



TRADITIONAL BANKING TO DIGITAL TRANSFORMATION



PROBLEM STATEMENT

Banks often face the difficult task of maintaining and upgrading legacy (heavyweight) core banking systems, which can be time-consuming, complex, and costly. Heavyweight platforms often need more agility and flexibility, making it hard for banks to adapt to the ever-changing customer demands and competitive industry landscape. This can lead to a drop in client satisfaction and set back the bank's ability to scale and innovate.



SOLUTION

Transitioning from legacy systems to lightweight platforms is an effective solution, which offers banks different benefits, such as but not limited to – lower maintenance expenses, improved agility, higher client retention and satisfaction, more effortless scalability, enhanced security, and precise compliance.



THE EFFECTS OF DIGITAL TRANSFORMATION

Banking institutions are experiencing a rapid surge in digital transformation, driven by technological advancements and ever-growing customer expectations. This evolution demands a shift from traditional, monolithic system architectures to lightweight, microservices-based platforms. However, adopting such a transition can be challenging. It requires comprehensive expertise in cybernetic systems and a deep understanding of microservices principles.

WHY BANKS NEED TO UNDERGO DIGITAL TRANSFORMATION

1. ADAPT TO EVOLVING CUSTOMER EXPECTATIONS:

Consumers increasingly expect banking services to be convenient, personalised, and accessible anytime, anywhere. Digital transformation allows banks to meet these expectations by offering innovative digital channels such as mobile banking apps, online banking platforms, and chatbots.

2. GAIN A COMPETITIVE EDGE

Fintech companies and other non-traditional players are disrupting the banking industry by offering innovative digital banking services. Banks must invest in digital transformation to stay ahead of the competition and maintain their market share.

3. IMPROVE OPERATIONAL EFFICIENCY

Digital transformation can help banks streamline operations, automate processes, and reduce costs. It can lead to improved efficiency and profitability.

4. ENHANCE RISK MANAGEMENT

Data analytics and artificial intelligence (AI) are used to improve risk management and fraud detection. It can help banks to minimise losses and protect customer data.

5. GAIN INSIGHTS FROM DATA

Digital transformation allows banks to collect and analyse huge amounts of customer and operations data. The information is used to gain valuable insights to help banks improve their products, services, and marketing campaigns.

6. STAY COMPLIANT WITH REGULATIONS

Regulatory requirements are becoming increasingly complex and stringent. Digital transformation can help banks to comply with these regulations more quickly and efficiently.

7. EMBRACE INNOVATION

Digital transformation opens up new opportunities for innovation. Banks can use new technologies to develop products, services, and business models.

8. ATTRACT AND RETAIN TALENT

Tech-savvy talent is in high demand in the banking industry. Digital transformation can help banks to attract and retain top talent by creating a more modern and innovative work environment.

9. IMPROVE CUSTOMER SATISFACTION

Digital transformation can help banks to provide a better customer experience by offering more personalised and convenient services. It can lead to increased customer satisfaction and loyalty.

10. ACHIEVE SUSTAINABLE GROWTH

Digital transformation can help banks achieve sustainable growth by improving operational efficiency, reducing costs, and enhancing customer satisfaction.

WHY BANKS SHOULD MOVE FROM LEGACY SYSTEMS TO LIGHTWEIGHT SYSTEMS

There are several reasons why banks should invest in digital transformation and switch from heavyweight systems to their lighter, modern counterparts.

Reduce Costs: Legacy systems are expensive to upgrade and maintain. Microservice-based platforms, on the other hand, are cost-effective to implement and maintain. They also require less infrastructure, which can further shed operational expenses.

Increase Agility: Lightweight systems are designed to be more agile and responsive to evolving business needs. It enables banking institutions to rapidly adapt and react to changing regulatory requirements and develop and launch new products/services.

Improve Customer Experience: Modern platforms allow banks to offer a more personalised and seamless client experience. It is achieved through improved online banking solutions, mobile apps, and customer service portals.

Enhance Data Analytics: Unlike heavyweight systems, microservices-based platforms can gather and analyse vast amounts of data. They can give banking institutions valuable insights into market trends, client behaviour, risk factors, etc. The collected information is used to ameliorate decision-making and risk management.

WHY BANKS SHOULD MOVE FROM LEGACY SYSTEMS TO LIGHTWEIGHT SYSTEMS

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Scalability: Much more scalable than legacy systems, lightweight platforms can handle more data and transactions without performance degradation. It's an essential feature as data and transaction volume is constantly growing.

Security: Modern systems are much more secure than their traditional counterparts. It's because they are built with safety in mind from the start. They often use encryption, firewalls, and intrusion detection, among other security features, to shield sensitive information from unauthorised access.

Innovation: Microservices-based systems are innovative because they're built using open standards and technologies. They give banks more flexibility and different options for developing and deploying new applications.

