

Content Science Unveiled.

Opening the vault of enterprise content:
Content Science – unlocking the value of
enterprise content with AI.



2024

Inside the vault

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Foreword

Ruben Thys - Managing Director AmeXio Belgium

In a time where innovation drives progress, how we handle and use content has reached a pivotal moment. **Content is no longer just stored information—it is the heart of connection, strategy, and success.** The evolution of artificial intelligence (AI) has opened doors to what we at AmeXio call *Content Science*. It is an exciting blend of AI and content management that transforms hidden opportunities into real, tangible results.

In this Playbook, we dive into the wild, wonderful world of Content Science — a place where AI meets content and makes it work smarter, not harder.

However, the road to embracing AI is far from smooth. It's full of twists, turns, and a few potholes where companies either stall out or take off at full speed.

Some businesses sprinkle AI dust over their content, hoping for instant magic. *Spoiler alert:* it doesn't work that way. Then there are those who won't even let AI near their content, clutching it like a toddler with a favorite toy. "*What if it starts making decisions we don't agree with?*" they ask.

And while caution is wise, standing still isn't exactly a winning strategy either.

Here's the thing: we've noticed **two strong emotions driving how companies react to AI—fear and excitement.** On one side, there's anxiety over potential risks: unreliable content, job displacement, loss of data control, privacy breaches, and unexpected costs. These challenges are real, especially when compliance and trust are at stake.

On the flip side, there's immense enthusiasm— companies eager to dive headfirst into AI, thrilled by its potential to revolutionize their operations, such as through task automation with AI agents. Yet, without a clear strategy, they risk overlooking critical issues like adhering to regulations, safeguarding against potential pitfalls, and ensuring AI contributes meaningful outcomes rather than just flashy innovation.

The key is to **balance opportunity with responsibility.**

“In the era of AI, content isn’t just information—it’s a strategic force, and Content Science is the key to transforming it into a driver of innovation, connection, and success.”



This Playbook is here to guide you through the exciting and transformative domain of Content Science, helping you navigate the mix of emotions and turn them into smart, confident actions.

Much like Data Science revolutionized how organizations extracted insights from data 20 years ago, Content Science introduces a strategic framework for managing and leveraging content in entirely new ways. It's not just a concept—it's a forward-thinking strategy that transforms content into a core driver of business value.

Let's explore this evolution together and use Content Science as the key to unlock the vault of untapped content potential!



AMEXIO
GROUP

Digital Experiences That Matter

ENTERPRISE CONTENT MANAGEMENT (ECM)

Turning data into information

CUSTOMER EXPERIENCE MANAGEMENT (CXM)

Connecting the dots, from content to experience

STRUCTURED CONTENT MANAGEMENT (SCM)

Extract the most value from your XML content

COMMUNICATION MANAGEMENT (CM)

Optimize communication across channels

SOLUTIONS

'One-stop shop' approach

“AI is changing how we use content—it’s not about what AI can do, but what it can do *for you*. Quality content is essential because AI delivers its best results when it has high-quality input to work with. Content science plays a crucial role in unlocking that potential and turning it into real value.”

Ruben Thys,
Managing Director AmeXio Belgium

How AI is transforming content management

As the foundation of all human communication, **content remains at the heart of how we work**. From product designs to impactful marketing campaigns, strategic sales contracts, and essential HR policies: it's all content propelling businesses forward. Content is the lifeblood of organizations, fueling how we connect with employees, engage customers, and shape our businesses.

Yet, despite its central role, **tapping into the full potential of content remains a challenge**. After years of storing and managing files across platforms like SharePoint, file shares, and other document management systems, many organizations still struggle to extract true value from their unstructured content. Unlike structured data in databases—easily queried, analyzed, and transformed into actionable insights—content often feels like an untapped resource.

The tools for unlocking content value are often limited to keyword-based searches, falling short of the intelligence and predictive capabilities we expect from structured data.

Content is the lifeblood of every organization—shaping connections, driving engagement, and fueling business success across every function, from marketing to HR.

*largely
untapped
value*



But here's the good news: this is now **fundamentally changing with the recent advancements in artificial intelligence (AI)**. In fact, it's felt like a rollercoaster ride as generative AI has given us the key to unlocking the full value of content. Slowly but surely, we can start interacting with our content – querying and summarizing what we have collected. But even more exciting, we can start thinking about automating processes in ways we could not have imagined just 2 years ago.

Entering the Era of Content Science

This is exactly what Content Science is all about: combining content management with AI to transform content into real value. Credit where credit is due: tech visionary Peter Hinssen was one of the first to spot the immense potential of the generative AI wave for content management. In fact, he even coined the term “Content Science” to describe this exciting new field combining the powers of Large Language Models (LLMs) and AI with traditional content management practices. For more than a decade we've been working on data science by collecting, cleaning, exploring, and exploiting structured data. With the advent of generative AI, we are entering the era of content science.



This Playbook details how your organisation can leverage content science to its advantage. It outlines the evolution, practical applications, and a proven methodology to ensure success while avoiding common pitfalls.



PRESENTS

CONTENT SCIENCE CONFERENCE

13:00 - 13:30

WELCOME + STADIUM TOUR

13:30 - 13:45

SETTING THE SCENE
BY AMEXIO

13:45 - 14:45

KEYNOTE BY PETER HINSEN
(NEXXWORKS)

14:45 - 15:00
PAUSE

15:00 - 16:00
BREAKOUT SESSIONS 1

16:00 - 16:15
PAUSE

16:15 - 17:00
BREAKOUT SESSIONS 2

17:00 - 18:00
NETWORKING + FOOD



“Recent advancements in AI are transforming how we interact with content. Generative AI unlocks its full potential—enabling smarter queries, efficient summaries, and automation beyond what seemed possible just two years ago.”

Tom Laureys,
Solutions Director AmeXio Belgium

The evolution of AI in Content Science

How did we get here? How has AI managed to revolutionize content management so quickly? It's a story of rapid innovation, relentless progress, and breakthroughs that have reshaped what's possible in just a few short years.

