Future-ready finance: *Modernizing billing* for an energy giant

Imagine trying to transform a business that still relies on a billing system that's been in place for 30 years.

A top provider of energy equipment and services found itself in just this position in the late 2010s. The company's leadership understood that an outdated finance system, which touches every part of the organization, would stymie broad digital transformation. Something had to be done.

The global energy company asked longtime-partner Capgemini for assistance modernizing this finance system so it could propel, rather than impede, the pace of transformation.

Capgemini knew that migrating the existing internal-billing system to the cloud would give the client access to the latest capabilities and developments. At the same time, they needed a thoughtful, deliberate strategy that would not disrupt daily operations. Here's how they did it.

Region: North America and global

Industry: Energy equipment manufacturer

Client challenges:
An energy company's internal-billing system required complex tech integrations that could not support its broader digital transformation strategy.

Our approach:
The finance system was migrated from the mainframe to Azure cloud in phases and prepared for a microservices architecture.

Business outcomes:
With robust security and quality assurance, the new system processes thousands of transactions each month and positions the client for growth.

From legacy to cloud: Understanding the scope of the challenge

The existing finance system included several issues common to legacy technologies. It required ongoing upkeep to operate effectively alongside new platforms, which took up time and energy that could've been better spent on other activities.

The client wanted to build a brand-new system on Microsoft Azure, one of the world's leading cloud-computing platforms, offering a range of services that help businesses build and deploy applications.

The client chose to partner with Capgemini in part because of the company's deep expertise and experience working with Azure. They decided to develop a stable environment for processing financial transactions on Azure that was scalable, accessible, and reliable. It would also eliminate legacy dependencies.

However, modernizing the system was no easy task. Migrating existing tools and processes to cloud comes with both technical and change-management challenges.

Engineers had to integrate more than 250 enterprise resource planning (ERP) systems, which help manage core business processes, and more than 1,600 billing unit codes across 108 countries. These all needed to work alongside the middleware, which bridges operating systems and applications.

The transformative solution: Microservices

Capgemini developed a phased, strategic approach to modernizing the billing system. Starting in 2020, the team would prepare different components for microservices: a software development approach that makes it easier to develop and scale applications.

Monolithic software architectures couple all processes, so they run as a single service. But microservice architectures decouple processes into small independent services for greater agility and modularity.

The different microservices can still communicate with each other over defined application programming interfaces (API), but companies enjoy greater technological freedom. If one aspect of the system is malfunctioning or lagging, engineers can easily replace it without disrupting the rest. This flexibility empowers teams to update the system as technology accelerates, so it's always running on the most advanced software.

Tapping into Capgemini's experience and expertise with microservices ensured that each element of the finance system was ready for the newly built Azure environment.

