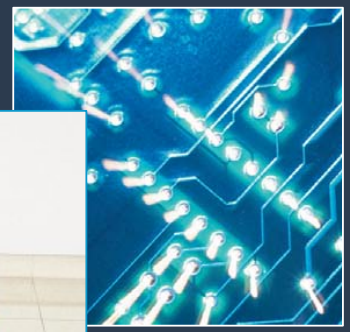

How Linux® Will Drive Technology Convergence:
An Embedded Story

LinuxWorld Beijing Keynote
18 August 2005

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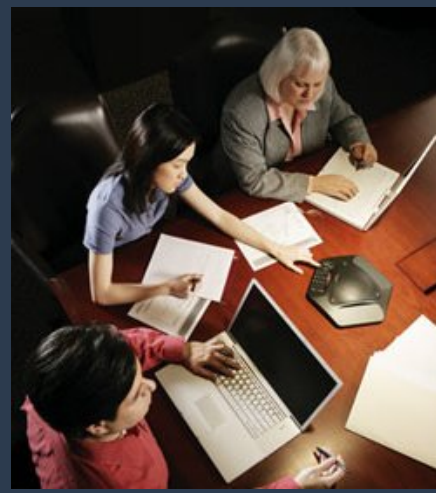
Agenda

- Who is Freescale? A brief introduction
- Linux in embedded markets
  - On mobile platforms
  - On the PowerPC® architecture
- Technology convergence and Linux…the equalizer
- China: Re-envisioning computing and communications
- Conclusion



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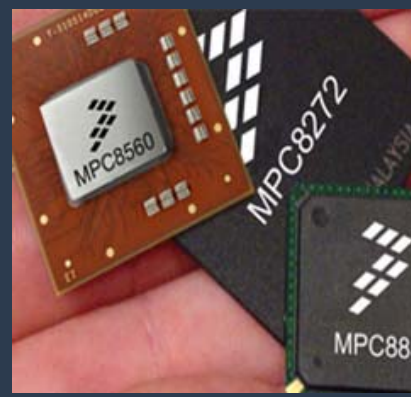
Who Is Freescale Semiconductor

- Semiconductor design and manufacturing company established in 1953
- Focused on the networking, automotive, wireless communications, industrial control and consumer electronics markets
- Engaged with 10,000+ customers globally; over 100 of the top electronic manufacturers
- $5.7 billion in revenue in 2004
- Headquartered in Austin, Texas
- 22,000 employees in over 30 countries



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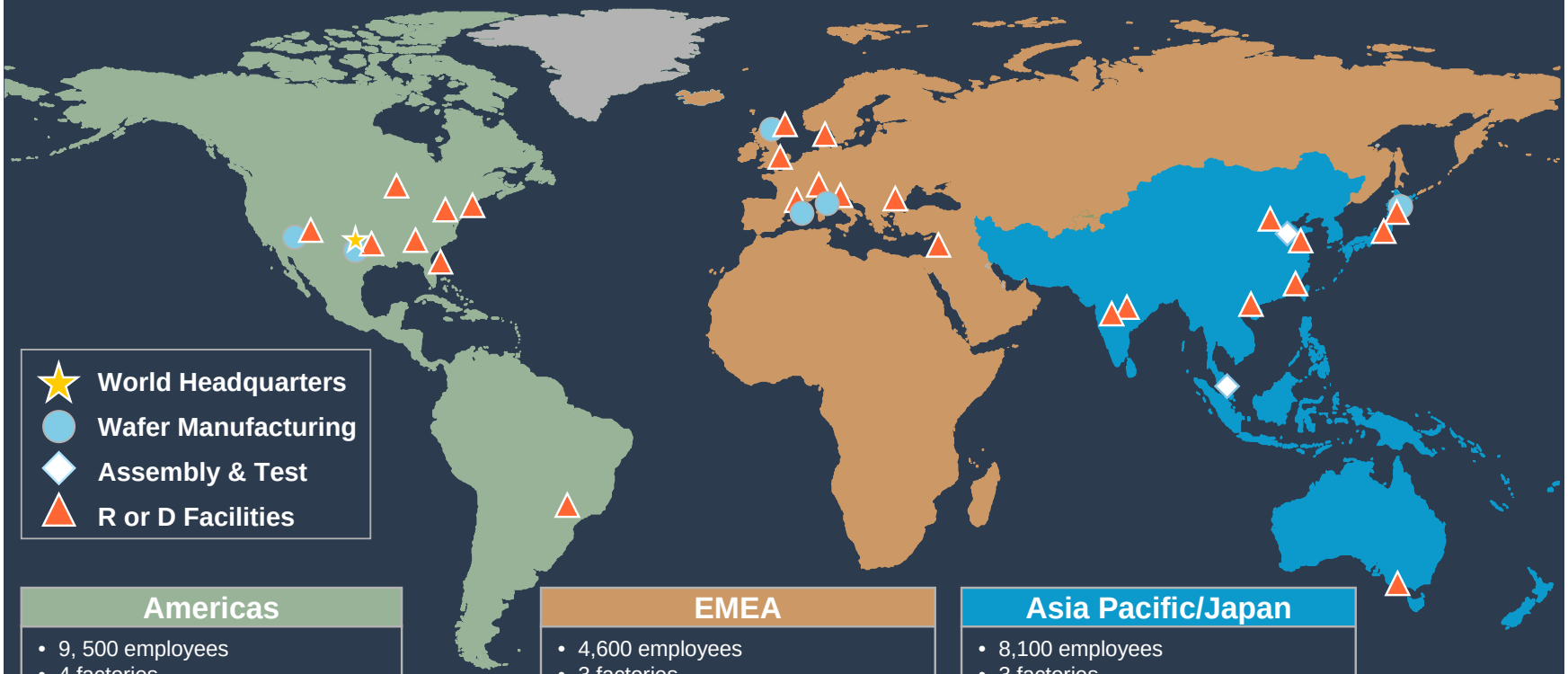
Operating Around the World



