Artificial Intelligence (AI) in Tourism

Assessing and Supporting NTO's Research & Marketing Operations

EUROPEAN TRAVEL COMMISSION

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the European Travel Commission
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FOREWORD

The rapid development of emerging technologies is reshaping industries around the world, including the tourism sector. For Europe's National Tourism Organisations (NTOs), these technologies offer new opportunities to enhance operations in research and marketing, drive innovation, improve efficiency and provide solutions to meet evolving travel trends.

However, it is a reality that not all NTOs are equally equipped to take advantage of these developments. Differences in digital maturity, access to expertise, and concerns around data use, ethics, and regulatory compliance create real obstacles. As such, there is a growing need to bridge these gaps and ensure that all tourism bodies unlock the benefits of AI.

To this end, the European Travel Commission (ETC) launched this study to explore how AI, can be used to strengthen the capabilities of NTOs and foster knowledge sharing. While these tools are still relatively new, early findings from this study point to major gains in both productivity and content quality, especially in communication and knowledge-driven tasks.

This report focuses on how such technologies can be successfully applied within tourism marketing and research functions. It shares lessons from early adopters, outlines potential risks, and presents practical recommendations tailored to the specific context of NTOs.

By encouraging shared learning, highlighting responsible AI use, and supporting the exchange of best practices, ETC seeks to foster innovation while ensuring that progress is inclusive. The insights in this study aim to help NTOs confidently navigate this evolving landscape and unlock the value of AI for smarter, more responsive, and more resilient tourism strategies.

Miguel Sanz

President

European Travel Commission (ETC)

Acknowledgements

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This report forms part of ETC's ongoing Market Intelligence Programme and was conducted under the guidance of Marieke Politiek (Netherlands Board of Tourism & Conventions (NBTC), Jennifer Iduh, Lyublena Dimova, Menno van IJssel, Cornelia Keller, Marie Guilleux, Miguel Gallego and Diogo Paciência (ETC Executive Unit), on behalf of ETC's Market Intelligence Group (MIG). We thank them for their valuable input and dedication to this project.

The successful completion of this project would not have been possible without the active involvement of ETC's member National Tourism Organisations (NTOs). We sincerely thank all ETC members who generously contributed their time and insights.

In particular, we wish to acknowledge and thank:

- All respondents to the ETC Survey on *AI in Tourism - Assessing & Supporting NTO's Research & Marketing Operations* carried out between 24th March - 17th April 2025.
- ETC members who participated in the exploratory interviews to help shape the scope of the questionnaire.
- ETC members who participated in follow-up interviews, deepening the understanding of their specific position in terms of their AI development, challenges and best practices.

Your collective efforts and collaboration have been fundamental in the success of this initiative. We thank you sincerely.

Executive Summary

- Artificial intelligence (AI) is already reshaping day-to-day operations across Europe's National Tourism Organisations (NTOs). A handful of member bodies have emerged as early adopters, reporting tangible productivity and quality gains. Crucially, employee sentiment is broadly positive: resistance to experimentation is low, signalling fertile ground for rapid diffusion.

- Maturity, however, varies markedly between functions. Marketing departments are generally ahead of research departments in both adoption and confidence, and the performance gap within marketing teams is narrower than that observed across research teams. Practitioners in marketing report more immediate, visible value—from automated copywriting to data-driven campaign optimisation—whereas researchers consider the technology useful but still exploratory.

- Across both functions, the most urgent enabler is skills development. Staff require structured, role-specific training to move beyond ad-hoc tool use and unlock AI's full potential. After basic capability building, the priorities diverge. Research teams need clearer insight into what AI can achieve for their tasks; without this vision, experimentation risks stalling. Marketing teams, by contrast, call for stronger leadership and a cohesive strategy to scale successful pilots, but face budget constraints that threaten momentum.

- Organisation-wide barriers likewise reflect these themes. The single greatest hurdle is a scarcity of in-house AI expertise. For research departments, the next obstacle is the absence of a well-defined AI roadmap. For marketing, constrained financial resources present the more pressing challenge.

- Targeted investment in training, coupled with strategic guidance for research and budgetary support for marketing, will accelerate responsible AI adoption, close inter-departmental gaps and position NTOs to compete more effectively in the global tourism marketplace.

Artificial Intelligence in Tourism - Assessing and Supporting NTO's Research and Marketing Operations

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Chapter 1
Introduction

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Introduction

Artificial intelligence[1] (AI) has moved rapidly from a niche technology reserved for the advanced-analytics teams of well-funded companies to a mainstream set of tools used by a growing share of the global workforce. The meteoric rise of ChatGPT made AI tangible in day-to-day work, and the specific class of generative AI[2] (GAI) based on large language models[3] (LLMs) is already regarded as indispensable in many knowledge-intensive roles. This report therefore places particular emphasis on GAI.

Because GAI and LLMs are still relatively new, evidence of their impact on knowledge work remains thin. Early studies, however, indicate sizeable gains: productivity in writing tasks has been found to increase over 60 per cent[4], and over 50 per cent for coding output[5]. Many of these efficiency gains are often matched by improvements in quality. With figures such as these, it is easy to see why organisations and employees are keen to harness the technology.

As general-purpose tools, GAI systems are poised to reshape numerous sectors. This report focuses on their implications for Europe's National Tourism Organisations (NTOs), and in particular for their research and marketing functions. It assesses opportunities, challenges and ethical or legal constraints, and highlights lessons from early adopters in the tourism industry. The aim is to equip NTOs with practical guidance so they can deploy AI responsibly, boost innovation and strengthen cross-border collaboration. A deeper understanding of AI applications will, in turn, allow NTOs to refine their data-driven strategies and deliver greater value.

Given the rapid developments both in the regulatory and technological landscape surrounding AI, as well as in the ETC member organisations operational contexts, the results presented here should be seen as a snapshot of the situation as it appeared in April 2025, when the data was collected.

[1] Artificial intelligence refers to computer systems that can perform complex tasks normally done by human-reasoning, decision making, creating, etc.
[2] Generative AI is a type of artificial intelligence that can learn from and mimic large amounts of data to create content such as text, images, music, videos, code, and more, based on inputs or prompts.
[3] Large language models (LLMs) are a category of AI systems trained on vast amounts of text and related data, enabling them to understand and generate natural language (and other content) for many different tasks.
[4] https://www.science.org/doi/10.1126/science.adh2586
[5] https://www.bis.org/publ/work1208.pdf

Chapter 2
Methodological Approach

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Methodological Approach

This report is based on several research methods.

Interviews

Before designing the questionnaire, two interview rounds were conducted with two different NTOs. The aim was to ensure that the survey questions covered all relevant areas of AI use within the departments, in order to reliably assess their level of maturity.

Once the survey results had been compiled and analysed and the AI maps produced, further interviews were conducted. These targeted organisations in each quadrant of the map, with the aim of deepening the understanding of their specific position in the map, challenges and best practices.

Survey

Survey responses were collected between March 24th and April 17th, 2025. The survey was completed by 29 out of 36 ETC member organisations. The findings presented in this report are based on input provided by the headquarters of the National Tourist Organisations and do not reflect the views or circumstances of their international or regional offices.

The survey included a total of 64 questions, divided into five sections with different focuses each: Section 1 consisted of background questions. Section 2 aimed to capture the organisational conditions for successful AI implementation within the NTOs. Section 3 and 4 focused on examining how AI is used in the research and marketing departments respectively, what benefits this use generates and how these applications relate to the relevant regulatory framework. Section 5 was for further comments.

Mapping

In creating the two-dimensional maps, two aspects derived of the survey questions were analysed: organisational readiness and the perceived utility of AI use.

For the first dimension, McKinsey's 7-S model was used to calculate an average score reflecting the organisational structure's capacity to support AI implementation within the departments. The second dimension was based on responses related to the current usefulness that AI provides within the departments.

1. The Readiness Variable

The 7-S model is an analysis tool that highlights seven key elements within an organisation that must be aligned for change initiatives to succeed:

- **Strategy** – the action plan an organisation has set up to meet external changes, for example a business plan that point out the direction the organisation should take to strengthen its position.
- **Structure** – the way an organisation is organised to support the strategy and meet external changes.
- **Systems** –monitoring, measurement, rewards and resource allocation.
- **Shared values** –the core of the working culture that shapes people's behaviours, actions and decision-making.
- **Skills** – the competencies and skills that are characteristic of the organisation.
- **Staff** – the people who work in the organisation are seen as a resource that needs to be developed and supported and aligned with strategic needs.
- **Style** – refers to the people in leadership positions and their leadership qualities and behavioural patterns.

By aligning specific survey questions with each domain in the 7-S model, a composite variable was developed to enable the calculation of an overall score indicating how well equipped each department is to successfully and effectively implement new ways of working based on AI usage. This variable was labelled Readiness (displayed on the x-axis).

The areas in the 7-S model were linked to the following questions in the survey. Each response option is assigned a different point value (up to a maximum of 7 points), with options indicating more stable structures for change efforts corresponding to higher scores. Each area was weighted equally towards the overall score.

Element	Question	Options
Strategy	*Does your NTO have a formal AI strategy? By strategy we mean a high-level plan outlining how AI will be leveraged to achieve your NTO's business objectives.*	1) Yes, a detailed AI strategy is in place 2) No, but we are currently working on an AI strategy 3) No, we have some AI-related plans but no formal strategy 4) No, we do not have an AI strategy 5) Don't know
Structure	*How centralised are AI efforts in your NTO?*	1. Completely fragmented - 7. Fully Centralised 8. Don't know
Systems	*Does your organisation track or follow up on AI use among staff members in any way?*	1) Yes 2) No
Shared values	*Does the team feel they have the freedom to experiment with AI initiatives?*	1. No opportunity - 7. Strong encouragement and autonomy to innovate
Skills	*How significant are the following challenges in AI adoption within your department?*	"Limited AI expertise and skilled staff " 1. Not a challenge at all – 7. Major barrier 8. Don't know
Staff	*What percentage of team members in your department use AI tools on a weekly basis? Please provide an estimation.*	1) 0% 2) 1%-10% 3) 10%-20% 4) 20%-50% 5) 50%-75% 6) 75%-100%
Style	*In general, how would you describe top management team's support for AI adoption in your NTO?*	1. No management support - 7. Full management support 8. Don't know

2. The Usefulness Variable

To capture the benefits of existing AI initiatives, both the perceived value of AI in relation to department-specific tasks and the time savings achieved through AI implementation were measured and combined into a composite variable. This variable was labelled Usefulness (displayed on the y-axis).

The variable is based on a combination of the following survey questions. The greater the perceived value of AI use — whether in terms of benefits or time savings — the higher the score assigned to the response. Each area was weighted equally towards the overall score.

Perceived usefulness	Question	Options
Perceived value	*In general, how valuable has your team found AI tools to be for the following tasks?*	Different tasks specific for research and marketing departments listed. 1. Not valuable at all - 7. Highly valuable 8. Don't know/Not applicable
Time saving	*In general, has the use of AI tools led to time-savings within your team? (Please provide an approximate percentage)*	1) 0%-20% 2) 20%-40% 3) 40%-60% 4)60%-80% 5) 80%-100% 6) More than 100% 7) We have not saved any time
User confidence	*On average, how confident is your team in using AI tools for research and data analytics?* and *On average, how confident is your team in using AI tools for marketing?*	1. Not confident - 7. Fully confident
Organisation's AI development	*At what stage of AI adoption would you classify your NTO?*	1. No AI use – 7. Fully integrated AI across all departments 8. Don't know

These two variables give the two departments at each organisation an x-value and an y-value which together generate their position in the map.

Stages of Adoption

The map visualises NTOs overall score regarding organisational readiness and perceived benefit from their AI use into four quadrants.

Beginners (bottom left quadrant): They are characterised by being at the beginning of their AI exploration, having low AI usage or usefulness, with weak or no organisational structures supporting the development of AI-focused working methods.

Opportunistic Users (upper left quadrant): Their perceived benefit of their AI use is high, but that organisational support structures are weak.

Untapped Potential (bottom right quadrant): they seem to have well-functioning organisational support structures for developing new AI-based working methods but somehow do not fully seem to be reaping the benefits of their AI work.

Early Adopters (upper right quadrant): They are distinguished by having among the highest scores in both the conditions for successful change efforts and the perceived usefulness of AI tools.

The map should be viewed as relative rather than absolute. An organisation's placement in it reflects its position in comparison to others. A location in the upper right quadrant does not indicate that the organisation is "done" in its AI journey, but rather that it has progressed further than those located in the lower left quadrant.

In chapter 4, different paths that an organisation can take to advance in its AI journey is outlined, in general, as well as for research and marketing teams.

Chapter 3

Key Survey Results

Key Survey Results

As described in the previous chapter on methods used for this study, the survey was divided into five sections with different focuses. One of the sections focused on the organisation's overall approach to AI integration. Two of the other sections focused on the actual AI use in the research and marketing departments.

This chapter presents selected results from these sections to provide a picture of the organisations' overall approach to AI and how the practical work with AI is done at the departments.

Given the rapid developments both in the regulatory and technological landscape surrounding AI, as well as in the member organisations operational contexts, the results presented here should be seen as a snapshot of the situation as it appeared in April 2025, when the data was collected.

Survey results are available for participating member organisations upon request.

