Report: Impacts of User-LLM Relationship

Introduction – General Framework

1.1 Context and Justification

Artificial intelligence (AI) currently generates as much enthusiasm as concern, leading to radical discourses about its benefits or harms (such as "AI will replace us all"). In a context of accelerated digitalization of economies, the widespread adoption of generative AI models (like LLMs) is disrupting professional, educational, and social practices, and perhaps **even the structure of our societies**. This report offers an analysis of the positive and negative socio-economic impacts of AI in OECD countries, linking available **quantitative data with a qualitative analysis** of current uses, perceptions, and dynamics.

1.2 Key Opening Data

Higher Education Level (source: OECD 2022)

-On average, **40% of 25-64 year olds in OECD countries have a higher education degree.**

-This proportion exceeds 50% among 25-34 year olds in some countries (Canada, Estonia).

In short: These figures provide an idea of the educational framework for the potential integration of AI into society and the world of work. **A high level of education increases the capacity for adopting AI tools.** This point is not specific to individuals from elite universities but is still quite indicative of the current trend.

AI Adoption by Businesses (source: European Commission, 2024)

-13.5% of European companies with more than 10 employees use AI in 2024.

+5.5 percentage points in one year.

Up to 41% in large companies.

Therefore: Usage is growing fast, especially in technological sectors, but remains moderate in very small and small and medium-sized enterprises (VSMEs and SMEs) for now.

1.3 Objectives of Part 1.

Map the current effects of AI on the world of work, education, and inequalities.

Distinguish between uses by automation and by augmented assistance.

Identify real perceptions among professionals (teachers, managers, unions).

Propose a reflection on the conditions for ethical and beneficial AI development.

Part 1: Automation, Media Fantasy Versus Reality of AI Assistant Usage

"Artificial intelligence will eliminate 300 million jobs"—Le Figaro, March 2024

Comment: This figure is repeated **without direct source or nuance.** It relies on a Goldman Sachs report often misinterpreted. No sector or country is specified, which makes the information difficult to use.

"With ChatGPT, I lost my job in 2 weeks"—Le Parisien, June 8, 2025

Comment: The article recounts the isolated case of an administrative assistant, **without verifying if the position was already vulnerable**. No investigation into the actual uses of AI in society is conducted.

Note: On YouTube, simply type "artificial intelligence": you will see that, in the majority of cases, **AI is a topic used to sell training by fear of being replaced**. For copyright reasons, I am limited in my description, but I trust your wisdom to understand.

In summary

The collected figures and testimonies show a nuanced reality. AI, today, is primarily:

An assistant for cognitive or repetitive tasks

A complementary tool, particularly in education or office automation

A strategic stake in some companies, but not a driver of mass layoffs

We will address this point immediately:
Qualitative Observation: **The Real Use of AI in Educational and Professional Environments**

Contrary to the alarmist narratives conveyed in some media, the daily use of artificial intelligence, as it emerges from field testimonies, reveals a completely different dynamic: that **of collaboration, much more than substitution.**
Education: Assistants More Than Replacements

Teachers use LLMs (like ChatGPT or Gemini) for:

-Generating personalized course materials;

-Creating quizzes, summaries, model answers;

-Adapting educational content to students' actual levels.

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"I use it to adapt my content for struggling students, or to rephrase instructions. It saves
me time."
— High school teacher, Lille academy.
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Students use them to:

-Rephrase misunderstood concepts;

-Get complex concepts explained synthetically;

-Draft outlines or brainstorm project ideas.

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"For my thesis, ChatGPT helped me organize my ideas. Not to cheat, just to structure my
thoughts."
— Law degree student, Paris Nanterre.
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Striking fact: **no testimony describes a marginalization of the teacher.** AI is used as an educational accelerator, not as a substitute.
Businesses: AI as a Lever for Targeted Productivity

Managers use it to:

-Draft or proofread emails, summarize reports;

-Prototype ideas (e.g., prompts for image generators or code);

-Support decision-making through data summaries.

