



Modern Banking Applications with Vaadin

BUILDING SECURE & SCALABLE APPLICATIONS
FOR FINANCIAL INSTITUTIONS

TRUSTED BY LEADING FINANCIAL INSTITUTIONS



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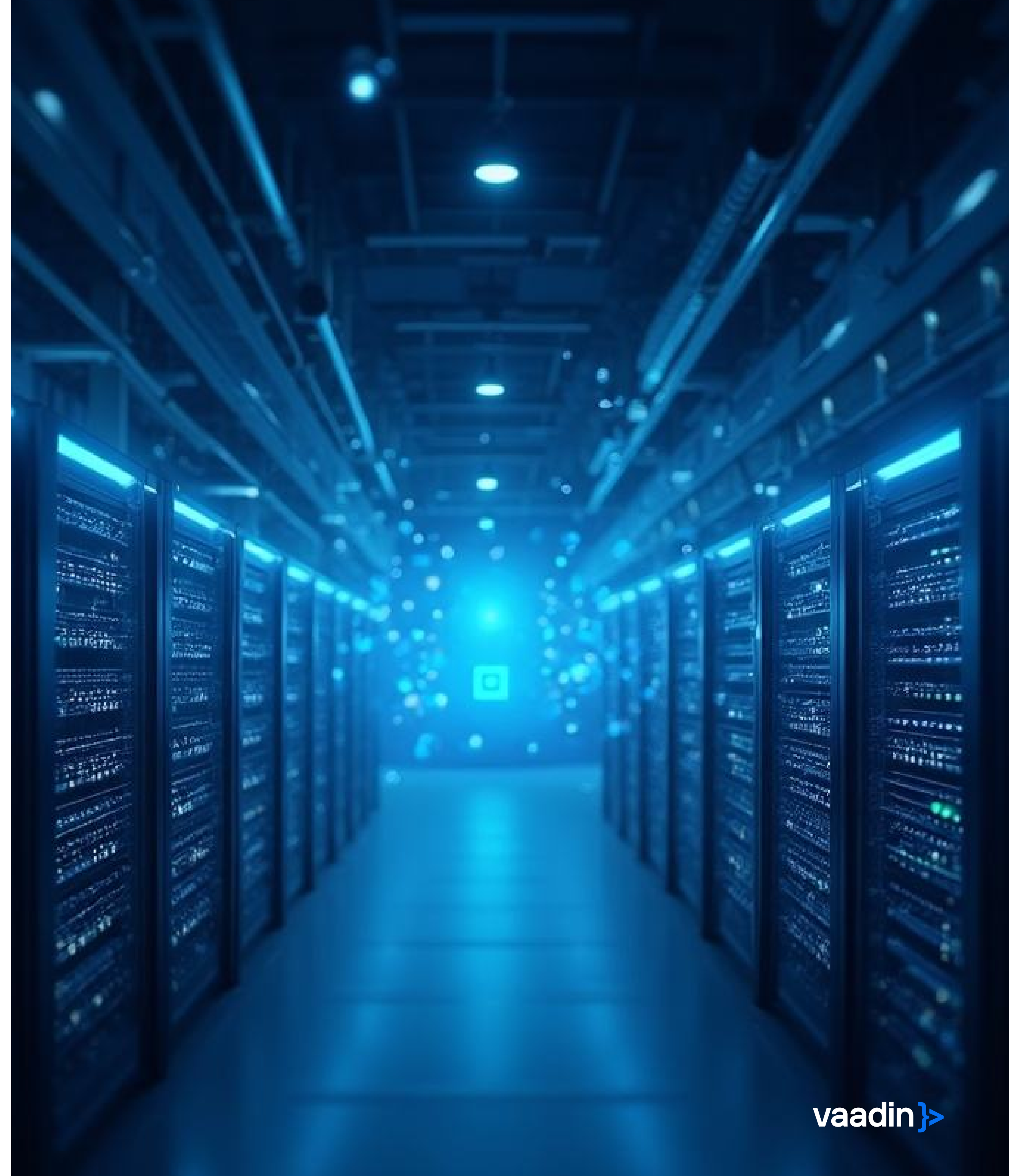
Executive Summary

#security #productivity #maintainability #futureproof

Vaadin is made for mission-critical systems that must stay secure and supported for decades. It offers **up to 20 years** of long-term support, security patches, and expert help from the engineers who build it.