Americas

- 9, 500 employees
- 4 factories
  - Ed Bluestein, Austin
  - Oak Hill, Austin
  - Chandler, Arizona
  - Tempe, Arizona
- 8 design centers

EMEA

- 4,600 employees
- 3 factories
  - Toulouse, France
  - East Kilbride, Scotland
  - Crolles2 Alliance, France
- 8 design centers

Asia Pacific/Japan

- 8,100 employees
- 3 factories
  - Sendai, Japan
  - KLM, Malaysia
  - Tianjin, China
- 9 design centers

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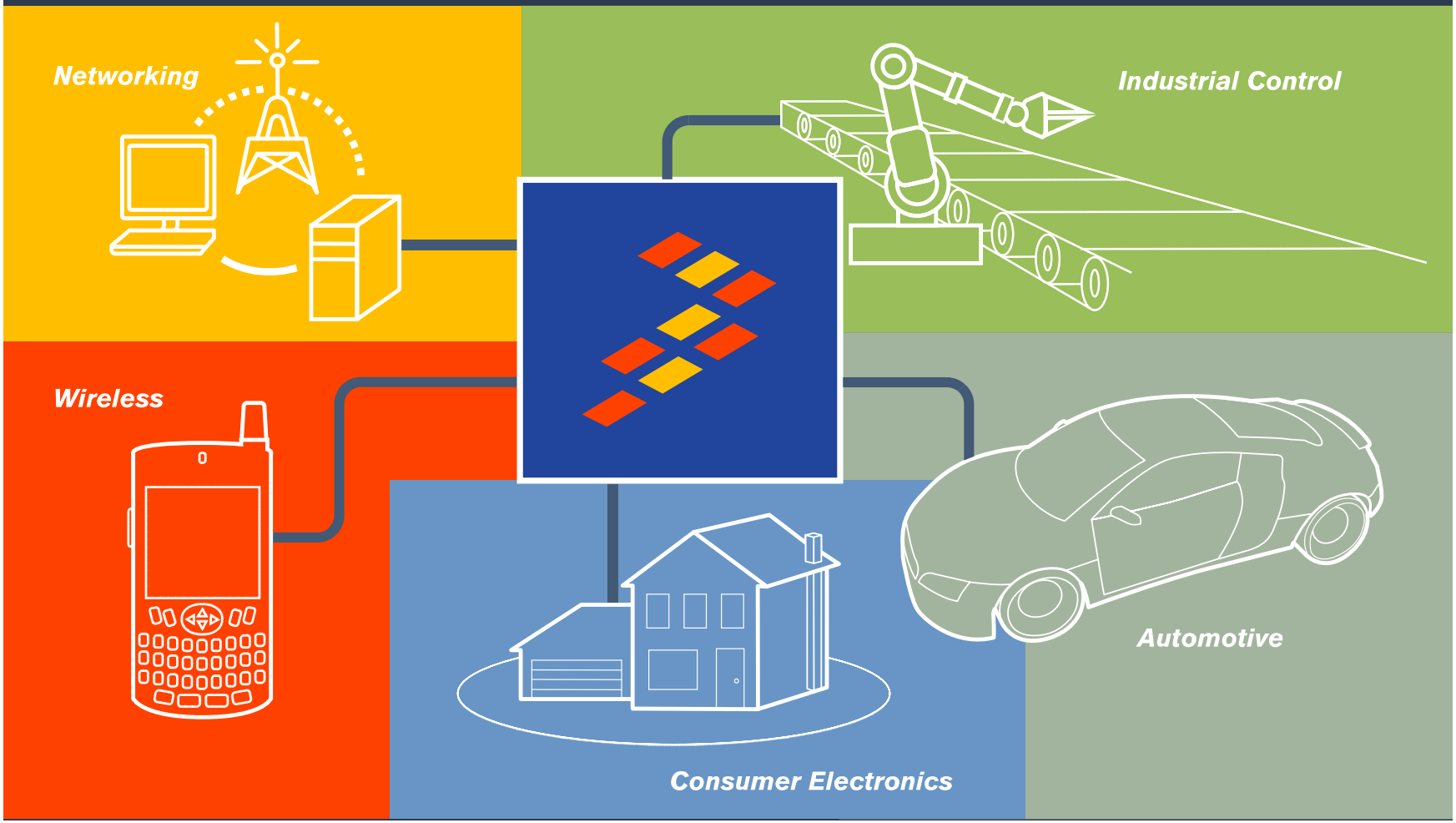
Freescale's Core Markets



