AI IN ACTION:
IT & DATA
FROM PROMISES TO PROOF, REAL-WORLD CASE STUDIES

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FOREWORD

Across IT and data-driven organisations, a shift is happening. The promise of AI is no longer confined to visionary concepts or marketing headlines. It's being embedded deep into everyday processes: in how we write code, test software, manage data, secure systems, and unlock intelligence.

At Expleo, we believe that AI should not just accelerate your digital journey, it should multiply your ability to deliver value, at every step. That means practical AI, integrated into your tools, trusted by your teams, and focused on what really matters: quality, speed, and impact.

This playbook brings that belief to life.

From AI-augmented software development, to insurers automating quality assurance with generative tools, each case study featured here shows how AI can be embedded where it's needed most.

At Expleo, we help our clients move beyond hype to harness AI as a practical accelerator, across the entire software and data life cycle.

With Expleo, deliver faster and better quality software (to the power of AI).

Dinesh Mohan

Head of Digital & Technology Services, Expleo

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AI IN SOFTWARE DEVELOPMENT

HOW AI WILL CHANGE THE SOFTWARE DEVELOPMENT LIFE CYCLE (AI)

AI is transforming the software development life cycle by embedding intelligence at every stage, from planning to deployment. The result: faster time-to-market, less technical debt, better quality, and lower risk. Tomorrow's applications will go even further — becoming proactive, autonomous, and seamlessly multimodal.

HOW AI WILL CHANGE THE SOFTWARE DEVELOPMENT LIFE CYCLE (AI)

1 Planning and requirement analysis

Large Language Models (LLMs) can assist business analysts or product owners in reviewing requirement documents to identify ambiguities and inconsistencies. At the same time, predictive analytics can identify potential risks in scope definition based on historical project data.

Reduced risk of costly rework, improved business alignment and stronger compliance assurance from the start.

2 Design and architecture

AI can assist software architects and software engineers in automating legacy code analysis to map dependencies, suggest a refactoring approach for transitioning from monolithic systems to a microservices architecture, and simulate architecture to evaluate scalability, performance, and security trade-offs before coding.

Reduce the cost and delay of legacy IT systems and reduce the risk of costly rework after the deployment phase.

3 Coding and implementation

Developers are shifting from hand-coding to vibe coding (co-creation), where tools like GitHub Copilot and Cursor generate entire software components (from architecture and logic to interfaces and documentation) from natural language prompts. However, agentic coding (AI autonomy) is expected to become mainstream shortly.

Increase the development team productivity while accelerating time-to-market.

4 Testing and quality assurance

AI can help quality analysts generate functional test cases and assist quality engineers in automating Application Programming Interface (API), User Interface (UI), and performance testing using self-learning scripts that adapt to application changes.

Expand test coverage at lower cost, improve releases reliability to increase stakeholders trust.

5 Deployment and production

AI can help DevOps engineers automate the generation of Infrastructure-as-Code (IaC) templates for multi-cloud or hybrid environments and ensure continuous monitoring with anomaly detection.

Reduce the cost and delay of the deployment, enhance the system reliability.

SOFTWARE DEVELOPMENT LIFE CYCLE (SDLC)

FROM CODE LABOURER TO CODE MENTOR: HOW MICROSOFT USES AI TO ELEVATE SOFTWARE DEVELOPMENT TEAMS

Since 2024, Artificial Intelligence codes for 30% of Microsoft's software. Here's what that means for your tech teams.

