

Lightweight Content Generation Tool

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Abstract

The rise of generative AI, powered by large language models like GPT-4, is reshaping how organizations create and communicate, particularly in marketing. It enables scalable, personalized, and adaptive content strategies that enhance both efficiency and audience engagement in an increasingly crowded digital landscape.

This paper addresses the topic proposed by Expleo through a progressive analytical approach, ultimately clarifying the research and system development objectives. The final aim is defined as follows: to investigate trending topics from the past year, identify current market dynamics, analyze the strategic positioning of Expleo's competitors, and derive data-driven insights. Based on these findings, the study generates detailed content outlines across five different content formats, each designed to support one or more of Expleo's three core strategic functions—brand positioning, talent acquisition, and target client engagement. Each content format includes clearly defined key insights, the specific function it serves, its intended audience, distribution strategy, and priority level.

Furthermore, the study introduces a Lightweight Content Generation Tool powered by OpenAI's latest language model. This developed tool offers a compact, flexible solution that generates structured content with as few as three lines of command. The paper presents validation results for the tool, showcases examples of final outputs generated from the detailed outlines, and concludes with innovative recommendations on sustainable, AI-powered precision marketing strategies for Expleo.

Authorship Declaration

I hereby declare that this dissertation is entirely my own work and that it has not been submitted, in whole or in part, for any other degree or professional qualification. All sources of information and assistance have been properly acknowledged and referenced.

I understand the academic regulations regarding plagiarism and affirm that this work complies with the institutional standards of academic integrity.

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Introduction

Expleo is a global technology and engineering consultancy that delivers end-to-end services in digital transformation, quality assurance, and systems innovation. Operating in over 30 countries, the company serves a diverse portfolio of industries—including aerospace, automotive, finance, and energy—by combining strategic foresight with advanced technical execution. Recognized for its AI-driven capabilities and commitment to sustainable engineering, Expleo positions itself as a trusted partner in helping organizations navigate increasingly complex digital landscapes.

This study was initially conceived to investigate emerging market conversations and content trends, with the aim of uncovering actionable insights that could inform content strategy and competitive positioning for Expleo. The original scope included analyzing long-term data patterns to guide the creation of content blueprints aligned with the company's core messaging and audience segments. However, in response to the limitations of generative AI models when applied to static or outdated datasets, the methodology was refined to prioritize recency and relevance.

Focusing on trending topics from the previous year, the project centers around three strategic pillars critical to Expleo's brand communication: brand awareness, talent acquisition, and client engagement. For each of these pillars, five content format blueprints were developed, structured to include core insights, objective alignment, audience targeting, distribution planning, and content prioritization. This structured, modular framework equips marketing teams with a dynamic toolkit for rapidly generating and refining content in line with brand objectives, market signals, and evolving user needs—thereby enabling a more responsive and sustainable content strategy cycle.

1. Requirement Analysis

1.1 Why examine the topics of the past year

- Understanding present and emerging trends requires contextualizing them within past developments. By analyzing changes in industry dynamics, technological innovation, and consumer behavior over the past year, we can discern which topics are gaining momentum and which are becoming obsolete.
- The past year offers the most complete and analyzable data window. Market reports, social media analytics, and competitor activities are best documented within this timeframe, providing a reliable foundation for trend identification and strategic planning.

1.2 Why define current trends

- Content marketing must both follow and lead trends, then to maximize brand visibility and engagement, Expleo must align its messaging with the current focal points of the industry, while also positioning itself as a thought leader.

- Trend definition informs brand positioning, which means it is essential to identify the wave Expleo intends to ride before determining content formats and messaging strategies. This alignment enables precise audience targeting and relevant topic selection.

1.3 Why analyze competitor strategies

- Benchmarking drives strategic differentiation by evaluating how competitors approach branding, recruitment, and promotion, Expleo can uncover strategic gaps or areas for competitive advantage.
- Avoid redundancy and highlight uniqueness, such as "digital transformation" or "AI engineering"—helps Expleo either differentiate its messaging or approach the same topics with greater nuance.
- Learn from competitor strategies worked and why enables Expleo to adopt and adapt proven approaches.

