



Embold for the Financial Services Industry

Take real-time decisions,
increase performance and
deliver high quality products.

FOR MANAGERS

Deliver high quality code
in time-critical environments.

FOR DEVELOPERS

Solid foundation so that
there are no breaks.

FOR THE CODE

01

Understanding and controlling software quality is no longer a nice to have – it is impacting share price, bottom-line and most importantly reputation and liability risks to companies.



02

Who we are (www.embold.io)

**Out on a mission to become the de facto
A PLATFORM DEVELOPED BASED ON THE LEARNINGS FROM THE
CHALLENGES WITHIN THE AUTOMOTIVE INDUSTRY.**

Our company

Founded in 2009 in Germany, spirited with the Silicon Valley DNA of its founders, Embold is a venture backed technology company headquartered out of Frankfurt, Germany.

Quick Facts

Seasoned in supporting large enterprises in designing and improving their data-driven software development quality and analytics programs.

Product-centered, with strong R&D focus, our engineers design our products from the ground up and react to the demands of the market continuously.

Funded by leading German VCs and Business Angels, we do not intend to stop growing.

Our platform

Multi-dimensional, intelligent software analytics platform.

Only solution on the market detecting architectural and design issues and highest coverage of code metrics and issues.

AI Driven Code Analytics Platform.

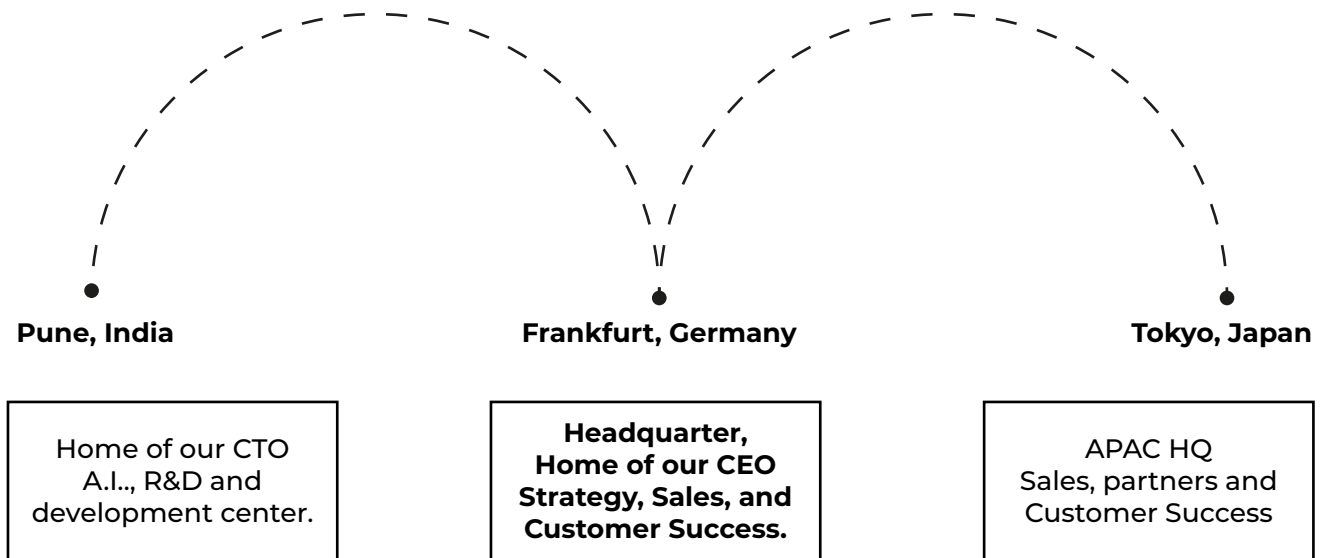
To create actionable intelligence derived from code.

Built and designed to adopt to our customers use cases.

Our software is built for customization to incorporate use cases around developer analytics and design-centric code quality analysis.

03

Global locations



04

The biggest names in the industry are failing

CHALLENGES IN THE FINANCIAL SERVICES INDUSTRY



UK Bank lost £330M due to IT failure

TSB's 1.9 Million users were locked out of their accounts for over 6 days in 2018. The reason was an IT failure while data migration from its former parent bank into a platform created by Sabadell, TSB's new owners. Users were either facing intermittent failures or seeing data that was not applicable or confidential. The £330M total spent by TSB to address the IT failure was made up of £125m in customer payouts, fraud and operational losses of £49m, the cost of fixing the tech systems, which was £122m, and £34m in income lost due to waived fees and charges incurred because of the disruption. Barclays also faced a similar issue on a smaller scale later that year.



NatWest

Large banking institutions have also failed in some upgrades, costing them dearly.

In 2012, **Natwest/RBS faced a huge banking meltdown**, the botched software upgrade affected millions of people, both the bank's customers and those expecting payments from accounts held by these banks. The problems affected savings and offset mortgages as well as current accounts. This crash lasted over 12 days and costed the bank £175M in total - £70M in compensation.