AI at the Organisational Level

Overall, there is a significant interest in AI and its potential among the organisations. Many member organisations believe they are still in the early stages of their AI journey. Despite this, there is generally strong support from top management for adopting AI. However, perceptions of how urgent this adoption will be, vary widely across the organisations.

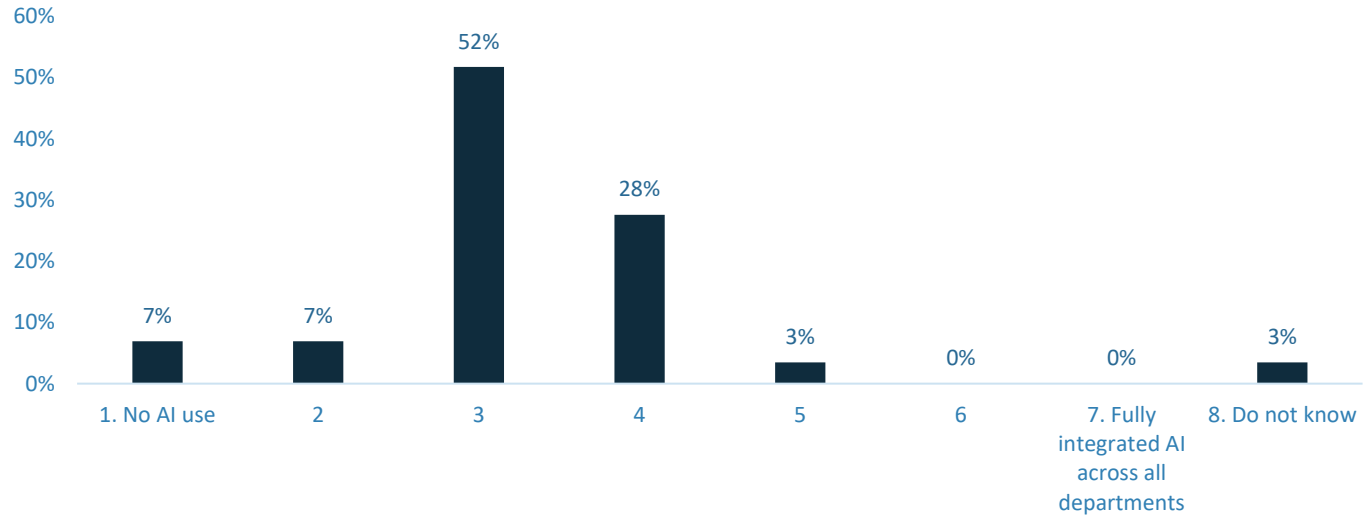

Figure 1. Self-reported stage of AI adoption among NTOs, based on a scale from 1 (No AI use) to 7 (Fully integrated AI across all departments). Based on Survey Responses, April 2025. Question: *At what stage of AI adoption would you classify your NTO?*

There is also considerable variation in how organisations have approached AI from an organisational perspective. While several are working to develop strategies, policies and visions for AI use, none currently have a formal strategy or vision in place. Only 14% have a policy, making this relatively uncommon.

Nearly four in ten have established a dedicated team to coordinate AI initiatives, and a similar proportion actively monitor AI usage among employees. In many cases, AI efforts remain more fragmented rather than being fully centralised.

These results are neither surprising nor unexpected. Given how recently AI tools have become widely available to the public, it is natural that most organisations remain in an exploratory phrase. At this stage, no single actor is fully "ready" or positioned to serve as a clear model for others.

AI at the Departmental Level

Even though AI is used in different ways and for different purposes, it has gained a strong foothold in both research and marketing departments.

In research departments, AI is perceived as particularly valuable for desk research, a view shared by 72% of the NTOs. Open-ended responses show a wide range of use cases: tools like Qwen are used for sentiment analysis, while others mention applications such as AI translation, coding, transcription, image generation, and summarising reports.

In marketing departments, AI is valued primarily for copywriting, also cited by 72%. Here, AI supports both the creation of marketing campaigns and the streamlining of internal processes such as brainstorming, ideation, and quick testing of content formats. A concrete example is MarIAnne, an AI-powered chatbot on France.fr that provides personalised recommendations based on user interests. Other uses include survey summarisation, supporting presentations, and evaluating creative concepts.

Despite these varied efforts, there is notable variation in who drives the use of AI-tools within departments. In research departments, over half (55%) report that initiatives are pursued informally, with no clear ownership. In marketing departments, AI use is more often led by a specific person or small group (45%), though many efforts still arise organically or without defined leadership. This fragmented approach underscores the broader challenge of moving from individual experimentation to a more coordinated, organisation-wide adoption of AI.

Nevertheless, confidence in experimenting with AI is high across both departments. The prevailing sentiment is one of strong encouragement and autonomy, with few reporting limited opportunities to explore AI tools.

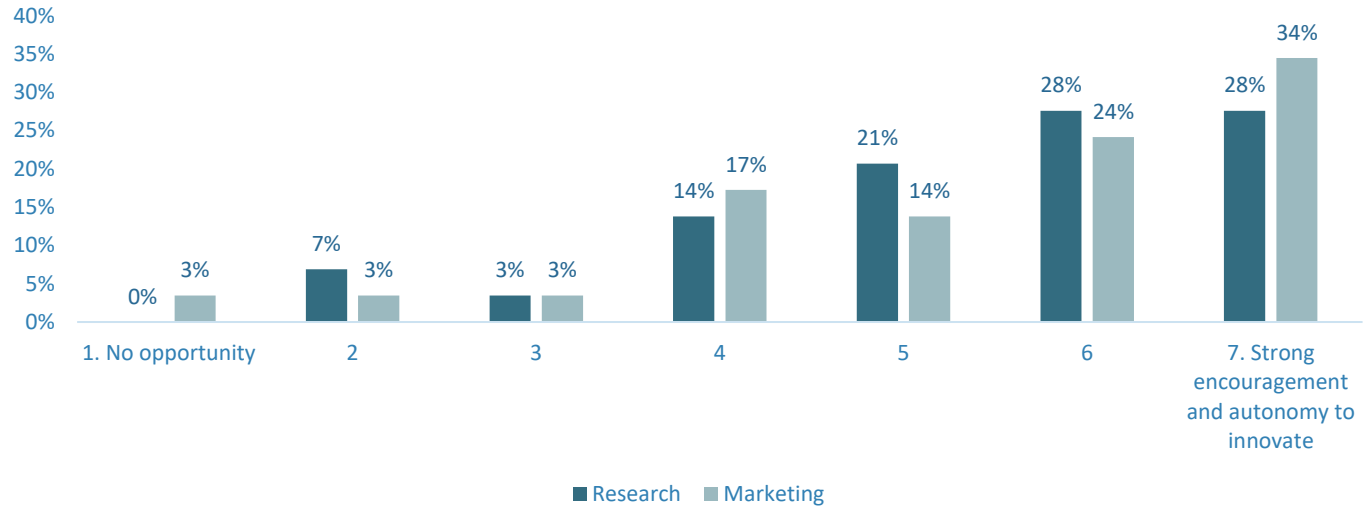

Figure 2. Perceived freedom to experiment with AI initiatives. Based on Survey Responses, April 2025. *Question: Does the team feel they have the freedom to experiment with AI initiatives?*

This freedom to experiment, is largely bottom up. When learning about AI, employees in both departments most often rely on self-directed learning and knowledge sharing among colleagues, rather than formal trainings or structured internal initiatives. This suggests a strong individual interest but also highlights the lack of systematic support for developing AI capabilities across the organisations.

This is closely tied to the main challenges departments identify in advancing AI use, as well as what is seen as the most important enablers. Limited AI knowledge and a shortage of skilled staff are seen as main obstacles. To make progress, many emphasise the need for skills development, greater insight into what AI can achieve, and for the marketing departments, a stronger leadership paired with a clear strategy for implementation.

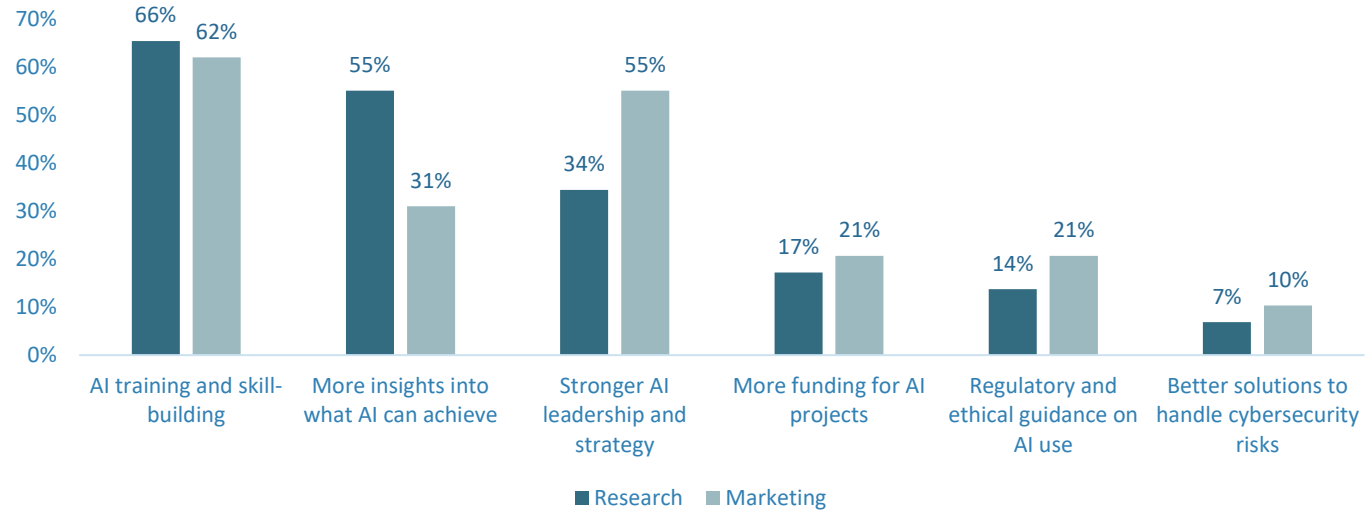

Figure 3. Key enablers for advancing AI adoption, according to the research and marketing departments. Based on Survey Responses, April 2025. Question: *What would most help your department advance in AI adoption? You can choose up to 2 options.*

In addition to the main challenges and enablers identified, departments expressed several other factors that could encourage greater AI adoption. Research teams highlighted the need for secure data handling, access to professional AI tools, more time to experiment, and inspiration from successful use cases elsewhere. Marketing departments pointed to concerns around cybersecurity, clearer measurement of AI's return on investment, stronger leadership, and dedicated time and resources. Both departments shared aspirations to deepen AI usage, researchers aim to leverage AI for enhanced data analysis, forecasting, and efficient reporting, while marketers envision AI as a tool to personalise customer experiences, optimise campaigns, and streamline workflows without compromising creativity.

Summary

AI at the Organisational Level

- Strong interest in AI, but most organisations are still in early stages
- General support from top management, though urgency levels vary
- Few formal frameworks in place, no strategies yet, and only 14% have an AI policy as of today
- Around 40% have dedicated AI teams or monitor AI use
- Efforts are often fragmented rather than centrally coordinated

AI at the Departmental Level

- Overall, AI is well established in both research and marketing, but with different purposes
- Research departments perceive AI as most valuable for desk research
- Marketing departments perceive AI as most valuable for copywriting and campaign development
- AI use is often informally driven in research, more frequently led by individuals or small teams in marketing
- High confidence and autonomy to experiment with AI across both departments
- Learning is mainly self-directed, formal training is rare

- Most important enablers for both departments were targeted skills development, better understanding of AI's potential. In addition, for the marketing departments, stronger leadership, and clear strategy
- Staff in both departments express strong motivation to use AI more extensively in the future. They emphasise the need for secure data handling, time to experiment, professional tools and inspiring use cases to move from experimentation to integration

Chapter 4
Mapping Results

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Mapping Results

This study has mapped European Travel Commission (ETC) members' AI maturity for research and marketing departments. Results are based on survey responses and consider AI maturity as a two-dimensional aspect comprising a **readiness** variable (organisational predisposition for long-term success deploying AI) and a **usefulness** variable (current observed gains from AI use). Based on member responses, research and marketing departments were placed into four different groups reflecting members' stage of development: beginners, untapped potential, opportunistic users and early adopters (see figure 4).

Given the rapid developments both in the regulatory and technological landscape surrounding AI, as well as in the member organisations operational contexts, the results presented here should be seen as a snapshot of the situation as it appeared in April 2025, when the data was collected.

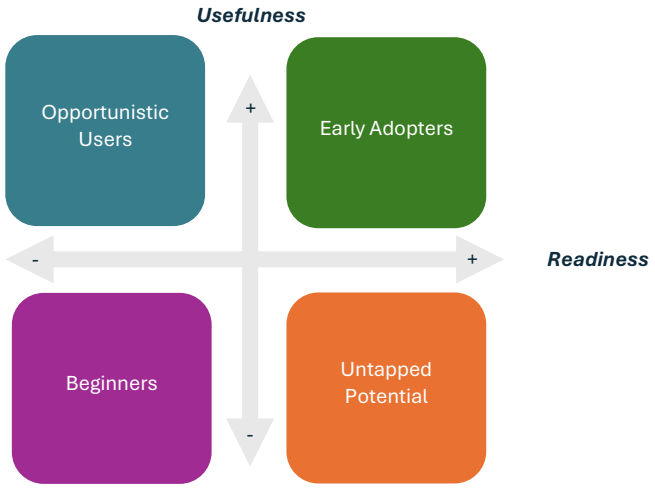


Figure 4. Categories of members according to the two-dimensional mapping of AI maturity conducted in this study.