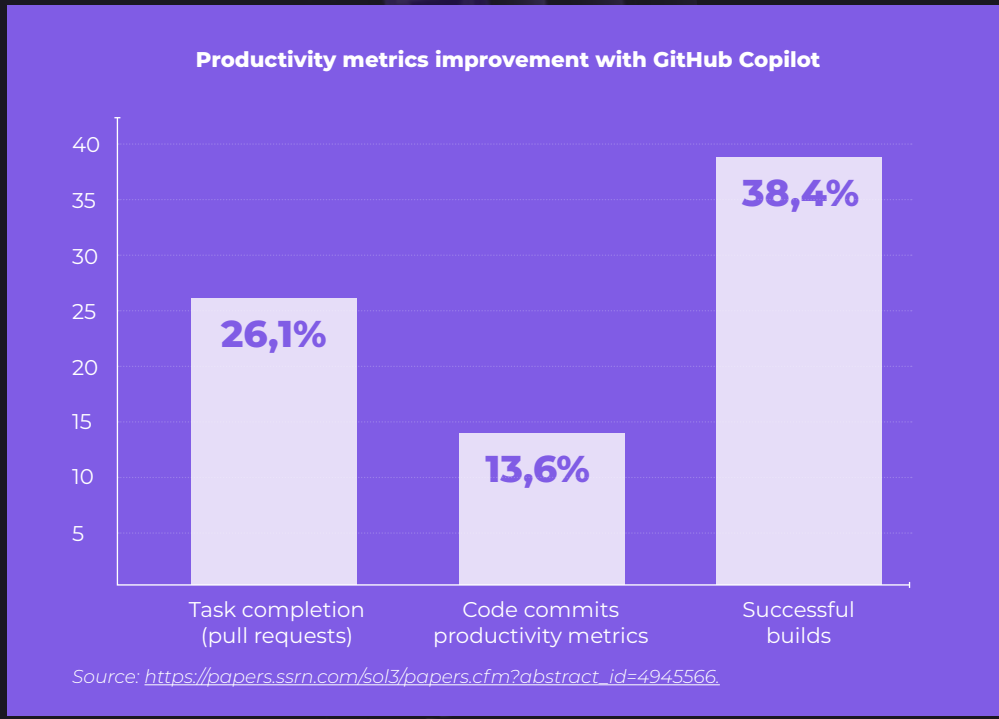
Before AI: the challenge behind the project

Software development used to be a linear craft. Before frameworks and cloud-native dashboards, developers coded manually. Think: no factoring, no asynchronous teamwork, and very long, bleak lines of code. Speed was crucial, but rarely achievable. Mistakes slowed everything down. Talent gaps extended delivery cycles. As the pace of innovation intensified, developer productivity became a strategic priority for tech-driven businesses.

Due to the rapidity of innovation cycles, engineering project managers struggled with two dynamics: growing pressure to ship quality code faster, and an increasingly complex talent landscape. Onboarding new developers and helping them upskill took time. Legacy systems got harder and harder to maintain. And while cloud infrastructure like GitHub and agile practices improved workflows, they couldn't fully solve human issues, as developers were still preoccupied by repetitive tasks that drained their creativity.

How AI was applied: the turning point

Microsoft changed the game by putting AI into action. By integrating GitHub Copilot, powered by OpenAI's Codex, directly into their development environments, they introduced AI within their software life cycle, not just as an assistant. The impact was profound: by 2024, AI was writing up to 30% of Microsoft's code. Junior developers using GitHub Copilot saw productivity gains of 26% and in some cases, up to 39%. Teams began to fundamentally reshape how they worked, from coding to testing to deployment.



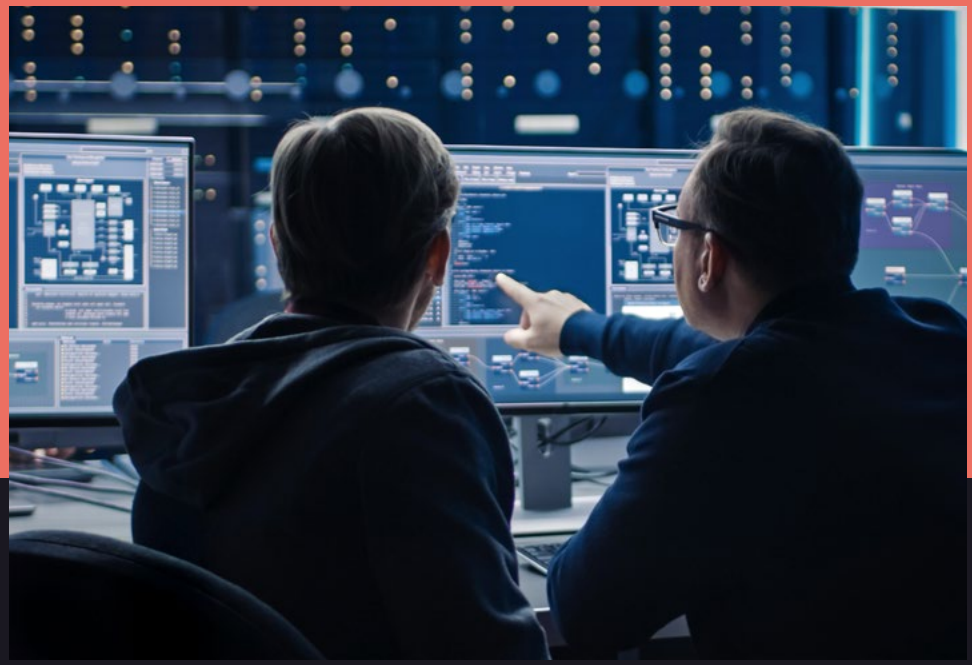
Source: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4945566.

