

Understanding Networked Applications:
A First Course

Chapter 2

by
David G. Messerschmitt

Application

- Application = something that puts technology to use to the benefit of someone
- Technology = something that puts scientific principles to use
- Terms are relative (e.g. Pentium/PC)
- In this course, we are interested in the level at which technology meets users (people) and organizations

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Important ingredients

- Information technology
- Information
- Users (people)
- A purpose or mission (application)

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Definitions

- What is an application?
- What is a technology?
- What is information technology?
- What is the relationship between application and technology?

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Types of applications

- Individual = entertainment or productivity
- Social = groups of users
- Information management = access to or manipulation of information
- Educational = contribute to learning or training
- Organizational = aid mission or operations

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Social Applications

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Social Applications

- Categories of user groups
- Styles of social applications
- Illustrative social applications

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Objectives

- Identify distinctive types of user groups
 - In terms of impact on application needs
- Identify distinctive types of social applications
 - In terms of applicability to different groups
- Note: terminology specific to networked applications, not general society
 - e.g. citizenry

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Group Characteristics

- What characteristics of a group are relevant to
 - application design and features
 - information technology infrastructure

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Group Characteristics

- Size
- Narrowness of purpose
- Duration
- Frequency and type of interaction
- Social relationships
 - communication links
 - trust (individual and generalized)
 - expectations and routines

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Group characteristics (cont.)

- Technology accessibility
- Language skills

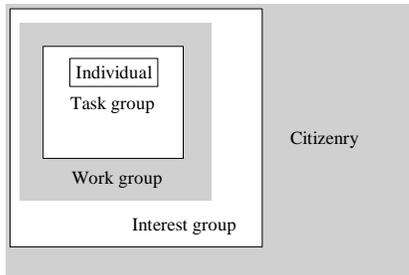
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Group classification

- Note: any classification is imperfect
- Goal is insight into different application requirements
 - Individual
 - Task group
 - Work group
 - Interest group
 - Citizenry

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Categories of user groups



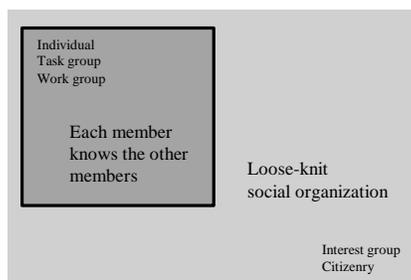
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User groups

- What are some examples of:
 - Task group?
 - Work group?
 - Interest group?
 - Citizenry
- In:
 - University?
 - Company?

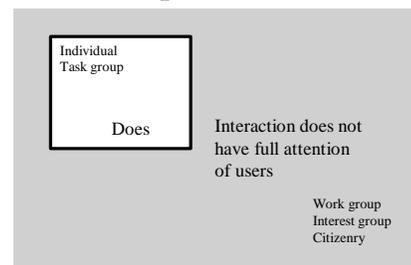
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Important to application style



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Important for infrastructure requirements



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Task Characteristics

- Communication
- Coordination

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Communication Applications

	Immediate	Deferred		
Direct				
Publication			Same time	Different time
			Same Place	
			Different place	

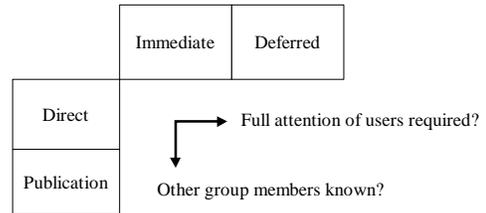
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Some Examples

- Newsgroup
- Chatroom
- Telephony
- Web Board
- Net Meeting

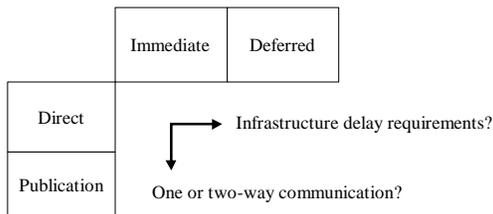
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Styles of social applications



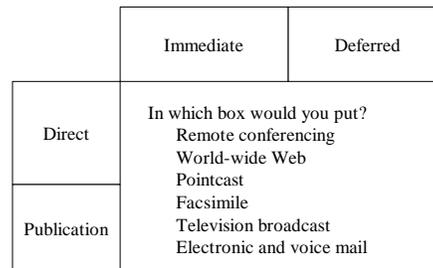
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Styles (con't)



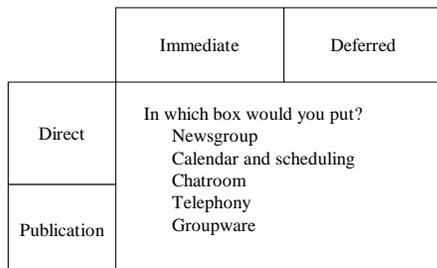
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Styles (con't)



