How Cloud Platforms Can Enhance Digital Experiences

The benefits of cloud computing are clear. Companies recognize that investing in on-premises technology is no longer a cost effective and nimble way to adapt to the changing needs of users. A better, more flexible and highly scalable strategy is to use a platform in the cloud to build applications that work across digital devices and can better address customer demands in real time.

Discussing the benefits of a cloud platform on digital experiences with Knowledge@Wharton are Dan Lahl, vice president of product marketing at SAP, and Scott Snyder, a senior fellow at Wharton's Mack Institute for Innovation Management, adjunct professor of engineering at the University of Pennsylvania, and a partner at Heidrick Consulting, leading its digital and innovation areas. He is the author of Goliath's Revenge: How Established Companies Turn the Tables on Digital Disruptors.

An edited transcript of the conversation follows.

Knowledge@Wharton: In your view, what are some of the biggest challenges companies face when delivering new digital experiences?

Scott Snyder: The first thing they fail to do is work from the customer backwards — start with the customer experience. At the end of the day, the cloud is there to enable these experiences across touchpoints. If you just look at mobile as a proxy, and mobile and smartphones have been around quite a while, 60% of applications on mobile devices get abandoned after five uses. That's not very good. That's not a great track record for industry, which means we're falling short on building good experiences.

The other thing is something we call the 'customer expectation ratchet.' So no matter what industry you're in, if a customer has a great experience in the entertainment sector or in retail and they walk into your bank or your health care institution, they're going to expect that same experience — immersive, cognitive and trusted. [They expect you to let] them use any touchpoint they want, whether it's voice, mobile, gestures, VR.

Right now 25% of searches are voice. They want

it to know them and recognize them. They don't want to have to fill out a form again. They want to have it be a personalized experience, no matter what channel they come in on. That's the cognitive part. The heavy lifting is on the analytics side behind the scenes.

They also want to be able to trust it. And if they're going to share their data they want to get something back — the give and the get. They want to know what benefits are there and they want to know that their data is going to be protected and used responsibly. Companies are still figuring this out, how to bring that all together.

Dan Lahl: I want to touch on what Scott said about the multichannel experience. Historically, there have been different tools and application services for delivering across each one of those different channels. For the IT group to deliver an omnichannel or multichannel experience that is consistent across all of these channels is really, really hard. That's been really, really hard to do because the IT group has used different tools and technologies for each different channel.

Secondly, Scott talked about involving the

end user. Again, the joke within the IT group historically has been a user gives you a definition of the application [they want created]. You go away, you write [the code for it] for six months, and you bring it to the end user. Then the end user just says, "I have no idea what this application is, how it runs, how it operates because I wasn't involved in the design of it." And so I think that's a big challenge as well, especially with old legacy and monolithic applications.

Knowledge@Wharton: That's a good point. Why is it critical to manage both legacy and new applications?

Lahl: The legacy and new applications have to co-exist today. Most companies are not unicorns; they're not starting out just in digital applications. They've got a whole portfolio of legacy applications that are actually running the company. My sound bite on legacy applications is that a legacy application is any application that's actually working and servicing your business today.

So customers are going to have to utilize both legacy as well as new applications. And they may have to do a lot of work to re-energize those legacy applications. Just look at what banks are doing today. … They have to securely deliver new experiences to different platforms and different mobile devices. The new applications have to be built into the warp and weft of the current application stack so that the customers can innovate.

Snyder: I totally agree with Dan. These legacy applications aren't easily switched over to new platforms very quickly, but they have to start taking advantage of things like the cloud to get the efficiencies. But more importantly, most of the important data assets of legacy companies are locked up in these legacy applications.

So whether it's EMRs for health systems or point-of-sale systems for retailers, if you really want to capture these new immersive experiences, you have to tap into that legacy data asset. If you're a customer and you're walking into a café and you want to tap a kiosk and have it know your health profile and show you foods that might be good for you, that is accessing legacy data sources and legacy applications. Bringing these together onto a modern architecture is really important to do.

Lahl: That's really critical. The agility of the cloud to be able to build new applications and new multichannel applications quickly off of the existing legacy data so customers can mine the existing data that they have is going to be really important as well.

Also, there's a metadata component to that. Having a common understanding of all of the data across the enterprise that then can be used into new applications and new experiences for customers, partners and for employees is really important.

Knowledge@Wharton: It sounds like this kind of integration is critical. But the question from a CFO would be, what return on investment can one get by using the cloud to enhance the digital experience? And how big of an investment could be expected?

Snyder: There are lots of different numbers that people throw around. I've seen numbers that are pretty dramatic. Companies that have made the investment in transitioning to cloud — along with these new experiences and touchpoints like mobile, as well as analytics because they kind of all go together — moving to the cloud and not taking advantage of those doesn't make sense.