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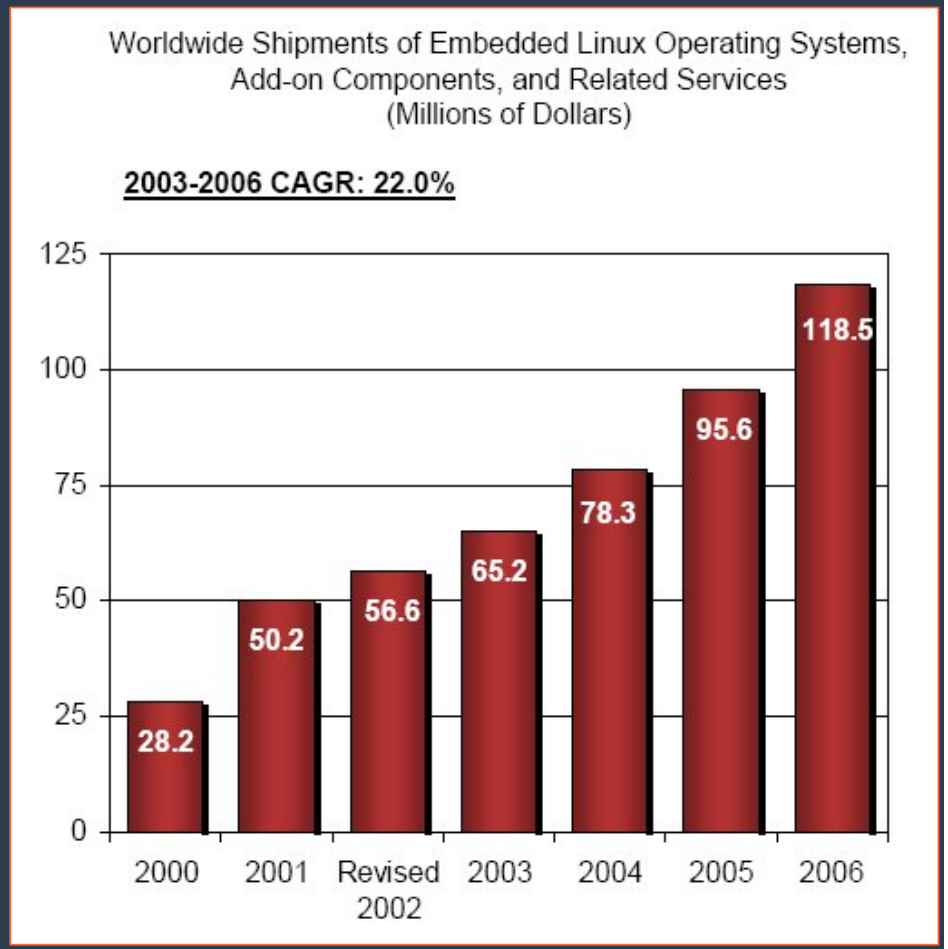
Linux and Embedded Markets