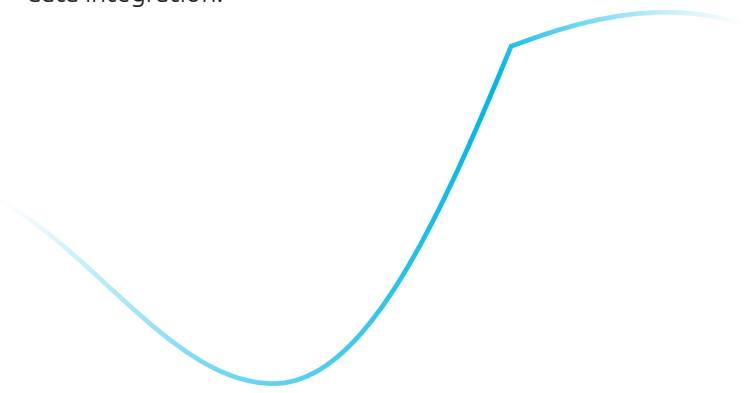
Wave-based integrations

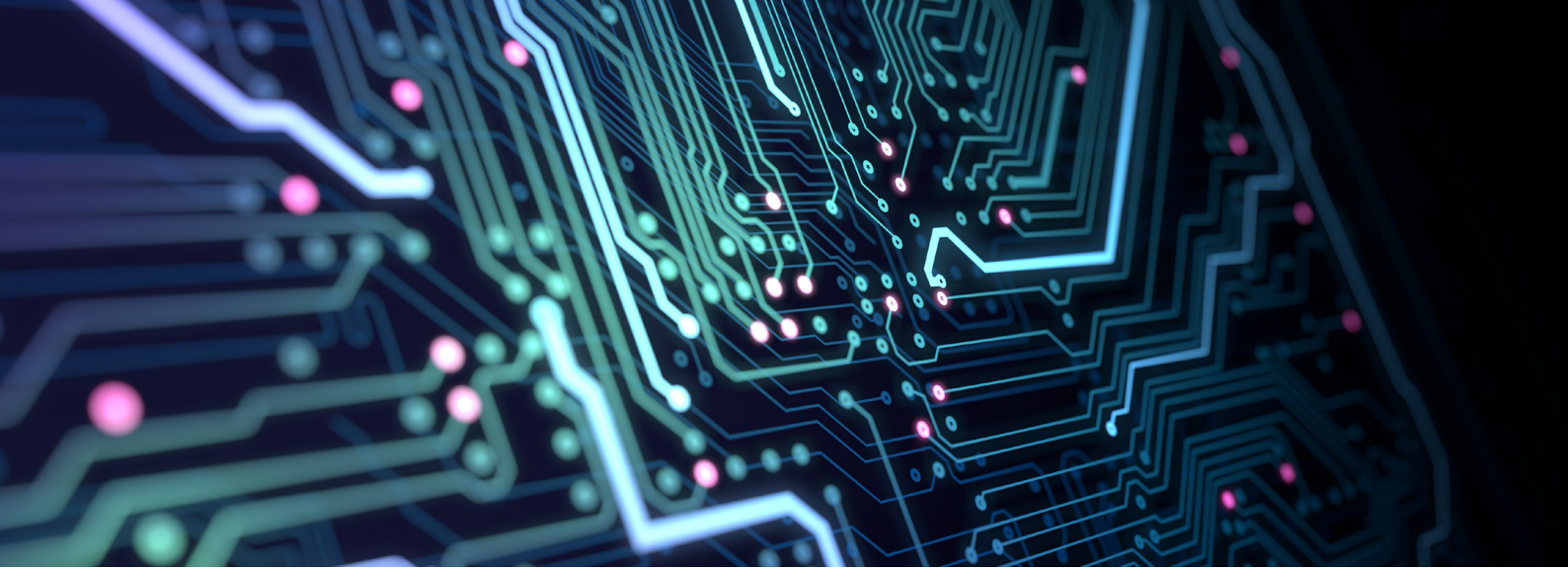
The implementation team integrated the many ERP platforms and middleware components into the new cloud system in waves. Avoiding a single large-scale rollout allowed them to account for the specific configurations and requirements of each.

Overall, the team integrated more than 150 components into the new cloud environment. But these components had been integrated into the legacy system using different platforms, which were incompatible with each other – posing a challenge.

We leveraged our expertise in multiple middleware-integration services to move more than 150 separate components to the new solution.

Turning this obstacle into an opportunity, the engineers capitalized on the specific strengths of each integration service. For instance, Boomi was ideal for hybrid integrations, whereas Informatica was perfect for data integration.





Testing and quality assurance

The team decided to perform both system integration tests (SIT) and user acceptance tests (UAT), which ensure the technical components work as expected and that the user's needs are met, respectively.

Using computer-aided translation (CAT) software, the team conducted more than 1,500 functional test cases to check that the system operated as intended, plus more than 175 interface test cases to validate that information was being shared between the different platforms.

Concurrently, the team performed narrower "sanity checks" to make sure specific functionalities worked properly after updates and changes. These were specifically carried out for integrations related to high-priority energy clients.

Compliance and security

Azure environments are generally more secure than traditional on-premises servers, thanks to Microsoft's security controls and regular updates. However, the ultimate protection level depends on the configuration and management of each platform.

Network administrators and compliance specialists needed to navigate stringent security protocols, set up firewall rules for handling the flow of network traffic, manage port configurations, and ensure secure authentication methods.

In achieving all this, the team adhered to secure file transfer protocol (SFTP), which protects sensitive information whenever employees send or receive files. This set of rules calls for encrypting data transmitted between two devices on the same network. Known as secure-shell encryption, this cryptographic method prevents unauthorized users from accessing protected data by assigning each device a public key (generated by an algorithm) that corresponds with a private key.

Business outcomes

The collaboration led to the successful modernization and migration of the internal-billing system. Post go-live in July 2024, Capgemini didn't just deliver the application but saw through to the end critical inaugural activities:

- Processing thousands of transactions
- Completing three settlement cycles (reconciling charges between departments), which occur twice a month
- Executed month-end routines, such as allocating expenses and generating invoices, which occurs once a month
- Closed financial quarters through more rigorous process (e.g., regulatory checks, rate adjustments).

Now, the systems and processes are in place for these activities to continue. Thanks to a trouble-free deployment, the business enjoys the following benefits:

- Maintaining continuity without any downtime to the financial system
- Scaling efficient financial processes and tools throughout the global organization smoothly
- Providing employees with a better user experience
- Avoiding follow-up requests from regulatory bodies through clear reporting
- Positioning the company for future growth, powered by greater financial visibility.

