

New Technologies for Research Administration

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Thesis

IT is transforming science
and the relentless effect of
Moore's Law is transforming
that transformation.

Research and research administration
are both affected...

Effect of Information Technology

IT reduces the effects of:

- *distance*
- *time*
- *complexity*

All of these significantly affect scientific research...

Effect of Information Technology

Effect of IT on tasks:

- *accomplishment*
- *coordination*
- *possibility*

This improves both efficiency and effectiveness, and even allows new strategies to be pursued.

Topics

- IT Transformed by Moore's Law
- Effects on Research Administration
- Agencies On-line
- Full ERA: Challenges and Problems
- Underlying Technologies

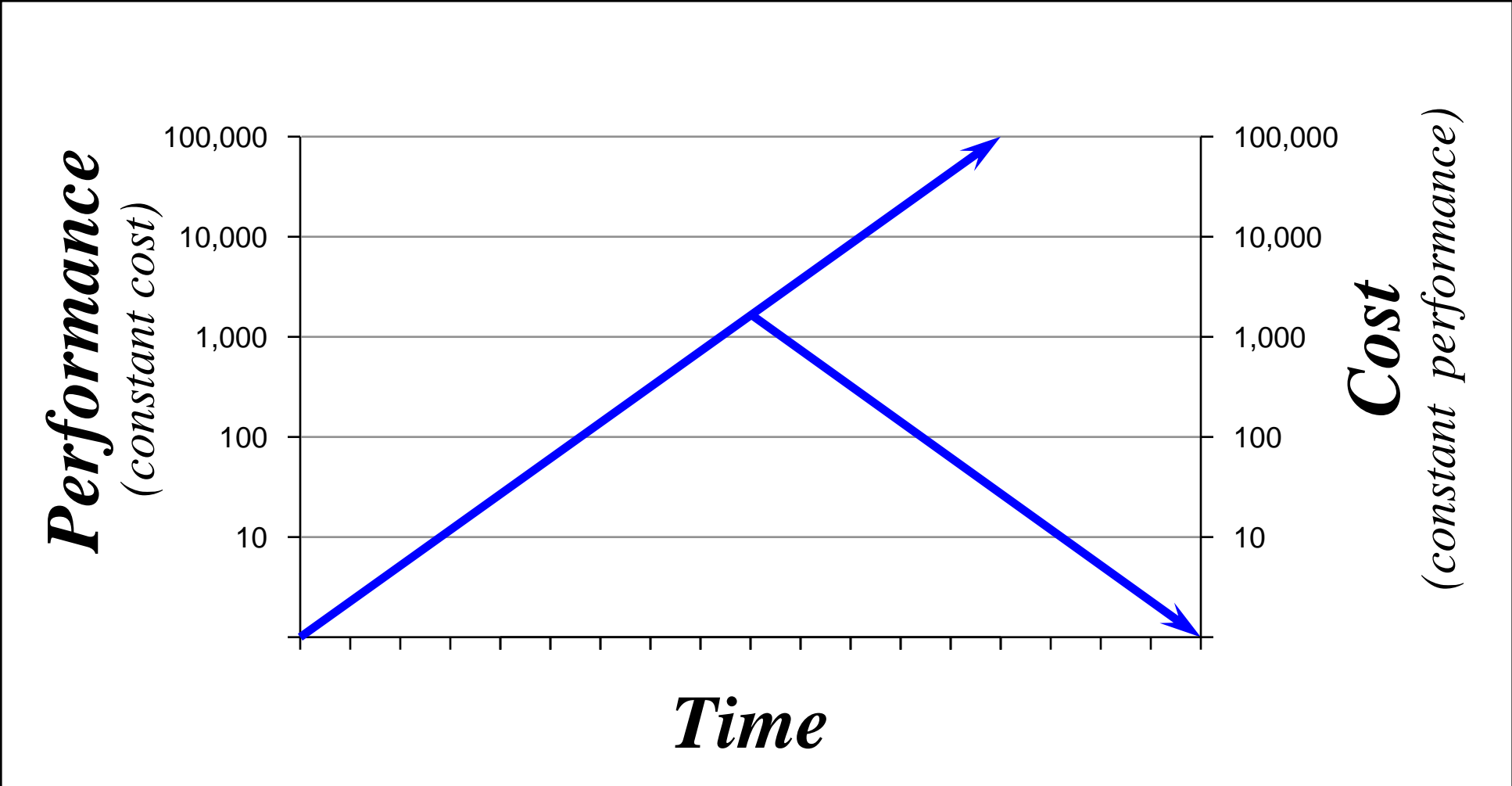
IT Transformed by Moore's Law

Moore's Law

Every eighteen months, the number of transistors that can be placed on a chip doubles.