Compliance: Lightweight platforms are more compliant with regulatory requirements. They are designed and built using secure and reliable methods and technologies. They help banking institutions avoid costly penalties and fines.

MONETISING THE SHIFT

The transition to lightweight banking platforms improves operational efficiency and customer experience and opens new revenue streams. Banks can monetise their data insights to offer targeted marketing campaigns, personalised financial advice, and innovative financial products.

DIFFERENCES BETWEEN HEAVYWEIGHT AND LIGHTWEIGHT SYSTEMS

Aspect	Heavyweight Systems	Lightweight Systems
Architecture	Monolithic, rigid, complex	Flexible, microservices-based, modular
Scalability	Less scalable, challenging to adapt	Easily scalable, adaptable to changing demands
Innovation Speed	Slower due to complexities	Faster due to ease of deployment and agility
Maintenance Costs	Higher due to elevated maintenance needs	Lower due to efficient resource use

HOW LIGHTWEIGHT SYSTEMS IMPROVE OPERATIONS

- Operational Efficiency: Microservices-based systems are designed to automate processes, reducing the time and effort required for different banking operations. For example, automating loan approval procedures can reduce processing and acceptance time by up to 50%.
- AML Compliance: Both legacy and modern platforms can comply with anti-money laundering regulations. The main difference is that monolithic systems often employ centralised monitoring, while lightweight platforms use distributed data analysis to detect and pinpoint suspicious activities. The technology used to develop microservices-based systems makes them faster and more accurate.
- Identity Verification: While heavyweight platforms rely on centralised identity verification databases, which can render the process cumbersome and tedious, modern systems leverage distributed verification or blockchain-based identity verification technology. These advancements result in quicker, more precise, secure, and reliable verification processes.

USE CASE SCENARIO

ABC Bank, a prominent financial institution, aims to overhaul its banking infrastructure by adopting a microservice architecture coupled with Kubernetes orchestration. This upgrade aims to ensure more efficient GDPR compliance, strengthen data security through a distributed persistence layer, and create a globally scalable lightweight banking platform.

This use case outlines the strategic objectives, technological implementations, and displays the benefits of the transition.



STAKEHOLDERS INVOLVED

USE CASE SCENARIO

Bank Executives and Management:

Responsible for decision-making and project approval.

IT Development Team:

Architects, engineers, and developers in charge of deploying the new platform.

Compliance Officers:

Ensuring GDPR adherence and compliance with data protection requirements.

Operations and Infrastructure Team:

Managing and maintaining the banking infrastructure and systems.

TRANSFORMATION OBJECTIVES

USE CASE SCENARIO

- Move from monolithic systems to a microservice architecture for improved agility and scalability.
- Leverage Kubernetes for efficient container orchestration and management.
- Establish GDPR compliance across the platform.
- Focus on robust data protection measures.
- Implement a global, reliable, lightweight banking system with a distributed persistence layer for enhanced operational cost reduction and seamless new business model deployment.

TRANSITION PLAN

USE CASE SCENARIO

Microservice Architecture: Implement modular services for different banking operations (e.g. transactions, account management).

Kubernetes Orchestration: Container orchestration enables automatic deployment, scaling, and microservices management across the banking infrastructure.

GDPR Compliance: Integrate user consent management, encryption mechanisms, and stringent data governance protocols to ensure complete adherence with GDPR and other information-safeguarding requirements.

Global Persistence Layer: Deploy a distributed persistence layer using modern storage solutions or databases throughout different geographic regions to ensure scalability, data availability, and resilience.

Security Measures: Implement comprehensive security mechanisms at every level of the system to avert data breaches and considerably enhance overall platform security.

TRANSFORMATION ADVANTAGES

USE CASE SCENARIO

Agility and Scalability: The microservice architecture and Kubernetes orchestration will allow ABC Bank to scale its operations, meet fluctuating demands, and accelerate innovation cycles.

Augmented Reliability: The distributed persistence layer will reduce downtime and improve dependability.

GDPR Compliance and Data Protection: Deploying robust GDPR-compliant measures shields client data, increases trust, and mitigates legal risks related to non-adherence.

Operational Efficiency: Enhance resource utilization, automated integration, and management capabilities offered by Kubernetes, resulting in augmented operational efficiency and reduced maintenance overheads.

Global Accessibility: Transitioning to a global platform will help ABC Bank cater to customers worldwide while guaranteeing consistent performance and compliance with local regulations.

Since ABC Bank decided to undergo a digital transformation and invest in a lightweight system, it has benefited from the following results:

- REDUCE ITS COSTS BY 30%;
- INCREASE TIME TO MARKET FOR NEW PRODUCTS/SERVICES BY 50%
- IMPROVE CUSTOMER SATISFACTION BY 20%
- REDUCE FRAUD LOSSES BY 10%

REAL-LIFE STATISTICAL EVIDENCE

USE CASE SCENARIO

Accenture conducted a study showcasing that banking institutions that adopted lightweight, microservices-based systems experienced a 25% reduction in IT expenses and a 50% increase in development speed. Additionally, a report by Forrester Research proves that modern, lightweight platforms can be deployed 30 times faster than their monolithic counterparts.

