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AdvancedTCA and SA Forum advance growth opportunities for the telecom industry

The release of the latest PICMG specification, Advanced Telecom Computing Architecture (AdvancedTCA) has created quite a buzz in the telecom industry and for good reason. As Raju explains in this article, this most recent specification from PICMG is offering new, more powerful capabilities that specifically target the booming data traffic on wireless and wireline telecom networks.

Leveraging interoperability standards

Today, the success of network equipment providers can be measured by their ability to rapidly provide a wider range of high-bandwidth services to their customers, and wireless broadband services are driving the market. To address this need, the AdvancedTCA specification was created in the largest specification effort in PICMG's history, with more than 100 companies participating in the work. The goal of this group is to develop standards that could enable higher computing densities and more bandwidth while reducing the development time and costs to roll out new services. By leveraging interoperability standards such as AdvancedTCA and Service Availability Forum (SAF), Network Equipment Providers (NEPs) can use the latest COTS carrier grade technologies from leading component vendors.

However, this is just the first step. NEPs still need to deliver a network of AdvancedTCA compliant hardware that is manageable. Historically, NEPs have spent a year or more developing a management framework after all the hardware components are ready. Though AdvancedTCA specifies physical and data interoperability, it does not specify management interoperability in the broader sense of problem reporting, diagnosis, isolation, and recovery as well as inventory management and upgrades. AdvancedTCA specifications open the door to many hardware vendors but also dramatically complicate the management effort due to the sheer number of new hardware components that

may need to be managed. Fortunately, this problem is also being addressed by SAF. SAF is developing Application Program Interfaces (APIs) that promise to simplify management of heterogeneous multi-vendor solutions. SAF standards are not specific to AdvancedTCA, but it appears that AdvancedTCA will be the first architecture to use SAF APIs when they are complete. The timing of the SAF API introduction coincides with the expected adoption date for AdvancedTCA equipment in higher volumes for NEPs. The first layer of SAF APIs has already been completed, termed the SAF Hardware Platform Interface (HPI). Additional APIs include the SAF Application Interface Specification (AIS), which is close to completion, and the SAF System Management Specification (SMS), which is currently in development. These are critical to enable NEPs to realize the promise of a multivendor solution using AdvancedTCA components.

Where there's AdvancedTCA and SAF, there's a way

How big is the market for AdvancedTCA and SAF? Today, we've hit an opportunity in the telecom market:

- There's a growing demand for wireless services.
- Wireless carriers are upgrading their 2G and 2.5G networks to 3G.
- With the new AdvancedTCA and SAF standards, NEPs and telecom companies are able to meet the needs of the market faster and with more breadth of services.

And the market is huge. Wireless infrastructure is expected to be one of the largest market segments for new AdvancedTCA systems, particularly given the network upgrades to 3G. Even the more conservative projections for AdvancedTCA predict it to be a multibillion-dollar market by 2008. Why? Because the new wireless services demand is also growing by leaps and bounds.

What are key services that will take advantage of AdvancedTCA and SAF?

One service in particular that is experiencing a surge in popularity is Voice over IP (VoIP). The firm Morgan Stanley recently surveyed of 225 CIOs and found wireless infrastructure and VoIP are moving up the ranks of companies' technology priorities, making it to the top six. And this is just one of many wireless broadband services drawing companies' attention, with unified communications, instant messaging, presence, and several more that are attracting notice.

Additionally, we'll see providers implementing transport, control, and service network elements on AdvancedTCA platforms. An excellent example of a 3G wireless application being targeted for AdvancedTCA is the Radio Network Controller, which controls traffic between radio transmitters (cell towers) and the core telecom network elements, such as the Gateway GPRS Support Node and Serving GPRS Support Nodes. IP telephony applications, including Softswitch and Voice over IP, as mentioned earlier, are also good fits for AdvancedTCA technologies. This truly is a new and exciting time for the telecom industry, and the opportunities are endless as the AdvancedTCA standard continues to evolve.

How do AdvancedTCA and SAF deliver?

With this kind of growth potential and demand in the industry, it's imperative that NEPs and telecom companies have the capacity to deliver new, next generation, wireless broadband services. With this in mind, the AdvancedTCA specification and SAF APIs pack a one-two punch. One, AdvancedTCA overcomes prior limitations in regards to the capacity to support:

- Multiple, higher-speed processors
- More advanced, high-bandwidth network fabrics

And, two, SAF enables an ecosystem of such components to be managed as a single service delivery solution.

Value of COTS

Most network equipment providers and telecom companies have been moving toward a COTS strategy for many years. In the past, many NEPs developed proprietary products, but that practice took too long and cost too much, slowing a company's time to market, reducing its return on investment, and affecting its ability to be competitive. Readily available COTS platforms reduce time and costs of development but increase time and costs of managing a mixed architecture. With SAF, NEPs can finally realize the advantage of COTS components.

Where to get it:

Criteria for vendor selection

Right now, there are dozens of companies set to offer AdvancedTCA-compatible systems and products. The key to choosing the right solution, during this time when the AdvancedTCA ecosystem is rapidly evolving, is to look at vendors with a strong record of delivering complete platforms to the telecom market. These vendors have the experience to take advantage of emerging standards to deliver a reliable and scalable platform – a platform

which can be easily and rapidly embedded by OEMs and system integrators into their platforms and integrated with their applications to provide highly available solutions. These solutions should offer flexibility and compatible extensibility, for example; management capabilities, in addition to carrier grade operating systems that provide the security required of this market, particularly in the wireless arena.

Conclusion

There is no doubt the AdvancedTCA and SAF specifications are breathing new life into the telecom industry's quest for new services faster and at lower cost. The best suppliers to the NEPs and telecom companies will meet the AdvancedTCA and SAF standards as the baseline, and further accelerate development cycles and reduce development costs with integrated value-added modular additions to a robust baseline. These new offerings will further support the latest trends in high-speed network fabrics and next generation high performance processors, as well as providing improved reliability, manageability, and serviceability. At the same time, the new offerings will be easier to manage and maintain over the life of service delivery. The combined benefits will mean new opportunity for revenue and growth for an industry poised for expansion. Keep an eye

on AdvancedTCA and SAF moving forward, and you'll see exactly where the future of the telecom industry is headed.

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