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"I use GPT to summarize my meeting reports. It allows me to keep the essential points
without spending an hour on it."
— Manager in a Digital Services Company (ESN), Lyon.
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Technical employees (developers, analysts, etc.) report using it to:

-Correct or explain code;

-Automate time-consuming and repetitive tasks;

-Create scripts or unit tests more quickly.

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"I never code without it anymore. It saves me two hours a day, but I always keep control
over decisions."
— Python Developer, Toulouse.
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Major common point: AI is rarely "left autonomous"; **it operates under constant human supervision.**

It should be noted that the only "automated" AI introductions would then be the AIs used by public services.

We have all heard, for example, about facial recognition AIs in China or AIs in France that read our license plates to fine us.

It is ironic to note that the entity that automates the most with AI is the one that seems to fear it the most.

Part 2: Popularization of LLMs and Epistemological Hypothesis

2.1 What is Generative AI? And how do LLMs fit into it?

First, it is important to put things in context. In 2022, what the world discovered on a large scale was just one type of AI! **Too many people have since thought that ChatGPT is AI.** AI is a technique conceived in the 1960s. The intellectual approach, following the development of computing tools, was to transpose the actions of the human mind into hardware or software components. And, as such, ChatGPT is a generative AI, like Claude or Gemini.

A generative AI is a type of artificial intelligence capable of creating new content from training data: text, images, music, code, etc.

Unlike a classic AI that merely classifies, detects, or predicts (for example: recognizing a face, detecting fraud), a generative AI produces something new: a text, an image, a fiction, or even a design.

It does this from what is called a Token. **A token is a basic unit of language that AI uses to understand and generate text, images or else**. To better understand what a token is, it would be like a small piece of text that the LLM uses to understand language. For example, a word, like 'cat', is an example of a token.

Note: **A token is not always a complete word** (for example, "extraordinary" can be divided into several tokens).

An LLM (like GPT or Claude) is a generative AI specialized in language. It does not just analyze text: it generates sentences, responses, ideas, by following probabilities of association between words (or tokens).

This means that an LLM, when it responds to you, does not try to describe a reality. It simply calculates the most probable words to answer you based on the data at its disposal. This remark will be very important in the rest of our report.

2.1 How does an LLM (Large Language Model) work?

An LLM (Large Language Model) **is an artificial intelligence trained on billions of words, phrases, and texts from the Internet,** books, articles, and forums. Its objective is simple but powerful: to predict the most probable next word in a given sequence.

To do this, **it transforms each word into a mathematical vector** (via embeddings), learns the statistical relationships between words, and, through successive layers (transformers), refines its predictions. It has no "consciousness," but it can produce remarkably accurate responses due to the depth of its training.

2.2 Fundamental Limits: Probability is Not Understanding

An LLM does not think. It models probable structures of human language. It does not understand what a table is; it knows that the word "table" is often followed by "wooden" or "in the dining room."

It can therefore seem intelligent, without being so. But this illusion of understanding sometimes allows for relevant uses, especially when the LLM is well-used.

2.3 An Epistemological Parallel with Human Thought

Humans do not directly access truth. They create theories, models to approach reality: in science, philosophy, economics. These models evolve according to historical, logical, social, technological, or even natural criteria.

However, these models use language: they are sentences, hypotheses, reasonings. Humans also manipulate symbols to approach a world they cannot fully grasp.

In short, as Kuhn believed, a scientific theory, or more broadly, knowledge, describes reality with high probability, a probability validated by experience.

Thus, we can formulate a hypothesis:

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Hypothesis: If humans approach truth through modeling, then a well-used LLM could also
approach it. Not through understanding, but through the intermediary of collaborative use.
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2.4 The Importance of Usage in Improving Results

An LLM alone, when reading a text coldly, does not improve. But an LLM actively solicited by a user, who provides context, critiques, revisits responses, creates a co-constructive process, potentially becomes more relevant, more adapted.