The graphs below are an anonymised mapping of AI maturity in research and marketing departments based on the abovementioned readiness and usefulness variables. Specific data is available to participating NTOs upon request.

Overall, the results from the mapping indicated that AI tools have an impact in many ETC members already today. Members find themselves in varied stages of development with some indicating early adoption of tools, with observed gains (time or value) and enabling structures (for example top management's support, a cross-departmental team for AI usage etc.). Others are much more cautious in their use, having observed fewer real-world gains and with organisational structures that would suggest slower adoption. Nevertheless, there was a **high interest for AI** across members and the perceived importance of addressing AI is high, with – in general – low resistance from employees regarding the deployment of AI tools and systems.

A general observation is that **marketing teams seem to have extracted more useful gains from AI use** than research departments, as they systematically scored higher on the usefulness variable. This is not very surprising, considering many of today's AI tools excel at many tasks generally associated with marketing department's tasks, such as copywriting or generating content for social platforms. The variation between NTOs teams was also found to be lower among marketing than research, indicating that marketing teams are all closer to the same level. **For research, the usefulness varies more, some finding it very useful, while others reporting much less usefulness.**

Mapping of Research Departments AI Maturity

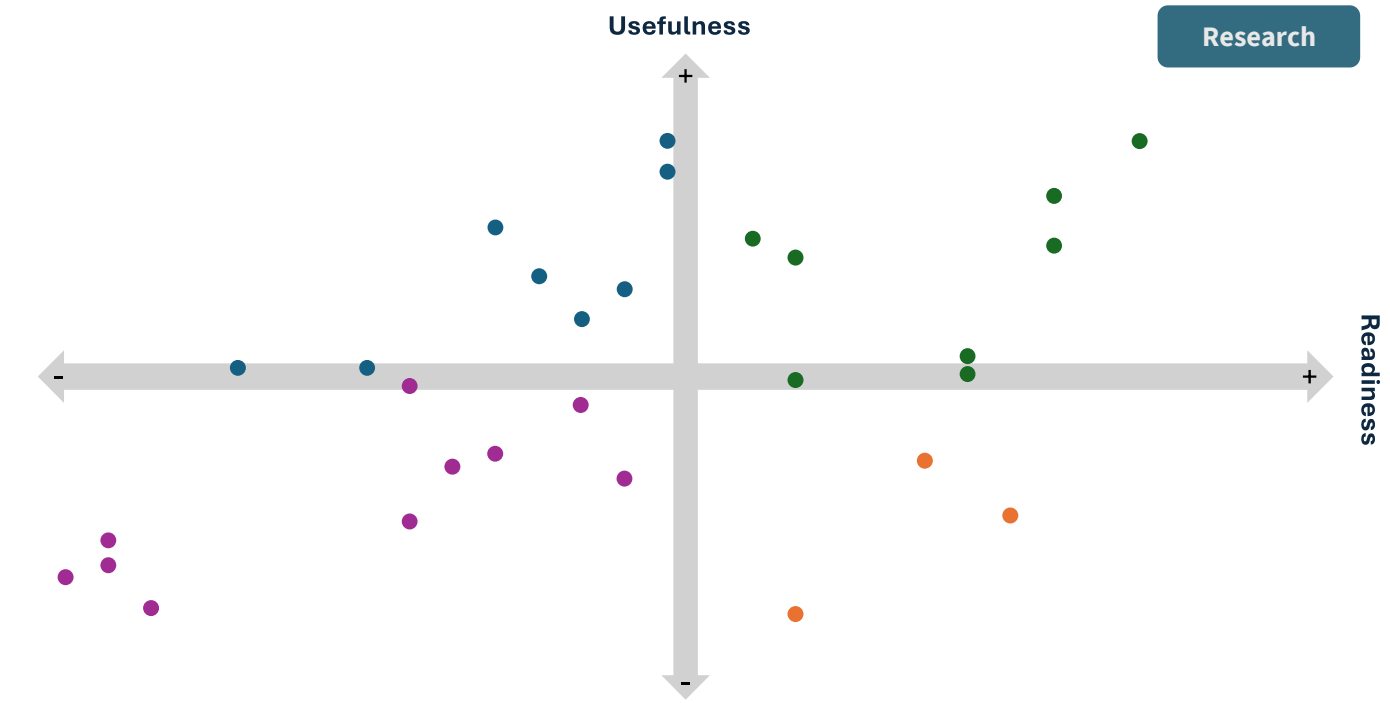


Figure 5. Two-dimensional mapping of the research departments' AI maturity. Based on Survey Responses, April 2025.

Mapping of Marketing Departments AI Maturity

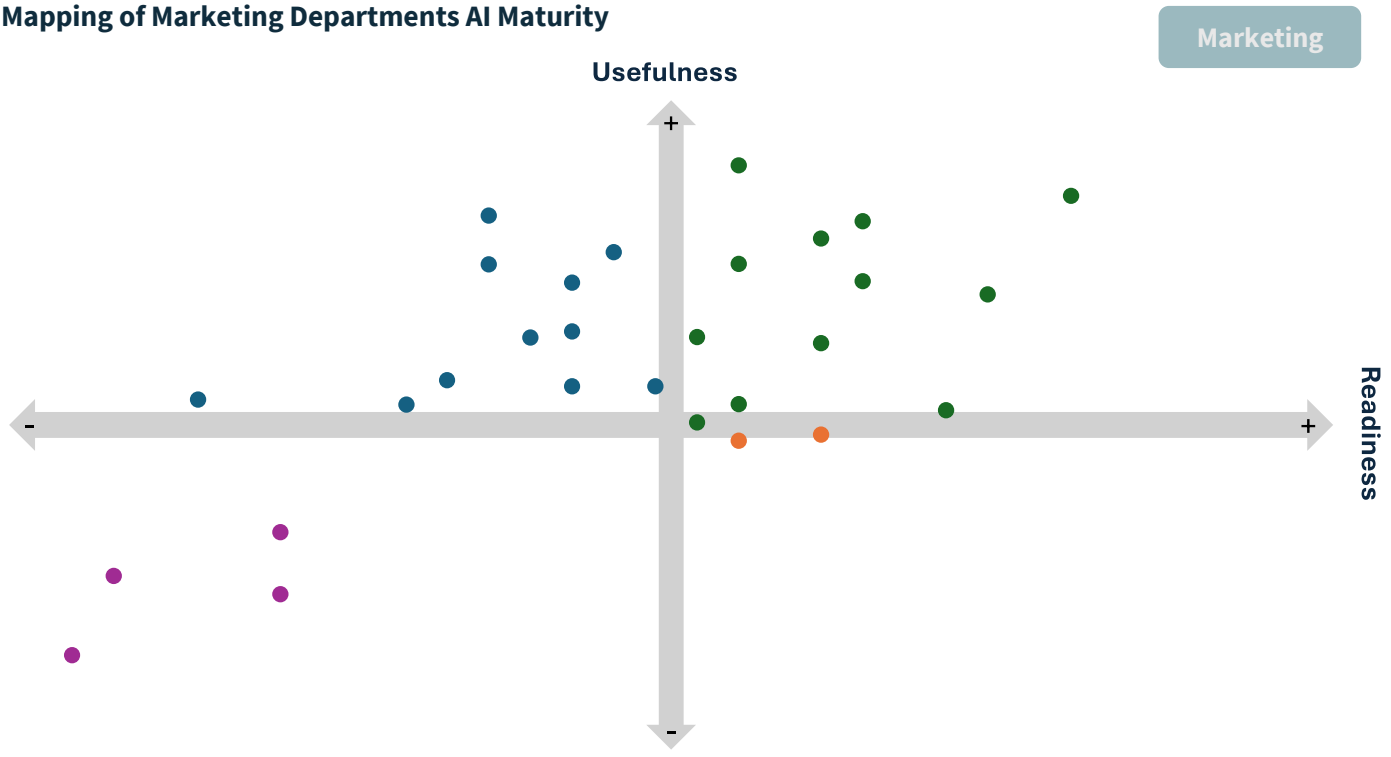
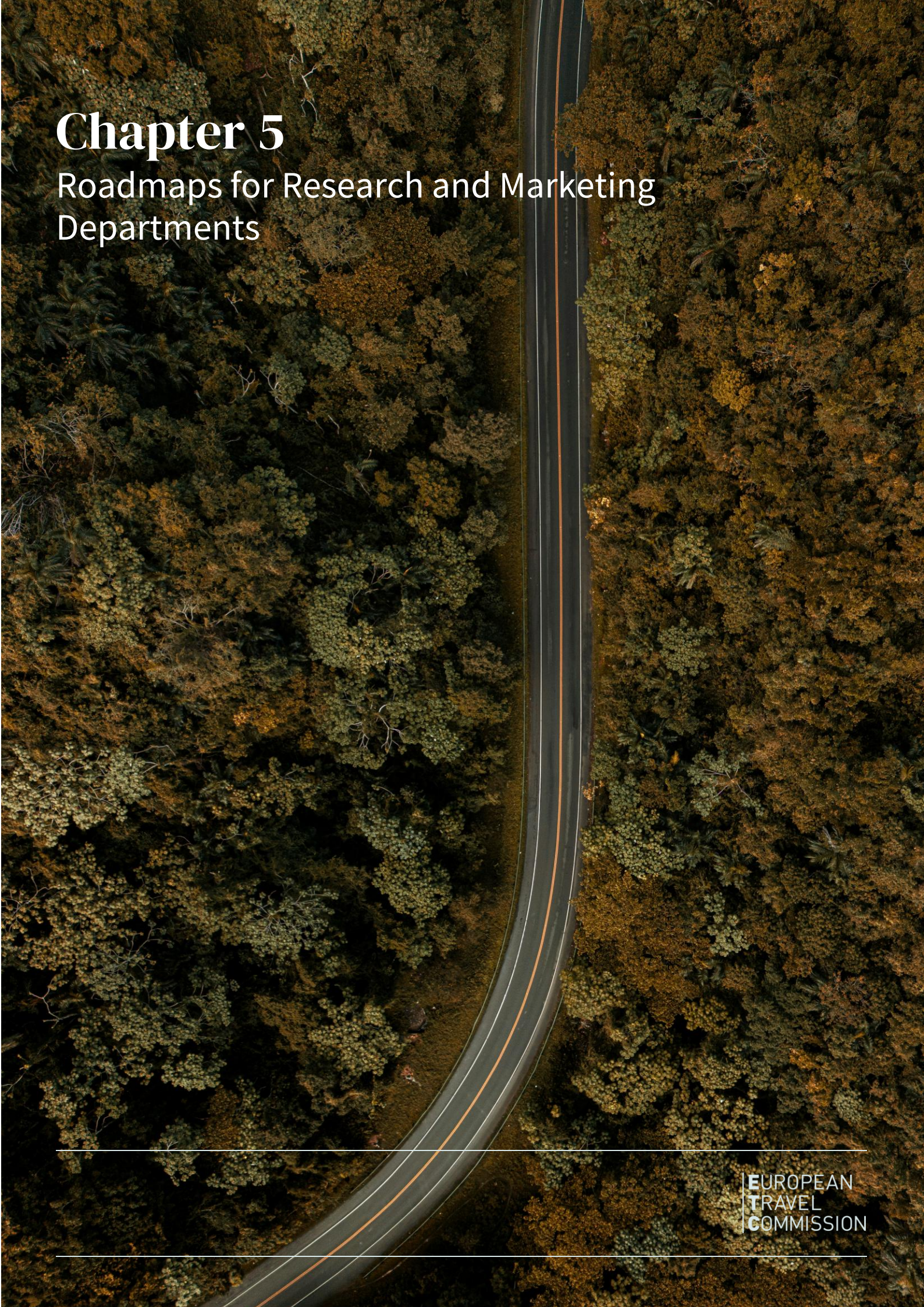


Figure 6. Two-dimensional mapping of the marketing departments' AI maturity. Based on Survey Responses, April 2025.



