



Snapshot

June 29, 2005

The Bazaar Invades the Cathedral: Power.org Comes to Mare Nostrum in Barcelona

By Joyce Tompsett Becknell

Power.org is the first organization to experiment with the idea that an open hardware architecture can drive standards and a platform for innovation spanning the gamut from embedded devices to supercomputers. The desire to drive innovation around its Power Architecture caused IBM to launch Power.org in December of 2004, creating a standards organization for developing, enabling, and promoting the Power Architecture technology and specifications. Barcelona in June was the scene of the latest summit for the group to announce recent progress in membership, activities, and products as well as to discuss future directions and promote awareness and interest in the community.

In the 1990s, Eric Steven Raymond wrote a piece about his perceptions of the functioning of Linux and open source versus traditional software development. He used an analogy of the Cathedral and the Bazaar to explain the differences. He posited that traditional software development was like building a Cathedral, involving careful crafting by individual or small groups of experts working in isolation, with no product releases until they were finished. He contrasted this to the Bazaar, where releases were frequent and as soon as possible, and where everything was delegated and open. Raymond described the Bazaar as a model of differing agendas and approaches from which a coherent and stable system might emerge. How ironic then that a European meeting of Power.org, a group attempting a similar community within the electronics industry, should be held in a former cathedral in Spain. The notion that open collaboration might be useful to the electronics community is as revolutionary as that of the original open source community, and may indeed be the best approach for companies who build business value through innovation.

Collaborating to Innovate

Innovation is the idea behind Power.org, and innovation drives the high-tech industry from the smallest piece of microcode or the tiniest transistor to the most complex systems in the largest datacenters and laboratories. However, innovation requires research and development, the ability to design products that meet machine and user needs, manufacture in consistent, reliable, and cost-effective volumes, and marketing to prospective consumers and partners. Organizations with great ideas, useful improvements, or changes to existing products often face daunting requirements for cash. For investors, the challenge is to figure out which companies have the best likelihood of success and help them achieve it. Even so, the default working mode — that companies should work individually — is inefficient and good ideas cannot be leveraged across development where returns could be significantly higher. Even large companies find that the next generation of chips requires significant investment not only in product design, but also in development tools, software development environments, and code libraries. Research and design costs for developing advanced manufacturing technology for semiconductors can run to tens

The Sageza Group, Inc.
32108 Alvarado Blvd #354
Union City, CA 94587

650-390-0700 fax 650-649-2302
London +44 (0) 20-7900-2819
Milan +39 02-9544-1646

Copyright © 2005 The Sageza Group, Inc.
May not be duplicated or retransmitted without written permission

sageza.com

of millions of dollars, and building a new fab requires billions of dollars. In addition, expertise is needed to manufacture the increasingly smaller and delicate technologies, and this does not begin to address the costs of designing and marketing products. The increasing range of devices and equipment means that one chip will not solve all problems, so it is harder to find economies of scale needed to make products cost-effective, and one company cannot design all the innovation the industry needs to drive it forward.

The obvious answer is that companies across the spectrum need to partner, and indeed the last five years have seen a growth of partnerships as various companies have focused on different aspects from design to manufacturing, and from research to marketing. The problem with building and maintaining relationships, however, is that in essence a series of bilateral relationships is formed rather than a community. To build each additional relationship requires an incremental set of investments that further stretch company resources. Additionally, in a partnership, the risk is high if the partnership fails. In a group, any one member's changes have a lower total impact on the community, lowering the risk of working within the group and with the technology. The notion behind this group is that real business value can be driven through collaboration around standards with innovation layered on top throughout the value chain. Additionally, membership in the community means that companies don't just adopt standards, but actively contribute to them as well, ensuring that development considers and implements the parts most relevant to them.