What changed: measurable outcomes & business impact

Microsoft's developers didn't just work faster, they worked smarter. With AI handling boilerplate tasks such as automated regex completions, test-scenarios generation, and refactoring suggestions. Engineers were able to focus on architecture, design, and problem-solving. GitHub Copilot became a virtual mentor, especially for younger developers still learning the ropes. In trials conducted across Microsoft, Accenture, and a Fortune 100 electronics firm, AI-assisted teams delivered more pull requests and code commits. Despite this increase in volume, their number of errors decreased, drastically reducing time-to-market and validating AI's role as a productivity accelerator.

The use of AI shifted the mindset towards more high-quality code, not just more code or code built faster. As Microsoft engineers shared: "When I write the comment, Copilot already knows what I'm trying to do. It's almost eerie — but incredibly helpful.", "It gives me five or six different implementations, and I just pick the one that makes the most sense for the context. That saves me a lot of time.", "Writing tests used to be the boring part. Now, Copilot scaffolds them for me — I just validate and tweak. It's a game changer."

A new model of software team management is emerging. AI isn't simply assisting developers — it's elevating them, but only if they adopt it. Microsoft is rethinking workforce planning, talent strategy, accelerated onboarding, and upskilling. With the right governance and mindset, AI becomes a competitive advantage: it reduces time-to-market, improves developer satisfaction, and gives room for more structural, cultural innovations. As other organisations follow Microsoft's lead, human-plus-AI engineering is quickly becoming the new enterprise standard.



FROM MANUAL TO SOFTWARE TO MACHINE-LED: HOW A GLOBAL INSURANCE FIRM STREAMLINED SOFTWARE TESTING WITH GENERATIVE AI

Before AI: the challenge behind the project

In software development, testing is often the most laborious step. It's essential, yet time-consuming and error-prone. For one of the world's leading insurance firms, ensuring quality at scale meant facing the reality of hundreds of test cases written manually from detailed user stories.

That was until they put AI into action in partnership with Expleo. The insurance company adopted ExpleoSophia, a generative AI tool designed to translate software requirements into functional test cases, redefining what speed, consistency, and efficiency look like in Quality Assurance (QA). Before AI, writing software test cases meant laboriously translating user stories into structured, repeatable checks. Launching a new product required rigorous testing across multiple channels. Product managers would write user stories, test engineers would read each user story, break it into acceptance criteria, then write test cases line by line, an exercise that demands precision, collaboration, and hours of tedious effort.

The burden was twofold. First, it slowed down time-to-market, a critical challenge in a sector where digital-first competitors move fast. Second, it introduced inconsistencies and room for human error, especially when large teams interpreted user stories differently or under pressure. Add to that the cost of regression testing and the struggle to maintain quality across updates, and the traditional approach began to show its limits.

How AI was applied: the turning point

Known for integrating AI in customer-facing applications such as advanced chatbots and policy assistants, the company took a bold step to embed AI into its internal development processes. This included empowering its product managers and QA leaders with smarter tools that could scale with the business. They turned to their long-standing innovation partner, Expleo, who proposed a solution tailored to the challenge: ExpleoSophia.

