) notes. As an illustration, an AI model can label a photo as either "office" or "teamwork," but will fail to identify whether an asset lends itself to a brand story of innovation, "tradition," or "sustainability." The outcome is a semantic disconnect that negates the relevancy of the asset in brand communications.

An additional problem with this challenge is a phenomenon referred to as semantic drift, the tendency of AI-generated descriptors to drift out of the desired brand meanings over time. Storey (2025) cautions that general-purpose AI models tend to be optimized towards statistical, as opposed to strategic, alignment, so that tags they produce can reflect generic understandings as opposed to domain-relevant information.

As an example, a generative AI would narrate a luxurious selling point with general adjectives like "shiny" or "elegant" without emphasizing brand-specific tone determinants like the terms "heritage" or "bespoke" essential to sustaining a luxury brand perception. Semantic drift lacks oversight mechanisms to destroy brand integrity by propagating content that does not conform to the established narrative and voice.

There have also been hindrances to developing brand-specific taxonomies that relates to internal messaging and culture. Alkhard (2024) stresses that the majority of taxonomies are created by the system architects emphasizing the technical clarity rather than the communicative meaning. Another issue is the dead end that marketing departments and the DAM developers create as these tagging schemas are usually more dependent on asset type and format rather than brand purpose, emotional tone or campaign relevance. Therefore, the systems may not enable brand consistency on the narrative level, even when they technically work.

A significant limitation of current AI-augmented DAM systems is the absence of real-time feedback loops for semantic review. These platforms generally lack interfaces that would enable brand teams to correct or refine AI-generated tags in a way that informs the model's future behavior (Storey, 2025). Without such a feedback mechanism, the system is unable to learn from expert user input and absorb brand-specific nuances over time. This perpetuates the use of generic descriptors and reinforces the very semantic misalignment the technology was intended to solve.

2.5 Theme 3: The Technology of Natural Language Search (NLS)

Natural Language Search (NLS) is a revolution in the way users engage digital systems, specifically in the enterprise environment. Compared to older keyword-based search techniques (in which users must remember specific keywords or metadata to search data) NLS lets the user conversational query systems with intuitive language. This development is helped in large part by Natural Language Processing (NLP), machine learning, and retrieval-augmented generation (RAG) which in aggregate allow systems to understand and act on the semantics and intent of user input (Wu et al., 2025; Nguyen et al., 2025).

At its core, NLS leverages NLP to process human language inputs through parsing, interpreting, and mapping them into structured data. NLS systems, unlike keyword-based information retrieval which depends strictly on the matching of query terms with indexed metadata, are able to analyse the semantics of both the user and the query and infer context by performing semantic parsing across the data in a meaning-based search. Such semantic processing enables users to make compound natural queries, like, “show me all videos of the spring campaign with youthful energy,” and get results that not only reflect the shallow vocabulary, but also the deeper concepts (Nguyen et al., 2025).

This augmented interpretive ability of NLS provides immense advantages when compared to conventional keyword search programs, especially in an enterprise scenario where the repositories are large and usually poorly tagged. Key phrase search is based on the premise that users are versed with the accurate terminology found in metadata schemes.

Myyrä (2022) points out that the users often grapple with DAM systems because of their natural queries not fitting available pre-set tags, leading to irrelevant or incomplete results as a result. Through NLS, this issue is addressed by closing the chasm between system logic and user language, with more precise and explorable results.

Furthermore, cognitive efficiency is a significant advantage of NLS. NLS also eases the workload of meaning taxonomies, metadata categories, or designated terms when users can just spell out their query using the natural language (Nguyen et al., 2025). This is particularly attractive to non-technical users or employees not necessarily sitting in the center of the brand or marketing teams and therefore not well versed in internalized vocabularies. Rather than insisting on compliance with fixed scripts, NLS accommodates the user voice, and opens entry to organizational expertise and digital resources by democratizing data.

This flexibility, however, poses fundamental tensions, we find especially within brand environment where tone, voice, and restricted vocabulary are part of the identity and governance. As Falck (2018) and Storey (2025) insist, brand language is not just a style but rather a strategic tool that carries meaning, values, and personality. When open-ended queries are interpreted by NLS systems trained on general-purpose AI models, there is a bias towards common or statistically probable interpretations at the expense of brand-relevant interpretations. To provide an example, when searching for the query of “funny videos,” the user may receive lightweight content that fits the general humor image but not the elegant, formal presentation of the luxury brand. This inconsistency where search intent and brand logic collide is a significant issue in governance.

This issue is addressed solved in the literature by the emerging of the practice of prompt engineering, especially in enterprise environments. Prompt engineering is the process of using structured input prompts to modify the output behavior of large language models (LLMs) to be domain-specific. Prompts may contain brand-authorized tone-of-voice cues, restricted word sets, or semantic filters that influence system understanding and execution of queries, as Schulhoff et al. (2024) suggest. Entirely, prompt engineering can form a gentle oversight layer-installing brand limitations not in the NLS engine yet in the NLS interface such that the outcome sustains brand character.

Arawjo et al. (2024) describe tools such as ChainForge that allow brand teams and UX designers to A/B test alternative formulations of prompts, evaluate the effects, and improve the way the system responds to formulate it in line with strategic messaging. The given method goes beyond technical configuration, entering the domain of collaboration between human knowledge and machine abilities, creating the joint shaping of AI behavior.

Despite these controls, a primary trade-off in NLS system design is the precision versus recall trade-off. Precision is defined as the proportion of only the most relevant assets returned by the system; recall is the proportion of all potential relevant assets they returned. Towards discoverability through default, NLS systems will err on the side of recall, a wide semantic net will simplify rediscovery (Wu et al., 2024). But it can also surface semantically related, off-brand content. Conversely, emphasizing precision can be frustrating to the user when their query fails to appear in the specific terminology of the brand, limiting accessibility and satisfaction. The balance between the two is one that needs calibration, in particular when used within a branding context where messaging discipline matters most.

Besides, the implementation of NLS presents opportunities and risks as far as organizational knowledge governance is concerned. On the one hand, NLS encourages inclusivity because it allows access to assets and knowledge without having an extensive knowledge of metadata structure. Conversely, lacking guardrails, including brand dictionaries, prompt guidelines and semantic feedback systems, NLS can unintentionally reveal or exacerbate the discrepancies in brand-tone and narrative and undercut long-term equity (Falck, 2018; Storey, 2025).

Finally, the literature highlights the fact that NLS systems are not neutral. These systems reflect the biases and the priorities of the data they are trained on as Liu and Shen (2025) emphasize, and remind designers. In branding, this begs the question of whose voice is heard and whose voice is silenced. Unless intentionally curated and inclusive designed, NLS risks the reproduction of limited or out-dated brand representation, most especially when trained on legacy content devoid of cultural diversity or changing tone.

2.6 Synthesis and Gap Analysis

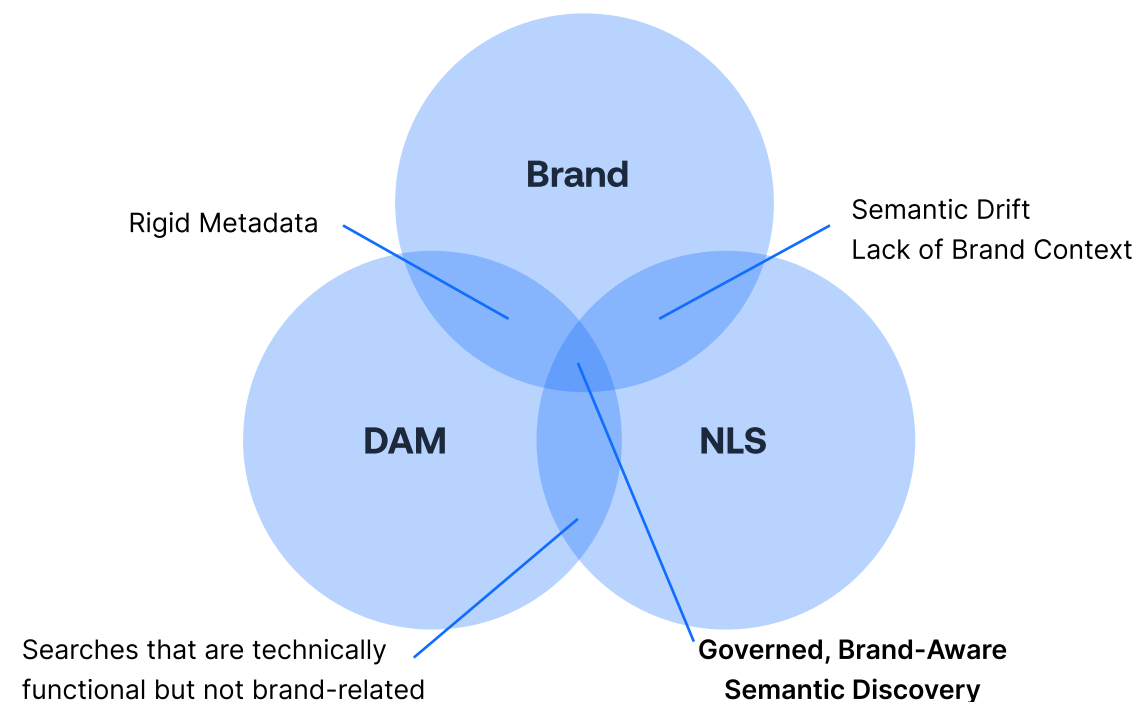
Literature reviewed in the scope of branding theory, brand governance, and the emergence of digital technologies identify that information has a vital intersection between verbal brand identity, Digital Asset Management (DAM), and Natural Language Search (NLS). Iconic branding models, including Aaker and Keller concepts of Brand Identity Model and the CBBE Pyramid, validate the importance to brand building and brand equity sustenance of brand language (tone, voice, and controlled vocabulary) (Falck, 2018; Zia et al., 2021). This piece of knowledge underlines the strategic importance of consistency in verbal identity on all touchpoints. In practice, DAM systems seek to enable such consistency by having that centralized and taxonomized and tagged system of managing brand assets. Nevertheless, according to Alkhard (2024) and Myyrä (2022), they lack structural capabilities of grasping the semantic finesse of brand terminology. Manual tagging is error-prone and inconsistent and automated solutions may lack the notion of context, causing semantic drifts and inadvertent misalignment of results (Storey, 2025; Schinas et al., 2023).

NLS based on advancements in NLP and retrieval-augmented generation can be seen as a potential option since it enables users to query assets with intuitive, conversation-like queries (Nguyen et al., 2025). Nevertheless, the literature also states that there is a conflict between the NLS flexibility and strict brand constraints needed to ensure consistency (Schulhoff et al., 2024). Although early results suggest promise of prompt engineering and hybrid AI-taxonomy models, there is a limited number of studies seeking explicitly how NLS can be integrated into DAM systems to support verbal brand identity.

Therefore, the key research gap is the unrealized potential of NLS approach as a mediated retrieval interface in DAM systems. It is therefore urgent that frameworks be developed that integrate the user-friendliness and flexibility of NLS, and the semantic control of branding in large-scale DAM systems.

2.7 Conclusion

This literature review underscores the strategic nature of brand language in influencing identity and equity, structural shortcoming of existing DAM systems in maintaining verbal consistency, and the developing promise of Natural Language Search (NLS) in broadening asset search capabilities in enterprise. Although the branding theory focuses on tone and voice as critical to brand coherence, DAM systems tend to lack the semantic richness to effectively enforce such qualities in a coherent manner. NLS is flexible and discoverable but poses risks of brand dilution in the absence of governance. There is a distinct research gap when it comes to incorporating NLS into DAM platforms without compromising brand integrity. Such a study is driven, therefore, to explore how governed NLS frameworks (a combination of prompt engineering, brand dictionaries, and AI governance) can boost DAM functionality and guarantee consistent, scalable, and brand-secure content discovery.



Section 3 Competitive Analysis

3.1 Introduction: Defining the Field of Competing

After confirming that the "brand semantic gap" is the key pain point of Bynder's future product strategy, to situate this project within the current market, this section provides a competitive analysis of the Digital Asset Management (DAM) landscape. This section first focus on two questions: **Who is considered an effective competitor? What features should I focus on?**

Since Bynder has gradually become a leader in the industry since 2016 and now(Figure2.3.1), this section will not analyze all DAM platforms. To make the analysis both represent the industry and not dispersed, I screened 9 companies selected from the DAM market reports of Gartner, Forrester and IDC over the past two years, covering traditional DAM platforms and SaaS cloud platforms that have performed better in recent years.

Next, I implemented 'Brand-Governance Maturity' and 'AI Depth' as a five-point dual axis: the former focuses on governance elements such as dynamic brand management and cross-departmental approvals; the latter measures technology stacks such as automatic annotation, natural language search, generative AI, and multi-agent collaboration. The ratings are not subjective conjectures, but are cross-validated based on official functional white papers, demo observations, and ratings published by non-profit platform evaluations over the past year.



Figure 2.3.2: Selected Competitors in the Digital Asset Management Market

3.2 The Competitive Landscape and Bynder's Market Position

This cohort spans both ends of the spectrum: on one side, highly customisable 'heavy-weight' platforms such as Adobe AEM Assets, Aprimo and Widen (Acquia); on the other, nimble "brand-tool" players such as Frontify, Brandfolder and Canto. Bynder itself, together with MediaValet, sits between those extremes as a The enterprise DAM market is mainly divided into large markets and small markets where small and medium-sized enterprises are mainly located.

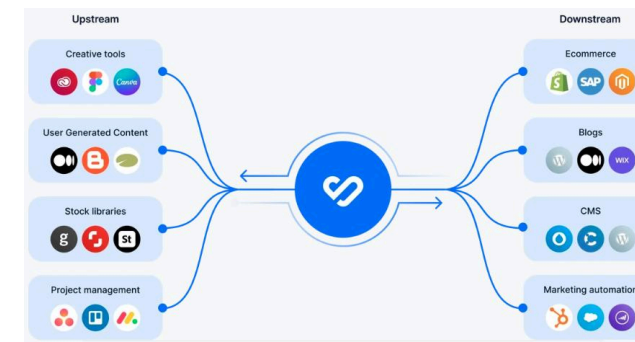


Figure 2.3.3: Bynder's Integration

First targeting large DAM enterprises, such as Adobe and Aprimo, usually characterized by expensive and lengthy onboarding processes, requiring dedicated implementation partners. These vendors are a closed ecosystem, and there are many difficulties if customers want to consider migrating to other platforms because they are reluctant to connect to existing technologies that do not belong to the suite, so such integrated services are often weaker. In the figure, you can see that bynder can integrate many platforms and technologies. The 2024 Forrester Wave report affirms Bynder's competitive power, placing it firmly in the Leaders quadrant for its robust functionality and market presence. Aprimo is a MRM-first solution, but its current market share limits its development and requires data management with third parties, which will affect customer trust.

Unlike small businesses, Bynder's strategy focuses on developing some of the industry's leading AI integration technologies, providing customers with flexibility in design product integration such as e-commerce or Canvas. The open ecosystem is in stark contrast to competitors such as widen acquired by Acquia. For the market, Bynder's acquisition strategy focuses on enhancing its core DAM capabilities, such as Bynder's acquisition of AI-Search expert Emrays in 2023.

It can be seen that Bynder is positioned in a middle position, providing enterprise-level functions, and flexibly integrating other functions to target small enterprises, especially enterprises without design departments, to meet most marketing needs, reduce burdens, and solve users' practical problems. fully cloud-native system that promises enterprise depth without enterprise drag.

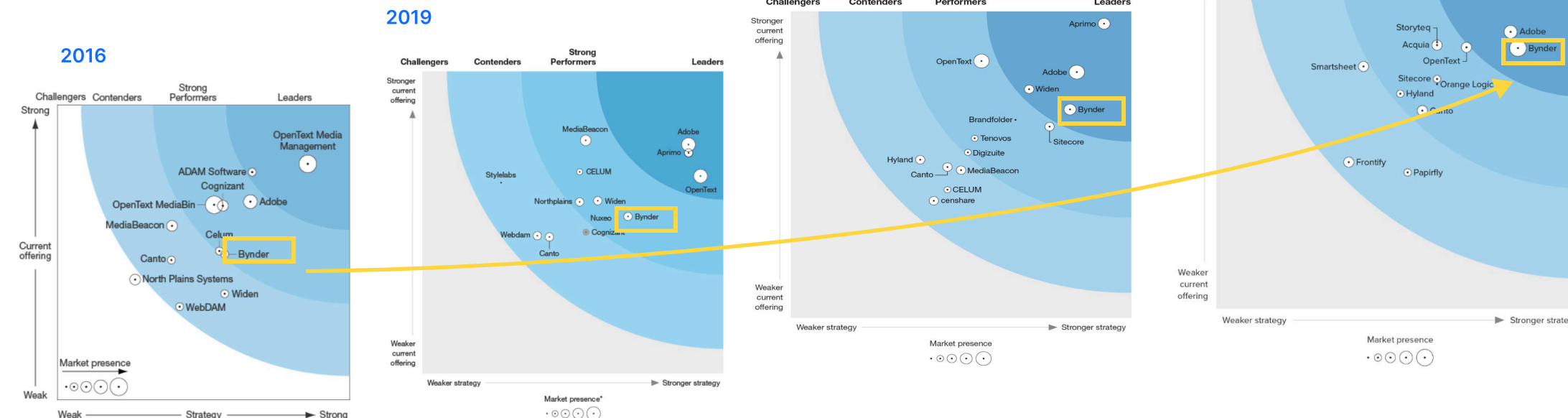


Figure 2.3.1: Longitudinal Analysis of the DAM Competitive Landscape from Forrester (2016-2024)

3.3 Deep Dive 1: Brand Governance Maturity

Effective brand governance is one of the most important parts of DAM. The established platforms in this dimension, such as Aprimo, provide the ability to allow or restrict content to access user groups or create rules for brands, laws, and Coperdesk comments, as well as this multi-level compliance workflow that allows organizations to precisely control their brand expression. Other competitors offer more basic tools such as static style guides or simple approval workflows. A common situation in the entire market is that companies are doing a lot of functions in compliance, which is necessary, but it also makes things less unique.

Each DAM platform has Brand Guidelines function, but this is limited to materials that have been edited or created, and requires additional time and energy to search, which is not smart enough for users. The growing AI-driven functions will definitely improve this efficiency in the future. At the same time, more opportunities for AI can also be used to search for accurate downloads from the outside and upload resource content and create content. While current brand governance tools often excel at ensuring compliance with laws and regulations, analysis indicates a growing market opportunity for solutions that focus on the strategic consistency of the brand's message across all assets.

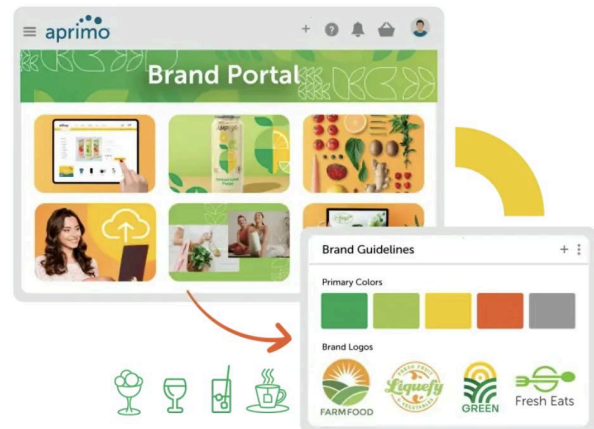


Figure 2.3.4: Example of a Brand Governance Feature from Competitor Aprimo

3.4 Deep Dive 2: AI Feature Maturity and the NLS Interface

To gain a more detailed understanding of the competitive landscape, I analyzed and researched all AI features of selected competitors in version 3.1. See Appendix A for details. Only features related to natural language search are listed here. The color intensity indicates the maturity of each feature, with darker colors indicating higher performance and lighter colors indicating basic or absent functionality. All data is current as of April 2025 and is sourced from official websites, technical documentation, and product demos.

