Fintech SPECIAL REPORT

Developing the future of finance

New development techniques are revolutionising key applications in financial services, writes **Jason Walsh**

Ivan Goor, Ardanis chief executive, focuses on an agile approach to software development

Financial services was one of the first industries to computerise and has long reaped the benefit of it. Today, however, with consumer demand changing, legacy applications, which remain crucial, often lack flexibility and responsiveness. It is a real puzzle for the industry, as no-one wants to abandon rock-solid systems, but, at the same time, customers today do not want to wait for things like overnight reconciliation.

There is a solution, however. Ardanis, which provides development services to a range of companies, but specialises in financial services and fintech, has found that there is growing interest in taking a strategic approach to dealing with legacy applications in the sector.

"Our core team members each have 20 years' experience working in fintech, but we are also experienced in modern development techniques," said chief executive Ivan Goor.

In practice, Ardanis brings 'agile' development to a sector more usually associated with 'waterfall' development, a development methodology that breaks down into sequential phases, with each phase depending on the previous one. Agile moves away from this, and instead focuses on a software development process that is adaptive, evolutionary, and rapid, with other goals including continuous improvement and flexibility in the face of new or changing requirements.

"Traditionally, fintech would have a waterfall approach, which is slow to make changes, but the world is changing: people want self-service, they want live actions [so] we're much more focused on the agile approach and on helping our customers get up and running quickly," he said.

Agile, instead of taking a monolithic approach, means when you fail, fail fast, and when things are working, scale and grow.

"The main way to do that would be automation – everything we do is underpinned by some level of automation – and taking full advantage of the cloud to help you deliver the real benefits," said Goor.

This does not mean abandoning legacy systems, but it does mean looking at what sub-sections of business activities can be better served with new applications. In other words, it is evolution rather than revolution.

"You carve out the new bits, so people might say 'we want an app' or "we want self-serve', and deliver on those. Then, you can also put facades over legacy systems and build out the new components, looking at cloud architectures and microservices," said Goor.

The idea is to break projects down into smaller pieces, but unlike with waterfall development, each project should be self-supporting. This keeps things manageable and means results can actually be delivered.

In addition, said Goor, future-proofing should be part of the equation.

"The mistake is to make a million small pieces and do them all at the same time. You do it bit by bit, and you also design software so that it can evolve over time," he said.

Cloud, in particular, has a reputation for cost, but Goor said that a smart approach to cloud brings real benefits to the financial services sector. Indeed, in such a highly-regulated space, the ability to comply not only with regulations relating to financial transactions but also software transactions is a real boon.

"Everybody is worried it's a major cost to move to the cloud, but you get a lot of stuff out of the box: you get compliance, you get regulatory, you get traceability. What really suits fintech is the ability to evolve in stages.

"Auditabiltiy and traceability are key in regulation," he said.

Finally, taking an agile approach and working to develop things on a stage-by-stage process, including regular testing, helps avoid not only costly project failures but the prospect of breaking the systems that are already in place.

"Testing ensures backward compatibility; you need to know you're not breaking what was there before," Goor said.

Designing for the customer first

Financial technology isn't just about digital payments. Today, high-tech solutions led by design thinking are changing banking and insurance, writes **Jason Walsh**

Traditional financial institutions, be they banks, insurance companies or brokers are coming under pressure from new entrants emerging from the world of technology. That is not news. Less well known is the fact that because of how financial technology works, improvements can be made that not only transform traditional business processes, but meet increased customer expectations and cope with a fast-changing regulatory environment.

User experience (UX) consultant Each&Other has found that banks are open to change, and while they do not want to upset proven systems there are other potential points of entry. For example, changes to payments can be made at the level of intermediaries.

"Traditional banks are a bit like supertankers, but the providers can be more nimble and they can integrate with the banks," said Each&Other's co-founder and director Ciarán Harris.

At the centre of the improvement process is the adoption of technology designed to keep things smooth despite ever-increasing complexity.

For example, Each&Other worked with fintech stars Stripe to develop a challenge-response system to reduce fraud, but with a specific goal in mind: to encourage legitimate transactions

"In the past, a lot of fraud reduction was so intrusive that it actually stopped people transacting. Now, it's the opposite," said Harris.

Behind this is the use of advanced artificial intelligence (AI) and machine learning (ML) techniques to analyse purchases, automatically flagging suspect ones. Similar technologies are also used to ensure that customers can easily sign up, something that is becoming increasingly difficult.

"There has been a revolution in KYC [know your customer] and AML [anti-money laundering] regulation," said Harris.

Beyond using AI and ML, working through one client's KYC and AML processes, Each&Other found that processes were stuck in the past, slowing and frustrating customers.

"We are able to change many linear processes into concurrent processes after finding that there were only two points in the process that had to be completed in a linear fashion," he said.

