

IBM Consulting

A glowing blue cube is positioned in the center of the image. The cube's faces are decorated with pixelated cloud icons. It sits atop a detailed, dark circuit board with various components and traces. The entire scene is bathed in a blue light, creating a high-tech, digital atmosphere.

G-Cloud 15 IBM – Generative AI Powered Productivity & Quality Improvement for Software Development Teams Service Definition Document

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IBM Generative AI Powered Productivity & Quality Improvement for Software Development Teams

Service Overview

Features

- **Role-Based Assistants Tailored to Your Tech Stack, Standards, and Workflows**

Examples:

- Backend engineer assistant that generates API scaffolds, unit tests, and data validation code for Java/Spring or .NET.
- Frontend assistant that converts Figma specs into accessible React components aligned to your design system.
- SRE assistant that suggests runbooks, auto-drafts incident timelines, and proposes resiliency fixes from past outages.

- **Learn by Doing: Test, Iterate, and Refine GenAI Assistants**

Example:

- 6–8 week pilot in one squad to co-design prompts, guardrails, and workflows; A/B comparison against a control team to quantify gains before scaled rollout.

- **Robust Framework to Measure Productivity & Quality Improvements**

Examples:

- Time-to-completion per task, defect escape rate, change lead time, test coverage, and MTTR all captured in dashboards.
- Quality gates that track AI-generated code issues (security, reliability, maintainability) via SAST/DAST/linters.

- **User-Centered Design: Research, Service and Content Design**

Examples:

- Context-aware assistants embedded in IDEs, issue trackers, and docs portals; journey maps to remove friction.
- Content strategy for AI-produced artifacts (PR descriptions, architectural ADRs, release notes) with clarity and tone guidelines.

- **Business Analysis, Product and Delivery Management Coverage**

Examples:

- Requirement decomposition, user story drafting, acceptance criteria generation, and backlog grooming with AI support.
- Release planning simulations (what-if) using historical velocity and risk signals.

- **Code Generation / Conversion and Testing (Manual & Automated)**

Examples:

- Legacy conversion (e.g., Python 2 → 3, AngularJS → React) with automated refactoring suggestions.
- Auto-generated unit/integration tests, mutation testing recommendations, and test-data synthesis for edge cases.

- **DevOps / Cloud Infrastructure Management and Maintenance**

Examples:

- IaC assistants (Terraform, Bicep) that propose secure defaults, drift fixes, and cost-aware resource sizing.
- CI/CD pipeline authoring with policy-as-code guardrails; automated SBOM creation and vulnerability triage.

- **Support Content, FAQs, and Knowledge Base Production**

Examples:

- Auto-curated KB articles from resolved tickets; FAQ generation for new releases; semantic search over runbooks.
- Conversational support bots that surface relevant logs, metrics, and fixes during incidents.

- **Vendor-Neutral Advice on GenAI Platforms and LLMs**

Example:

- Comparative evaluation across safety, latency, cost, IP controls, multilingual support, and on-prem options mapped to your risk profile and compliance needs.

- **Governance, Analytics, and Dashboards**

Examples:

- Policy controls (PII handling, secure coding standards), prompt and output audit trails, model usage analytics, and ROI tracking.
- Role-based access, red-team testing for jailbreaks, and continuous oversight via AI/ML operations playbooks.

Benefits

- **Higher Engineering Throughput and Better Code Quality**

Example: 20–30% faster task completion on routine coding and test authoring, with fewer defects escaping into production.

- **Data-Driven Decisions with Measurable Outcomes**

Example: Dashboards prove reductions in lead time for changes and defect density; leaders prioritise investments based on hard evidence.

- **Maximised Impact through Role-Specific Customisation**

Example: Tailored assistants for QA, SRE, Platform, and Product reduce rework and improve cross-team handoffs.

- **Reduced Delivery Costs and Cycle Times**

Example: Automation of repetitive tasks (scaffolding, documentation, test data) cuts non-value-add effort across squads.

- **Improved Release Reliability and Operational Resilience**

Example: AI-assisted runbooks and risk detection lower MTTR and incident volume.

- **Full Governance and Auditability**

Example: Every AI interaction and generated artifact is traceable for compliance, IP protection, and security reviews.

Key Differentiators

- **End-to-End SDLC Coverage**

Unlike point tools, our approach embeds GenAI across discovery, design, build, test, release, ops, and support with consistent guardrails.

- **Outcome-First, Tool-Agnostic**

We select platforms/models based on your objectives and constraints (security, data locality, cost), not vendor lock-in.

- **Governance-by-Design and Measurability**

Built-in policies, controls, and metrics ensure safe scaling and continuous value tracking.

- **Human-Centered Adoption**

Co-design with engineers, product, and ops ensures assistants augment, not replace, expert judgment and team practices.

