



Jeff Reed

CTO, Arrow Electronics

Editor's Note: In this issue, *martinwolf* interviews Jeff Reed, CTO, Arrow Electronics. Jeff is the first CTO that we're interviewing for this publication, and he brings with him a wealth of knowledge and experience from a career that has spanned the IT industry. He has worked at large (Microsoft, Arrow), mid-market (Logicalis) and startup (Eyealike) technology companies, and his accomplishments include creating Microsoft's Outlook Web Access and T-Mobile's eCommerce/POS products and data services platform. *martinwolf* sold his services company in the go-go years of 1997-2001, and since we first met he has constantly impressed with his unique perspective on the industry. In this interview, he touches on the role of CTO in bridging the gap between sales and engineering, his firsthand experience with M&A and how each year he tries to predict the future.

Tell me about what set your career in IT in motion.

There are two major tech products that I played a key role in early on that set my career in motion. One was a lead developer at Microsoft on a product called OWA (Outlook Web Access) in 1995 when Bill Gates sent out his famous Internet memo. Simply put, OWA was the web version of Outlook. We created it primarily in response to Boeing, because they were not going to adopt PCs for their thousands of unix-based CAD designers, and they needed an email client. Instead of writing a Windows client, we wrote a browser-based email client since Netscape 2.0 and IE 1.0 was out. Twenty years later, SaaS is all the rage, and those early beginnings with OWA have evolved in to Office 365. The technology has changed a lot—but the premise that anybody, anywhere on any device could use the software they needed to do their job (in this case email) was what we rolled out in 1995 and it's what you see dominating the market in today's SaaS model.

The other was as Chief Software Architect at T-Mobile, and remembering holding some of the first text messaging and data services phones in my hand...at a time when no one believed short text messages would catch on in the USA. We all looked at it and asked ourselves what these nascent data services really meant. Watching that transition, and how fast it really happened in the market, and how dominant PC players like Microsoft lost the mobile wave, taught me a lot about how you always need to think five years out and beginning executing today. In fact, Five Years Out is a key mantra we use at Arrow Electronics. Those two life experiences and career experiences set me up for how I act as CTO today.

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How did you end up in the IT industry, especially with a PhD in Ancient history?

There is a correlation with the PhD, in that my undergrad and graduate programs were partially devoted to linguistics and anthropology. While soft sciences, they have natural correlations with the IT industry, particularly in Machine Learning and Artificial Intelligence with natural language processing. What I studied was dead languages and interpretive models for how to understand ancient texts where we know less about the actual situations and intentions of the author. Since the language is dead, you’re trying to figure out some of the same things AI folks are doing: how do you create a system of algorithms that can interpret something like a human would at that time?

The other real answer is more traditional: my mom bought me a computer when I was in fourth grade and I feverishly started learning to “write code” I grew up in Montana, hunting, fly-fishing, in a highly competitive wrestling family...and I think my mom knew that this “computer stuff” (as she called it) could be big. And she was right. If you’re going to do a PhD in humanities, it’s wise to have a Plan B if you don’t get the coveted professorship you dreamed of. I had done programming since high school, and as soon as I went to college I was working in an IT shop. So I’ve always made my money in IT, even when I was doing my education in something that I enjoyed for different reasons. It’s brought great balance to my life, and a lot of people I respect in the tech world have diverse interests outside of tech. For me, it was about doing a PhD while I was young, before I had a family, but knowing that eventually I had to make money and I most likely would not be a professor. So that’s the real story of how I got both of those careers. I published a lot when I was younger, and recently co-authored a college textbook on Hellenistic Greek, and hopefully, will find more time in the future.

That’s definitely unique—not many IT people publish in the humanities.

Yes, I think the process of publishing is helpful because it’s a very detail-oriented task—to put something down on paper you really need to know what you’re saying—and since most of my studies were in anthropology, they were extremely relevant to the business world. No matter how you want to slice IT, it’s still about people, especially if you’re doing it at a global scale at companies like Arrow and Datatec. Understanding different cultures and how they go about transacting in the IT world is a key part of the job. My formal education served me well, and I loved it, and I think it makes me well rounded in a fairly technically dominated world.