5.2M transactions failed due to IT collapse

In 2018, **Visa's back-up data centre designed** to handle all transactions across Europe **did not switch** on when problems emerged, resulting in **5.2M failed transactions** in a 10-hour slot. Visa compensated the customers that were affected, costing them dearly.



Data breach at renowned credit reporting agency

It was one of the biggest cybersecurity incidents reported in history, when Equifax, a consumer credit reporting agency declared in September 2017 that it was hit by a massive data breach. The breach resulted in loss of sensitive data of over 100 million consumers. Personal details such as Social Security numbers, addresses, birthdays, and Driver's License numbers got stolen by the hackers. Reports suggest that a US website application vulnerability was broken by criminals to gain access to the files.

Digital Transformation has brought tons of data online. While it is important to safeguard this data, it is equally critical to check the software systems and applications for vulnerabilities. Vulnerability Assessment is the first step towards successful Security Testing strategy.

Understanding and controlling software quality is no longer a nice to have – it is impacting share price, bottom-line and most importantly reputation and liability risks to companies.

05

What exactly is Technical Debt? Why does it matter?

The best and most efficient ways of building software systems aren't usually the most obvious and intuitive. A look at the computational complexities of brute-force algorithms vs their advanced but efficient counterparts should this. **Yet it is easier and feels quite natural to go for the simple solutions,** add to this the need to deliver features fast, and an engineering team may find itself choosing a quick and easy way over a time-taking, advanced, but better approach. **Hence, companies suffer from technical debt.**

Technical Debt is created when developers write software that violates good architectural or coding practices, creating structural flaws in the code.

Structural flaws in the following product / application features can cause technical debt:

Robustness — The stability of an application and the ease of recovery from failures.

Performance Efficiency — The responsiveness of the application.

Security — An application's ability to prevent unwanted intrusions.

Transferability — The ease with which a new team can understand the application and quickly become productive working on it.

Changeability — An applications' ability to become quickly and easily modified.

**Technical Debt - Principal = (Σ high severity violations) x .5) 1 hr.) x 75\$) +
(Σ medium severity violations) x .25) 1 hr.) x 75\$) +
(Σ low severity violations) x .1) 1 hr.) x 75\$**

06

Global Automotive Industry Is Embracing Our Technology

Some of our clients.



Our experience.

We are helping financial institutions such as banks and insurance providers in a large variety of use cases and projects. These include digital transformation, B2B corporate lending platform, corporate software such as Product Life Cycle Management, internal audits and more.

Embold is the core development platform for the future of financial services institutions to help with digital transformation without any crashes, reduce technical debt, enhance security and quality of software products and reduce IT failures.

Embold is used to build a central financial/insurance QA platform, ensuring shipped source code follows the same high standards as internal projects.

Let Embold help you like we have helped these global giants.

07

Our approach

TO MITIGATE THE CHALLENGES FACED BY THE FINANCIAL SERVICES INDUSTRY

Identify problems throughout the software development lifecycle which would otherwise cost companies and teams:

1. money
2. time
3. degradation of quality
4. liabilities
5. reputation damage

Detect architectural and design issues and highest coverage of code metrics to allow for well designed code that is built to last. A strong base will reduce the time needed to introduce new features as the project becomes more complex, it will also increase performing and efficiency of the task force.

Create actionable intelligence derived from code, allowing real-time decision making

Our goal is to empower you to deliver great quality and manageable products, right on time.

A Smart Software Analytics Platform that will help you achieve higher software quality.

EMBOLD FITS RIGHT INTO YOUR CURRENT SYSTEMS WITHOUT MUCH HEAVY LIFTING, HOW?

1

The platform identifies problems throughout the software development lifecycle and works within the CI/CD model to provide continuous integration to maximize quality control and provide better reports. Allows real-time decision making, increases performance and efficiency and mitigates degradation of quality

