

Kickoff - Datathon 2024

Polyfinance – BNC

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Introduction – Datathon 2024

Datathon - 2024

A challenge at the intersection of AI
Generative and Finance





MANDATE

AI FACTORY

MISSION

*Transforming our Banking business processes through industrialization of state-of-the-art **hyperautomation** and **artificial intelligence** technological capabilities.*

MANDATE INTERNAL

Delivering end-to-end technologies for hyperautomation projects for the IT-Ops sector

Delivering end-to-end technologies for artificial intelligence projects for business sectors

Leading in partnership with the CDO the organization of work, identification of needs, prioritization and governance in AI

Building skills in AI technology development
Management of cross-functional technological assets in AI

Support transformation and identification of opportunities with emerging technologies (Cloud, Low Code)

Manage the data valorization research and development program

Managing the cross-functional technology park in hyperautomation and artificial intelligence

EXTERNAL MANDATE

Manage the research and development partnership with universities and research centers

Working with academic/university circles on the content of training programs based on Bank needs

Contribute to the promotion of the Bank's successes in the academic community
– Conferences, publications, etc.

Support sales teams with technology clients, including AI



Description of the Challenge

Challenges

- Financial analysts process large volumes of data and reports to generate insights, assess business performance, and analyze data.
- Generative AI is a powerful technology that could help analyze large amounts of data.
- Question to be solved: How to exploit generative AI to provide support to financial analysts?

Project objective

- Design AI solutions that help financial analysts analyze financial data and track financial market trends.
- Use of real-time data, performance indicators and risk analyses to provide a precise vision of market developments.

Expected added value

- A generative AI-based solution capable of simplifying analyses for financial analysts by providing clear and actionable insights.



The role of a Financial Analyst (Research)

1. Collection and Analysis of Financial Data

- Data sources:** Financial reports, market data, economic indicators, etc.
- Quantitative and qualitative analysis:** Ratios, modeling, trend study, etc.
- Real-time monitoring:** Continuous monitoring to detect market trends.



2. Asset Performance Assessment and Forecasting

- Assessment of values:** Stocks, bonds and performance prospects.
- Market forecasts:** Advanced models to anticipate market movements.



3. Analysis / Investment

- Portfolio analysis:** Optimal composition based on objectives.
- Analysis of investment strategies:** Analysis and development of short, medium and long term strategies.



4. Financial Risk Management

- Risk identification:** Market fluctuations, credit, operational risks.
- Evaluation and mitigation:** Diversification, risk coverage.
- Adaptation:** Adjustments according to economic and geopolitical developments.



5. Communication et Reporting

- Analysis reports :** Synthesis of research and recommendations.
- Strategic monitoring:** Regular updating of market developments.



Proposal of some analysis features

The development of AI tools to support financial investment analysts, by automating and improving the tasks performed.

- Key needs include **automating the analysis of quarterly and annual financial statements, tracking changes in executive comments from one year to the next, and facilitating comparisons with companies of the same the sector.**

Key indicators to be monitored by AI:

- Basic financial indicators : Turnover, gross margin, free cash flow, net debt, profit (before interest, taxes, depreciation and amortization), earnings per share, etc.**
- Sector-specific indicators (examples):**
 - Mining sector: Production volume and grade, all-in sustaining costs, changes in investments in capital.
 - Basic and discretionary consumption: Growth in sales on a like-for-like basis (as in existing stores).
- For each sector, consider identifying and comparing key indicators with similar “comparable” companies in order to measure whether or not a company outperforms its competitors.**



Additional Analysis Features

Sentiment analysis

- **Assess sentiment** in executive comments over time to anticipate revenue or performance trends benefits.

Tracking key messages

- **Highlight new, recurring or abandoned topics** in official communications from leaders, as They may indicate a change in company priorities.

Event summaries

- **Summarize financial documents and reports** (investor calls, press releases, etc.) by including sentiment scores and the top topics discussed, which can reduce the time spent manually analyzing these documents.

Critical requirements for data accuracy and source attribution:

- Generally speaking, **the quality of the developed AI tool is its ability to provide accurate data by attributing systematically return information to its sources to avoid information “hallucinations”.**



Resources and Tools Available

AWS Environment



Uses of the Services

AWS available for the Datathon: You have the freedom to choose the services and models that best meet your development needs

The entire **AWS** environment
(**BedRock**, **Cloud9**, ...)

Workshops



Workshops given throughout the event

Several shared links
and information are to be consulted

Data



A drive with: Annual reports from different companies (to use or not, depending on the team's choice)

All online data of the "Open Source" type. Participants may not use paid data sources, under penalty of disqualification.

