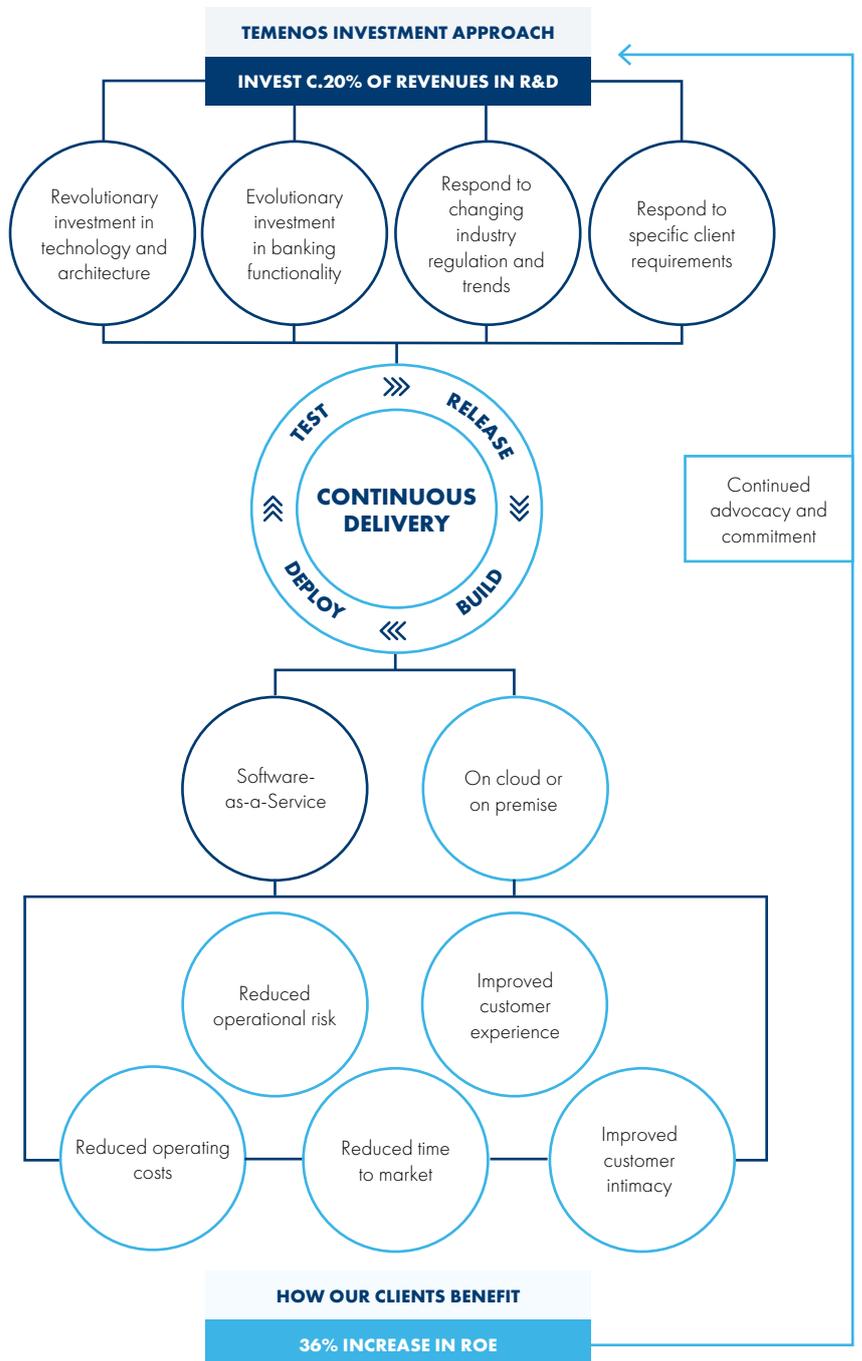


Research and development

INVESTMENT TO INNOVATION

The Temenos software investment approach forms a virtuous cycle in which our clients influence Temenos' investment and therefore benefit from the improved product. This in turn contributes to their success. Our clients then advocate for our solutions enabling us to attract new clients continuing the cycle.

THE VIRTUOUS CYCLE OF TEMENOS SOFTWARE INVESTMENT



Revolutionary investment in technology and architecture

In order to keep pace with the rapid rate of change in information technology, Temenos continues to invest significantly to ensure that its software takes advantage of the latest innovations. The technology changes required to support the growing business and regulatory interest in Open Banking are a prime example of this. What is revolutionary at one point becomes standard in the following years, and this is why it is important to continue with this investment approach. Examples can be seen in recent years in the adoption of mobile banking technology and the increasing desire to provide software solutions which are hosted on the cloud. Temenos offers updated software based on the latest technology to clients seamlessly through simple, regular upgrades.