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Currently you're CTO of Arrow—a role you've held at various stages at your career. How has that role changed as technology has changed?

You have to be a fairly large company to need a CTO, but all companies big or small have a technical person who doesn't mind wearing a suit and being in sales situations. I always remind my direct reports that if they want to take over for me as CTO, that have to have one foot solidly in sales and one foot in technology. In fact, only five years ago, I took a year off from the CTO role to be a true bag carrying sales rep, in part to build credibility with sales people. But my true talents are as a CTO. And that means you have to be comfortable knowing you're never going to be as good as your counterparts who are full-time in engineering or full-time in sales, but you have to earn their respect by being pretty darn good at both.

One of the problems in IT sales at some of the large hardware companies or VARs and distributors is that they're notorious for building sales forces who actually don't know a lot about the technology they are selling and where it's going in the marketplace. Their jobs are transaction-oriented—close the deal no matter what to achieve quarterly targets and numbers. And as much as I might get in trouble for beating up on the sales industry in IT, I think it is in a transition away from “transaction orientated” individuals to well-trained solutions sellers who are well informed on fewer products and work as a team at large enterprise customers...and share the rewards. Again, back to my point about what the CTO does, it's making sure a tech company factors in customer-facing sales and the job of managing your sales on a day-to-day basis with the products you're building on the engineering side of the house. And if you're a really good VAR or distributor, you'll have an organization where the sales and engineering coexist and work well together...and, again, share in the rewards equally.

So as part of an executive team, that's my job—I speak up when I think sales is missing the boat on where the market is headed, and on the flip side I make sure engineering knows we need to be around in a year and that means actually having really products that solve real problems today for our customers.

Is the CTO a role that has changed with technology? It seems like a fairly static need.

Strategy is simply the alignment of time horizon with trends in the marketplace...regardless of those tech trends. The time horizon for a sales person is pretty myopic...this month, this quarter, and this year. It's my job to understand what are the trends, what is our long-term strategy as an organization, and how can we execute on this. While I worry about “five years out”, most of our employees are executing

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against a one year plan. We are pretty systematic at how we do this, so that our sales organization has a one year strategy horizon. I gather true subject matter experts from various business units that deliver certain sorts of products, whether they're server, storage, networking, security, cloud, unified communications, software applications, etc. I grab those subject matter experts and build a coalition, and starting in the third quarter of the fiscal year I hold an intensive roundtable planning session about where the market is going—just like IDC, Gartner and the others. We draw from the analysts and our customer feedback, take that experience, and organize that into a roadmap. And that roadmap is sent to the extended leadership of the company, which includes more operationally focused business units like accounting, sales and the office of the CEO and other P&L business unit owners. We then take their feedback, combine it all together, and present it to the rest of the company to explain what we're going to do for the following year. This “strategy” then allows various business units to set comp plans etc. that aligns behavior going in to the new year.

That's why I think the role is so fundamental. I've seen companies, especially big or quickly growing ones, where the strategy is so loosely defined that every business unit has its own strategy, and there is no synergy. Instead of $1+1=3$, you get $1+1+1+1 = 3$...yes, you get less than the sum of the parts due to overhead and inefficiencies. So, at least at mid-market and larger companies, I don't know how you excel without this kind of role. But, of course, I'm biased!

Has this role of predicting the future gotten more difficult?