- **Examples of embedded Linux:**
  - Carrier-Grade Linux
  - Automotive-Grade Linux
  - uClinux
- **Benefits for embedded systems:**
  - Cost-effective
  - Streamlined code base
  - Network-friendly
  - Flexible
  - Hardware agnostic
  - Developer control

Source: Venture Development Corporation



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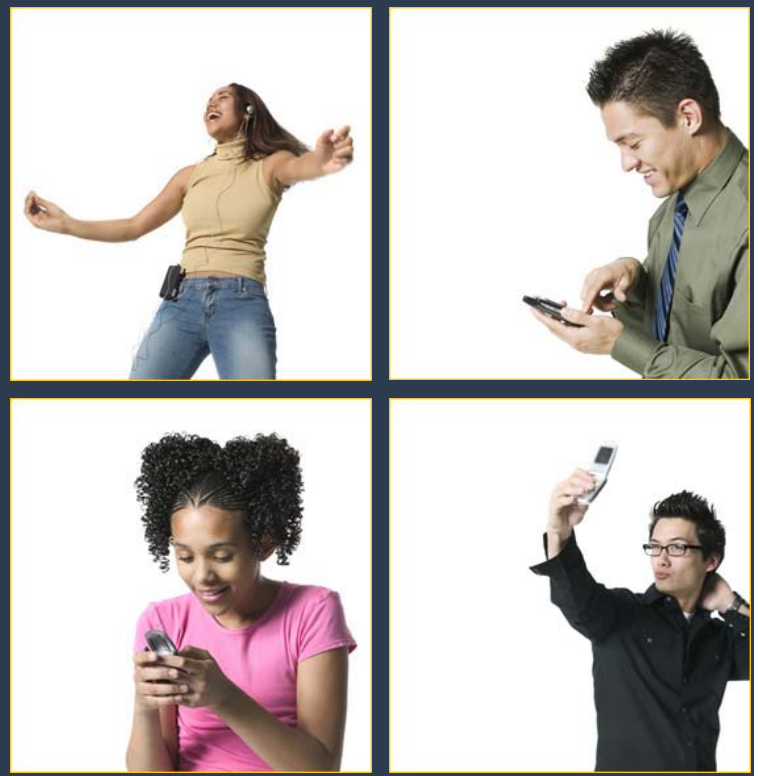
Linux on Mobile Platforms

- The Challenge: Differentiating services while lowering costs
- What's driving Linux growth in mobile platforms:
  - Customization of platforms and feature scaling…
    - > GPS navigation
    - > music playback
    - > imaging
    - > gaming
    - > e-mail
    - > V2IP



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Smartphones plus Linux, the future is here

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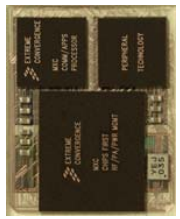
Freescale Mobile Multimedia Solutions

- Mobile Extreme Convergence (MXC) platforms
  - True Single core modem approach
  - Baseband, RF, PA, PM, memory in a postage stamp
  - Reduced cost, complexity, size and power consumption
- i.MX multimedia applications processors
  - Smart speed – low power consumption with MHz performance to spare
  - High degree of integration reduces design time



With MXC, high-performance mass-market mobile devices can be developed affordably on a platform the size of a postage stamp

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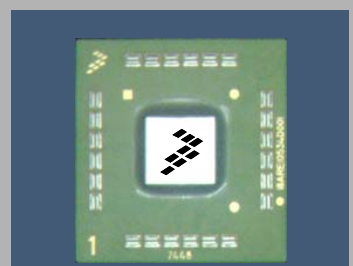
Linux on the PowerPC™ Architecture

- The Challenge: Increasing compute density without increasing cost and power
- What's driving Linux growth on the PowerPC platform:
  - home media
  - web servers
  - infrastructure capacity
  - cluster computing
  - automotive infotainment



PowerPC Processor

Open Firmware

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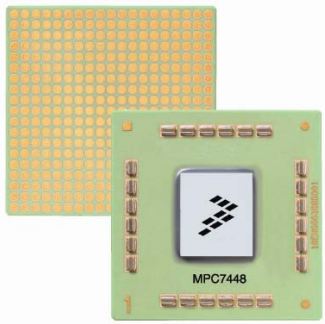
Freescale PowerPC™ Solutions