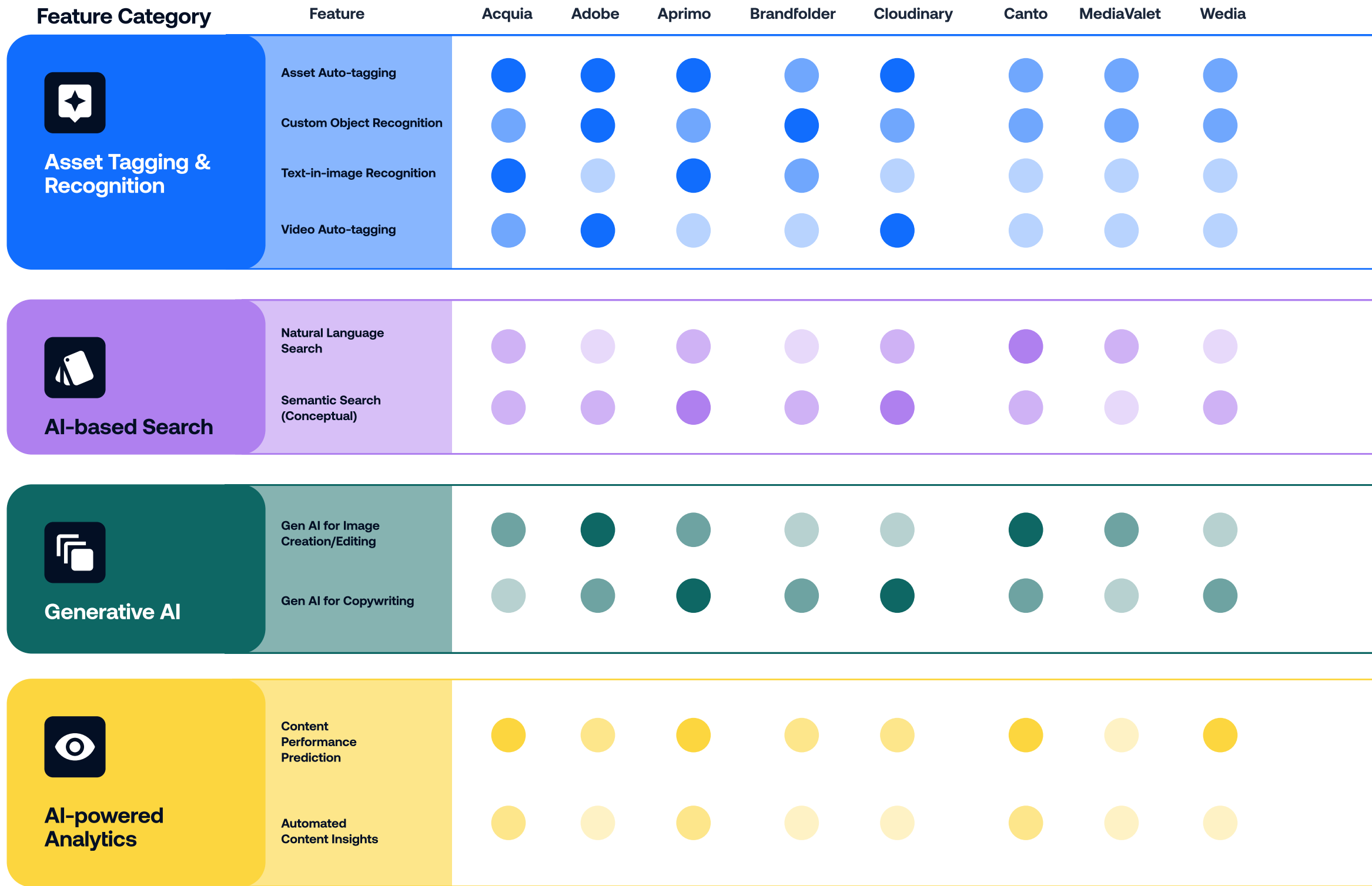


Figure 2.3.5: Comparative Matrix of AI and NLS Feature Maturity Across DAM Vendors till April 2025 (The figure presents a heatmap comparing the AI capabilities of key DAM competitors. Rows delineate specific features within four main categories, while columns represent the vendors. The color intensity signifies the functional maturity of each feature, with darker shades indicating higher performance and lighter shades indicating basic or non-existent functionality. The analysis is derived from publicly available product information.)

Analysis of AI capabilities shows that while basic features such as universal auto-tagging are now standard, advanced features are the key differentiators.

Bynder's platform is built on a foundation of AI-powered innovation. While basic features like auto-tagging are becoming standard across the industry, Bynder's comprehensive AI strategy sets it apart. The platform leverages a sophisticated suite of AI capabilities across four key areas: Asset Tagging & Recognition, AI-based Search, Generative AI, and AI-powered Analytics. This commitment to technological leadership allows Bynder to offer advanced features that deliver significant value to users.

This project focuses on Natural Language Search (NLS). While these competitors on the list claim to have NLS capabilities, analysis of the market shows an opportunity to evolve current NLS capabilities. While many platforms offer this feature, our research highlights a significant opportunity to evolve the standard NLS interface. The next step is to move beyond basic keyword matching—which often relies on a single search bar and lacks semantic context—and build in a deeper understanding of user intent. Incorporating synonyms and context will greatly enhance workflow efficiency.

3.5 Strategic Opportunity: From AI Features to Brand-Aware Intelligence

Bynder's position as the definitive market leader, recognized by every major analyst including Forrester, IDC, and Gartner, provides the foundation for the next logical evolution in digital asset management. This leadership is not just based on market presence, where Bynder "outperforms all other vendors," but on proven technological excellence. IDC highlights Bynder's "broad set of... capabilities," while Gartner points to its "advanced DAM features". This established strength in core technology is precisely why Bynder is positioned to solve the next major challenge for enterprise brands.

As brands grow, a critical operational challenge emerges: maintaining brand consistency across vast, global content ecosystems. Current search technologies excel at objective recognition—finding assets based on what they are. However, the next frontier is subjective understanding—finding assets based on what they mean for a specific brand.

This project addresses this strategic gap directly. The opportunity is to evolve Bynder's platform from a system that manages assets to a system that understands brand logic. By embedding a "Brand Dictionary" into the platform's intelligent search, we can create a new layer of brand-aware intelligence. This will achieve three key outcomes:

- **Create a Unique Market Position:** By connecting powerful search technology with deep brand governance, Bynder can offer a solution that no competitor currently provides in a single, integrated suite.
- **Deepen Value for Core Customers:** Placing brand guidance directly into user workflows will solve a primary pain point for marketing and creative teams, making the platform indispensable.
- **Pioneer Adaptive Governance:** This will shift the platform's role from enforcing static rules to one that learns and adapts to a brand's evolving language, creating a truly automated system for brand consistency.

By leveraging its proven leadership, Bynder can address this clear market need, transitioning its platform from a best-in-class DAM to an essential partner in strategic brand management.

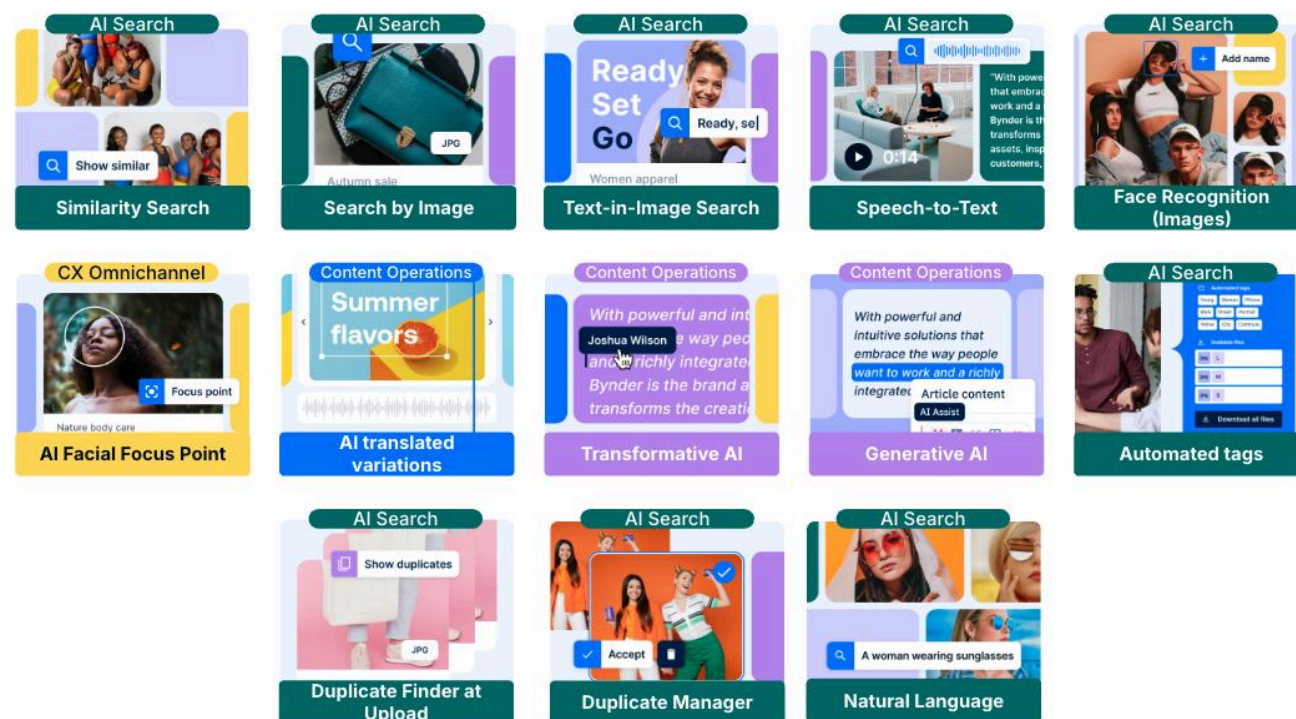


Figure 2.3.6: Bynder's industry leading AI



Figure 2.3.7: IDC MarketScape: Worldwide Intelligent Digital Asset Management Vendor Assessment Q3, 2024



Figure 2.3.8: Gartner® Magic Quadrant™ for Digital Asset Management Platforms Q1, 2025

Section 4

Stakeholder Interviews

4.1 Methodology & Data Collection

To collect raw data on the challenges of brand-related search, a series of semi-structured interviews were conducted.

A total of 11 interviews were conducted between March and May 2025, each lasting approximately 45 minutes. The interviews were conducted online via Google Meet or on-site at the Rotterdam office.

Based on the conclusions of the stakeholder analysis, qualitative data needs to be obtained from relevant internal stakeholders as well as end users to fully understand the needs, pain points, and benefits of the current product.

It is worth mentioning that according to company requirements, this project cannot directly interview customers. In order to obtain customer feedback, I contacted two customer success managers within Bynder, who serve as a link between Bynder and customers and can provide customer perspectives for this project.

In the end, I chose three types of customers, representing different stakeholders, to obtain real possible customer feedback from CSM, understand the marketing needs and methods of brand consistency from brands and marketers, and understand the current NLS technology and possible future directions for expansion and implementation from DAM engineers.

The steps for collecting, recording, and storing this data are shown in the figure.

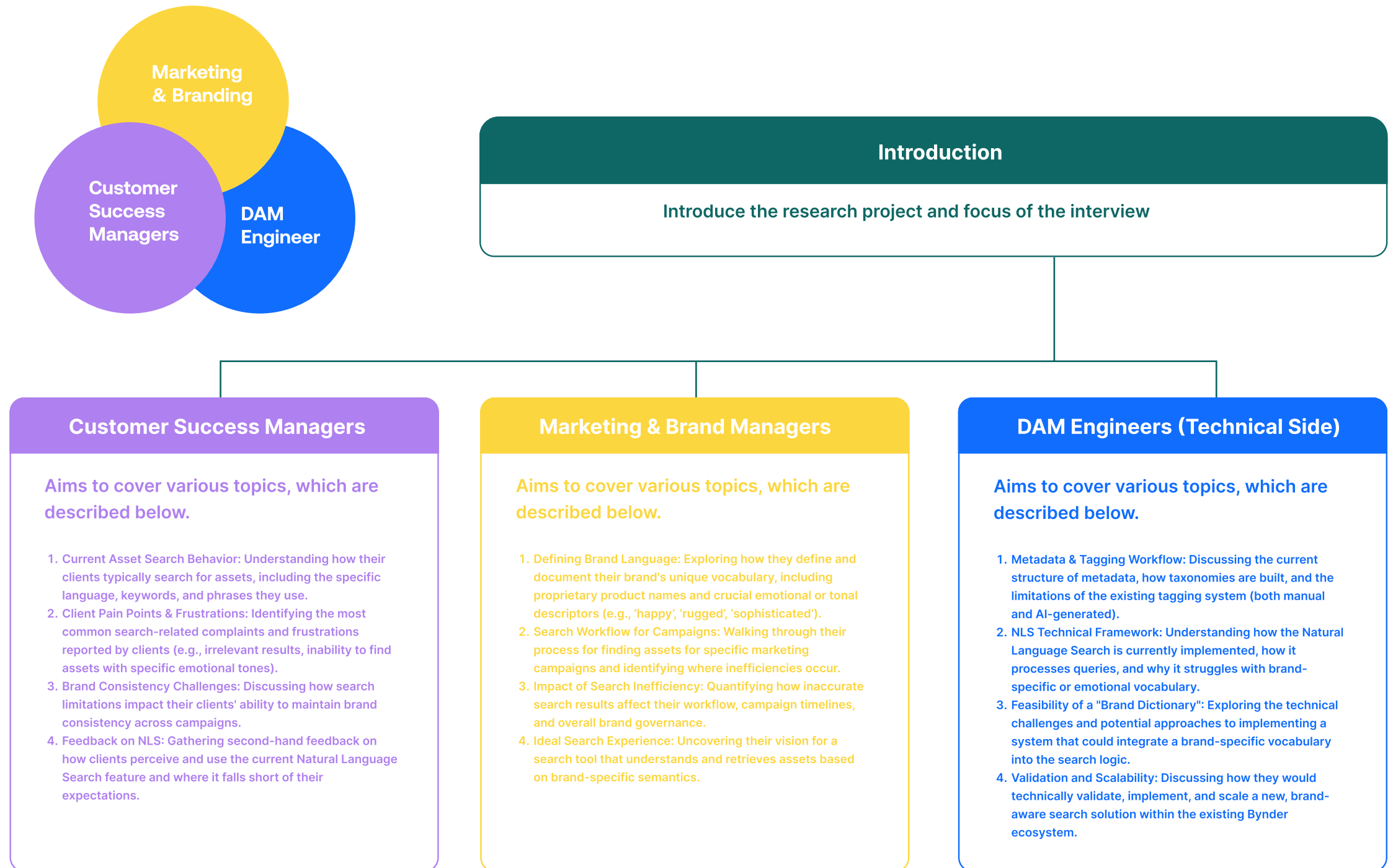
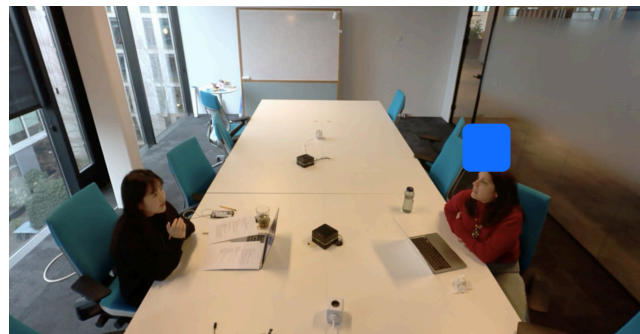


Figure 2.4.1: Interview Protocols and Areas of Inquiry for Each Stakeholder Group

4.2 The analysis

4.2.1 Interview and analysis logic

In the timeline, I try to first interview brand-related personnel to understand the brand knowledge and their needs, as well as the brand staff and the public's understanding of the brand from their perspective, so as to find consistent requirements, then interview engineers to understand our current technical logic, and finally use the brand's knowledge and engineers' input as my basic knowledge, and finally interview the customer success manager. The reason is that we need to understand the needs of customers based on our existing products and functions and my ideas.



4.2.2 Data Analysis process

After all the interviews were completed, the recordings were uploaded to **Dovetail**, Bynder's user research platform for transcription, and sorted and organized according to different roles and arranged in order. The platform facilitates user researchers to conduct analysis. While repeatedly processing the raw data, the platform can help user researchers build and visualize insights in an iterative manner.

To structure the data analysis, a standard user research framework was adopted for this project. When coding, the data was classified into five key aspects to capture a holistic view of the user experience: **context**, **pain points**, **needs**, **likes**, and **use cases**, as can be seen from the figure 2.4.3.

In order to facilitate overview and find correlations, as well as discuss with my mentors, I transferred the important codes from **Dovetail** to **Miro**, and each code was written on a separate sticky note as shown in the figure.