1.4 Why rely on data-driven insights

- Effective content cannot rely on intuition alone. Every strategic recommendation must be grounded in measurable indicators—such as customer behavior, click-through rates, and engagement metrics—to ensure both credibility and impact.
- Data-backed strategies are more persuasive for internal stakeholders, fostering cross-functional support and execution.

1.5 Why diversify content formats

- Omnichannel marketing requires format adaptability, short videos suit social media, whitepapers work for websites, etc.
- Audience segmentation dictates content preferences.
- Repurposing allows one insight to be disseminated via multiple formats, increasing reach and return on effort.

1.6 Why provide a detailed content outline

- A detailed outline facilitates systematic thinking by ensuring that all content is logically connected, coherent, and well-structured, thereby preventing redundancy, abrupt jumps, or omissions.
- Serving as a goal-oriented tool, the outline consistently guides focus towards the goal requirements, minimizing the risk of deviation or digression.
- In a collaborative project, the outline acts as a shared framework that clarifies each team member's responsibilities, timelines, and content direction.
- It provides users with an excellent reference point, enabling them to brainstorm, further develop, or optimize the work, ultimately enhancing the quality of the final output.

3. Lightweight Content Generation Tool

3.1 Tool Overview

We are working based on the top 10 most effective content formats for media-based marketing in 2024. The task is to select any 5 distinct content formats and develop a detailed outline for each, including the following components:

- content format
- key insights in bullet points (the more the better),
- relevant business objective (branding/recruitment/client acquisition)
- target audience
- recommended distribution strategy
- priority level from 1 to 5 (1 = highest)
- a brief explanation (1–2 sentences) to clarify its relevance or strategic intent

The results should be sorted and formatted according to priority level and saved as a .doc file locally for the user to easily retrieve, review, and optimize when needed.

3.2 Top 10 Performing Content Formats in 2024

- Blog Posts
 - Essential for SEO, drive organic traffic, and showcases brand expertise.
 - Suit for B2B, thought leadership, brand marketing, and client acquisition.
- Videos
 - Highly engaging; ideal for storytelling, product demonstrations, and social sharing.
 - Suit for brand and product marketing, social media campaigns, recruitment.
- Social Media Content
 - Delivering rapid reach, fosters interaction, and enhances brand visibility.
 - Suit for brand marketing, talent attraction, event promotion, and B2C lead generation.
- Case Studies
 - Offer tangible proof of value and build trust—especially in long B2B sales cycles.
 - Suit for B2B sales enablement, client acquisition, investor relations.
- Infographics
 - Present complex data in a visually digestible and shareable format.
 - Suit for brand visibility, educational campaigns, and content syndication.
- Webinars
 - Enable real-time interaction, educational value, and high-quality lead generation.
 - Suit for B2B lead generation, talent engagement, partner enablement.

- Email Campaigns
 - Personalizable, high ROI, and ideal for nurturing and converting leads.
 - Suit for lead nurturing, client onboarding, conversion campaigns, and re-engagement.
- E-books
 - Provide in-depth insights and serve as premium content for capturing leads.
 - Suit for B2B lead generation, enterprise marketing, and thought leadership.
- User-Generated Content (UGC)
 - Build authenticity and community trust through social proof.
 - Suit for B2C marketing, talent branding, and brand loyalty.
- Templates & Checklists
 - Offer actionable value and are highly effective as downloadable lead magnets.
 - Suit for lead capture, client onboarding, and productivity-focused campaigns.

