The CIO's Guide to Becoming a Trailblazer

salesforce app cloud

Table of Contents

01

Trailblazing with Transformation: Is Innovation for Everyone?

Rapid advances in technology are redefining our world, and their plummeting cost is revolutionising business and society. The combined effects of technologies – mobile, cloud, social, artificial intelligence, sensors, and analytics, among others – accelerate progress exponentially. Technology is the multiplier.

At the same time, technology is creating new customer behaviors, expectations, and preferences: Customers expect transparency, speed, ease of use, convenience, and personalisation. This is a digital transformation and a customer revolution that is changing business models, disrupting industries, and generating massive opportunities. This digital transformation expands profit pools, creates new revenue models, and enables unprecedented access to global markets. Only a few years ago, it took Fortune 500 companies an average of 20 years to reach a billion-dollar valuation; today's digital startups are getting there in four. Transformation is the key.

The IT department is at the forefront of this digital transformation, looking to remain agile while finding innovative ways to adapt to customer expectations, business demands, employee needs, and technology capabilities. The most common misconception we encounter among CIOs is the belief that they need to move to Silicon Valley in order to effectively innovate, and that innovation is something that only resource-rich, high-tech companies like Amazon, Apple, or Google can take on. Others think of technology as a panacea to remedy poor user adoption and slow innovation cycles. Innovation is the driver.

The truth is that any company or organisation can become a trailblazer with agile by improving its ability to innovate, and in so doing leapfrog its competition. Just like a garden requires preparation for long-term growth, the same is true for the enterprise. Companies at the forefront of innovation have to work to maintain agility in order to keep pace, and they have to drive innovation in changing customer, business, employee, and technology landscapes. Ultimately, innovation is delivered by employees – the people within the company – with the right culture, the right organisation, and the right environment of continuous improvement.

With Salesforce, you get this ability to easily evolve and rapidly prototype – helping you get new apps into the hands of the business early and often. It's so agile.

– **Stephen Simons**
CIO, Direct Energy Solar

02

What Innovation Is Really All About: People

What trailblazing, innovative companies understand is that they must enable their people and help foster collaborative cultures through organisational and team design.

Technology sets a foundation, but the real key to innovation is people. Choosing the right technology for the right job is what accelerates innovation, but the fundamental drivers of innovation are and will always be the people who are committed to customer experience and overall company success.

> *When you're growing so rapidly, it's critical that you keep people connected and informed.*
>
> **– Craig Butler**
> VP of Information Systems, Workday

03 Successful Innovation Starts with Well-Designed Teams

While there's been an incredible amount of research on innovation, companies are still learning how to build the teams that excel at it.

One reason the challenge of building teams holds organisations back is that they don't take into consideration how organisational design affects innovation, which in turn dictates what is designed and, ultimately, the customer experience. Let's look at app development as an example. Conway's Law, a concept often cited in software architecture, states: "An organisation that designs a system will produce a design whose structure is a copy of the organisation's communication structure." Traditional apps were built in a waterfall approach by teams organised around presentation, middleware, and database layers, which often resulted in a tightly coupled tiered architecture design. Today's apps require more agility and flexibility than traditional systems can deliver, necessitating a fundamental shift in how teams are designed. This is why many companies find it challenging to transition from traditional waterfall to modern agile development. Building apps with constantly changing requirements in a commingled, highly interdependent environment can quickly become a developer's worst nightmare. A change in one part of an app often requires changes in many other parts. When deciding to adopt new technology, IT leaders should think more about how teams are designed to harness and maximise innovation.

Another reason why companies struggle with innovation is the lack of information flow across large, highly matrixed teams or organisational silos. And yet cities such as San Francisco and Tel Aviv are hotbeds of innovation, not because of their physical locations but instead and largely because of how information flows across companies in the ecosystem, between founders, and amongst venture capitalists. These companies' organisational design generate a high volume of ideas, which spread rapidly because of the flow of information. This constant iteration of ideas as they move among groups produces higher- quality solutions. Architects and organisational behavior professionals have often promoted the use of a "honeycomb" or open-floor-seating layout to promote "water cooler" conversations and the exchange of ideas.

"We're gluers now, we're puzzle builders, working alongside the business."

