



# IT Trends

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## Emerging Technologies

- Grid Computing- harnessing the unused processing power of all computers on a network (LAN and WAN)
- Composite Applications- user sees a virtual "dashboard", a kind of Web portal that combines various applications.
- 64-bit Computing- next generation chip for the desktop.

## Emerging Technologies

- Nanotechnology- the science of manipulating individual atoms and molecules to create materials, devices, and systems with enhanced physical properties.
  - Will lead to:
    - vastly more powerful microchips,
    - smaller computers,
    - huge advances in computer memory and data storage.
- Wireless/Mobile Computing
  - Converged devices for email, Web, calendar, access to applications, phone with QWERTY keyboards.

## Impact on Higher Education

- Pervasive computing
  - Dorm of the future
  - Wireless PDA's and phones
- Distributed computing
- Tablet computers
- Content is king
  - Merging of learning and gaming

# Dorm of the Future

- IBM and Steelcase are jointly developing the “office of the future”.



# e-Stadium

- Technology
  - Mobile Devices
    - PDA (802.11x)
    - Smart Phone (Cellular)
  - Video and audio services added later
- Programmatic
  - Infotainment
  - Safety & Security
- Partnership
  - Intercollegiate Athletics
  - Center for Wireless Systems & Applications
  - ITaP
  - Industry



## Digital Learning Collaboratory

- A cutting-edge facility provides students the opportunity to utilize workstations for:
  - accessing the Libraries electronic resources, scanning, image capture, 3-D development & rendering, web development, as well as editing and compressing digital video.
  - Large multimedia development area, wireless instructional area, equipment checkout, and collaboration rooms.
- The collaboration rooms for students working independently or with classes for conducting research and creating multimedia content.
- Checkout equipment includes laptops, digital cameras, digital camcorders, tripods, firewire kits, and external firewire hard drives.

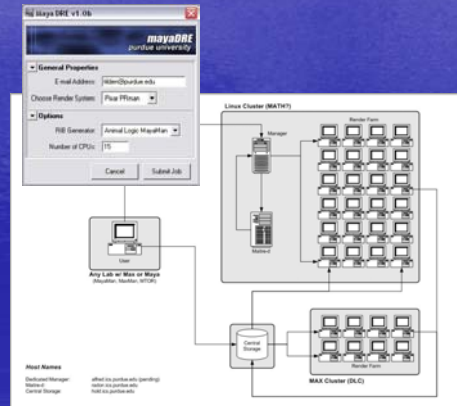
## Composite Applications

- Distributed academic computing services.
- Web-served applications allowing students access to software anytime anywhere.
  - Microsoft office products, AutoCAD, Adobe products, Mathematica, MatLab, ChemDraw
- Web CT flexible, integrative e-Learning environment for:
  - on-line course development, management and delivery of instruction

# Distributed Rendering

■ High Performance Classroom – Distributed Rendering Environment

- A network of multi-platform machines working in together to render computer generated 3D imagery
- 2 hour rendering time for an animation was cut to 6 minutes



# Distributed Computing



**Capturing unused cycles from desktops**

# Recycled Clusters



**High throughput computing  
(recycled clusters)**