Chapter 5

Roadmaps for Research and Marketing Departments

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Roadmaps for Research and Marketing Departments

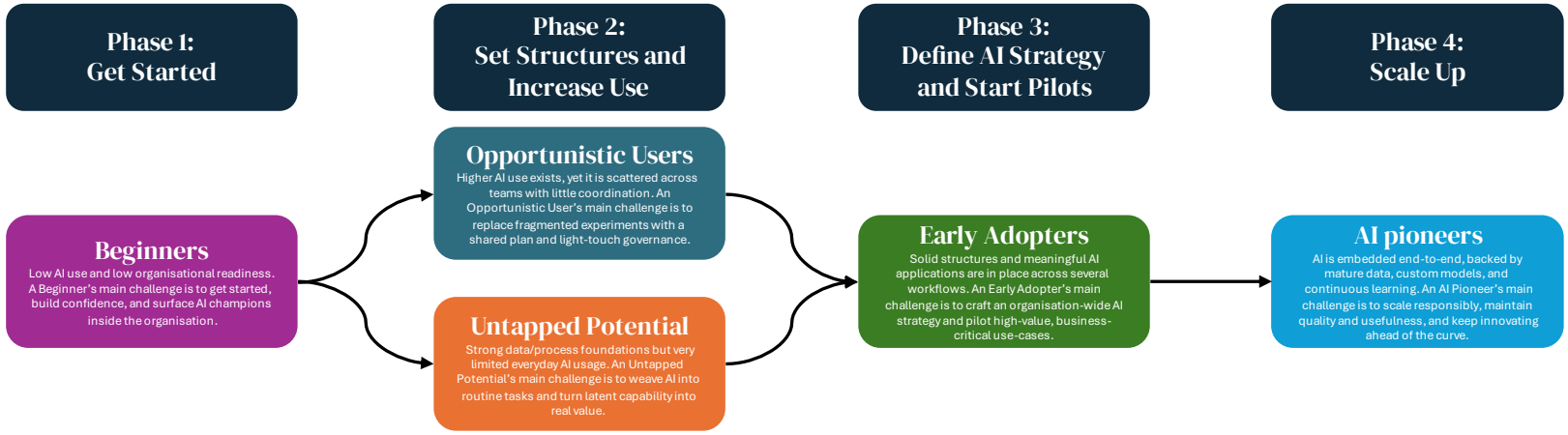
The preceding chapter mapped every NTO on a AI-maturity spectrum, from **Beginners** to **Early Adopters**. The present chapter converts that assessment into a sequence of practical actions. Three tailored roadmaps – organisational, research, and marketing – are provided so that capability develops cohesively rather than in isolated pockets.

As the position of the member organisations on the maturity map is relative rather than absolute, those located in the upper right corner, Early Adopters, should not be considered as having completed their AI development. To support their continued progress, a fifth group has been introduced in the roadmaps to point out actions that early adopters can take to further advance their AI work. This way, all member organisations, regardless of their position on the maturity map, receive guidance on activities to help them progress their AI work.

The recommendations are grouped by the maturity cohorts introduced earlier. Because the challenges faced by each cohort differ materially, the guidance is calibrated accordingly. Where objectives overlap—most notably for Untapped Potential and Opportunistic Users—the advice is consolidated; where they diverge, bespoke recommendations are offered.

- **Beginners** – *Get started*: establish foundational skills, foster confidence, and identify internal champions.
- **Untapped Potential** and **Opportunistic Users** – *Set structures and increase use*: replace fragmented experimentation with coordinated practice supported by light-touch governance.
- **Early Adopters** – *Define AI strategy and initiate pilots*: embed AI in several workflows and scale the most valuable use cases.
- **AI Pioneers** – *Scale up responsibly*: integrate AI end-to-end, uphold quality and ethics, and sustain innovation ahead of the curve. AI pioneers are introduced as a new stage in this section as a next step for those with desire to progress beyond the Early Adopter stage.

Together, these roadmaps form the operational companion to the maturity model: they clarify *what must be done next* and *how to begin*. Whether an NTO is opening its first exploratory pilot or scaling successful projects, the guidance that follows is intended to meet the organisation at its current stage and support a disciplined, responsible, and ultimately transformative journey towards AI excellence.



General Roadmap

Invite universal hands-on experimentation. Give everyone access to low-cost LLM tools such as ChatGPT, Mistral's Le Chat, or Google Gemini and encourage daily "sandbox" time to explore their capabilities.

Offer bite-sized training and inspiration. Point staff to short seminars, MOOCs, and curated success stories that demystify AI and spark ideas.

Collect and share emerging use-cases. Ask teams to document where AI helps, even modest time-savers, and circulate the best examples company-wide.

Identify internal AI champions early. Spot curious, motivated employees and give them extra resources or sandbox credits so they can mentor peers.

Protect calendar time for experimentation. Build regular "AI play hours" into team schedules so discovery is deliberate, not ad-hoc.

Create an AI Centre of Excellence (CoE). Form a cross-departmental forum with clear roles for knowledge-sharing, standards, and vendor scouting.

Articulate a concise AI vision. Describe in one page how AI supports organisational goals and the main problems it should solve first.

Publish a lightweight AI policy. Cover data privacy, intellectual-property, and security basics to give employees confidence to experiment responsibly.

Make AI a standing item on leadership agendas. Signal top-level commitment and allocate visible sponsorship.

Document and scale success. Turn emerging best practices into a living playbook—tools, prompts, and workflows mapped to business tasks.

Expand enablement beyond volunteers. Provide structured training paths so every employee, not just the keen few, can adopt AI tools.

Co-develop a focused AI strategy. Leverage the CoE and executive team to write a short, actionable plan that links AI investments to measurable business value.

Prioritise high-value pilot projects. Select 2-3 use-cases with clear ROI, defined success metrics, and executive sponsors.

Make AI literacy mandatory. Incorporate baseline AI competencies into onboarding, role profiles, and performance reviews.

Upgrade the policy to a full governance framework. Add ethical-use principles, security controls, and data-handling standards aligned with EU regulation.

Budget explicitly for AI. Allocate today's operating funds and forecast future investment for talent, tooling, and infrastructure.

Continuously monitor and refine the AI strategy. Use dashboards and periodic reviews to track adoption, ROI, and risk; iterate quarterly.

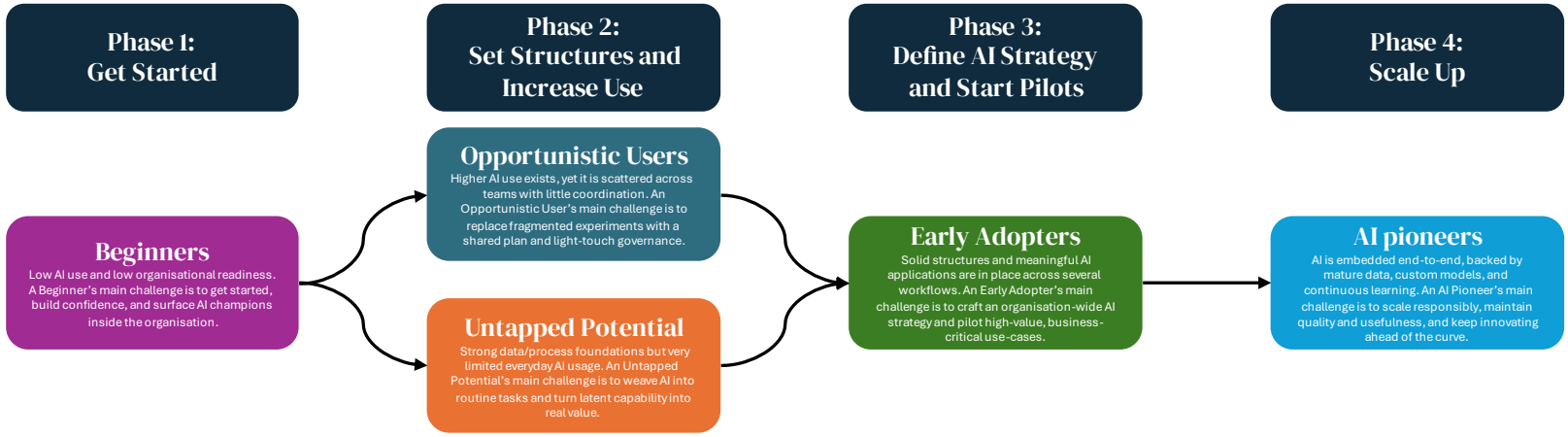
Choose the right build-vs-buy mix. Evaluate bespoke models, off-the-shelf solutions, and in-house development against cost, control, and speed.

Double-down on winners, sunset laggards. Scale successful pilots organisation-wide; retire or pivot projects that fail to deliver, documenting lessons learned.

Centralise data and guard quality. Conduct a data audit, eliminate silos, and establish enterprise data governance that underpins all AI work.

Evolve roles and keep the CoE vibrant. Introduce positions such as Prompt Engineer or Model Steward; celebrate innovation through internal showcases.

Maintain a culture of lifelong learning. Keep training catalogues fresh, provide advanced tracks, and recognise employees who push AI boundaries responsibly.



Research Roadmap

Run AI-assisted "literature-review labs" Hold weekly sessions using ChatGPT or Mistral's Le Chat for summarising papers and research. Try out research specific tools like NotebookLM.

Pilot code-assistants for data cleaning and stats. Give volunteers GitHub Copilot/Cursor credits/subscriptions and capture productivity gains.

Launch a shared prompt repository. Use Slack or a Teams (or office suite of choice) channel where staff post successful prompts, datasets, and outcomes.

Nominate Research AI Champions. Empower 1–2 enthusiasts per unit to mentor peers and liaise with the CoE.

Schedule protected experimentation time. Block out weekly "play time" in project plans for safe experimentation.

Version-controlled prompt library. Establish a "prompt & notebook library" for reuse and review. Make it easy to find and to update. Internal wikis work very well for this purpose.

Light data-governance checklist. Introduce naming conventions and an anonymisation checklist before AI processing. Update regularly when a new best-practice is found.

ROI working group. Form a cross-project team to track hours saved, value and insights gained from AI. Share those with the different teams, not just research if possible.

AI-enabled research templates. Make LLMs an integral part of survey design and sentiment analysis.

Advanced-technique training. Offer workshops on RAG, vector search and LLM-assisted coding. Over time, the technical vocabulary will improve.

Research-AI strategy. With the CoE and leadership, draft a roadmap that links AI to organisational KPIs.

High-value pilot selection. Launch 2-3 pilots (e.g. demand forecasting, large-scale web-scraping, semantic dataset search). It does not need to be complicated, but high value.

Compute & SaaS budget. Provide credits and specialised licences, with clear usage reporting to those who wish to go the extra mile.

Make AI a part of the onboarding process . New members of the research team should be shown from day one where AI is expected.

Ethics review upgrade. Expand the data-ethics process to include EU AI Act impact and bias checks.

Mandatory AI up-skilling. Make AI proficiency on par with other types of necessary and expected skills.

AI Insight Platform. Deploy an internal platform combining a knowledge graph, RAG chat and dashboards.

Build-vs-buy models. Decide whether to fine-tune a tourism-specific LLM or partner with external vendors.

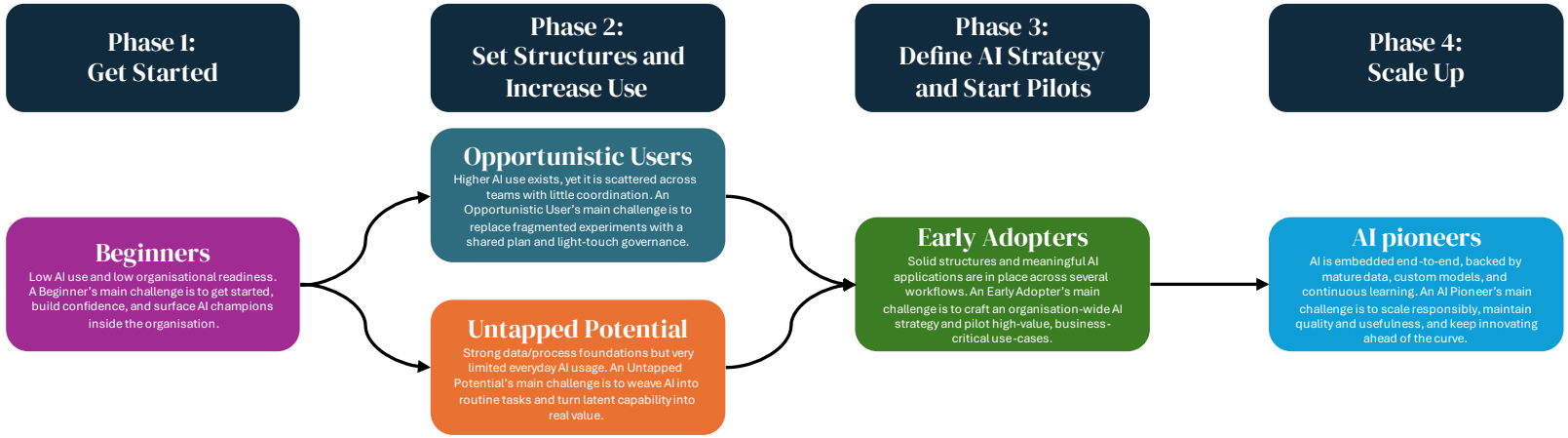
Decide what privacy features are important to your organisation. Open source LLMs can be run locally and guarantee no data is used to train new models.

Continuous model monitoring. Automate bias, drift and data-quality alerts with clear ownership.

Open-source contributions. Publish non-sensitive tools or datasets to attract partners and talent.

AI Fellowship programme. Rotate staff through advanced projects to spread skills and avoid silos.

Collaborate with research institutions . Identify local universities interested in working together on AI projects.



Marketing Roadmap

AI visual ideation. Encourage use of DALL-E 3, Midjourney, Runway orHeyGen to mock up concepts before studio work.

Run prompting workshops. Run guided sessions on prompting for ad copy, blog outlines and persona brainstorming.

Make a best-prompt gallery. Curate "best prompt - best output" examples in a digital space everyone has easy access to.

Two-week social challenge. Ask every marketer to create just one social post with AI, then compare results in a group call – learning by doing.

Set up regular inspiration sessions . Set aside some time every month to review what other marketing teams around the world have achieved with AI.

Organise weekly creative sprints. Test AI on low-risk assets and share learnings every Friday.

AI brand guardian. Assign a team member to vet tone-of-voice, inclusivity and compliance of AI outputs.

Have a brand-voice prompt library. Maintain do's & don'ts for each channel as a living document, preferably as an internal wiki.