– Toby Lester
VP of Technology, Architecture and Innovation, Brown-Forman

03

Let’s look at this again in the context of app development. Information about new customer needs or market changes must flow quickly from the front line to developers, designers, and admins. Many organisations will often produce business requirement documents that are already outdated by the time they reach the development team. But by creating the right environments and designing processes that include business roles as well as technology roles in app development, leaders can architect the flow of human conversation in an organisation. Companies that have recognised the importance of information flow collocate business-product owners with the app development team to maximise cross-training and idea exchange. It’s organisational designs like this that better enable people to iterate faster, innovate faster, and drive the entire organisation further along the digital transformation spectrum.

04 The Case for Agile App Development

When CIO Trailblazers look to drive innovation in their organisations, one area gets more attention than most, and that area is – you guessed it – app development.

More specifically, these CIOs want to innovate, and to do that they need more than agility: They need an environment where agile is embedded in everything, from the physical space employees occupy to the tools with which they build, share conversations, and develop workflow, code, and components. Teams like these create software in shorter sprints of about three-to-four weeks each. New software features and capabilities are delivered more quickly to those who will actually be using them. Product owners can better manage app backlogs with predictability and improved demand planning. Sprints shorten feedback loops between developers and end users, and developers can better focus on what is most important: customer and user satisfaction.

One research report found that teams that adopt agile delivery are 1.5 times more likely to exceed their organisation's profitability, market share, and productivity goals.* However, it's important to note impact will vary by the level of maturity across IT capabilities.

* source: "Join The DevOps Craze, But Start With The Right Business Case"

8 Best Practices of Agile App Development

The bottom line is that delivering great products and apps digitally requires not only new ways of working, but also new considerations for environment: agile development practices like rapid-release cycles, automated testing and deployment, and iteration, as well as information flow, common workflow, and reusable components.

The following pages offer eight ways trailblazing organisations consistently innovate, delivering new and unique products and services through this approach to agile app development.

#1 Focus On the Customer

#2 Provide Users with Safe Boundaries

#3 Right-size Innovation Based on IT Resources

#4 Take Advantage of Shadow IT

#5 Evangelise the DevOps Ethos

#6 Develop with a Microservices Approach

#7 Continuously Deliver

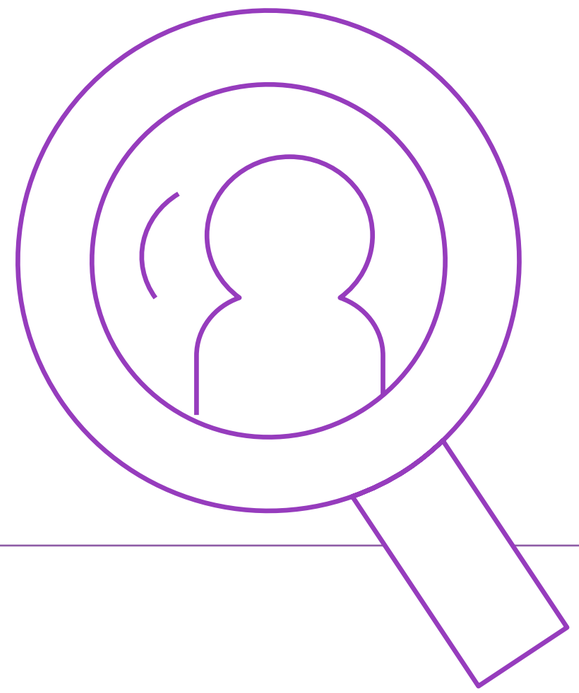
#8 Capture Tribal Knowledge

BEST PRACTICES

#1 Focus On the Customer

The most important thing that IT leaders relentlessly focus on is the customer, or end-user experience. New technologies will continue to come in and out of vogue; the only thing we can rely on is constant change. Whatever the technology, what matters in the end is impact on the customer. Product and app teams will still need to deeply understand customer needs and adapt accordingly. By empowering teams to take ownership of the end-to-end customer experience, companies can innovate.