They're seeing 50% or more revenue growth boost over their peers. The data shows that if you've made this investment, it's as much about the flexibility and speed as it is about the economics. In fact, the public cloud sometimes can actually be more expensive because you're paying on-demand by the byte. Whereas maybe the private cloud might be a better solution. But either way, the speed at which you move, launch new products, respond to customers, is really the advantage the cloud brings.

Lahl: Customer satisfaction is really huge, and

that's tied to the digital experience. It turns out that unhappy customers share their story three times more than happy customers. In fact, I've been accused by my kids of being an old angry guy on Instagram because I post things that give me bad experiences. I've stopped doing that. But [it goes to show that] a rich experience and good experience really matter.

Previous research we did with Wharton showed that companies that invest in design and experiences outperform the S&P 500 by a great margin. And another thing we think is kind of interesting — just one data point that we got from a Forrester Consulting study that we did — is that by providing a rich experience it increases the perception of that company as being innovative by 28%. So experience matters, for sure.

Knowledge@Wharton: Let's drill down a bit on the financial aspect of this. How much does a company have to invest in DX and platform strategies relative to its size and goals? Should you reach a certain scale before an investment makes sense?

Snyder: It's always a 'depends' answer, right? It depends on what industry you're in. It depends whether you're a B2C or B2B business. It depends on where you are in your own digital maturity. The important thing is that you're thoughtful and you have a mission-driven approach to investment in these types of activities. Because ultimately, it's driving step-change outcomes in your business for your customers. And you have to work backwards from that and make sure your investments support that across all of these touchpoints.

If you look at the latest data, companies spend 10% of their IT budgets on software. I would argue it's not enough. Almost every company has to become a software company.

If you look at companies like Domino's Pizza that some people might view as a traditional company, they've been on this fantastic digital journey and now maybe a huge portion of their workforce is digital and focused on using those analytics, using things like the cloud to deliver a better experience. They've made a significant investment.

So it really depends on where you are in your journey and how you wrap that around the customer experience. But certainly it should be a significant portion of your IT spend.

Lahl: Historically, SAP was the classic monolithic applications suite that was extensive, took a long time to implement and it was a long rollout cycle for a lot of customers. We have really changed that with the cloud platform tools that we offer, to extend applications or integrate cloud SaaS applications together with on-premises applications, or just to build new functionality on top of your existing data or application set. What we offer from a cloud platform perspective is a set of tools and technologies that are services-based.

The way we see customers consuming this is they will come to us with a project that we want to do that will extend, let's say, S/4HANA, which is our core ERP application. And we want to create a new partner portal, for example. So we'll give them a set of services that they consume on a pay-as-you-go basis, and they pick and choose the services that they want. We get into a fast-sale type of project with them where they can prove out this new portal for their partners, for example, in six to eight weeks. If it reaches the minimum viable product [level], then they can roll that out in another month or two.

We see that customers are consuming the cloud platform to extend and integrate applications on a project-by-project basis. They're spinning up project-by-project and imagining projects as they go. It's no longer a monolithic way that they're delivering new experiences, but rather on a project-by-project and much faster basis, much more agile basis. Scott, I don't know if you see that from the other vendors, but that's clearly how we see customers enriching our SaaS applications going forward.

Snyder: That's really key for driving what people

refer to as a two-speed business model, where you're obviously running your current business. You have to do that successfully. But you're spinning up this rapid experimentation and the ability to slice your infrastructure to support or light up those new applications at a small scale until you can prove them out — especially things like AI and machine learning where you're testing new algorithms. You want to make sure they're hitting the mark, they're providing return before you deploy them more broadly. That ability and flexibility to have the infrastructure be able to do that almost in these micro services is really important.

Lahl: We had one example in northern U.K. at a company called Northern Gas. They actually took a 'heartbeat' application, which was an old legacy application, rewrote it in the cloud platform in about four months and deployed that to their service engineers across their enterprise. The key KPI for them was they had to respond to any gas leak across their customer base within an hour. That's why it was what they called a 'heartbeat' application.

They were able to provide a whole new mobile experience for all their service workers to be able to get to the right service person at the right time to go out to a customer residence to check a gas leak. They did that all through a mobile application. … And that's really all about the user experience for the service worker.

Knowledge@Wharton: On that note, what advice or best practices can you share about cloud-based platforms and the digital experience?

Snyder: Be customer-centric and work backwards. Think about the give and the get, the immersive, cognitive and trusted [aspects] and balancing all those as you design and architect these new applications. Ultimately, that's what's going to meet this customer expectation that's rising every day. That means also being able to expose your data assets, your services, whether they're legacy or new, both to internal innovators and external ones.

Having the flexibility of a cloud infrastructure to

do that and an API-type approach to the world is really crucial if you want to innovate at the speed of the market. That's really important. And you can't think of DX and cloud as separate things. They're really very intertwined. That's probably the best message I'd give.