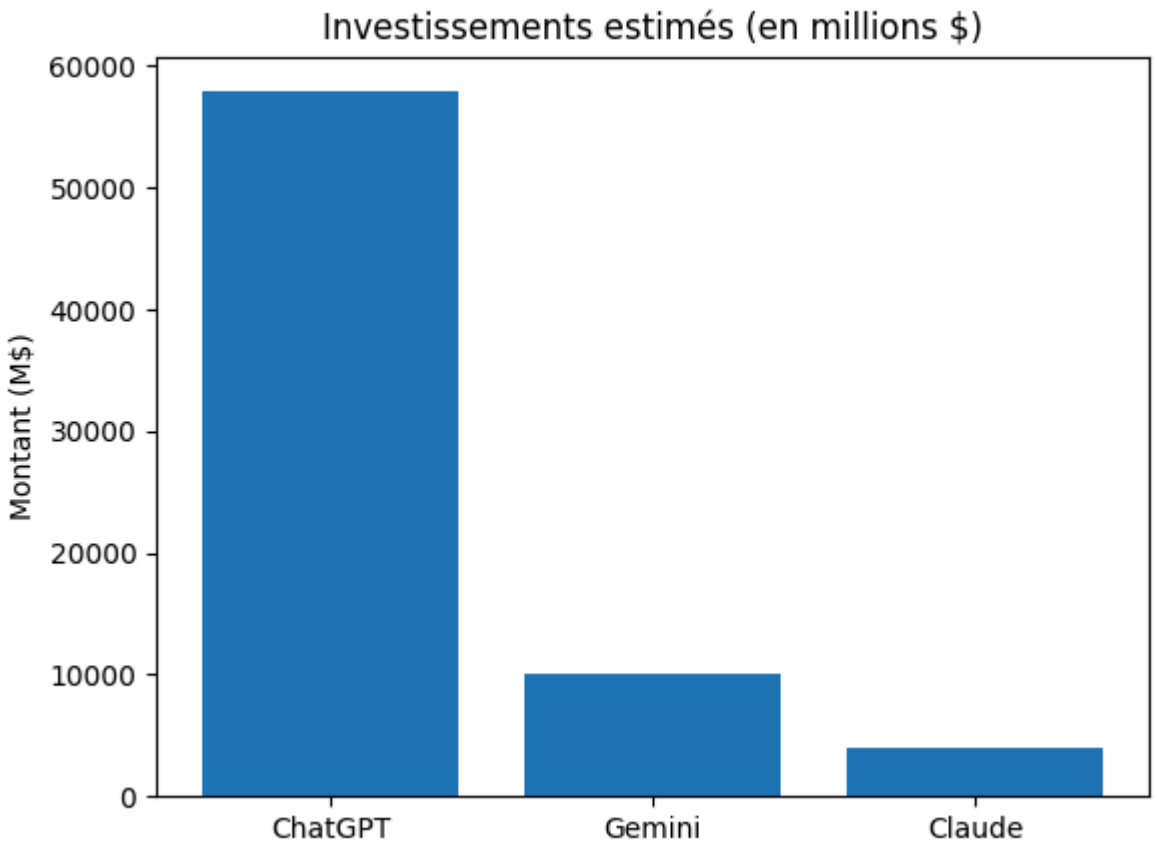
In this hypothesis, the performance of the LLM would not depend solely on its power or funding, but also on the level of user engagement.

Thus, in Part 3, we will focus on the impact of human usage on LLM performance, with a qualitative study and avenues for further exploration. This is a fascinating part to study but cannot be fully addressed by an individual study.

Part 3 — Why does the question arise?