- PowerPC Microcontrollers
  - For automotive and industrial applications
- PowerQUICC™ I, II, and III Communications Processors
  - On-chip integration of high-speed interfaces, network acceleration, security
  - SOHO, enterprise, wired and wireless infrastructure + storage, industrial, print/imaging
- High-Performance PowerPC Processors
  - Dual core processor on roadmap
  - Networking + home media, commercial robotics, blade servers, printers, gaming

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Converging Technologies

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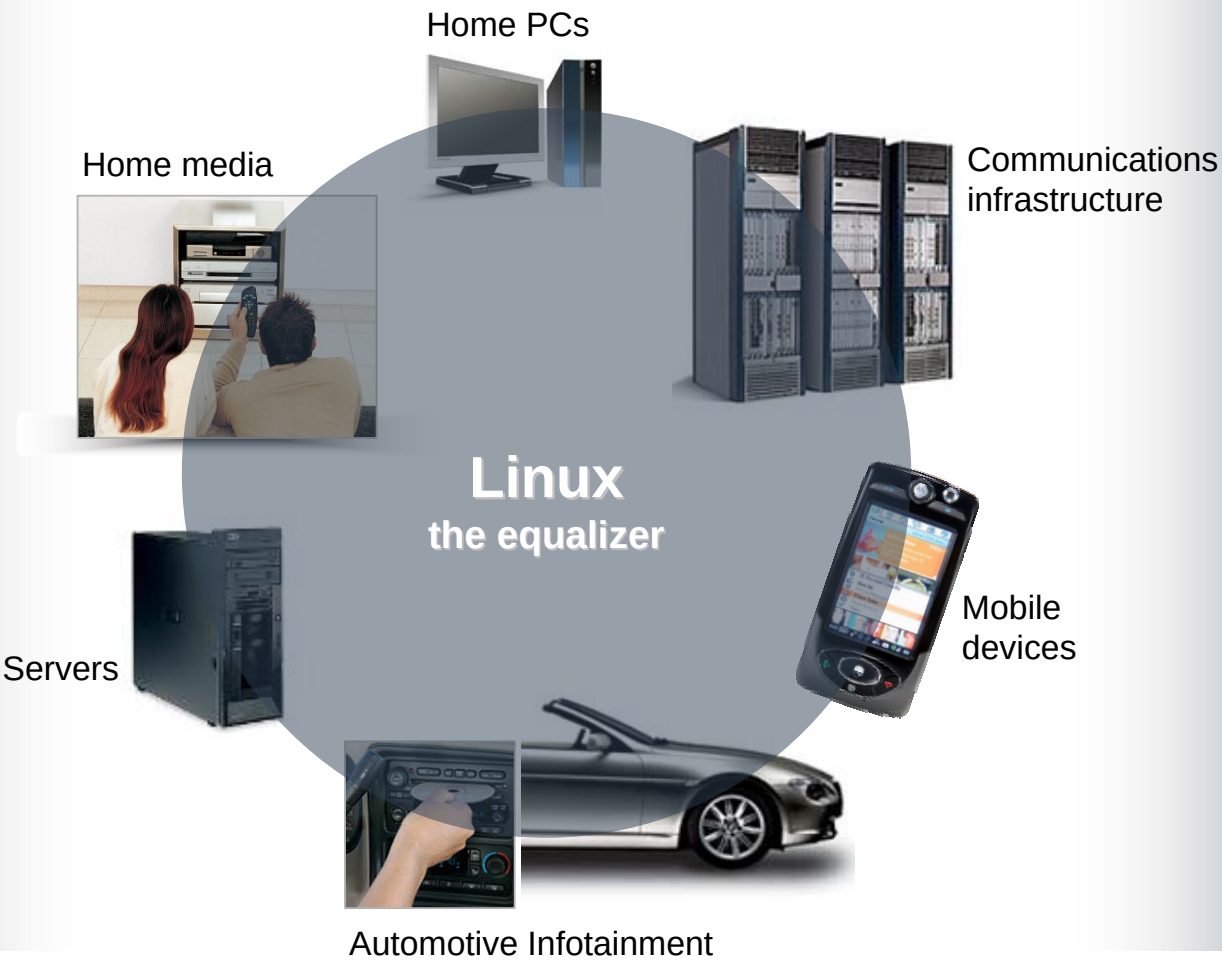
Converging Technologies