2

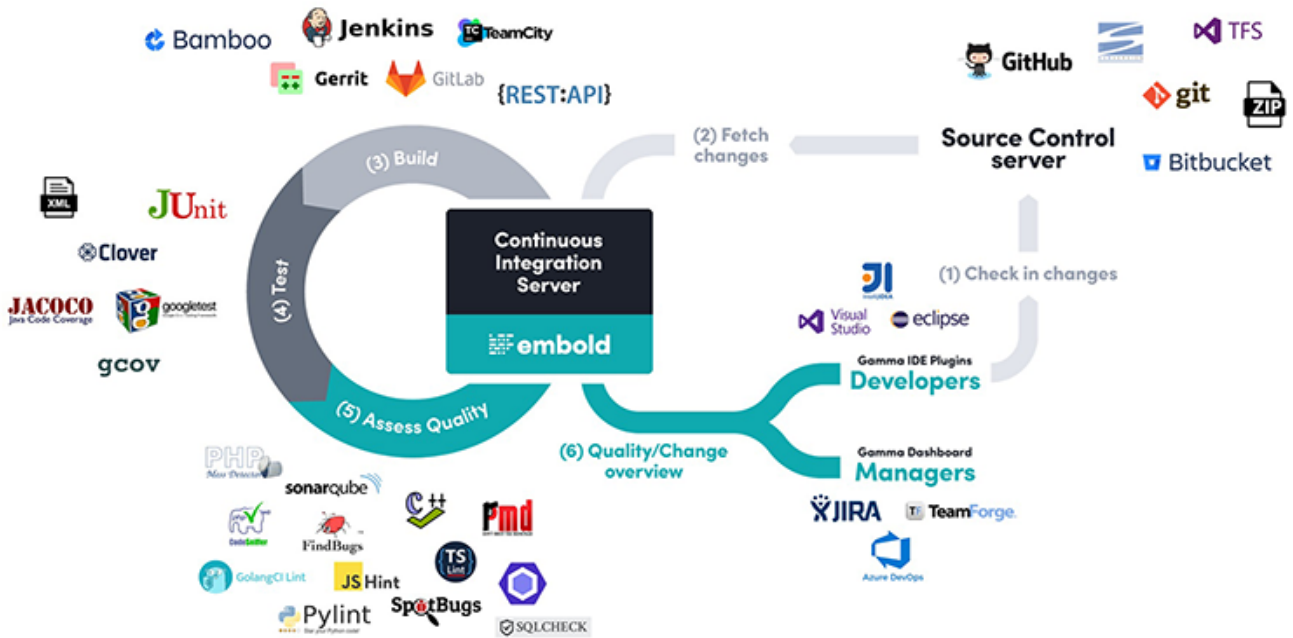
It can be used across all major software platforms, applications, and phases of software development or maintenance.

3

It is offered both as a cloud version (SaaS) and on-premise. So you can pick what works for you and get going right away.

With Embold you can shift your focus on what you want to deliver, while it shows you how with the added bonus of great quality.

08 Enterprise Ready Integrations



09 The Platform

FIND BUGS AND FIX THEM IN REAL-TIME



SMART HEATMAPS

Visually comprehend the size and quality of every component and fully understand the state of your software at a glance.



DEPENDENCY DIAGRAM

View and navigate through all dependencies of your software components and learn how they influence each other.



COMPONENT EXPLORER

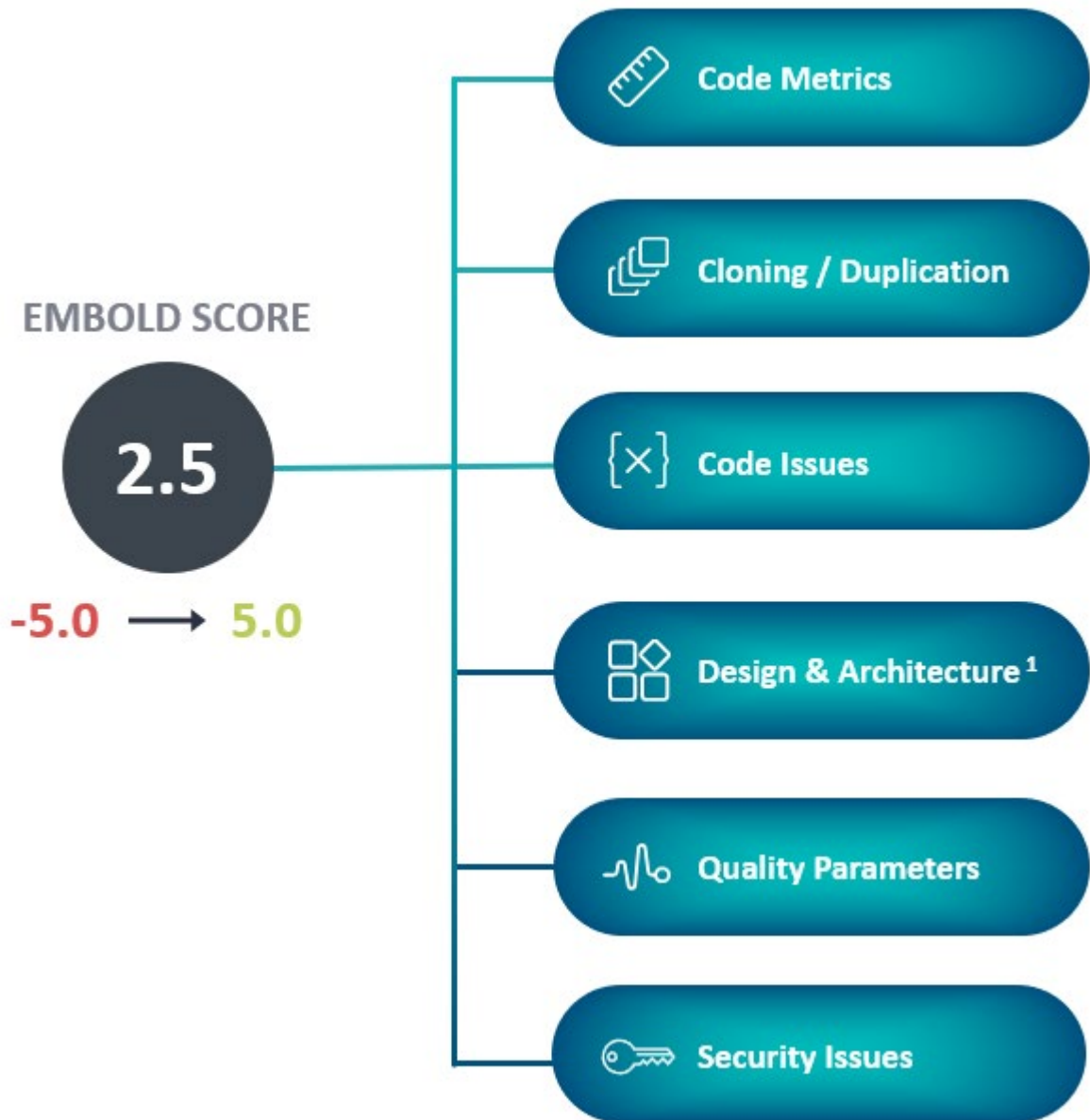
Understand issues on a component level with rich annotations and see where they are located in your code.



