

URL: <https://stvp.stanford.edu/blog/videos/personal-connectivity-cycle>

Estrin talks about the personal connectivity cycle. The cycle of connecting people is the notion of people being able to connect to each other and connect to information anywhere. This means true mobility and ubiquitous, high bandwidth connectivity, she says. The enablers of this cycle are economic and behavioral. From an IT demand perspective, she explains, the real win is in the consumer devices and services and not in the IT infrastructure. Related issues are business models (walled garden, AOL vs. seamless systems, Internet), affordable broadband to the home, and making technology easier to use. The consumer market is not an easy market for a startup to begin with and to innovate in, she notes.



## Transcript

So let's take a look at the next cycle which is about connecting people.. What do I mean by this? I essentially mean the notion of people being able to connect to each other and connect to information anywhere.. You know everybody says anywhere, anytime but true mobility.. Now why do I say true mobility and not just mobility? Because right now people talk about connectivity.. Mobility or being able to keep seamless connectivity as you move around.. But not seamless services.. So you can go any place you want and get a dial tone.. But a dial tone may not be enough.. And if you're somewhere else and you can't connect back to your ISP, can you read your mail? Or in some cases you can read it but guess what? You can't send it.. That kind of stuff and having to figure out and navigate through that is just nuts..

And so this next phase really needs to be driven by true mobility from a services and a connectivity perspective.. As well as ubiquitous always on high band width connectivity.. We, here in the valley almost think it's ubiquitous.. But if you look throughout the world, it's not.. And then home networking.. And just the growth of not just computers in the home but every device in the home.. Now the enablers of this, it's interesting are not so much technological or the obstacles.. But economic and behavioral.. Because a lot of the technology we need to this actually is there.. But a lot of the economical behavioral conditions are not..

And I'll talk about that in a minute.. Now the reason this curve is lower is not because I was trying to make it look pretty with lower curve and a higher curve.. But I actually think from an IT demand perspective or IT dollars, this is not going to be as much growth.. Because the system's architecture and the networking architecture is the same pretty much.. It'll drive some increased demand but the real win here is in the consumer devices.. And the services that are provided to consumers and not so much in the IT infrastructure.. So what are some of the issues here? The big ones are business models.. And when I talk about business models there's a number of different issues.. One has to do with what we call either a walled garden versus a seamless connectivity or seamless services.. The way you can make money, the reason the cellular service providers have been able to make more money, the way companies like AOL grew up is through a walled garden..

You basically have people call into your services and you charge them for those services.. The internet is the opposite of that.. Which is once you connect to the internet, you're connecting into everybody on the internet.. That is a harder business model to make money on.. But unless we move into the internet model and break out of the walled garden, we won't see ubiquity.. You just can't do it with these walled garden approaches.. And so figuring out how to make money there is a key issue.. Affordable broadband to the home.. Fifty dollars a month is not affordable to a lot of people.. And \$50 isn't enough for the vendors to make money..

So this is another trigger point where people are going to have to figure out how to make the money to deploy the technology.. We made a huge mistake during the bubble.. Most new technologies start out high priced while you build up the infrastructure.. So you sell to businesses first.. They pay a premium.. Think about cellphones.. Think about pagers.. They pay

a premium while you're building out your infrastructure.. And then you drop the price to drive ubiquity.. Because in the bubble the big deal was, you know people used to say URL..

Ubiquity now, revenue later.. So people didn't worry about pricing.. We dropped the price before we could build out the infrastructure and I say we as an industry.. So now who's going to build out the industry? Government dollars is not the way to do it.. We have to figure out a business model with services and value that will pay for that build out.. And then the entertainment business needs to change their business model to adapt to this new world.. On the other hand the technology industry has to figure out how to protect that content as the entertainment industry is changing their business models.. So there is a role for technology to play.. We have to make this stuff easier to use.. If we're really going to drive you ubiquity and get into the home, the technology industry tends to still think about things that are too complicated..

And as I mentioned before, the next cycle will drive more demand but not as much as we saw in the last cycle.. The last thing I just want to say as entrepreneurs, the consumer market is really hard for start-ups.. So this is not an easy place for a start-up to innovate.. And one of the problems I think we'll have in the industry is the big companies aren't as good as innovating.. And given the risk inverse environment, people are not going to want to take a risk on something that's that hard.. And that's going to push off innovation and I think it's going to push off this cycles on...