Cloud, customer demand and regulations require banks to modernize, but replacing everything at once is risky. Vaadin helps banks move to the web in steps, keeping critical systems running while updating old ones. Legacy desktop apps, built on top of e.g. Swing can even run inside a browser with new Vaadin views around them.

Vaadin keeps all business logic and data on the server, so nothing sensitive is exposed in the browser. This means fewer security risks and easier compliance with GDPR, PSD2, and OWASP standards.



Every Bank is a Software Company

Banks must deliver fast, secure, and easy-to-use digital services, both for customers and employees. But most banking systems were built years ago, using tools and architectures that make change slow and risky.

Every bank is a software company

What's driving change

Banks face strong pressure to modernize because of:

- **Cloud adoption** and the need for scalable systems.
- **Digital channels** becoming the main customer touchpoints.
- **Regulations** like PSD2, GDPR, and KYC/AML that demand better data security and transparency.
- **Competitive pressure** to launch new features faster.

These forces affect both **customer facing apps** and **internal business apps**.

Modern UIs that last

Banks need apps that look and feel modern, but also stand the test of time. Rebuilding every few years is too expensive. Vaadin helps banks modernize while keeping codebases maintainable and compatible long-term.

You get a modern web UI built on stable, supported technologies that fit into existing architectures.

According to Gartner **30-80% of modernization projects fail**. But most banks succeed by modernizing in **phases**: updating one system, one UI or one workflow at a time. Unlike other technologies Vaadin supports this gradual path by helping run multiple platforms inside one and modernizing over time. You can add new Vaadin-based modules around old systems (JSP, JSF, GWT, Angular or even Swing), reuse existing logic, without downtime or massive rewrites.

Empowering existing teams

Your developers already understand your business. With Vaadin, they can build web apps without needing to become JavaScript experts. That means faster delivery, easier maintenance, and better use of existing talent – no need to re-skill entire teams.

Vaadin in a nutshell

Vaadin Feature

Full-stack Java UI framework. Vaadin includes UI components, server–client communication, and a Java API for building complete applications. Everything and all open source.



Rich set of built-in business components. Grids, forms, charts, dashboards, etc., plus 2000+ community add-ons.



Single, integrated platform. Dependencies and compatibility managed by Vaadin’s core team with over 25 years of backward compatibility.



Secure communication channel. All client–server data exchange goes through a single managed connection penetration-tested and enterprise-hardened.



Long-term support and maintenance options. Free core support plus commercial guarantees of up to 15 years, including patches and updates.



Open source under Apache 2.0 license

What It Means for Banking

Enables banks to build secure, complex business apps entirely in Java. Perfect for regulated environments that already rely on Java for their backend.

Speeds up delivery of internal and external banking apps such as loan origination, KYC workflows, and reporting dashboards with ready-to-use, enterprise-grade UI components.

Reduces long-term maintenance risk or teams diving into technical problems that are already solved by others. Banks can safely support apps for decades without breaking changes or dependency issues.

Meets strict banking security requirements. Simplifies compliance audits and protects sensitive financial data in transit. Customer data is the most valuable thing and is a must have. No single developer will build an accidental REST api just for a single use-case.

Fits the long lifespan of banking systems. Ensures stability, continuity, and compliance over time, even as teams or technologies evolve. Frameworks like React and Angular don’t offer maintenance, security updates or priority in their backlog as they’re driven mainly by the creator’s needs.

Ensures transparency and freedom from vendor lock-in, critical for banks requiring auditability, independence, and long-term control of their technology stack.

