AI-driven architectural modernization

Modernize the architecture of Java and .NET applications up to **15x faster**

Companies are sitting on a growing backlog of complex, monolithic applications that are difficult, risky, and expensive to refactor.

Yet most modernization efforts focus on code upgrades or lift-and-shift migrations without addressing the root of the problem: **the application's architecture.**

Faster modernization starts with the architecture

vFunction delivers **AI-powered architectural modernization** that works seamlessly with GenAI code assistants like **Amazon Q Developer and GitHub Copilot** to transform Java and .NET monoliths into modular, scalable, microservices-based applications —up to **15x faster** than traditional methods.

How vFunction works

While other tools generate code for greenfield projects, **vFunction cuts through the complexity of brownfield applications**. To continuously modernize applications, vFunction:

- Combines static and dynamic analysis with data science to uncover architectural technical debt
- Provides relevant context to code assistants for automated refactoring
- Breaks monoliths into scalable cloud-ready services for faster transformation.
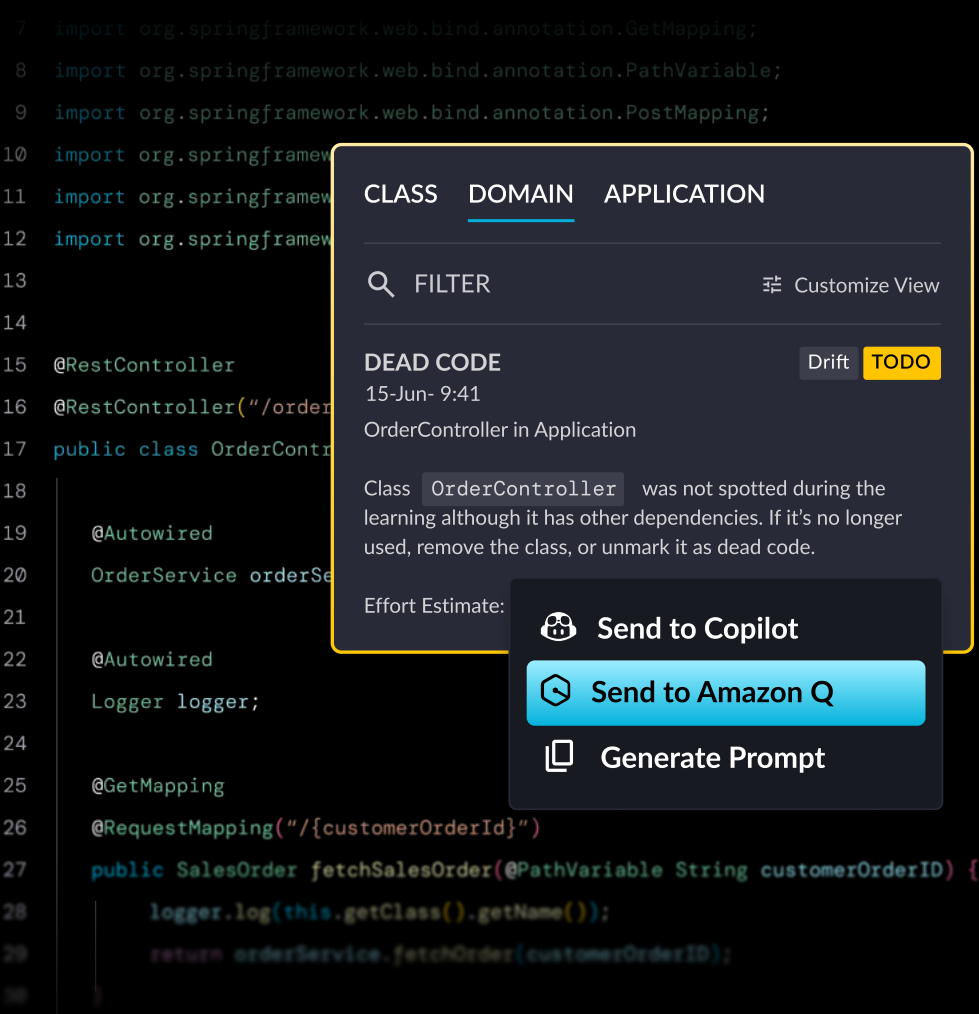
Key benefits

✔ **Accelerates modernization**

Refactors complex Java and .NET applications into modular, cloud-ready services

✔ **Visualizes architecture and enables DDD**

Uses patented static and dynamic analysis, combined with data science to enable domain driven design and uncover architectural technical debt.

