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GIGASPACES
FINANCIAL SERVICES

Avanza Delivers Digital Banking Services
with Millisecond Response;
Growing Customer Base by 5X

Technology innovations and customer demands are revolutionizing the financial industry, and the focus on delivering exceptional customer experience is now more important than ever.

The demand for speed, simplicity, personalization, and transparency is driving a new generation of technologies and services that are transforming cumbersome and complex processes into simple, super-targeted products that address very specific individual needs.

The rise of the digital bank is clear. Over the last 15 years, the number of transactions occurring in a branch has shifted **from more than 50%** to **less than 10%**.

Avanza has embarked on a completely digital strategy as they focus on customer-centric innovation and new open banking services with innovative and agile technologies.

88%
OF LEGACY BANKING ORGANIZATIONS

fear losing revenue to financial technology companies

PricewaterhouseCoopers

37% OF BANKS

said expanding their digital presence was a top priority (up from 18% in 2018)

Cornerstone Advisors, 2019

Customer AVANZA BANK

Avanza is a Swedish digital bank founded in 1999. A trailblazer in the financial world, it constantly seeks to create the best financial services by integrating innovative technologies with the ever-growing demand for customer experience.

Today, Avanza offers stock trading, funds, savings accounts, pensions, mortgages and open banking to over 1.2 million customers. It leads Stockholm NASDAQ stock market transactions, offering customers solutions to save in a wide range of Swedish and international securities and savings accounts, with no fixed fees and very low brokerage fees. And it constantly seeks more relevance for a broader audience.

1.2M
CUSTOMERS

22 TB
OF DATA
IN-MEMORY

280K
EQUITY
TRANSACTIONS
PER DAY

1200
MICROSERVICES

MS RESPONSE FOR
>28M
CUSTOMER VISITS
PER DAY

Avanza received the Bank of the Year award in 2018 and 2019; has been the winner of the Swedish Quality Index award for the most satisfied savings customers for 10 consecutive years; and has been recognized in ServiceScore's ranking as provider of the Best Customer Service in financial services for five consecutive years.

All this has been achieved by continuously evaluating and integrating new, innovative technologies that increase efficiency and deliver customer value and satisfaction in today's digital era.

Business Challenge

To grow its customer base and maintain its leading position in customer satisfaction, Avanza required a platform that would deliver the response speed required for digital customers; the scale necessary for its continuous growth in both number of customers and volume of operations; and the agility to create and quickly deploy new innovative services for continued, strong innovation.

Winner of the Swedish Quality Index award for the most satisfied savings customers for

10 consecutive years

Technical Challenge

Avanza was challenged with an architecture that failed to deliver the performance, speed, scale and availability required. It was preoccupied with time-consuming manual optimizations and faced with numerous challenges that had a negative impact on customer experience. These ranged from slow data transfer on large data sets, slow execution of complex queries and high latency to cache eviction issues and single points of failure.