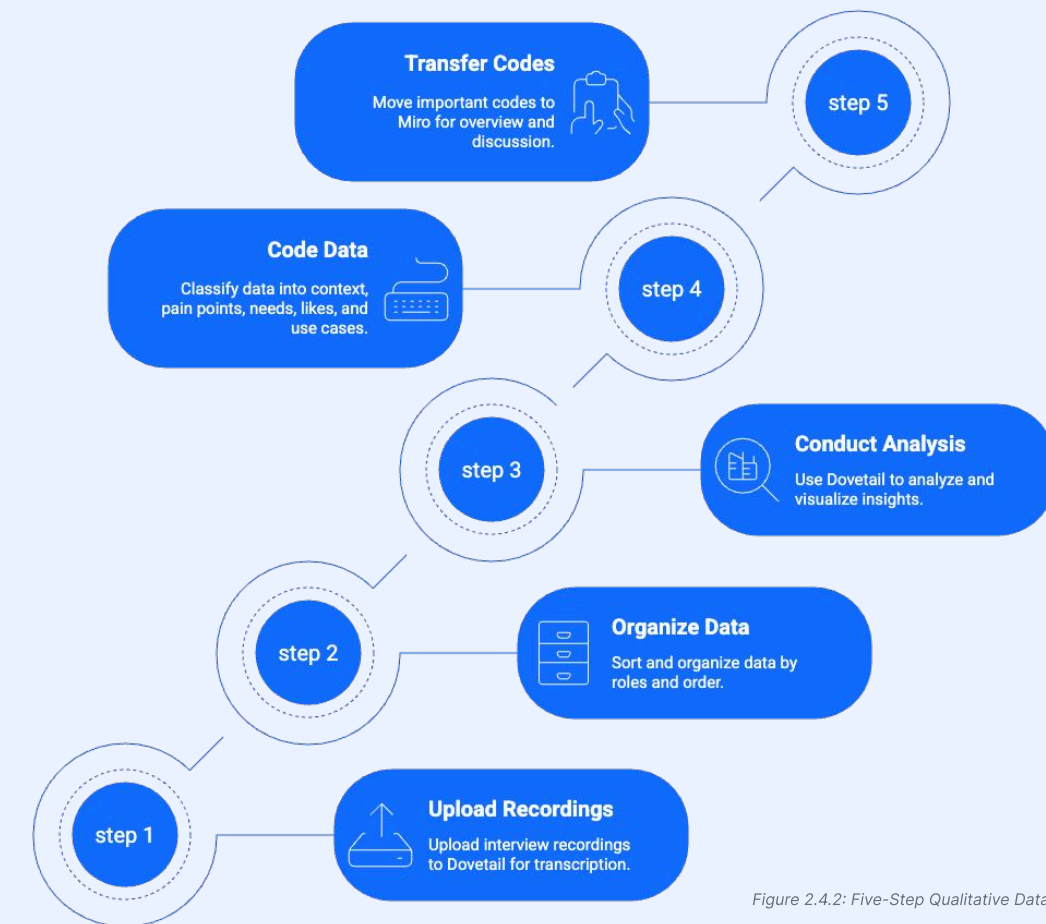


Figure 2.4.2: Five-Step Qualitative Data Analysis Workflow



Figure 2.4.3: Thematic Coding Tags Table on Dovetail



Figure 2.4.4: Thematic Coding Clustering on Dovetail

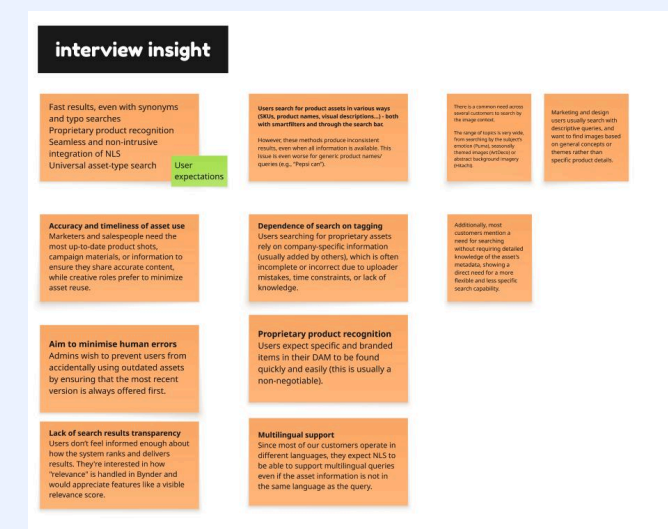


Figure 2.4.5: Coding Insights on Miro

4.3 Analysis Findings

4.3.1 Overview of the categories

Before the interviews, I collaborated with user researchers and product designers from Bynder to understand their perspectives on opportunities to enhance the user experience and their assumptions about the existing system. They both worked on the NLS project since 2024 and had established a basic understanding of the features.

They agreed the opportunity of improving brand consistency and suggested that I should focus on the technology we already have, through CSM and marketers to meet the needs of users, and to obtain more brand knowledge from people that not work in Bynder.

The analysis of the 11 semi-structured interviews on Dovetail is to identify the practical challenges of the 'Brand Semantic Gap'. The analysis focused on three core areas: users' current search habits, the specific pain points of brand-consistent search, and their expectations for a more intelligent NLS. This thematic analysis resulted in the identification of four main categories of findings, which are detailed in the following sections (Figure 2.4.7). These categories structure the qualitative evidence and provide a clear framework for understanding user needs.

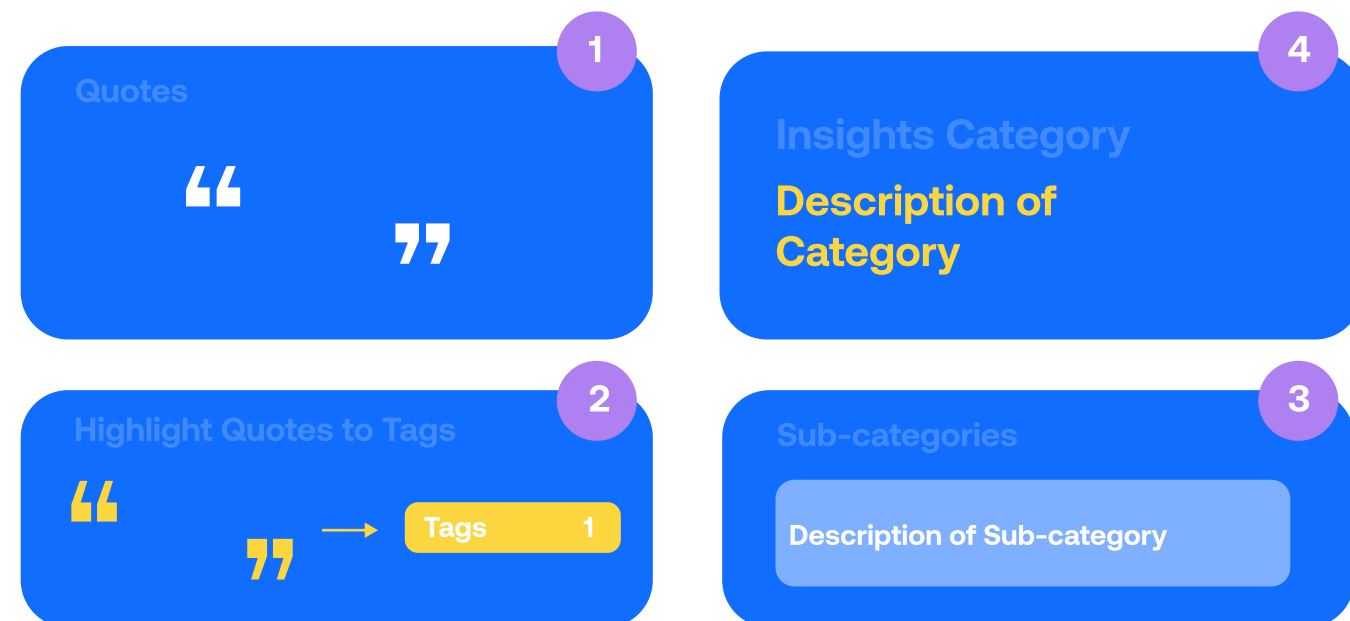


Figure 2.4.6: Visual Legend for the Thematic Analysis Structure

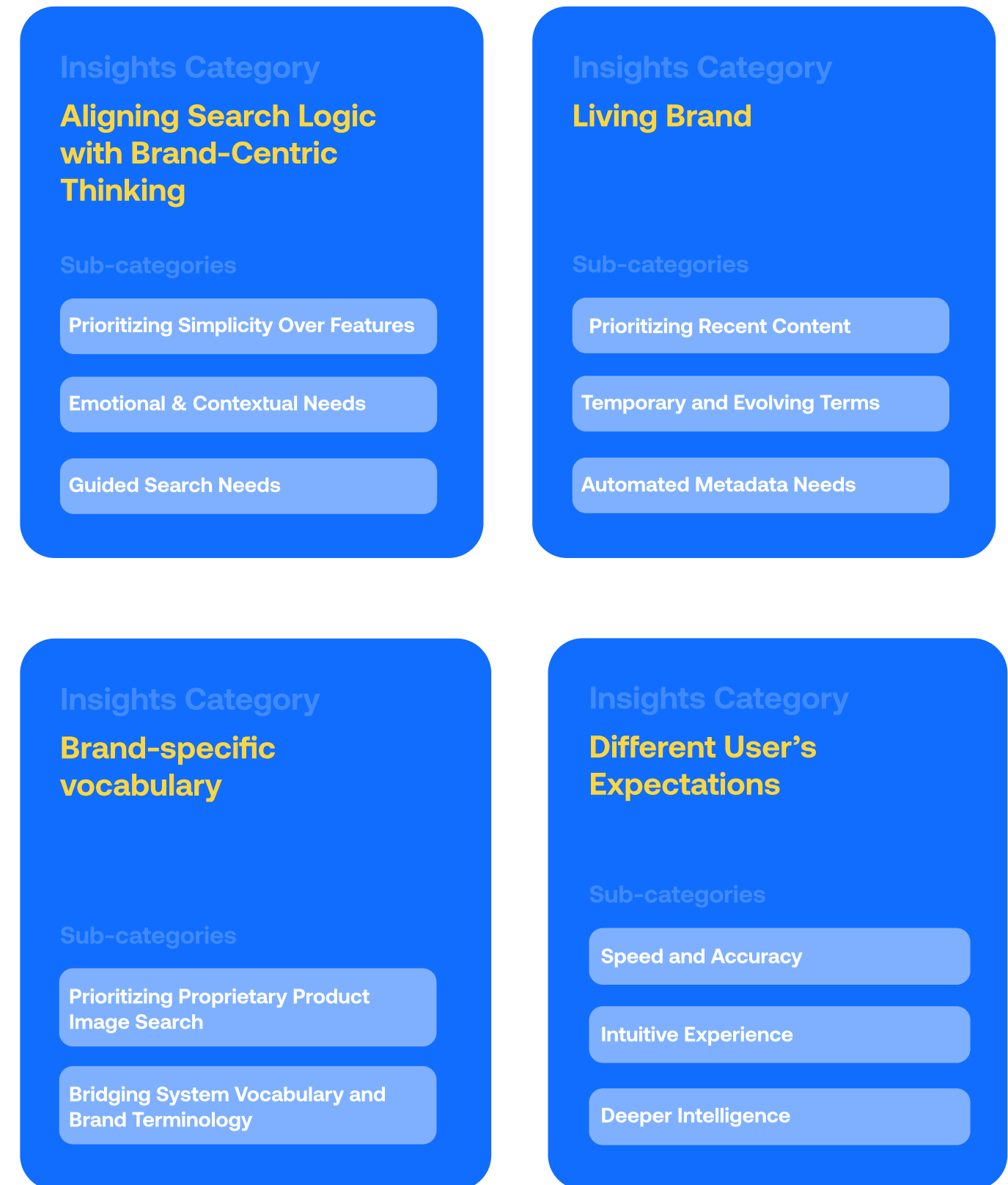


Figure 2.4.7: Thematic Categories Overview

4.3.2 Category: Aligning Search Logic with Brand-Centric Thinking

This first category explores the opportunity to align how users intuitively think about finding assets with the powerful capabilities of the DAM system.

The interviews revealed that users expect a search experience that is simple, contextual, and understands their intent, much like 'Google' this kind of search engine. However, they are interacting with a system that could require precise and logical inputs. Besides, they also expressed it's necessary to have a deep understanding of its structure while it takes more time and effort. This theme is explored through the following three sub-categories.

Sub-Category 1: Prioritizing Simplicity Over Features

A finding is that users prefer a simple, intuitive search interface and often ignore more complex but powerful features, such as smart filters. The mental model for search is now shaped by search engines' tools, leading to the expectation of a single search bar that works effectively.

This user behavior was clearly articulated by a DAM administrator, who noted the influence of universal search engines on user expectations.

"Our users expect a search experience that feels as natural and intuitive as a Google search—where they can simply type what they're thinking and get relevant results." (P4)

This preference for a simple search bar means that more complex search methods, even if they offer more precision, are often ignored. The same admin explained that they stopped training general users on how to use Boolean operators in the search bar for this reason.

"We've found that our teams don't adopt complex search commands. The real opportunity is to make the search powerful enough that it doesn't require special training to get accurate, reliable results." (P4)

These insights show that the workload of learning a 'system language' (like Boolean operators or complex filter configurations) is a bit high for the average user. Their expectation is for an intuitive, natural language interface that does the interpretive work for them. When a system requires a lot trainings to be used effectively, users perceive it as inefficient and will either avoid it or use it in the most basic way possible, failing to unlock its full potential.

Sub-Category 2: Emotional & Contextual Needs

Beyond simplicity, users expressed a need to search for assets based on abstract, emotional, and contextual qualities.

A brand specialist with a background in marketing research described this challenge as a primary challenge for marketers trying to maintain brand consistency.

"Looking ahead, we need to find assets based on the feeling or emotion they evoke. It's a challenge when you're trying to find something 'inspirational' but the system mainly returns literal keywords." (p1)

This need becomes especially clear when searching for assets related to seasonal campaigns or abstract themes, where the intent is not to find a single asset, but a collection of assets that convey a particular mood.

"For seasonal campaigns, it would be a game-changer if we could search for a theme, like 'summer vibes,' and have the system understand the visual concepts associated with it, rather than us having to guess all the right keywords." (p3)

This highlights a significant opportunity to move beyond keyword-based search and enable users to find assets based on abstract 'feelings' or 'themes', which would directly support the creative and brand-building process.

Sub-Category 3: Guided Search Needs

This insight reveals a strong user preference for a simple search bar, driven by a need for efficiency. For time-constrained users, mastering a detailed metadata taxonomy is less of a priority than finding assets quickly. This highlights the opportunity to develop a more intuitive search method that harnesses the power of the system's taxonomy without requiring users to learn its complex structure.

An experienced DAM admin noted that despite having a very detailed taxonomy, most users do not engage with it.

"Our users gravitate to the main search bar because it's simple and direct. This shows a clear opportunity to embed the power of our rich taxonomy into a more guided and intuitive search experience" (p6)

This avoidance of filters is often because users do not have the time or incentive to learn the system's specific structure.

"Our users are focused on getting their work done quickly, so they don't always have time to learn the intricacies of a new system. An effective search must be intuitive from day one." (p6)

Even for administrators, the sheer scale of the taxonomy can be a barrier to using filters effectively. An stakeholder explained why we don't expose all of their metadata fields in the filter panel.

"From a design standpoint, it's impractical to expose every single metadata field in the filter panel. We need a smarter way for the system to use that rich data without overwhelming the user." (p4)

A filter-based system is powerful for expert users, but its reliance on a complex taxonomy can present a learning opportunity for new users. This highlights the need for a search experience that places the burden of understanding on the system, not the user.

4.3.3 Category: Living Brand

This insight addresses the dynamic nature of a modern brand and the opportunity for a DAM system to evolve alongside it. The interviews revealed that a brand is a living entity, with constantly changing campaign priorities, seasonal language, and a steady input of new content. This creates an opportunity for the DAM to function less as a static archive and more as an updated, "living" system. From the user's perspective, a "living" system understands timeliness, adapts to new contexts, and minimizes the manual effort required to keep it current.

Sub-Category 1: Prioritizing Recent Content

A finding from both prior research and the current interviews is the user's focus on timeliness. For most marketing, creative, and sales roles, the newest assets are inherently the most relevant, as they are connected to current campaigns and strategic goals. Users expect the search system to understand and prioritize this temporal relevance.

An experienced DAM Admin confirmed this, explaining that for sales-driven organizations, the focus is always on the latest product.

"For our teams, the most relevant content is almost always the newest content. A key factor for search success is ensuring the most recently uploaded assets appear first." (p6)

This analysis shows that users treat the DAM not just as an archive, but as a tool for current business operations. While a search algorithm based purely on keyword relevance is effective for finding technical matches, it can surface outdated assets that are no longer strategically useful. This creates an opportunity for a 'living' search logic that weighs an asset's age as a key factor in its relevance, ensuring the most current and strategically valuable content is always the most discoverable.

Sub-Category 2: Temporary and Evolving Terms

This sub-category explores the challenge of managing brand language that is, by nature, temporary and constantly evolving. The interviews highlighted that brand communication is filled with seasonal themes, campaign slogans, and emerging trends that are difficult to capture in a static taxonomy.

A marketing manager gave a clear example of how seasonal language creates search challenges.

"There's a significant opportunity to improve the ROI of our content creation by better connecting our strategic campaign planning with our existing asset library. Often, we find the perfect asset for a new trend or seasonal event was already created years ago, and improving its discoverability would save both time and resources." (p3)

A brand expert also pointed out that a product can have two distinct vocabularies: the company's internal classification and the customer's real-world language. It's valuable to align the search experience with how customers actually speak.

"A product can live in two worlds: its official classification and its consumer perception. For instance, a specialized athletic shoe might be adopted as a lifestyle sneaker. An ideal search needs to understand and account for both contexts." (p1)

These results illustrate that a brand's vocabulary is not a set of words, but a living model. This highlights the opportunity for the DAM's taxonomy to be as dynamic as the brand it supports, preventing missed chances and ensuring the full value of existing material is realized. This shows that the DAM needs a system that can handle transitory, changing, and even contradictory vocabularies so that it stays in line with the brand's current voice.

Sub-Category 3: Automated Metadata Needs

This finding highlights the opportunity to reduce the manual effort required to keep a DAM system's metadata current. By making the system more adaptive, we can shift the workload of updating and tagging from the user to the platform itself.

Interviewees highlighted a key operational insight: the manual effort required for comprehensive tagging presents a significant scalability challenge for teams.

"Manual tagging can be a significant time investment, and ensuring every asset is properly categorized across a large library would be our scalability goal. (p3)

Another DAM admin quantified the effort required for just one part of their collection, underscoring the lack of scalability in a manual-first system.

"The manual effort required is substantial, with the process of tagging all assets from a single project estimated to take several full workdays." (p6)

Moving away from a heavy reliance on manual metadata updates is the key to creating a truly 'living' system. An intelligent, automated process would be faster, more scalable, and more consistent, creating a reality that ensures the metadata always reflects the brand's current state.

4.3.4 Category: Brand-specific vocabulary

This category addresses the opportunity for natural language search technologies to learn and prioritize a brand's unique, proprietary language. The interviews revealed that for many users, the most important and frequent searches are for specific products, often identified by internal names, SKUs, or codenames. While a general language model provides a powerful foundation, it does not inherently know this proprietary brand vocabulary. This creates an opportunity to bridge the gap between how internal teams speak and how the system understands content. Teaching the system this brand-specific language is the key to increasing search efficiency and building greater user confidence in the search features.

Sub-Category 1: Prioritizing Proprietary Product Image Search

The analysis shows that searching for specific products' images is not just one use case among many, but a primary, high-priority task for most users. Whether for populating e-commerce sites, creating marketing materials, or internal planning, the ability to quickly and reliably find a specific product is considered a foundational requirement of the DAM.

Interviews with marketing and brand managers confirmed that their entire search workflow is often built around product names and article numbers because it is the most reliable method.

"For locating product-specific imagery, the most effective and efficient search method currently available is to use an exact product number or article code." (p3)

The emphasis on product-image-specific search reveals that for many organizations, the DAM is fundamentally a product image library. Therefore, efficiently supporting this core task is a foundational requirement for user success. Any advanced search solution must excel at this, making proprietary product recognition a baseline for future innovation.

Sub-Category 2: Bridging System Vocabulary and Brand Terminology

This sub-category details the technical and semantic conflict between a brand's internal language and the auto-tags by natural language object recognition. Even when a brand has a well-defined name for a product, common object recognition models may favor a universal description, which can result in inaccurate tags and less relevant search results.

A DAM engineer explained this exact problem using a hypothetical that mirrors the challenges described by many clients.

"If a client's product is a specific type of athletic shoe, the system-generated metadata often provides a generic tag like 'shoe' but may miss the proprietary product name" (p2)

This opportunity extends beyond product types to other brand-specific attributes, such as proprietary color names.

"Our customers search using the public-facing marketing name for a product, not the internal SKU. The system needs to understand both vocabularies to be effective." (p9)

A brand specialist noted that a product often has two distinct contexts: its official purpose and its cultural perception by consumers. This creates an opportunity for the search to understand both.