Prompt-approval workflow. Add a simple review step so brand-critical prompts get a second pair of eyes before use at scale.

Quick-request form. Set up a Form so any team can ask the AI CoE to review or tweak AI content. This keeps oversight lightweight but accessible.

Policy quick-reference card. Create a marketing specific short AI policy in a one-pager format with "3 do's, 3 don'ts, and who to ask."

Send out a periodic AI roundup e -mail. Recap new tools, best prompts and any pitfalls spotted. This keeps everyone aligned with minimal fuss.

Use AI in more tasks than previously. Use LLMs to feedback and review more things: images, websites. Integrate them into more workflows, even it may not always seem like they fit in.

Use the collaboration features. Tools like ChatGPT can create projects that can be shared in teams, with specific overarching instructions and documents.

Try out more advanced tools. Platforms like Lovable or Replit allow users to build webpages/apps, which can result in faster prototypes and ideas testing.

Train AI agents with your own data. Feed internal manuals, guides or newsletters as training material to agents/custom GPTs so AI answers match your specific tasks.

High-value pilot selection. Launch 2-3 pilots (e.g. event gathering guide for tourists). It does not need to be complicated, but to focus delivering high value.

Monthly demo day. Invite teams to show one AI-created campaign asset and its performance. This should build confidence and a little internal FOMO!

Scale your successful AI pilots. Evaluate what worked and what didn't, rethink if there are any functions that can be transferred to other of your team's use cases or even other teams.

Make an annual tool benchmark. Once a year, test your chosen AI tool against two competitors on quality, cost and speed to keep pricing and performance on par with what exists on the market.

Keep a continuous -improvement board. Kanban column "AI Fixes & Ideas" lets anyone log issues or upgrades; review at the monthly CoE meeting.

Manage a AI knowledge base. Build a simple internal wiki with FAQs, short videos and compiled best-practices so newcomers can self-serve answers.

Maintain a risk register. Keep a living table of any AI-related issues (e.g., wrong facts, copyright flags) and how you fixed them. It helps show responsible governance.

Chapter 6

Do’s and Don’ts Guide

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Do's and Don'ts Guide

AI adoption does not have to start with a big strategy or expensive tools. Many NTOs are already experimenting in small ways, such as drafting content, analysing visitor data, or improving planning tools. This section outlines practical do's and don'ts for getting started and advancing with AI across research, marketing, and internal work. Each recommendation is based on real-world use and tailored to different maturity levels, from beginners to early adopters.

Category	Do	Don't	NTO Maturity level
General **Expectations**	View AI as a "junior" colleague good at writing and helping out with various tasks, but lacks context, experience and deeper knowledge of your organisation	View AI as a "senior" colleague or an expert. While it can provide good advice, it lacks the experience and tacit knowledge usually found in senior roles.	All levels
General **Internal AI skills**	Sponsor training and encourage learning and experimentation.	Assume AI adoption will happen without internal support.	All levels
General **Cooperation**	View AI as a cross functional tool and treat it as an organisation wide capability.	View AI as an IT question or work in silos.	All levels
General **Tools**	Test beginner tools like ChatGPT, DALL-E, or NotebookLM on real internal tasks.	Introduce advanced tools without understanding their limitations.	Beginners
General **Internal sharing**	Create a shared space (e.g. Teams, Google Doc) to document AI experiments, tips and best practices.	Avoid sharing knowledge with each other.	All levels
General **Ethics and safety**	Define clear rules for data management and ethical use of AI tools.	Limit the use and adoption of AI with overly complicated governance.	All levels
General **Mindset**	View AI as a time-saving tool.	View AI as a job-taker.	All levels

General **Experimentation**	Encourage experimentation and start small pilots before scaling.	Wait for the perfect strategy or use case to get started.	All levels
General **External collaboration**	Work with universities, startups, or vendors to test AI use cases and access expertise.	Rely on internal AI skills only.	Early adopters
General **Scaling AI**	Identify successful pilots and build the infrastructure, training, and processes to scale them.	Scale too quickly without evaluating outcomes or preparing support systems.	Early adopters
General **Data Management**	Centralise data and make it available across the organisation.	Build data silos, fragmented across the organisation and hard to access.	Early Adopters
Research **Report summaries**	Use AI tools to summarise reports, surveys, or policy documents.	Expect AI summaries to be accurate without checking source alignment.	Beginners
Research **Real Time Monitoring**	Use AI to monitor tourism patterns and impact in real time.	Assume all metrics are useful just because they are real time.	Early adopters
Research **Trend Detection**	Use AI to identify trends in search, social media, reviews and news.	Confuse weak signals with trends.	Early adopters
Research **Pattern Analysis**	Use AI to find patterns in large datasets.	Rely only on one kind of data.	Early adopters
Marketing **Generative AI content**	Use GAI to create marketing content.	Create low quality generic AI content.	All levels
Marketing **Personalisation**	Use AI to tailor offers and content.	Send the same content to all audiences.	Early adopters
Marketing **Creative exploration**	Use AI tools to explore variations of headlines, copy, or visuals.	Publish content without review or alignment with your brand tone.	Beginners
Marketing **Campaign Testing**	Use AI to test multiple versions of ads or emails to find what performs best.	Optimise campaigns based on one-size-fits-all messaging.	All levels

Marketing **Cross-channel alignment**	Make sure AI-driven content or recommendations are consistent across web, email, and social media	Let each channel run its own version of personalisation without coordination.	Early adopters
Marketing **Performance Tracking**	Set clear metrics for how AI-generated content performs (e.g. engagement, click-through)	Use AI tools without checking whether they're actually improving results.	Early adopters
Marketing **Chatbots**	Use AI chatbots to make travel planning and finding information easier.	Deploy chat bots without clear value or tested scripts.	Early adopters

Chapter 7

Best Practices for Research and Marketing

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Best Practices for Research and Marketing

In this section, best practices from real life examples in research and marketing are presented, both from the tourism industry as well as other relevant industries. These examples showcase a breadth of best practices, from foundational infrastructure to user facing applications. While they can be used for inspiration for all levels of maturity, they primarily belong to the “Early Adopter” category.

Research Best Practices

2. Predict demand to optimise operations

Predictive AI can forecast destination demand in advance, helping manage staffing, pricing, and resource allocation. By analysing historical booking patterns, seasonality, events, and external factors, AI enables proactive planning.

Hospitality Demand Forecasting – InsightMax

1. **Theme / Focus area**
   AI-powered revenue management and probabilistic demand forecasting for hotels.

2. **Description**
   InsightMax ingests historical bookings, live pace data, weather, events and social sentiment to generate probability curves—for example, a 70 % chance of hitting 90 % occupancy during a festival—so teams can plan for multiple outcomes.

3. **Results / Impact**
   Hotels report up to 20 % better forecast accuracy and 15–25 % revenue uplift; scenario planning also optimises staffing and marketing spend, as shown when dynamic pricing captured peak demand while keeping service levels high.

4. **Tools / Technology used**
   Ensemble ML models that learn continuously, real-time data pipelines for market signals, and a cloud dashboard that visualises forecast distributions and sends alerts.

5. **Lessons learned**
   Probabilistic forecasts outperform static point estimates in volatile markets, but human revenue managers must interpret the ranges and fine-tune strategy—AI augments, not replaces, expertise.

6. **More information**
   https://www.demandcalendar.com/blog/the-revenue-manager-vs.-ai-a-tale-of-predicting-hotel-demand

3. Use AI to monitor tourism in real time

AI can help tourism organisations track the impact of tourism on destinations in real time. By integrating live data sources such as mobility, traffic, bookings and sentiment into AI-powered dashboards, organisations can detect changes quickly and respond accordingly. This supports rapid decision-making, improves coordination with local stakeholders, and enables more proactive visitor management.

Jackson Hole Tourism Dashboard – Jackson Hole Travel & Tourism Board

1. **Theme / Focus area**
   Real-time destination management and sustainability analytics.

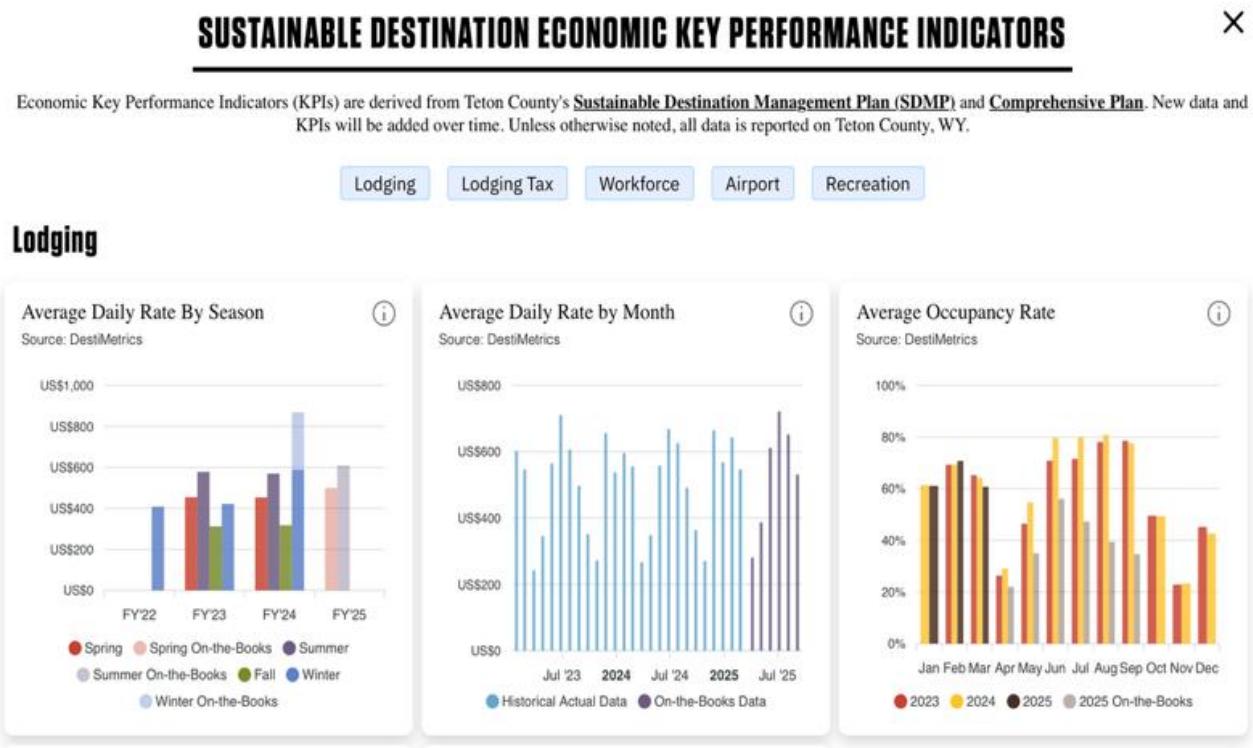
2. **Description**
   A live dashboard, developed with the University of Wyoming and a data-science partner, that merges 37 data streams—lodging, trail counters, traffic, wildlife incidents, social sentiment and more—into 55 sustainability indicators, updated almost instantly through machine-learning data fusion.

3. **Results / Impact**
   Gives local government, tourism officials and community groups a daily view of tourism pressure, helping them manage peak periods, protect wildlife corridors and gain international recognition for progressive destination stewardship.

4. **Tools / Technology used**
   Cloud data warehouse, API integrations and machine-learning models for anomaly detection and trend synthesis, surfaced via an interactive BI dashboard.

5. **Lessons learned**
   Integrating diverse local datasets with Machine Learning (ML) delivers a far richer, faster picture than periodic reports, while university–industry collaboration keeps costs down and rigour up.

6. **More information**
   https://industry.visitjacksonhole.com/data-and-reports



4. Create a centralised, multi-source data platform

Tourism research often depends on fragmented data from multiple sources. AI can support the development of centralised platforms that combine data from national, regional, and private partners, allowing for more consistent and accessible insights. This helps align strategy across sectors, reduce duplication of effort, and improve the quality of market intelligence.