4. System Implementation

4.1 Apps and version used

- Python: 3.10.12
- Anaconda3: 2024.10-1
- Model: GPT-4.1 (the best model tested till now)

4.2 Anaconda Installation Guidance

- Go to the official website: <https://www.anaconda.com/download>
- Choose the right system according to your pc: Windows (.exe), macOS (.pkg), Linux (.sh)
- Download it
- Take window installation as an example:
- Double-click the downloaded .exe file.
- Click Next, accept the license, and choose “Just Me” or “All Users.”
- Choose the installation location
- Check “Add Anaconda to my PATH environment variable”
- Click Install, then Finish.
- Generate the configuration file by running the following command Anaconda Prompt: `jupyter notebook --generate-config`
- Then, go to the file path shown in the output (usually something like `C:\Users\YourName\.jupyter\jupyter_notebook_config.py`)

- Open it with notepad++ or txt
- Find the following line, and modify it as needed: `c.NotebookApp.notebook_dir = 'D:/MyProject(c.NotebookApp.notebook_dir = 'D:/MyProjects(put your own project folder)'`
- Save the file and quit

4.3 “PROMPT” we used

PROMPT = """

Conduct thorough research on popular topics to identify emerging trends, analyze competitor strategies of Expleo company, and gather data-driven insights, focusing on 2024.

Based on the research, generating engaging content ideas tailored to Expleo company according to below three main business objectives:

1. Strengthening brand visibility
2. Attracting and hiring top talent
3. Reaching and engaging target clients

There are top ten different content formats, including Blog Posts, Videos, Social Media Content, Case Studies, Infographics, Webinars, Email Campaigns, E-books, User-Generated Content, Templates.

Please select 5 content formats from the list and provide the following six items for each: (1) content format, (2) key insights in bullet points (the more the better), (3) relevant business objective (branding/recruitment/client acquisition), (4) target audience, (5) recommended distribution strategy, (6) priority level from 1 to 10 (1 = highest), and each item should be accompanied by a brief explanation (1–2 sentences) to clarify its relevance or strategic intent.

Please respond in a well-formatted JSON array.

"""

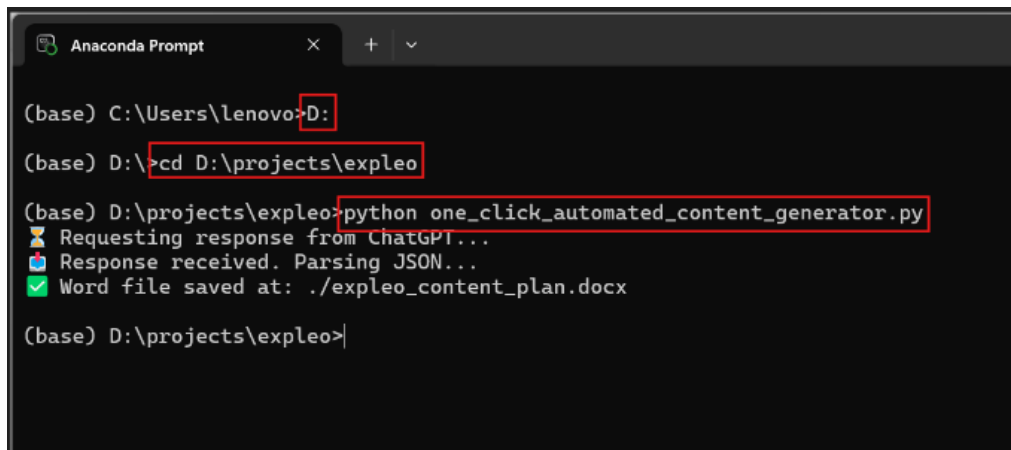
This prompt is designed to guide our tool on how to generate the desired outputs based on the given content. For testing purposes, we are producing five distinct content formats here. However, we recommend generating 10 distinct content formats, as the output from the generator is likely to remain consistent whether it is run on April 1 or June 1, 2025—given that the trending topics from the past year typically remain unchanged.

Additionally, producing 10 high-quality, diversified content pieces is generally sufficient to support a full year of marketing activities.