"We see this often where a product designed for a specific utility, like a durable work jacket, is adopted by a completely different subculture and becomes a fashion statement. An intelligent search system needs to understand not just the product's intended purpose, but also its cultural context." (p1)

This is a core manifestation of the Brand Semantic Gap. It demonstrates that while a purely technical, object-recognition approach to tagging is a powerful first step, there is an opportunity to enhance it for specific brand needs. By creating a loop to learn, store, and prioritize the brand's own vocabulary, the system can add significant value beyond generic labels by surfacing the terms that are most meaningful to users. This highlights the necessity of a system that can map the brand's proprietary language onto the platform's general understanding.

4.3.5 Category: Different User's Expectations

This final theme goes beyond identifying current problems to outlining what users expect from DAM. Users first expect baseline performance in speed and accuracy. Beyond that, they desire an intuitive experience that reduces cognitive load. Besides, different user personas have different goals, advanced users and administrators look toward a future of deeper system intelligence....

Sub-Category 1: Speed and Accuracy

This sub-category covers the foundational expectations for DAM. Before any advanced features, users expect the system to be fast, reliable, and comprehensive. The primary metric of success for most users is simply the time it takes to find the correct asset.

A DAM admin described the results-oriented mindset of their users.

"Our users are results-oriented and on tight deadlines. Their primary goal is to find the exact asset they need as quickly as possible, with minimal friction...."(p4)

Speed and accuracy are the bedrock of user trust in a search system. The findings indicate that for users, the top priority is finding the correct asset quickly. They prefer a comprehensive search result that is guaranteed to contain what they need, even if it includes many related options, over a more limited result that risks excluding the correct asset.

Sub-Category 2: Intuitive Experience

This sub-category focuses on how users expect the search feature to feel and operate. The interview shows a strong preference for a seamless and integrated experience that mirrors the simplicity of modern web tools, rather than a set of complex features that require special training.

The interview discovery report documented the user desire for a search bar that felt natural and unobtrusive.

A user highlighted how the current search dropdown can be overwhelming because it surfaces too many different types of content at once, indicating a need for a more intuitive and less cluttered interface.

"A single search can return a mix of different content types—images, collections, guidelines—which can feel overwhelming. We need a more intuitive and less cluttered interface for displaying results"(p9)

Users expect search to be a holistic experience. They do not want to have to choose between different 'modes' of searching. The ideal experience described is one where the user can simply state their intent in the search bar, and the system intelligently uses all available methods—keyword matching, semantic understanding, and metadata filtering. They want it can return a single, unified set of results.

Sub-Category 3: Deeper Intelligence

A significant finding from the analysis is the conflict in search priorities between different user personas. The research shows a clear divergence between marketing or business users, who prioritize compliance and search for the correct and approved asset, and creative or design-focused users, who prioritize novelty and search for the newest and most inspiring content to avoid repetition. This sub-category captures the desire for more advanced search capabilities, particularly from power users and administrators.

"Different teams have different priorities. A marketing user needs the officially approved asset, while a creative user is often looking for what's new and inspiring."(p4)

The need for freshness was a recurring topic among creative users, who explained that asset fatigue is a real problem that constantly drives them to look for new content.

"Asset fatigue is a real challenge. To keep our content engaging, our creative teams are constantly looking for new and unused visuals, so discoverability of fresh content is key."(p7)

An admin envisioned a search results page that provided more clarity about its logic, separating high-confidence matches from more speculative guesses.

"An ideal search experience would provide more clarity on its logic. For example, it could categorize results into a tier of high-confidence, exact matches, and a secondary tier of related suggestions."(p4)

This finding has significant implications for how a search system should define and rank 'relevance'. A single, universal relevance algorithm is unlikely to satisfy both user groups. For a marketer searching for a logo, the most relevant result is the single, officially approved file. For a designer working on a new social media post, the most relevant results are the newest and least-used lifestyle images that fit a theme. They want the system to not only return results but to explain why it returned them based on their roles, and to help them discover content they didn't know they had.

4.3.6 Summary

The stakeholder interviews collectively reveal a significant disconnect between user expectations for an intuitive, brand-aware search experience and the current system's capabilities. A central finding is that users, conditioned by universal search engines, overwhelmingly prioritize simplicity. They expect a single search bar to intelligently interpret their intent without requiring them to learn the system's complex taxonomy or specific search commands.

Furthermore, the analysis underscores the critical importance of brand-specific vocabulary. The most common and crucial search behaviors revolve around proprietary product names, internal codes, and campaign-specific terminology—language that generic AI models do not inherently understand. This creates a core "Brand Semantic Gap" that hinders workflow efficiency.

The interviews also highlighted the need for the DAM to function as a "living" system that adapts to the dynamic nature of a brand. This includes prioritizing the most recent content and accommodating an ever-evolving vocabulary of seasonal and cultural terms, which a static taxonomy cannot support. Finally, the findings point to divergent expectations among user personas: marketers seek compliant, approved assets, while creatives search for novel, inspiring content.

In conclusion, the research indicates a need to evolve the search function from a technically proficient tool into a strategic brand partner. The ideal system must be simple on the surface but deeply understand brand context, user intent, and the dynamic nature of brand language to meet the varied needs of its users.

Section 5

Conclusion

This chapter's discovery work was designed to fully unpack our primary research question (RQ1) and get to the explanation of the 'brand semantic gap'.

- *RQ1: What are the theoretical foundations and practical manifestations of the 'brand semantic gap' in DAM systems, and what specific challenges does this gap create for Bynder's key user personas in maintaining brand consistency?*

First, the literature review provided theoretical grounding. It showed that the disconnect between a brand's unique language and a system's ability to understand it isn't just a technical issue; it's a strategic one that directly impacts brand equity. The review confirmed that while the need for brand consistency is well-established, there's a clear academic gap in how to achieve it with modern tools like Natural Language Search (NLS) without sacrificing brand control.

With this theoretical foundation in place, the competitive analysis and stakeholder interviews showed what this gap looks like in the real world. The market analysis revealed a clear business opportunity for Bynder, as no competitor has truly solved the problem of brand-aware search. More importantly, the interviews gave the problem a user perspective.

The section 2 explains why the problem matters, the market analysis shows it's a problem worth solving, and the user interviews confirm it's a real and persistent pain point. An answer to RQ1: to evolve Bynder's NLS from a powerful search tool into an intelligent, brand-aware partner.

Chapter 1

Chapter 2

Chapter 3

Chapter 4

Chapter 5

INTRODUCTION

DISCOVERY

CONCEPT
DEVELOPMENT

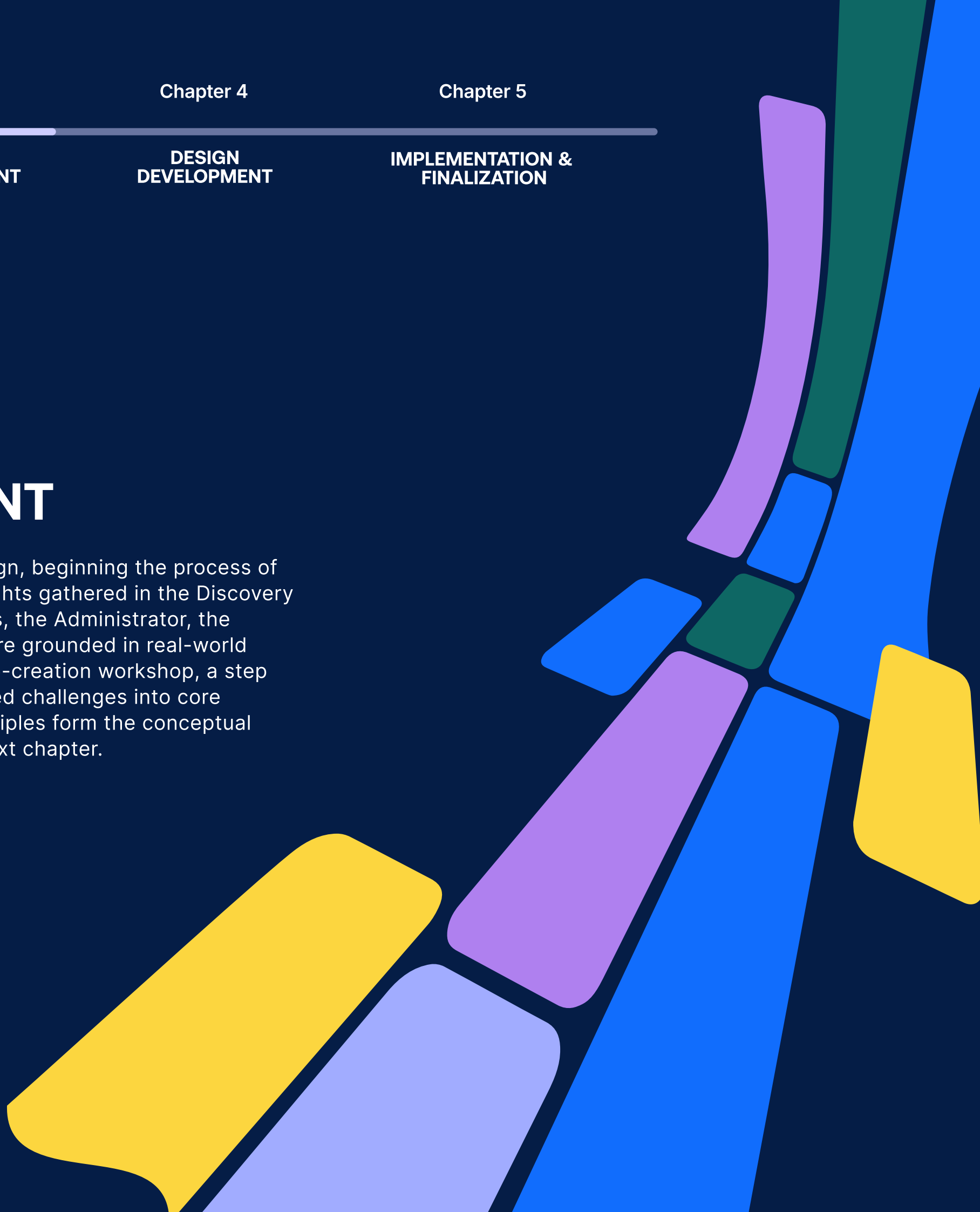
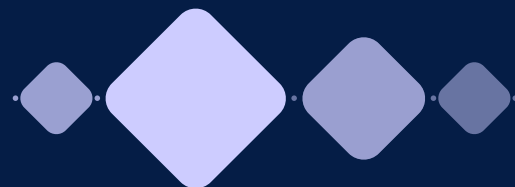
DESIGN
DEVELOPMENT

IMPLEMENTATION &
FINALIZATION

Chapter 3

CONCEPT DEVELOPMENT

This chapter bridges the gap between research and design, beginning the process of answering the second sub-question. Building on the insights gathered in the Discovery phase, section 1 will first introduce the key user personas, the Administrator, the Contributor, and the Consumer, to ensure our solutions are grounded in real-world needs. Section 2 is the core of this chapter details the co-creation workshop, a step where stakeholders collaborated to translate the identified challenges into core principles for a brand-aware search solution. These principles form the conceptual foundation for the design framework developed in the next chapter.



Section 1 Persona

1.1 Introduction

According to the current situation of the Bynder platform, there are six types of permission profiles: light users, moderate users, and heavy users. Among them, the highest permission is for heavy users, who are administrators.

Through interviews with stakeholders and analysis of the existing platform permission levels, it is determined that there are three main personas in the Bynder platform: administrators, contributors, and consumers(end user). They are displayed on the right, and the specific information will be displayed in each persona.

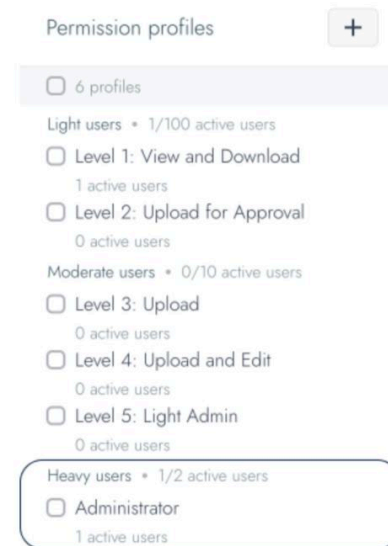


Figure 3.1.1: Bynder DAM Permission Profile



1.2 Administrator

The first persona Alice represents the role of brand governance. Typically a Brand Manager or DAM Administrator, her role is strategic and preventative, focused on maintaining the integrity and compliance of the entire asset library. Alice is motivated by the need for predictability and control, ensuring the platform serves as a reliable single source of truth for the entire organization. A detailed breakdown of her profile, including her specific goals and pain points, is presented in Figure 3.1.2

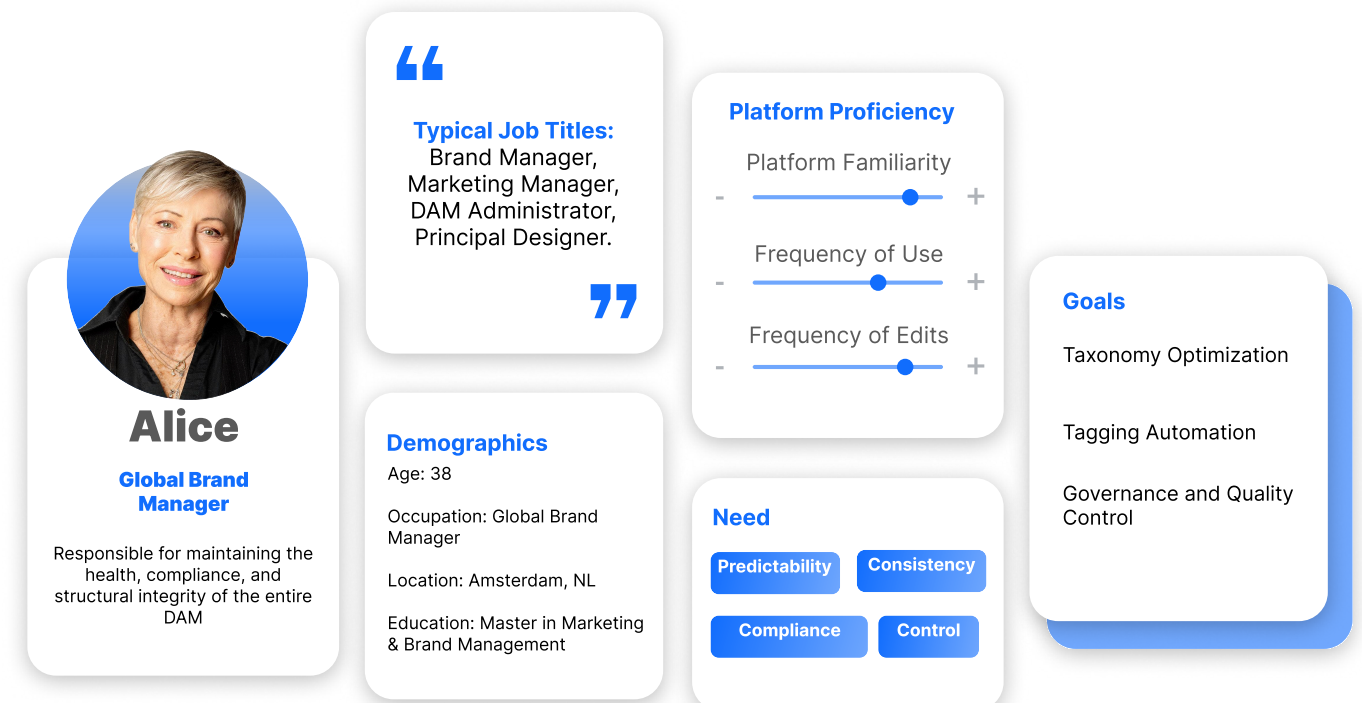


Figure 3.1.2: Persona Profile of Administrator-from the Bynder UX Documentation

Disclaimer: titles and responsibilities may overlap (a brand manager can be a creative strategist) depending on the size of the company.

1.3 Contributor

The second persona, Chloe, embodies the content creator. As a hands-on power user, often a graphic designer or content creator, she interacts with the DAM daily to find inspiration and manage creative assets. Chloe is primarily driven by efficiency and creativeness, her main goal is to find the precise asset she needs as quickly as possible to maintain momentum on her projects. Her complete profile is outlined in Figure 3.1.3.

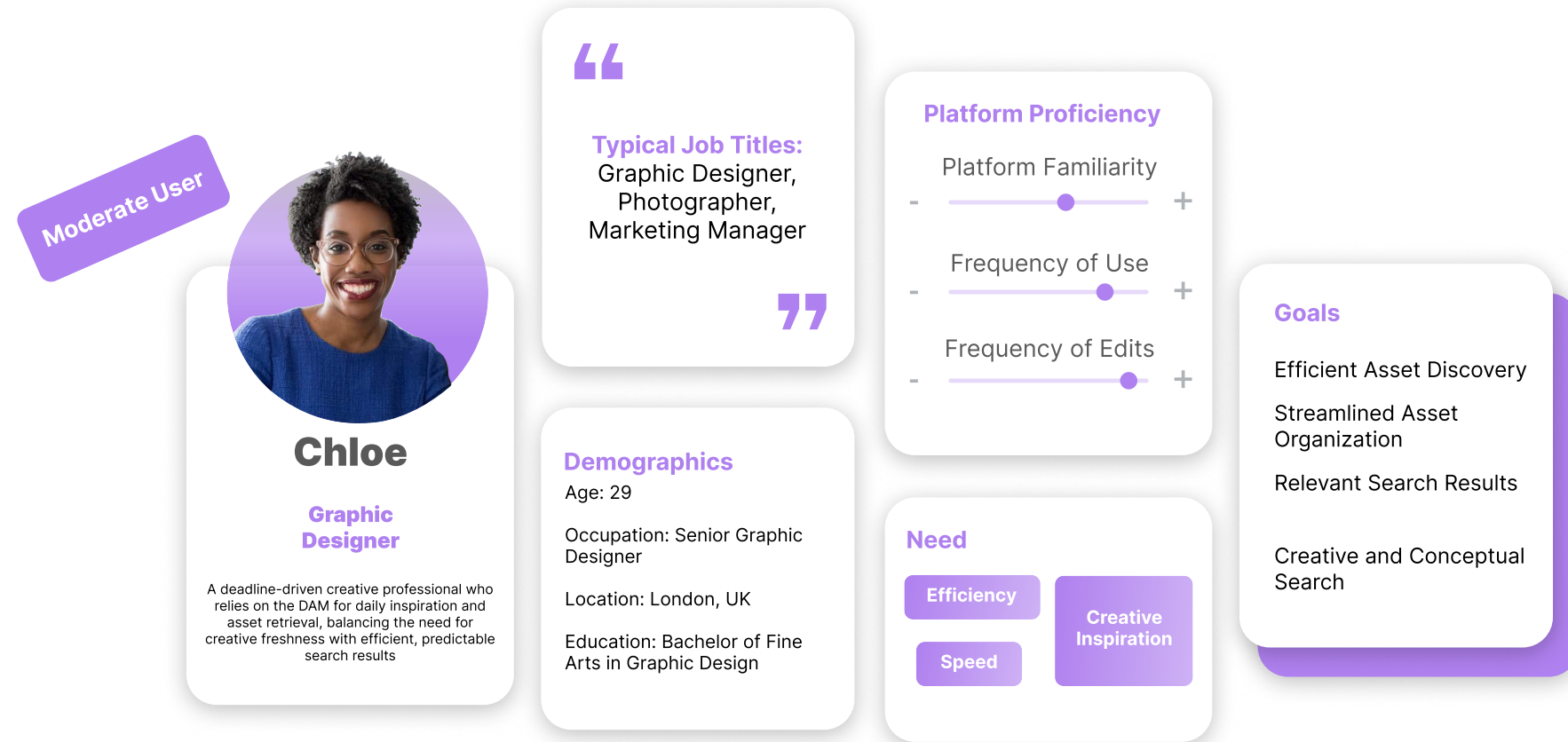


Figure 3.1.3: Persona Profile of Contributor--from the Bynder UX Documentation

1.4 Consumer

The third persona Jane represents the end user, consumer. Typically in a role like sales or regional marketing, Jane is a light user whose interaction with the DAM is sporadic and purpose-driven. She is not involved in content creation or management; her aim is to quickly find and download an approved, ready-to-use asset with absolute confidence. Moreover, she doesn't see any settings and can't upload, but only download. Download options can be also restricted for this type of user.