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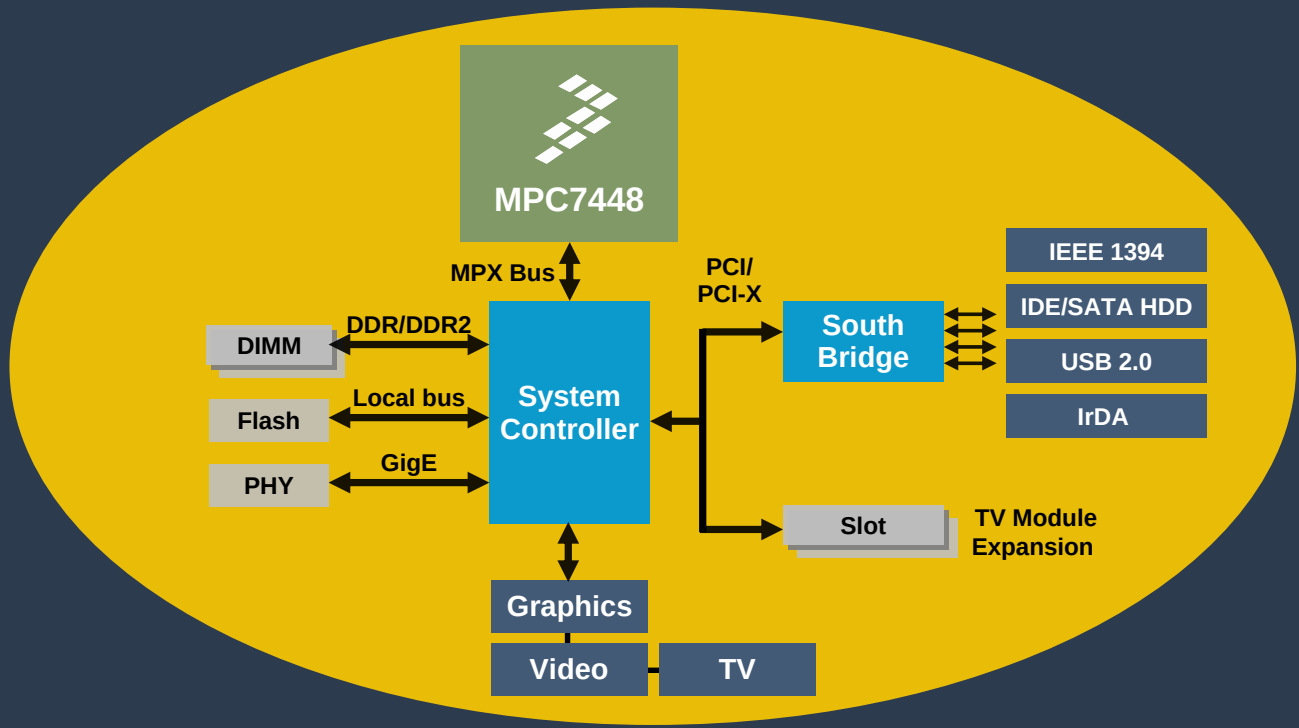
Home Media Center