Tourism Data Collective – Destination Canada

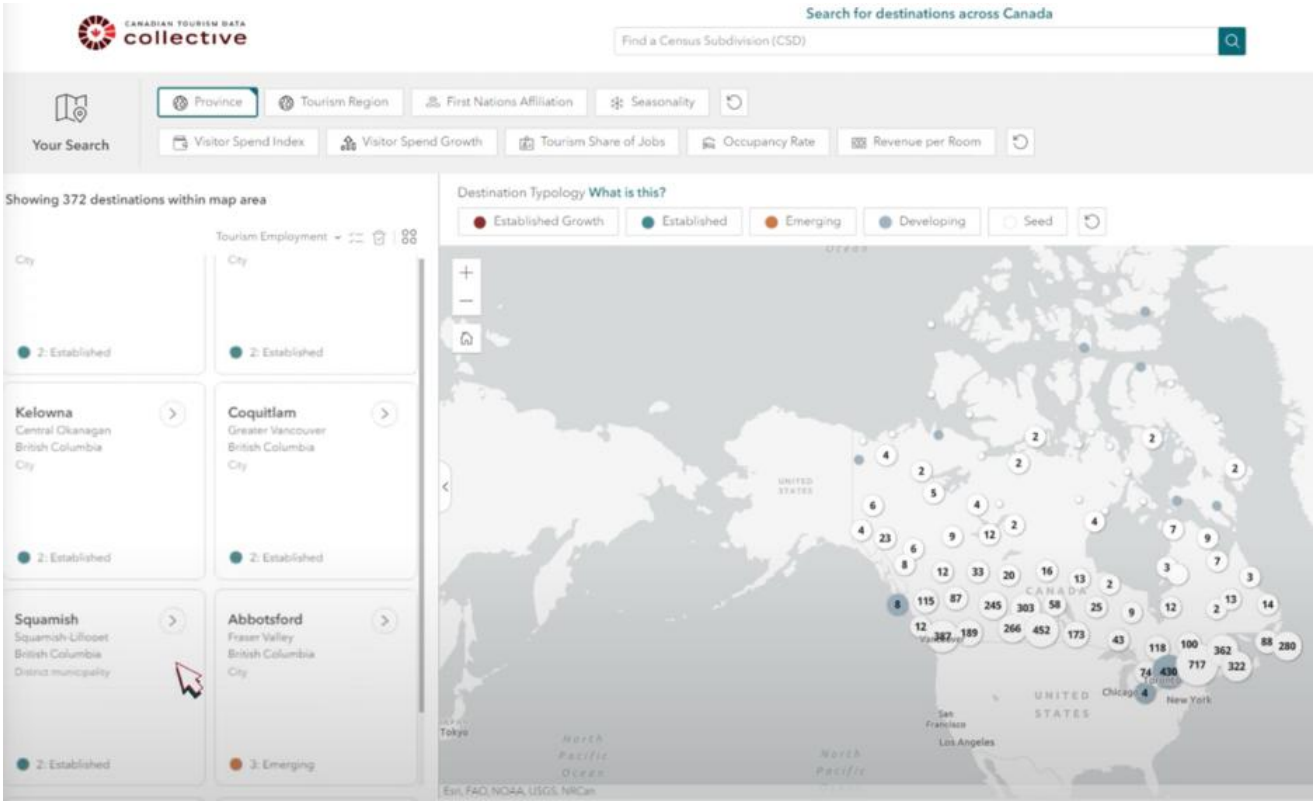
1. **Theme / Focus area**
   National tourism-data infrastructure and real-time AI insight-generation.

2. **Description**
   A Canada-wide platform that pools data from public bodies, credit-card networks, mobility services and regional DMOs, then applies AI to deliver live dashboards and demand forecasts for partners across the sector.

3. **Results / Impact**
   Democratises high-quality data for smaller businesses and regional organisations, enables coordinated, evidence-based decisions at local and federal levels, and flags emerging market shifts early to support Canada's long-term tourism-growth strategy. In less than 12 months, the platform has engaged over 18,000 active users and 60 subscribing partners, delivering more than $4.5 million worth of insight to each annually. It has helped inform regional investment, optimize marketing spend, and support sustainable development. It also won the *2024 DataIQ AI for Good* Award.

4. **Tools / Technology used**
   Cloud data lake with secure API feeds, machine-learning models for predictive analytics, and interactive BI dashboards accessible via a partner portal.

5. **Lessons learned**
   Building shared, well-governed data infrastructure is the cornerstone of effective AI; broad stakeholder buy-in and clear value exchange accelerate adoption and scale.



6. **More information**
   https://www.tourismdatacollective.ca

5. Use AI to detect and interpret emerging trends

AI can analyse large volumes of unstructured data, such as online conversations or reviews, to identify shifts in consumer behaviour, preferences, or trends. This enables tourism organisations to detect early signals and adjust offerings or campaigns accordingly. It improves responsiveness to changes in demand and helps identify opportunities before they are widely recognised.

Coca-Cola Creations – AI-Driven Social Listening

1. **Theme / Focus area**
   AI-powered consumer insight for product innovation and marketing.
2. **Description**
   Coca-Cola continually analyses millions of online conversations with AI sentiment and trend tools, fuelling its 'Creations' pipeline to launch limited-edition drinks – e.g. Dreamworld (2022) and Y3000 (2023) – that echo emerging cultural themes.
3. **Results / Impact**
   Real-time insights have shortened concept-to-market cycles and produced headline-grabbing flavours that deepen Gen-Z engagement and lift campaign ROI.
4. **Tools / Technology used**
   Enterprise social-listening platforms (such as Sprinklr), machine-learning topic clustering, and AI-assisted co-creation tools integrated with agile R&D sprints.
5. **Lessons learned**
   Always-on AI listening uncovers niche cultural currents missed by traditional research, enabling rapid, low-risk product experiments and more authentic storytelling.
6. **More information**
   https://www.coca-colacompany.com/media-center/coca-cola-creations-imagines-year-3000-futuristic-flavor-ai-powered-experience

6. AI to identify behavioural patterns in large datasets

AI can find recurring behaviours and hidden patterns within vast travel datasets – such as booking histories or mobility data – supporting informed decisions on resource allocation, itineraries, and visitor flow.

Booking.com Machine-Learning Framework – Booking.com

1. **Theme / Focus area**
   Personalised search and recommendations through machine learning.
2. **Description**
   Booking.com trains hundreds of ML models and runs thousands of A/B tests at any moment to learn how travellers actually search and book—such as their price limits, preferred property types or trip purpose—and then shows more relevant options.
3. **Results / Impact**
   Sharper recommendations have boosted booking conversions and let new ideas move from concept to live feature in days rather than months.

4. **Tools / Technology used**
   Cloud-based data pipelines, an in-house testing platform, and a mix of simple classifiers and neural networks.
5. **Lessons learned**
   Giving every team easy access to data and fast, reliable testing turns machine learning into a steady stream of low-risk improvements.
6. **More information**
   https://aws.amazon.com/solutions/case-studies/innovators/booking/

7. Use AI-based fraud detection in transaction systems

AI-based fraud detection models in banking analyse behaviour and transaction patterns to flag suspicious activity. This approach enhances trust and reduces losses more effectively than static rule systems.

Anti Money Laundering AI – HSBC

1. **Theme / Focus area**
   AI-powered anti-money-laundering and fraud monitoring.
2. **Description**
   Co-developed with Google Cloud, AML AI scans about 1.3 billion transactions a month, learning normal spending patterns and connections between accounts to flag suspicious activity without fixed rules.
3. **Results / Impact**
   Detects two-to-four times more illicit activity, cuts false-positive alerts by 60 %, and shortens case resolution to roughly eight days, earning Celent's 2023 Model Risk Manager award.
4. **Tools / Technology used**
   Google Cloud AML AI models running in HSBC's encrypted cloud environment, with open-source projects such as Kubernetes and built using React.js.
5. **Lessons learned**
   Replacing static rules with self-learning models greatly improves security. NTOs collect and manage large amounts of traveller data. AI systems can secure this data by detecting anomalies in real time, such as suspicious login attempts or data access patterns. AI can also identify and block bots and fraudulent users attempting to exploit marketing offers, ensuring marketing funds are spent on genuine potential travellers.
6. **More information**
   https://cloud.google.com/blog/topics/financial-services/how-hsbc-fights-money-launderers-with-artificial-intelligence

Marketing Best Practices

8. Use AI to personalise visitor experiences

Personalisation through AI allows tourism organisations to tailor content and services to individual users based on their preferences, behaviours, and context. This includes generating itineraries, recommending experiences, or adapting content layout in real time. This helps improve the relevance of digital services, increases the usefulness of planning tools, and provides tourism boards with behavioural data that can inform future marketing and product development.

"Ask AI" Trip Planner – Discover Puerto Rico

1. **Theme / Focus area**
   Conversational AI for personalised trip planning and visitor-insight capture.
2. **Description**
   Launched in February 2025, the "Ask AI" tab on DiscoverPuertoRico.com uses Mindtrip's engine to quiz travellers on their interests and instantly build shareable, multi-day itineraries that blend the DMO's existing content with maps, images and safety tips.
3. **Results / Impact**
   Returns information on preferred themes and locations, helps steer users away from closed sites, and deepens links to local businesses.
4. **Tools / Technology used**
   Mindtrip for Business conversational AI, real-time content indexing and embedded interactive maps.
5. **Lessons learned**
   Structuring existing destination content for AI unlocks ultra-fast, tailored trip planning while generating actionable insight without extra field research – all in a very seamless experience.
6. **More information**
   https://www.discoverpuertorico.com

9. Use AI to Create "share-worthy" Visual Storytelling

AI image-generation lets marketing teams turn abstract brand values into vivid experiences that travellers can see and share.

Dutch Cycling Lifestyle Tool – Netherlands Board of Tourism & Conventions (NBTC)

1. **Theme / Focus area**
   Sustainable mobility and destination branding through generative AI.
2. **Description**
   A free web tool (launched October 2023) that lets anyone drop a Google Street View location and instantly see it re-imagined as a greener, bicycle-friendly Dutch street via AI in-painting.
3. **Results / Impact**
   442 k images created and over 1 million sessions in the first month; earned-media reach of roughly 7.5 million across five priority markets and multiple digital-impact awards (Webby, Lovie, Dutch Interactive, Anthem).

4. **Tools / Technology used**
   Stable Diffusion for image generation plus a road-and-vehicle segmentation model, orchestrated with ComfyUI; full backend released open-source on GitHub.

5. **Lessons learned**
   Visually striking, shareable AI prototypes can rapidly shift public imagination around sustainable transport and boost a destination's soft power, while open-sourcing prolongs impact through community reuse.

6. **More information**
   https://dutchcyclinglifestyle.com

10. Use chatbots to simplify visitor planning

Chatbots powered by AI can help users find relevant information faster by responding to natural-language questions. They can be used to guide different types of visitors through planning processes without the need for staff support. This improves access to planning resources, increases engagement on digital platforms, and reduces friction in the visitor journey.

"Ellis" Chatbot – New York City Tourism + Conventions

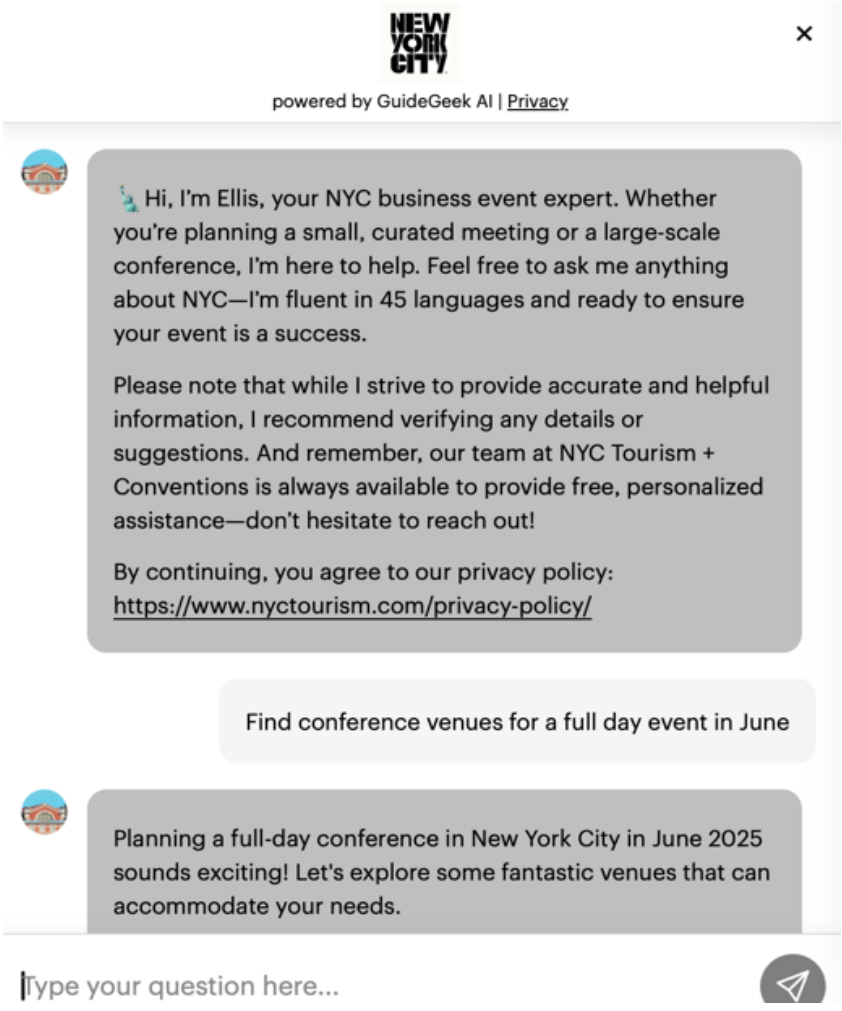
Theme / Focus area
Multilingual conversational support for meetings and events.

1. **Description**
   Launched in 2025, Ellis answers planners' questions on venues, hotels and attractions across more than 40 languages and channels, drawing on NYC's official DMO and Convention & Visitors Bureau's existing content.

2. **Results / Impact**
   Doubled traffic to the meetings section within a month, boosted newsletter sign-ups and session duration, and surfaced query data to flag content gaps.

3. **Tools / Technology used**
   Cloud chatbot platform from GuideGeek AI with large language model, destination knowledge base.

4. **Lessons learned**
   Training a bot on curated in-house content delivers accurate, brand-safe



answers while generating first-hand insight into planner priorities.

5. **More information:**

https://www.business.nyctourism.com/meeting-planners

11. Use AI to deliver real-time, personalised marketing offers

AI can be used to analyse customer data and deliver personalised messages or offers at the right moment and on the right channel. These systems typically draw from app usage, location, past purchases, or contextual data like weather. This increases the efficiency of marketing campaigns by targeting people with relevant content, improving both engagement and return on investment.

