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The War On FAEs (Part 1): Remembering When FAEs Ruled

by the OT Club

If you've been working in the electronics industry for a while, as a user of electronic components, you may have noticed some changes in the levels and quality of service that your semiconductor field application engineers (FAEs) provide. If you've been working many years on the other side of the fence, as a semiconductor FAE, then you may be even more keenly aware of these changes. The writers of this article fall into the latter category. As longtime semiconductor FAEs, we have experienced the changes first hand. And we have lived through enough peaks and valleys in the business to recognize the long-term changes affecting our business and how we do our jobs.

This article is about the long-term shifts in how semiconductor manufacturers have treated the role of the FAEs. We're writing specifically about trends in the semiconductor business, since that's what we know from our decades in the business. But much of what we write here may apply more broadly to the entire electronics industry, and perhaps even to American industry as a whole. This discussion centers around the impact of "finance" on business.

We won't attempt to formally define that term here, though it will be clear once we get further into the discussion what we mean by "finance". And suffice it to say that others have discussed, in broad terms, the growing impact of finance, what some call "the financialization of American business," which you can read more about in reference [1].

But here our focus is the semiconductor business, and in this three-part series we will explore the changes in the industry as they have affected the FAE role, during what we'll describe as the three different eras in our history. Here in part 1, we focus mainly on the first era, which lasted from the time FAEs became common in the semiconductor industry up until the late 90s. It was during this period that semiconductor FAEs were highly valued and well utilized by their companies. Thinking back on our careers as FAEs, we realize that we were treated like kings during this period.

But then came the period, which started during the dot-com era, when the FAE role started to be devalued. We refer to this as the era of benign neglect. We'll talk more about that time in part 2 of this article. Finally, we come to the current era in which some companies are actively working to undermine and rid themselves of FAEs, who they seem to view as being detrimental to meeting their objectives. It's this current state of affairs that we're mainly referring to in our title "The War on FAEs," and we'll describe some of the conditions of this era here in part 1 and write more about this time in part 3.

We describe the situation as a war, because, in the U.S., when something is demonized and targeted for elimination, we always make war on it. Such wars usually go on forever wasting resources and time. The goal is never achieved but lots of distraction and career building go on during the "war". Consider as examples, "the war on drugs," "the war on cancer," and "the war on terrorism" and you get the point. Perhaps the esteem of FAEs has not quite fallen as low as that of these better known targets of war, but given the conditions under which we do our jobs, it does seem like the companies that employ us are trying to eliminate us. This attitude is reflected in comments by managers along the lines of "What would happen if we didn't have FAEs and it was all online, that would save money." Finance is in charge of everything now.

But before we go any further, we have to address a key question. Why is the so-called war on FAEs important to you? Well, if you are in the semiconductor industry, the answer may be somewhat obvious, and you probably have already seen and experienced what has happened to the FAE role over the years, and how it affects the business. But, if you are a customer, you have probably been on the receiving end of the trend and you've witnessed the decline of customer support. For example, in the past, where you would have had contact with an FAE, now it's more likely that all you get is a sales person or a website or email that goes somewhere.

Moreover, when you do reach out for tech support, you may find that there's no one left to speak with in English in your time zone, thus the emphasis on email, and certainly no one who will travel to see you. This is a far cry from the past. In the late 70s, and throughout the 80s and most of the 90s, if you were a customer, we could hardly wait to visit you. This article discusses not only how things have changed but why.

Origins Of The FAE Role

As best we can determine, National Semiconductor invented the FAE program in 1968. There were two paragraphs in the annual report from that time talking about "experts" traveling with the salesman.

The requirements in 1968 were several. The main one was that you had to have three to five years of system design experience. No exceptions. No theoretical MIT MSEE's, no IC designers or product engineers with three years of experience.

Analog Devices started their FAE program around 1978. Hank Zumbahlen was the first one—one of the authors of this article had the honor of working with him as well as other fine ADI people who were top leaders of ADI at that time.