IBM realized that while the Power Architecture had many possible uses and benefits, they would be unable to develop, manufacture, and market everything themselves. Additionally, IBM does not do business in many of the segments where Power could be used, and enabling others to cover those areas would enhance the ecosystem and create benefit to IBM. Power.org was developed with the mission to make Power the preferred open standard hardware development platform for the electronics industry and to administer qualification programs that optimize interoperability and accelerate innovation for a positive user experience. The intended result is to develop open standards and specifications, business guidelines documents, best practices and education, and certifications to validate implementations and drive adoption of Power Architecture technology. In short, Power.org seeks to enable the growth of an ecosystem around Power while reducing the friction inherent in developing new products. Companies participating in Power.org should find business benefits such as shorter time-to-market for new products, lower development costs through leveraging the community, the ability to take advantage of innovations from other organizations within the supply chain, and influence over the future of the technology without needing to own and develop everything themselves.

Mare Nostrum as Background to a Growing, Active Community

With these goals in mind, Power.org had their European Summit in Spain, at the Barcelona Supercomputer Center, home of *Mare Nostrum*. *Mare Nostrum* is the largest supercomputer in Europe and the fifth largest in the world, running on blade servers powered by Linux and Power microprocessors. Against the eye-catching backdrop, eleven new members were added to the existing seventeen, three founding companies announced new products and deployments based on Power, and nine companies along with IBM demonstrated a range of solutions based on Power.

The original member group represented a broad spectrum of the electronics industry from corporate software representatives Novell and Red Hat, to consumer electronics players like Sony, system manufacturers like Wistron and Jabil Circuit, and semiconductor manufacturers like IBM and Chartered Semiconductor Manufacturing. The eleven new recruits represent the growing depth of interest across the industry, including startups, design firms, software companies, and service providers. New products and uses for the technology at the summit included:

- **Thales** – introduced the EasyG5, a dual-G5 VME system designed for avionics environments and military embedded applications.

- **Max Planck Society** – announced they will use an IBM eServer p5 575 supercomputer to do new work in the areas of nanotechnology and environmental protection as well as other research projects the Society commences.
- **Synopsys** — announced the availability of fully synthesizable versions of IBM's PowerPC 405 and 440 processors as part of the DesignWare Star IP program. The cores can be implemented into foundry processes and configured to product design requirements including low power, high performance, or small silicon area.

Finally, IBM, Toshiba, and Sony indicated that they will release the full chip specifications and software libraries of the Cell microprocessor. The chip, which is used in gaming systems such as the Sony PlayStation 3, has potential for broad applicability, and the goal is to get Power.org members to evolve the basic software layers. The architecture specification includes details for more than 200 new instructions used in the specialized cores within the Cell processor.

Leveraging for the Future

Membership in Power.org represents a worldwide cross-section of semiconductor and electronics organizations, ranging from SoC firms, tool vendors, foundries, OS vendors, OEMs, Independent Hardware Vendors (IHVs), ISVs, and service providers. Power.org also welcomes individual developers, educational institutions, and government organizations. These may seem the most obvious contributors, but there are other potential members as well. Venture capitalists will find this a unique medium for participating in the industry. Financial analysts can get better insight through participation. Entrepreneurs looking for the next new thing will find plenty of new ideas here. Of course R&D managers, product developers, chief technology officers, and other technologists should think about participating as well. In essence Metcalf's law, which states that the value of a network increases in proportion to the square of the number of nodes on the network, applies here. The value of Power.org increases as the range and interests of Power.org mirror the broadest representation of the total electronics industry.

Organizations who want to develop to a growing architectural base have nothing to lose and large potential benefits from investigating Power.org. Power.org is still in its infancy, and many of its activities are being tried for the first time, which means that the process of joining and working out the inter-relationships and goals of each subgroup are more an art than a science at this point. At the same time, that means those who join now can have a large influence on how Power.Org works and what it works on. Further, since members share the technologies they want in the areas they choose, the risk is no different than that of any other partnership or participation in a standards organization. Individuals and organizations who want to sit at the center of innovation for the future of the electronics industry should be thinking about Power.org now and preparing their contribution for the latest Bazaar.