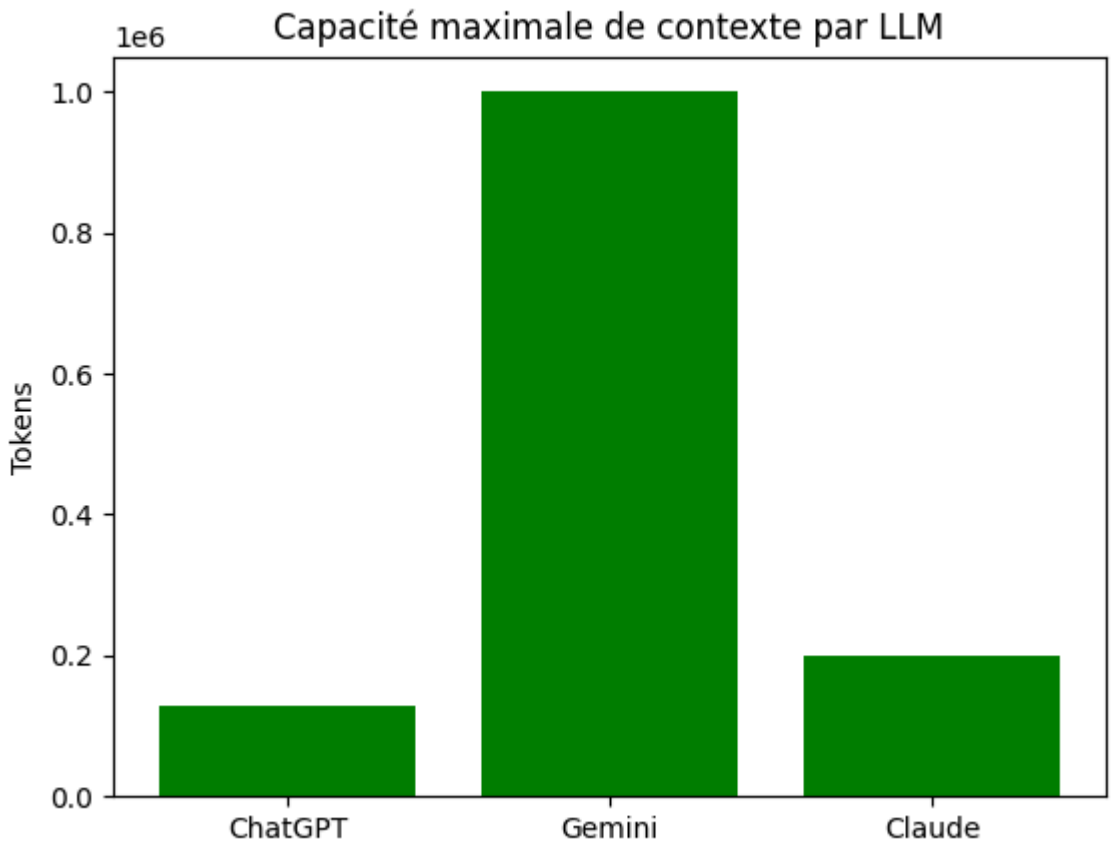
3.1 Three visual observations that contradict a linear reading of performance

Investments:



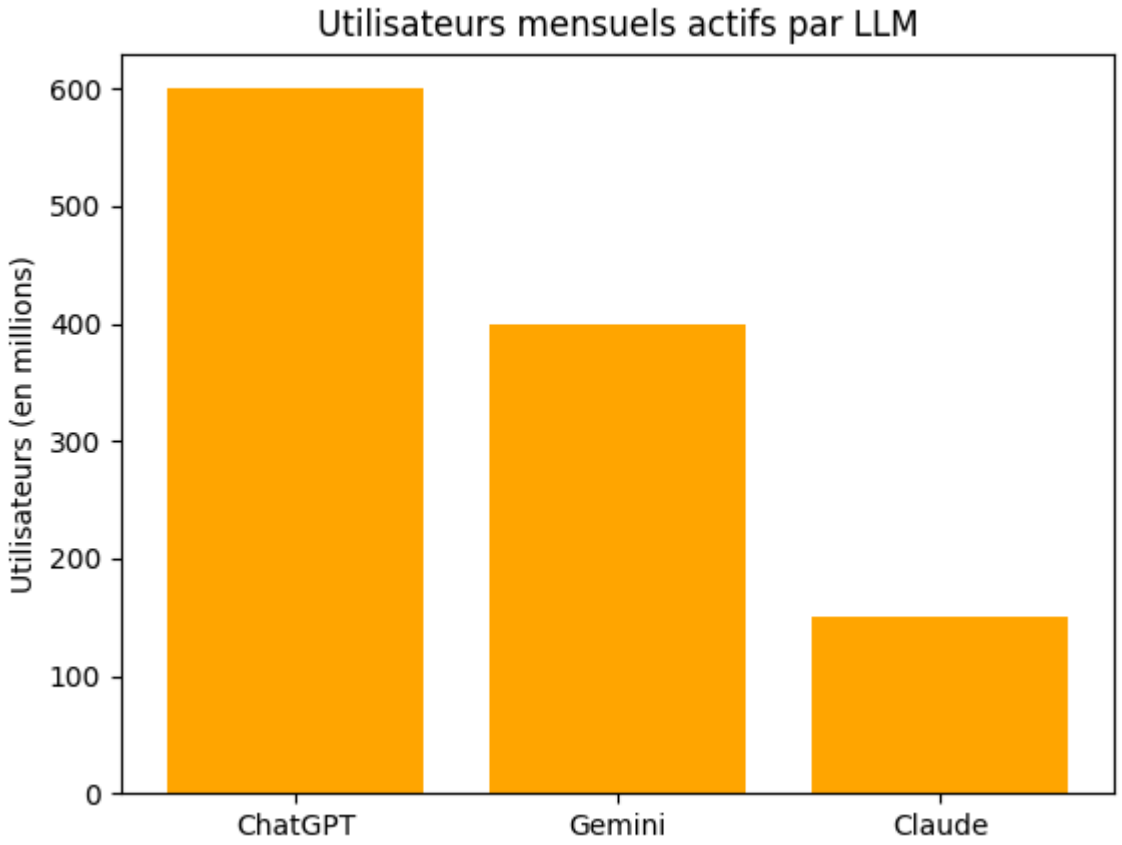
We observe colossal differences in investment among LLMs. ChatGPT significantly outperforms its competitors in this regard with nearly 58 billion cumulative dollars, while Claude is below 5 billion.

Technical Structure (contextual capacity):



However, it is not OpenAI, but **Gemini that has the highest contextual capacity (1 million tokens),** a sign of a structurally different design.

Active Users:



Finally, Claude, despite being the least funded and least used, sometimes achieves superior conceptual results. **We are therefore forced to conclude that performance does not mean either investment or volume of use**, although these obviously play a role.

3.2. Two major factors emerge: training and usage

What these discrepancies reveal is that **the quality of an LLM depends first on its training (data quality, model structure, alignment method), and then on how it is used.**

3.3. Three models, three philosophies

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ChatGPT: maximum versatility (massive use, generalist training, multimodality)
Gemini: integrated structure (integration with Google, pursuit of technical coherence)
Claude: conceptual rigor ("constitutional AI" philosophy, qualitative training)
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These three orientations illustrate different conceptions of what an intelligent assistant should be. They reflect development logics, but also epistemic visions of the role of AI.

3.4. Extended Epistemological Hypothesis

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"If we know through models, then can an LLM improve or regress through intermediary — that
is, through its own inductive structuring?"
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But let's go further: **can it also regress or drift due to the way it is used?**

3.5. A Concrete Experimental Hypothesis

If 13% of queries sent to ChatGPT are related to eroticism, i.e., to linguistic structures rooted in fantasy — therefore detached from reality — **can we think that this modifies, even partially, its ability to generate structured, coherent, and grounded language?** (This is not a gratuitous hypothesis: Jancovici cited this figure on the YouTube channel 'éthique et tac')

3.6. Opening towards collective work

It would not be reasonable to answer this question alone. It requires resources, protocols, and a team. But it is posed, and justifies a follow-up to this report, a follow-up to which we will try to respond with individual means in parts two and three of our work. In this regard, we will simply focus in parts 2 and 3 on the collaborative perspective of AI.

Index:

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