What changed: measurable outcomes & business impact

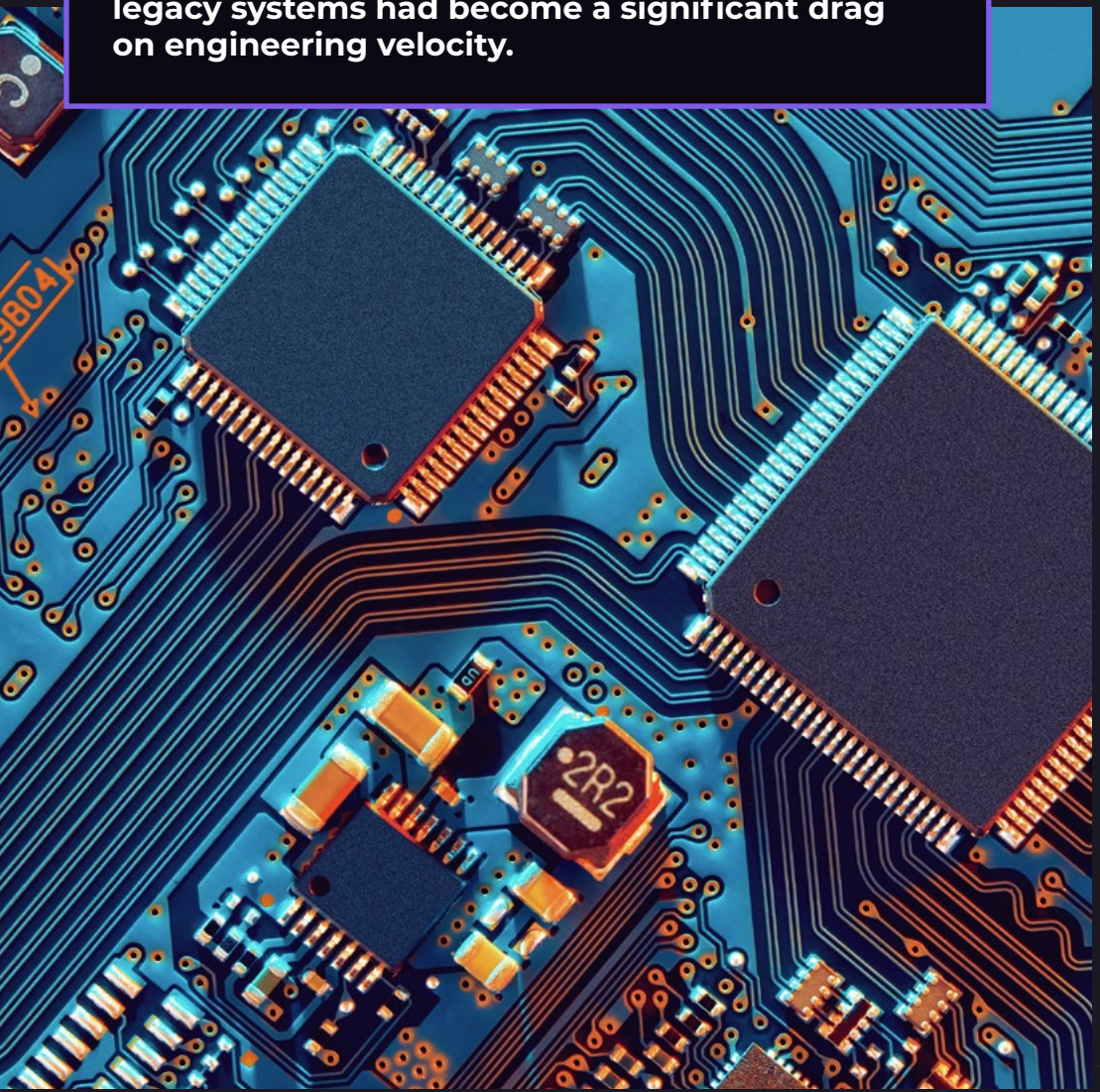
ExpleoSophia leverages generative AI and Natural Language Processing (NLP) to automate one of QA's most tedious tasks: transforming software requirements into functional test cases. Once product or QA teams input a user story into the tool, ExpleoSophia analyses the text, detects its functional intent, and generates detailed, executable test cases in seconds. This shift didn't just save time. It boosted the entire testing and quality team:

Test coverage improved thanks to consistent interpretation of requirements.
Time-to-market accelerated, freeing up QA teams for exploratory and edge-case testing;
Innovation capacity increased, as product managers could iterate more freely, confident that testing wouldn't become a bottleneck.

More broadly, the company's adoption of ExpleoSophia marked a strategic pivot, moving from using AI around tech processes to placing it at the heart of how software is built and validated. Today, its internal software teams, particularly product managers and QA managers, are no longer burdened by repetitive test writing. Instead, they work faster, focus on high-value tasks such as exploratory tests for better UX, and deliver more robust applications. By embedding AI such as ExpleoSophia into its software development life cycle, the insurance firm is not just modernising QA, it is transforming software quality into a competitive advantage.

LEGACY CODE MAINTENANCE: GETTING RID OF LEGACY CODE MAINTENANCE WITH AI

Modern semiconductors power the digital world, yet their software infrastructures are often held back by ageing code. For one of the world's top semiconductor manufacturers, maintaining legacy systems had become a significant drag on engineering velocity.



Before AI: the challenge behind the project

This reality is not unusual in the high-tech sector. Many large technology firms, especially those with decades of R&D behind them, struggle with legacy software that remains business-critical. Without clear documentation or up-to-date design diagrams, onboarding developers and scaling innovations become unnecessarily difficult. As new features and compliance demands increase, engineering teams find themselves devoting more time to understanding the past than building the future.

How AI was applied: the turning point

Faced with this challenge, the semiconductor manufacturer turned to Expleo. The solution: DevXptAi, an AI-powered platform developed to automate software analysis and boost development efficiency at scale.

Deployed over a ten-week engagement, DevXptAi brought together a range of autonomous capabilities, including inline code documentation, Semantics Data Dictionaries (SDD) generation, test case creation, and security review. By applying generative AI to raw source code, across multiple languages, the tool could instantly produce artefacts that previously required weeks of manual work.

What changed: measurable outcomes & business impact

The transformation began with structure. DevXptAi parsed source code to automatically generate comprehensive SDDs, complete with architectural diagrams such as flowcharts, class, and sequence diagrams. These visual models offered development teams a common reference point, accelerating understanding of even the most complex modules.

Next came clarity. By embedding contextual inline documentation into the legacy code, the platform surfaced the logic behind unfamiliar functions and control structures. Engineers no longer needed to decipher opaque code blocks or dig through outdated repositories. Every part of the system became more transparent, thus more maintainable.

Testing was another critical gain. DevXptAi generated robust unit test cases directly from the codebase, complete with assertions and logic branching. By integrating into the organisation's DevSecOps pipelines, these AI-generated test cases helped ensure high coverage while freeing QA teams to focus on exploratory and edge-case testing. Security and resilience also improved. With built-in threat modelling such as DREAD scoring or attack tree generation, DevXptAi flagged potential vulnerabilities early in the cycle. Risk scenarios could be prioritised and addressed before reaching deployment, creating a safer and more compliant software estate.

The impact was significant. According to the client, documentation, testing, and review processes became up to 80% faster. Developer productivity increased. Collaboration improved. And above all, software quality was no longer compromised by time constraints or repetitive manual tasks.

DevXptAi represents a new standard for software engineering teams grappling with legacy complexity. By embedding artificial intelligence into the core of the software development life cycle, companies reclaim the time and talent once lost to maintenance. The result: cleaner code, stronger security, faster delivery, and teams empowered to focus on what's next.

AUTOMATED UI AND API TESTING: AI TAKES THE LEAD IN SOFTWARE TESTING AT AN INSURANCE COMPANY

A Singapore-based insurer revolutionised its software development life cycle with ExpleoTeresa, an AI-powered testing platform. The result: faster releases, better coverage, and reduced complexity across User Interface (UI) and Application Programming Interface (API) testing.