4.4 How to use the tool

- Search Anaconda Prompt (install with Anaconda) at start bar in your pc
- Open it
- Put our generator code file (`one_click_automated_content_generator.py`) at: `D:\projects\expleo` (you could change to other folder)

- Input command as below screenshot showed in red frame:



```
(base) C:\Users\lenovo>D:
(base) D:>cd D:\projects\expleo
(base) D:\projects\expleo>python one_click_automated_content_generator.py
🕒 Requesting response from ChatGPT...
📄 Response received. Parsing JSON...
✅ Word file saved at: ./expleo_content_plan.docx
(base) D:\projects\expleo>
```

- Open the folder D:\projects\expleo, you could find there is a doc named expleo_content_plan.docx
- Open the doc file and edit it as you want (the generated content examples is upload in GitHub)

4.5 Code, results and video link

- GitHub (code and results): <https://github.com/AliceCQ-dev/Lightweight-Content-Generation-Tool>
- YouTube video: <https://www.youtube.com/watch?v=I0xN7Y-RtWE>

5. Examples Demonstration

How to use the generated content is also very important, it is just like they provide the perfect idea to us, but the product still depends on us.

Firstly, Internal teams can further refine content for campaigns.

Secondly, text outputs feed into ChatGPT for language polishing.

Thirdly, visual content is generated via Canva.

Fourthly, final assets are compatible with Expleo's standard tools.

Below are two different contents directly generated from ChatGPT, which is kindly for reference.

5.1 The input of content outlines

The content shown is a document generated by our lightweight content generation tool and saved on the local machine, as illustrated in the screenshot below.

▪ **Infographics**

Key Insights:

Visual content is highly shareable and effective for communicating complex data quickly.
Competitors use infographics to summarize reports, showcase trends, and highlight key outcomes.
Data-driven infographics about market trends, client success metrics, or technology adoption rates position Expleo as an industry authority.
Infographics boost engagement on social media and are useful in presentations and pitches.

Objective:

Strengthening brand visibility

Target Audience:

Current and prospective clients;
media;
and industry analysts;

Recommended Distribution Strategy:

Share on LinkedIn;
Twitter;
and slide-sharing platforms. Embed in blog posts and reports;
and include in email campaigns to maximize reach.

Priority Level (1=highest):

5

Explanation:

Infographics increase content shareability and are effective for both top-of-funnel awareness and supporting other content formats like blogs and case studies.

5.2 The output from ChatGPT

For this demonstration, we simply pasted the content generated by our tool directly into the official ChatGPT website, without using any advanced paid APIs and without further editing or optimization by our marketing team. The resulting output, shown below, is already sufficient for publication on a marketing account. However, we do not recommend direct pasting in practice, as additional refinement can further enhance content quality and maximize audience engagement.



6. Conclusion

This paper systematically analyzed the evolving needs of the client, Expleo, and defined both the research scope and the development objectives accordingly. Based on this, we successfully designed and implemented a compact, lightweight, user-friendly, efficient, and high-quality tool that directly meets the client's requirements. The results obtained from real-world testing further validated the effectiveness and reliability of the tool, confirming that it meets expectations.

We hope that this paper not only delivers a practical solution for Expleo but also offers valuable insights and inspiration for others exploring sustainable and intelligent approaches to marketing management.

7. Future Work and Prospects

The tool we developed represents just one component of the Green Sustainable Precise Marketing Strategy. The broader initiative also includes:

7.1 Lightweight Precision Content Distribution Tool

The top 5 major digital advertising platforms generally offer robust APIs and sample code for programmatic campaign management. This enables automation of precise content delivery—similar to our "one-click automated content generator" system. Taking LinkedIn as an example, precision ad targeting via its API involves:

- Utilizing the LinkedIn Marketing Developer Platform, including:
 - Ad Accounts API
 - Campaign Management API
 - Audience Targeting API
 - Ad Creative API
- Registering on the LinkedIn Developer Portal
- Creating an app and requesting necessary permissions
- Obtaining an access token via OAuth 2.0
- Using Python (e.g., with the requests library) to:
 - Fetch ad account info
 - Set up targeting logic
 - Schedule and push content automatically to users based on selected criteria

