UCSB Facilities Management

Project Godzilla

Construction Document Tracking
(C-Docs)
A major application using Internet Connect

Robert J. Garcia
FM IS Manager
University of California
Santa Barbara
9/21/1997

DISCLAIMER

The opinions and views presented in this talk are those of the speaker and do not necessarily represent the views of the University of California, its officers, or the Regents of the University of California.

UCSB Facilities Management

UC is Dedicated to
E-Commerce

- Re-engineering of business
- Doing business in a paperless way
- Streamline management
- Reduce Complexity
- Increase productivity

UC is Dedicated to E-Commerce (continued)

- Value of goods and services sold electronically:
  - 1996: $150 billion
  - 2001:estimated to be $580 billion (source: Gartner Group)
- UC is a $10 billion 'corporation'

Facilities Management Overview

- Physical Facilities
  - 285 Employees
  - $10 million budget
- Design and Construction Services
  - 20 employees
  - $80 million in current capital projects

Facilities Management Overview (Continued)

- **Business Services**
  - 20 Employees
  - Fiscal, Personnel, Information Systems

UCSB Facilities Management

The Problem

- The paper chase

  A successful construction project relies on accurate, timely
  communications between all involved parties. Traditionally, this
  communication has been accomplished via paper. But paper
  documents are easily misplaced, and because these document pass
  through many hands, it is impossible to know at any point in time the
  status of the document.

UCSB Facilities Management

The Problem (Continued)

- A Request for Information (RFI) Example

UCSB Facilities Management

The Task

- Create a single repository of information
  that holds all relevant contract documents
  on a construction document
- Reduce the amount of time it takes to route
  the paper from weeks to hours

UCSB Facilities Management

The Task (continued)

- Maintain an accurate history of all aspects and phases of the construction project
- Reduce the amount of paper and the amount of time chasing the paper.
- Provide complete auditing of all transactions

UCSB Facilities Management

A Request for Information Example - Reprise

UCSB Facilities Management

The Players

- UCSB acting as the Owner's Representative
- Project Manager
- Architects
- Engineers
- Consultants
- General Contractor
- Sub Contractors

UCSB Facilities Management

Major C-Docs Components

- Request for Information
- Submittal Transmittal
- Field Orders
- Application for Payment
- Inspector Daily Reports
- Contractor's Daily Reports

UCSB Facilities Management

Major C-Docs Components (continued)

- Potential Change Orders
- Cost Proposal
- Letter of Instruction
- Proposal Request
- Change Order
- Notice of Non-Compliance

UCSB Facilities Management

Fundamental Project Requirements

- Multi-platform (Macintosh, Windows)
- Support multiple projects
- 'Thin' client
- TCP/IP based
- Secure

Project Requirements (continued)

- Must be able to connect from 'anywhere'
  - Construction site trailers are temporary, and in places inaccessible to UCSB fiber network
  - Architects, engineers, and consultants may be off-site (off campus, other cities, other states)
- Oracle RDMS
- Web Based/persistent connection

How it Works

- Hardware components
- Software components
- Network topology
- Security

The IC Extension

- Window and components
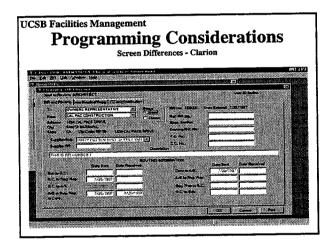- Controls
- Formatting

UCSB Facilities Management

The IC Templates

- Cookies
- Static and Dynamic HTML

UCSB Facilities Management

Challenges to Overcome: the Web

- It is a terminal session!
- Tools?
- SLOOOOOOW

UCSB Facilities Management

Challenges to Overcome: the Web

- 'Thin' clients?
  - IE minimum installation is 43mb, memory footprint is 4mb
  - Netscape minimum installation is 16mb, memory footprint is 5mb
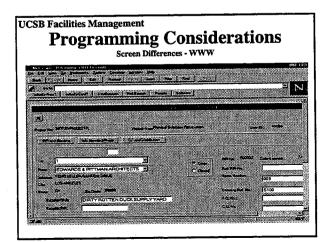- HTML was developed for publishing documents, not database transaction processing.

UCSB Facilities Management

Challenges to Overcome: the Internet

- Security
- Fragile and subject to failures
- Relies on volunteers
- Becoming saturated

UCSB Facilities Management

Web Gotcha's

- Drop down Lists
- Popup lists
- Combo Boxes
- Sheets and Tabs
- Fonts

UCSB Facilities Management

Web Gotcha's (continued)

- Close Window Event
- Redisplaying a window
- Multi-field keys in drop down lists
- Error trapping

Web Considerations

- Keep graphics to an absolute minimum
- Can't use MESSAGE()
- Stay away from TABS, if possible
- Don't redisplay, unless absolutely necessary
- Users are not tolerant of delays and slow processing

Programming Considerations
Screen Differences - Clarion

Programming Considerations
Screen Differences - WWW

UCSB Facilities Management

An online demonstration

UCSB Facilities Management

Conclusions