Starbucks Deep Brew – Personalising Coffee at Scale

1. **Theme / Focus area**
   Using AI to tailor offers and run stores more smoothly.

2. **Description**
   Starbucks started gathering data with its loyalty app in 2011 and, in 2019, built an AI engine called Deep Brew. The system studies billions of orders to suggest drinks customers may like, predict busy times, stock the right ingredients and even pick new café locations.

3. **Results / Impact**
   The app now drives record sales and more repeat visits; the Starbucks Rewards club has topped 17 million active US members. Faster service and less waste follow from smarter staffing and stock forecasts.

4. **Tools / Technology used**
   Deep Brew machine-learning software, the Starbucks mobile app, and smart coffee machines that feed real-time data.

5. **Lessons learned**
   Collecting good data early makes later AI projects far easier. Letting algorithms handle the numbers frees baristas to focus on friendly, personal service.

6. **More information**
   https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4987473

12. Use generative AI as a creative tool in campaigns

Generative AI can support creative marketing by producing visuals, text, or concepts based on prompts. It can be used to develop unique, engaging content or to invite user participation in campaign creation. This adds novelty and engagement to digital campaigns and can help destinations reach new audiences through creative formats.

“Heinz, It Has to Be Heinz” – Kraft Heinz

1. **Theme / Focus area**
   Generative-AI visuals for playful brand storytelling.

2. **Description**
   Heinz fed text-to-image prompts such as “ketchup in space” into a diffusion model; almost every output

resembled the classic Heinz bottle, proving—tongue-in-cheek—that even AI "knows" what ketchup looks like.

3. **Results / Impact**
   Campaign delivered approximately 850 million media impressions, beat previous engagement benchmarks and earned global press, with assets reused on social, packaging and digital galleries.

4. **Tools / Technology used**
   Text-to-image diffusion model (Stable Diffusion–style), in-house creative pipeline and multichannel ad buy.

5. **Lessons learned**
   Generative AI offers a low-cost sandbox for creative ideas experimentation; if brand codes are distinctive, the outputs themselves become proof-points that audiences love to share.

6. **More information**
   https://campaignsoftheworld.com/digital-campaigns/heinz-a-i-ketchup/

13. Apply AI to adapt content and offers dynamically

AI systems can adjust marketing content automatically based on how users interact with it. This includes changing offers, layouts, or messaging across digital platforms in real time. It allows organisations to scale personalisation across large audiences without needing to manually manage multiple campaigns or segments.

Real-Time Personalisation Platform – U.S. Bank

1. **Theme / Focus area**
   Using customer data to send the right message at the right moment.

2. **Description**
   U.S. Bank brought together information from all its products (cards, mortgages, savings, etc.) in Adobe's customer-data platform and now uses it to show personalised offers on the website, in the mobile app, at ATMs and even in branches.

3. **Results / Impact**
   Within a year, personalised messages converted nearly twenty times better than before and helped the bank more than double the number of new accounts opened.

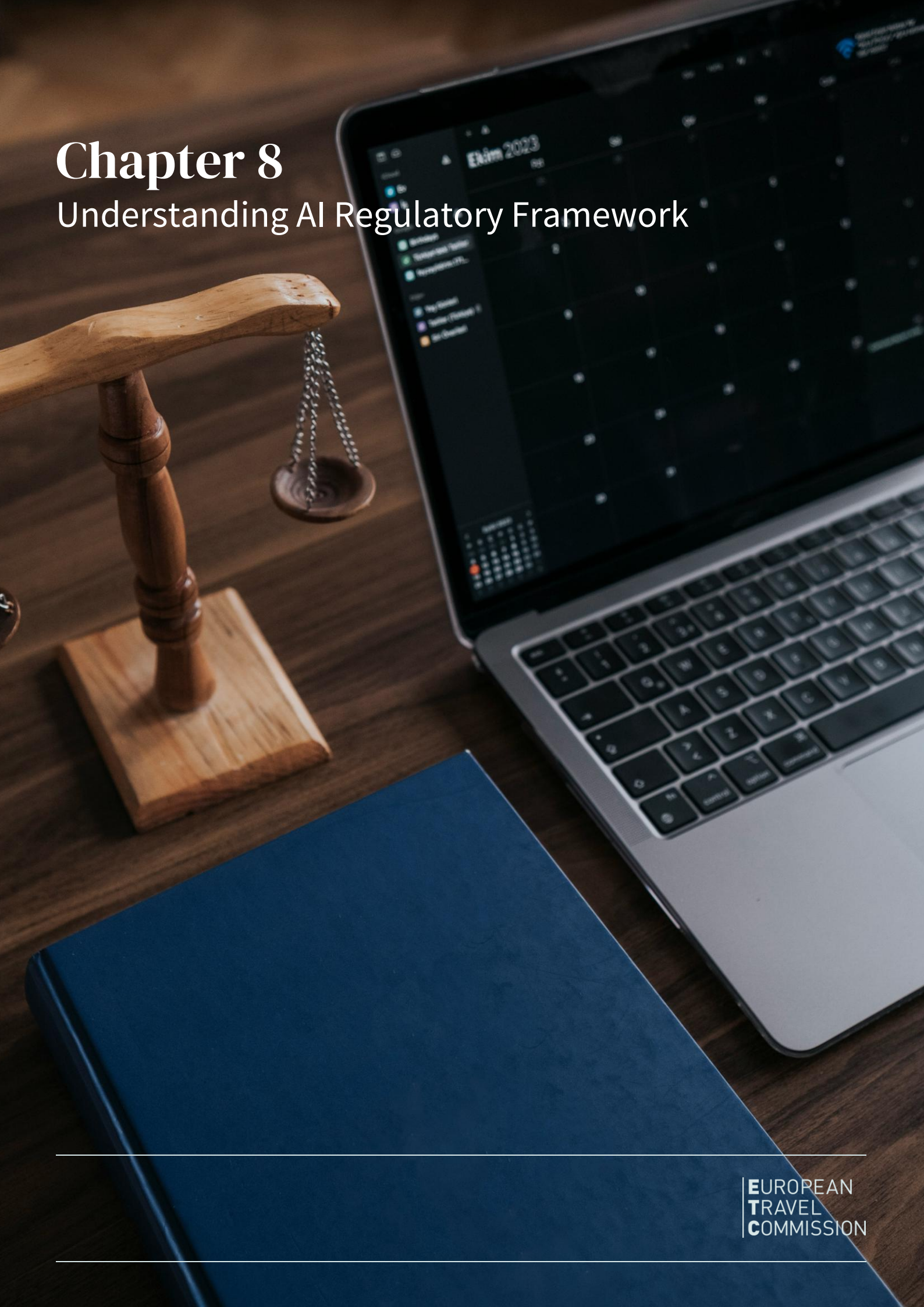
4. **Tools / Technology used**
   Adobe Experience Platform with Adobe Real-Time Customer Data Platform and Adobe Journey Optimizer, linked to the bank's existing website, app and branch systems.

5. **Lessons learned**
   A single view of each customer lets marketers act in hours instead of weeks—but only if marketing, IT and compliance teams work closely together.

6. **More information**
   https://business.adobe.com/customer-success-stories/us-bank-case-study.html

Chapter 8

Understanding AI Regulatory Framework



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Understanding AI Regulatory Framework

As showcased in previous sections, AI has moved from the periphery of tourism strategy to the heart of daily operations for many ETC members. With this shift comes the pressing need to understand, and comply with, a fast-evolving regulatory landscape while still unlocking the technology's advantages. This chapter maps that landscape and positions it firmly against the realities uncovered in the survey.

This section begins with **an overview of the European Union's AI Act, adopted in 2024 and entering its phased application period through to 2026,** as well as other authoritative reference points. Together, these instruments set the guard-rails for trustworthy AI across the Single Market and beyond.

The second part turns the lens inwards, examining **how ETC members are currently deploying AI and the extent of their regulatory readiness**. Drawing on survey responses from members across Europe, this summary outlines which functions are most AI-enabled, and how ETC members relate to current regulation.

Finally, **a concise appraisal of the risks and benefits** evident in members' present AI use is presented.

Taken together, the chapter equips ETC members with a clear view of the rules already in force (or imminently so), a benchmark of where the community currently stands, and a pragmatic understanding of the trade-offs they must manage as they scale AI responsibly.

Regulatory framework

What is the EU AI Act?

The EU AI Act, in force since 1 August 2024, is the world's first horizontal (i.e. applicable across industries) law for artificial intelligence. It aims to make AI deployed in the EU **safe, rights-respecting and innovation-friendly** by matching legal duties to the risk posed by each use-case.

Who and what does it cover?

The rules apply to any organisation that places an AI system or model on the EU market (**providers**) or uses it professionally (**deployers**). Location is irrelevant: if the output affects people in the EU, the Act bites. It is therefore important to understand whether a specific application of AI in an organisation makes one a provider or a deployer.

How does it manage risk?

The act categorises four different risk levels of AI.

- **Unacceptable risk: banned outright**
  Practices such as social scoring, untargeted scraping of faces, real-time public-space biometric ID, or AI that manipulates vulnerable groups are prohibited.

- **High risk: heavily regulated**
  AI that can seriously affect health, safety or fundamental rights (e.g., migration-control tools, credit-scoring, safety components in transport) must clear a checklist *before* launch: quality-managed development, documented risk assessment, human oversight, robust cybersecurity, and registration in an EU database.

- **Limited risk: transparency rules**
  Chatbots, recommender engines and most generative-AI tools need only two things: tell users they are interacting with AI and label synthetic content (content created with the use of AI); the model's provider must also publish a copyright-compliance policy and technical documentation for downstream users.

- **Minimal risk: largely unregulated**
  Spam filters, video-game AIs and similar everyday software remain unregulated, though voluntary "AI Pact" commitments are encouraged.

Figure 7. EU AI Risk Pyramid: Ranking AI uses from minimal up to unacceptable risk.

Other resources related to AI, AI ethics and AI regulation:

- Briefing from the European Parliament on EU AI Act
- European AI Office, centre of AI expertise
- European Commission guidelines on responsible GAI use in research
- OECD G7 Policy Paper, AI and Tourism
- Stanford University AI Index Report
- DeepLearning.ai open courses in AI

Understanding NTOs relationship with AI and AI regulation today

As of April 2025, all surveyed NTOs report using AI on a weekly basis – with between 30% to 100% of both research and marketing teams, on average across all ETC members, engaging with these tools. This is a significant figure and likely a stark contrast to only a few years ago, when such tools were neither as common nor as easily accessible. Only a few research teams report seeing no time savings at all, while others report up to 80% in time saved. This suggests that AI tools are here to stay and makes understanding current AI regulation all the more important. With 82 % of research teams and 64 % of marketing teams still in the process of deepening their understanding of the EU AI Act, the results underscore the importance of ongoing compliance initiatives. This is not particularly surprising and likely reflects a wider early stage for AI development and implementation. Many research and marketing teams are still at the early stages of operationalising AI-regulation readiness—fewer than half have begun targeted alignment efforts, and only about one in ten have completed an internal compliance assessment.

Regulation, as mentioned above, is often primarily related to risks in AI use. To better understand those risks, it is first key to understand for what purposes AI is used today and what risks (and benefits) are associated with those use cases. The table below displays the five main applications where research and marketing teams report seeing the greatest value from AI, along with how many of the surveyed team who say so.

Key AI Applications Delivering the Most Value to NTO Research and Marketing Teams (Based on Survey Responses, April 2025)	
Research tasks	**Marketing tasks**
Desk research, **75%**	Copywriting, **68%**
Administration and communication, **54%**	Search and media management, **54%**
Scripting, **50%**	Advertising, **46%**
Data analysis, **39%**	Content creation (images, video, audio, etc), **46%**
Questionnaire design, **39%**	Segmentation and personalisation, **29%**

Risks and benefits of current AI applications

This subsection enumerates the benefits and corresponding risks of each task, recognising that, within a regulatory context, it is the identified risks that fundamentally dictate the applicable regulatory obligations.

Research task	Main benefits	Main risks
Desk research	Cuts literature-review and summary production time dramatically. Ability to process multiple languages. Can act as own reviewer before human review.	Possible hallucinated citations and facts, fact-checking mandatory. Check for copyright exposure when re-using paywalled content.
Administration and communication	Rapid, clearer, error-free and tone-consistent communications.	Potential GDPR breaches if personal data fed to models.
Scripting	Speeds up prototype scripts for data scraping/cleaning. Lowers entry barrier for non-developers.	Bug and/or security flaws in autogenerated code.
Data analysis	Easier to handle open-ended surveys and text data.	Provides results that seem functional at first glance but may lack context.

	LLMs can provide specific advice for complex programs (e.g. excel, R, etc) and write code for particular analysis use-cases.	Black-box reasoning can make it difficult to explain results. Languages models have a harder time handling quantitative data.
Questionnaire design	Drafting and formatting survey questionnaires can be significantly faster. Ability to get fast second opinion and simulated survey answers in testing.	Risk of generic and/or low-quality questions if not enough human involvement.