Making a simple and immediate user experience her primary need. A full profile of Jane, including her specific goals and platform proficiency, is shown in Figure 3.1.4.

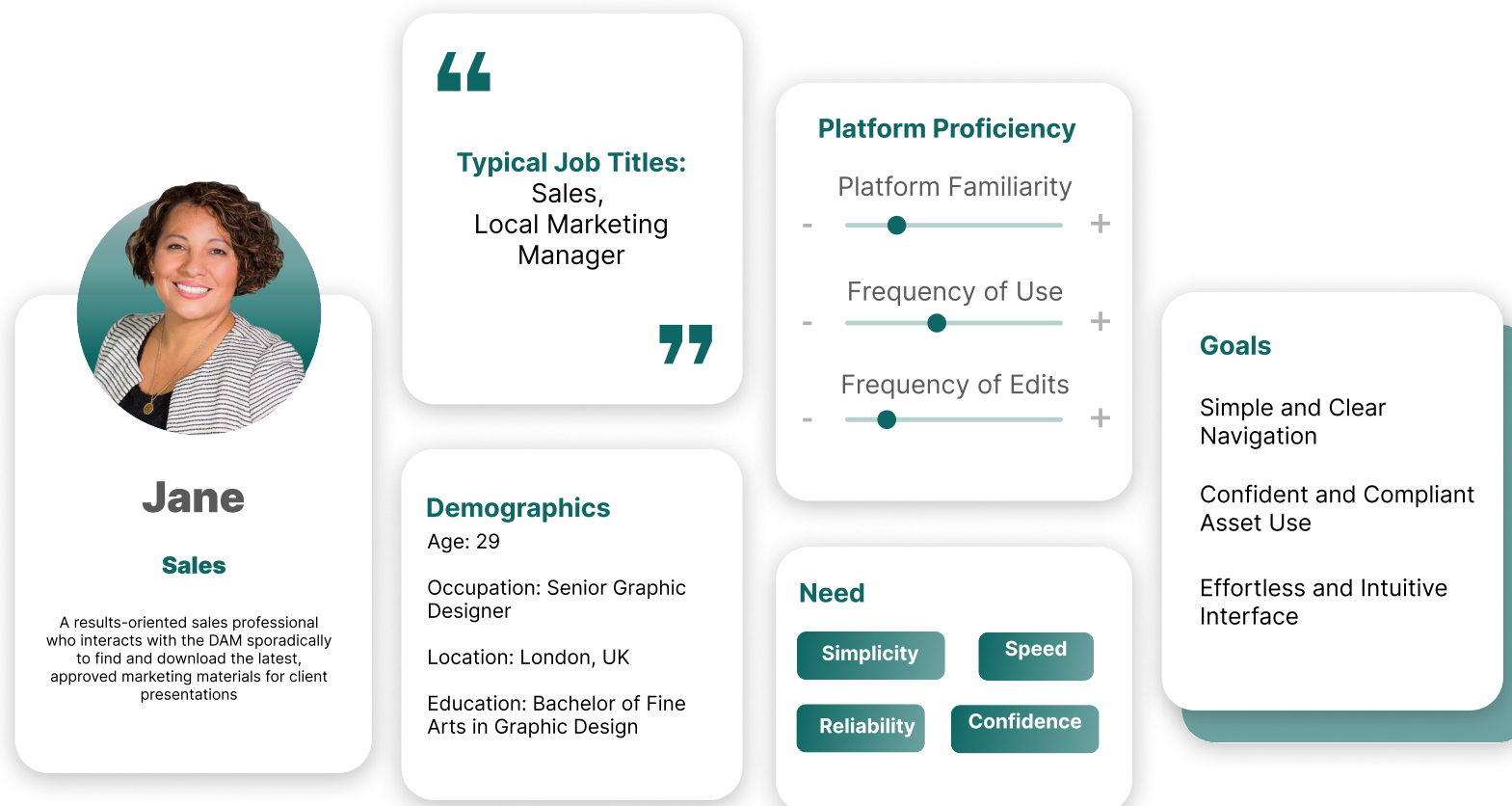


Figure 3.1.3: Persona Profile of Consumer--from the Bynder UX Documentation

1.5 Deep Dive: Persona Pains & Needs

The information based on the three personas shows that different users have different needs, but also have common problems in using DAM.

4.4.1 . Different Usability & Interaction Success Metrics

According to the three-dimensional analysis defined by Platform Proficiency, the familiarity and frequency of use of the DAM platform (including basic function download and advanced function editing) show the user's understanding of the platform and the main interaction.

Different users often have different interaction success metrics for the same function.

- **Administrator**

The main needs of Administrators are usually Predictability and Control, which also means that the standard of success for them is based on whether they can conduct a comprehensive review and management of system content. The search must contain content that has not been reviewed and published.

- **Contributor**

Contributors are driven by workflow efficiency. Success depends on quickly finding the assets they need to avoid duplication of work. For designers, success means discovering the newest assets, not those that have been used and published, because campaigns often require different materials. For marketers, success means finding the most accurate assets and simplifying the process of content creation and publishing, especially for those content creation processes that the design team is not involved in.

- **Consumer**

Consumers are more concerned about simplicity and confidence. The metric of success is whether they can find directly available assets with the least effort and the fastest speed.

4.4.2 Willingness To Invest Learning Effort

Generally, **the Administrator** is usually willing to invest significant effort up front, particularly in complex configurations like establishing the system's taxonomy. They accept a high initial cognitive load in exchange for achieving long-term system predictability and control.

On the contrary, **the Consumer** has a high need for immediacy and ease-of-use. If they cannot locate an asset rapidly, they may prefer to use other tools or local file systems they feel more familiar with. As a result, minimizing cognitive pressure is key to their success.

4.4.3 Shared Pain Points

Although different users have different goals, **'zero results'** and **'duplicated content'** are two shared pain points for all users. In 2025, Bynder already has the features named 'Duplicate Manager' to help with duplicated content. If the query of empty results can be improved in NLS, it can greatly improve the user experience, especially for contributors and consumers.

1.6 Summary

The analysis of these three personas reveals the design challenges for a brand-governed NLS.

It's not only necessary to taking the success criteria and the goal to minimize the learning cost for all users into account, it's also valuable to consider that administrators usually operate in the background Settings, while the other two types of personas usually operate in the front-end Asset Bank. To create a system where the complex, back-end governance work performed by an Admin translates into a simple, intuitive, and powerful search experience for front-end users may be a design opportunity.

Section 2

Co-Creation Workshop

2.1 Introduction

Based on the previous research, the core challenge of this project is that the words used by different brands for brand governance and brand consistency are often difficult to understand by the existing natural language model. The system for managing brand assets requires specific and logical data, and the platform also needs to consider delivery costs and time.

In section 1, the different pain points and needs of the three personas of bynder have been analyzed. In order to maximize the user experience of the three main users, I adopted a co-creation approach.

Co-creation describes joint or partnership-oriented creative approaches between two or more parties, especially between an institution and its stakeholders, towards achieving a desired outcome.

The purpose is not only align with the research through design methods to collect requirements, but also to directly obtain feedback from different users, create a space for all stakeholders to discuss and find the best solution to this problem.

2.2 Context

As mentioned in chapter 1, Bynder's main clients consumer are consumer product brands. Based on this background and Bynder's customer privacy, this co-creation workshop I chose a sports brand (brand N) that a well-known brand as the context.

Brand N exemplifies a Bynder customer in the apparel and footwear industry. It is hoped that the findings may inform future collaborations with similar brands in this industry.

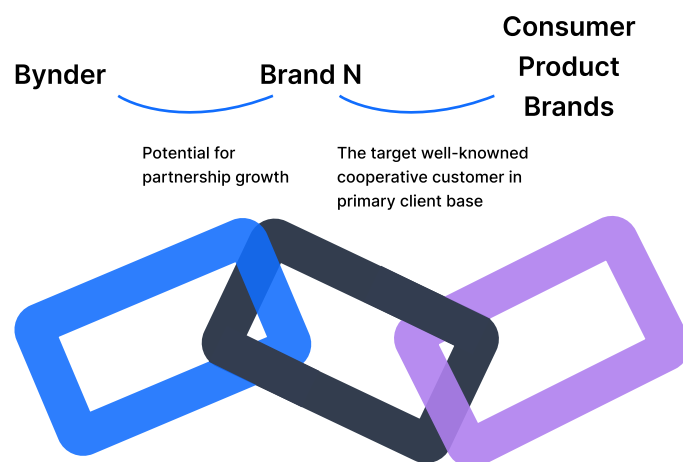


Figure 3.2.1: Context Overview for Co-Creation Workshop

2.2 Participant Profile

Five members participated in this workshop as Figure 3.2.2 present. For the sake of the project's objectivity and the effectiveness of the co-creation outcomes, participants were selected based on their user profiles, including two administrators, two contributors, and one consumer. The detailed information is presented in the figure.

To provide a comprehensive viewpoint, two of them were from Brand N's marketing team contributed additional brand insights relevant to the workshop's theme. The other participants either had previous working experiences with DAM and were familiar with the brand or had used at least one product.

		Participant Number				
		1	2	3	4	5
Personas	Administrator	●		●		
	Contributor		●	●	●	
	Consumer - Sales					●
Company	Brand N Marketing Team	●		●		
	Other CPG Team		●	●	●	●
Experience	DAM Experience	●	●	●	●	●
	Be Familiar with Brand N	●	●	●	●	●

Figure 3.2.2: Comparative Maturity Matrix of AI-Powered Features Across Leading DAM Platforms

2.3 Workshop Process

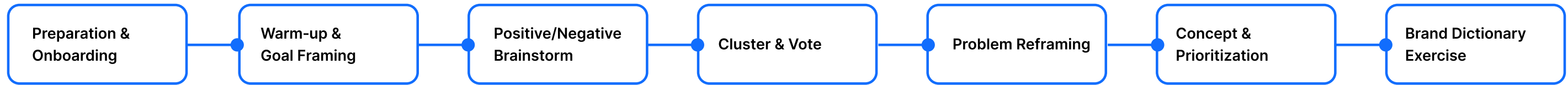


Figure 3.2.3 The workflow of the co-creation workshop

The co-creation workshop was designed as a 7 stages journey to guide participants from identifying broad challenges from natural language search to co-designing specific solutions. The entire process is outlined as Figure 3.2.3.

2.3.1 Preparation & Onboarding

This stage is mainly to plan the overall workshop process, activities and goals, mainly through Pilot test, which is a role-play pilot test that was run on campus to verify timing and platform.

The pilot test found that more than two hours of meetings would fatigue participants and reduce the quality of the final conception (the most critical part of the workshop). Therefore, the entire workshop was compressed to 120 minutes to ensure that participants have enough energy to contribute meaningfully to the solution. The pilot test also showed that remote participation simplified the schedule between them. So in the end, Miro is a real-time collaboration platform with simple usage.

The participants received an email with an introduction containing background information through email and were informed of the duration and time to prepare for the meeting.

2.3.2 Warm-Up & Goal Framing

As introduced in 2.3.1, the workshop was held in Google Meet, opened with a brief welcome, introduced each participant, and gave a short overview of Bynder's DAM platform and its Natural Language Search (NLS) capability.

The session objective was framed as to translate N's brand voice into searchable prompts framework and a brand vocabulary that can be leveraged by NLS features.

Next, participants completed a quick "warm-up" on Miro to get comfortable with the two key features they would use throughout the workshop—sticky notes and dot-voting. Everyone added a sticky note with their name and cast a vote on a selection of memes. This exercise ensured that all participants could navigate Miro, setting the stage for collaboration.

	1	2	3	4	5	6
What's your name & title?	admin	contributor-marketer	contributor-creative roles	consumer		
What was your first job?	Paper boy	social media content marketing	LXR	sales	Marketing assistant	
What's one lesson you learned from it?	Don't eat paper	always think out of box				

Figure 3.2.4: Co-Creation Workshop Participant Profiles.

Next up: **voting**. During the workshop, instead of going into long discussions, you will be placing red dots on the ideas that you believe the team should pursue. So, give it a go now. Copy the red dot to the right, then hover your mouse where you want to place it, then paste to cast your vote.

Which meme do you find the funniest?

Click to select and then copy me!

Place red dot under the best meme :)

Figure 3.2.5: Co-Creation Workshop Voting Exercise

2.3.3 Positive/Negative Brainstorm

Participants were asked to place themselves in the shoes of N's brand team, treating Bynder as their DAM platform.

Working from this point, they worked two framing questions:

- What's helping N find on-brand assets using Natural Language Search?
- What's preventing N from finding the right assets through NLS?

Then the participants came up with context-specific insights that helped with problem clustering and prioritization by noting particular things that help brand governance.

Step 1. Start on a positive note

Step 2. Capture problems

Figure 3.2.6: Co-Creation Context Insights

2.3.4 Cluster & Vote

After the brainstorming round we transitioned into clustering.

Participants first explained the meaning behind their own sticky-notes, then collaboratively dragged related items into coherent groups.

Based on these discussions I added black labels as themes, for example 'Logo-related' and 'unclear emotional words', until thirteen distinct clusters had been defined.

Next, every participant had three red dots to vote for the clusters they believed did the most harm to Brand N's brand-consistent search. Four themes stood out: **persona / target group, internal jargon / internal info, product info / asset tag, and unclear emotional words.**

The result underscores two patterns already highlighted in the stakeholder interviews (see Chapter 2):

- Consumer brands like Brand N must support searches aimed at different customer personas.
- Product-driven brands rely heavily on terminology and specific product names & technology, making internal jargon and asset tags critical to search accuracy.

After a consensus on the voting results, these top-ranked pain points were the basis for the upcoming 'How-Might-We' restructuring phase.

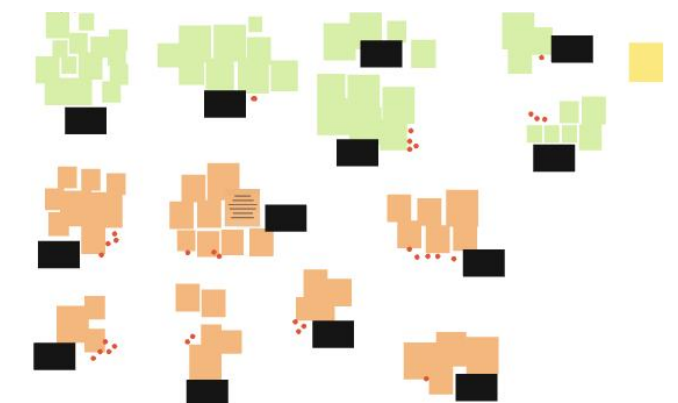


Figure 3.2.7: Co-Creation Workshop Clustering

2.3.5 Problem Reframing

With the pain-points prioritised by voting, the next step was to turn them into solution-generation. The workshop selected the four clusters that had received the most votes and rewrote each as a actionable 'How Might We (HMW)' question. Structure present as Figure 3.2.8.

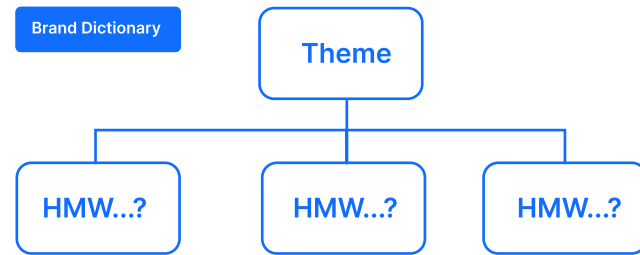


Figure 3.2.8: Problem Reframing HMW Structure

Brand Dictionary

Three HMWs focus on enriching a shared brand dictionary:

- Persona - How might we ensure the system recognises and reflects Brand N's real people?
- Emotional / Conceptual Request – How might we add more context in the search bar so abstract emotions are correctly interpreted?
- Internal Jargon – How might we help users find their way even when they use internal code-names or shorthand?

Prompt Framework

One high-priority HMW addresses the user interface of search:

- Negative or Exclusionary Searches – How might we signal when a search input conflicts — without blocking the user?

Redefined Problem Statement

The problem can be redefined as:

1. How can we enrich the underlying knowledge base of the system so that each brand is not just a static list of terms, but a dynamic model?
2. How can the redesign user patterns based on the existing search page to meet the needs of actual users when thinking and searching?

2.3.6 Concept & Prioritization

With four 'How-Might-We' questions on the board, the participants switched into rapid solution-finding. By using green notes, everyone was encouraged to sketch as many ideas as possible.

To narrow the field we mapped every idea onto a two-by-two Impact-versus-Effort grid. Participants were asked to think aloud and working aloud, the team first judged the brand and user value of each concept, then estimated implementation cost in the current DAM platform.

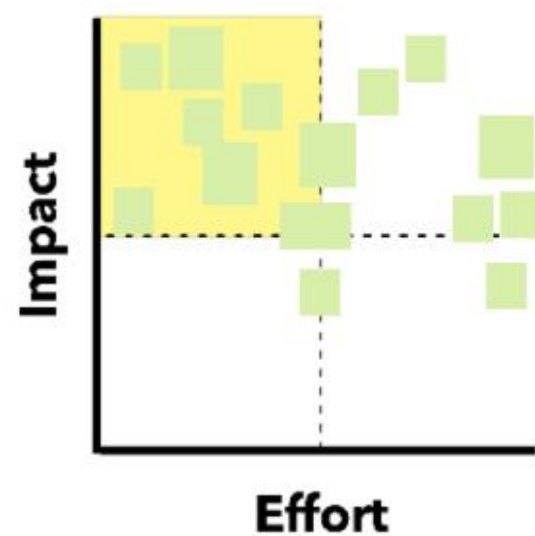


Figure 3.2.9: Impact-Effort Matrix for Prioritizing Solution Concepts

Results are on the right side.

2.3.7 Brand Dictionary Exercise & Conclusion

To close the session I re-introduced Keller's Brand Pyramid, previously discussed in Chapter 2, and showed a streamlined three-tier version (see Figure 3.2.11).

Participants were asked to evaluate the model and to suggest concrete terms for each layer.

Everyone agreed that the pyramid is a useful way to think about things, but they also said that the emotional tier is hard to put into words and that the top layer, brand essence, is usually simplified to one or two words like slogan. The group stopped a few times during the exercise because no one could rapidly come up with a word that really fit into one layer.