The rise of artificial intelligence in content science can be traced through **4 key breakthroughs**:

- the explosion of **generative AI** like ChatGPT
- the organizational shift to **bring-your-own-content (BYOC)** with retrieval-augmented generation (RAG)
- the evolution from **text-based content to multimedia**
- and the current leap toward **agent-driven workflows**

Let's dive into each of these game-changing innovations.



Generative AI: A Paradigm Shift

The launch of ChatGPT on November 30, 2022, was nothing short of groundbreaking. It wasn't just an AI milestone—it was a full-blown revolution. Right from day one, ChatGPT's impact went far beyond curiosity or simple demos, delivering real value in creative content and idea generation on an unprecedented scale. In just one month, it attracted 100 million active users.

This first wave of generative AI focused heavily on creativity: organizations experimented with AI-generated business plans, kids found a digital partner for writing book reviews, and ChatGPT likely contributed to more than half of 2023's New Year's speeches.

BYOC & RAG

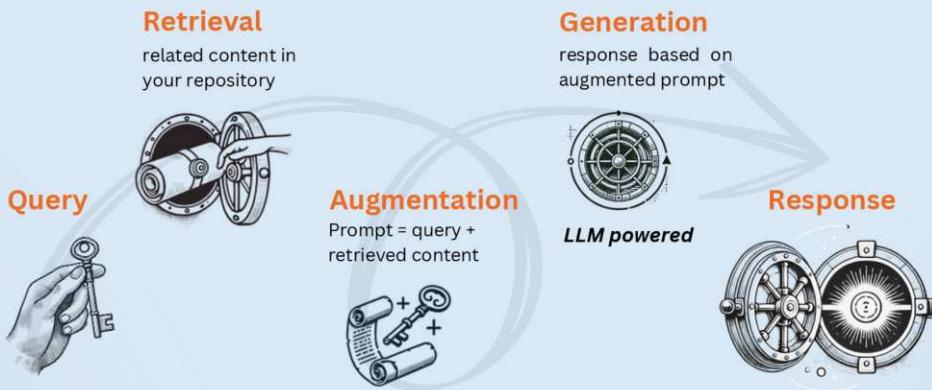
Quite soon organisations began asking a pivotal question: "How can we leverage this groundbreaking AI technology to unlock the potential of the PDFs, Word documents, PowerPoints, and emails we've been accumulating for years?"

ChatGPT's launch redefined creativity in AI, reaching 100 million users in a month and transforming idea generation globally



This curiosity sparked the **Bring-Your-Own-Content (BYOC)** movement, propelling generative AI from a purely consumer-oriented tool to a transformative business application. At the heart of this shift lies Retrieval-Augmented Generation (RAG)—a technique that harnesses generative AI to craft rich, detailed responses using advanced semantic understanding of an organization's unique content.

Today, many organizations embarking on their AI journey are still uncovering the potential of RAG. However, deploying RAG at scale remains challenging. Inaccurate or inconsistent content sources often pose a significant hurdle to making systems production-ready. We'll come back to that later.



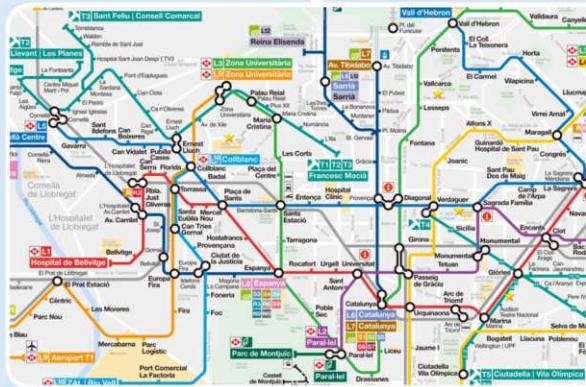
Multimodal Processing

In 2024, AI-driven multimodal processing made remarkable strides. From a creative perspective, image creation has almost become table stakes, and video creation is making fast progress with, among others, the public releases of OpenAI Sora and Google Veo 2. But also from an interpreting perspective, we now have AI models that can not only read text but also hear and see.

More impressively, these models can understand the content they process and take meaningful actions based on those insights.

Despite these advancements, we feel that many organisations still **underestimate** the transformative potential of multimodal processing.

Consider the example of the Barcelona subway map: advanced AI technology can now analyze the map image without requiring any preloaded data or external context. By interpreting the visual layout, station names, and connections, it can provide precise, step-by-step directions for traveling from iconic landmarks like the Sagrada Família to Montjuïc.



This demonstrates the impressive potential of AI to turn simple visual inputs into actionable, real-world solutions, revolutionizing how we navigate complex systems like public transportation networks.

To get from Sagrada Família to Parc de Montjuïc using the Barcelona metro, you can follow these steps:

1. Start at Sagrada Família: Take the L5 (blue line) from Sagrada Família station.
2. Transfer at Diagonal: Get off at Diagonal station and transfer to the L3 (green line).
3. Take the L3 (green line): Head towards Zona Universitària and get off at Paral-lel station.
4. Transfer to the Funicular de Montjuïc: At Paral-lel station, transfer to the Funicular de Montjuïc, which will take you directly to Parc de Montjuïc.

This route will take you through some of the main metro lines and a funicular, making it a convenient way to reach Parc de Montjuïc from Sagrada Família. Enjoy your visit!

Now, picture applying these capabilities to your own images, videos, and audio. From straightforward applications like OCR (extracting text from images) and content tagging in your DAM system to advanced use cases—automatic meeting minutes (a top *Microsoft Copilot* use case), interpreting complex charts, visual defect inspections, or safety checks via video input—the possibilities are immense.

And yet, we've only begun to scratch the surface here.

Autonomous Agents

Looking ahead, the latest AI buzzword is agents. These come in various forms, ranging from enhanced chatbots—now often referred to as "retrieval agents"—to the emerging class of autonomous agents.