Evolutionary investment in banking functionality

Banking functionality changes more gradually than information technology, with evolutionary advances being made in banking products, industry practice and regulation. Temenos' investment in functionality over the past 25 years reflects this. Recent examples have included the embedding of analytics across the entire portfolio to support decision making by our clients and incremental investments in AI capabilities in areas such as the robo-advisor in wealth. We enable our existing clients to add new functionality to what they use already through regular updates, whilst releasing the latest software for new clients monthly.

Respond to changing industry regulation and trends

Banking, being a highly regulated industry, is subject to the continuous changing of requirements by regulatory agencies. At Temenos, we actively follow changes in banking regulation, in order to build relevant solutions into the software and thus support our clients using the regular upgrade mechanism. We also anticipate other significant industry trends such as open and digital banking, and incorporate them proactively into our software.

Respond to specific client requirements

As we enter new markets or work with new clients, it is possible that our software may require enhancement. We invest in our products to close these functional gaps, but also in such a way so as to make the new functionality of widest benefit possible to our existing and future clients. We do this by ensuring that flexibility is built into the design, and that the software is incorporated into the standard product. Our wide geographic reach across all banking segments means that enhancements developed for a specific client are often relevant in other markets and to other clients.

Continuous delivery

Temenos builds, deploys and tests software on a daily basis. We use this as the foundation for the continuous release of upgrades to clients, which are then accumulated into one Annual Maintenance Release each year. All releases are cumulative enabling clients to upgrade when they want. The upgrade process is designed to operate with minimal disruption to a bank's staff and customers.

Reduced operating costs

Banks spend an average of 14.3% of their operating costs on IT. Moreover, less than 30% of this is on growth and innovation; the remainder is spent on business as usual activities. In contrast, Temenos clients spend only 5.7% of their total costs on IT, of which 53.7% is on innovation. The result of lower and innovation-focused expenditure is an ROE (Return On Equity) ratio for Temenos clients which is 36% higher than banks using legacy systems.

Improved customer service

Customers expect banks to provide the same level of seamless, personalized service which they receive from leading online service companies such as Amazon or Uber. In the past, banks' abilities to provide such service has been hampered by legacy technology and business issues. Temenos provides a modern front-to-back digital and integrated solution, allowing seamless customer journeys across all areas of a bank's service and product portfolio. A single rules engine driven by embedded analytic capabilities, enables a bank to proactively tailor the experience to a customer's individual needs based on a single 360° lifetime view of the customer.

Reduced operational risk

Legacy IT landscapes are inherently risky because of the many interfaces which are required between different functionality and delivery silos; the number of "islands" of functionality and the resulting complexity of connections between them increase the number of points where a process or technology failure can occur. As a result, banks can face outages in mission critical operations with resulting reputational damage. These risks are increased if the bank is still relying on obsolete technology where there is often a shortage of suitably skilled resources. The end-to-end integration offered by Temenos' software, with its configurable and sophisticated workflow, access control and security features, allows our clients to benefit from the lowest levels of IT operational risk, and to future-proof their IT architecture by means of the regular software release mechanism.

Reduced time to market

Today, digitalization and the rise of new, specialized and highly agile competitors are driving banks to respond ever more quickly to customers' individual needs. Temenos' software enables banks to respond quickly, flexibly and securely to these business needs as it is highly parameter-driven, and delivered with pre-configured, re-usable content, as well as user-friendly configuration, design and testing tools.

Improved customer intimacy

A modern, digital bank requires sophisticated analytics to understand customer needs, to service regulators and to make optimal business decisions in a timely and efficient manner. The Temenos analytics product set is tightly embedded within the overall front-to-back solution, providing real-time, predictive and integrated analytics based on a single version of the truth sourced from both transactional and contextual data from all areas of the solution. This enables bank staff to take customer service and business strategic decisions on the basis of up to date information.