Figure 3.2.10: Keller's brand pyramid (2011)

Figure 3.2.11: Reframed Brand Pyramid

Although the activity did not yield a tidy list of approved brand dictionary, it exposed a deeper issue: **when even brand experts and seasoned DAM users struggle to recall consistent language, an open-ended brand dictionary and a free-text search bar become less effective.**

Adding a small amount of restriction, like pre-set filters or guided aspects, may actually help people think more clearly and lower their cognitive burden.

Section 4

Conclusion & Key Findings

Based on Bynder's typical user personas and co-creation workshop, the following findings are intended to guide the development of a more intuitive and effective search system.

A Controlled Vocabulary Is The Foundation Of Usability

The biggest search barrier in NLS does not come from the algorithm, but from missing or inconsistent terms which is the input data. It is difficult for administrators, designers, and marketers who are familiar with DAM platforms to recall standard tags with structure, and it is even more difficult to imagine the user experience of people who have not used DAM platforms. Therefore, future asset tags or metadata must rely on a unified "brand dictionary".

Different User Need To Meet Different Needs At The Same Time

DAM is a complex system. If administrators can reduce manual settings, contributors can quickly find the required assets, and light users can quickly locate and download assets that have been approved and align with the brand, the overall user experience can be improved.

Functional Layers Must Be Prioritized

User search behavior is overwhelmingly dominated by concrete, internal terminology. Product names, SKU numbers, and specific campaign titles are the most frequently queried terms. This indicates that the system's highest priority is to satisfy the functional layer of user needs, ensuring that basic, factual information is flawlessly retrievable.

As the core of brand consistency relies on accurate product information and assets, perfecting this foundational search capability is paramount before addressing more abstract needs.

Emotional Search Is An Opportunity For Advancement

When prompted to search using words related to brand emotions or campaign concepts, users found it difficult to formulate a short, consistent prompt. This demonstrates the inherent limitation of an open-ended search bar. To facilitate it, the system should move beyond a simple text field and incorporate targeted prompts, smart filters, or structured templates. This approach can guide users toward relevant emotional and abstract concepts without requiring them to guess the correct terminology.

Mild Restriction Enhances Usability

The brand pyramid exercise revealed that complete, unstructured freedom in a search bar leads to uncertainty and cognitive overload.

A more effective approach is to implement a system of 'guided freedom'. By introducing predefined filters and guided prompt templates, we can significantly reduce the user's cognitive burden. This method provides necessary structure while still allowing free text input within those guides, ensuring that the creativity and specific needs of Contributors.

This balance offers a more efficient and less ambiguous experience than freedom.

Chapter 1

Chapter 2

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Chapter 5

INTRODUCTION

DISCOVERY

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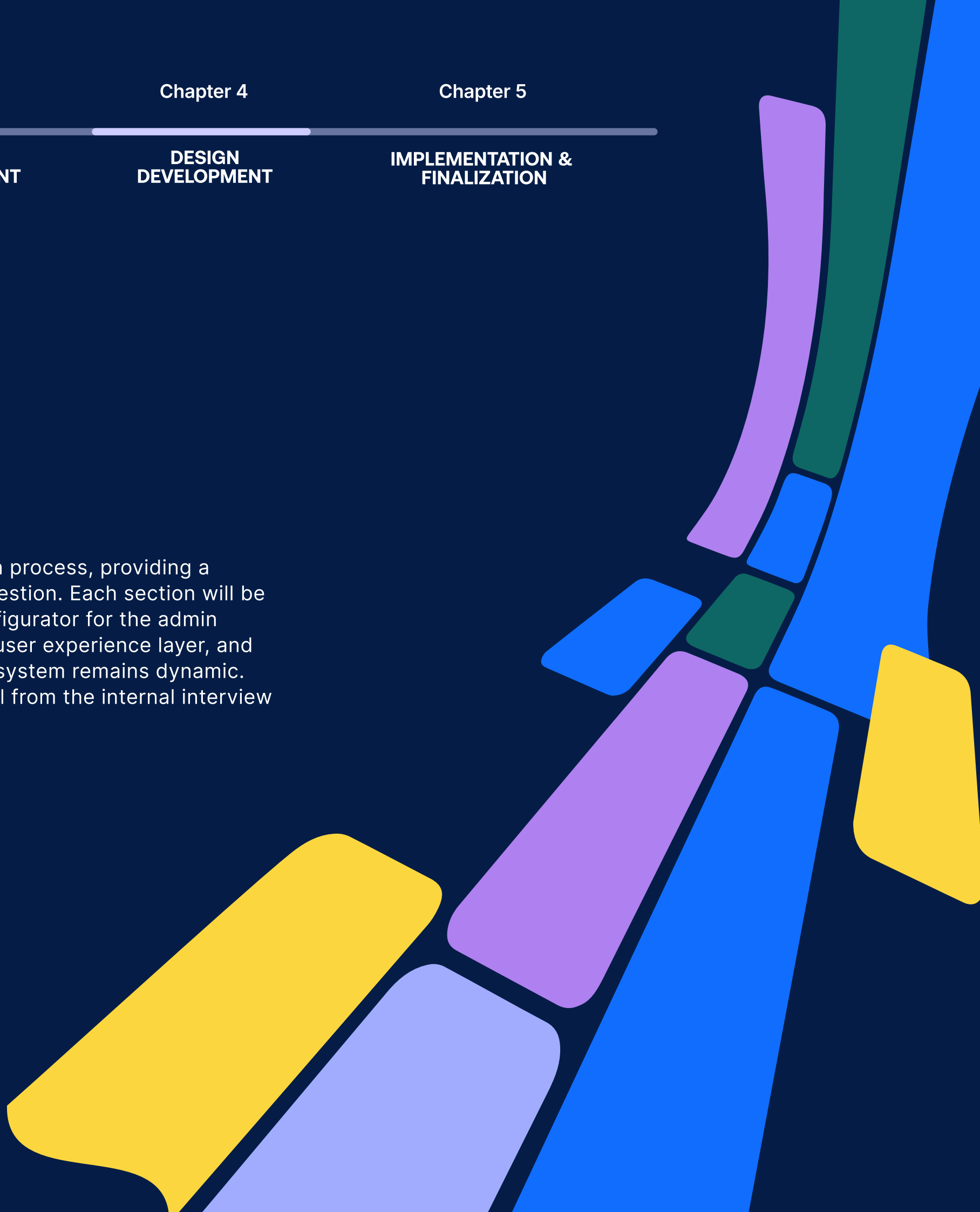
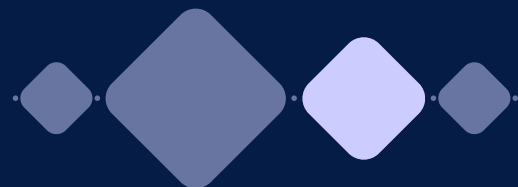
DESIGN
DEVELOPMENT

IMPLEMENTATION &
FINALIZATION

Chapter 4

DESIGN DEVELOPMENT

This chapter presents the tangible outcome of the design process, providing a detailed answer to the second half of our second sub-question. Each section will be explained in detail: section 2 is the Brand Dictionary Configurator for the admin layer, section 3 is the Guided Prompt Framework for the user experience layer, and section 4 Brand Language Feedback Loop to ensure the system remains dynamic. Section 5 also shows how these three elements work well from the internal interview experience.



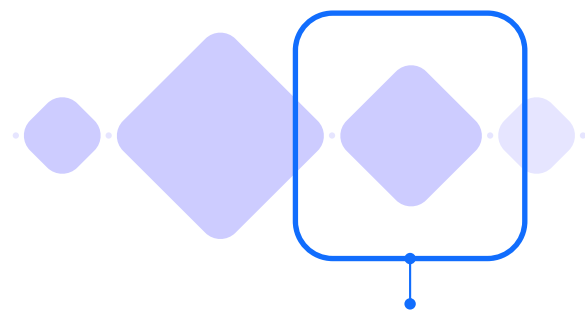
Section 1

Final Concepts

2.1 Introduction

Figure 4.1.1 stitches the workshop findings into the workflow. Users begin with a structured prompt in the search bar, and that wording is immediately checked against the Brand Dictionary, where tone, persona, product terms, and other controlled terms are in taxonomy. The refined query is then passed to Bynder's existing NLS engine, while the user can add familiar metadata filters on the front-end to narrow the set even further. The result is a list of assets that satisfy both the search algorithm and brand-consistency rules.

Building these layers on top of the current DAM avoids the heavy cost of a ground-up rebuild, yet still unlocks value for every persona. A richer taxonomy means administrators spend less time correcting tags, contributors locate campaign visuals faster, and light users retrieve pre-approved assets with confidence. To realise this vision, the next part introduces three solutions that will be detailed.



Based on the identified challenges, what are the core principles for a brand-aware NLS, and how can these principles be translated into a tangible design framework to address the needs of each user persona?

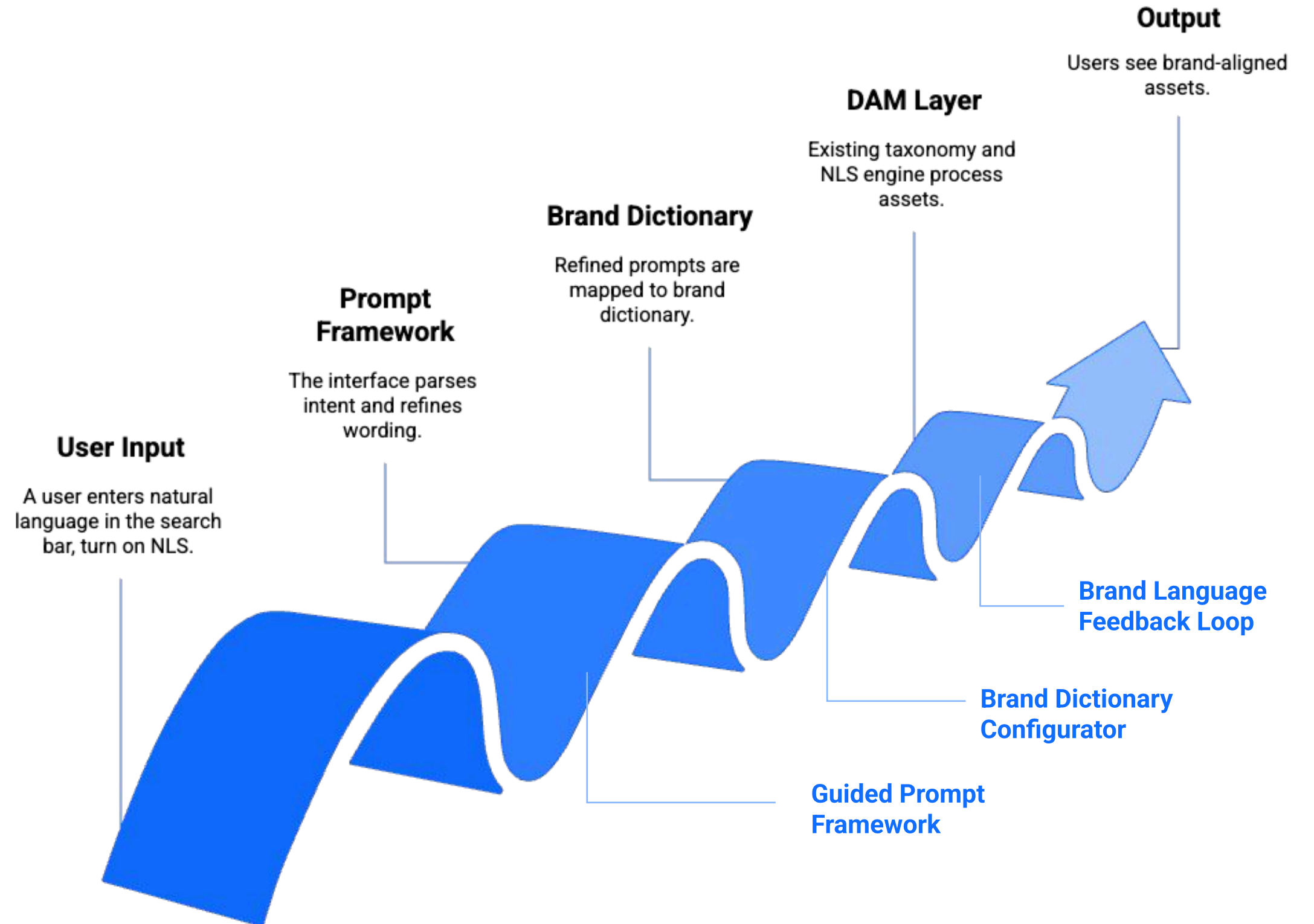


Figure 4.1.1: Conceptual Information Flow of the Proposed Solution

Section 2

Brand Dictionary Configurator

The Brand Dictionary Configurator is an admin-layer centered that turns a handful of brand language into a ready-to-use, multi-level taxonomy of tones, personas and product attributes.

Why It Matters

During set-up most DAM administrators confront two challenges:

- Vague brand-guideline PDFs that never translate into searchable tags.
- Manual tagging that snowballs into thousands of inconsistent terms.

The result is a mess taxonomy that even power users struggle to navigate, and Natural-Language Search can only be as good as the data it indexes.

Taxonomy Onboarding

- Theming
- Login in
- Metaproperty
- Metaproperty Suggestion

Metaproperties and options

Configuration

Configuration Create automation

Customize your metaproperties' display order and required fields for uploading, editing and reviewing assets.

Metaproperties	Required
1 <input checked="" type="checkbox"/> New cool products	<input type="checkbox"/>
2 <input checked="" type="checkbox"/> Mark	<input type="checkbox"/>
3 <input checked="" type="checkbox"/> Channel	<input type="checkbox"/>
4 <input checked="" type="checkbox"/> Football teams	<input type="checkbox"/>
5 <input checked="" type="checkbox"/> Category	<input checked="" type="checkbox"/>

Search

Home Assets Collections Guidelines Studio Content Workflow Workflow Custom More

Advanced Color Tags Brand Alignment Saved filters

Brand Persona	Visual Style	Brand Tone	Brand Vocabulary	Product Category (Brand Lens)
Athlete 87	Minimalist 200	Bold 90	Just Do It 50	Lifestyle 58
Creator 332	High Contrast 95	Rebellious 80	Move to Zero 99	Performance 99
Trailblazer 100	Urban Street 24	Inspirational 60	Game-Changing 68	Collaboration 76
Community Leader 107	Kinetic / Motion 101	Friendly 100	Elite Performance 78	Techwear 98
Underdog 127	Gritty Realism 24	Competitive 105	Designed for Every Body 95	Kids / Women / Pro 303



Section 3

Guided Prompt Framework

The Guided Prompt Framework sits in the UX layer.

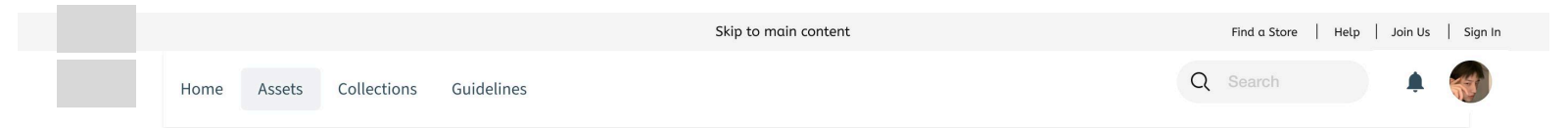
It turns an open-ended search bar into a fill-in-the-blank sentence that guide marketers and creative roles to use approved brand terms.

Each placeholder (Tone, Persona etc.) is mapped to the Brand Dictionary defined during onboarding or taxonomy.

Why It Matters

There are 3 reasons for this idea:

- Emotional thinking vs. technical tags
Users know the vibe they want ('fresh, urban, Gen Z') but rarely remember the exact metadata. Prompts bridge that gap.
- Reduces 'zero-result' frustration
By constraining the query to recognised terms, the system avoids empty states and accelerates time-to-asset.
- Scales to every skill level
Power users can toggle to full natural-language search, while newcomers get guidance.



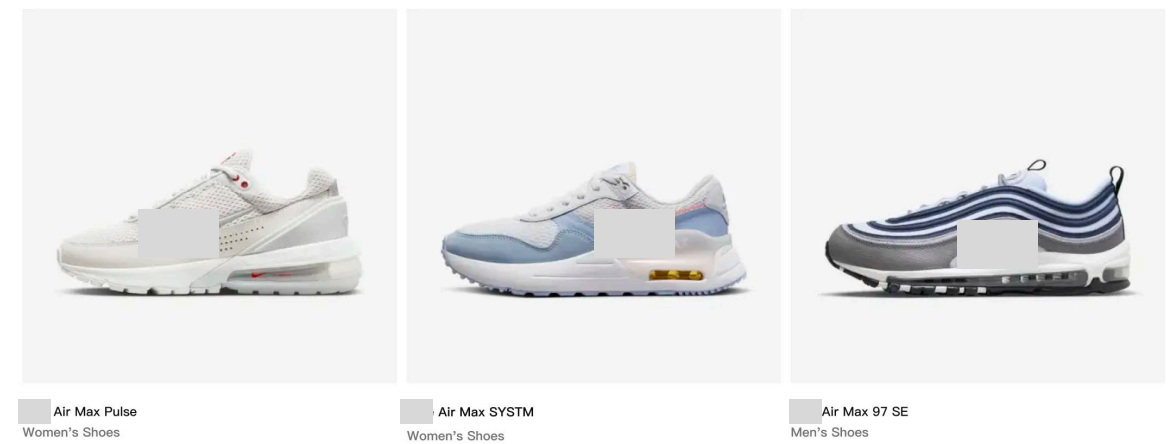
Natural Language Search

Format [v] Select tag [v] Filter for [v] Lets go!