Optional Add-Ons

- **IDE Plugins & Integrations:** VS Code/JetBrains extensions with policy-aware prompts and context windows.
- **Secure RAG for Engineering Knowledge:** Connect assistants to your internal repos, ADRs, wikis, and incident archives with strict access controls.
- **Skills Enablement:** Targeted training for developers, testers, SREs, and PMs on effective AI collaboration and prompt engineering.

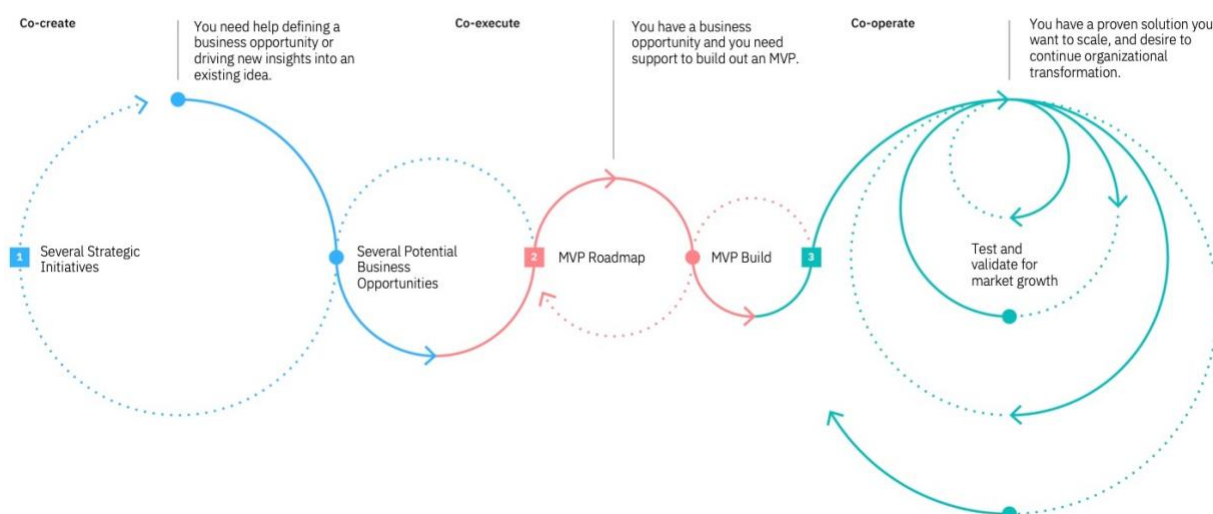
IBM Generative AI Powered Productivity & Quality Improvement for Software Development Teams

Our Offering

This service, powered by IBM Garage's end-to-end model for accelerating digital transformation, helps public sector organisations improve productivity and quality throughout the software development lifecycle.

