

“Application Enabling Platforms Come of Age”

Outsourced Development Standards Take on New Economics for Telecom Equipment Manufacturers

Engineering lessons of the 1990's taught us more about standards adoption than how to wither on the vine while reinventing the wheel. From the basic chassis of network switches to the backplane architecture that drives telecom functionality, the industry has finally awakened to the cents and sensibility of integrating standards-based technology in modular design efforts. Those pennies conserved by not retooling each telecom equipment manufacturer's (TEM) product line has amounted to better redistribution of scarce resources and dollars created in reaching the market faster—with economic flexibility in mind.

This furor of seeking competitive advantage is what proves to be driving standards bodies such as the PCI Industrial Computer Manufacturers Group (PICMG) to offer TEMs a platform for rapid solution development. Notably, many of these functional solutions are built around the context of a softswitch design and require a common approach to standardized programming options. Picking up the pieces where Compact PCI left off, the latest standards of PICMG 3.x, commonly known as Advanced Telecom Computing Architecture (AdvancedTCA), unveil a suite of next generation building blocks of not only hardware to meet the engineering criteria of telecom applications, but rather extend the spectrum of possibilities available to manufacturers in broadband signaling, wireless, VoIP, and others to name just a few. The biggest breakthrough, however, is the tangible introduction of finished products and services to the marketplace at compressed cycles by as much as 60% less than previously seen.

And if fast and furious isn't enough of a motivator, the scaled reduction in cost can not be ignored. Available 2003-2004 manufacturing data from the U.S. Bureau of Economic Analysis and primary research in linked studies to operations management suggests that the two-fold benefit of quicker and less expensive development is beginning to pay dividends in stimulating positive growth in the telecom sector. Firms that comprise the communications and networking sector saw on average a 5.1% marginal improvement in the reduction of inventory surplus and an overall increase in relative GDP (gross domestic product) output of 17.4% in Q1 of 2004. Of this change, the sharpest predictive factors reflect lean manufacturing in sync with customer demand, and a net increase in new orders for telecom equipment.

The buoyancy of positive news is further echoed by mainstay manufacturers and solution providers both domestic and international. Motorola Computer Group (www.motorola.com/computers), headquartered in Tempe, AZ, is one of the central stakeholders investing heavily in the future of sourced standards development and a critical player in the adoption of next-generation architectures for the TEM community. Throughout the 1990's, the company has kept an active hand in guiding the PICMG evolution and supporting chassis-level solutions that keep the lifeblood of innovation sustained with its customers.

John Fryer, director of advanced platform operations at Motorola Computer Group, heralds the coming of new releases such as PICMG 3.x as a sure path to pave the long-term survival and ultimate success of the TEM

ecosystem. “The formidable challenge to any solutions developer is resolving the development process to improve their cost profiles,” notes Fryer. “More than ever, TEM’s require a complete set of standard development blocks upon which to architect their solutions at a price-conscious basis”. As the chief evangelist and direct liaison to Motorola’s involvement with the PICMG organization, he understands the invariable level of risk for customers seeking to produce turnkey offerings in the shortest interval possible. In fact, he lays claim to the notion that time itself is a competitive weapon for winning the fight for adoption in today’s noisy enterprise.

“Eventually, much of what we see in terms of solutions will be driven by softswitch services, and differentiation by the TEMs will happen at the code-level of their development efforts,” says Fryer. “The secret sauce of intellectual property for the developer will undoubtedly come from their ability to match functionality with constrained cost structures. The partnering decision with upstream manufacturers such as Motorola curbs the hurdle investment in components and allows them to focus on unique applications.”

Apparently, Motorola’s customer audience agrees with this philosophy. Randy Waters, president and chief technology officer for Carrius Technologies, Inc., of Richardson, TX, subscribes to framing his business model around reference designs that include standardized chipsets from Motorola Computer Group. “Clearly, time to market with our products is an imperative, and we really strive to minimize the costly investment in proprietary firmware solutions,” says Waters. “The goal in mind is to avoid the hardware business since it consumes scarce development dollars and fails to provide a justifiable return at the bottom-line.” Waters remarked that much of Carrius’ development efforts center around smaller quantities of highly customized products—making the feasibility of proprietary hardware a null consideration.

While Carrius fashioned its start from the legacy of Compact PCI (PICMG 2.16) standards, the horizon of PICMG 3.x looks equally promising with the ratification of protocols and interfaces being formed within AdvancedTCA—or ATCA for short. TEM developers like Carrius who anticipate a move toward developing the ATCA platform hope to catch the wave of edge and core solutions that harness greater spans of interconnect speed and processor fabrics that pose the ultimate drawing board. With more than just capacity at hand, TEMs are waiting anxiously to see how manageability, reliability, and service fall into place with the unfolding specifications.