Security & Compliance

Security is built into the core of Vaadin’s architecture. Unlike client-driven frameworks, Vaadin keeps all application logic, data, and state on the server. Nothing sensitive ever runs in the browser, which means attackers cannot inspect or tamper with internal logic. The browser only receives what needs to be displayed, for example a user’s name and never the full user object or confidential data.

Vaadin automatically handles the communication between client and server through one secure endpoint. This channel, which supports WebSocket push and other modern features, is penetration-tested and includes built-in protections like CSRF tokens and session validation. Even if an attacker manipulates the browser, the server always verifies each action and blocks anything that isn’t valid in the current UI state.

To maintain trust, Vaadin follows OWASP best practices for secure session handling, data validation, and protection against XSS and injection attacks. All user input is validated on the server, and only explicitly approved content is sent back to the client. Vaadin also integrates cleanly with standard Java security frameworks like Spring Security, JAAS, and Apache Shiro, allowing developers to use established authentication and authorization methods.

Top 5 Security Benefits of Vaadin

- 1 Server-Driven Logic**
All business logic runs on the server — no sensitive code or data exposed in the browser.
- 2 Smaller Attack Surface**
Minimal client-side footprint reduces risk of injection, XSS, and data leaks.
- 3 Compliance-Ready**
Built to support GDPR, PSD2, and OWASP guidelines for data protection and secure coding.
- 4 Enterprise-Hardened Communication**
All client-server communication goes through a single, penetration-tested channel with secure session handling.
- 5 Long-Term Security Maintenance**
Continuous updates, long-term support, and optional security patches for up to 15 years.

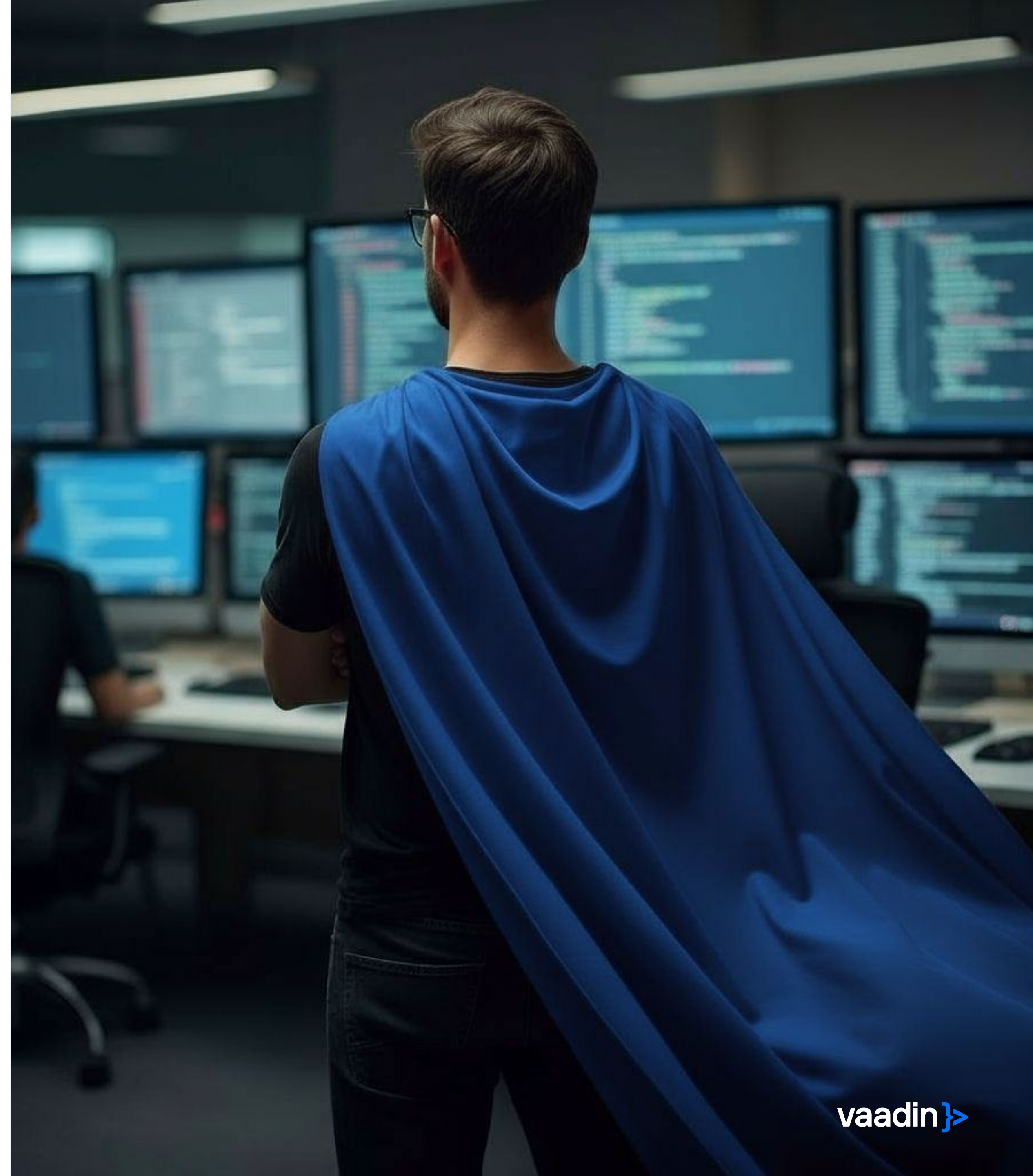
Developer Productivity & Maintainability