Gordon Moore, co-founder of Intel...

Moore's Law

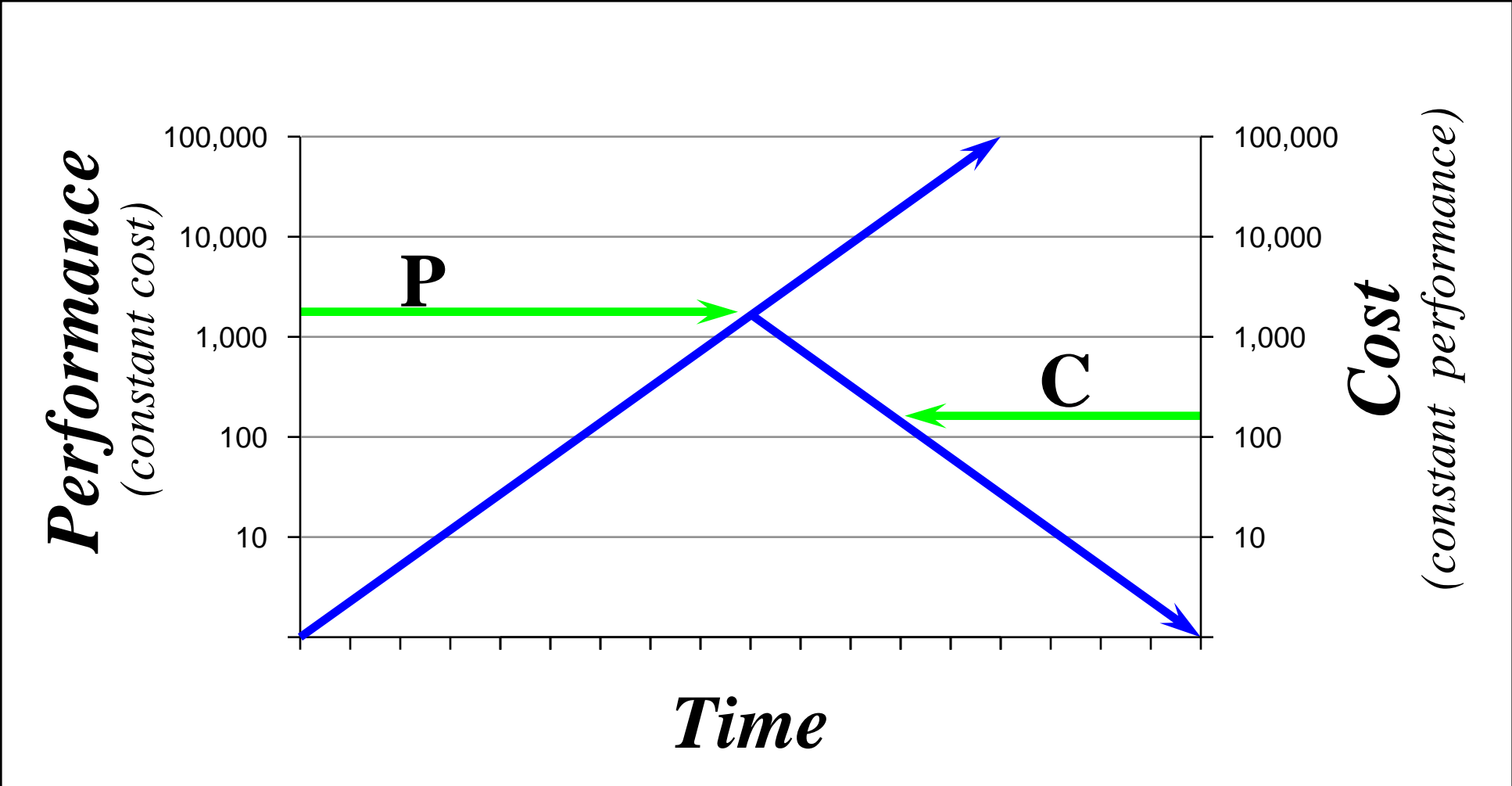


Moore's Law

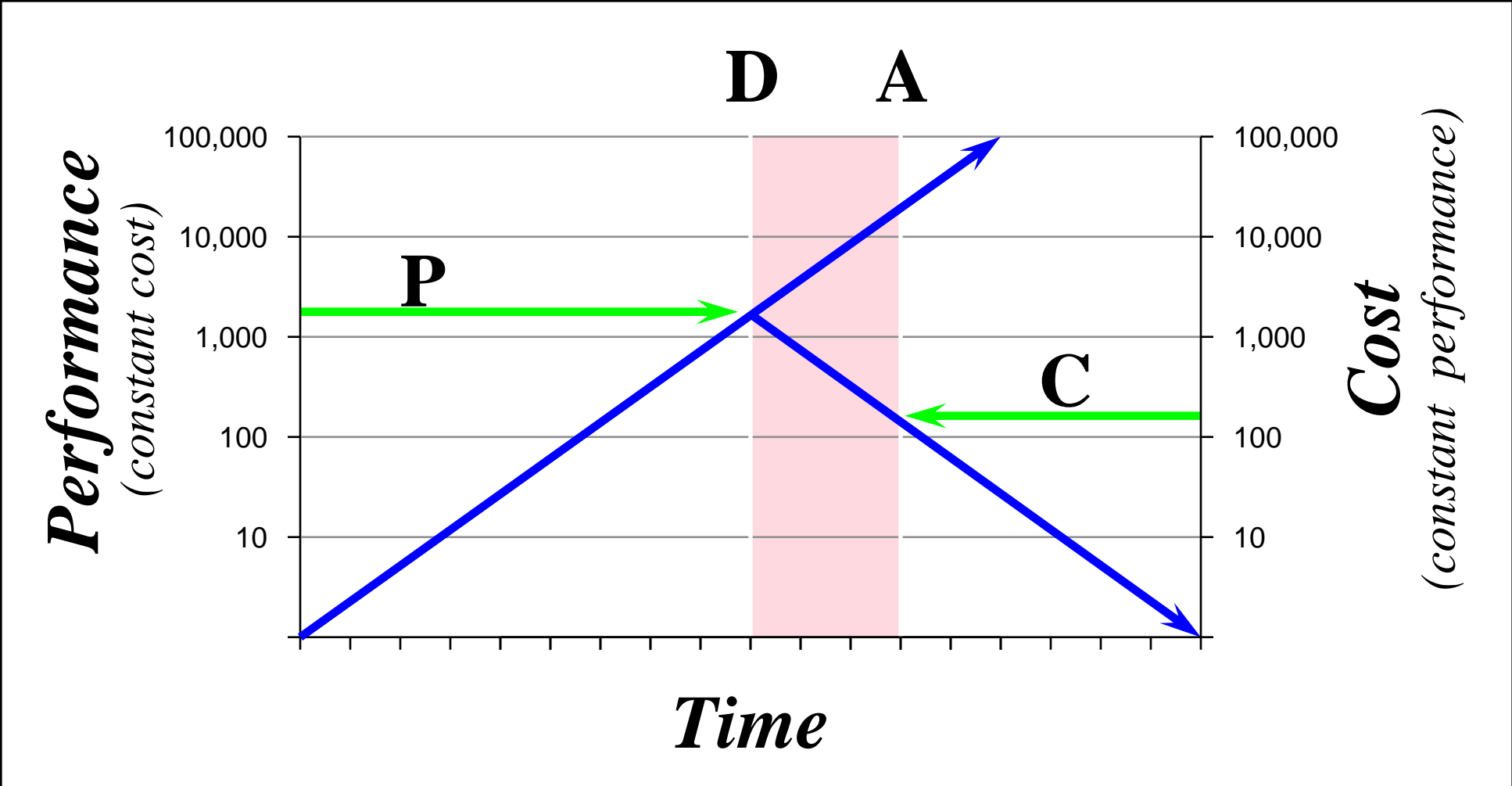
Three standard phases of system development

- *It's simply impossible*
- *It's way too expensive*
- *It's long overdue.*

Moore's Law



Moore's Law



Moore's Law

Corollary Effects

- *The number of things than can be computerized increases exponentially over time.*

Moore's Law

Corollary Effects

- *The number of things than can be computerized increases exponentially over time.*
- *The number of things than are computerized increases exponentially over time.*

Human Resource Issues

- Reduction in need for non-IT staff
- Increase in need for IT staff, especially “information engineers”

In biology, the general trend is to convert expert work into staff work and then into computation. New expertise is then required to design, carry out, and interpret continuing work.