✔ **Guides and automates refactoring**

Architectural intelligence powers GenAI workflows that help code assistants fix technical debt and break down monoliths into modular components.

✔ **Streamlines service transformation**

Extracts services with speed and accuracy, generating APIs, and supporting framework upgrades made for the cloud.

✔ **Enables continuous modernization**

Integrates with your SDLC to detect, monitor, and remediate architectural drift—keeping systems resilient, scalable, and aligned release after release.

TODO (34)		
		Expand TODO
DOMAIN CHANGES		15-Feb-2024 13:46
① ShippingScannerJob	Drift	TODO
STATIC CLASS EXCLUSIVITY		15-Feb-2024 13:46
① Architectural Complexity has decreased from 3 to 1	Drift	TODO
DEAD CODE		16-Feb-2024 13:46
InventoryController in Application	Drift	TODO
DEAD CODE		16-Feb-2024 13:46
ProductController in Application	Compat	TODO
CLOUD READINESS		16-Feb-2024 13:46
com.oms.util.Logger	Compat	DONE
DOMAIN CHANGES		16-Feb-2024 13:46
① DinersPayment Service	Drift	DONE

Integrate architectural modernization into your SDLC

vFunction connects its architectural modernization engine to modern developer environments, enabling teams to query architectural issues, generate GenAI prompts, and trigger remediation directly from the command line. Leveraging vFunction's Visual Studio code extension or its MCP (Model Context Protocol) server, vFunction bridges the gap between architecture and code assistants, making architectural transformation fast, actionable, and fully embedded into your SDLC.

With optimized support for Amazon Q Developer and GitHub Copilot, teams can resolve complex issues like circular dependencies, god classes, resource exclusivity and domain entanglement using prompts enriched with run-time architectural data.

Through integrations with Jira and Azure DevOps, vFunction pushes prioritized architectural to-dos directly into your backlog, ensuring that nothing gets lost between discovery and execution while automatically validating that these to-dos are remediated.

◈	**AmazonQ**
⊛	**GitHub Copilot**
◰	**Azure DevOps**
✦	**Jira**

Examples of issues vFunction helps resolve with GenAI workflows

Refactor domain dependencies and cross-domain calls

Simplify and split "god" classes

Untangle circular flows and domain-level loops

Split classes used differently across multiple domains

Remove dead code

Resolve circular library dependencies

Upgrade aging frameworks and outdated libraries

Transform Apache Struts Forms to REST

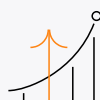# Fully funded application modernization

Modernizing complex applications doesn't have to be a budget blocker. vFunction partners with leading cloud providers through a range of programs—including Proof of Concept (POC) funding and modernization acceleration programs to reduce risk and accelerate cloud native adoption.

Through programs like the **AWS ISV Workload Migration Program**, qualified organizations can receive fully funded vFunction licenses to jumpstart stalled migrations and transform Java and .NET monoliths into modular services on cloud platforms like AWS Lambda, EKS, ECS with Fargate, and beyond.

vFunction also works closely with other leading cloud providers to support application modernization across a variety of environments.
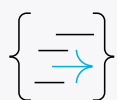
Unblock stalled migrations	**Accelerate adoption of advanced cloud services**	**Modernize faster with no upfront license cost**

aws · Microsoft Azure · Google Cloud · ORACLE Cloud Infrastructure

From complexity to innovation

TREND MICRO

"Without vFunction, we never would have been able to manually tackle the issue of circular dependencies in our monolithic system.