> *IT should never be the one slowing down the company when it comes to delivering something to our customers. Never.*
>
> – **Antoine de Kerviler**
> CIO, Eurostar



BEST PRACTICES

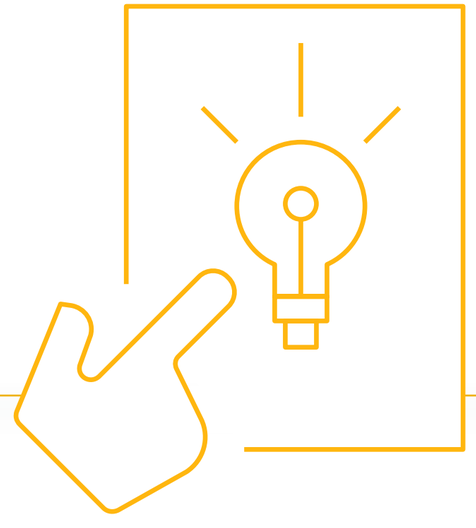
#2 Provide Users With Safe Boundaries

CIOs who want to nurture innovation give their teams room to explore the boundaries. They provide just the right level of security without creating too much friction. They invest in a data-integration strategy so that workers can freely access the right data and empower users to curate it according to their own specific needs. This up-front investment in a governance strategy helps organisations to effectively scale and avoids the pitfalls of poor change-management strategies.

How can you get honest feedback in a safe environment from advisors you like and trust? One answer is to emulate Pixar's brilliant feedback system, the Brain Trust.* The Brain Trust is a core group of trusted advisors who give critical feedback on work, and explain how it can be improved.

In *The New York Times* story, "What Google Learned From Its Quest to Build the Perfect Team," Google shared that its single most important attribute across teams was providing an environment of "psychological safety" for team members to contribute ideas without fear of retribution or embarrassment. Another brainstorming technique used by thousands of companies is to have team members privately write down ideas and then share with the rest of the group to prevent groupthink.

* source: *Creativity, Inc.*, by Amy Wallace and Edwin Catmull



BEST PRACTICES

#3 Right-size Innovation Based on IT Resources

Choose the development-team structure that best fits your IT resources and app development strategy. There was a time when a monolithic app-delivery model sufficed for most organisations. Today, many organisations must support legacy IT systems while also rapidly innovating and developing new apps. For instance, if an organisation is short on IT staff, it could rely more on low-code app development platforms to fill the gaps. While this approach provides less control over the code and isn't a truly open environment, business users as well as professional IT teams can build value quickly.

Similarly, other teams, when available, can create on more freestyle development platforms that support languages like Java, Ruby, Python, PHP, Node.js, Go, and others, while maintaining more control. When choosing an app-development platform that enables all types of users, look for solutions where both business users and developers can work together in the same environment or codebase using source-code control systems.

Additionally, some enterprises are organised along discrete product lines, with development teams responsible for their own apps. In this model, developers each carry their own institutional knowledge about their work as they build and maintain their apps. But for many organisations, such developer resources are scarce, and such a strategy is a luxury. In this environment, developers must be treated as shared resources. Here, it's even more imperative to embrace collaboration, DevOps, and microservices so that developers and IT resources can be shared and reused to the maximum extent possible. Other benefits include shorter lead times, more uptime, and greater IT staff engagement.