Autonomous agents represent the next frontier in AI innovation. Though still in their early stages, these agents function as virtual experts capable of making decisions, executing actions, and managing processes entirely on their own—without needing direct human input. Humans only step in during exceptional circumstances or complex scenarios. Think of it as Robotic Process Automation (RPA) supercharged with intelligence and adaptability.

Autonomous agents are the next frontier in AI, blending intelligence, adaptability, and autonomy to make decisions, execute actions, and manage processes independently. They surpass traditional automation, requiring human intervention only for complex challenges, and promise to revolutionize industries with smarter, more efficient solutions.



A photograph of a professional conference or seminar. A male speaker in a light-colored shirt and dark trousers stands at a podium on the right side of the frame, gesturing with his hands as he speaks. He is positioned in front of a projection screen which displays a presentation slide. The audience, consisting of numerous people in business attire, is seated in rows of blue chairs, facing the speaker. The room has a modern design with a white ceiling featuring recessed lighting and a dark wall. A small sign on the wall indicates an exit. On the left, a vertical banner for 'AMEXIO' is visible, with the text 'Digital Experiences that Matter'.

Ready to future-proof your content for the age of AI?

Let AmeXio guide you: contentscience.be

“Where companies now have a data science department and data scientists, they will also need to hire content scientists and build content science departments in the future. These are not database nerds, but a whole new breed: “Conan the Librarians” who love to work with unstructured data in strategic ways.”

Peter Hinssen,
NexxWorks - peterhinssen.com

The AmeXio Content Science methodology

Tom Laureys on mastering Content Science

So, here we are. We've witnessed blazing fast evolution – even revolution - in AI capabilities. Emerging technologies, such as autonomous agents, are on the horizon. And they all hold tremendous potential, especially for unlocking your content and turning it into value for your organization.

Many organizations find themselves at a critical crossroads. Some are experimenting, others have production-ready solutions, and many are still searching for their AI breakthrough.

But how do you ensure you're on the right path? How can you evaluate your plans, avoid common pitfalls, and bring your employees along for the journey? To address these challenges, we've developed the Amexio Content

Science Methodology –three simple steps to guide you forward.

At Amexio, we address content in all its forms, whether used internally or externally. Our approach is consistent but adaptable, taking into account the unique needs of each context—be it managing internal documents and highly structured XML-based content or refining external marketing materials.

The Organization-internal Perspective: ECM

Let's first consider the 3 steps from the perspective of organization-internal content management, commonly known as Enterprise Content Management (ECM). Afterwards, we discuss the customer-facing perspective, known as Customer Experience Management (CXM).



Discover Value

Prepare Content

Maximize Value

How can you benefit from content science based on those piles of internal content – Word, Excel, PowerPoint, PDF, e-mails, ... – that you've collected over the years? Let's break it down, step by step.

“It is not about what AI can do; It is about what AI can do *for you*.”

STEP 1: Discover Value

Within many organizations we sense the desire to start applying AI, but at the same time there's often a lack of insight into which AI-driven applications could bring real value.

And that's no surprise: we're all continuously overwhelmed by the sheer volume of AI features and demos, we're bombarded with AI opportunities. But it's incredibly challenging to translate these advancements into practical, valuable applications.

The initial step in introducing content science **involves identifying and mapping valuable use cases.** This means focusing on key AI capabilities and understanding the **specific roles** people play within your organization—sales, HR, legal, and beyond. It is essential to acknowledge that the benefits derived from AI and automation are intrinsically linked to one's organizational role, its associated responsibilities, and the relevant performance indicators.

Even for enterprise-wide AI solutions like Microsoft Copilot, the advantages vary according to each distinct role within the organization.

Through discussions with employees, we populate the AI-value table with potential use cases, focusing primarily on processes that are key but at the same time slowed down, tedious, manual, or repetitive. The table below provides a small-scale example of this exercise.

	Sales	HR	Marketing	Operations	Legal
Classification/ Extraction			perform sentiment analysis on customer feedback	classify incoming content	OCR scanned documents
Retrieval		find applicants with specific skills			find similar cases
Creation	create draft based on similar offers		create a product presentation from this document	create test cases from analysis	
Summarization/ Insights	summarize customer interactions	prequalify from cv			summarize case file
Flow Automation	agent suggesting hot leads	agent for employee self-service	agent suggesting content creation based on market	agent routing incoming content	
Security/ Compliance		protect privacy-sensitive docs			check contract for consistency

AmeXio AI Discovery Canvas

The relationship between value and function is quite evident. Consider your **sales department**. One of their key performance indicators includes short sales cycles. Providing them with technology to create accurate draft offers based on similar existing ones could help achieve this goal.

Similarly, within your **HR department**, valuable time is often spent responding to basic inquiries that are well-documented in HR policies. By employing an integrated HR knowledge agent, employee self-service capabilities can be enhanced, thereby freeing up time for more strategic tasks.

Lastly, look at your **legal department**, which currently invests time in scrutinizing contracts to ensure they are error-free. Implementing automatic version comparison and compatibility checks against terms and conditions could result in substantial time savings.

Once these use cases are identified, we map them onto an **impact-feasibility matrix**, offering deeper insights into how to strategically develop your AI journey.

Note that feasibility entails more than just technology; organizational and data readiness are just as important as we'll explain next.



STEP 2: Prepare Content

We've identified our content science gems in step 1. Your organisation is eager to kick-off their first AI projects. What can still hold you back?

*Here's a hint: it might be **your content...***

We must recognize that for AI tools to perform effectively, the content they rely on needs to be available, accurate, and secure.

Unfortunately, in many organizations, at least one of these factors is missing.

See here the primary reason why so many organisations have struggled with deploying RAG-based solutions into production: in many cases not the technology but **the content turns out to be the weakest link.**

Content is the food for AI.

When AI eats junk, it's not going to perform.