Other authors of this column worked at National, which in January 1981 found itself featured on the cover of Fortune magazine with the headline "The Animals of Silicon Valley". National viewed that description as a complement, so much so they used it as the slogan for a sales campaign. Then, every month, for about 8 to 10 months, they sent a T-shirt to the FAEs and FSEs (field sales engineers) with an animal and a catchy slogan.^[2]

In those days, FAEs were indeed kings, and every semiconductor company had to have a FAE. Even now, some of the FAE legacy from those glory days persists. National is now TI and Analog Devices bought Linear Technology so both are still around, and both still seem to have FAEs today. So it would seem that a few companies still value FAEs and such companies can still provide good tech support. But at the companies who no longer have FAEs, or who have undermined their FAEs, your chances of getting good tech support are slim.

Today your technical question might be answered via email or a phone call to a far-off land. In fact, this just happened to one of our authors when he asked some questions of a well-known instrumentation company that has been around for decades. (Hint: it was started by two very famous individuals). The email response to his questions took about three weeks to reach him, was written in broken English, and just encouraged him to buy one of their instruments from an authorized distributor—yeah, that was helpful. It's hard to believe, but that same instrumentation company used to deliver a demo unit in a day or two so you could try it on your bench.

Although this anecdote doesn't refer specifically to an experience with a semiconductor company, it reflects the same problems with poor customer service that semiconductor customers encounter. By the way, some manager at that instrumentation company probably thought that their useless email response was a "win in the metrics." More on what a win in the metrics means and how we got to where we are today in a bit.

But let's start by recalling how it was when the FAE role was first introduced. We were usually hired from companies that were customers of the semiconductor manufacturers and we had extensive design experience, abilities and knowledge of the products and applications. In many cases we could do the customers' designs for them because we had done so before.

When we were hired we were issued a company car and a card to use for fuel or maintenance and repairs on the vehicle. It was clear that management wanted us on the road in front of customers rather than waiting in the shop or along the side of the road. In fact, we were typically issued a new vehicle after the company car was either "mileaged" or "timed out." After all, time was money and the number one priority was being with the customers, helping them.

Similarly, air travel, training, and support were all plentiful and the other departments in the company—legal, finance, HR, IT (or MIS, management information systems, as it was called back then), product marketing, sales and everyone else imaginable were there to help us because it was understood that by supporting the FAEs, they were supporting the customer.

The requirements for reporting were minimal and consisted of providing our feedback on what the customers needed next, what the competition was up to, what documentation was needed, and what factory applications engineers (product line applications engineers) could do to help. Everything we wrote was read and considered a priority—the customer was next in line to us and we were the messenger. The data we reported was almost always used and had a positive impact on the customer experience.

Conversations went something like this "Phil, since you will be at Company X next week, what can I get you? Do you need samples, documentation, and reliability reports, test data? Just let me know and when you get back can you give me a call and let me know what the engineers at Company X need so we can beat the competition?"

We lived in an adaptive, flexible world, where there were rules and policies, but they were mainly guidelines for supporting the customer. So coloring outside the lines was encouraged and called innovation. Today, process and following the process is paramount. The process in fact has become more important than the product or the customer. Rules and policies are applied rigidly.

In the early times, the reporting channel was all technical in nature. The F&E's boss was usually an engineer with design experience who had visited customers before and had real world experience in front of customers designing things in or had been a F&E himself forever. The rest of the chain were either technical or knew enough to listen to the people who were. Also, we had no Microsoft Office Suite, SAP, Oracle or salesforce.com. We eventually had the fax machine and that was state of the art. Looking back, how in the world did we survive? Actually it was better because you had to use common sense and logic.

As the head of IBM once said, "Think" —that's what we could do. We did not suffer from "data-data-everywhere and not a drop to drink". The phone, fax machine and postal service with the occasional FedEx were all we had for communications and for sending parts, product data and app notes to the customer. And yet, we still were able to provide top notch customer service.

The F&E was treated like a king and as an integral and important part of the business including the planning and development of new products and services. The support people in marketing were often technical having had design experience at various leading aerospace companies and such. They also knew the products and applications and were willing to visit customers or engage the F&Es in technical discussions on how best to use existing products, what the competition was up to and how to get a leg up on them and out-service them and advance the state of the art.

Besides having experience, back in the 70s, 80s and much of the 90s the managers had common sense. But they are gone and it's all about metrics and process now. We worked for some of the best people on the planet until about the time the dot-com thing came along. Then we got some of the strangest management in the world. Many of these people came from outside of the electronics industry.