Strong recommendations:
YahooFinance, **MorningStar**, **FRED** and annual reports on the drive.

Support technique



AWS Experts: Available to help with technical questions and usage of AWS.

BNC Experts: AI scientists available to help with questions related to AI and Generative AI.

Evaluation Criteria

Quality and features of the support tool (35%)

- **Usefulness and relevance:** The tool must provide practical and varied assistance for financial analysts (summaries, ideas, extraction key information) beyond financial reports.
- **Adaptation of results:** Ability to generate syntheses, extractions and analyses adapted to various analytical tasks.
- **Innovative functionalities:** Integration of advanced functions (automation of recurring tasks, descriptive, predictive and prescriptive analyses, Chatbots, compatibility with external databases/tools).



Data analysis and processing capacity (35%)

- **Processing versatility:** Processing of multiple financial and market sources (articles, databases, trends).
- **Synthesis and analysis :** Quality of the analyses and syntheses generated (e.g.: trend syntheses, portfolio evaluation).
- **Data visualization:** Generation of visuals (graphs, tables) to facilitate interpretation.
- **Innovative approaches:** Use of generative AI for data processing (e.g.: prediction and automation).



User experience (UX/UI) (10%)

- **Intuitive design:** Easy navigation and intuitive design.
- **Accessibility and ergonomics:** Simplified workflow adapted to the needs of financial analysts.



Using AWS environment (20%)

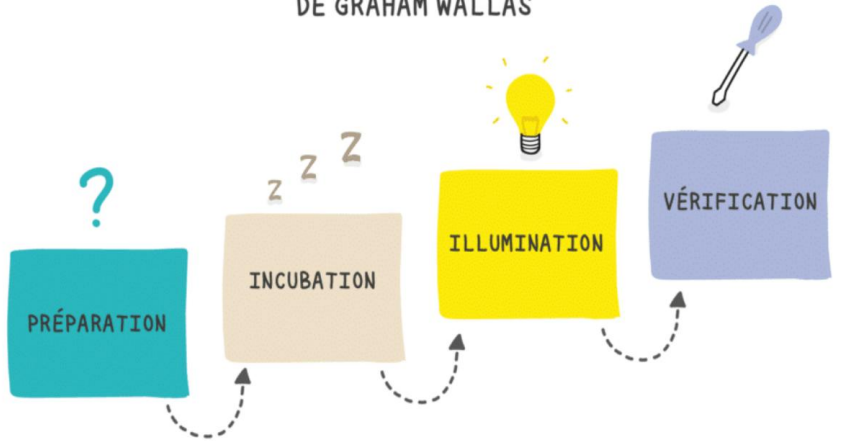
- **AWS Services Integration:** Effective use of AWS services for data processing and content generation IA.
- **Cloud efficiency:** Cost optimization, scalability and efficient management of AWS resources.



The Creative Process

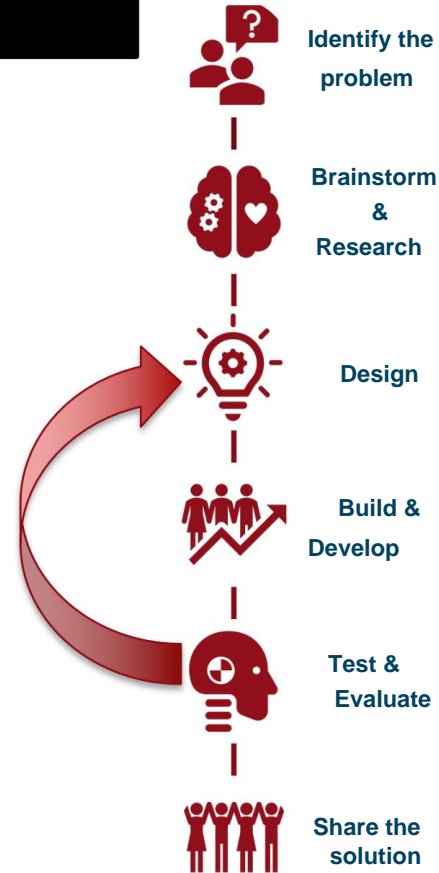
4 ÉTAPES DU PROCESSUS CRÉATIF

DE GRAHAM WALLAS



- formuler le problème
- collecter des informations
- analyser
- tout mettre de côté
- processus inconscient
- pendant le sommeil...
- à un moment inattendu : la nuit ou en voiture...
- confronter la solution à la réalité
- réaliser l'idée

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Conclusion

“One of the only ways to get out of a tight box is to invent your way out.”

Jeff Bezos

“Those who are crazy enough to think they can change the world usually do.”

Steve Jobs