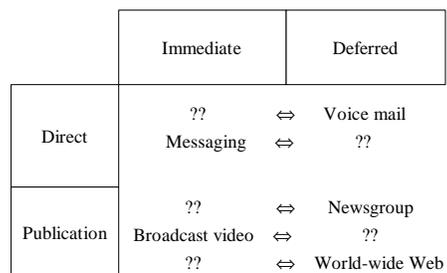
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Styles (con't)



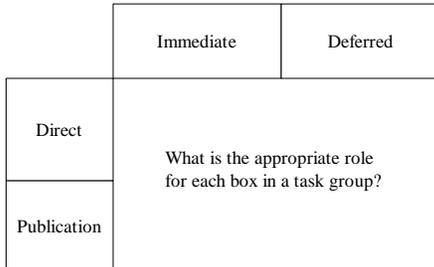
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Some variations



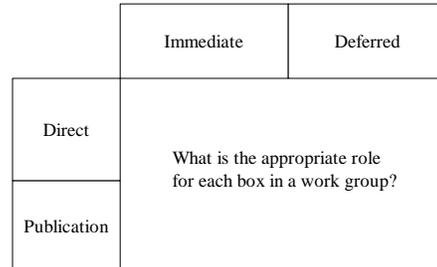
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Task group



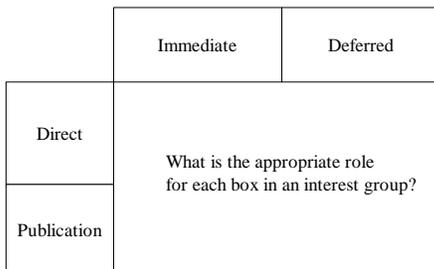
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Work group



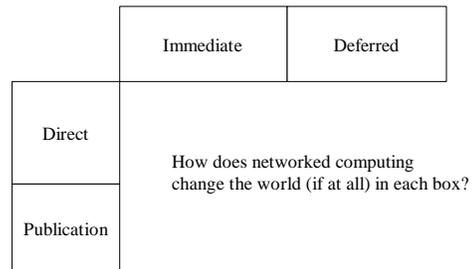
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Interest group



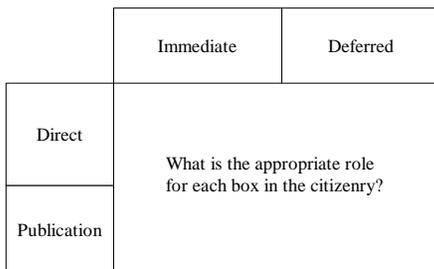
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What has changed?



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Citizenry



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Coordination Applications

- Resource allocation
- Monitoring and notification
- Collective decision-making

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Examples

- Collaborative authoring
- Calendar and scheduling
- Awareness
 - Who's available now?
 - Who did this?
- Electronic voting

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What Kinds of Groups?

- Resource allocation
- Monitoring and notification
- Collective decision-making

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Issues in social applications

- How effective is remote collaboration relative to personal interaction?
- What are some advantages/disadvantages of geographic dispersal to organizations?
- What are the relative merits of immediate and deferred styles?

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Information management

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Summary

- Information management for individual user
- Information management as an element of a social application

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How networked computing helps information management

- Timeliness
- Wider access
- Processing
- Multimedia
- Social aspect

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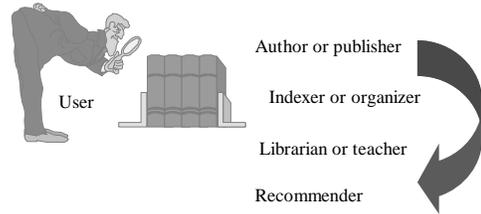
How networked computing helps

- Timeliness
- Access
- Processing
- Multimedia
- Social aspect

What are some specific ways these can help (or hurt) organizations?

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Participants



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Participants

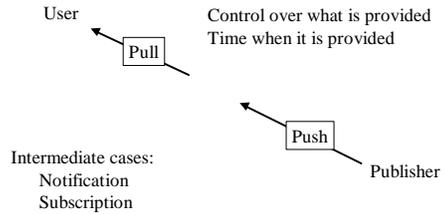
- User
- Author or publisher
- Indexer or organizer
- Librarian or teacher
- Recommender

Who fills these roles in an organizational context?

How might these roles be affected by networked computing?

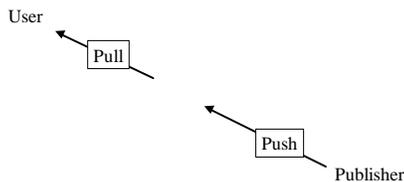
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Push vs. pull



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Push vs. pull



What are some examples of each in an organizational context?

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Proper roles of push and pull?

Pull: work	Push: attention
Brainstorming	Notification of topic
Accessing documents	Notification of document availability
	Reminder of deadlines

As networked computing grows, the deluge of information and communication can overwhelm the individual unless we use it wisely

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Finding useful information

- Search
- Browse
- Navigate

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Others can help

- Author: Hyperlink
- Author or third party: Index
- Metadata
- Reviews or recommendations

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Social information access

- A group can collectively access information
- Examples:
 - Remote collaboration
 - Problem solving, e.g. customer service
 - Aid of librarian or teacher

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