Overcoming AI Challenges

Challenge 1: unavailable content

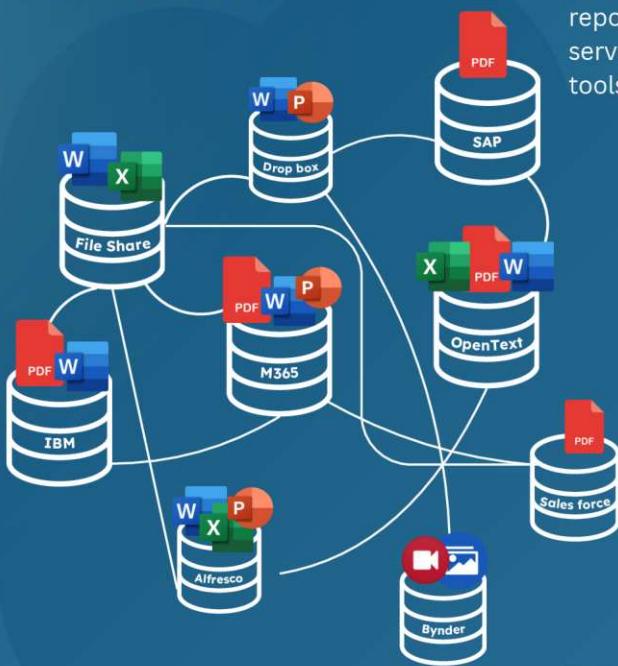
A first challenge is the unavailability of content. In many organisations, especially large ones, content is fragmented across multiple repositories—some introduced through acquisitions, others as quick fixes for specific needs like sharing large files in marketing, still others deployed based on department-level decisions.

The result?

Content is siloed and disconnected, which rarely benefits anyone: it becomes difficult for employees to find or store information, applying a consistent security policy is a nightmare, and maintaining all these platforms is costly.

The problem deepens in the era of content science and AI, where fragmented content makes it **nearly impossible to make AI tools work seamlessly across your tech stack**. The more complex your content management landscape, the harder it will be to integrate your content into AI systems.

Therefore, a first step in data preparation consists of consolidating your content as much as possible, either through **migration** or continuous **content exchange** between platforms. This is also where we're seeing the concept of the **content lake** emerge more and more—a master repository of curated content that serves as the foundation for your AI tools.



Challenge 2: low-quality content

A second challenge is **content quality**.

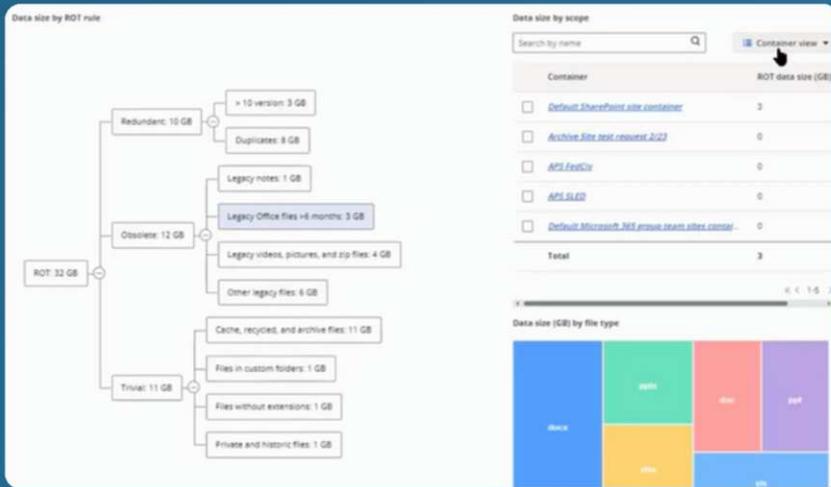
When we run a content analysis on content repositories, it's not uncommon to find that up to 70% of the managed content is identified as **ROT—Redundant, Obsolete, or Trivial**. Redundant content is typically defined by duplicates. Obsolete content is outdated and no longer relevant, for example, old project files or HR policies. Trivial content is content with little to no business value, such as casual emails, cache files, low-quality drafts, or unstructured notes without context.

Imagine the negative impact of all this low-quality content on your AI-generated responses.

It's like asking your AI tooling to search for a needle in a huge haystack.

And also here the adage applies: the smaller the haystack, the easier it is to find the needle.

A second step in data preparation is therefore **cleaning out all ROT content** from your repositories. We all need to become the Marie Kondo of information management. The good news? This cleanup can be largely automated. Additionally, setting clear retention policies will help control the ongoing buildup of ROT content. These actions not only reduce storage costs but also ensure your AI responses are accurate and based on the most up-to-date information.



Visualizing ROT: Streamlining Content for Better AI Insights.

Challenge 3: overshared content

Consider the following tweet from Salesforce CEO Marc Benioff.



Is he correct?

Well, yes and no.

No, because technically, Copilot ensures that it only bases its responses on content that Joe Blow has access to.

Yes, because in practice, in many organizations, Joe Blow's permissions extend far beyond appropriate limits. This wasn't a problem when Joe Blow had to actively search for that hidden content, but with AI's search superpowers, that unexpected content can now easily surface during a query or summarization.

On the next page you can find a real-life example of how content, some of it extremely sensitive, is overshared inside and outside organizations.

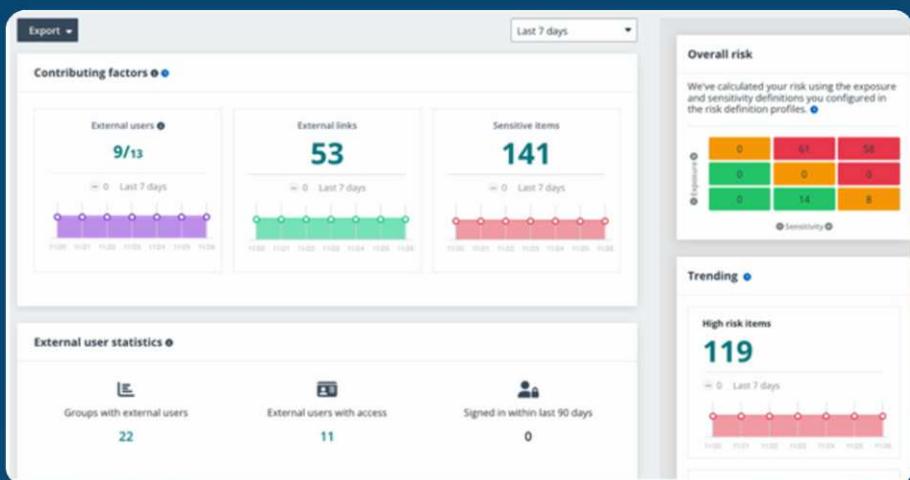
In recent years, content platforms have revolutionized collaboration,

making it easier than ever to share information seamlessly across teams and organizational boundaries. But this **convenience has come at a cost**.