7.2 Lightweight Marketing Data Analysis Tool

The first step is to define key performance indicators (KPIs), such as:

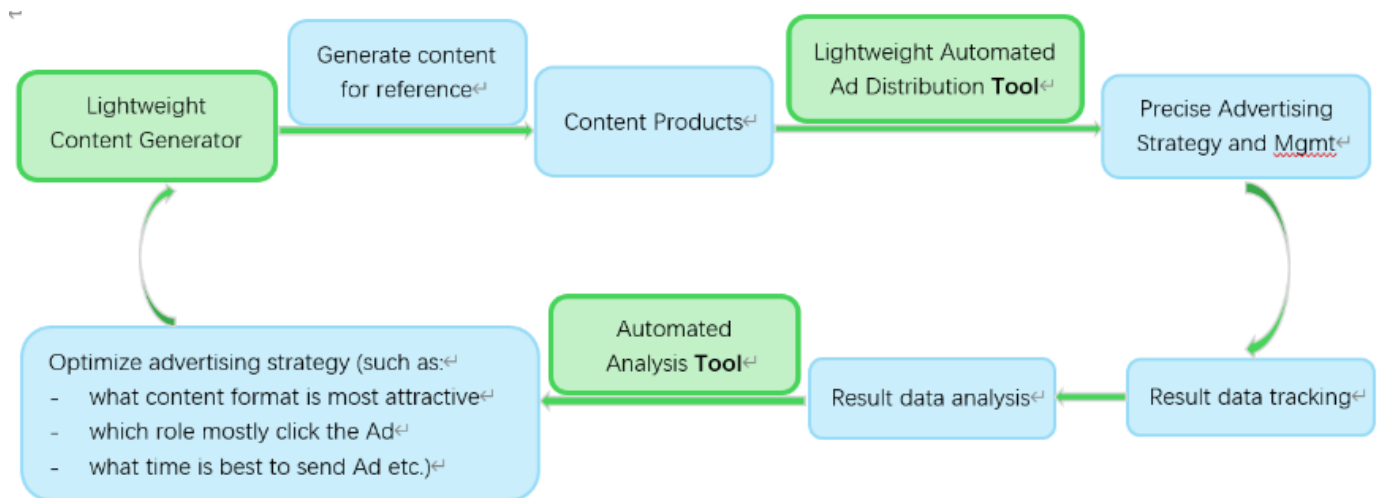
- Total reach (targeted impressions)

- Click-throughs
- Post-click inquiries
- Conversions (actual deals closed)
- Revenue generated

