

## **A conversation with Arlene Harris**

**From The Payphone: an Illustrated Romance, Told by Artists, Engineers, Politicians, Punks & Pranksters  
by Kyle Cassidy & Jessa Lingel (This text has been edited down from a longer conversation.)**

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“Wireless was never a mystery to me. The notion of being able to talk over the air was a concept that was in my life when I was five years old. My father was an electrician and electrical contractor, and he put radios in his trucks. From that he applied for a license from the FCC, got one. That was in the early 50s. So, when I was five or six years old my father was talking to us from his truck on his job site and after that we had a mobile telephone business.

When I was a teenager, I'd made money working for my family and bought a car and I had a phone in my car when I was 15. That was pretty wild. I mean, back in those days, no one except movie stars, and industrial people with big towing rigs had mobile phones. There wasn't enough spectrum to provide service that was reliable to any more than a few hundred customers in the whole of LA. And I was one of those people that happened to have a phone in my car. That was pretty unique for this 16 year old high school chick to be driving around, drag racing in her car with the phone in it.

There wasn't a perception in the 50s and 60s and 70s that consumers were targets for wireless communications like that. All of the communications that we developed and that Motorola developed and GE and others were all focused on enterprise. The notion of consumers having communications in their pocket or even in their cars was not even a likelihood until the 90s when PCS (Personal Communications Service) started shipping. That's because the cost of the devices and, more importantly, the cost of the service and the development of the networks, was so expensive that the use of that equipment was just too costly for most consumers.

Now we've gone from that kind of environment to today where there have been surveys made in consumer settings that show people would be willing to downgrade the kind of food they eat in order to have enough money to have a cellphone. So it's changed. Being able to communicate when and where you want to is totally a concept that's come of age in this century, not in the last one.

In the late '60's and early '70's, I worked for the airlines. At the time they were the most automated and most computerized commercial services in the world besides the government. Everything that the airlines did had to scale, and it had to scale quickly because of the arrival of huge airplanes. So, you had to scale reservations, ticketing, baggage handling, passenger handling, seat selection, customer information systems, reservations. Everything in the whole network had to scale. The airports physically had to scale. The systems that were going to automate the movement of passengers into the airport, get them on the plane, get the plane going ... all of that had to be planned and executed like multiple moving parts.

That was the environment where I got introduced to computer technology, and then when I was about 23 years old I went back to work for my folks who had just added paging services and beepers, and you had to manage these little devices that were floating around in people's pockets, try to figure out how to keep track of them and how to bill them and all of that nonsense and I said, “Hell, I'm not going to try to do all this stuff manually.” So, my mission when I got there was to figure out how to automate the management of a wireless services company in 1973. We were the first company in history to do that.

Part of the process that I implemented early on in that business was automated provisioning – that is, the system used to activate wireless devices. What I wanted to do is take an order from a customer, enter it into a computer, and automate all the things that need to happen to make that customer's service work, so that the customer would be able to enjoy the service that they subscribed to and we would get paid according to our bargain.

We automated the first provisioning of wireless devices onto a network and eventually we automated the management of the usage transactions coming out of our mobile telephone supervisory equipment using punch cards to feed into the billing systems. Before that you had to do it by hand. This was all before cellular launched in 1983.

A few years after the beginning of cellular, we created a prepaid cell phone service connecting cellular switches in order to automatically supervise, in real time or near real time, who could use the airwaves. In the 80's, there were no automated systems to do any of that. Sounds arcane today, but back then few people had personal computers and few companies had process control systems.

The way billing worked in early cellular days was by automated magnetic tape recording of the cellular telephone switching equipment that were taken off the switch and shipped to a billing company for computation, printing and mailing. In order to make a prepaid system, clearly you couldn't wait for that magnetic tape processing; you have to get the data in real time. The first service we implemented was what was called a *post-call prepaid system*, which meant you could make a call and a specially

built switch connected system would keep track of how much money you'd deposited for future usage and that number would get decremented after each call down to a point where you couldn't make phone calls anymore until you added more money.

The prepaid platform also allowed for a variety of other services that included keeping track of stolen phones. If you tried to activate a phone that had been reported stolen, you couldn't activate it and there were a whole variety of services that you could provide because you had immediate feedback on usage of the switch by each customer.

That was the very first incident of a system that would allow a cellular company to take a customer who might be credit challenged and get them on the air. The problem was, at that time, about half of the customers that were applying for cellphone service were being turned away because they didn't have credit.

We live in a capitalistic society, so part of our mission is obviously growth. We're trying to grow capital. We're trying to grow efficiency. We're trying to make things better. In the past the theory about running a company was that you're doing it for shareholders, and I think that there's a slow but steady switch towards the idea that you're building a company for community and for all of the stakeholders to enjoy the success. If you're looking for a hierarchy of purpose, I can't imagine that any business has a higher purpose than being additive to and improving the human condition."