Many organizations have struggled to keep sharing capabilities under control, leading to security lapses that make today's information security officers cringe during in-depth audits. What was once a boon for productivity is now often a serious challenge for data protection.

AI transforms oversharing from a hidden risk to an exposed vulnerability, requiring organizations to rethink permissions and implement preventive safeguards.

A final step in content preparation therefore entails 'fixing' these oversharing issues by rolling them back. At the same time, we always recommend implementing appropriate **policies** which will automatically prevent future oversharing in the first place.



Monitoring external access and sensitive data to prevent unintended exposure.

STEP 3: Maximize Potential

Even if your content science projects are properly set up and running smoothly, we find that employees might fail to fully exploit the benefits.

Especially for horizontal, enterprise-wide AI solutions such as Microsoft 365 Copilot,

we've sometimes seen adoption rates drop to 40% after a few months.

And that's not because M365 Copilot is a bad product, but rather because adoption should not be considered a given.

People are incredible creatures of habit

Throughout AI rollouts at customers, we've learnt 5 key lessons:

1. It's not about the button you click. It's about the value it delivers.

This lesson ties back to value discovery. Value is tied to the roles people perform, so focus your training on showing the impact. Demonstrate to your sales team how AI can auto-generate draft offers, or show your legal team how it can help identify contract errors.

2. You can't change a 20-year habit overnight.

People are incredible creatures of habit, and old habits die hard. If someone has spent 20 years of their professional life creating Word docs from scratch, transitioning to using AI for draft creation takes time—and repeated effort. Repetition is key to turning awareness into adoption.

3. The magic isn't just in the answers. It's also in the questions.

We're not big fans of so-called 'prompt engineering', the art of crafting successful prompts. In a way, prompt engineering is nothing more than working around the (often hidden) weaknesses of AI models. Today, however, guiding employees on the essential prompt components—focusing on goal, context, tone, and audience—is still valuable. And don't forget—keeping the conversation flowing is a crucial skill that needs explicit training.

4. Manage expectations. Experimenting ≠ production.

AI is impressive, but not every demo or experiment is production-ready. Start small, understand the strengths and weaknesses of your AI, and be clear about what's still in the experimental phase.

5. Measure and adapt, continuously.

As always, measure and adapt as you go. These days, most AI platforms come with analytics that show usage patterns, success rates, and who's using the tools. Use these data to highlight successes and pinpoint those who may need a little extra encouragement.



AI evolutions

with major impact
content science

Ready to future-proof your content for the age of AI?

Let AmeXio guide you: contentscience.be

“We will need to implement content governance tools because at some point, we will need to comply to AI regulation in this domain. Prepare for a lot of pressure and situations where you will need to prove that you're not misusing information to feed your large language models.”

Peter Hinssen,
NexxWorks - peterhinssen.com

The Customer Experience Perspective: CXM

Next to improving efficiency for your internal content processes, AI can also be used to enhance the experience for your customers. Think about it: content is foundational to every touchpoint across the customer journey, so surely there are ways to provide value using AI in this domain too.



Discover Value



Prepare Content



Maximize Value

STEP 1: Discover Value

Typical use cases include campaign ideation, content translation, image generation, automatic tagging, and continuous accessibility monitoring. We have seen these use cases become table stakes over the past year and are rapidly being adopted by Digital Experience Platform (DXP) and Content Management System (CMS) vendors. Such tools can help authors and marketing teams to improve their **content supply chain** and decrease time-to-market.

Next to helping teams in creating and delivering experiences faster and more cost-effective, AI has also the potential to have more dramatic impact on Customer Experience Management (CXM) as we know it today. At this moment, we see an interesting application on the horizon. By using AI to enhance **content discovery and retrieval**, we can help customers find answers to their questions more quickly.

	Marketing	Authors	Legal	Customer
Content creation	Ideate campaigns	Translate content		
Content classification		Automate entity extraction		
Content delivery		Personalize at scale	Monitor accessibility	
Content discovery & retrieval				Find better answers more quickly
Insights	Democraticize analytics			

Let's look at this use case in the context of the Web as we know it today. Finding your way across websites and webpages tends to be a hurdle.



Think about it: every website uses a bespoke **information architecture**. When looking for information or an answer to a specific question, customers often need to dig through complex navigation structures to reach the content they are looking for. Think about several UI elements like dropdown megamenu's, breadcrumbs, doormat menu's, language switchers, etc.

Search engines have been widely adopted to help customers find relevant information. These search engines are typically **keyword-based** and present a list of search results. Often, filters, sort options and pagers are presented to help users find the right information. However, the visitor still needs to dig through numerous search results and extract and combine information by hand.

Help

SEARCH BOX

Consider the following when entering your keyword(s):

- Use quotation marks to search for an exact phrase, e.g. "whole genome sequencing".
- Using upper- or lower-case letters (e.g. FLU, flu) gives the same results.
- Using several keywords give search results containing all of those keywords.

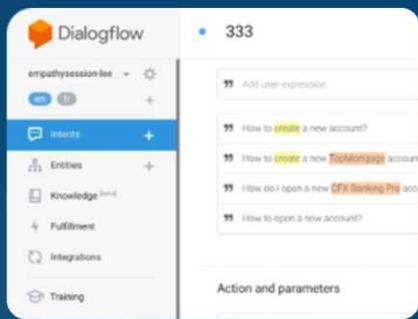
SORT AND FILTER

- Narrow your search results using the filter groupings: Category, Group of diseases, Public health topic and Date.
- Selecting values within the same filter grouping e.g. 'news' and 'multimedia' will display all the results for news or multimedia.
- Selecting values across filter groupings e.g. 'news' and 'respiratory diseases' will display news related to respiratory diseases.
- Sort your search results by relevance or recency using the menu on the top right of the search page.