Key Challenges

Millisecond business requirements

Mission-critical availability

Fully transactional

Elastic scalability to handle TBs of data

Agility to quickly introduce new services

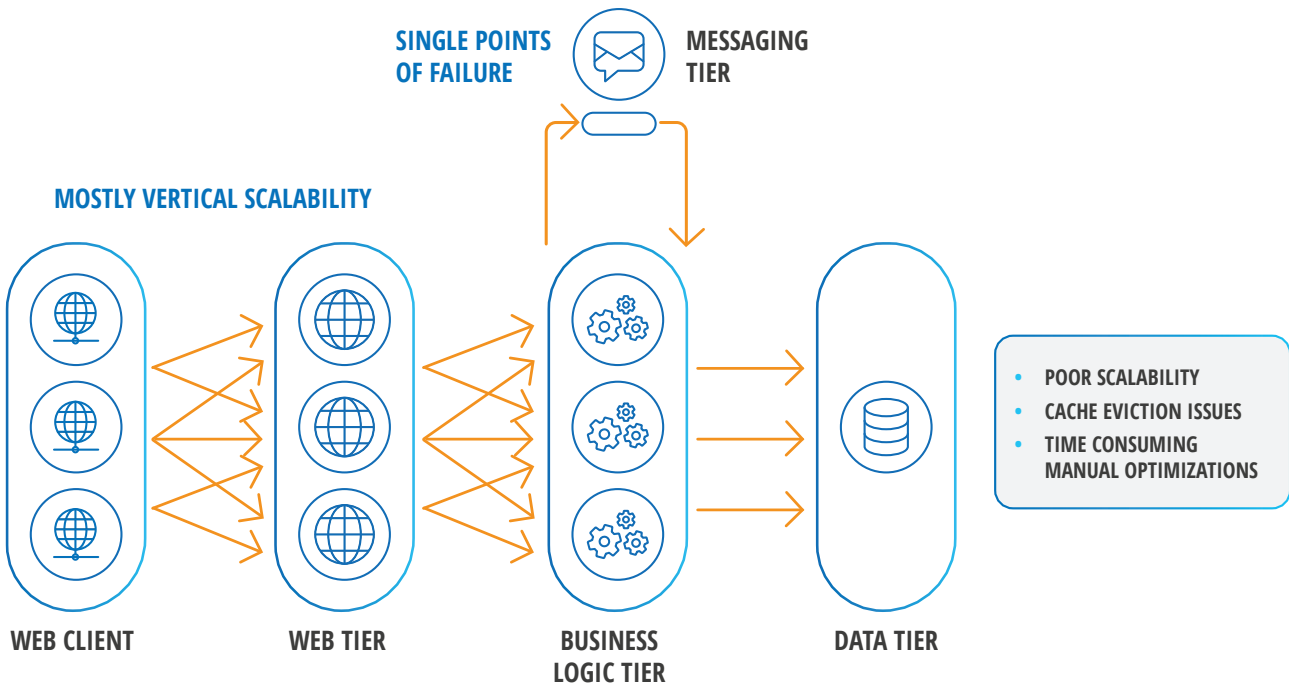Figure 1: Previous Avanza architecture that lacked performance, speed and scale

Solution

GigaSpaces' InsightEdge Smart ODS provides Avanza with a simplified, scalable, microservices core software architecture to power its digitalized banking offering, supporting the growing demand for instant response times and easy-to-use applications from any device.

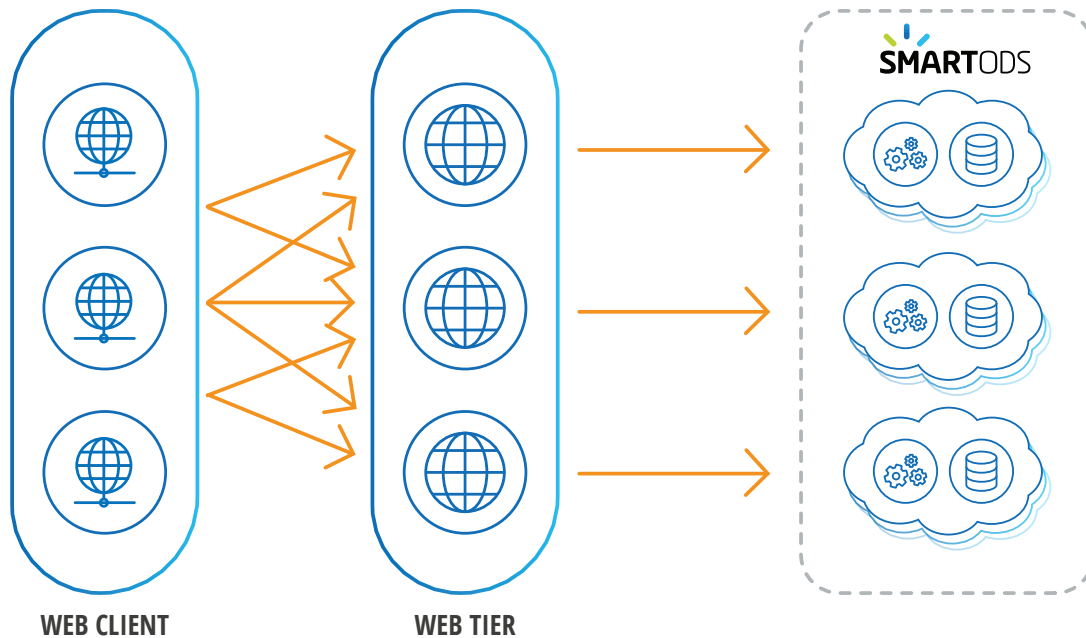**100%** of operational transactions and data are run and stored on GigaSpaces Smart ODS