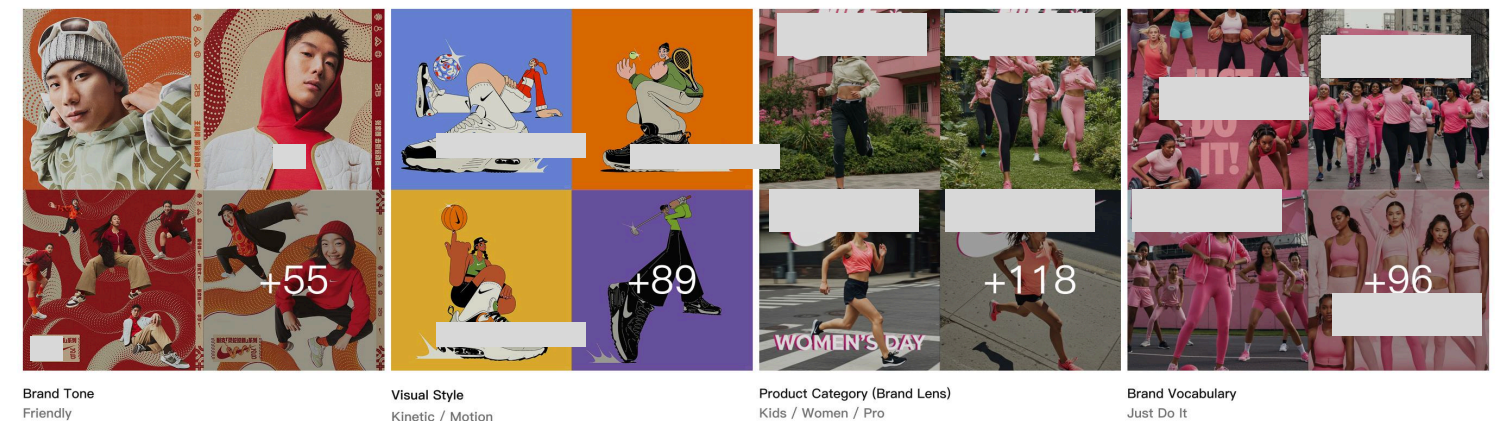
Tags

- Gym(71)
- Run (211)
- Athlete (75)
- Nature (71)
- Lifestyle (88)
- Just Do It (28)
- Techwear (32)
- Minimalist (33)
- Bold (21)
- Creator (82)
- Energy (71)
- Nature (71)
- Friendly (75)
- Outdoor (71)
- Just Do It (28)
- Underdog (85)

What is popular



Featured Collections



Recently added

Order by Popularity [v] [icon]

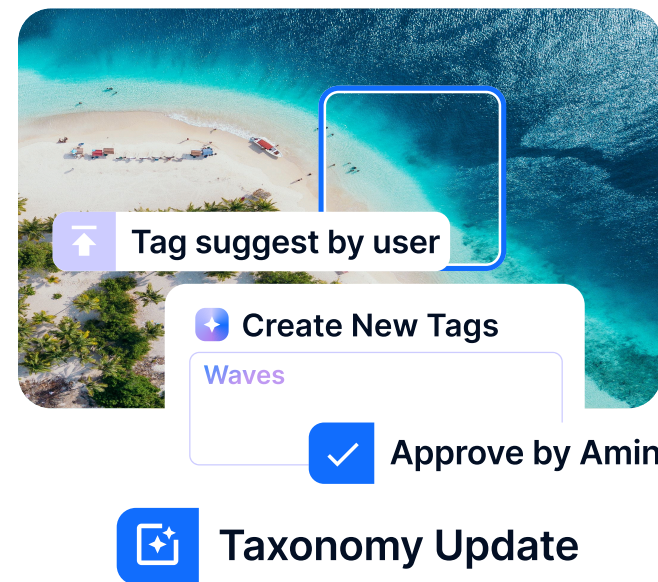


Section 4

Brand Language Feedback Loop

The Feedback Loop operates behind the scenes. Whenever users search or upload assets with words the system doesn't recognize, those terms can be flagged as 'candidates'.

Administrators can review these words in the dashboard. If some words appear frequently, they can be directly approved or merged with synonyms. This avoids administrator bias and simplifies the manual tagging process. With just one click, new words will be embedded in the brand dictionary.



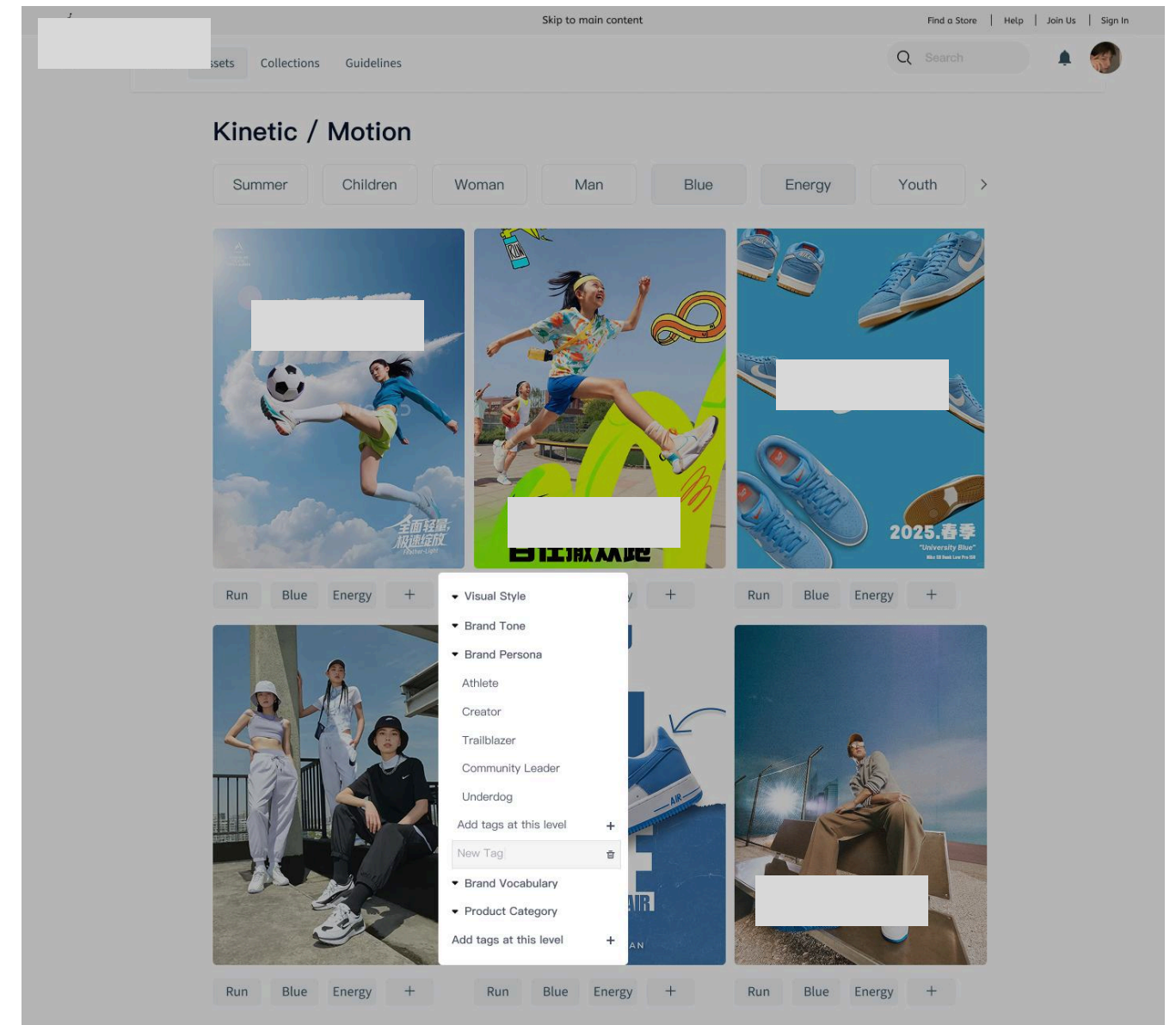
Why It Matters

Brand vocabularies are never finished, that's why we call this taxonomy 'Brand Alignment'. No matter how seasonal collections, regional slang, and cultural shifts introduce fresh language faster than guidelines are updated. Bynder always encourages clients to review the tags once in a while to check if they're still relevant, while only a few clients do it because of the workload of manually checking.

Without a feedback loop, DAM taxonomies fossilise and search relevance decays. The loop can keep metadata current by turning user input into structured tags, yet it preserves quality control because nothing enters the dictionary without an admin's review.

It also exposes blind spots: if regional teams keep looking for a tag while the tag doesn't exist, that insight shows up in the review queue with usage counts, revealing real demand.

In short, the feedback loop makes the dictionary always updating, keeps bias in check, and aligns the platform to how people think and speak about the brand today.



Section 5

Concept Testing

5.1 Introduction

To validate the feasibility and strategic value of the three proposed design concepts, two semi-structured expert interviews were conducted. This qualitative testing method was chosen to gather in-depth feedback from internal Bynder professionals with deep expertise in product strategy, sales, and customer needs. The sessions were designed to present the three-part solution and facilitate a discussion around their practical application, business potential, and alignment with market demands.

5.2 Key Findings from Expert Feedback

The interviews provided validation for the project's core premise and offered valuable refinements for the proposed solutions. The findings are summarized below.

5.2.1 Validation of the Core Problem and Solution Framework

The experts confirmed that the "Brand Semantic Gap" is a significant and persistent opportunity for Bynder's clients. They highlighted the pain point of manual taxonomy management.

"we probably write that 'advice to review tags' as a hopeful comment, but I don't think anybody is going through their taxonomy over and over again anymore." (p6)

The proposed three-part solution was seen as a practical approach. The Brand Language Feedback Loop, in particular, was praised as a form of "crowdsourcing for taxonomy improvements," addressing the inability of clients to maintain their own systems.

5.2.2 Refined Understanding of the "System Limitation"

A crucial insight emerged regarding how to frame the problem. One expert clarified that the issue with searching for abstract or emotional concepts is not a technical failure of the DAM, but a failure of process due to immense manual effort.

"It's not that the system struggles and isn't equipped to handle it. The investment in putting the taxonomy in there isn't worth it... the manual effort is the gap."

This feedback reframes the project's value proposition: the solution overcoming the manual effort that currently prevents clients from leveraging the full power of their DAM.

5.2.3 Strategic Value and Market Positioning

The experts provided clear guidance on how to position the features for different user personas, confirming the project's alignment with business goals.

For Administrators (The Buyer): The Brand Dictionary Configurator and Feedback Loop should be positioned as powerful efficiency tools. The key selling point is taking the burden off the admin. As one expert framed it, "You're taking the burden off of the admin of something we know is very painful for them."

For End-Users (The Value Proof): The Guided Prompt Framework directly addresses the needs of marketers and creatives. The experts validated the insight that different roles have different goals, confirming that marketers often want the "most popular" assets, while creatives seek the "least used" to maintain freshness. This feature provides a more effective and personalized search experience.

The experts also endorsed the strategic vision of evolving Bynder from a Digital Asset Management tool to a "Brand Asset Management" partner. This move was seen as a way to create a unique market position in a crowded space.

5.2.4 Confirmation of Target Audience

When asked which clients would value these features most, the experts immediately pointed to consumer brands, stating, "where brand loyalty becomes the most important is when it's consumer brands." For these clients, whose "brand is their business," the ability to enforce a specific vocabulary (e.g., "sneaker" instead of "shoe") is critical to their reputation and storytelling.

5.2.5 Constructive Feedback and Areas for Refinement

While the core concepts received strong validation, the expert interviews also highlighted a critical consideration for implementation: the potential knowledge gap of the DAM administrator.

A key concern was raised that the success of the Brand Dictionary Configurator depends heavily on the admin's brand expertise. As one expert pointed out, not all admins are strategic brand managers; some may be tasked primarily with asset organization and tagging. This raised a crucial question: would an admin without a deep branding background be able to effectively build a rich brand dictionary from scratch?

This discussion led to a suggestion for improving the solution: incorporating a more robust onboarding experience. Rather than presenting a blank slate, the system could use AI-driven suggestions or guided templates to help admins define their brand's key attributes, such as personas, tone, and values. This would not only lower the barrier to entry for less experienced admins but also ensure a higher quality and more consistent output across all clients.

5.3 Synthesis and Impact on Design Direction

The expert feedback provided validation for the project's direction.

The key takeaway from this testing phase was the critical importance of framing. The solution is not just about adding features, but about fundamentally changing the client's relationship with brand governance, transforming it from a painful manual task into an automated, intelligent, and collaborative process. Furthermore, the feedback highlighted the need to support the administrator with guided onboarding, ensuring the tool is accessible to users of all expertise levels. This insight reinforces the need for a user experience that is simple and guided on the front-end, while being powerful and efficient on the back-end.

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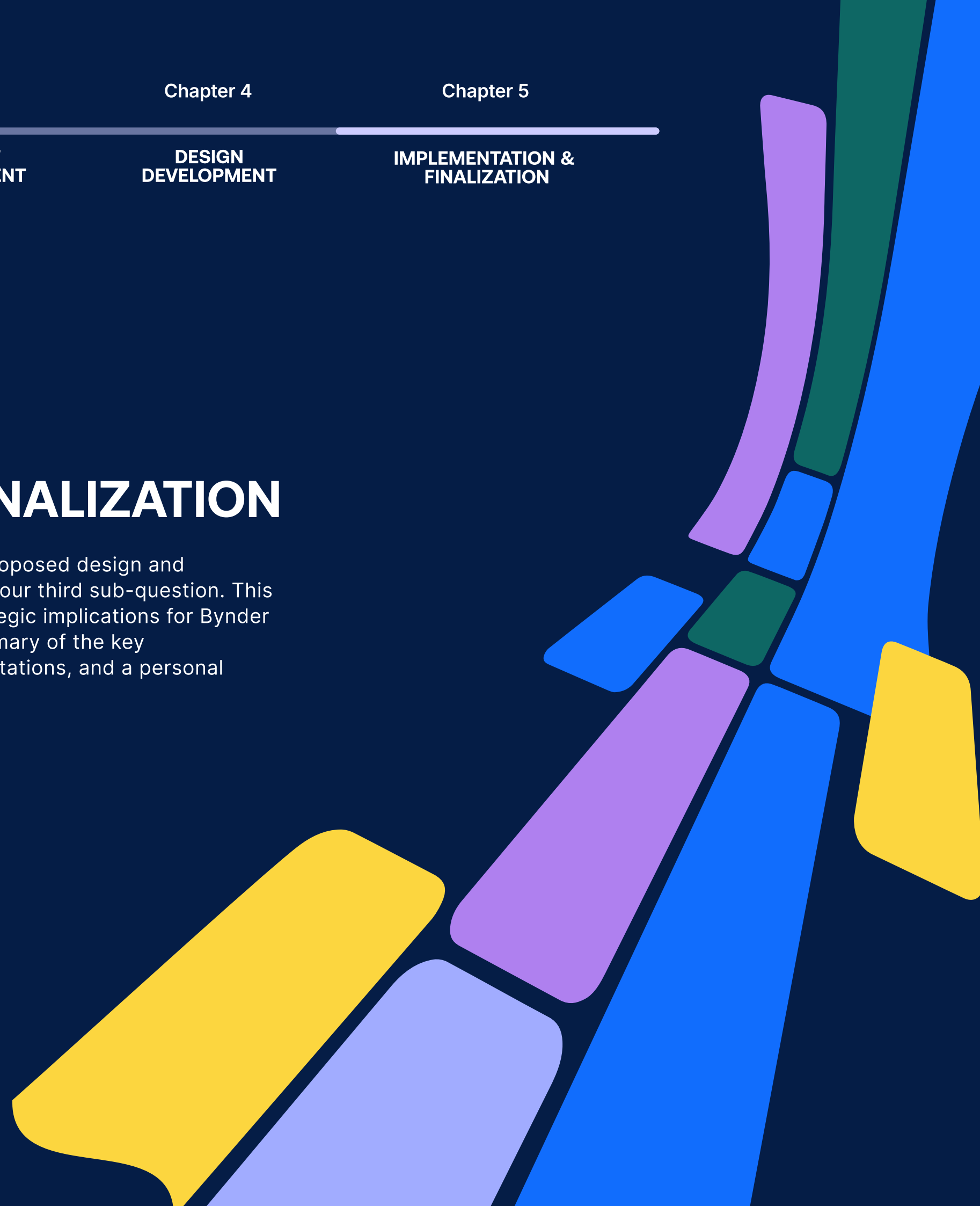
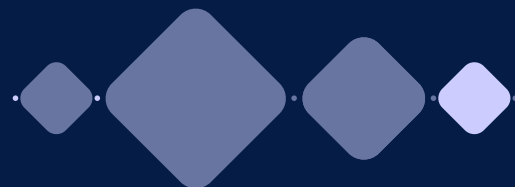
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FINALIZATION

Chapter 5

IMPLEMENTATION & FINALIZATION

This final chapter closes the project by evaluating the proposed design and reflecting on the project's outcomes, thereby answering our third sub-question. This is followed by a broader discussion of the project's strategic implications for Bynder and the DAM industry. The report concludes with a summary of the key contributions, an honest assessment of the project's limitations, and a personal reflection on the research journey.



Section 1

Evaluation

The project tackles a well-defined pain point that multiple stakeholders have confirmed. The final design respects the needs of the DAM's varied user personas, offering matched solutions for both the front- and back-end. At the same time, the front/back collaboration in turn boosts search performance and streamlines back workflows.

On my supervisor and mentor's advice, the core brand-knowledge layer draws on solid academic models, most notably Aaker's Brand Scale and Keller's Brand Pyramid. So the system's brand taxonomy rests on firm theoretical ground. The guided-prompt search concept emerged from co-creation workshops, where participants stressed they needed a tool that leads them toward what they want rather than making them guess the perfect keyword. Finally, the feedback loop answers a key insight from stakeholder interviews: the brand dictionary has to stay current, updating in real time.

Section 2

Discussion

2.1 Redefining the DAM's Role

What started as a straightforward attempt to fix a technical problem the 'Brand Semantic Gap', grew into something more related to a human-computer collaboration study. It became clear that the final proposed solution wasn't just a new set of features, but a chance to change the relationship between a brand's team and its most important knowledge system. The opportunity was to recast the DAM from a library for storing assets into a collaborative partner in the daily work of brand governance.

This shift is rooted in the emerging field of Human-AI Collaboration. As AI becomes more deeply integrated into enterprise workflows, knowledge management is no longer about simply automating tasks but about co-creating meaning and structure. The following discussion explores how this project's design solutions serve as a practical application of key theories in Human-AI collaboration.

2.2 Co-Creation Through Interface Design and Feedback Loops

Enterprises do not just consume AI; they actively shape it through the design of interfaces and feedback mechanisms. As Storey (2025) notes, knowledge management in the age of generative AI requires active configuration of how knowledge is surfaced and refined. This project's three-part solution is a direct embodiment of this principle.

The Brand Dictionary Configurator and Guided Prompt Framework are interfaces designed for co-creation. They translate the abstract principles of human-centered interaction design (Costa, 2022) into practice.

The Configurator empowers administrators to explicitly teach the AI what the brand stands for, while the Guided Prompts help end-users frame their queries in a way the system can understand.

Crucially, the Brand Language Feedback Loop establishes a formal learning mechanism. It creates the kind of interface that allows brand teams to correct and annotate AI-generated metadata, enabling the learning loops that help the AI align with brand-specific semantics over time.

2.3 Mediating Tacit Knowledge

A significant challenge in brand management is that much of what makes a brand coherent resides in tacit knowledge—the intuitive, experience-based understanding that is difficult to encode (Storey, 2025). An experienced brand manager often knows instinctively if an asset "feels" right.

This project addresses this knowledge mediation problem. The interfaces are designed to translate this intangible brand expertise into forms the AI can process. The Brand Dictionary, for example, acts as a "contextual scaffold" (Costa, 2022) by creating a formal glossary for the brand's unique terms. This mediating layer guides both the user and the machine toward consistent decisions, preventing the AI from defaulting to generic interpretations that conflict with strategic brand intent.

2.4 Building Trust Through Explainability

For any Human-AI collaboration to be sustainable, creative professionals must trust the systems they work with. Predictability and transparency are essential for building this trust (Liu and Shen, 2025).

The Guided Prompt Framework, by structuring the search process around the brand's own defined terms (personas, tone, etc.), makes the system's logic transparent. Users understand why they are getting certain results because they are participating in the query's construction.

This mutual adjustment process strengthens both human and AI competencies and promotes alignment between brand values and daily operations.

2.5 Acknowledging that AI Is Not Neutral

Finally, it is critical to acknowledge that AI systems are not neutral; they reflect the biases of the data and designers that shape them (Liu and Shen, 2025). If a system is trained only on past campaigns reflecting a narrow cultural lens, it will reproduce those biases.