Before AI: the challenge behind the project

For the insurer's tech teams, delivering seamless digital experiences required rigorous testing of both user interfaces and backend APIs without slowing development. Yet, software test automation posed major hurdles: high initial investments, fallible test scripts, increasing maintenance efforts, and dependencies across multiple browsers and platforms. Add to that their hybrid hosting solution between Cloud and on-premises, the rising expectations of mobile responsiveness, and it became clear that their testing automation tools needed a booster.

How AI was applied: the turning point

Enter ExpleoTeresa, the AI-powered automation tool designed to revolutionise testing processes. Built with both web and mobile interfaces in mind, ExpleoTeresa merged Natural Language Processing (NLP) with low-code to no-code tooling, enabling business and technical teams to create codeless tests with ease. ExpleoTeresa offers features like visual UI testing, self-healing scripts to minimise flaky tests, and data-driven testing to manage dynamic data scenarios.

Seamless Continuous Integration/ Continuous Deployment (CI/CD) integration and support for both cloud and on-premises environments further strengthened ExpleoTeresa's fit. Most notably, ExpleoTeresa's AI capabilities enabled the automatic generation of API test cases and analysis of engineering requests, which can be critical when navigating cloud migration scenarios (e.g. from AWS to Azure).

What changed: measurable outcomes & business impact

Post-deployment, the insurer's tech teams quickly noticed the operational advantages of ExpleoTeresa over other tools. With no licence costs, the platform proved to be cost-effective from day one. Its frequent upgrades and tailored customisation allowed it to evolve alongside the insurer's needs. Being both user-friendly and compatible with enterprise infrastructures, ExpleoTeresa provided easy-to-maintain artefacts and fast onboarding for teams. The intuitive front-end ensured stakeholders at all levels could track progress, test coverage, and release quality, without getting lost in technical detail. In short, the company's teams didn't just automate testing, it gained a testing platform aligned with its broader digital agility goals. ExpleoTeresa became more than a tool, it was the catalyst for a faster, smarter, and more resilient Software Development Life Cycle (SDLC).

DATA AND CYBERSECURITY

HOW AI-POWERED DATA GOVERNANCE ACCELERATES STRATEGY, SAFEGUARDS TRUST, AND POWERS SMART DECISIONS

With over 37,000 restaurants in 115 countries, McDonald's manages a staggering volume of data across business units, franchises, and markets. From loyalty programmes tracking 150 million+ customers to kitchen operations and restaurant expansion strategies, the brand is data-driven by nature. But in practice, silos, regional disparities and manual processes slowed down innovation.

Before AI: the challenge behind the project

Before 2021, each business unit largely operated with its own data systems. Whenever teams needed insights, like assessing the viability of opening a new restaurant, they had to start from scratch: What data do I need? Where is the data I need? Is it reliable? Strategic decision-making was being delayed by fragmented data access and governance.

How AI was applied: the turning point

McDonald's turned to Expleo to modernise its data governance and build a global standard fit for scale. In under 60 days, Expleo implemented a robust enterprise-wide data intelligence platform, Collibra. This new architecture brought together business glossaries, governance and technology catalogues, reference data, and a data marketplace, everything searchable and standardised. More than just federating data, the governance framework ensured consistency. From privacy to data quality and ownership, each element was codified.

The result: faster onboarding of data-based projects, streamlined implementation of compliance, and a shared intelligence database across all departments and locations. But this wasn't just a transformation in structure, it was a leap forward in capability. That's where AI comes in. McDonald's didn't stop at structuring its data environment. It infused it with AI, turning governance into an intelligent layer supporting every data-driven decision. AI agents boost data governance in three critical ways.

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AI agents boost data governance in three critical ways:

1. **Insight generation:** AI recommends relevant glossary terms or metadata connections based on usage patterns. For instance, it can help determine if customer data, like a postal code from the loyalty programme, should be treated as personally identifiable, sensitive information.