FREQUENT SEARCHES

- Click one of the suggested frequent searches under the search box to perform a search for this term.

Ten years ago then, chatbots were introduced with the promise to help users navigate content more naturally and have their questions answered more easily. However, these chatbots were **rule-based** and required intents to be programmed one-by-one. Also, the ability to “understand” user questions was still rather limited.



Implementing all of these techniques requires **extensive research and analysis** to define solid information architectures, aligning with the mental model and expected behaviour of their users. Think about persona definitions, focus groups, top tasking, etc. These are complex and time-consuming endeavours and require lots of assumptions to be made and a continuous optimization loop to be put into place. Moreover, applying personalizing to these kind of user interfaces is a feat.

With the advent of Large Language Models, we can now offer customers a more natural way to interact with our content. With **Retrieval Augmented Generation (RAG)**, we are able to combine the power of LLM’s with our own set of content in a conversational interface: customers are presented with concise answers to their questions, complete with references to the source content.

Large Language Models and Retrieval Augmented Generation (RAG) transform customer interactions, delivering concise, source-backed answers through conversational interfaces powered by your content.

However, RAG-based solutions are often found to remain stuck in their proof-of-concept stage, failing to provide proper accuracy required for public deployment. The main cause for this issue is the **lack of content quality**: we feed last-decade content into modern-day LLM’s. Now, let’s see which measures we can take to prepare our content for AI use cases.

STEP 2: Prepare Content

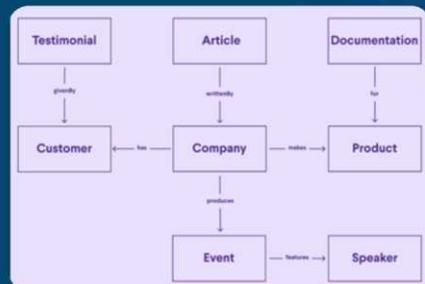
The root cause for this can be found in the way we used to manage content in the past, heavily relying on visual page-building tools and WYSIWYG editors.

These methods result in content being **locked in pages**, easy to comprehend by humans, but lacking proper semantics, context and metadata required for LLM's to do proper synthesis. Moreover, content nowadays is often dispersed across different CMS's and managed in different kind of structures, containing lots of ROT.



To harness the power of LLMs, we need to focus on organizing content better—making it clear, connected, and enriched with meaning, instead of scattered and outdated.

To leverage the power of LLM's in content retrieval, we need to step away from design-first thinking and move to a **content-first** approach. The idea is to adopt a **modular** approach to content, which allows for content to become **connected** and enriched with the necessary **semantics**. The diagram on the right shows an example content structure, modelling content in a semantic way (source: Sanity).



Moving from *Design-First*



1990



2000

Design-First

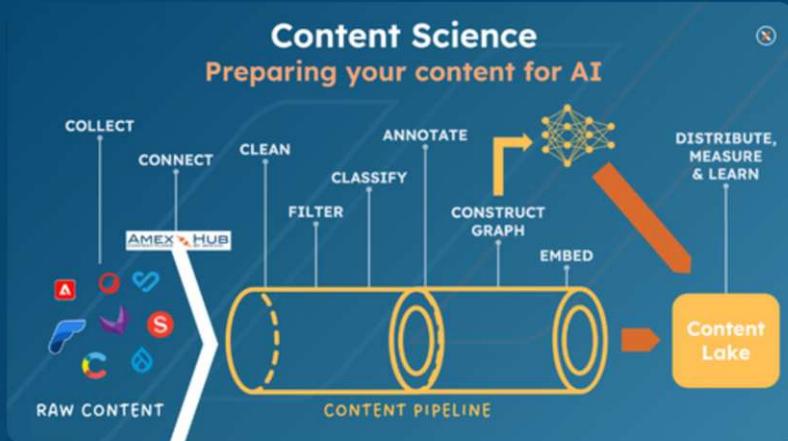
Into *Content-First*



2010

2020

Content-First



Applying the techniques of content science can help us with this, preparing our content for today's AI use cases. A **Content Pipeline** can be seen as the implementation of content science in this regard, streaming all your content into a unified “**content lake**”.

Once in place, an LLM can directly connect to this content lake and process a clean library of highly structured and connected content, resulting a dramatic **increase in output quality** in applications like RAG.

STEP 3: Maximize Potential

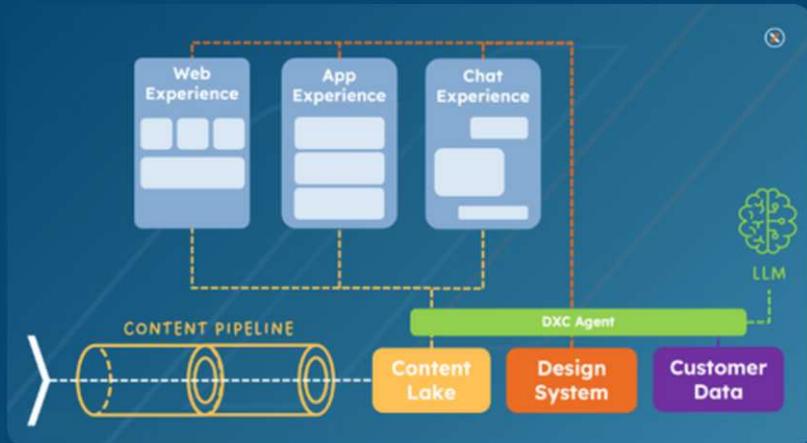
Before rolling out these kinds of LLM-based solutions to your end-customers, careful consideration is necessary.

It is highly advised to first roll out these applications internally in your organization, e.g. as a support tool for your customer care department.

Next, you can iteratively optimize the solution using metrics collected, before moving on to a public launch.

What's next?