WEB CLIENT   **WEB TIER**   SMARTODS

*Figure 2: Current Avanza architecture – all online services running
on GigaSpaces distributed in-memory platform*

The GigaSpaces platform provides Avanza with assured performance, scalability, low-latency and high availability. Reducing the operational risks in development and weekly release cycles, it enables greater focus on tactical improvements, including:

Building innovative services for business value, with little upfront work

Developing and deploying agile applications and new features

Enabling deployment on-premise, cloud and hybrid and alignment with Avanza strategy

"GigaSpaces enables us to deliver on our vision of providing a fully digital bank that services our customers solely through high performance, personalized retail banking applications."

Peter Strömberg, CIO at Avanza Bank

Results

Immediate Cost Savings
Elimination of the need for the roll-out and maintenance of additional auxiliary infrastructures.

Extreme Performance
Running over 22 TB of data with millisecond response to over 28 million website visitors per month, leading NASDAQ Stockholm with more than 280,000 equity transactions per day.

Scale and Support of Unplanned Peaks
The ability to effortlessly scale and seamlessly handle unplanned peaks has helped Avanza provide a continuous, excellent customer experience with no downtime and millisecond response times.

Accelerate Batch Applications
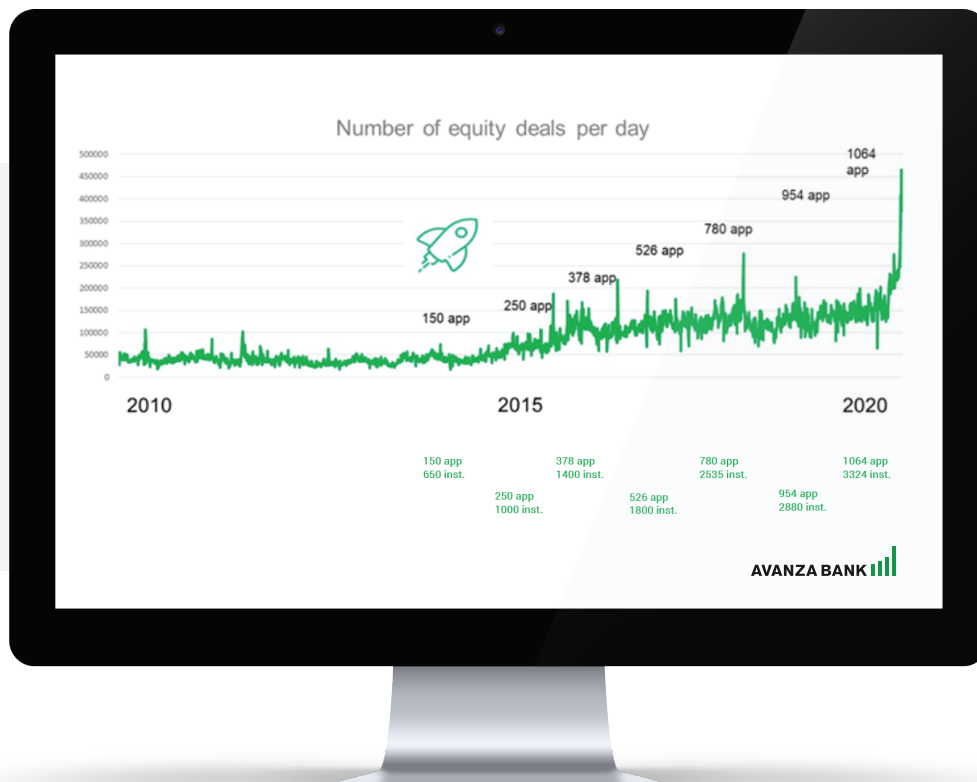For example, the Benefit Level application runtime reduced from 18 hours to 10 minutes

