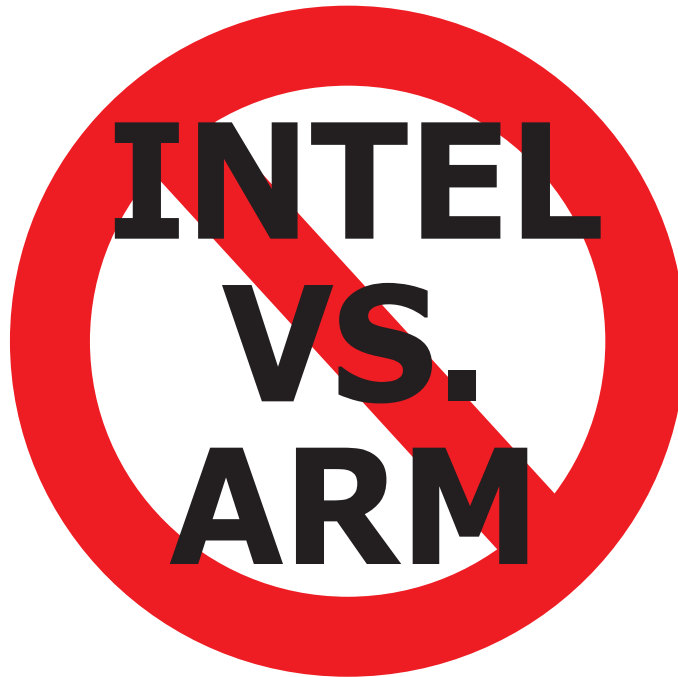
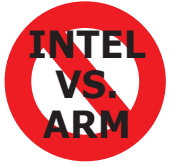


**ARM TECHCON – IS CLOUD COMPUTING JUST A DREAM
AND**

Tom Starnes had an interesting panel at **ARM Techcon** this year. The topic of the panel was Cloud Computing but at the end the conversation turned into a look at the competitive battle between Intel and ARM.

CLOUD COMPUTING

It looks like there are two views of Cloud Computing. The first is Larry Ellison's description of that big database in the sky for whatever computational appliance you are using at the time. The other is an application cluster in the sky that you can pull down and use with whatever database you decide to access. I don't know if any conclusions were drawn but some interesting trends seem to be emerging. First free applications are here to stay; vendors are finding other ways to monetize their offerings. This of course is not good for Microsoft and is good for Google, etc. Second, no matter how it turns out the computational appliance of your choice will need increasingly more horsepower and probable not at the expense of power consumption. These appliances are increasingly mobile and consumers are demanding more and more battery life, along with the increase in performance. This puts the burden on the microprocessor designers and the computer architectures they target. This is how the conversation turned to the Intel vs. ARM battle.



It was quickly decided that Intel can't compete with ARM; that is unless they want to go fabless and get into the μ P IP business. They need to compete with ARM's customers. Actually what they need to compete with is the ARM ecosystem.

Today ARM is leading in price, in performance and in the extensive support by its ecosystem. Intel can't beat them on price, as Intel is now structured. Intel can hope to catch up to them in power/performance, but not really surpass ARM in that area. While Intel's ecosystem has traditionally been Microsoft, Microsoft is in more trouble than Intel is at this point. That puts Intel in the position of competing with the likes of Sony, Apple, Qualcomm, ST Micro, TI, Samsung, and also with the TSMCs and the rest of the design chain. Not the greatest position to be in.

Still I'm not counting Intel out just yet. They have Gadi Singer in charge of their SoC program and Gadi has been one of the brightest stars in the semiconductor world for years. Still Intel needs to keep in mind that this battle will be fought on a level playing field, and the only way to win will be with a breakthrough architecture. Although they can't compete with ARM, they do need to come up with a better architecture than ARM and right now ARM has the lead. They are in the lead because they design cores where Intel has been designing microprocessors. This is a completely different way of looking at a design and Intel needs to make this paradigm shift. That leaves Intel with a big question. In the heterogeneous, multi-processor/ core world of virtualization and hypervisors, is the x86 architecture a competitive advantage or is it an eight ounce Coke bottle tying them to their past (see **The Future of Computing**)?

Let me know what you think.