Another study reveals that Barclays, a prominent global bank, underwent a 50% rise in development velocity and a 30% reduction in IT costs following the migration of its heavyweight core banking system to a microservices architecture. Similarly, ING, a Dutch insurance and banking corporation, achieved a 25% reduction in downtime and a 40% improvement in customer satisfaction after its digital transformation.

WHAT IS KUBERNETES

Kubernetes, commonly abbreviated as K8s (K - 8 letters - s), is an open-source platform designed to automate the deployment, scaling, managing, and orchestration of containerised applications. At its core, it offers a container orchestration system. It allows you to abstract the underlying infrastructure, providing a consistent way to deploy and manage applications across various environments, whether hosted in a public cloud, private cloud, or on-premises infrastructure.

KUBERNETES-BASED PLATFORMS VS TRADITIONAL PLATFORMS

Kubernetes offers several advantages over traditional platforms for deploying and managing applications, especially in modern, cloud-native environments. Some reasons why Kubernetes systems are preferred over conventional platforms include:

- Container Orchestration: Kubernetes excels at managing containers, offering robust orchestration capabilities. It automates containerised applications' deployment, scaling, and management, providing a more efficient way to handle complex distributed systems than traditional platforms that may lack containerisation or orchestration features.
- Portability: It provides a level of abstraction that makes applications more portable across different environments. It allows developers to build and consistently deploy applications across various infrastructures, whether on-premises, in the cloud, or in hybrid environments. This portability is more challenging to achieve with conventional systems that might be tightly coupled with specific hardware or infrastructure.
- Scalability: Enables effortless scaling of applications by automatically adjusting resources based on demand. It can scale applications horizontally (adding more instances) or vertically (increasing resources for existing instances) based on defined criteria. This scalability is more dynamic and efficient than traditional platforms requiring manual intervention or lacking the flexibility to scale based on workload.

- Resilience and Self-healing: Kubernetes has built-in mechanisms for self-healing. It monitors the health of applications and automatically restarts containers or replaces failed instances, ensuring high availability. Conventional solutions may lack these automated self-healing features, leading to potential downtime or manual intervention to address failures.
- Declarative Configuration: Allows you to declare the desired state of your application using YAML or JSON files. It continuously maintains that desired state, simplifying configuration management compared to traditional platforms where configurations might be more manual and error-prone.
- Ecosystem and Community: It has a vast and active open-source community, resulting in a rich ecosystem of tools, plugins, and integrations. This ecosystem supports various functionalities such as monitoring, logging, security, and continuous integration/continuous deployment (CI/CD), making it more versatile than monolithic systems that might need more extensive community support.
- Modern Architecture: Kubernetes is designed with modern, cloud-native applications in mind. It aligns well with microservices-based architectures, allowing for easier development, deployment, and management of applications built using microservices or other modern architectural patterns.

These factors collectively make Kubernetes platforms more adaptable, scalable, and suitable for modern application development and deployment than heavyweight platforms that might struggle to provide the same level of agility and scalability in today's dynamic computing landscape.

SEPA CYBER'S SOLUTION

SEPA Cyber Tech Group has developed a state-of-the-art, lightweight, microservice Kubernetes-based banking platform featuring a persistence layer and global GDPR cluster with full certification. Our product allows banks to quickly and seamlessly move from monolithic systems to modern solutions, ensuring significant operational cost reduction and enhanced scalability through access to new business models and service features.

The products we offer enable banking institutions to enhance their services and operations with all the advantages mentioned earlier. It allows banks to execute faster and more secure transactions, update their portfolio with new features, expand their network locally and globally, all while reducing overhead costs.

SEPA CYBER'S MISSION

Committed to becoming a global leader and innovator in several key areas, including FinTech and RegTech, SEPA Cyber's mission is to facilitate digital transformation for banks worldwide to optimise their operational processes.

Specialising in white-label, turnkey tech solutions, SEPA Cyber can help banking institutions enhance and automate a plethora of services, such as but not limited to:

- **Core banking operations**
- **Regulatory operations (KYC, KYB, PEPs & Sanction)**
- **Transaction monitoring and fraud alerts**
- **Payments and transfer processing**
- **Card issuance and processing**
- **Acquiring processing system**
- **ETMS**
- **Internet payment gateway**
- **Fiat and crypto exchange**
- **Reporting**

Banks can make a massive leap in their evolution by entrusting SEPA Cyber Tech Group with their digital transformation.

CONCLUSION

Implementing microservice-based Kubernetes-managed GDPR-compliant banking systems empowers banking institutions to ensure data protection, attain regulatory compliance, improve operational efficiency, and access the global market. Modern platforms can position banks as global leaders in an ever-evolving financial landscape.