REFACTORING SUPPORT

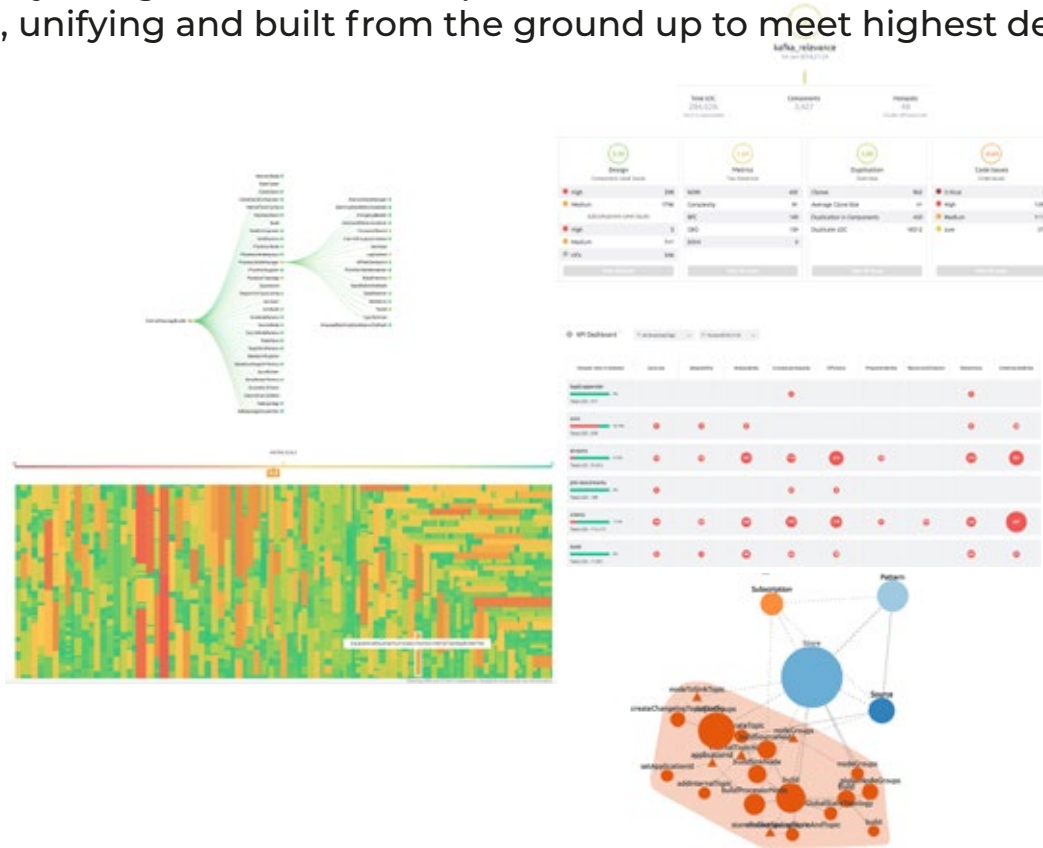
Quickly understand how to refactor and split complex components by using our innovative partitioning algorithms.

Embold score



10 Gamified Multi-Sided Platform that connects the right minds

A cleanly designed, multi-sided platform around code that is simple to use, unifying and built from the ground up to meet highest demands.