Building and maintaining modern banking applications shouldn't require juggling multiple frameworks, toolchains, and programming languages. Vaadin reduces front-end complexity by allowing teams to build complete web applications entirely in Java, the same language already used for most core banking systems. There's no need to manage a separate front-end stack or maintain complex securitywise risky APIs between the UI and the backend.

With Vaadin, developers can create interactive, server-driven UIs using a simple and consistent Java API. Vaadin Co-pilot adds a visual editor and AI assistant that helps teams quickly design and adjust layouts, improving collaboration between developers and designers and speeding up delivery.

Because all parts of the application – UI, logic, and data flow – live in one coherent stack, context switching is minimized. Developers can stay productive without needing deep JavaScript knowledge or complex build tools. The result is faster development cycles, simpler maintenance, and fewer integration issues over time.

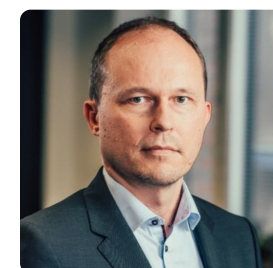
Vaadin applications often require up to 50% fewer lines of code than a typical Angular + Spring setup while providing the same functionality. Fewer technologies mean less upkeep, easier onboarding for new team members, and a lower total cost of ownership. Exactly what banks need for long-lived, mission-critical systems.