ATCA Community—the ties that bind

Early to jump on the bandwagon, SOMA Networks of San Francisco, CA, took the plunge to be part of the ATCA evolution with their wireless broadband solutions. Jack Fuchs, vice president of business development at the startup, recognizes the need for a standards-based environment upon which to assure service provider customers that their solution is well-anchored. “It’s amazing to see how our carrier and network service providers pay such close attention to the path of our development—not just the bells and whistles of the product, but rather what is inside the box itself,” quips Fuchs. His comments shadow an emerging concern of customers seeking mature technology and component partners that can bellwether the downturn of a difficult economy. Too many service

providers found themselves high and dry without support as equipment manufacturers crumbled—leaving in their wake a hard lesson to not repeat.

But apart from solidarity rites that come in part from aligning themselves with an icon such as Motorola, SOMA believes firmly in focusing on the end-customer while mirroring its operations to scale in step with changing demand. “For us, the opportunity to reduce engineering complexity and simplify our product means that we can respond nimbly to customer interests. And that essentially implies not having to bear the burden of obsolete inventory or invest in foundational technology at a drastically higher cost,” notes Fuchs. All said, SOMA remains confidently pleased with its Motorola sourcing relationship and anticipates further evolution of its own products as the ATCA platform agility lends to new service functions. “Our collaborative relationship with manufacturers like Motorola is helping innovators like SOMA to actually extend the reach of development platforms like ATCA,” says Fuchs. “And at the end of the day, their resolve to application enabling platforms is pivotal to our triumph in the broadband space.”

Some of the greatest pressures looming in the TEM marketplace come from the macroeconomics drivers of commodity technology. And while no TEM is exempt from declining profit margins and comparative products, a few have learned to turn the tables on market dynamics at the macroeconomic level by applying ATCA to their development schedule. One such organization, MetaSwitch, with headquarter operations in the United Kingdom, applies a practice of reverse economic engineering to its focus on leveling the TEM playing field of softswitch developers. According to MetaSwitch’s chief executive officer, John Lazar, there is no ambition to compete among vendors by investing in proprietary platforms. “While the market drives the force of scalability, cheaper technology, and commoditized architectures, the real battle is being won by those who can effectively reduce R&D costs while engineering performance features that surpass the competition,” says Lazar. “In a sense, we compete with a solid platform that absorbs most of our development risk and enables us to concentrate squarely on the demand signals of the customer.”

While the common voice across TEMs is about customer centricity, there is consensus that keystone manufacturers like Motorola not only narrow macroeconomic pressure at the chassis-level, but enhance TEM viability by reigning in the arduous process of developing the standard itself. Motorola’s Fryer is quick to note that moving from abstract and often ambiguous ideas is a painstakingly slow passage of time; the end benefit is a mature platform that has been collectively decided upon with customer consideration in mind. “Unlike proprietary development, the sourced method of standards-based development removes the cumbersome overhead that would otherwise be cost-prohibitive to individual TEMs and allows everyone to take advantage of modularity to design at will,” says Fryer.

Standards groups like the Service Availability Forum (www.saforum.org) operate as a consortium of companies working in collaboration to develop and publish high availability and management software interface specifications to platforms such as ATCA. Many of their member organizations remain active in the dialogue between individual

TEMs and the future engineering of platforms that enable their applications. And for most, this voice is reassuring that their concerns are being heard by Motorola and others as the evolution continues. MetaSwitch's Lazar points out, "Companies like Motorola exist for the primary objective of *platform assurance*—meant to guide increasing performance, reliability, and solidification of standards while working to reduce the cost structures of individual components." And with platform assurance in place, TEMs can rest comfortably in knowing that standards are being tracked and the long-range interests of the platform are being adhered to in the process.

Moving faster at a lower cost

Speed does matter, but it's not just processor blades and the I/O bus on the clock. As application enabling platforms such as ATCA come to fruition, the mandate for TEM developers worldwide is to follow the demand curve—which seems to change quarter over quarter. But the consistent message is clear: compete on functionality instead of wasting dollars on architecture. Let those with deeper pockets invest more strategically in the future by cementing the protocols and standards that make end-to-end performance a reality.

In the Make vs. Buy game, the management of a simplified supply chain should be at the heart of every TEM strategy—as a method for not only delivering continuity to the market, but to ensure the highest profit yield possible. As Carrius' Waters best sums it up, "Competency delivers profits while standards enable profit". And that's a universal truism worth achieving.