C-Level

1. Responsible for delivery, quality and risk
2. Disconnected from the process
3. Wants to be in touch and control again

Software Managers

1. Pressure and Constraints to release Quality Software
2. Coping with complex, heterogeneous systems
3. Struggles in coordinating and driving teams

Developers

1. Brings in domain knowledge and skills
2. Often only responsible of small pieces of the code
3. Faces bug fixing and low-value cognitive activity

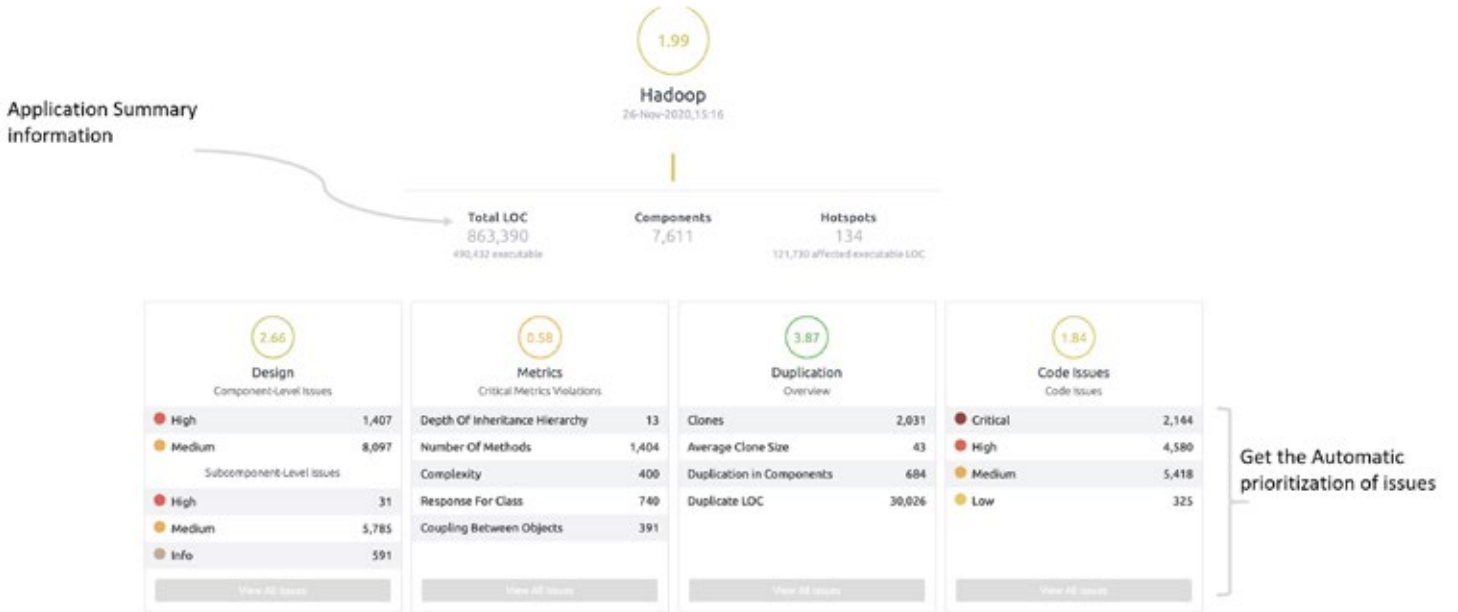
Code

1. Architectures break, bugs increase, maintenance
2. Becomes less secure, reliable and trusted
3. Becomes unmanageable and causes failures and damage

11 Overview & Root Cause Analysis / understood by all stakeholders.



12 Product / Complex issues simplified and explained



13 Core Use Cases

For MANAGEMENT

MANAGEMENT COCKPIT

Quickly read and react to changes made in your code base through actionable and non-technical dashboards and cockpits.

ESTIMATION AND PORTFOLIO

Estimate and bid data-driven on tasks/projects. Skip the rotten fruits and cherry pick high ROI projects. Clean out your portfolio and get access to higher overall margins.

COST & RISK REDUCTION

Embold early warning feature supports early risks recognition in the development cycle, minimizing development costs as well as risks influencing the estimated value of a project

For DEVELOPERS

PRODUCTIVITY IMPACT

Developers use Embold to drive effectiveness of their code review, improve system design and fixing bugs faster.

COORDINATION IMPACT

Embold brings a new language toolbox to your team that fosters communication and coordination beyond team level

ONBOARDING / LIFE CYCLE

Use Quality Gates, Team Composition and Embold features to get your new developers up to speed faster.

For THE CODE

CODE BASE MAINTAINABILITY

Understand how fixing architectural code issues and focusing on the Embold score drives cost of code and maintainability.

BUG FIXING PRIORITIZATION

Embold prioritizes defects by severity and identifies hot spots in your code to guide you in fixing the bugs that matter most.

QUALITY PROCESS IMPROVEMENT

Use the data and insights generated by the rich analytics engine of Embold to design your quality assurance process.

...and many more.