Martin Lavigne
R&D Lead, Trend Micro®

15x
faster full application modernization

Global financial leader
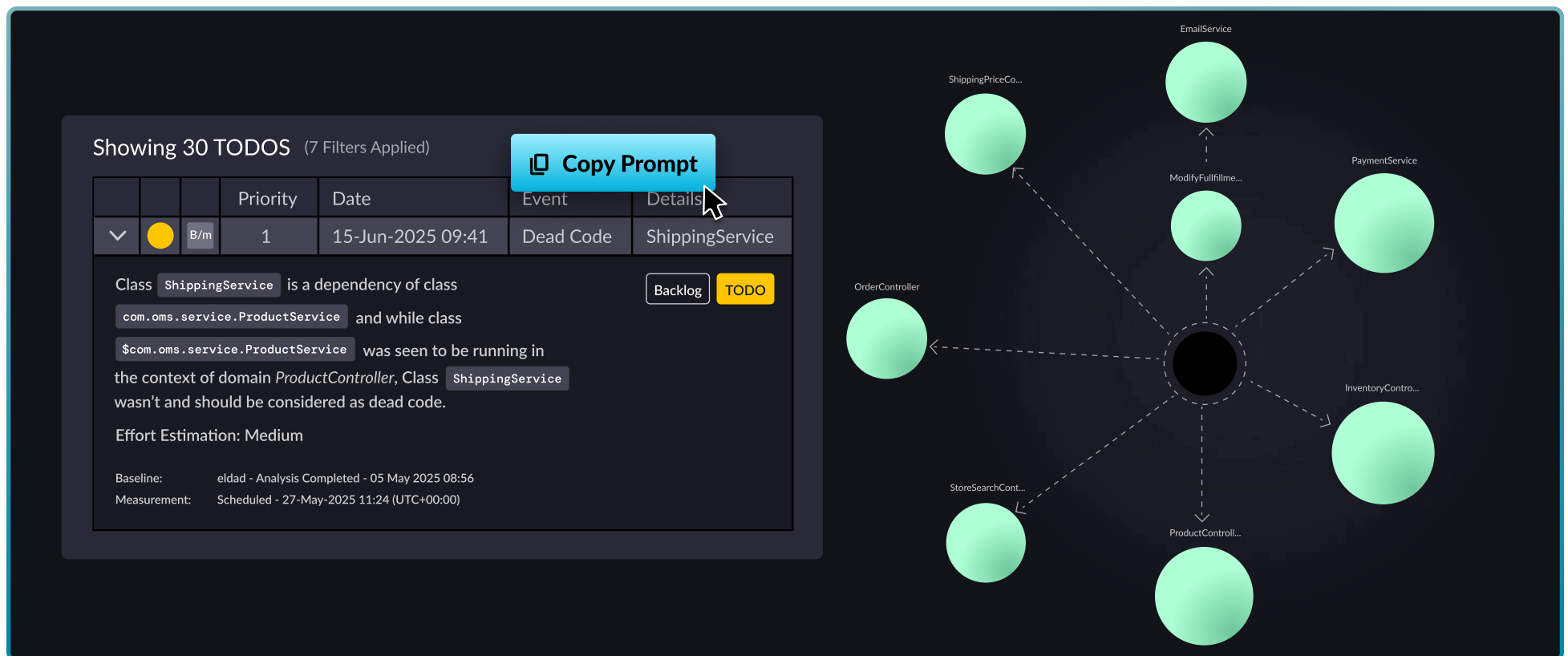
3x
increase in release frequency

Intesa Sanpaolo

90%
decrease in deployment time

Trend Micro

Visualize, modernize, and govern, all in one platform

vFunction not only accelerates the modernization of complex Java and .NET applications—it also ensures those modernized services stay healthy and manageable over time. By leveraging OpenTelemetry tracing and supporting a variety of languages and technology stacks, vFunction provides deep architectural insight across distributed systems. After breaking monoliths into modular components, it enables ongoing governance to prevent sprawl, enforce service boundaries, and monitor architectural drift. This end-to-end approach helps teams build scalable, resilient systems and keep them that way.

Ready to tackle complexity and scale modernization?
Visit vFunction.com to get started.

Get Started

Trusted by:

About vFunction

vFunction is the pioneer of AI-driven architectural observability and modernization, working seamlessly with code assistants to transform Java and .NET monoliths into modular, microservices-based applications—up to 15x faster than traditional approaches. Global system integrators and top cloud providers partner with vFunction to help leading companies like Intesa Sanpaolo and Trend Micro discover their architecture and transform applications—accelerating innovation and amplifying business impact. vFunction is headquartered in Menlo Park, CA, with offices in Israel, London and Austin, TX. To learn more, visit www.vfunction.com. To learn more, visit www.vfunction.com.