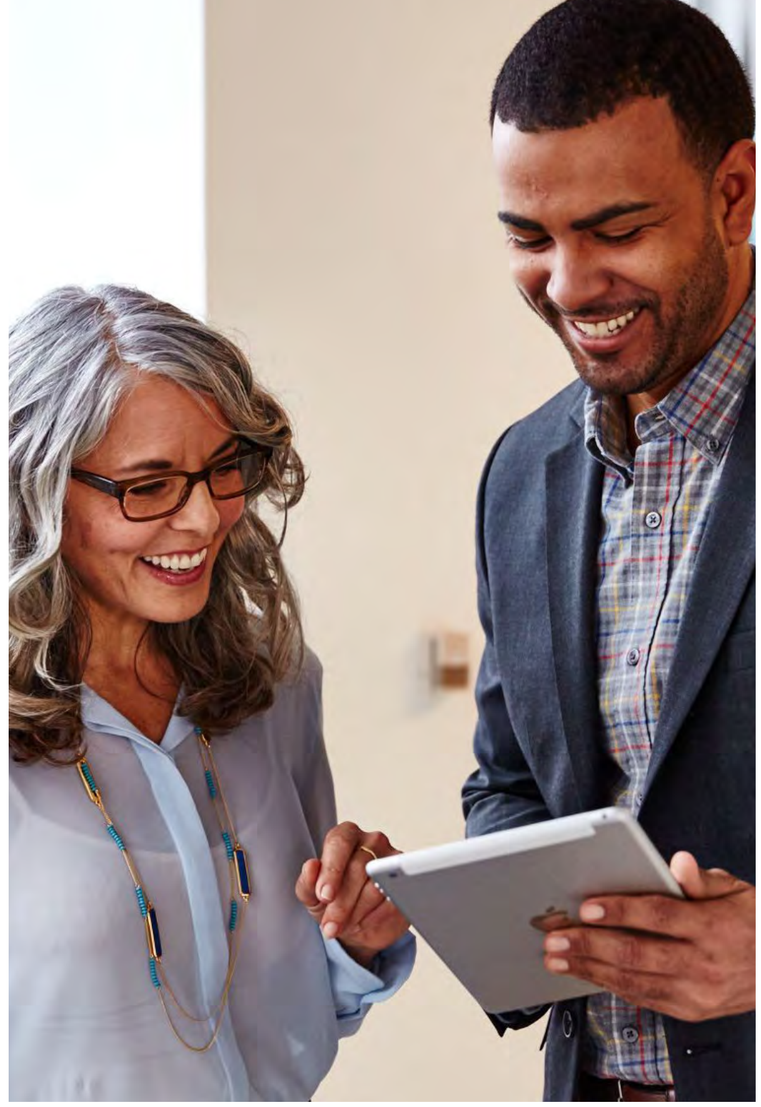
BEST PRACTICES

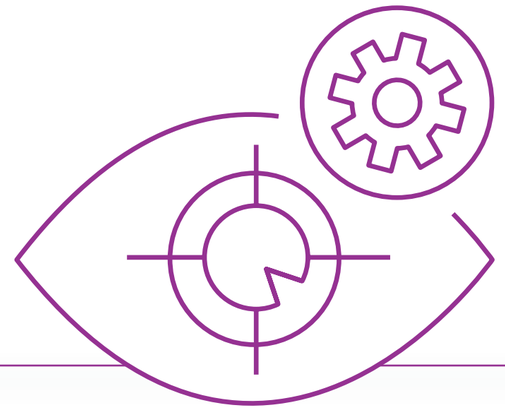
#4 Take Advantage of Shadow IT

Innovative enterprises are always on the lookout for innovation from the front lines of the business. Shadow IT can be a signal that business users are looking to build the apps they need to be more effective. These grassroots initiatives provide real-time insights into what the real business needs are, so savvy CIOs see shadow IT not as a threat, but as an opportunity.

CIOs can provide these non-IT users with visual app-development tools that allow them to develop apps in “low-code” and “no-code” visual programming environments. In this approach, users can build while IT maintains oversight to ensure security and regulatory compliance, and also that other internal data policies are preserved. This way, more employees can develop useful productivity apps, and even skilled developers can create apps swiftly.

BMC Software, the digital enterprise-management software company, is a great example of how teams can make this transition successfully.





Cloud and low-code development platforms provide an opportunity for business users to have a very significant role.

Rachel Rogers, IT Senior Services Manager, said that the IT team's backlog used to have 50–60 stories but that the team has now shifted toward a "zero-backlog mentality." Any user across the 6,000-person company can come up with an idea, define his or her own requirements through an IT-governed process, and "code" his or her own apps. Users take pride in and ownership of their solutions, and as a result become more engaged in the business. The user can then request IT to maintain the app for the rest of its lifecycle. Allowing users to solve their own problems permits IT to focus on more strategic activities, freeing up development resources.

This is about enabling business users to be more proactive in what they're trying to accomplish – because as the pace of business demands increases, so does the need for users to build their own solutions. Cloud and low-code development platforms provide an opportunity for business users to have a very significant role.

Empowering business users with these tools frees up other development resources – such as DBAs, UX designers, and QA engineers – for more value-added activities. This is vital because, by some estimates, 85% of enterprises are facing a growing backlog of apps.