What's more?
Embold is: **TÜV Certified**
MISRA C 2012 compliant

ID	Titel
ISO 26262:2011	Road vehicles – Functional safety
IEC 61508-3:2010	Functional Safety of electrical/electronic/programmable electronic safety-related systems, Part 3: Software requirements

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Customer Case Studies

GLOBAL LEADERS HAVE TRUSTED EMBOLD TO HELP THEM ENHANCE THEIR SOFTWARE – AND THE PLATFORM HAS DELIVERED!

1. Embold as a quality support platform – Mainfunders
2. Embold as a taskforce support platform – Internal support and monitoring service for GoDigit
3. Embold for an Insurance sector Digital Transformation - Sokabau

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Case Study 1

Embold as a quality support platform – Mainfunders

The problem.

Commerzbank along with Main Incubator wanted to create a digital peer-to-peer lending platform (Main Funders) for SMEs.

This platform would enable clients of Commerzbank's business division to present concrete investment projects to potential investors and secure financing.

The main aim of this platform was :

A - Increase customer satisfaction

B - Strengthen its competitive position

C- React to regulatory requirements

D - Create a basis that will allow it to build further innovative loan products upon

For this, Main Incubator selected Embold to provide a solution.

Our approach.

Embold consulted the Commerzbank IT department with regards to the best set up for it's plans, including required software as well as hardware.

To ensure the quality of the code, Embold platform was used by our developer.

Use of Embold made sure that the code was developed fast with no/less errors along with being cost effective.

Use of Embold also ensured team to delivery the release before time.

Embold scans were performs on every releases. Scan reports along with code was provided to the customer.

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Case Study 1

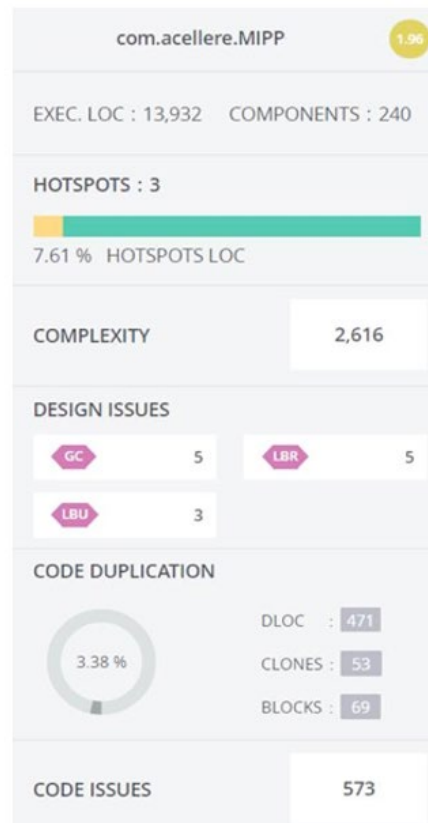
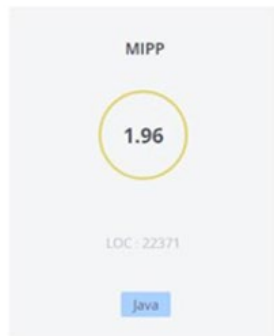
Embold as a quality support platform – Mainfunders

The outcome.

All releases were delivered before time accepted without any problems.

Their testing time and efforts were less due to good code quality, which resulted in quick production deployment and rollout.

Due to the successful phase 1 release, Embold’s contract was extended for phase 2 development and deployment.



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Case Study 2

Embold as a taskforce support platform –
Internal support and monitoring service for GoDigit

The problem.

Godigit (Digit insurance), one of the fastest growing insure-tech startups in India, face problems in tracking code quality, easy onboarding of employees, reducing the production issues, etc.

The following processes at GoDigit require assistance:

The expanding development team require easy onboarding

A quality gate is required in the following areas of the development lifecycle:
At the time of committing the code in the version control system (Git and SVN)
In the Pull request flow.

Finding code issues within development flow (Eclipse IDE)
Support for VSCode IDE
Daily progress tracking within their CI/CD flow.

Our approach.

For 250 developers at Godigit, we decided to provide the Eclipse Embold plugin that can be used to identify early findings within the IDE.

Along with the plugin we also decided to provide them with a CLI tool so they can create an issue list for changed files without any IDE.

For restricting developers from writing bad quality code in a Version Control System (Git, SVN), providing them with a custom feature called 'gated commit'. The 'gated commit' configuration integrated with their central server, will allow all the developers to use a common configuration where Embold can exclude/include code issues from a central location.

Embold's scan integration within their Bitbucket allows for monitoring for all Pull Requests. The users will be able to view the newly added issues in PR in Embold's UI.

Integrating Embold with their Jenkins CI/CD flow allows for a scan to happen after every production build and results to be logged in on Embold's UI.

Multiple reports (daily, weekly and monthly) are provided to their Management. All reporting process is automatically handled in their environment.