Lahl: Take a cloud platform-type of approach to expose all of your data and all of your business processes so as to take advantage of both the investment and nuggets that you have in the data, as well as business processes that can then be extended and enriched along the way. Again, you can do that very quickly in an agile cloud environment.

The other really, really important thing is involving your users on every step of the process. Not only during the design phase, but also in the prototyping phase and the final phase where you're ready to go live. So the end user, at the end of the day, has this reaction to the new user experience: "Of course I like the user experience because I helped design it and, through this agile process, the IT group actually designed what I wanted all along the way. And I got input all through the process." So bringing them into the mix throughout the whole design, development, and deployment process is really, really critical.

Snyder: That's where the analytics become so important, because getting those customer insights to understand where the customer is having a pain point or need [can be identified.] Who knew we ever needed over-the-air software updates for our car until Tesla started providing them? All of a sudden, it has now set a new standard for the experience.

If I want rain-sensing wipers, I would just download a piece of software and I can change that experience so my car gets better with age. A Nespresso [coffee] machine will automatically reorder its own cartridges so I don't have to worry about that anymore as a customer. So wrapping yourselves around using those analytics to deliver a better experience is really what the

cloud enables.

Lahl: I had a personal situation with another car manufacturer I won't mention — it's German. They came to me and said, 'You have an update needed for the software in your car. Bring it in. We'll keep it for two days. And we're only going to charge you $200 instead of $400 to do the software upgrade.' They've totally missed the mark that the new bar is over-the-air upgrades for free, like Tesla does every two weeks.

That is the new bar that people expect in this digital experience: Automatically done, automatically updated. Done in increments of two weeks, not every six months. And you don't have to bring your equipment in to get it updated by a professional.

Knowledge@Wharton: Can you share more examples from a variety of businesses or industries of how a cloud-based platform leads to improved DX and customer satisfaction, as well as improved sales, profits, and cost savings, faster and more efficient responses to customers and other gains?

Lahl: We've had a number of customer examples. I'll just highlight a few of them. There is a company called LEO Pharma and they operate in more than 61 countries. They've got an international salesforce. They're in the pharmaceutical industry.

They established a new user experience infrastructure using our product, SAP Cloud Platform, this agile, cloud-based development environment, for their IT employees to give seamless access to backend application processes that SAP owns, using our next generation user experience called Fiori Launchpad.

This enables employees to do time registration, time logging from any device, and then managers approve the time registration by logging from any device as well, whether on their system in the office, at home, or on their mobile device.

They were able to put 600 new users on this

application in only two months. It was an application that was built in the space of less than half a year; it was about a quarter and a half to build this new experience for these customers. So, 600 new users [were onboarded] in two months. There was almost no training time across those 600 new users.

Less than 50 hours were spent for the global training time and registration. Then there was a more than 75% reduction in the process time for capturing workflows — the time that the consultants were putting in — and workflow approvals. So just a huge automation win on that as well.

Snyder: I'm glad you mentioned an employee application, because sometimes I think the employee and also B2B companies are sometimes forgotten. We spend a lot of time in academia and the media talking about B2C companies. When you think about the opportunity around enabling employees with the same kind of [digital] experience, whether it's field workers, whether it's folks in your plant to be able to do things differently and work in a new way, it's the same kind of basic approach [that you would apply to consumers].

When you think about B2B companies that are using things like sensorization to not only monitor equipment in the field, whether it's a locomotive or a windmill, but then actually build digital twins and simulate that asset … and try new algorithms without disrupting the production environment, that's all cloud-enabled. The ability to do that for B2B companies is a game changer. It allows them to deliver proactive services, change their business model towards delivering a service focused on the customers' end need instead of just delivering a piece of equipment.

Lahl: We've actually had a number of customers change their business model to 'service-as-a-blank.' We had a client company who built huge tractors. They're not selling tractors anymore; they're selling tractor-as-a-service and upping the

time for tractors.

We had another company that used to build very large air compressor equipment for manufacturing applications. They're now selling air-as-a-service, and upping the time of air-as-a-service and billing that to their customers at an hourly or daily basis. They can do that because they've built that predictive analytics into their applications, checking the efficacy of their compressors or farming equipment. They can also know when they need to do preventive maintenance so that there is not any breakdown in the equipment.

Let me talk about Komatsu, another B2B example. They are the second largest manufacturer of earth-moving equipment. The American division of Komatsu built its distributor portal allowing their distributors to create orders for their product from anywhere on any device — a multichannel experience. Those distributors can view real-time inventory and pass that on to their customers to find out when they're going to get the parts and systems they ordered and also view the product catalog information online.

Through this portal, they were able to get a 99.3% customer satisfaction rate. If you compare that with statistics showing 84% of consumers who say their experiences fall short of expectations, the 99.3% customer satisfaction is really a great achievement. And then some of the other key metrics through this distributor portal that they built were a 40% time savings during order entry and a 99% adoption of the portal among their distributors. So clearly, this new multichannel experience that they provided has been very successful for Komatsu America. ■