Marketing task	Main benefits	Main risks
Copywriting	Drafts headlines & body copy in significantly faster times with easier A/B variants for testing and multilingual versions. Consistent tone guidelines if properly integrated into prompts.	Generic “AI-sounding” text can hurt SEO and/or reader trust.
Search and media management	Easier to use agentic search for scouring web for mention of destination, NTO or other strategic keywords. Assistance in speeding up SEO.	May hallucinate details or make up elements that have never existed. Unclear how SEO scoring will function in increasingly AI dominated search systems.
Advertising	Much faster campaigns, with potentially more and better assets at cost-efficient price points.	People are increasingly exposed to AI, and low-effort AI advertising may be quickly spotted and genuinely disliked.
Content creation	Speeds up blog, social, video asset production. Lowers cost of localisation and seasonal refreshes. Enables always-on content calendars.	Risk of “AI slop” (low quality, AI generated content that people avoid and actively mistrust).
Segmentation and personalisation	Can make any content match exactly how users prefer it, which can significantly boost engagement.	Over-personalisation can be experienced as uncomfortable and may breach GDPR.

Chapter 9
Futures Outlook

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Futures Outlook

Since the mid-2010s artificial intelligence has progressed at an extraordinary pace. One signal is the career choices of new AI PhDs: in 2011 roughly half remained in academia while the other half joined industry; by 2022 almost 70 % chose the private sector and barely 20 % stayed in universities[6]. Capital flows tell the same story. After years in which annual global investment in AI never exceeded USD 5 billion, funding soared past USD 20 billion in 2023[7]. These two datapoints – talent migration and surging investment – place **AI squarely in a rapid expansion** (and unquestionably "hype") phase.

Because AI is a **general-purpose technology**[8], its ripple effects may ultimately reach every industry. NTOs whose value proposition rests on knowledge creation, coordination and dissemination, are therefore likely to feel the impacts as well. While it is impossible to forecast every implication for tourism, understanding how AI reshapes knowledge work provides a practical compass. This chapter therefore:

- reviews the **main AI trends affecting knowledge-intensive organisations**,
- sketches **alternative scenario lenses**, and
- considers what these dynamics might mean for **future organisational capabilities** and roles.

Key AI trends for knowledge organisations

1. Widespread, bottom-up adoption of AI tools

Large-language-model (LLM) interfaces such as ChatGPT, Le Chat and Claude have lowered the barrier to experimentation almost to zero. Recent studies in Denmark[9], for example, report that more than 60 % of journalists, software developers and marketing professionals already incorporate AI into daily tasks – from drafting headlines to debugging code. Similar patterns are emerging across the world. The lesson for NTOs is that adoption is no longer a fringe experiment led by tech enthusiasts; it is a grassroots reality that alters team workflows. Policies and up-skilling programmes must catch up with the pace set by individual employees.

2. From chatbots to autonomous agents

The first wave of LLM-based tools acted primarily as conversational aides. The next wave adds planning, memory and ability for systems to use tools (e.g. web browsing, access to messaging and emails) creating agents capable of browsing the web, running multi-step research loops or even executing code. Early products such as OpenAI's DeepResearch can run advanced report production and produce in a matter of minutes what a junior analyst could produce in days. For knowledge organisations this raises new best-practices questions: How can these workflows be integrated and used efficiently? What are efficient (not necessarily formal) "audit" processes that can allow agents to act (semi-)independently while preserving the "human-in-the-loop" checkpoints?

3. The quest for higher-value human work and the capture gap

Automating routine cognitive chores (minute-taking, first-draft writing, basic data aggregation) frees up time, but organisational productivity gains do not automatically follow[10]. Studies across several industries show a capture gap: individuals report higher output, yet the organisation struggles to translate that into measurable performance

[6] https://hai.stanford.edu/ai-index/2024-ai-index-report/education
[7] https://ourworldindata.org/data-insights/investment-in-generative-ai-has-surged-recently
[8] National Academies of Sciences, Engineering, and Medicine. 2025. *Artificial Intelligence and the Future of Work.* Washington, DC: National Academies Press.
[9] https://bfi.uchicago.edu/insights/the-adoption-of-chatgpt/
[10] https://www.nber.org/papers/w33777

improvements. Closing this gap requires redesigning workflows, incentive structures and knowledge-management systems so that AI-generated value is retained, validated and reused rather than siloed in personal inboxes. NTOs can lead by codifying AI-augmented processes for content creation, market analysis and partner communication – preferably in open-dialogue with personnel.

4. Idea-to-prototype cycles collapse

With LLM-powered code assistants (e.g. Cursor, GitHub Copilot) and no-code tools (e.g. Lovable), non-technical staff can now spin up functional prototypes such as interactive dashboards, data pipelines, even simple booking engines in hours instead of weeks. The cost of experimentation plummets; the bottleneck shifts from building to evaluating and prioritising experiments. For tourism bodies that often juggle many small initiatives, this means decision-making frameworks must adapt: instead of evaluating ideas abstractly, steering committees may increasingly compare working prototypes and allocate resources to those that demonstrate traction.

5. Open-source parity and early signs of commoditisation

According to benchmark analyses by Epoch[11] and others, open-source foundation models trail frontier proprietary models by roughly 12 months but are closing fast. Organisations with modest budgets can already fine-tune private models that match some of the latest model-class performance while avoiding vendor lock-in and data-sharing concerns. Meanwhile, many proprietary model providers remain currently unprofitable as compute and infrastructure costs outstrip revenue. These economics hint at future commoditisation: as capabilities diffuse and price-performance improves, the distinctive advantage will shift from owning an exclusive model to mastering integration, data quality and domain-specific workflows.

Three visions of the future

In a report[12] by the American National Academies of Sciences, Engineering and Medicine on AI and the Future of Work, researchers crafted 3 scenarios:

Scenario 1: Extended Occupational Polarisation

AI is learning to handle many routine white-collar tasks, such drafting standard legal text, pulling together research notes, writing basic code, or giving first-pass medical advice. As these tools spread, mid-skill office jobs such as paralegals or claims clerks shrink, because software can now do their predictable work quickly and much more cheaply. Jobs at the very top, such as creative strategists, senior engineers, trial lawyers still grow, because big, uncertain decisions need human judgment. At the same time, in-person service roles that are hard to automate, like elder-care or hotel work, also keep growing. Degrees and elite credentials could lose some of their gatekeeping power, since a newcomer with a good AI assistant can often produce work that used to require a specialist; true experts step in only when stakes or uncertainty are high.

Scenario 2: AI Out-competes Humans

A less likely but more dramatic future imagines AI systems that match or beat people at almost every mental, emotional, and many physical tasks. If that happens, most human skills, diagnosing illnesses, writing software, negotiating deals, even creating art lose much of their market value. Wages fall, and wealth flows to the owners of the technology. Society would then face tough choices about income support, new kinds of work, and the role of humans in an economy where machines can do nearly everything. The report argues this extreme outcome is

[11] https://epoch.ai/blog/open-models-report
[12] https://nap.nationalacademies.org/catalog/27644/artificial-intelligence-and-the-future-of-work

unlikely in the next decade or so, because of technical limits, ongoing demand for person-to-person care, and history's habit of inventing new jobs when old ones fade. But the risks may be large enough to plan for.

Scenario 3: Mass-Expert Complementarity

In a more hopeful path, AI serves as a powerful helper that lifts human judgment instead of replacing it. Smart tools supply facts, spot risks, and explain their suggestions, so professionals make quicker, safer decisions. A nurse practitioner can diagnose and prescribe with an AI double-check, calling in a doctor only for the toughest cases. A junior coder learns on the job with a code copilot. Because AI removes much of the drudge work and speeds up learning, many more people can reach near-expert performance in new fields, while humans focus on overseeing AI, inventing new ideas, and offering highly personalised services. Achieving this future depends on deliberate design: companies, educators, and regulators must choose to build AI that augments people, invest in training, and keep humans in the loop.

Conceptualising the new model for knowledge work

Knowledge work is changing. Generative AI can now increasingly automate large portions of an organisation's workflow. Modern tools can draft text, write code, summarise meetings, search vast information sets, and present insights intuitively. Many dull or repetitive tasks are therefore ripe for automation—e.g., converting data into standard formats or combing lengthy documents for relevant content. What AI still cannot do is make accountable decisions, and that limitation will likely remain: models cannot be held responsible for their choices. Ultimately, a human must own both the decision and its consequences.

This creates a paradox. While AI simplifies execution, it must still be guided by humans who decide *what* to do and *why*. Employees who have never needed to articulate their work may now spend part of their day explaining tasks to an AI system. The shift looks can be captured as a "before and after AI" in figure 7. If ways of working are not redesigned, there is a risk of no real efficiency gain: bottlenecks migrate from execution to decision-making. Teams could end up waiting for meetings to approve next steps while lacking the authority to advance automated processes themselves.

Previously (without GAI) most steps in a standard process belonged to the human, and most of the work falls on performing a given task. With GAI, this is changing. Performing the task can increasingly be delegated to AI (with proper supervision), which means the typical tasks of reviewing and evaluating quality is where humans may spend more time on. This is represented by the relative size of the circles in the model in figure 7. Over time, performing the tasks may occupy an ever-smaller share of a given workflow—and increasingly falls within the computer's domain. By contrast, defining, deciding, and evaluating tasks will likely remain time-consuming and must still be led by people.

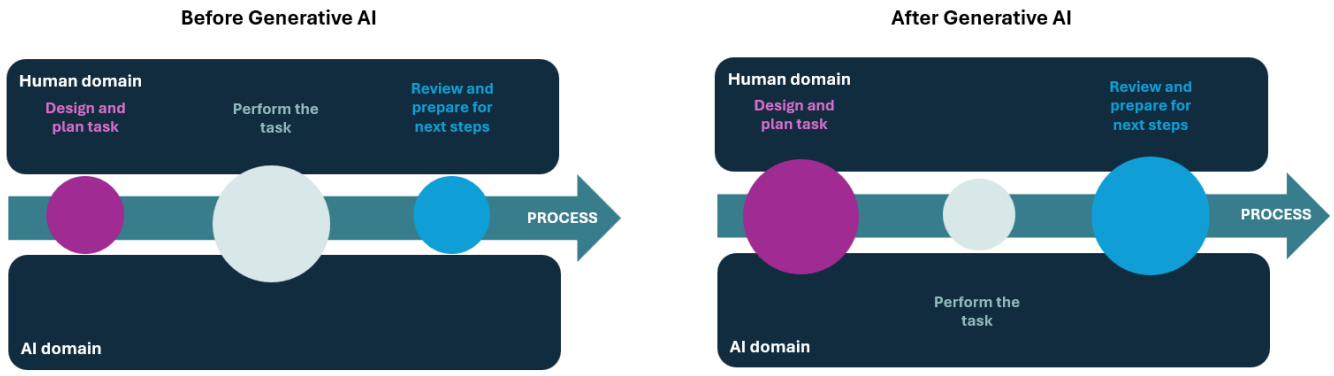

Figure 9: Shift in work processes for knowledge work.

Is everyone becoming a manager?

As task coordination and instruction grow in importance, employees effectively assume more managerial duties. Organisations must address how to distribute this new workload. Self-leadership is already cited as a critical 21st-century skill, and AI is accelerating the move from hierarchical structures toward more individualised ones—for better and worse.

A related issue is culture. If AI assistants handle more work, will humans interact less (or perhaps more) with each other? The answer will depend on role and task, and may evolve as new practices take hold. These are long-term questions every organisation needs to monitor while considering the broader shifts that AI tools make probable.

Chapter 10
Conclusion

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Conclusion

Artificial intelligence is already producing observable effects within Europe's NTOs, yet implementation remains largely exploratory. Empirical evidence from the mapping study indicates that a small subset of members acts as early adopters, while **the majority are engaged in short-term pilots and other types of trials intended to test feasibility rather than to achieve operational scale.** Across the sample, employee sentiment is consistently favourable: interest in AI applications is high and overt resistance is minimal, creating a receptive environment for further diffusion.

Functional analysis reveals a marked differential in maturity. **Marketing departments score higher on perceived usefulness**, current capability and inter-organisation convergence than research units. This discrepancy is attributable to the presence of well-defined marketing use-cases such as automated content generation, where benefits are readily quantifiable and tangible. Research teams, by contrast, report greater uncertainty about AI's potential contributions to data acquisition and insight generation, and correspondingly lower levels of adoption.

Human-capital factors represent the principal constraint on progress. **Limited AI expertise and insufficient training opportunities were cited most frequently as barriers in both functions.** For research departments, an additional impediment is the absence of a clearly articulated strategy or roadmap; for marketing, budgetary limitations are more salient. Technological access and infrastructure issues were mentioned far less often, suggesting that **capability gaps outweigh resource availability at this stage**.

The evidence leads to several actionable implications. First, **allocating structured time for experimentation** – through informal hackathons, internal innovation sprints or simple workshops – would leverage existing staff enthusiasm while generating organisation-specific insights. Second, **prioritising role-specific training programmes** is likely to yield greater returns than generalised awareness sessions, particularly if internal early adopters are incorporated as peer instructors. Third, the **development of function-level roadmaps** could improve alignment between exploratory projects and longer-term objectives: research units require illustrative pathways from descriptive analytics to advanced modelling, whereas marketing teams benefit from frameworks linking pilot performance to relevant metrics. Finally, **incremental increases in dedicated AI budgets, contingent on demonstrable outcomes,** would enable successful pilots to transition into sustained operations. In sum, NTOs possess positive conditions for AI uptake; systematic capacity-building and strategic leadership now represent the main levers for advancing from exploration to utilisation.

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