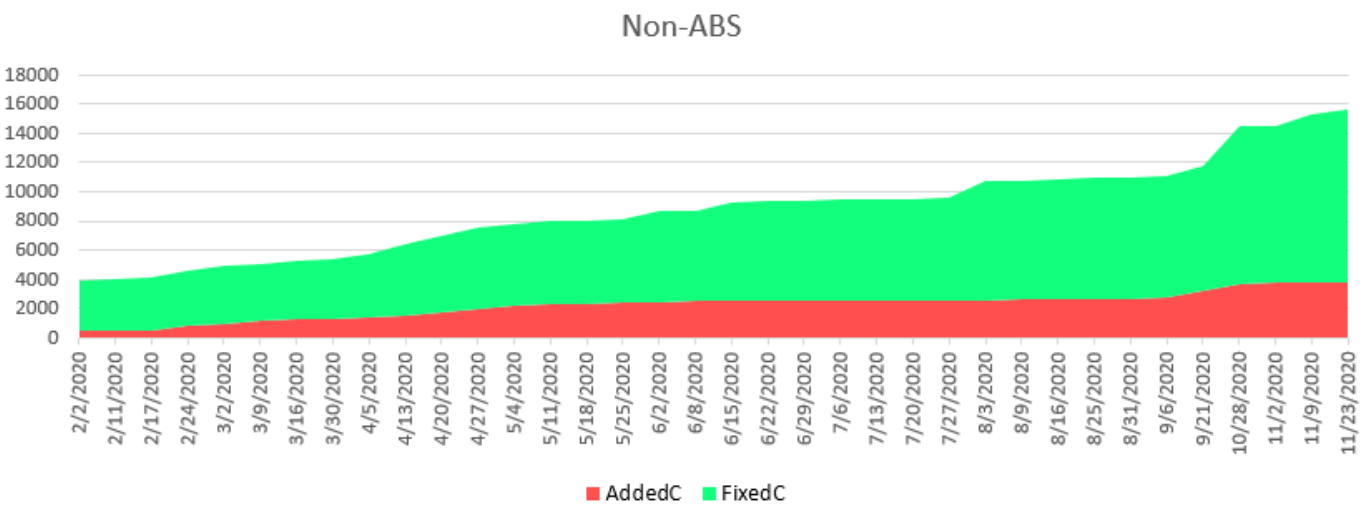
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Case Study 2

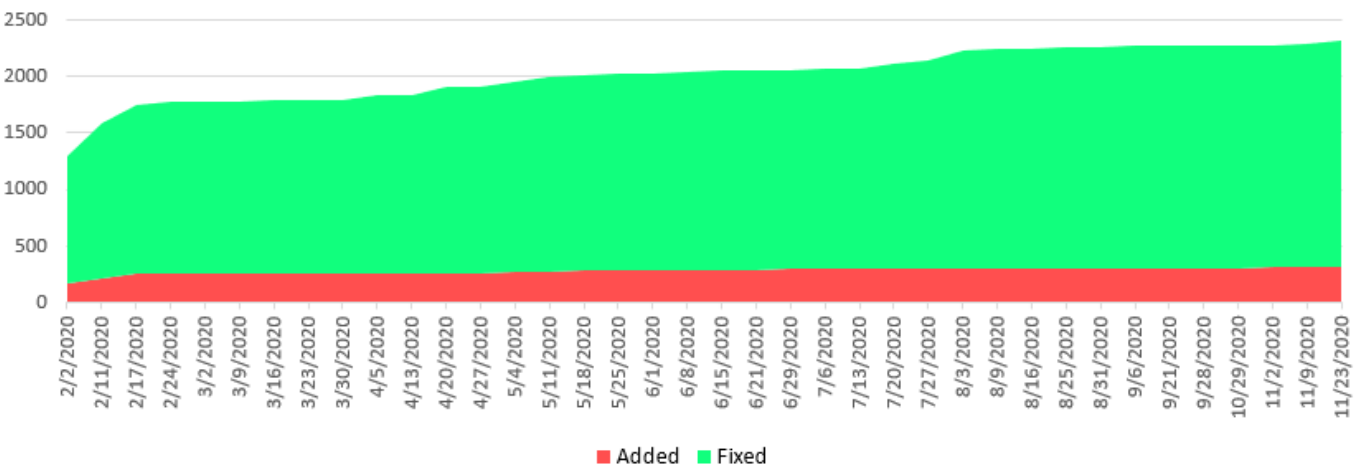
Embold as a taskforce support platform –
Internal support and monitoring service for GoDigit

The outcome.

