

EMMA Analytics

Phase 1 Summary: Findings and Functional Prototype

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1. Background and Context

The **EMMA initiative** initially focused on EMMA HR, with the goal of improving how teams access guidance while doing their work.

During early discussions related to that effort—including initial context coming from **Global Financial Services (GFS)**—a recurring issue surfaced: leaders were spending too much time trying to get clear answers from data, even though the data already existed.

As additional conversations took place with managers from other areas, it became clear that this challenge was not limited to HR. The same situation appeared across **multiple business functions**.

This led to the creation of **EMMA Analytics** as a separate Phase 1 workstream.

2. Scope of Phase 1

Phase 1 was designed as a focused **discovery and feasibility effort**.

What we did:

- Spoke with managers to understand how analytics questions are handled today
- Confirmed that the challenge is shared across business functions
- Explored whether an AI agent could improve access to analytics
- Built a working functional prototype to demonstrate the idea

What we did not do:

- Connect to production systems
- Use real or sensitive data
- Address governance, rollout, or scaling

This phase was about **learning and proving feasibility**, not deployment.

3. What We Heard from the Business

Across conversations, the same patterns came up repeatedly.

- **Data already exists** in systems, dashboards, and reports
- There are many dashboards, often more than people can realistically review
- Reports are long, complex, or sometimes don't exist
- **Answering simple questions** often takes too much time

The issue was not data quality or lack of tools.

The real constraint was **time**.

Managers and executives need answers quickly, often during **meetings** or **decision moments**.

4. The Core Problem

Analytics tools are powerful, but they are not aligned with how decisions actually happen.

To answer a basic question, people often need to:

- Navigate several dashboards
- Export data
- Recalculate numbers
- Or wait for someone to create a report

As a result, the path from **question to answer is slow**.

This pattern was consistent across business functions.

5. The Opportunity Explored

Phase 1 explored a simple question:

What if leaders could **ask analytics questions directly** and get **calculated answers immediately**—without navigating dashboards?

The focus was not on replacing existing tools, but on **changing how insights are accessed**.

This became the foundation for EMMA Analytics.

6. What EMMA Analytics Is (and Is Not)

EMMA Analytics is an **AI agent** designed to answer analytics questions through conversation.

It is:

- A way to get direct, calculated answers from data
- Focused on speed, clarity, and relevance

It is not:

- A replacement for BI platforms
- A dashboard redesign
- A production analytics system in Phase 1

7. The Functional Prototype

In Phase 1, we built a **working functional prototype**, not a conceptual mockup.

The prototype includes:

- A **conversational analytics agent**
- A PostgreSQL (SQL) database containing **10,000 synthetic records**

The database was intentionally designed to replicate the **schema, structure, and behavior** of SpiffWorkflow journal entry execution data.

This allowed the team to demonstrate how EMMA Analytics can query, calculate, and generate insights over large, realistic datasets, without using **real or sensitive information**.

8. Why SpiffWorkflow Was Used

SpiffWorkflow was used as a **reference business process**, not as a live integration.

The modeled process reflects a **manual journal entry workflow**, including:

- Submission
- Approval
- Rejection or completion

This type of workflow produces **structured, time-based data** that is common in enterprise environments and well suited for analytics questions such as volumes, processing times, and bottlenecks.

9. How the Prototype Works

At a high level:

- A user asks an analytics question in **plain language**
- The system executes **SQL queries** against the PostgreSQL database
- Deterministic calculations are performed
- A clear, focused answer is returned

When requested, the prototype can also:

- **Generate charts**
- Create formatted HTML reports
- Email results

All actions are logged so **results can be reviewed and verified.**

10. Use of Synthetic Data

Synthetic data was used intentionally to:

- Avoid access to **production systems**
- Eliminate data sensitivity concerns
- Allow **safe experimentation**

The dataset consists of **10,000 records** designed to mirror:

- Realistic workflow volumes
- Status changes and timestamps
- Approval paths and processing times

The goal was **realism in structure and behavior**, not real business content.

11. Security and Control

Even as a prototype, EMMA Analytics was built with **enterprise constraints** in mind:

- **Self-hostable components**
- A Python-based, auditable codebase
- **Clear separation** from production environments

No live data was accessed during Phase 1.

12. Current Status

EMMA Analytics is a **Phase 1 functional prototype**.

It demonstrates that:

- **Analytics questions** can be answered conversationally
- **Calculated answers** can be delivered quickly
- The approach applies across business functions

Any future phase would require **separate alignment, governance review, and approval**.

13. Closing

Phase 1 confirmed that **analytics access**—not data availability—is a shared challenge across the organization.

This work delivered:

- A **clear problem framing**
- A realistic, working prototype
- A **solid foundation** for next-step discussions