A UI like the one presented by ChatGPT is a very “raw” implementation of a conversational interface. Content is mostly presented in textual format, in question/answer pairs. This is not very engaging, nor does it have much “brand” feeling to it. Furthermore, it’s also not suited to do **storytelling** or providing customers with much inspiration.



Digital Experience Composition (DXC) is the answer here, which is typically the domain of designers and marketing experts.

Now, in this new era of AI, we can ask ourselves whether LLM's can also help us to compose really engaging experiences for our customers in a more **dynamic** way. Can this technology finally bring us hyper-personalized experiences at scale?

During the past decade, enterprise organizations have started to consolidate and scale both their visual branding and customer data, by implementing Design Systems and Customer Data Platforms (CDP's) respectively.

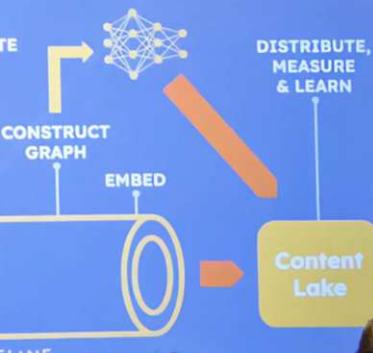
Now, let's imagine what we can do once we also have our content consolidated in a Content Lake.

Instead of a human operator creating experiences manually using traditional tools like drag and drop page builders and personalization tools, this process could be fully automated using **DXC Agents**. Such an agent is fed by your private content lake, design system and CDP to dynamically create experiences, fully tailored to the context of the user at hand. These could be classic experiences on the Web, experiences presented in native apps, or even experiences in 3rd party chat experiences like ChatGPT or Copilot.

This way, a tailored experience can be composed on the spot for every customer touch point, resulting in true 1:1 personalization.

We expect such DXC agents will start appearing in 2025 as a new major innovation in DXP's.

Content Science Content for AI



Ready to future-proof your content for the age of AI?

Let AmeXio guide you: contentscience.be

“Content science is a journey of transformation. With AI, organizations can turn content into a powerful asset, driving innovation and efficiency. Success lies in understanding AI, preparing content, and embracing change.”

Jan Lemmens,
Solutions Director AmeXio Belgium

Pioneering in Content Science

*Interview with Ronny Theunissen,
Content Science engineer at AmeXio*

Ronny Theunissen, an experienced professional with a solid background in Content Management, Retrieval and Cloud technologies, is now taking on a pioneering role within the emerging field of Content Science Engineering. Drawing on his expertise from projects at KBC and other leading organizations, Ronny shares his vision and insights into this dynamic and innovative domain.

You have recently taken on a pioneering role in Content Science. Can you share what this role entails and how it reflects the evolution of the field?

“Of course. Content Science Engineering represents a shift from traditional content management toward making content more actionable.

It’s about designing systems that allow content to be used dynamically—whether that’s for advanced search, conversational AI, or personalized user experiences. In my new role, I am focusing on creating solutions that don’t just store content but actively enable businesses to extract value from it.”

That sounds impactful. How did your experiences at organizations like KBC prepare you for this role?

“For example, at KBC, we developed systems that unlocked website content for conversational interfaces on the KBC Kate mobile app using RAG applications. Content structure was optimized for LLM usage, the search was expanded with semantic search allowing the



system to fully understand client questions and the answer was presented using a conversational interaction. Those projects showed me the power of combining content management with advanced AI, which is exactly what I'm now doing in this new role.”

What excites you most about this transition into Content Science?

“Engineers at Amexio love technology & innovation and Content Science is on the crossroads of challenging technologies: Content Management, Retrieval and AI. Content management is ever evolving into headless systems and component-based setups, Retrieval unlocks internal content using AI-supported technologies for semantic search and optimizations such as rerankers ... And of course LLM brings our users and content together... running it in Public Cloud infrastructure for privacy and security control.

It's not only the technology but also the opportunity for work with and learn from other teams. Business has innovative ideas on how to something... Data scientists contribute their deep knowledge of AI and machine learning...”

It's clear this field has a lot of potential. What do you hope to achieve in your pioneering role?

“Content Science is about unlocking the full potential of information to drive smarter, more dynamic digital experiences.”

“My goal is to help organizations unlock the full value of their content. Too often, companies have vast amounts of data but struggle to make it accessible and actionable. By engineering smarter content systems, I want to bridge that gap.

Whether it's improving customer experiences, enabling more accurate search, or creating robust Application Programming Interfaces (APIs) for developers, the focus is always on making content work harder and smarter.”

It sounds like you're driving the future of content management. What advice would you give to others looking to follow in your footsteps?

“Focus on the intersection of technology and content. Learn about APIs, semantic search, and how AI can enhance content systems. But beyond that, develop a mindset of curiosity and problem-solving. Content Science is about connecting the dots—between data, tools, and user needs. If you can master that, you'll be well-equipped for this exciting field.”

CONTENT SCIENCE CONFERENCE 24

On November 28th, the OHL Stadium in Leuven hosted Belgium's first-ever event on AI's impact on content management. It was a day packed with insights, ideas, and innovation—here's a quick recap of the sessions that made it unforgettable.

The Never Normal



Peter Hinssen (Nexxworks) kicked off the day with a keynote on the 'Never Normal,' highlighting the rapid changes in today's world. As the first to coin Content Science, he spotlighted the companies driving AI's evolution.

Peter Hinssen - Nexxworks, Entrepreneur, keynote speaker and author

Explore Peter's vision on Content Science:
<https://www.peterhinssen.com/blog/why-content-scientists-are-the-new-rockstars>

Content Science in Action



Tom Laureys (AmeXio group) showcased Content Science in Action, revealing how AI is revolutionizing enterprise content management by turning unstructured content into a strategic asset.

Tom Laureys - AmeXio Group, Solutions Director specializing in innovation in the domain of ECM

Learn more on Tom's vision on ECM:
<https://www.linkedin.com/in/tlaureys/>



Content Science in Action (2)



Jan Lemmens showcased Content Science in Action for CXM, demonstrating how AI enhances customer experiences, drives personalization, and streamlines content-driven processes.