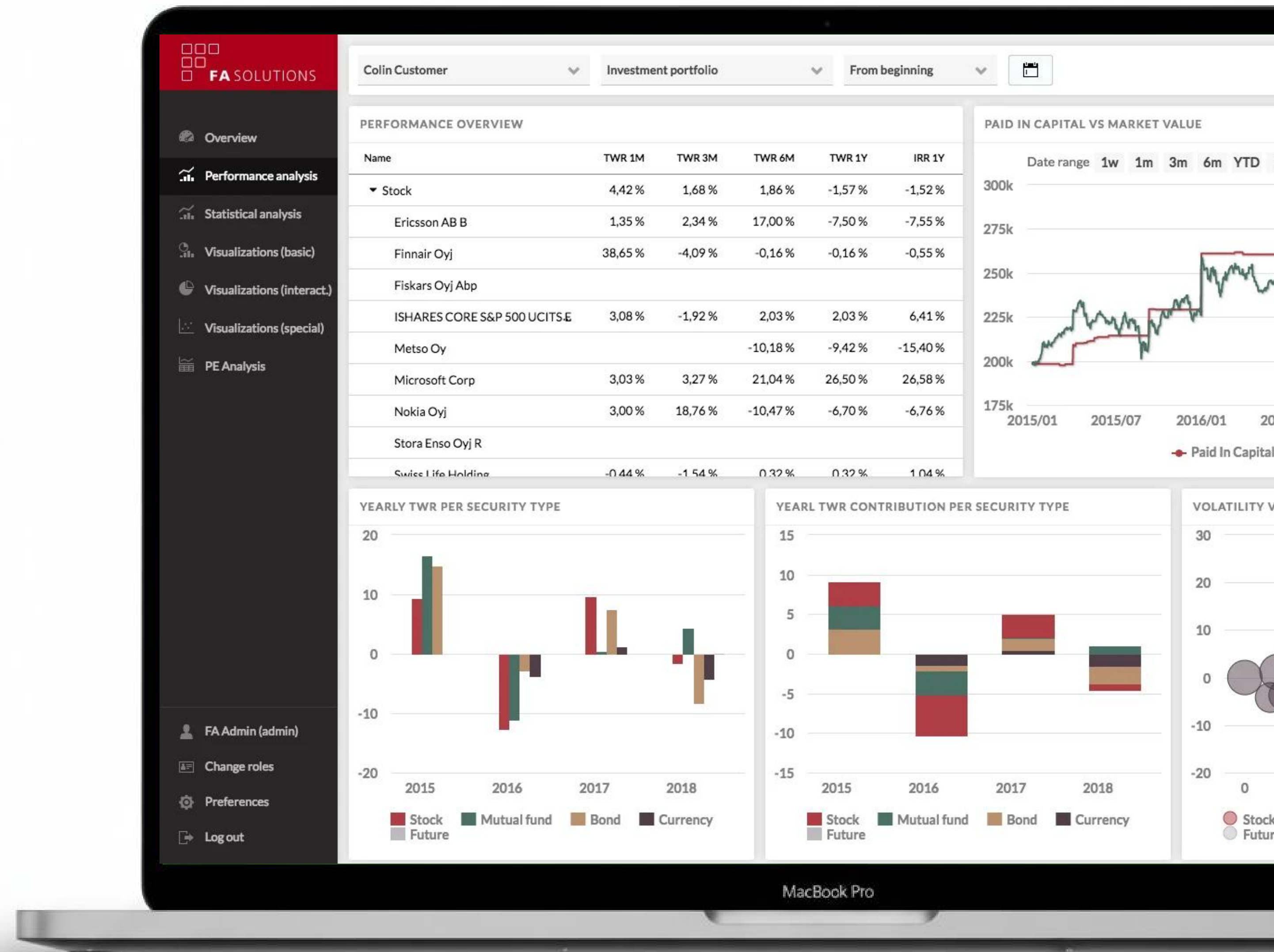
Proven in the Banking Sector



“The Vaadin technology has enabled us to build applications that are efficient, desktop-like, and usable anywhere by professionals in the financial industry.”



Juha Lehtonen
CEO, FA Solutions



When Longevity, and Security Matter Most, Vaadin Stands Apart.

Stability that stands

Banks and financial institutions depend on systems that must stay secure and maintainable for decades. Not just until the next framework trend fades. Vaadin was built for long-term stability.

Vaadin offers **the longest support in the industry**. With each version **guaranteed support** for up to **20 years**, you can plan confidently for the future. For example, **Vaadin 7**, released over a decade ago, remains supported until **2032** – proof of the company’s commitment to enterprise customers and backward compatibility.