BEST PRACTICES

#5 Evangelise the DevOps Ethos

DevOps, the culture of collaboration and empathy, prioritises ownership over outcomes, and the willingness to provide the solutions customers and users need. This ethos is not just for development and delivery teams.

Tools and technology are important, but leaders often don't see the cultural shift that happens across the entire organisation when moving from traditional waterfall to agile development methodologies. In waterfall environments, development, test, and staging teams exist in silos without being empowered to take end-to-end responsibility for the customer experience. If change is not sponsored at the executive level, teams will naturally try to maintain and protect the status quo. A feeling of shared ownership of roles and responsibilities must be instilled in everyone. To maintain speed and agility, business and IT teams need to move as quickly as they can, which means moving as one unit.

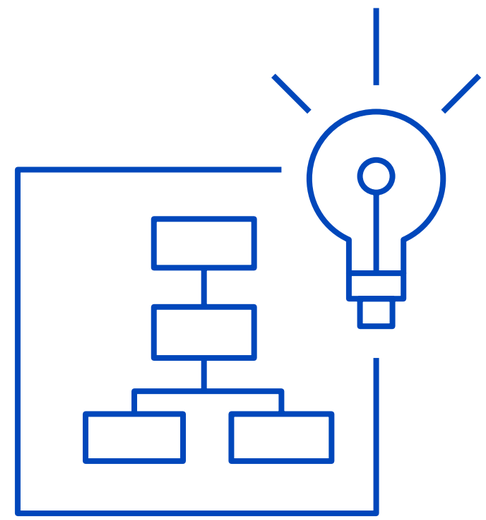
We see business users or product owners becoming more and more embedded in app-development teams in sprint cycles. Adopting modern software development practices must reflect a change in thinking not only within IT, but at the most senior levels of management across the entire organisation.

BEST PRACTICES

#6 Develop with a Microservices Approach

Teams are moving away from monolithic app-development approaches and toward a microservices-driven architecture, which allows them to build what they need more independently without complex interdependencies across apps. A microservices-driven approach enables loosely coupled app architectures by isolating functionality into components and services that can be reused and consumed by other teams. This way, the next time someone needs to create a new app that includes capabilities such as onboarding new customers or processing a completed form, he or she can take those prebuilt services and integrate them with the new functionality. The idea is that teams can work with independently developed and deployed services without stepping on each other's toes.

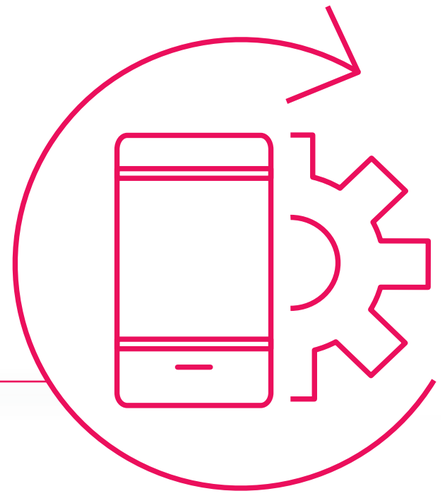
The clearest benefit teams see when they adopt this type of approach is that work can be shared and distributed, allowing companies to gain economies of scale. When a single product team develops an innovative app that can be used across many teams, IT can easily help refactor those components and services as shared services for everyone. This way, companies can sustain a speed of independent app deployment not possible with monolithic designs.



#7 Continuously Deliver

What is continuous delivery? It is simply delivering software that can, at any moment, be reliably deployed into production. There shouldn't need to be any human intervention in the chain of building, testing, and deploying software. While many enterprises have full continuous delivery pipelines in place, most don't – yet. They are automating their tests and building their continuous integration pipelines, but they have not yet fully automated.

To get there, companies should use tools designed to promote good behavior across app delivery. Cloud-based tools such as Heroku Pipelines are used to provide guided and standardised workflows for collaboration across the organisation. By standardising the flow of builds and automating testing, teams can rely on consistent delivery approaches, which are critical in dynamic environments. Using this approach, it's not uncommon to see teams spinning up and breaking down multiple app instances in a few minutes. Apps can be built and tested quickly, without additional overhead. This disciplined approach to innovation is what allows development teams to manage large and sophisticated apps with ease.