The changeover can probably be traced back to the way Robert McNamara unsuccessfully ran the Vietnam war—using whiz kids making decisions by the numbers (the so-called "metrics"). As we learned from that war, metrics can be used deceitfully to say we're winning, when we're not. Today, American business is run in much the same way, using metrics and more metrics, mostly just having the effect of placating management. And when something doesn't work, double down and do more of it.

It used to be the goal was be the best, win and beat the competition, and serve the customers. Now, no common sense is allowed. Instead, make sure your metrics in Salesforce.com and the other systems (SAP, Oracle, etc.) look great because that's what the bosses all look for. Now the people running the industry care about money more than anything else. Old fashioned views about building long term approaches, relationships, making the world a better place through technology first and then making a good income as a result, are largely forgotten. Instead it's about making "fast money now at all cost".

Industry leaders with any shred of altruism are usually mocked or ignored. In the past, the F&E was the key interface with the customer, generating new product ideas and calibrating the engineering community with the constraints, goals and challenges of the customer. Everything was about the customer rather than simply what's good for the semiconductor supplier in terms of making money right now and making Wall Street—management and finance—happy this quarter. F&Es back in the day also prevented "Field of Dreams" marketing (the "build it and they will come" attitude) and a myriad of other problems that naturally arise because new product development is not easy, and it never has been.

The good F&E was a conduit and also a filter between the customer and those doing the semiconductor product definition. The good F&E earned a reputation with customers for solving problems and establishing clear communication and credibility for the supplier company.

But the very large customers now have dedicated F&Es assigned to them, which has devalued their position as F&Es. Without that exposure to multiple customers, F&Es don't obtain the breadth of knowledge required to differentiate between a customer's wishes and its true needs versus an entire market view. Fortunately, expertise in areas like power and RF are still valued by some.

Back in the day, if we did not have the right part it was expected that the F&Es would tell the customer, "you know we can't do that right now but the best solution for what you need is from our competitor X, they are ahead in that area." Customers appreciated this and in the long term it won their business. As one visionary VP

of sales and marketing explained it, by telling a customer about a competitor's part, "you will establish technical credibility with him and he will trust you next month when you tell him to use parts from us."

That attitude would not fly today with most senior management as they don't understand what a customer even is, much less what they want or need. If your boss finds you recommending a competitor's part you will likely be reprimanded. "That's the customer's job to find that part, yours is to convince him that what we have today is what they need."

That's because the boss is simply looking at numbers on a spreadsheet. To modern managers, the customer is a line item on reports and the video game generation coming up the ranks loves it that way. The value of an FAE as perceived by the business guy is typically not very high and the business guys now rule.

In the "we were kings" era, the money and business people knew they needed us as a conduit to the customer. We were critical to product definition because we had access to and input from *multiple* customers. Back in the late 70 to early 90s, component companies would never allow their business units to define new parts solely based on input received directly from the top customers. But today, the top customers now know to look for that opportunity and they use the naive suppliers almost as dedicated ASIC suppliers. They tell them what they want and—with no NRE or commitment—the suppliers create the parts. This insanity is now seen as winning. These days, you could not define and develop a 555 timer without "a driver customer".

If this sounds like we're exaggerating, consider that many of the parts semiconductor suppliers offer in their catalogs really don't sell. But in today's electronics business, if something isn't working, the attitude is simply to do more of it. Double your efforts and make prettier reports! The financialization of the business has made it so.

So how did we get from the era when FAEs were valued and well utilized to our current state of affairs? In the second part of this article series, we will discuss the next phase in the FAE employment era, which began in the dot-com era and expanded and accelerated into the early 2000s. What began in this phase forever changed the industry. It was during this time that the semiconductor industry became infested with "professional managers" and the processes, systems and software that they brought with them from GE and Harvard business school.

References

1. "[The Pitfalls Of The 'Financialization' of American Business](#)" by Knowledge@Wharton, June 29, 2016.
2. "[Not the 'Animals of Silicon Valley'](#)" by Todd Nelson, Analog Footsteps, October 17, 2013.

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