Campus-Wide Information Technology Planning: A practical Guide

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Planned Agenda

- Present some random observations about plans and the planning process
- Describe a successful methodology we are using at UC Berkeley
- E-Berkeley – a specific case study
- An evolving architecture to support e-Berkeley
- Open discussion

Planning is hard work!

"In preparing for battle I have always found that plans are useless, but planning is indispensable".

Dwight D. Eisenhower

SCUP Telecast Planning Mantras

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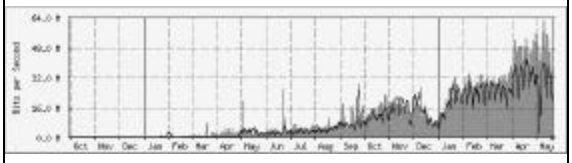
- Find a way to get, and keep, senior management involved in the process.

A Few General Observations

- The unintended consequences of technology change seem to be impossible to predict.

Abilene Traffic to Northern CA Gigapop



A Few General Observations

- The unintended consequences of technology change seem to be impossible to predict.
- You should move forward with a departmental planning process even if your parent organization does not have one.

IST's Cyclic Planning Methodology

Values, Communication, and Measurement

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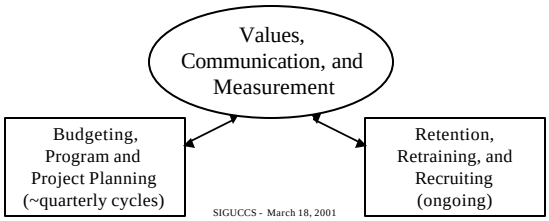
Budgeting, Program and Project Planning (~quarterly cycles)

IST's Cyclic Planning Methodology



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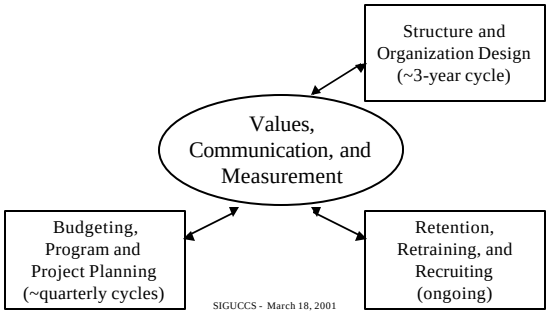

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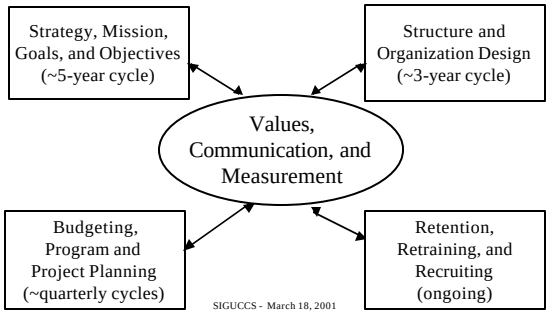

e-Berkeley

Vision:

- **Transforming our community through technology-enabled learning, discovery, and engagement.**
- **Making transactions for students, faculty, staff, alumni, business partners, and the public available on the Internet.**

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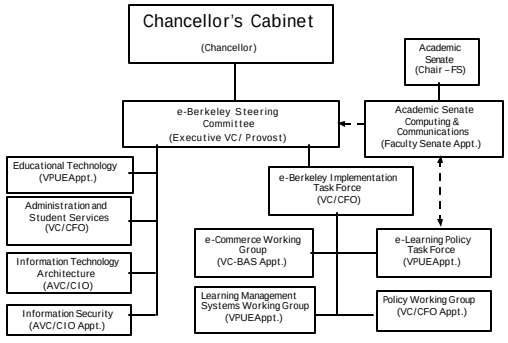
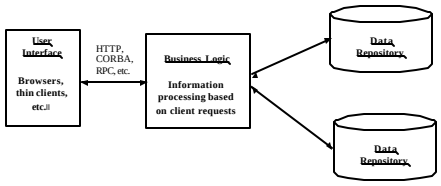
e-Berkeley Governance Structure



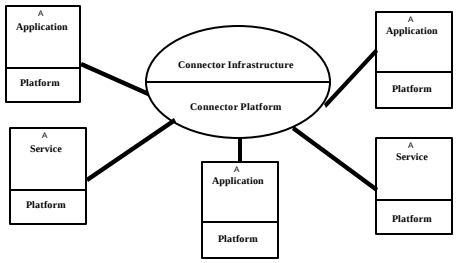
Proposed Technical Architectural Principles for e-Berkeley

- Seamless, secure access to information
- Information presentation actively tailored to the person and the task
- Service excellence, scalability and robustness
- Support a global learning and research environment
- Flexibility to adapt to new technologies and new service needs
- Individual privacy should be protected as much as possible