The Brand Language Feedback Loop is a deliberate mechanism to counteract this. By allowing real-time input from a diverse user base, it creates a pathway for new, emerging, and more inclusive language to enter the system. As Storey (2025) cautions, a total dependence on generative systems without such safeguards can lead to the loss of important organizational knowledge.

2.6 Challenges and Future Considerations

While this Human-AI collaboration framework represents a significant step forward, it own set of challenges that require ongoing consideration.

First, the Tacit Knowledge Barrier remains a formidable obstacle. Although the Brand Dictionary can capture explicit brand rules, it struggles to fully translate the intuitive, "gut-feel" expertise of a seasoned brand manager. The system can enforce what is known, but it cannot easily replicate the nuanced, implicit understanding that often defines a brand's unique character. This highlights a persistent gap between what can be codified and what is simply "felt."

Second, the system's effectiveness is highly dependent on the quality of human input. The principle of "garbage in, garbage out" applies directly to the Brand Language Feedback Loop.

If users provide inconsistent, low-quality, or biased feedback, they risk training the AI in the wrong direction, potentially reinforcing errors rather than correcting them. The framework assumes a level of user diligence and expertise that may not always be present in a busy enterprise environment.

Finally, there is a long-term risk of over-reliance and skill atrophy. As the AI becomes more proficient at guiding users toward on-brand assets, there is a possibility that creative professionals may rely on it too heavily, potentially diminishing their own critical brand judgment over time. The ultimate goal is to create a partnership that augments human expertise, not one that replaces it. Maintaining this balance between helpful guidance and cognitive dependency will be a critical challenge in the system's future evolution.

Section 3

Coclusion

3.1 Conclusion

This project set out to close the gap between the way brands speak and the way a DAM thinks. AI-powered search holds huge promise, but it can chip away at brand integrity.

The three-part solution answers that challenge head-on. First, a layered Brand Configurator captures brand language in a form the AI can use. Second, guided prompts ease the mental load for users and a feedback loop lets the system keep pace as the brand's vocabulary evolves.

In doing so, the project makes three key contributions. It brings a designer's eye to AI and brand governance, it traces a clear research-through-design path from field insights to enterprise software, and it delivers a user-tested concept for a brand-driven natural-language search. By turning brand vocabulary into living, shared data, the system recasts Bynder as more than an asset librarian—it becomes an active partner in the ongoing story a brand tells the world.

3.2 Limitations

The final result is a high-fidelity prototype, not a live, scalable web service. Consequently, the evaluation focused on interaction logic and strategic value rather than raw computational performance or search-ranking accuracy.

Furthermore, the participant pool for the co-creation workshop and expert interviews, while valuable, was small and drawn mainly from within the Bynder ecosystem, which introduces a risk of internal bias. Finally, the work centers exclusively on English-language contexts. Significant further research would be required to validate and adapt this framework for the multilingual, multinational environments that represent a core part of Bynder's global client base.

3.3 Self Reflection

Looking back, this project became a crash course in growing up—both in the classroom and on the job. I was lucky to spend my internship at Bynder, a company that instantly felt welcoming. While running B2B UX intern studies there, I finally put those qualitative research theories from my master's program to work. At the crossroads of brand strategy and natural-language search I could sense real design potential, yet pushing beyond 'just make it work' proved tough. My mentor, Jorg, kept steering me between the big picture and the tiny details, while Erik-Jan piled on theory and great case studies. By the end I'd learned how to peel ideas layer by layer like an onion and share them.

The co-creation workshop was another turning point. Watching participants wrestle with the concept showed me that not every process spits out a neat answer, and that's okay. In AI projects like this, the real value is still people, not the model's next version.

I also made peace with design research's messier side. Deadlines slipped, drafts fell apart, and writing a report in English—without leaning on translation tools—felt brutal at times. Jorg kept reminding me: "A clumsy report in your own words beats a slick one written by Chat GPT." That faith let me write, translators' rough edges and all, and end up with a clearer voice.

Most of all, the work cemented my love for strategic design and opened my eyes to the untapped 'blue-ocean' space where brands and human-computer interaction meet.

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Appendix A : Project Brief





Personal Project Brief – IDE Master Graduation Project

Name student Xiaoyi Ou

Student number _____

PROJECT TITLE, INTRODUCTION, PROBLEM DEFINITION and ASSIGNMENT
 Complete all fields, keep information clear, specific and concise

Project title

Enhancing Brand Consistency with Natural Language Search (NLS) Capabilities in DAM

Please state the title of your graduation project (above). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

Introduction

Describe the context of your project here; What is the domain in which your project takes place? Who are the main stakeholders and what interests are at stake? Describe the opportunities (and limitations) in this domain to better serve the stakeholder interests. (max 250 words)

In the evolving landscape of digital marketing, ensuring brand consistency is a critical challenge for large enterprises. Bynder, a leading Digital Asset Management (DAM) platform, offers AI-powered Natural Language Search (NLS) capabilities to streamline asset retrieval. However, there is potential for further improvement in aligning AI-generated metadata with brand-specific language to enhance efficiency and brand integrity.

Bynder's Automated Tags could be improved to comply with brand guidelines even better, aligning with the semantics and the brand vocabulary our users personas are working with. This refinement could enhance asset searches and reduce the need for manual adjustments, leading to cost savings and faster campaign execution.

This project explores the potential of Natural Language Search (NLS) to enhance brand-consistent asset retrieval. To address the identified challenges, this project will develop a Prompt Framework with UX patterns to guide users in formulating effective search queries and interacting with NLS, along with an AI-driven Brand Dictionary Framework. The key stakeholders include:

1. Brand Managers - Responsible for ensuring that all marketing and design materials align with brand guidelines.
2. Marketing and Creative Teams - Depend on DAM systems to efficiently access and deploy brand-compliant assets.
3. DAM and AI Product Teams - Tasked with developing search algorithms but face challenges in integrating brand-specific vocabularies into AI models.

As a Strategic Product Design student, my role is to connect technological possibilities with user-centered brand governance strategies, enabling scalable and human-aligned AI systems. By leveraging NLS and AI-driven Brand Dictionary Frameworks, this project aims to enhance Bynder's NLS by integrating a modular, updatable brand lexicon that bridges the gap between AI-generated tags and brand-specific vocabulary. The goal is to transform Bynder into an active brand governance platform, ensuring that every retrieved asset accurately reflects the brand's identity and semantics.

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introduction (continued): space for images

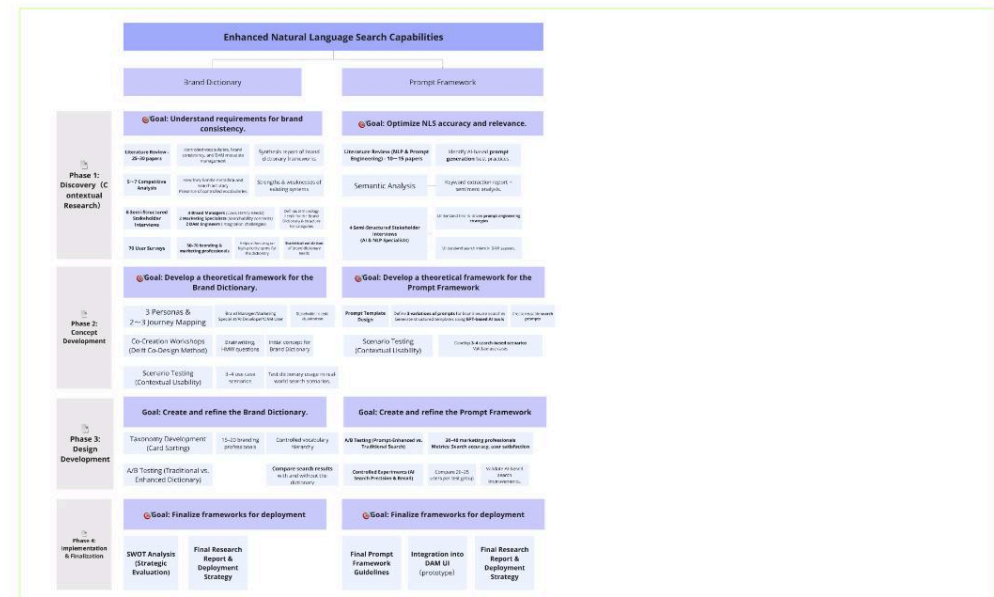


image / figure 1

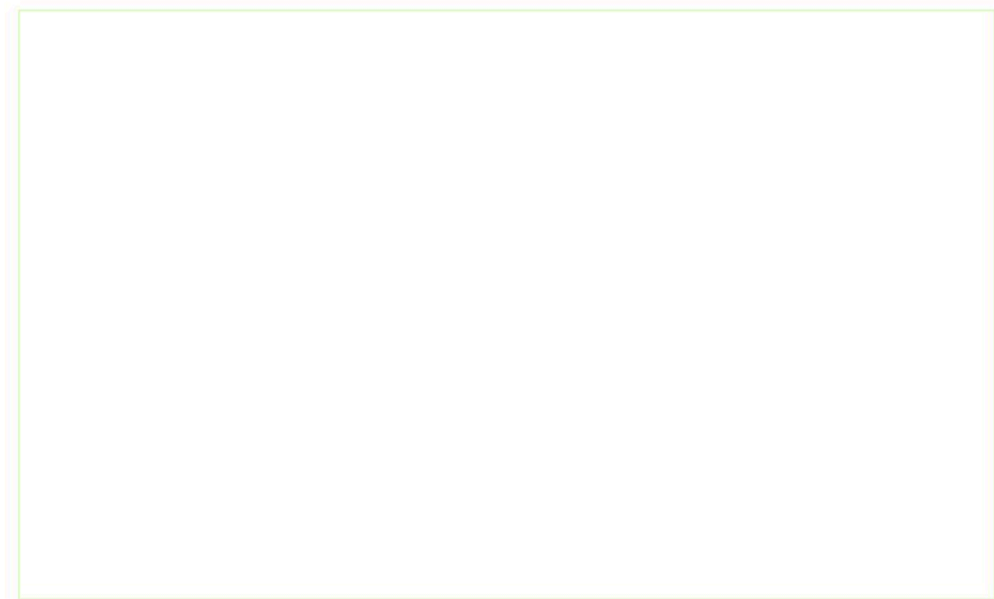


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Appendix A : Project Brief



Problem Definition

What problem do you want to solve in the context described in the introduction, and within the available time frame of 100 working days? (= Master Graduation Project of 30 EC). What opportunities do you see to create added value for the described stakeholders? Substantiate your choice. (max 200 words)

In digital asset management (DAM) systems, ensuring brand consistency is a persistent challenge due to inconsistent Automated metadata and search limitations. Many platforms use Automated tags, but these systems often fail to recognize brand-specific language, industry terminology, and contextual nuances, leading to inefficient asset retrieval and misaligned brand representation. This misalignment forces marketing and creative teams to manually verify and curate assets, increasing workload and reducing operational efficiency.

This project aims to enhance Natural Language Search (NLS) capabilities in DAM by developing a Brand Dictionary and Prompt Framework with UX patterns. These will improve the way AI understands and retrieves brand-specific assets by aligning automated tags with brand-specific terminology and context. The solution will help DAM users locate assets that align with their brand identity more accurately and efficiently. Accuracy and consistency will be evaluated through A/B testing on search success rates, alignment scores based on predefined brand terms, and qualitative stakeholder feedback.

Key opportunities include:

- Improved efficiency for marketing teams by reducing manual tagging.
- Consistent brand representation across all digital assets.
- More accurate search results aligned with brand-specific vocabulary.

This project aims to transform Bynder's DAM into a more intelligent and brand-aware system, adding value for brand managers, creative teams, and DAM product teams.

Assignment

This is the most important part of the project brief because it will give a clear direction of what you are heading for. Formulate an assignment to yourself regarding what you expect to deliver as result at the end of your project. (1 sentence) As you graduate as an industrial design engineer, your assignment will start with a verb (Design/Investigate/Validate/Create), and you may use the green text format:

Design a Brand Dictionary and a Prompt Framework with UX patterns to improve Natural Language Search (NLS) in Digital Asset Management (DAM) systems, ensuring accurate and brand-consistent asset retrieval.

Then explain your project approach to carrying out your graduation project and what research and design methods you plan to use to generate your design solution (max 150 words)

1. Literature Review: Analyze existing research on Natural Language Search (NLS), NLP, branding, and DAM systems to identify best practices in AI-powered search and brand consistency.
2. Stakeholder Analysis & User Research: Create a stakeholder map to visualize the DAM user journey. Conduct affinity mapping + journey mapping and user interviews with brand managers, marketing teams, and frequent DAM users to understand their challenges and needs related to asset retrieval.
3. DAM & AI Metadata Analysis: Examine existing AI-generated metadata in Bynder's DAM system to identify inconsistencies and misalignment with brand-specific language, use card Sorting for taxonomy
4. Framework Development & Prototyping: Design a Brand Dictionary to structure and manage brand-specific terminology for improved AI metadata accuracy. Develop a Prompt Framework with UX patterns to guide users in formulating effective search queries and interacting with NLS.
5. Usability Testing & Validation: Conduct A/B testing to compare search accuracy, efficiency, and brand consistency with and without the Brand Dictionary and Prompt Framework. Evaluate user satisfaction through user feedback and usability testing.

Project planning and key moments

To make visible how you plan to spend your time, you must make a planning for the full project. You are advised to use a Gantt chart format to show the different phases of your project, deliverables you have in mind, meetings and in-between deadlines. Keep in mind that all activities should fit within the given run time of 100 working days. Your planning should include a **kick-off meeting**, **mid-term evaluation meeting**, **green light meeting** and **graduation ceremony**. Please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any (for instance because of holidays or parallel course activities).

Make sure to attach the full plan to this project brief. The four key moment dates must be filled in below

Kick off meeting **3 Mar 2025**

Mid-term evaluation **28 Apr 2025**

Green light meeting **6 Jun 2025**

Graduation ceremony **18 Jul 2025**

In exceptional cases (part of) the Graduation Project may need to be scheduled part-time. Indicate here if such applies to your project

Part of project scheduled part-time	<input type="checkbox"/>
For how many project weeks	
Number of project days per week	

Comments:

Motivation and personal ambitions

Explain why you wish to start this project, what competencies you want to prove or develop (e.g. competencies acquired in your MSc programme, electives, extra-curricular activities or other).

Optionally, describe whether you have some personal learning ambitions which you explicitly want to address in this project, on top of the learning objectives of the Graduation Project itself. You might think of e.g. acquiring in depth knowledge on a specific subject, broadening your competencies or experimenting with a specific tool or methodology. Personal learning ambitions are limited to a maximum number of five. (200 words max)

During my internship, I observed the potential of Natural Language Search (NLS) to improve brand consistency in Digital Asset Management (DAM) systems. Many DAM systems rely on Automated metadata, but these often fail to align with brand-specific terminology, leading to challenges for brand teams. This project aims to explore how NLS can enhance brand consistency by developing a Brand Dictionary and Prompt Framework with UX patterns. These tools will help AI-powered search systems better understand and align with brand identity. I am eager to refine my UX research, strategic design, and usability testing skills, while deepening my understanding of AI-powered search optimization and branding automation. I hope to contribute to Bynder's AI strategy and advance AI-driven brand management solutions.

Appendix C : Interview Script

C.1 Interview Script for Brand/ Marketing Stakeholders

Target Profile: Brand Managers, Brand Strategists, Creative Directors

Introduction

- Thank you for taking the time to join this session.
- This project explores how Natural Language Search (NLS) in Bynder can better support brand consistency.
- Today's conversation will help us uncover how branding professionals like yourself currently manage brand language and asset search, and how we can improve the experience using AI and NLS.

Part 1 – Role & Search Experience

- Can you tell me a bit about your role and how it connects with digital assets in Bynder?
- How do you currently search for branded assets? (Search bar, filters, collections, shared links?)
- Do the search results reflect your expectations for brand alignment?

Part 2 – Brand Language & Challenges

- How do you ensure the brand's verbal identity is represented consistently across assets?
- Are you aware of any issues with mismatched tags or incorrect search results from Bynder?
- What happens when metadata fails to reflect brand-specific terminology?

Part 3 – Exploring NLS Potential

- If you could search in your own words (e.g. "modern bold campaign visual"), what would you expect the results to be?
- What role could a "Brand Dictionary" play in aligning search results with brand language?
- Can you imagine a scenario where this would significantly reduce manual validation?

Part 4 – Metrics & Expectations

- What would a successful NLS solution look like for you?
- How would you measure success—fewer complaints, increased confidence in search results, faster asset usage?
- Would you prefer customization of NLS behavior for different brands or campaigns?

Closure

- Is there anything else you'd like to share?
- Would you be willing to send over example search terms or assets you frequently work with?

C.2 Interview Script for DAM Engineers

Target Profile: DAM Admins, AI Engineers, Taxonomy Managers

Introduction

- Thank you for joining. This project explores how to enhance search capabilities in Bynder through a brand-aware NLS system.
- We'd like to learn about the current limitations of metadata, taxonomy, and automated tagging in the system.

Part 1 – Current Metadata Structure

- How are tags and metadata currently generated in Bynder?
- What AI systems or rule-based methods are used?
- Where do you see gaps in the existing taxonomy—especially for branded assets?

Part 2 – Technical Considerations of NLS

- From your perspective, what are the technical challenges of implementing brand-sensitive NLS?
- What limitations exist around NLP model training or maintaining language consistency across clients?
- Do you foresee scalability issues with integrating a custom Brand Dictionary for each client?

Part 3 – Search Behavior Observations

- Do users often misuse the search bar or input vague terms?
- Can you provide examples where the current keyword-based search failed to retrieve the expected results?

Part 4 – Feedback Loop & Measurement

- How is feedback about search quality currently collected and processed?
- Would a feedback loop from user search behavior or tag corrections be valuable to adjust taxonomy or retrain the NLS model?
- What backend metrics would you track to evaluate NLS success?

Closure

- Are there any system-level changes you would anticipate needing to support this enhancement?
- Anything else you believe would be critical to the success of an NLS + Brand Dictionary system?

Appendix C : Interview Script

C.3 Interview Script for Customer Success Managers (Expected Client Insight)

Target Profile: CSMs who interact frequently with clients and understand their asset search behaviors

Introduction

- Thanks for meeting today. Your insights are invaluable as someone who understands both client workflows and their search frustrations.
- We're exploring how NLS in Bynder can be improved to better support brand consistency and client satisfaction.

Part 1 – Role & Observations

- Could you describe how clients typically use Bynder for finding assets?
- What kinds of search-related issues or complaints have you heard from clients?
- Are there differences between how admins and end-users engage with the system?

Part 2 – Client Language & Metadata Gaps

- Do clients often mention “brand language” or custom terms they expect to find in asset tags?
- How do clients handle search when they don't know exact filenames or categories?
- Have any clients expressed interest in more intuitive or flexible search tools?

Part 3 – Imagining the NLS Solution

- How do you imagine clients using a natural language-based search tool?
- If you could wave a magic wand and redesign search for your clients, what would it look like?
- Would guided prompts help clients articulate what they're looking for?

Part 4 – Success Indicators

- What KPIs or success criteria do you think matter most to clients in terms of asset retrieval?
- Would better search speed, accuracy, or brand-alignment impact satisfaction or renewal?
- Do you think onboarding new clients with their brand dictionary could improve long-term engagement?

Closure

- Are you open to testing or gathering feedback from clients on early concepts?
- Anything else we didn't cover that you think is important?