

Building and Applying Digital Libraries

(Part 2)

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Overview

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- Instructor Background
- General framework for organizing issues
- Applying framework to class project
- Review of results produced from project

Background

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- 1978 --> 1985: ZOG Project, Carnegie Mellon University
- 1981 --> 1996: Knowledge Systems
- 1988 --> 1989: ACM Hypertext on Hypertext (KMS version)
- 1988 --> 1992: Dexter Group
- 1990 --> 1993: SIGLINK Chair
- 1990 --> 1996: Editor, ACM Hypertext Compendium
- 1994 --> 1996: PetaPlex Project (US Intelligence Community)
- But most important is experience from using hypertext

General framework for organizing issues

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- Framework = Conceptual Paradigm
 - Importance of Frameworks
 - Proposed Framework for Class Project
 - How Key Requirement Interact
 - Problem: Limited Resources
 - SubFramework: Utility
 - SubFramework: Utility--> Expanded

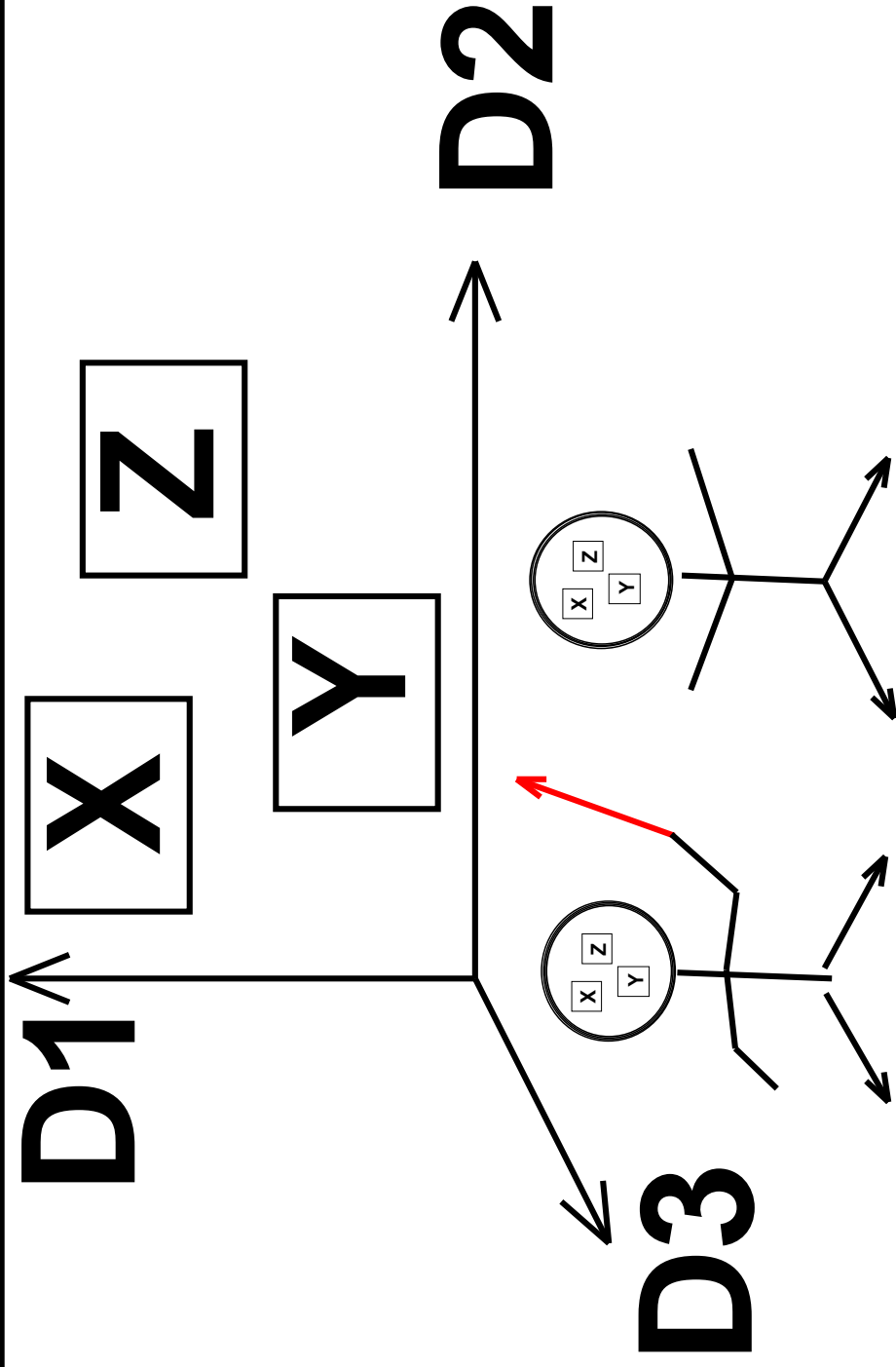
Importance of Frameworks

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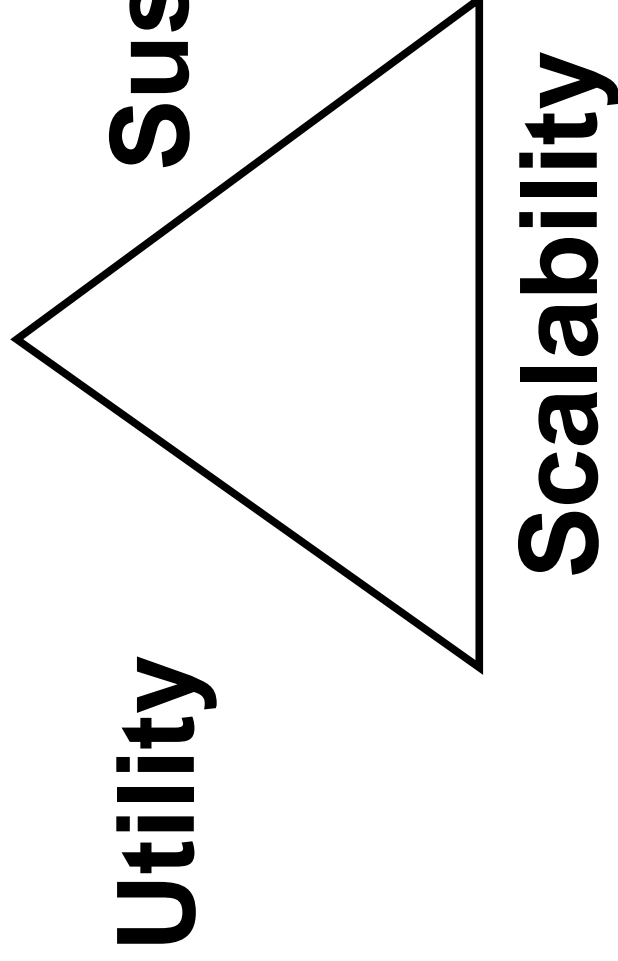
- **Provide a way to conceptualize field**
- **Provide a way to organize knowledge**
 - **Provide a common frame of reference that facilitates communication**
- **Help compare alternate approaches**
 - **Help make make/buy decisions**
 - **Help make design decisions**
- **Help promote interoperability**

Provide a common frame of reference that facilitates communication

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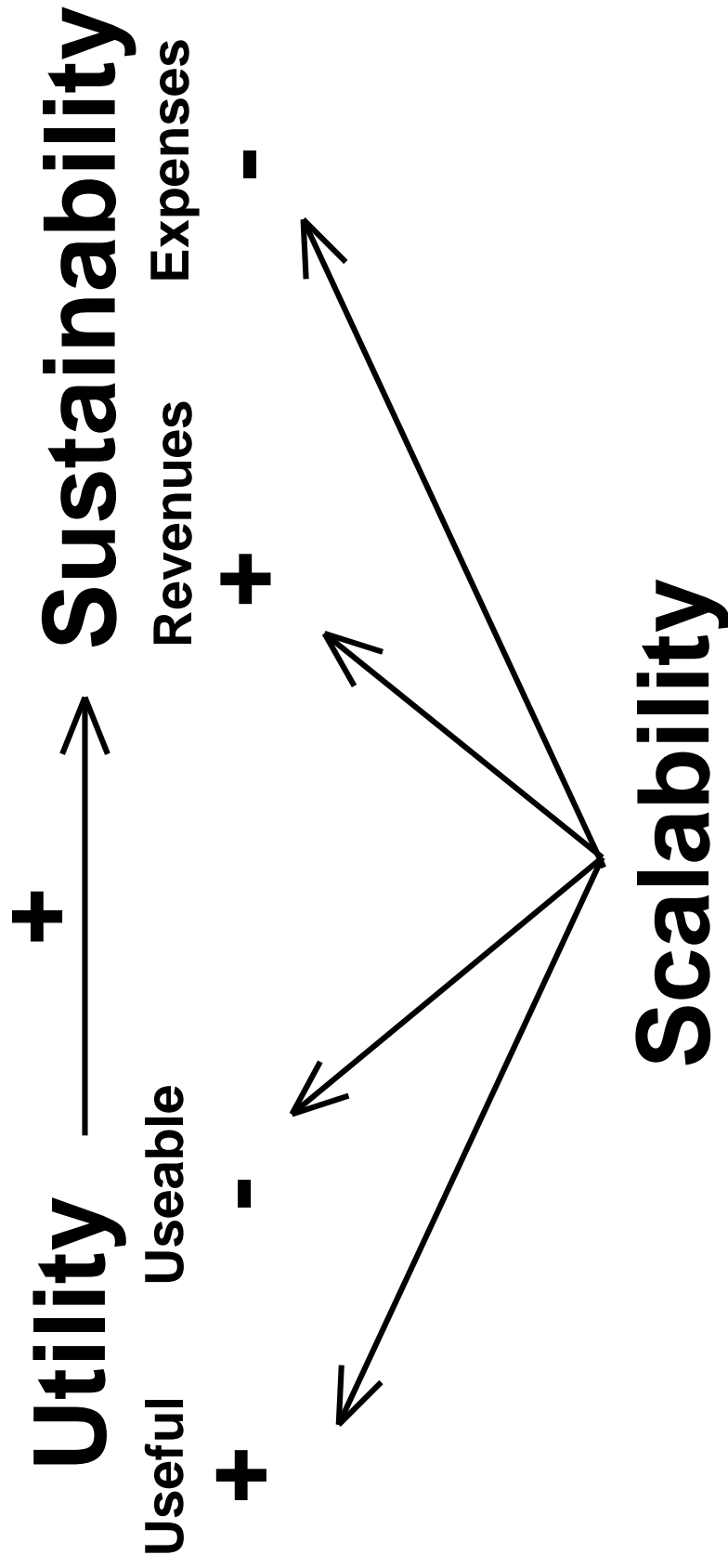