Code quality has improved



Top management can monitor code quality very easily



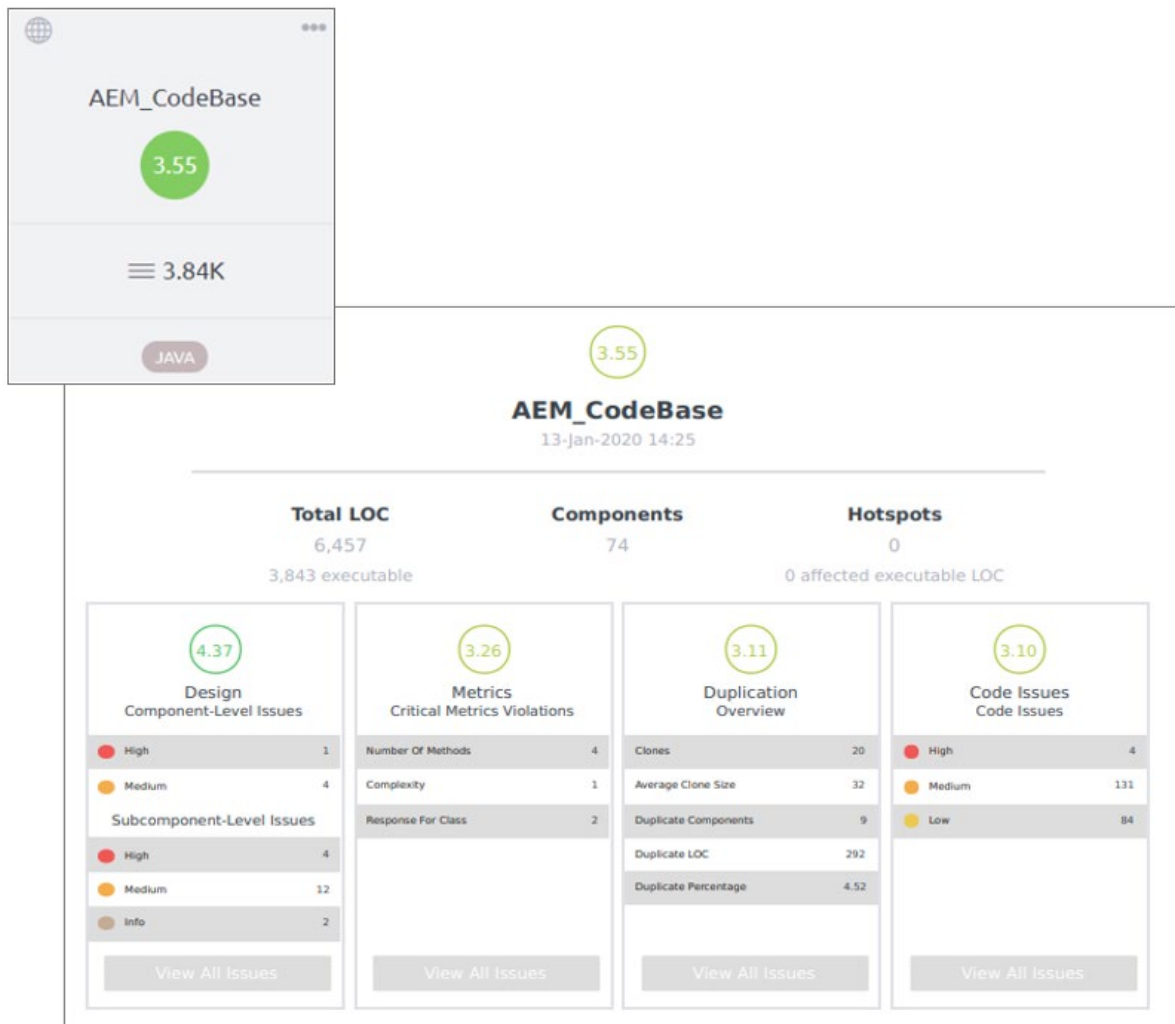
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Case Study 2

Embold as a taskforce support platform –
Internal support and monitoring service for GoDigit

The outcome.

Language : java
Repository Name : AEM_CodeBase



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Case Study 3

Embold for an Insurance sector Digital Transformation - Sokabau

The problem.

Sokabau a traditional insurance company headquartered in Weisbaden near Frankfurt, is modernizing their infrastructure and want to make sure they do it right from the beginning, to avoid the blunders that the industry has faced due to fast and hasty digitization of their legacy infrastructures.

Sokabau caters to insurance for blue collared workers and operate mainly in Continental Europe. Their legacy systems are written in Java, and the CTO wants to modernize the same to keep up with current systems and technology and has decided to invest in the transformation so that they do not have any technical debt from day 1 and do not have to later invest in maintaining or fixing their software.

Their aim is to execute things right from the very start with Embold.

Our approach.

We are the core technology management platform for Soka Bau's CTO as he is modernizing his legacy infrastructure.

The Embold platform is the perfect fit for their digital transformation, because it allows for evaluation and identification of issues in real-time, aids in prioritizing, identifies security vulnerabilities, and helps build a solid architecture right from the very start.

Embold will leverage it's platform to help Sokabau reach its goal of no technical debt and complete digital transformation.

The solution.

A modern infrastructure, to keep up with the times, build to last, with zero technical debt. Which will result in reduction of maintenance costs, no breaks and solid security.

Our solution will help Sokabau avoid messy failures that have costed market leaders heavy losses, along with impact on share price, the bottom line as well as reputation and liability risks.