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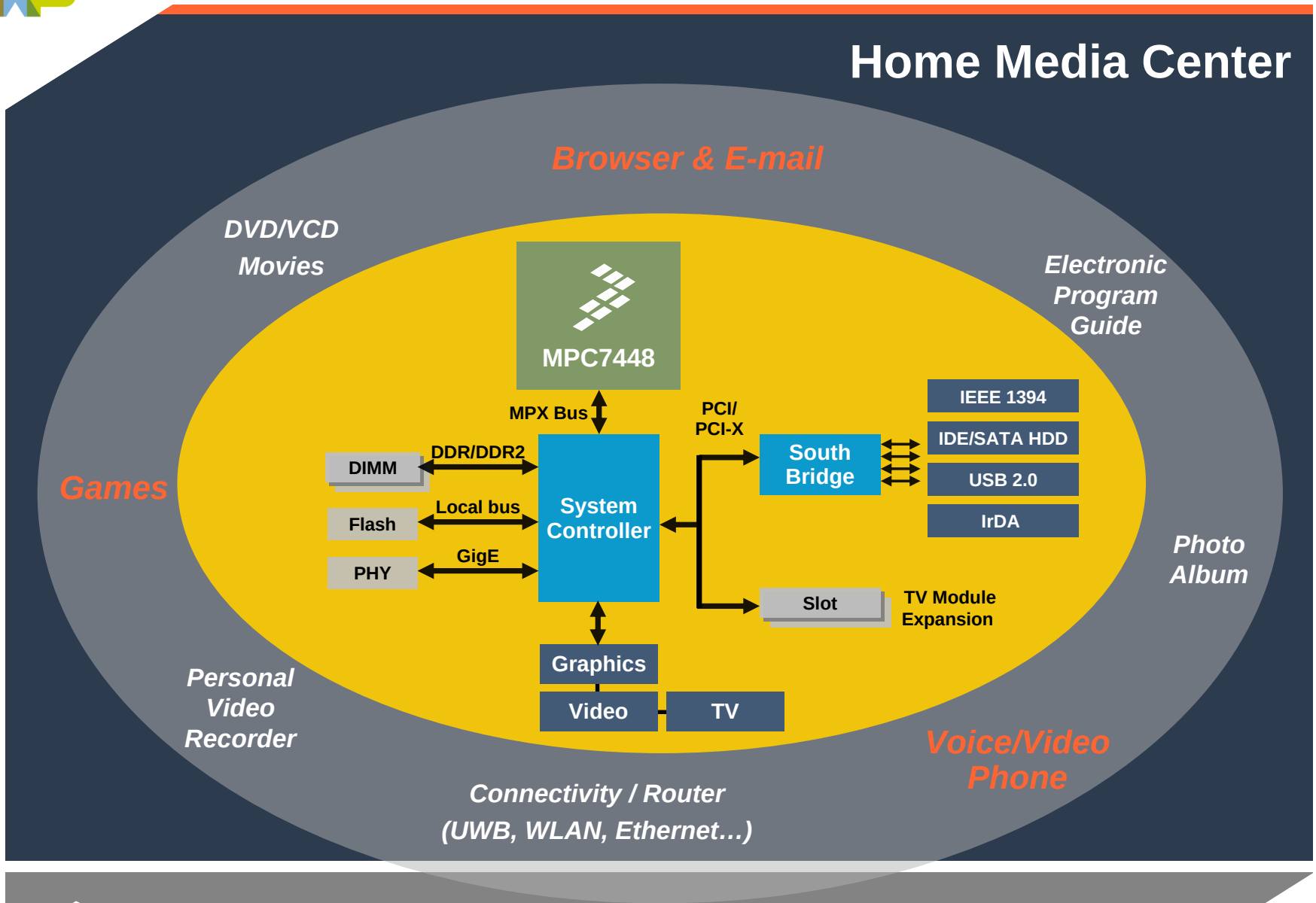
Home Media Center



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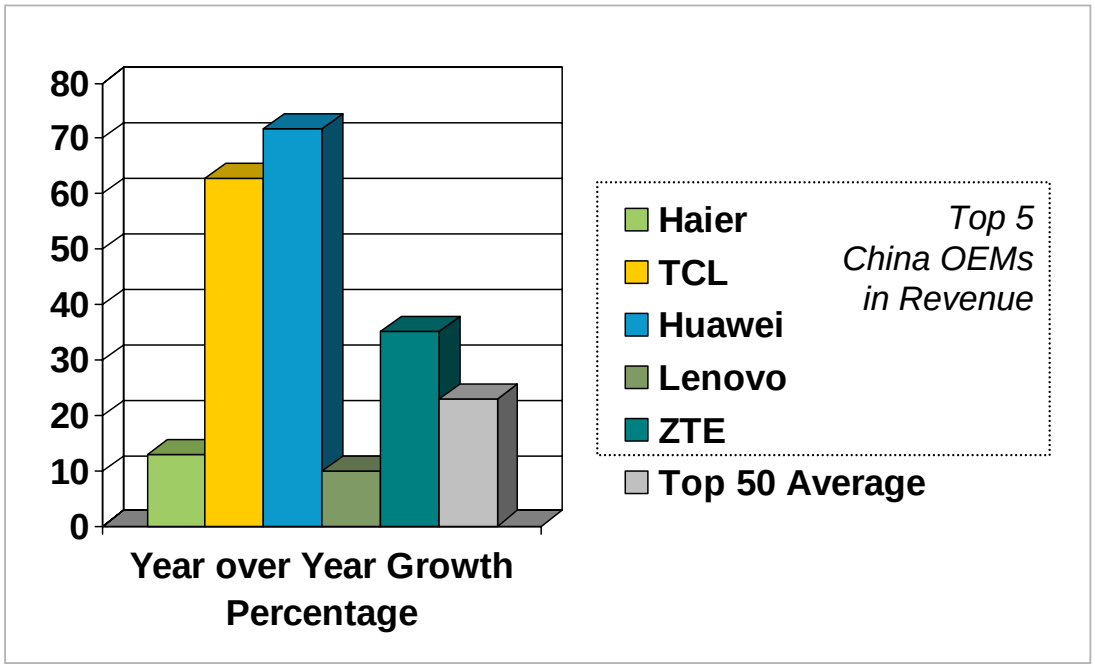
Growth and Innovation Come Hand-in-Hand



Source: iSuppli Corp. February 2005

China's top 50 OEMs outperform the market in 2004 with a 23% year-on-year increase in sales.