EFFECTS ON RESEARCH ADMINISTRATION

New Technologies

Effects on Research Administration

- *More tools for administration*

New Technologies

Effects on Research Administration

- *More tools for administration*
- *Higher expectations*

New Technologies

Effects on Research Administration

- *More tools for administration*
- *Higher expectations*
- *More to administer*

New Technologies

Effects on Research Administration

- *More tools for administration*
- *Higher expectations*
- *More to administer*

If it can be done, it *must* be done...

New Technologies

Information Access

- *Better access to remote information*
(agencies on-line)
- *Easier dissemination of information*
(local information publishing)

INFORMATION ACCESS


Agencies On-line



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Address <http://www.nih.gov> Links



National Institutes of Health

[Welcome](#) - [News](#) - [Health](#) - [Grants](#) - [Science](#) - [Institutes](#) - [Employees](#)

Can't find it? Try using the [NIH Search Engine](#).

[What's New](#) -- The latest information on major additions to the central NIH home page.

[Welcome to NIH](#)
An overview and introduction to NIH including an employee directory and maps of the NIH "campus" in Bethesda, Maryland.

[News and Events](#)
The NIH Calendar of Events, press releases, special reports, and employment information.

[Health Information](#)
A selection of some NIH health resources such as CancerNet, AIDS information, Clinical Alerts, the Women's Health Initiative and the NIH Information Index (a subject-word guide to diseases and conditions under investigation at NIH).

[Grants and Contracts](#)
Information on NIH's extramural research and training programs including NIH's funding opportunities (with application kits), grant policy, and award data that includes access to the

Shortcut to <http://www.nih.gov/grants/>



The screenshot shows a web browser window with the address bar containing <http://www.nih.gov/grants/>. The browser's toolbar includes buttons for Back, Forward, Stop, Refresh, Home, Search, Favorites, Print, Font, and Mail. The page content features the NIH logo on the left and the heading "National Institutes of Health" at the top. The main title is "Grants & Contracts" in a large, stylized font. Below the title is a grayscale image of two people looking at a laptop. The page lists several links and descriptions:

- Grants Page** -- Leads to information about NIH grant and fellowship programs, applying for a grant or fellowship, policy changes, administrative responsibilities of awardees, and the numbers and characteristics of awards made by the NIH. [Managed by the Office of Extramural Research (OER).]
- Contracts Page** -- This page is being constructed. It will contain information about Requests for Proposals and resources for those preparing proposals. Information on selected R&D Requests for Proposal (RFPs) can be accessed through the [NIH Gopher directory](#). (Managed by the Office of Contracts Management (OCM)).
- NIH Guide for Grants and Contracts** -- The *Guide* is the official document for announcing the availability of NIH funds for biomedical and behavioral research and research training and disseminating policy and administrative information. It is currently available in 2 formats:
 - [NIH Official Gopher Version](#)
 - [NYU WWW Version](#)
- Pages of the Institutes, Centers, and Divisions** -- Each major component of the NIH is managing a site that consolidates information of interest to the grantees and staff of that

At the bottom of the browser window, a shortcut is provided: <http://www.nih.gov/grants/oer.htm>.

The screenshot shows a web browser window with the address bar containing <http://www.nih.gov/grants/phs398/phs398.html>. The browser's toolbar includes icons for Back, Forward, Stop, Refresh, Home, Search, Favorites, Print, Font, and Mail. The page content features a header with a logo of a stylized bird and the text "Application for a Public Health Service Grant PHS 398". Below the header, the main heading reads "Application for a Public Health Service Grant (PHS 398)", followed by the subtext "Includes Research Career Awards and Institutional National Research Service Awards". A horizontal line separates this from the text "U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES Public Health Service GRANT APPLICATION (PHS 398)". Below this, a note states "Instructions for PHS 398 Form Approved Through 9/30/97 Rev. 5/95 OMB No. 0925-0001". Another horizontal line leads to the "TABLE OF CONTENTS" section, which lists: "FOREWORD", "I. PREPARING YOUR APPLICATION", "A. Introduction" (with sub-points "1. Requests for Applications/Program Announcements" and "2. Authorization"), and "B. General Instructions". The browser's taskbar at the bottom shows the Start button and several application icons.