I don't think it's actually that hard. There are so many analysts, and so much data, that execution is always the hardest part. We saw it with “cloud”, and now we're seeing it with one of the next big phases related to cloud -- namely IoT (Internet of Things) – which will be one of several topics that dominates the IT market in the next five years. Most of us really understand the “cloud” and what it's going to do to our business models, but now it's about execution. The market doesn't shift its spending overnight—it has long-term contracts, adoption that takes time to play out, legacy systems that work “good enough” and have sunk costs—change takes time...because of the human element. Just because some great idea came out, it doesn't mean that everybody's going to adopt tomorrow. Same with the cloud—it's moving in waves, different workloads are getting there, and all those things are starting to get worked out and continue to drive revenue up to a point that we'll cross the chasm. For example, in distribution, cloud doesn't necessarily need two-tier distribution—“cloud” doesn't need a warehouse. But single invoices, financing for long term cloud contracts, managing multiple passwords across cloud providers, training, and the general aggregation that distribution

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brings—that's not going anywhere at all. Distribution is still need, including two tier distribution. The first distribution companies that make it easy for all of their VARs, and the VARs' customers, to procure many cloud services in a combination of “eCommerce” user interfaces and traditional procurement mechanisms (POs, not just credit cards), will make a lot of money. IoT takes it to another level, just due to the massive amounts of endpoints (sensors, mobile devices, gateways) that need to be purchased and automatically provisioned to a cloud environment for management, alarming, and analytics. Figuring out a “strategy” with all the smart people in the room who live and breath this daily the easy part—the hard part for many of the traditional VAR and distributors is building a new set of systems that empower buyers in the Internet age.

Tell me about your history with M&A.

As CTO, one of the things I do is look for potential acquisitions that fit our strategy, and if bought, work on the integration of purchased companies into our existing organization. I probably spend about 10% of my time as CTO working on both the strategy—what are you going to buy—and the execution—primarily going and meeting the human beings that you're buying. If you lose the wrong people in an acquisition you're going to lose the company—so I spend a lot of time with the people we're acquiring and lean on my anthropology background and experience as someone who sold his company to understand the goals of the other person. My experience gives me plenty of insight to rely upon—I sold my company with two other partners, I've been on the advisory board of companies that have been sold, I've invested in companies that have failed as well as succeeded—and I take that experience as CTO to enhance the company's organic growth and inorganic growth. I was luck since I sold my company when I was relatively young, and decided to stay on with the purchasing company to gain global experience. Datatec was a great company with Westcon and Logicalis, one on the distribution side and the other on the VAR side. I had come from the software and services IT industry, which most VARs aren't that great at. But most SI's aren't that great at integrated hardware solutions. It was my chance to get good at both: product and services. And I was right, because what's happening is that the cloud is forcing everything to consolidate, as services and the hardware that goes with it are not separate. It's helped me understand the transition that the cloud is forcing on the VAR, distribution and services industries. And it's great leveraging this experience at Arrow Electronics, a Fortune 500 company with many divisions, many interests but fundamentally a distribution business model that is being transformed by cloud and services models of IT.

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How did you know it was the right time to sell?

Gut—I sold my house in 2006 as well. I live by a model that when everyone's exuberant it's time to be cautious, and while everyone is cautious it's time to get to work and make some strategic acquisitions of choice. It's something I picked up from one of the best investment advisor's I've worked with, Phil Scott at Merrill Lynch. So, my timing was good. And I'm sure I does of luck and hard work were part of the equation too, as Malcolm Gladwell discusses in *Outliers*, but it's not just about what you do at the time of the sale. It's about what you do after. I chose to stay on and helped survive good times and bad times to grow from a \$100M business to a \$600M business.

What's the next dominant trend on the horizon?

The cloud model is all about using automated virtualization as a platform to host software, but there are variations such as public cloud, private cloud, and hybrid cloud. IoT takes that to the next level, but adding billions of devices as endpoints in to that cloud infrastructure, which can “analyze” all of that data at scale. The IoT market size, whatever you want to call it, is big (I've seen \$200B to \$1T). And “big” markets tend to create dominant trends. Instead of pizza-box sized servers, the smallest sensors and micro-controllers on all types of solutions come into play. And when you take the number of units, and the scale and complexity that goes with it, there's a huge disruption and huge chance for monetization – including for distributors because it becomes a “platform” play. It's not necessarily net new monetization—there's going to be winners and losers—but the train has left the station for the cloud, and IoT is only going to ratchet that up. I think the cloud is still the dominant trend in IT, but IoT takes that to another level—and for the next 5 years, that's one area we're going to be focused on.