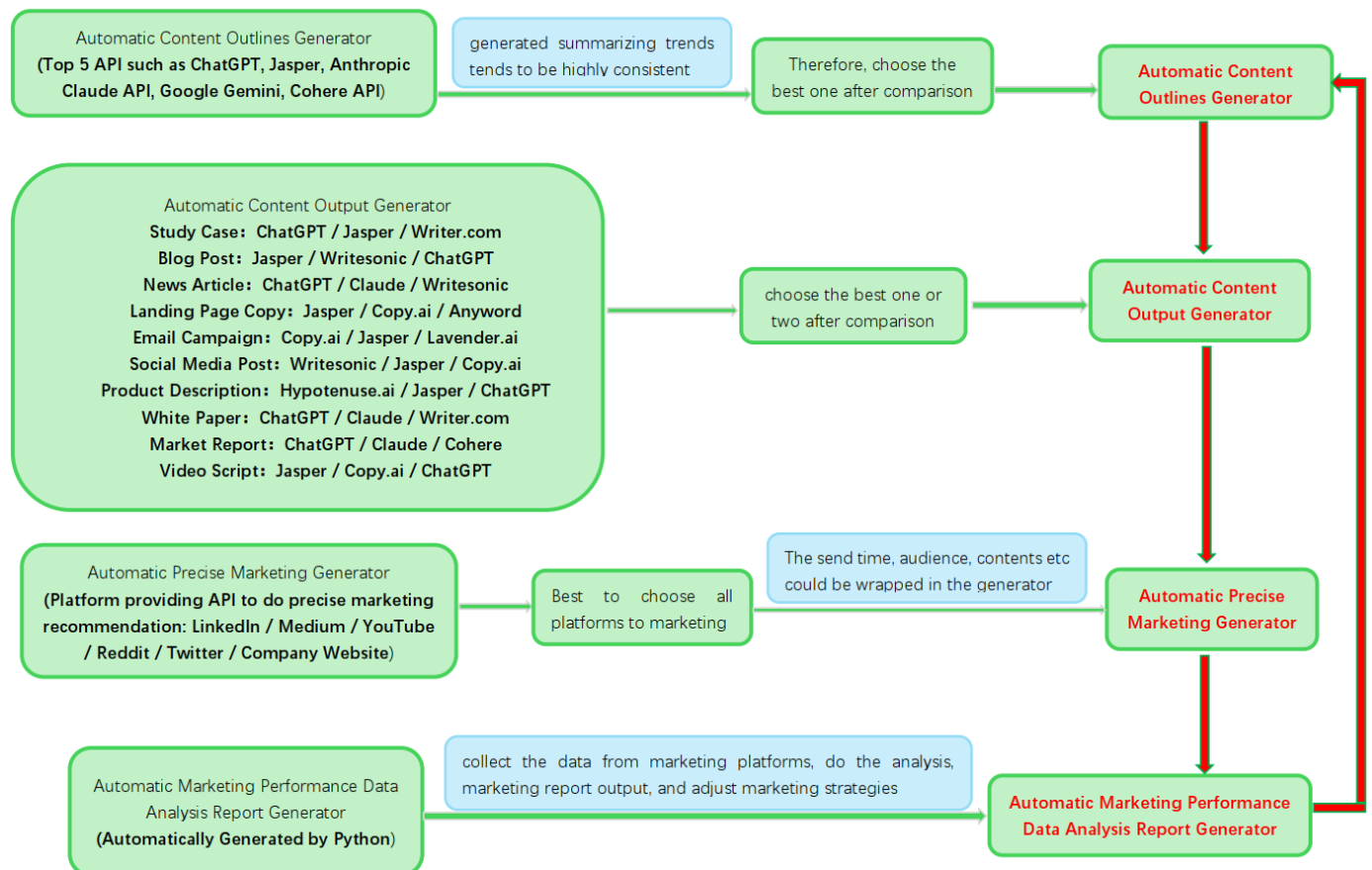
Most advertising platforms provide data dashboards or export functions that allow advertisers to monitor campaign results in real time. With structured data collection and analysis, users can adjust their targeting strategies iteratively and effectively.

7.3 Prospect of Green Sustainable Precise Marketing Strategy

Regardless of industry, marketing is a core driver of growth. With the evolution of large language models (LLMs) and AI, the ability to harness these tools effectively is becoming a major differentiator, the framework of the Green Sustainable Precise Marketing Strategy is as below:



This establishes a green, self-reinforcing ecosystem for precision marketing, offering practical recommendations tailored to the client's long-term goals. The strategy could be expanded in the future by integrating additional AI-driven and automated tools to form a comprehensive solution or application for managing precision marketing campaigns. Based on the above concepts, we conducted further research and identified corresponding AI applications along with our recommendations. The detailed workflow is illustrated in the following diagram.



8. Acknowledgment

During the development and documentation process of this project, I utilized the most powerful GenAI tool, OpenAI's ChatGPT, as a supplementary tool to enhance efficiency and quality. Specifically, ChatGPT was employed to assist in:

- Finding relevant research materials and technical references
- Translating technical terms and concepts into fluent and professional English
- Refining the language, formatting, and structure of written content

All technical decisions, implementations, and perspective were conducted and validated independently, with AI assistance serving only as a supportive resource.

9. References

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