2. **Workflow intelligence:** Routine processes, such as triaging data quality issues or assigning stewardship responsibilities, are now automated. Anomalies, like duplicate menu item codes or missing restaurant IDs, are flagged and routed to the right domain expert, accelerating resolution.

3. **Continuous monitoring:** AI agents detect schema changes, ownership gaps, or compliance violations across systems and platforms. Alerts are triggered automatically, and workflows are launched without waiting for human intervention.

What changed: measurable outcomes & business impact

Thanks to AI-enhanced governance, seven McDonald's regions now use a single platform for data access and insight. Teams from marketing, legal, operations, and product development can access trusted data without putting in unnecessary effort. This foundation fuels McDonald's Responsible AI programme. From digital menu optimisation to smarter selection of new locations, data is now a business enabler, not a bottleneck. And the proof is in the pace: new AI initiatives can be rolled out in weeks, not months.

Drawing from its expertise in complex global transformations, Expleo built a scalable framework supporting AI governance across 100+ countries. Today, Expleo continues to support McDonald's Responsible AI programme, helping the brand accelerate market strategies, automate compliance, and unlock innovation, one trusted dataset at a time.

FROM INTERPRETATION TO INTERACTION: THE GENAI THAT REVOLUTIONISED BUSINESS INTELLIGENCE AT A LEADING EUROPEAN CARMAKER

C-level data leaders know this challenge all too well: dashboards brimming with figures, but too many steps to translate their data into action.

Business Intelligence (BI) has long promised insights. That's why one of Europe's largest automobile manufacturers turned to Expleo GenBI: to stop interpreting data and start having real conversations with it.

Before AI: the challenge behind the project

In the fast-paced world of automotive manufacturing, where customer satisfaction and product quality are fiercely guarded, data has always played a central role.
For a European multinational automobile manufacturer operating across dozens of markets, business intelligence had become a necessary, yet cumbersome part of day-to-day operations. Between customer feedback loops, quality control indicators, and a labyrinth of Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM) systems, the teams responsible for IT and Data found themselves buried under KPIs.

Each day, BI teams would wade through siloed dashboards, interpret static charts, and manually extract figures from various systems to make sense of aftersales data.
The mission was to turn data into decisions, but the process was fragmented and relied on technical expertise. Even generating a simple anomaly report meant querying multiple databases, formatting raw exports, and translating that into business language for decision-makers.

How AI was applied: the turning point

The automaker partnered with Expleo to overhaul its BI approach, deploying a new AI-native platform: Expleo GenBI. The promise?

No more dusty dashboards. No more deciphering spreadsheets. Just a direct, natural-language dialogue with the data, across every tool and every function. Whether in ERP, CRM, or quality management software, Expleo GenBI acted as a single point of truth, interpreting complex queries and instantly surfacing tailored, conversational insights.

FROM INTERPRETATION TO INTERACTION: THE GENAI THAT REVOLUTIONISED BUSINESS INTELLIGENCE AT A LEADING EUROPEAN CARMAKER

What changed: measurable outcomes & business impact

Expleo GenBI did more than BI automation, it transformed the way BI was consumed. Thanks to its adaptive architecture and multi-agent design, the platform can instantly generate dynamic insights, explain anomalies in plain language, and deliver personalised reports with no need for SQL requests or any other technical input. Team members across quality and client services, technical or not, could ask, “What is the evolution of the number of technical incidents for this model of vehicle between 2020 and 2025?” and receive a coherent, narrative answer with data visualisations.

