



What will the software industry look like in 3, 5, even 10 years from now?

Over the next ten years we will see the last great architectural shift in the software industry take place as everything shifts to cloud computing. Fifteen years ago, there was this inescapable sense that the Internet would change everything. It has, and the cloud is the ultimate expression of the Internet's disruptive nature. Once cloud computing has truly taken hold in every sector-which it will before the next ten years are over-the full promise of the Internet revolution will have been realized. The first successful cloud services were companies like eBay and Amazon, which put consumer transactions in the cloud. Now, there's no going back.

It may seem like a long time has passed since the days of Netscape Navigator and AOL, but after a clearly superior technology emerges, it takes time for the shift to take place. It was clear back in 1980 that Oracle was the leader in database technology, but it took a long time for the disruptions of their superior relational database to ripple through the system and push out the old guard. So even though it has been more than 15 years since the public Internet opened for business, we still haven't reached the point where all applications are delivered over the cloud. But we will get there.

If you don't believe me, ask a venture capitalist the last time he or she invested in a company that delivers software on a CD. All the serious development with major backing happens today in the cloud, and that will make itself more and more obvious in the next three years.

There is a lot of discussion about whether this move will be to the "public" or the "private" cloud, but when I hear that it tells me that people are misunderstanding how the cloud works. The nature of a public cloud is to provide secure, seamless access to information and applications. You won't buy services from me if I can't keep that "private" when you want it private, but "public" when you want it shared. More often, the term "private cloud" is abused by people who are just trying to slap a new coat of paint on the client/server architecture that we know is already dead.

Workforce churn is going to play a huge part in the adoption of cloud services in the next few years. Most people coming out of universities have lived their lives in the cloud. Show them a room full of servers and they're going to ask, incredulously, "What is this? **This** is how you run your business?" The Zuckerberg generation was born on the Internet, not the PC, and they're going to turn to the Internet for both their business and consumer needs.

A lot of this change will be subtle and unnoticeable. Nobody can say exactly when people stopped visiting a bank just to check their balance-it happened slowly, over time. Five years from now we will see multi-billion dollar companies running all of their core business processes in the cloud, but it won't be part of some grand plan. We will wake up one day, look around, and realize that the old ways have faded away.

And what customer demands and business trends will drive changes in software products, how they're developed, and the industry that provides them?

The best way to look at any trend or demand is to ask whether the Internet is going to be core to that business process going forward. The answer is almost always going to be "yes." So any business or industry that isn't willing to truly embrace modern, Internet-based cloud architecture is one that will, by its own admission, fall behind and lose out.

The shift from the computer to the smartphone is fascinating. Microsoft has struggled so mightily, despite the fact that they basically invented the tablet, because they kept trying to drag the notion of the desktop computer to mobile devices. Nobody wants to be tethered to a desk-they want to be tethered to the cloud. That's why the younger generations use their smartphones for virtually everything we once thought of as the exclusive domain of the computer. In fact, it seems like just about the only thing they want PCs for, oddly enough, is to

make calls with Skype.

Of course, a "smartphone" can mean many things, and a Blackberry has pros and cons that differ from an iPad. Developers will have their work cut out for them to keep pace with the different choices consumers and business users have in smart devices, and will need to make some strategic decisions about what to support.

Social media is changing the way companies evaluate their performance. Instead of evaluating quarterly profit/loss statements, we can find out if we are doing our jobs correctly just by tuning in to what individual customers are saying. We can capture their thoughts from Twitter feeds, comments and reviews, and what they tell us in transactions, and break that down to immediately understand what these individuals are telling us about how we do business, and how our products, marketing, and customer service need to adapt to address gaps. That change will be coming soon-definitely within the next five years.

The sheer volume of social media content is going to force companies to get smarter about which customers they choose to respond to. Some are squeaky wheels which will simply never be satisfied. Others are canaries in the coal mine and will deserve immediate attention. And still others will be competitive saboteurs. Building the discipline that turns social media into competitive intelligence will not be easy, but it will be necessary.

Regulatory demands, both by businesses and governments, are going to drive consolidation of processes and data storage. The more systems data flows across, the more difficult it is to coordinate security policies and ensure compliance. There is no meaningful, consistent way to apply security standards to 25 different systems. So consolidating the number of systems that touch a particular data process, and consolidating all those individual servers running in data centers and utility closets in tens of thousands of businesses around the globe, is going to be a major concern.

This interview was published in SIIA's [Vision from the Top](#) , a Software Division publication released at [All About the Cloud](#) 2011.