

# IBM and Freescale Collaborate on Direction of Power Architecture™ Technology



# ***Market Dynamics***

- **There is an explosion of growth in the markets that requires a radical new approach to driving innovation around the microprocessor**
- **Market demands for more open, flexible, and innovative platforms require greater collaboration across the full ecosystem**
- **Power Architecture technology is the most flexible architecture that spans the broadest application range of any ISA**
  - > from small embedded microcontrollers to the highest performance enterprise systems and supercomputers
- **Power.org anchors a rapidly expanding open community to drive system needs from within the ISA and the system as a whole**



# ***February 6, 2006 Announcement Overview***

- **IBM and Freescale Semiconductor announce a collaboration focused on the evolution of Power Architecture™ technology**
  - > Specifically, IBM and Freescale intend to collaborate on architectural extensions for new applications and markets, product roadmaps, designs, enablement, and marketing.
- **Freescale joins Power.org as Founding member, bringing leadership in networking, automotive, storage, industrial control and embedded processing platforms to the open community.**
  - > In addition to a Founding member role, Freescale joins IBM in forming a Power Architecture Advisory Council (PAAC) responsible for managing the architectural roadmap and building new levels of extensibility and interoperability throughout the ecosystem and developer community.



# ***Power.org Enables Collaborative Innovation***

- **Driving Interoperability:**
  - > Manages the Power Architecture instruction set architecture enabling broader input from the community and ensuring consistency of architectural evolution
- **Increasing Standardization:**
  - > Defines open platforms and ecosystem specifications to reduce time-to-market, design and development costs, ease integration, and create economies of scale
- **Increasing Transparency:**
  - > Removes the friction from collaboration, providing a venue through which both businesses and individuals can contribute to the future of Power Architecture technology
- **Fostering Community:**
  - > Enables an open collaboration community around Power Architecture for enablement, education and expansion in new markets



# ***More About the Collaboration***

- **IBM and Freescale share a long heritage in the evolution of Power Architecture technology, including the PowerPC® instruction set, and a common vision for its future.**
- **IBM and Freescale have been collaborating around architecture roadmaps, Linux convergence, and marketing initiatives.**
- **Moving forward, Power.org will be the convergence point of collaboration for Power Architecture across the broad ecosystem.**
- **Common goal to extend Power Architecture technology deeper into next-generation applications in a broad range of segments including consumer, gaming, industrial, automotive, enterprise systems, telecommunications, storage and supercomputers.**



# Power Architecture Market Leadership

- **High-Performance Systems**

- > Power Architecture drives the world's highest performance supercomputers, including #1 Blue Gene. Enterprise servers based on Power hold six of the top ten spots on the TPC-C ranking (source: TPC.org, January 2006). Power Architecture powers high-performance industrial and medical applications.

- **Gaming**

- > Power Architecture is in the top three next-generation gaming console platforms.
  - *Game console shipments are projected to climb to 37 million in 2007*  
(source: Gartner, 2005)



# Power Architecture Market Leadership

- **Automotive**

- > Power Architecture is at the heart of engine control, enabling a wide range of automotive applications—body, advanced safety and driver information systems.



- *By 2007, approximately 50 percent of car models in the world will contain Power Architecture-based chips*

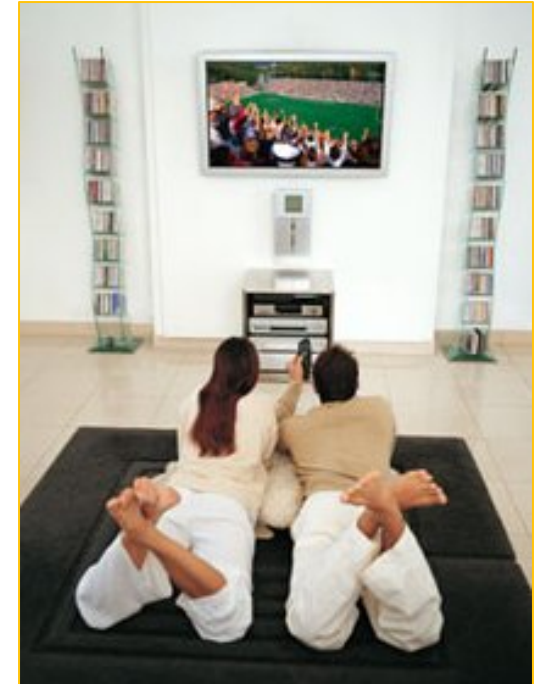
- **Communications, Storage and Networking**

- > Power Architecture is the leading processing platform for wireless infrastructure, wireline telecommunications, and enterprise storage, routing and switching.

# ***Power Architecture Market Leadership***

- **Consumer Electronics**

- > This segment represents the next major growth opportunity for Power Architecture. Applications range from set-top boxes to home media servers to voice-enabled residential gateways. As a processing platform, Power Architecture has the scalability, flexibility and performance attributes to win in this crucial market, and it is backed by one of the industry's broadest ecosystems.



# ***Power.org's Early Accomplishments***

- **Multi-lateral Governance & Collaboration**
  - > Operations, Marketing, Technical, & VC Committees
- **Membership**
  - > 40+ Corporate Members, thousands of individual developers
- **Existing Technical Subcommittees**
  - > High-volume server, Platform architecture SoC design hierarchy, Bus architectures, Storage SMB platform
- **Open availability of PowerPC 405 for academics and researchers**
  - > Source of the PowerPC 405 freely available to researchers



# ***Power.org's Current Corporate Membership***

- Above Micro Technologies
- Anyka Cayman
- Azul Systems
- Barcelona Supercomputing Center
- Cadence Design Systems
- Celestica Corporation
- Chartered Semiconductor Manufacturing
- CipherOptics
- CriticalBlue
- DAFCA
- Denali Software
- Etron Technology
- Forte Design Systems
- Freescale Semiconductor
- Genesi
- HCL Technologies
- IBM
- IP-extreme
- Jabil Circuit
- Joint Supercomputer Center
- KyoceraMita
- Magma Design Automation
- Mentor Graphics
- Mercury Computer Systems
- Nallatech
- Novell
- PA Semi
- Rapport Incorporated
- Red Hat
- Silicon Application Corporation
- SONY
- Synopsys
- Teak Technologies
- Tehuti Networks
- Terra Soft Solutions
- Thales
- Universal Scientific Industrial
- Universitat Mannheim
- Venture Corporation
- Virtutech
- Wistron
- Xilinx



# Strong Future

- **Leadership**

- > The two largest suppliers of Power Architecture platforms (IBM and Freescale) are openly collaborating with the broader ecosystem via Power.org to enable standardization, innovation, and create new market opportunities.

- **Stability**

- > Managed evolution of the Power Architecture ISA will take place within the Power Architecture Advisory Council (PAAC) – enabling broad community input, greater consistency, and keen focus on the future direction of Power Architecture.

- **Flexibility**

- > With technology convergence and integration demands rising at every level of hardware development, Power Architecture technology is uniquely positioned to enable greater freedom, flexibility, and choice enabling innovation for next-generation applications.

- **Collaboration**

- > Power.org's open community development processes and values system based on collaborative innovation creates an environment from which hardware development can take a more open and innovative direction.



## ***For More Information***

- **Supporting Analyst Presentation and Webcast**
  - > Replays and supporting content will be available on [www.power.org](http://www.power.org) website