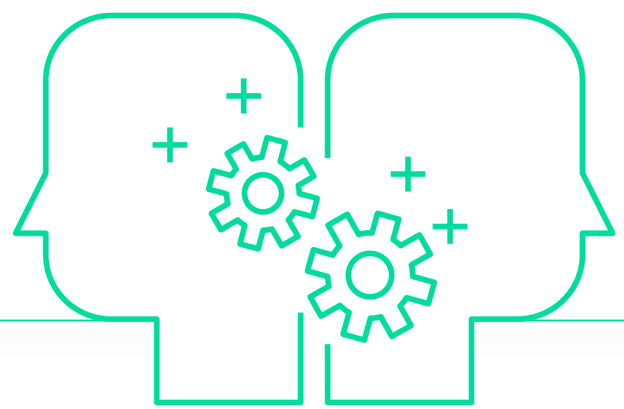


BEST PRACTICES

#8 Capture Tribal Knowledge

As enterprises grow, more knowledge tends to become trapped and unreachable in the minds of individual workers. As teams and companies grow, employees start to specialise so that they can scale. As a result, the number of potential individual communication points increases exponentially. To ensure knowledge silos aren't built during such growth, it's important that the right data be made available for all to use. Companies use cloud-based collaboration platforms such as Chatter and Slack to enable mobility and productivity anywhere. They also enable employees with tools to build, repurpose, and discover business workflows for other teams to use, accessible anywhere on the cloud. Complete with its own version control systems, these tools solve specifically for the problem of tribal knowledge and allow anyone to see what was done before and by whom. This makes it easier and faster to not only share our work but also hand off work to other teams.

Many more methods and best practices exist, but the common thread in every approach is the fostering of the right environment, and the cultivating of a sense of ownership and empowerment across the extended team.



CASE STUDY

Real-World CIO Trailblazers

The ability to create an innovative digital organisation isn't limited by industry or size. Any organisation, large or small, in any vertical market, can cultivate an innovative environment and use technologies that foster insightful and consistent agile development to become trailblazers.

Take OneUnited Bank, a 50-year-old community bank servicing low-to-moderate income communities with branches in Boston, Miami, and Los Angeles. As its footprint has expanded into the digital world, so too has the demand for better apps. OneUnited used a rapid app-development platform to gain leverage and agility, building a new application for credit-card approval in just 60 days that featured dynamic forms, lead tracking, and integration with back-end credit systems. Employees can also track a customer's application status with dashboards on mobile devices. CIOs like OneUnited Bank's Jim Slocum are increasingly seeing the need for agility, and are developing on cloud platforms that allow their teams to launch and iterate faster. In the case of OneUnited Bank, most apps can be built up to 80% without code.

In addition to the credit-card approval app, OneUnited Bank also built out an app that allows employees to see what products a customer currently has, and which ones he or she might be interested in. Now sales reps are better equipped to offer additional solutions to customers instantly.