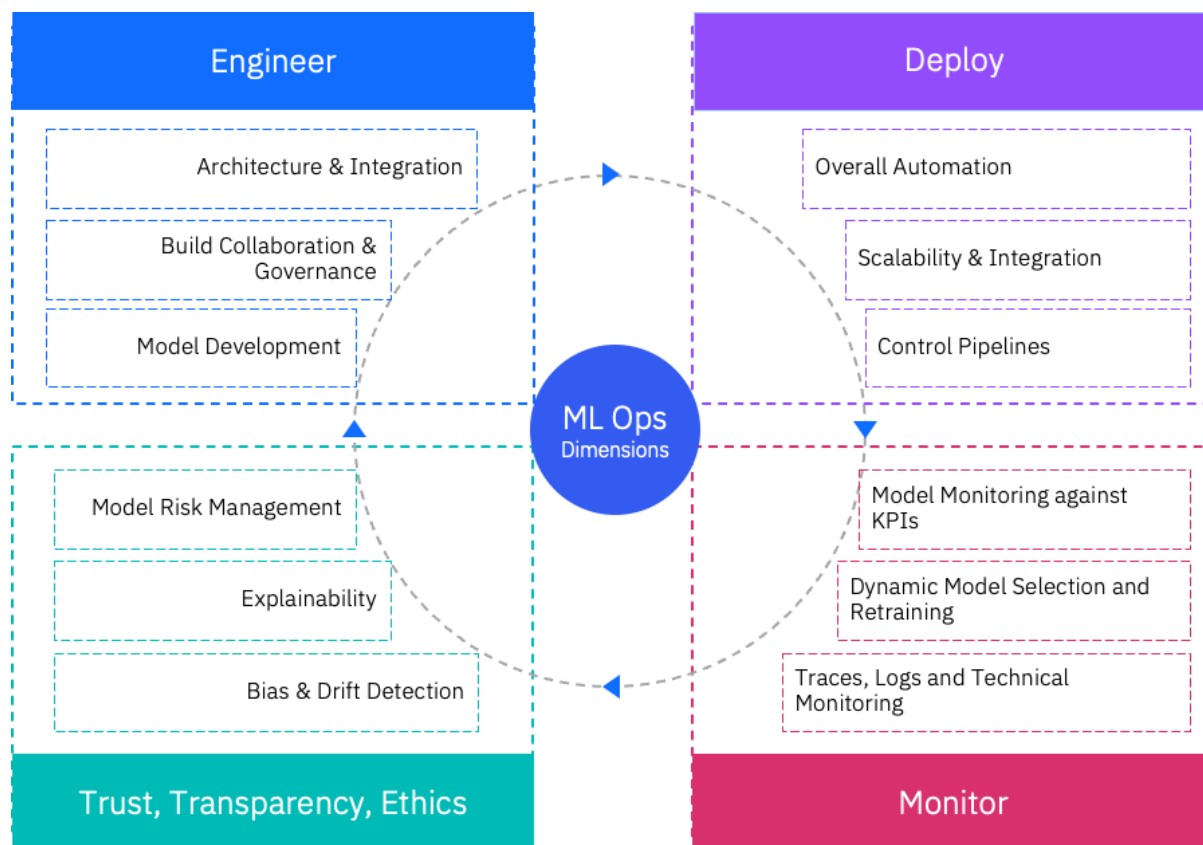
IBM Garage Methodology

De-risk digital transformation through structured innovation



It provides customised, role-based Generative AI (GenAI) assistants to software development teams, tailored to their specific technologies, standards, and workflows. The service works with the organisation's chosen GenAI platform and Large Language Models (LLMs), which are procured separately. Features include learn-by-doing testing and iteration, a robust framework for measuring productivity and quality improvements, and coverage of various areas such as user-centered design, business analysis, and dev-ops. The service offers unbiased advice on selecting the right GenAI platform and LLMs, as well as governance, analytics, and dashboards for GenAI.

Benefits include improved productivity and quality, data-driven decision making, maximised improvements, reduced development costs, increased delivery velocity, and full governance and auditability of GenAI initiatives.



IBM's model for AI / Machine Learning Operations

About IBM

Supporting Government

We help government organisations in the UK and worldwide deliver and transform essential public services – our teams are passionate and proud about helping you to make a real difference to people's lives.

Government Services Supported by IBM



Defence and Intelligence



Public Safety and Policing



Healthcare



Life Sciences



Tax and Revenue



National Infrastructure



Social Care



Education



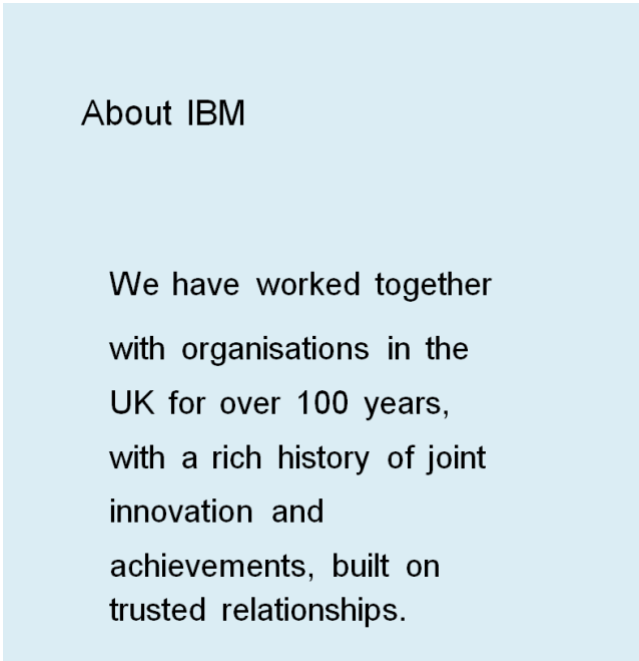
Work and Pensions

The problems we solve for clients are complex and cannot be satisfied with technology alone. They require a partner that can also offer deep industry expertise and a relationship of trust. IBM combines the portfolio, people and sense of purpose necessary to meet today's enterprise demands.

Every day, we support and manage complex delivery for government clients where the impact of delivery has wide-reaching impact on citizens and national services. We bring access to the industry experience, insight and technology capability to deliver and operate secure, scalable, optimised and available services for government.

We support you by bringing:

- Industry expertise – Professionals who understand and are passionate about delivering quality public services and can bring industry insights and apply innovation to your business processes
- Trust and security capabilities – Protecting valuable data and insights and deploying new innovations responsibly
- Innovative technology – Expertise in areas such as AI, blockchain, 5G, Automation, IoT, cybersecurity and quantum, delivered in a Hybrid Cloud environment
- Experienced Services professionals to support strategy, innovation and deliver transformation and change to processes, applications, and cloud infrastructure
- Global alliances – valuable partnerships with the world's leading vendors



Quantum

IBM Q, the world's most advanced quantum computing initiative for commercial use, is being used by CERN

Environment

IBM's focus on sustainability began in 1971 with our first environmental policy

Cloud

Together, IBM and Red Hat are working to deliver the world's only next-generation hybrid multicloud platform

- £ **Economy**
IBM has been **integral to the UK economy for >100 years**, and is one of its largest tech employers
- 💡 **R&D**
In the UK alone, IBM **invests £170 million in R&D** each year

Economy

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