Figure 3: Scaling for growing number of deals per day and support for spikes

Agility to Develop New Innovative Services

Since deploying GigaSpaces, Avanza has increased the number of microservices running on the platform from 150 to over 1200. Development time accelerated by 6x. Applications include:

Online trading with real-time trading recommendations

Avanza Zero, Sweden's first no-fee fund

Green room for climate-positive investment decisions

Portfolio Generator for fast and easy creation of diversified personal portfolios

Face recognition for banking apps

Mortgage services

Pension offerings

Open banking

Continuation of Avanza Innovation

Avanza plans to leverage GigaSpaces augmented transactions technology for further personalization of banking services, as well as simplifying deployments across environments using GigaSpaces' Red Hat OpenShift Operator support

"We have been writing banking history and will continue to do so with the help of GigaSpaces technology to enable our developers to innovate with confidence, knowing that our data infrastructure can handle the rapid growth in the number of advanced applications, concurrent users and transactions."

Peter Strömberg, CIO at Avanza Bank

▶ Click here

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THE RECORDED WEBINAR

Digital Transformation in Financial Institutions
Getting it Right with Avanza Bank

ABOUT GIGASPACES

For over a decade, GigaSpaces has pioneered the field of in-memory computing with software platforms that power the move to real-time, digital, and online services. Our broad portfolio fits the needs of all enterprises and OEMs - from accelerating and scaling existing data-driven applications to building a distributed, low-latency data fabric that seamlessly integrates with existing systems of record and siloed data stores.

Enterprises can transform legacy data infrastructure into a modern, real-time microservices based architecture to rapidly deploy new digital services with unparalleled response times at any load and high concurrency, across any environment, to external and internal consumers.

"GigaSpaces' InsightEdge makes you faster and smarter at the speed and scale of business with strengths in transactions, platform, multi-model, customer adoption, development tools, extensibility, and customer support."

The Forrester Wave™: Translytical Data Platforms Q4 2019

300+
Direct Customers

50+/500+
Fortune/Organizations

5,000+
Large instillations
in production (OEM)

BENEFITS

INSTANT INSIGHTS TO ACTION
Unlock immediate insights right as data is born, enriched with historical data, empowering time-to-analytics-to-action at sub-second scale. Event-driven analytics and business logic trigger analysis and action at the right instant. Predictive analytics from SQL, streaming, machine learning through Apache Spark and deep learning with Tensor Flow and other frameworks.

TCO OPTIMIZATION
Simplified architecture eliminating cluster and component sprawl complexity; radically minimizing the amount of moving parts. Cloud-native, infrastructure-agnostic deployment, for cloud, on-premise and hybrid. Intelligent multi-tiered data storage across RAM, SSD Storage-Class Memory (3DXPoint), Persistent memory reducing storage costs by 10X while retaining in-memory speed.

EXTREME PERFORMANCE
Ultra-low latency, high-throughput transaction and stream processing. Co-location of applications and analytics to act on time-sensitive data at millisecond performance.

MISSION CRITICAL AVAILABILITY
Always-on battle-tested platform for mission critical business continuity. Highly available with at least 5 nines reliability, auto-healing and zero single points of failure. Geo-redundancy, fast data replication and native persistence for rapid disaster recovery.

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