Speeding regtech

It's not just customer-facing processes that have changed, though, and Each&Other has worked on behind the scenes technology, too, including in ensuring consistency in the face of changing regulatory environment.

"Regulations change all the time, and that means new forms," he said.

Whether working on the front- or back-end, Each&Other's goal is to think about customers, with the end result of making sure the transaction goes through.

Ciarán Harris, Each&Other co-founder and director

Some financial institutions have taken a piecemeal approach to digital transformation, Harris said, meaning that they have not fully responded to raised customer expectations. "Motor insurance was very quick to do online quotes," he said.

Claims-handling, however, has not kept up.

"It's inefficient, paper and phone call-based, and, frankly, it's ripe for transformation," Harris said.

Partly this is because old, legacy systems, including mainframe batch processing systems programmed in COBOL, still rule the roost at the back-end. While mainframes have proved their stability, they are not suited to the kind of live transaction reconciliation that customers today demand.

However, they are unlikely to be replaced until there is a clear need.

"That need could be regulatory, or could be a very persuasive change agent at c-suite level," said Harris.

Working with Zurich on a life insurance product in the Middle East, Each&Other made the case for digital transformation by reducing customer on-boarding from weeks to mere minutes.

"We got it to the point where 80 per cent of customers were able to be processed in a few minutes and around 15 per cent in two business days," he said.

Flexibility brings with it some added complexity

BY JASON WALSH

If you don't use it, then you probably won't know its name, but behind the scenes, large financial, and other, businesses across the world use SAP software at the core of their businesses.

"SAP is fully-integrated enterprise software that manages entire businesses," said Keith Moran, group chief technology officer of CubeMatch, a global change and digital transformation consultancy that helps businesses plan and implement core business IT systems.

Indeed, according to SAP itself, 99 of the 100 largest companies in the world are SAP customers.

"Ninety-eight of the FTSE100 companies use SAP and, in Ireland, it is used by the big banks and the biggest companies.

"Bank of Ireland uses SAP, Diageo uses SAP, Glanbia, Kerry Group, pretty much everybody operating at that level uses SAP," said Moran.

Needless to say, SAP is a complex piece of software and, more than that, it is often so heavily customised that one installation does not necessarily look like another. What's more a major upgrade is coming soon, with an upgrade to SAP's latest platform S/4HANA soon to be effectively mandatory.

More than ever, then, getting the right partner in place is essential.

"SAP and S/4HANA is the biggest ERP system globally, and many companies fail at [IT project] implementations," said Moran.

The move from SAP's ERP 6 to S/4HANA is, in effect, the biggest update to strategy in two decades, and banks and others will have to check and test all kinds of processes.

"SAP has had to look very hard at the user experience, but by 2027 S/4HANA will be mandatory if you want support. Every single process will have to be tested and checked," he said.

This is where IT projects have often run into problems: upgrading enterprise software is not like running a consumer operating system update and demands a strategic approach.

"Because of the integrated nature of your business it's like a 5000-piece jigsaw. You can't just take five pieces out at a time," Moran said.

The power of ERP

Nonetheless, the complexity is warranted. SAP's strength is that it responds to inherently complex environments, notably including banking and financial services.

"SAP's strengths include regulatory reporting. That is a huge strength as it means the Central Bank can come in and instantly see the standing of a bank, for example. Also, there's definitely an opportunity for greater financial insight and control," Moran said.

A well-planned SAP installation can also enable a better user experience, but in the end any project will be judged by success or failure, so it is essential to define what a successful S/4HANA implementation would look like.

What it shouldn't look like, Moran said, is a mere IT project.

"Often, executives and c-suite sit around the table and view it as an IT project, but really it's a business transformation project, and a very big one. It's an opportunity enabled by technology that needs top-to-bottom active sponsorship from board on down," he said.

"The IT is the enabler. Often, companies underestimate the scale of the change," he said.

Faced with a tight labour market, businesses will have to choose their implementation partner as major upgrades require the best talent – and serious resources. This means adopting modern development techniques, he said.

"If you're going to fail, fail fast, and that's not really a culture in many companies where failure is a bad word. But a six-to-eight-week proof of concept means a smaller investment could save you millions in the long run," he said.

SAP's view is that, in the experience economy, banks need to exceed expectations, and that's absolutely true, said Moran.

"It's a very punishing environment. Consumer experience, primarily through Apple's work, is now such that they just expect to click and swipe through with a smooth customer experience and yet in background you can't have downtime, plus the regulatory environment has substantially increased.

"Then you have a huge volume of transactions going on and on top of that information management and security is a constant now."

In the face of this, though, SAP can be a bank's transactional engine, driving the real-time insights that customers want, said Moran.

Keith Moran, group chief technology officer of CubeMatch

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