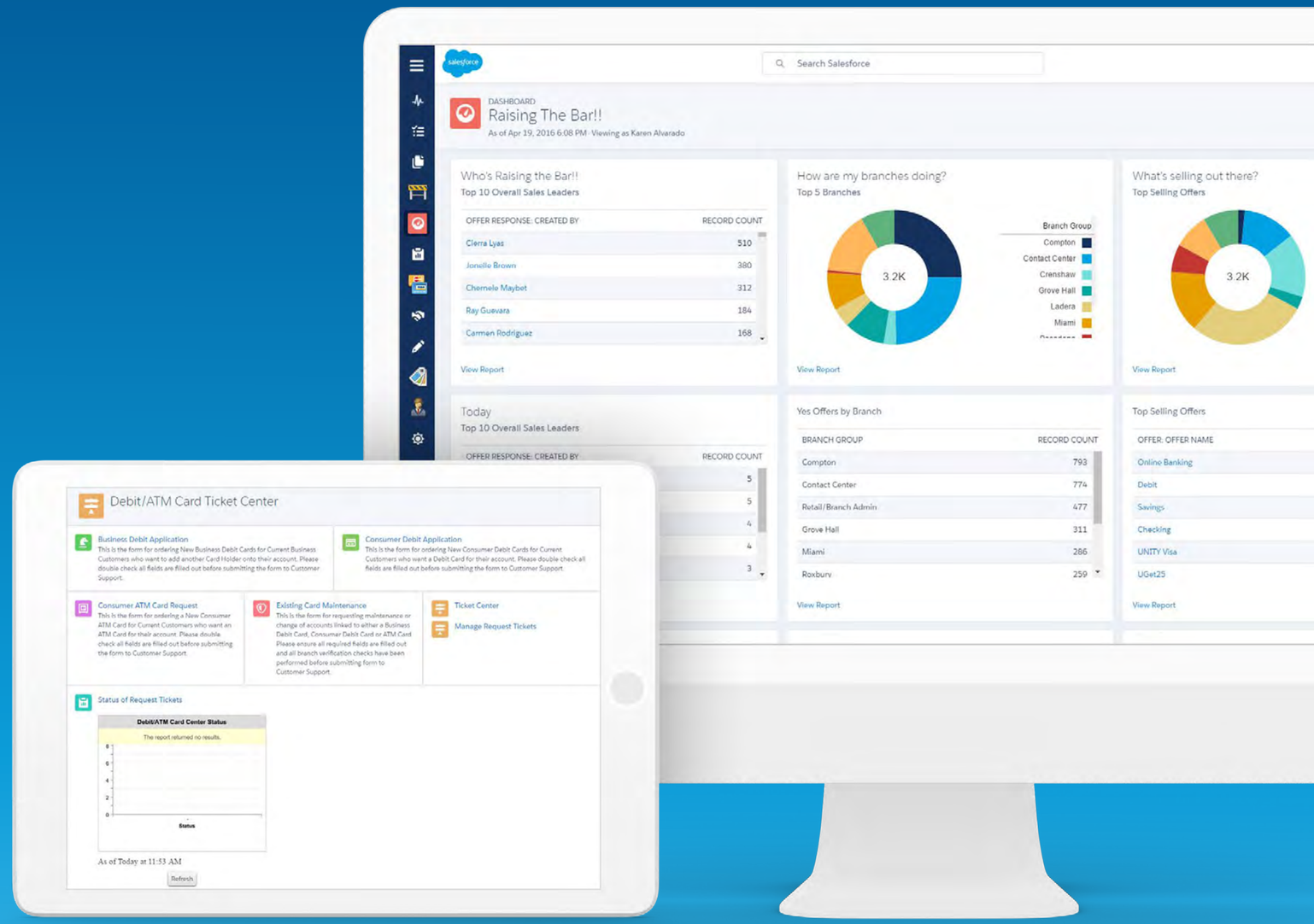
The role of the CIO has shifted. Our job isn't just about maintaining the infrastructure or simply building the app for a business unit; it's about leading the shift toward technology for your business.

– **Jim Slocum,** CIO, OneUnited Bank

50%

more customers

OneUnited Bank's vendor-management app helps employees better manage vendor relationships by tracking vendors, contracts, control assessments, and risk assessments. Teams can collaborate and share information appropriately all in one place. Company efficiency has improved overall, and approval rates increased by 50% – all while establishing a new line of business for the institution and giving customers the opportunity to rebuild their credit.



Stories like this one reveal how digitally transformed, innovative enterprises are able to swiftly build innovative products. They nurture the collaborative culture that lets information flow, and they equip everyone with tools to build and innovate quickly. They leave room for collaboration and creativity, allowing everyone the flexibility to adapt and capitalise on emerging, and even disruptive, business opportunities.

NEXT STEPS

Become a CIO Trailblazer with Agile

So how does any enterprise get started on its own trailblazing, innovative, digital-transformation journey?

There's no one path. But as you've read, the path to innovation must include fostering a culture that makes it possible for employees to propose and act on new ideas, and to strive toward innovation that serves the common purpose of the business. Organisations can promote such a culture by adopting processes and tools that unleash rapid, agile, and collaborative development. It can be done by any organisation of any size, anywhere.

See what other CIO Trailblazers and IT leaders are doing to innovate.

LEARN MORE

Or get started right now – talk to one of our experts by calling us at 1800 667 638 (AU), 0800 450 064 (NZ).

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