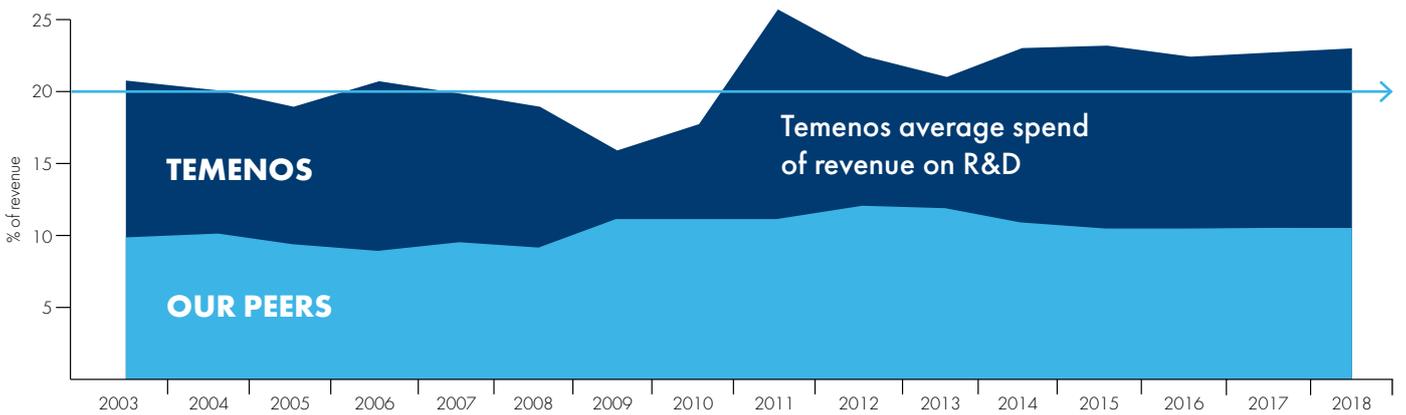
Research and development continued

R&D

% OF REVENUE SPENT ON R&D

USD 1.9bn

Cumulative R&D investment 1990-2018



R&D at more than twice the level of our competitors plus deep domain knowledge means that our software never becomes legacy.

Investing more than our peers on R&D

Temenos has consistently invested over 20% of its revenues in R&D. This is more than twice the level of investment made by our closest competitors. Furthermore, since we only produce software for banking and finance, all of this investment is targeted at our concentrated product portfolio.

Channeled continuously into product releases

Our software is fully packaged and upgradeable. We produce new software on a continuous basis which has traditionally been available on a monthly release cycle. This will continue to be available, together with an annual release, for clients which wish to consume our software on this basis. Going forwards, we will also make more of our software available on a continuous deployment basis, with DevOps support, for banks to help them to shorten the innovation cycle.

We also support partial upgrades, allowing our clients to upgrade the parts of their solution which they need to. This means that all of our clients can continue to benefit from the ongoing investment we make in our products.

Core principles

Temenos has always produced software according to a set of core principles. We believe in re-use, openness and being agnostic about technology platforms. This means that all developments are made available to all clients. It also means giving our clients choice over which technology they run and never locking them into a particular provider. The openness means that third parties can develop on our platform to accelerate innovation thus ensuring that our clients always have access to the best technology and functionality.

Proud record of innovation

Our philosophy could be summed up as constant functional evolution delivered on innovative technology. We are proud of the record of innovation which we have established, being, for example, the first banking software vendor to run on open systems, to have a truly 24x7 platform, the first to run core banking software in the public cloud and the first to have all services exposed as RESTful APIs. Temenos has recently announced the next stage in its technology investment and innovation with the migration of all of our products to “cloud native” and “cloud agnostic” platform capabilities.

I OPEN BANKING

The pace of innovation is accelerating at the same time as competitive boundaries are blurring.

The strong barriers to entry that existed in banking are disappearing, creating a greater need to innovate to stay ahead. But it's now not enough to just innovate faster; firms must keep up with best-in-class innovators regardless of what sector they might operate in today. This calls not just for technology investment, but to harness technology to continually adapt business models to the imperatives of the day. Today, that imperative is for companies to open up; to build competitive advantage by leveraging their position to put themselves at the heart of an ecosystem; to influence rather than control. This is true for Temenos. It is true for banks. It is true for fintechs.

Recognizing the broad need for collaboration across financial services is why we created the Temenos Marketplace; an ecosystem for growth.

Opening up is unavoidable

The effects of technology and regulation are self-reinforcing and pushing to much greater openness.

So many technologies are opening up the banking market: mobile phones have opened up a new distribution channel; cloud has lowered infrastructure costs and opened the market to new entrants; APIs have opened up the flow of information; and blockchain is decentralizing trust.

Now, regulatory forces are also pushing in the same direction. Open Banking legislation, which started in Europe, is fanning out across the globe, forcing banks to share customer data as well as share their payment infrastructure with third parties. As such, the move to Open Banking appears inevitable, whether banks like it or not.

