



MicroTCA: The State of the Eco System

■ μ TCA offers three compelling features:

- ▶ Performance in both computing & bandwidth due to wide range of scalability
- ▶ Low purchase and operating cost
- ▶ Modularity which means application flexibility and rapid time to market

Each module has impressive capabilities and of course they can be deployed as single module systems. But their strength lies in numbers. A single enclosure per the spec may contain 192 AMC modules.

Much bally-ho has been made about the \$500 target cost. The important thing is that MicroTCA was architected in a cost conscious manner. Whether the \$500 target was met or not, is only a question of whether MicroTCA achieves the market size that was intended. Clearly if the volume is high enough cost could go much lower.

The Operating cost is where MicroTCA really shines. What the commercial computing business really needs is platforms that can be deployed in vast numbers and maintained from centralized facilities. To achieve this telecom community has developed necessary technology, RASM. MicroTCA has taken that technology and enhanced it.

MicroTCA made reliability scalable and extended manageability with optional remote JTAG. JTAG which can do a lot more than test boards remotely. It can do software upgrades, FPGA reconfigurations and used to run engineering failure analysis & repair. Thereby dramatically reducing the cost of new product deployment and minimize customer impact.

Modularity provides for the option of configuring new products quickly thereby reducing development cost and speeding time to market. Because serial fabrics will be used to interconnect VLSI devices together when they on a single large PCB we can utilize multiple smaller PCBs with little impact on cost of complex designs.

Eli Goldfarb, a wise and very experienced businessman, once told me when it comes to products there are just three things that matter:

- ▶ Price
- ▶ Availability (in this case product availability rather than in context of RASM)
- ▶ Performance

Performance of MicroTCA even the earliest implementation has been demonstrated to be very impressive. This brings us to price and availability which are linked in a rather interesting way.

The MicroTCA technology is very near the top of the price erosion curve so prices are still quite high, although there have been some impressive inroads. To lower cost still further we need to move down the price erosion curve. To do so, means unit volume must ramp up; hence product availability is an issue.

Presently the focus seems to be on the Telecom market. In fact the MicroTCA Requirements Working Group intentionally targeted cellular base stations as the prime target for MicroTCA. However, in retrospect, I don't think we appreciated the time and effort it would take to get all aspects of redundancy going and that application and the Telecom market in general require redundancy. So applications that do not require redundancy should become the target.

This will mean that when redundancy is available, systems will be available at more attractive prices. Yes it was always the intention of the MicroTCA Requirements Working Group that telecom equipment prices were to be driven lower due to volume across the broad spectrum of MicroTCA applications.

We should utilize MicroTCA strengths to circumvent some development issues that will slow the emergence of the MicroTCA Eco-system.

I hope that you enjoy a stimulating and informative reading experience.



Mike Franco
Chairman of MicroTCA & Rugged MicroTCA
www.MicroBlade.us
Mike@MicroBlade.us