Enterprise-Grade tools and services

Vaadin Enterprise includes everything you need to build and sustain mission-critical applications:

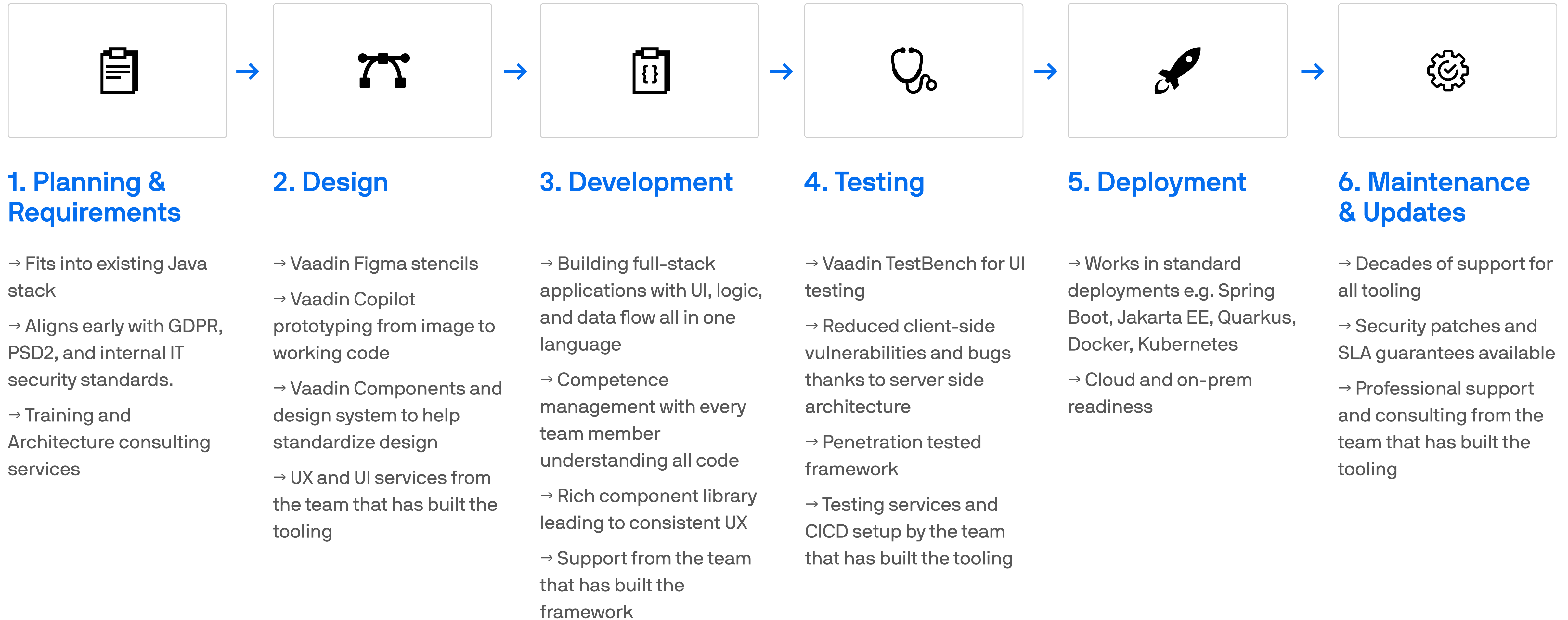
- **Guaranteed updates** and compatibility for decades
- **Components** such as **Charts, Grid**, and the **Collaboration Engine** for real-time, data-driven banking interfaces
- **Expert support and consulting** from Vaadin’s own engineering team — the people who build the framework
- **Security patches, SLA guarantees, and dedicated maintenance channels** for peace of mind in production environments

A partner you can rely on

While other web frameworks come and go, Vaadin has **supported enterprise Java customers for over 25 years** — evolving with the Java ecosystem and staying compatible across generations of technology.

Choosing Vaadin means choosing **stability, security, and expert partnership** for the full lifetime of your application.

Software Development Lifecycle





**Vaadin helps banks
modernize securely,
without losing control
of their core systems.**

Get in touch

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WEBSITE: [VAADIN.COM/CONTACT](https://vaadin.com/contact)