A new strategic imperative

The move to Open Banking, however, will be extremely lucrative to those banks that embrace the paradigm shift. To do so, they will need to abandon the old model of mass distribution and distribution and instead open themselves to working with a network of Partners, becoming a concentration point for information flows so that they can learn faster and give the best customer experience at scale.

Digitization won't be enough, only a true platform play will significantly boost returns on equity. A recent study by McKinsey showed that by digitizing existing processes and products, banks could boost return on equity by around 2.5 percentage points. In contrast, opening a true ecosystem play, where banks would aggregate products and services from third parties, could see banks boost return on equity by as much as 6.3 percentage points.

Banks are starting to appreciate this. A survey from Cognizant and Temenos found that a clear majority of bankers (89%) now see Open Banking as more of an opportunity than a threat with 57% of bankers saying that they would be prepared to distribute third-party services over their platform.

This change in banking sentiment coincides with an increasing realization on the part of many service providers, especially fintech companies, that using banks as a route to market – given their large customer numbers, compliance and capital – might well be easier than going it alone. In a recent poll we conducted with fintech companies, 87% told us that they would like to work with incumbent banks.

And so the scene is now set for greater collaboration.

OPEN BANKING READINESS

Banks were asked "To what extent do you agree/disagree with each of the following statements about Open Banking?" (%), 2015-2017.

89%

IT IS MORE OF AN OPPORTUNITY THAN A THREAT



57%

WE ARE HAPPY TO DISTRIBUTE THIRD PARTY PRODUCTS THROUGH OUR PLATFORM



Research and development continued

FINDING THE BEST FINTECH

According to some estimates, there are as many as 25,000 fintech companies in operation today.

The Community

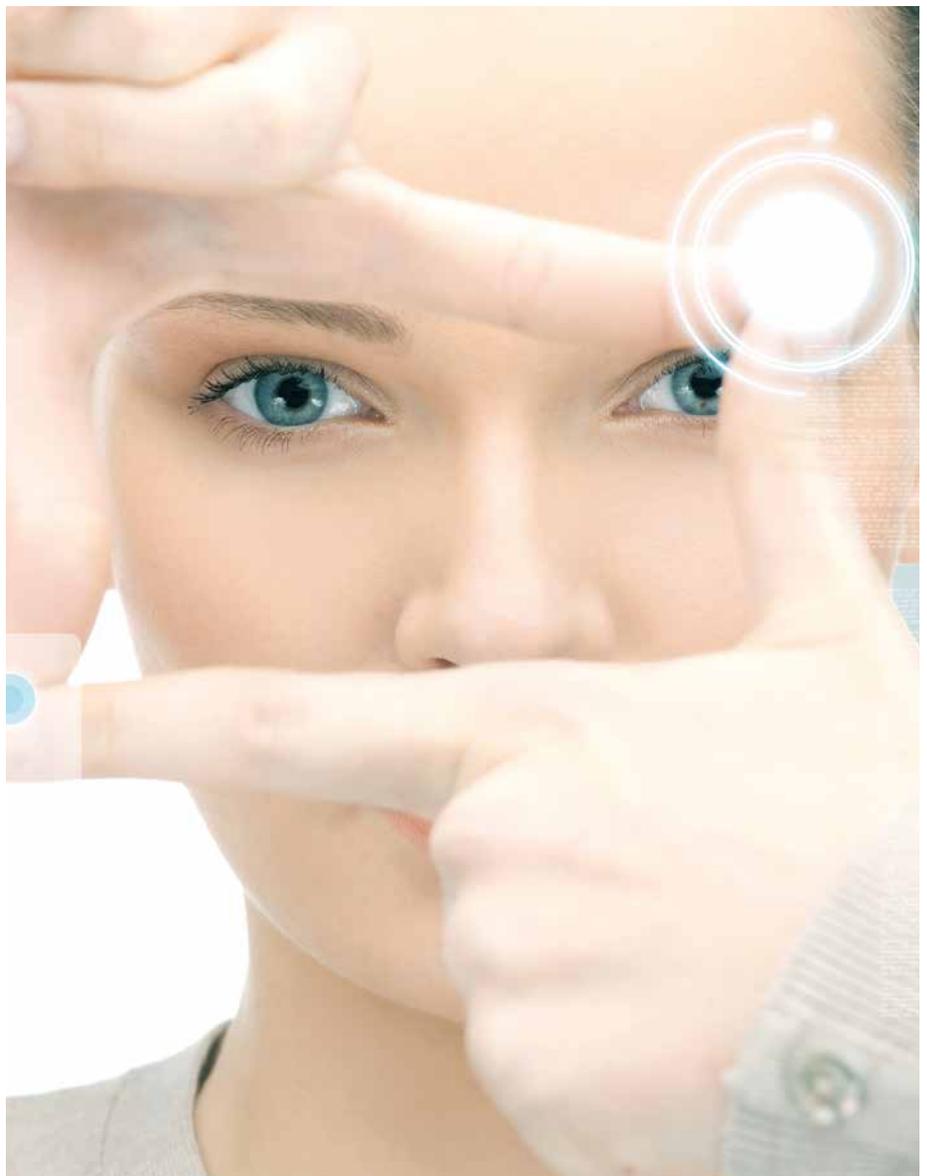
The Temenos MarketPlace community is vibrant and multi-sided. Our goal is to do more than just connect banks and fintech firms, but to catalyze the future of Open Banking. To do so requires us to bring together a diverse set of stakeholders. In 2018, we added several new relationships with innovation centers – such as B-Hive in Belgium and AUC Venture Lab in Cairo – which plug us into the best fintech providers from around the world. But most important has been the close collaboration with our customers and their innovation teams, who work with us to uncover the best fintech players.