Proposed Framework for Class Project 7



How Key Requirement Interact

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Problem: Limited Resources

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- **Forces tradeoffs to be made**
 - Which should be faced early in design process
- **But ignoring tradeoffs is a major failure of many efforts**
 - Oversight: Underestimate requisite timeframe
 - Oversight: Long-term sustainability not taken seriously
 - Oversight: Scalability solved by 'magic bullets'

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- **Leads to 'pet designs' that are not well-rounded**

SubFramework: Utility

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- **Users**
- **Tasks**
- **Information**
- **Capabilities**

SubFramework: Utility--> Expanded

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Users	X	Tasks	X	Information	X	Capabilities
Administrators Engineers Investors Managers Programmers Researchers Scholars Scientists Secretaries Students Teachers		Communicating Deciding Designing Evaluating Fact finding Learning Modelling Planning Presenting Researching Writing /Publishing		Maps Laws Hints Code Data Clips News Plans Lists Forms Invoices Tables Images Memos Photos Letters Events Orders Stories Movies Scripts Patents Essays Trends Drawings Diagrams Speeches Regulations Procedures Directories Calendars Predictions Formulae Schedules Symbols Instructions Editorials Policies Document Addresses		Authoring Citing Clipping Converting Displaying Exporting Formatting Modifying Link following /Link creation Notetaking/ Notemaking Searching Sending Transforming

Applying framework to class project: '1- Hour Project' session

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- **Who are the users?**
- **What do they want to accomplish with the library?**
- **What are the primary performance dimensions of interest?**
- **What are the design factors that make a difference along these dimensions?**

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- Research Interests** Use of hypermedia technology for large-scale digital libraries to support general-purpose enterprise-wide collaboration.
- Professional Activities** Chair, SIGLINK, ACM Special Interest Group on Hypertext, Nov90-Nov93
Editor, ACM Hypertext Compendium (Hypertext database on field of hypertext)
Program Committee, European Conference on Hypertext, Sep 1994
Program Committee, Hypertext 1993, 1996
Program Committee, European Conference on Hypertext, Paris Nov 1992
Program Committee, European Conference on Hypertext, Paris Nov 1990
Conference Chair, 2nd ACM Conference on Hypertext (Hypertext '89)
Co-Editor, ACM Hypertext on Hypertext, KMS version
Editorial Board, *Hypermedia* journal
Editorial Board, Journal of Digital Information (British Computer Society)
Member, Association of Computing Machinery (ACM)
- Experience** **Knowledge Systems Incorporated**
Co-Founder and President (1981-Present)
Carnegie Mellon University, Computer Science Department
Adjunct Scientist (1994 - Present)
Senior Project Scientist (1980-1985)
U.S. Army (1967-1978)
Captain, Infantry
- Education/ Training** **Carnegie Mellon University**
Ph.D. in Systems Sciences (in progress)
Graduate School of Industrial Administration
University of Southern California
M.S. in Systems Management (1977)
Specialization: Research and Development
United States Military Academy at West Point
B.S. in Engineering (1973)
Majors: Systems Engineering, Computer Science,
Management Science
U.S. Army
Airborne, Ranger, Amphibious Warfare
- Awards/ Achievements** 1980-1981 William Larimer Mellon Fellowship
1979-1980 IBM Fellowship in Information Sciences
1978-1979 William Larimer Mellon Fellowship
1977 Army Commendation Medal, 25th Infantry Division
1975 Army Commendation Medal, 25th Infantry Division
1973 First in Class - Honor Graduate, Infantry Officer Basic Course
1973 First in Class - Final Semester, Class of 1973, West Point

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