**Jan Lemmens - AmeXio Group,
Solutions Manager Customer
Experience Management**

Get in contact with Jan:
<https://www.linkedin.com/in/lemmensjan/>

From information to wisdom



Karsten Gielis, a Data Scientist at KBC, presented From Information to Wisdom, sharing how he leverages AI and content to make projects like KBC's *Kate* and others smarter and more effective.

**Karsten Gielis, Data Scientist at
KBC Bank & Verzekering**

Get in contact with Karsten:
<https://www.karstengielis.be>



Afterword

Tom Laureys - Solutions Manager AmeXio Belgium

Content science is all about adapting and growing, and this playbook shows how AI can help turn your content into a business superhero, cape not included. By using AI effectively, you can work smarter, spark creativity, and bring some serious innovation to your content strategy.

Of course, the journey isn't just about shiny tools. It's about prepping your content, trying new approaches, and convincing your team that yes, robots can help (but no, they're not taking your job).

“Content Science is the key that unlocks the vault, turning your content into a treasure trove of smarter strategies and impactful results.”

This playbook is here to guide you with practical steps and maybe even a few ‘aha!’ moments along the way.

At AmeXio, we specialize in turning AI-driven content management into real business value. With our expertise in Content Science, we help organizations unlock the full potential of their unstructured content, streamline workflows, and ensure AI adoption is both strategic and impactful.

This playbook is your guide, packed with practical steps to help you navigate the evolving AI landscape. We hope it leaves you inspired, ready to take action, and confident in how Content Science can reshape the way you manage and leverage content.



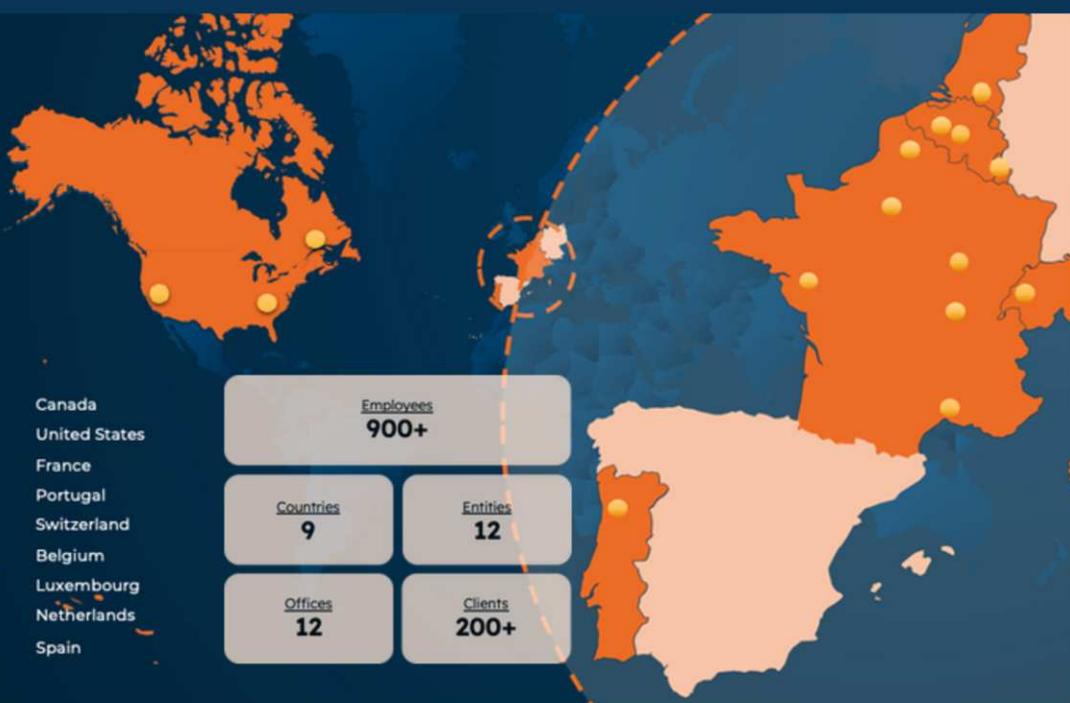
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LET'S TURN YOUR CONTENT INTO VALUE

At AmeXio, we help organizations make their **complex content manageable and valuable**. With almost 20 years of experience and a passion for content, our people are dedicated to helping our clients turn their content management into efficient processes and valuable information.

Our customers' success is our priority, and we strongly believe in **human excellence** and **tailored solutions** to achieve this. Every project is about people, and we act in a constructive spirit of collaboration to build partnerships that make the best possible outcome.



Our content management offer to support all our customers

Enterprise Content Management

We help organizations to streamline information lifecycles and manage content processes as part of our everything-you-need information governance services.

- *Electronic document management*
- *Digital archiving*
- *Capture*
- *Business process management*
- *Case management*
- *Intranet*



Customer Experience Management

Tailored digital platforms for web content & asset management, ecommerce, marketing automation and advanced analytics.

- *Digital (Web) Experience Platforms (Hybrid & Headless)*
- *Design Systems*
- *Extranet*
- *Customer Portal*
- *CRO & Web Analytics*
- *Frontend Applications*



Enterprise information management



Customer Communication Management

Customized solutions for all customer communications to speed up your business processes and deliver highly personalized customer experiences

- *Personalization and centralization of content*
- *Omnichannels communications*
- *Information governance*
- *Interactive documents & approval process*
- *Automatisation & optimization*

...

Structured Content Management

We offer a complete portfolio of XML content management expertise; from strategic thinking to content publishing and migration.

- *Component Content Management Systems (CCMS)*
- *Content Delivery Platform (CDP)*

...

About AmeXio group

At Amexio Group, we take a comprehensive approach to Content Science, ensuring alignment between people, processes, and tools for maximum impact. Our mission is to turn your content into value, no matter its form—whether document-based, web-based, XML-based, or beyond. Implementation is just the beginning—we go further to address every step required for lasting success and ROI.



contentscience.be