Innovation Jams

And, of course, our own scouting continues. In 2018, over 20 MarketPlace events were held in 12 different cities, of which more than half were hosted by community members – accelerators and banking clients. And, in 2018, we held nine different Innovation Jams to give a platform to companies not already on the MarketPlace to demonstrate their solution to our community members. We held these Jams in Hong Kong, Shanghai, Abu Dhabi, Miami, Amsterdam, London, Geneva, Dublin and Luxembourg. And the winners of the Innovation Jams took part in a global final, which was held at TCF in Dublin in May. The winners were Belleron, which provides protection against enterprise-level cyber attacks, and SONECT, which provides a solution for democratizing cash distribution. Both firms are now on MarketPlace.

The power of the crowd

Thanks to the efforts of the team working together with our community, we have now assessed over 1,200 fintech firms, of which just over 65 firms are now live on MarketPlace. Our selection criteria is tough, but that's because we only want the best.



THE TEMENOS MARKETPLACE

Catalyzing the future of Open Banking.

Overwhelmingly, banks and fintech companies want to work together. The challenge is that there is no established model for doing so. This is what the Temenos MarketPlace solves.

In 2018, we conducted two surveys. The first, together with Cognizant, was a survey of banks. The other was a survey of fintechs. Both are interesting in their own right, but even more so when they are put together. When asked about working with fintech companies, 89% of banks are in favor. When asked about working with banks, 87% of fintechs are in favor. Underlying these answers is a desire on the part of banks to get greater access to innovation and, on the part of fintechs, to gain a route to market for their services. It is therefore a symbiotic relationship to which both sides want to be party. So why are there not more bank/fintech partnerships? Because it's not easy to get these two groups to work together.

Consider the issue from the fintech angle. Banks are large, complex organizations to navigate with necessarily strict procurement processes. Even though 81.1% of our fintech respondents told us that banks willingness to work with them had improved over the last three years, only 45% of banks said their ability to work with fintech companies had improved.

From the banks' side, there are so many fintech companies out there – something like 25,000 – that it is difficult to understand what they do and how they could add value. In addition, it takes a long time (18 months on average) to steer these small companies through their procurement, legal and IT security processes and typically another 18 months to be able to test and integrate their solutions.

This is where we come in. The Temenos MarketPlace is curated. We work with our community to screen the market and find the very best solutions. Our clients can be sure that every solution on Temenos MarketPlace is best-in-class. Then, in order to speed up procurement cycles, we provide two solutions. The first is certification. Working with our partners at Fin5Lab, we are able to provide an independent, authoritative stamp of quality for the fintech solutions that go through the program, assessing the financial viability of the companies and the robustness of their solutions. The second is pre-integration and remote testing. Temenos clients can use a sandbox environment to test fintech solutions, allowing them to quickly and thoroughly test the solutions before deciding whether to buy and install into their production environment.

At the start of 2019, we opened up our MarketPlace for banking services, meaning that our customers can now access both a curated set of pre-integrated applications as well as a curated set of pre-integrated complementary services. The first of these was Raisin, the Europe platform for deposits and we will be adding several more during the course of the year.

CATALYZING THE FUTURE OF OPEN BANKING