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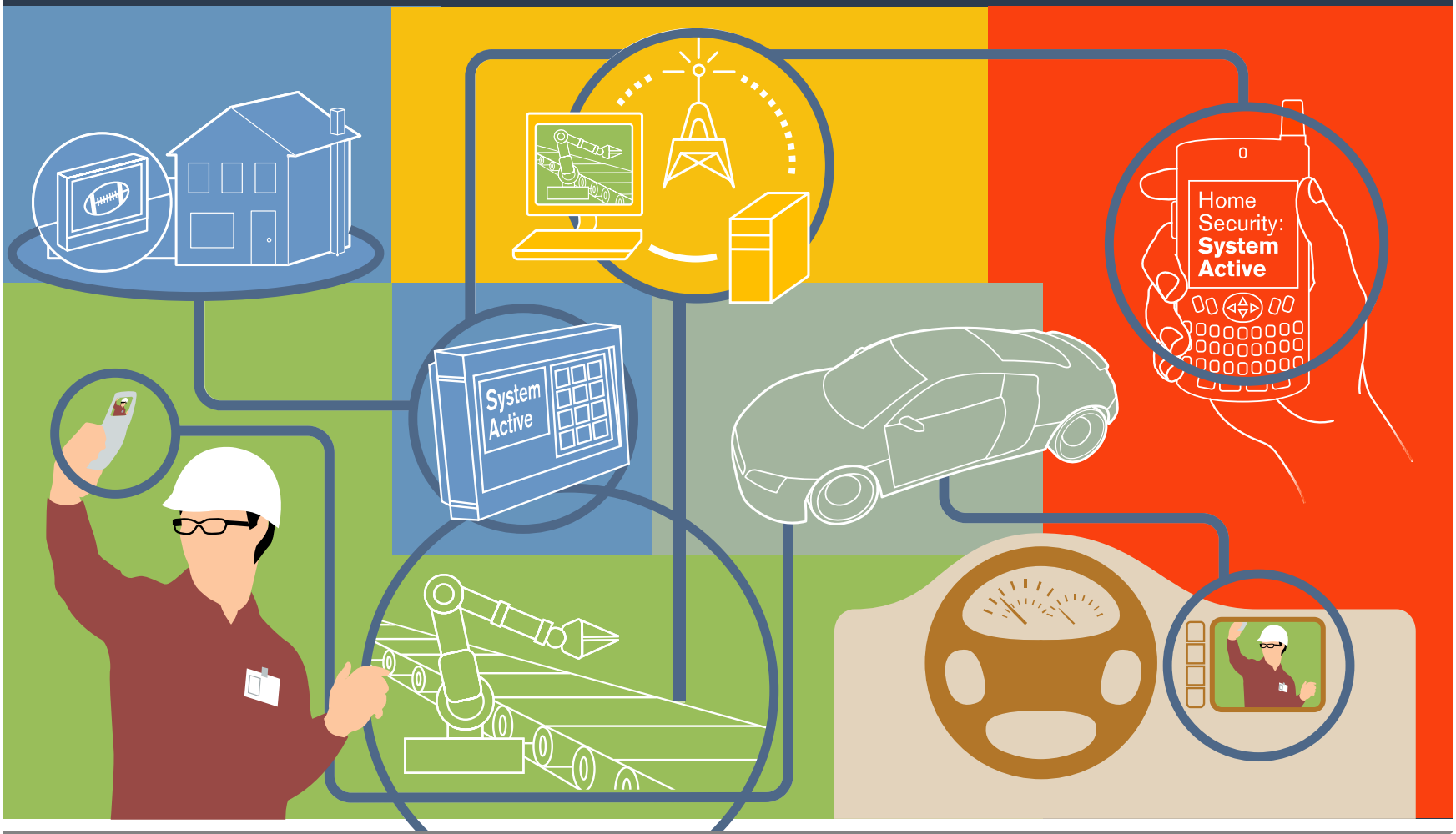
Enabling a Connected World



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