

AI-Powered SDLC Transformation for a Global Technology and Communications Company

Case Study



Customer Overview

The customer is a large multinational technology and communications company that provides connectivity and digital services to a broad customer base. It operates in a highly competitive, technology-driven market and has been investing in digital transformation, customer experience, and the expansion of its service capabilities.

Business Context

The customer was working against a very tight one-year deadline for a telecom Business Support Systems (BSS) stack replacement program. The program required a **25% to 35% increase in velocity per scrum team for the given headcount**.

Neurealm assessed the project state and the customer's AI maturity and recommended and implemented a five-level AI-Powered SDLC maturity model to support increased use of AI across the software development lifecycle.

Challenges

The customer needed to achieve a **25% to 35% increase in velocity per scrum team for the given headcount** to meet the very tight one-year deadline for the BSS stack replacement program.

The Solution

Neurealm proposed a **five-level AI-Powered SDLC maturity model**, progressing from AI-assisted tasks to increasingly integrated and agentic SDLC capabilities.

The model covered architecture and solution design, code planning, development, code review, testing, bug analysis, and other SDLC activities, with capabilities expanding at each level.

1. Chat Assist

The first level introduced AI assistance using Claude for architecture and solution design tasks, code planning, code snippet development, test planning, and test case creation.

What was created

- Prompt template library
- Prompt engineering techniques with examples to create and verify prompts

2. Embedded Coding Assistant

The second level introduced Claude Code for architecture and solution design tasks, code planning, code scaffolding, code completion, PR review, test planning, test case creation, test automation scripting, and bug analysis.

What was created

- claude.md per repository
- Spec-Driven Development
- Worktree parallel development
- Inline test generation

3. Unified Context Engineering

The third level introduced MCP Servers and Claude Code Skills to support the same broad set of SDLC activities with access to additional engineering context.

What was created

- Custom Atlassian MCP Server for the network-ringfenced Atlassian instance
- GitHub Enterprise MCP Server
- Database MCP Server for MySQL and Couchbase
- Playwright MCP Server
- Basic code map, KB4AI, with project-context.md and codebase-essentials.json
- Skill for bug analysis
- Skill for code scaffolding
- Skill for PR review

4. Agentic SDLC

The fourth level introduced an agentic SDLC using webhooks, Python, and the Claude API.

A detailed code map called **CodeAtlas** was created to

curate code and design documents into a graph consisting of capabilities, components, endpoints, business rules, entities, Kafka, and standards in the Open Knowledge Format (OKF).

The initial agents referenced CodeAtlas using an initial context and progressive tool-call-based context loading model.

Agents created

- PR Review Agent
- Bug-Analysis Agent
- Integrations Mismatch Reporting Agent

In roadmap

- HLD Creator Agent
- Skeleton LLD Creator Agent
- Code Scaffolding Agent
- Mock Services Creator Agent
- Performance Profiler Agent

5. AI-Native SDLC

The fifth level defines autonomous SDLC workflows using **LangGraph**, **Claude API**, and **Claude Agent SDK**.

Autonomous workflows in roadmap

▪ Design

HLD → LLD → dependencies → refinement → epics

▪ Development

LLD → stories/tasks → refinement → epics

▪ QA

tests → mocks → regression

▪ Operations - Self-healing

Technology Stack

The solution used **Claude Code on Sonnet-4.6, Sonnet-5, and Opus-5**, along with the **Claude API** through a **client AI Gateway Proxy**.

The implementation also included MCP Servers, Claude Code Skills, webhooks, Python, LangGraph, and Claude Agent SDK as part of the five-level AI-Powered SDLC maturity model.

Solution Impact

The engagement resulted in a **25% to 35% increase in velocity for scrum teams**.

The change in developer and tester velocity was measured as follows:

- **Before-** 8.5 Storypoints per developer or tester per two-week sprint
- **After-** 11.5 to 12.2 Storypoints per developer or tester per two-week sprint

1 Storypoint = 1 Person Day.

The engagement demonstrates how AI capabilities can be progressively introduced across the SDLC, from chat-based assistance and embedded coding support to unified context engineering and agentic workflows, with further AI-native capabilities defined in the roadmap.

Neurealm is an AI-first technology services company helping enterprises build the intelligent systems that power the future. We work across the full Physical AI to Agentic AI spectrum, from edge devices to autonomous agents, and help enterprises move from AI experimentation to production-grade deployment, powered by NeuGAIN, our unified AI platform. Our outcome-driven, engineering-led approach spans AI, Engineering, Data, RunOps and more, serving 280+ enterprises worldwide.

For more information on how **Neurealm** can help solve your business problems, write to inquiry@neurealm.com or visit us at www.neurealm.com