Conceptual Model of 3-tiered Application Architecture



Connector-emphasized View of Architecture



UC Berkeley Working Groups

- Information Technology Architecture Task Force (ITATF), a standing subcommittee of the e-Berkeley Steering Committee
- IST internal working groups
- IST Enterprise Systems Architect
- IST Management Team
- Chief Information Officer

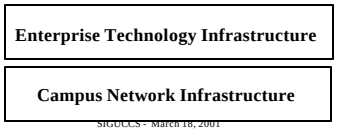
e-Berkeley Target Technical Architecture

Campus Network Infrastructure

Campus Network Infrastructure

- TCP/IP
- DHCP
- Multi-cast
- Domain name services
- Time service
- Connectivity
  - CENIC
  - I2
  - Commodity Internet
- Modems
- Hubs
- Routers
- ICCS
- Riser Infrastructure
- Traffic monitors

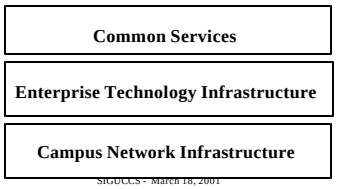
e-Berkeley Target Technical Architecture



Enterprise Technology Infrastructure

- Standard development tools: Java, ColdFusion
- Information management: databases, messaging & queuing
- Distributed computing infrastructure: directory services, backup services, network storage
- Computing platforms: MVS, UNIX, NT

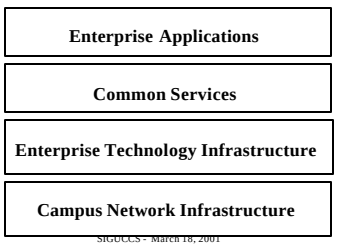
e-Berkeley Target Technical Architecture



Common Services

- Common application services: credit card processing, authentication, reporting, printing, LDAP
- Common data services: data warehouse environment – Berkeley Information System (B IS), BAIRS II, BearFacts
- Application servers: Citrix, Tuxedo

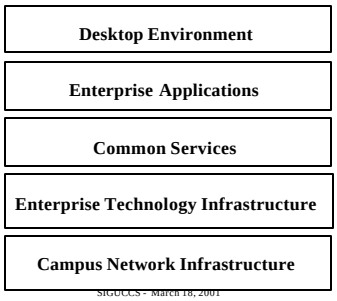
e-Berkeley Target Technical Architecture



Enterprise Applications

- Administrative
  - BFS
  - HRMS
  - TeleBears
  - UCLink
- Teaching & Learning
  - WebCT
  - Blackboard
- Library & museums
  - Gladys
  - Melvyl
  - California Digital Library
  - SunSite
  - Paleontology

e-Berkeley Target Technical Architecture



Desktop Environment

- User environment: browser, productivity tools, presentation services, local applications
- Client & workgroup servers: local computing platforms, service interfaces, Windows, Mac OS, UNIX
- Network interface: services and devices

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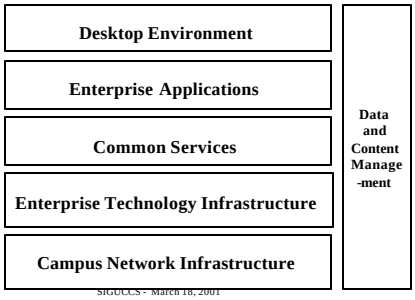
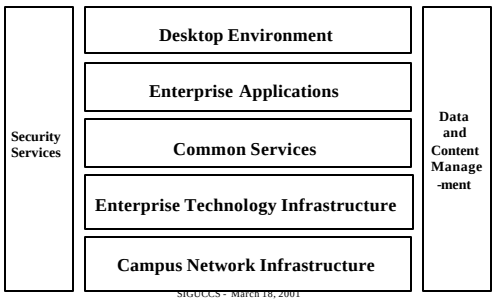


Data and Content Management

- Database management servers
- DB2
- Oracle
- Sybase
- Vignette - Storybook

e-Berkeley Target Technical Architecture



Security Services

- Kerberos
- Public key infrastructure
- Certificates
- SSL
- Operating system & Platform & application specific

J2EE Architecture Specifications

- Java 2 Enterprise Edition
- Addresses architectural requirements for a distributed computing environment
- Based on the 3-tier model
  - Clients on the front-end for presentation (=> browser)
  - Middle tier where applications and business functions reside (Web application servers)
  - Data resources and transaction apps on the back-end
- http://java.sun.com/j2ee/white.html

Next Steps

- Strategic networking technology evaluation and consultation by WTC (in progress)
- Results of short-term consultation with Interactive Business Systems (IBS)
  http://socrates.berkeley.edu:4259/itatf/activities.html
- Participate in the JA-SIG consortium and evaluate their approach to the student portal
- Participate in the World Wide Web consortium

OPEN DISCUSSION