About Capgemini

Capgemini is a global business and technology transformation partner, helping organizations to accelerate their dual transition to a digital and sustainable world, while creating tangible impact for enterprises and society. It is a responsible and diverse group of 340,000 team members in more than 50 countries. With its strong over 55-year heritage, Capgemini is trusted by its clients to unlock the value of technology to address the entire breadth of their business needs. It delivers end-to-end services and solutions leveraging strengths from strategy and design to engineering, all fueled by its market leading capabilities in AI, generative AI, cloud and data, combined with its deep industry expertise and partner ecosystem. The Group reported 2024 global revenues of €22.1 billion.

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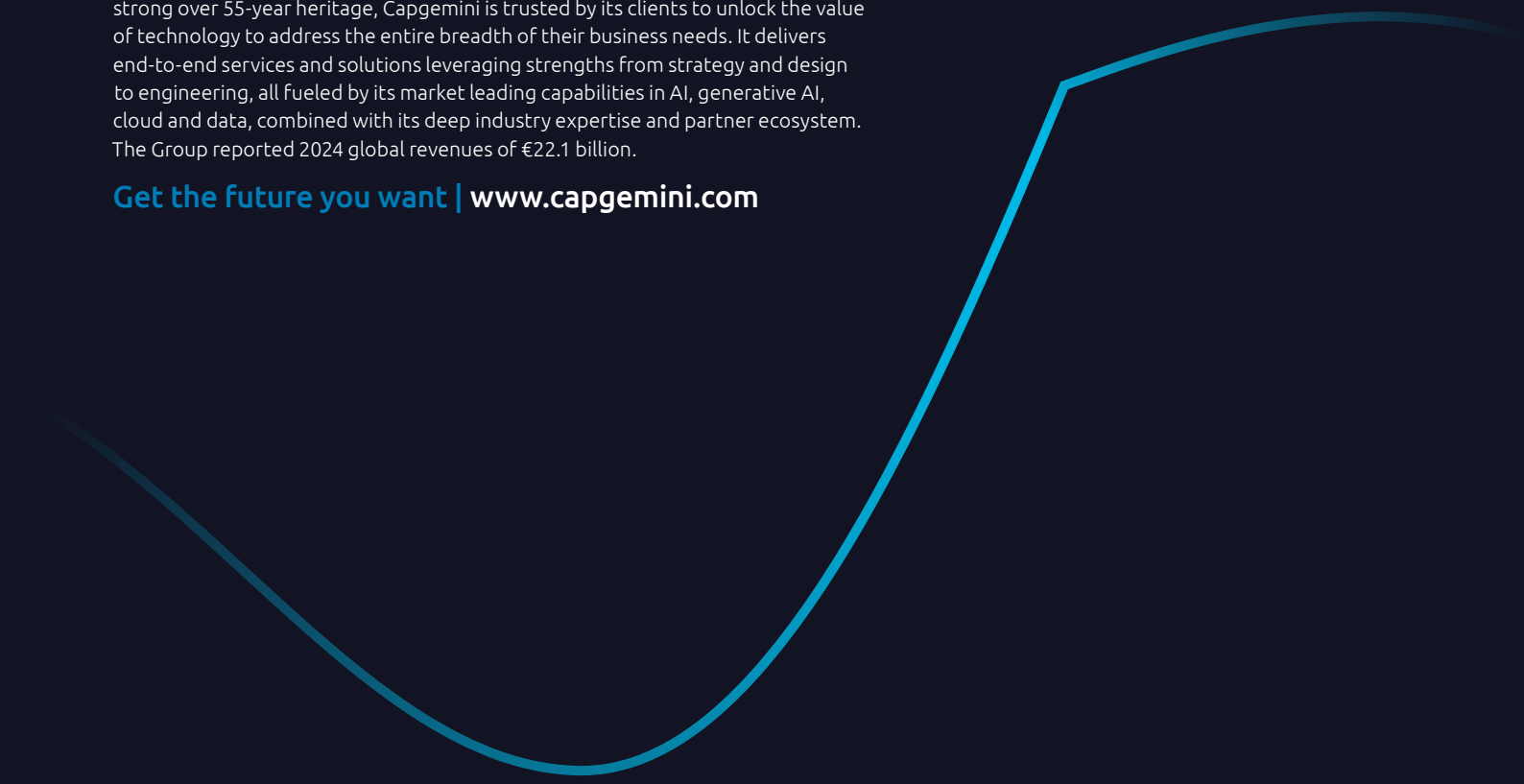

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