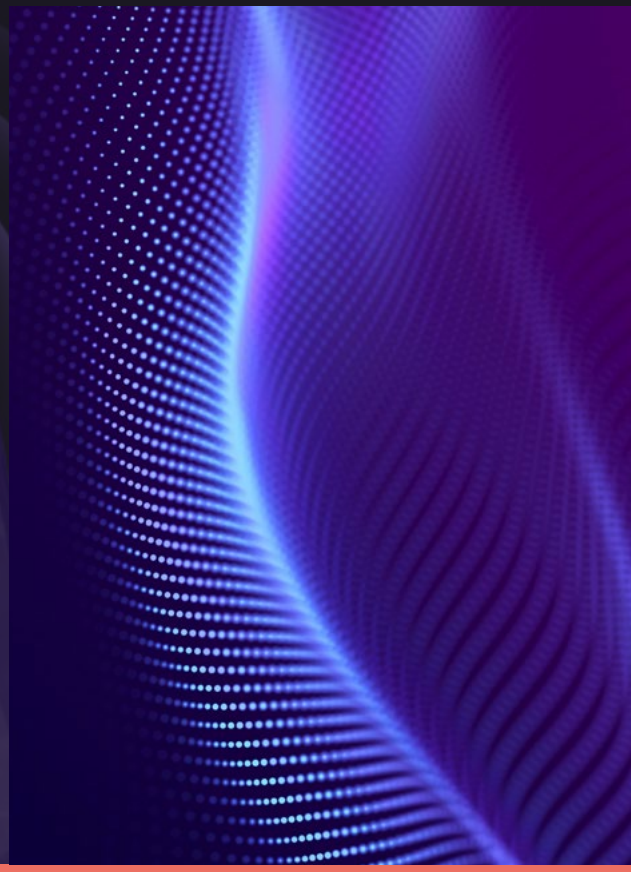
All teams, CRM, ERP or data engineers, had the same level of access, clarity, and confidence in the numbers. And most importantly, the company could now respond to customer needs, quality issues, and market signals in real-time, not retrospectively.

At Expleo, we believe the future of business intelligence lies in accessibility and agility.

Our GenBI solution embodies this vision. It’s already making a difference for global clients by transforming their approach to data. The result: faster decisions, clearer insights, and more empowered teams.

HOW A GLOBAL LEADER IN THE SENSORS BUSINESS TRANSFORMED ITS CYBERSECURITY AUDITS WITH GENAI

What if your next cybersecurity audit could be faster, sharper, and powered by an AI that actually understands data sensitivity and risk?



Before AI: the challenge behind the project

Faced with tightening regulations and rising cyber threats, a global leader in the sensors industry knew its current approach to cybersecurity audits had to adapt. Preparing for the EU Cyber Resilience Act and standards like the revised Networks and Information Security Directive (NIS2) and IEC 62443 required more than traditional compliance checklists. Their teams needed to accelerate assessments, extract insight from past audits, and reduce human error, without compromising confidentiality.

How AI was applied: the turning point

They turned to ELISAR by Expleo, a secure AI assistant engineered specifically for cybersecurity risk assessment and developed by Expleo. Built on a local Large Language Model (LLM), ELISAR doesn't just respond to prompts, it reasons through them. Using advanced prompting techniques and a Retrieval Augmented Generation (RAG) system, it pulls insights from private risk data to deliver clear, actionable, and explainable recommendations.

What changed: measurable outcomes & business impact

ELISAR was deployed to support the company's internal Governance, Risk and Compliance (GRC) consultants. It prepared interview guides, analysed compliance gaps, cross-referenced historical documentation, and helped prioritise risks. The impact was immediate: a 25% boost in productivity, sharper analysis, and faster delivery of the risk mitigation roadmap.

ELISAR's strengths lie in its specificity. Unlike generic GenAI tools, it's built by Expleo for sensitive environments, where security and explainability are non-negotiable. With ELISAR, the sensor company didn't just automate its audits, it transformed them into a strategic advantage. The AI assistant enabled its teams to move faster, act with more confidence, and stay ahead of evolving standards.

ABOUT EXPLEO

At Expleo, we cut through the AI noise to focus on one thing: **helping you build what matters most to you, to the power of AI.**

We bring decades of engineering, manufacturing, IT and data expertise, combined with hands-on AI know-how, to deliver customised solutions that solve real-world challenges.

But above all, we bring people who listen, understand, adapt, and roll up their sleeves. Our experts work side by side with your teams, making AI practical, usable, and above all, valuable. Whether you're just starting or scaling AI across your organisation, we help you making AI work — for your business, your people, and your goals.

With Expleo, build what matters most, to the power of AI.

Let's talk

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