The screenshot shows a web browser window with the address bar containing http://www.nih.gov/grants/phs398/forms_toc.html. The browser's toolbar includes icons for Back, Forward, Stop, Refresh, Home, Search, Favorites, Print, Font, and Mail. The page content is as follows:

PHS 398 Documents

The following documents are available in Adobe Acrobat format

[HELP AND INSTRUCTIONS](#) are available for downloading and processing (printing and viewing) Acrobat files. [Acrobat Reader software](#) must be obtained in order to view and print Acrobat files.

- [Form \(AA\): Face Page](#)
[Instructions for form field character length restrictions](#) for page AA are available.
- [Form \(BB\): Description, Performance Sites, and Key Personnel](#)
- [Form \(CC\): Research Grant Table of Contents](#)
- [Form \(DD\): Detailed Budget for Initial Budget Period](#)
- [Form \(EE\): Budget for Entire Proposed Period of Support](#)
- [Form \(FF\): Biographical Sketch](#)
- [Example \(GG\): Other Support](#)
- [Form \(HH\): Resources](#)
[Contin. Form \(HH\): Resources \(continuation\)](#)
- [Form \(II\): Checklist](#)
- [Form \(JJ\): Personnel Report](#)
- [Form \(KK\): Personal Data](#)

All forms (AA through PP) in Adobe Acrobat format as a single compressed (ZIPed) archive. If you do not have a decompression utility, you may download (using "shift-left mouse click") the utility [PKUNZIP ver 2.04g](#) from this server.

RESEARCH CAREER AWARDS

- [Form \(LL\):](#)
Research Career Award Table of Contents
- [Form \(MM\):](#)



AA

Form Approved Through 6/30/97
OMB No. 0925-0001

Department of Health and Human Services Public Health Service		LEAVE BLANK—FOR PHS USE ONLY.	
Grant Application Follow instructions carefully. Do not exceed character length restrictions indicated on sample.		Type	Activity
		Review Group	Formerly
		Council/Board/Month, Year	Date Received
1. TITLE OF PROJECT			
2. RESPONSE TO SPECIFIC REQUEST FOR APPLICATIONS OR PROGRAM ANNOUNCEMENT <input type="checkbox"/> NO <input type="checkbox"/> YES (If "Yes," state number and title) Number: _____ Title: _____			
3. PRINCIPAL INVESTIGATOR/PROGRAM DIRECTOR			
3a. NAME (Last, first, middle)		3b. DEGREE(S)	3c. SOCIAL SECURITY NO.
3d. POSITION TITLE		3e. MAILING ADDRESS (Street, city, state, zip code)	
3f. DEPARTMENT, SERVICE, LABORATORY, OR EQUIVALENT			
3g. MAJOR SUBDIVISION			
3h. TELEPHONE AND FAX (Area code, number and extension) TEL: FAX:		E-MAIL ADDRESS:	
4. HUMAN SUBJECTS <input type="checkbox"/> No <input type="checkbox"/> Yes		4a. If "Yes," Exemption no. or IRB approval date <input type="checkbox"/> Full IRB or Expedited Review	4b. Assurance of compliance no.
		5. VERTEBRATE ANIMALS <input type="checkbox"/> No <input type="checkbox"/> Yes	5a. If "Yes," IACUC approval date 5b. Animal welfare assurance no.
6. DATES OF PROPOSED PERIOD OF SUPPORT (month, day, year—MM/DD/YY) From _____ Through _____		7. COSTS REQUESTED FOR INITIAL BUDGET PERIOD 7a. Direct Costs (\$)	7b. Total Costs (\$)
		8. COSTS REQUESTED FOR PROPOSED PERIOD OF SUPPORT 8a. Direct Costs (\$)	8b. Total Costs (\$)
9. APPLICANT ORGANIZATION Name Address		10. TYPE OF ORGANIZATION Public: <input type="checkbox"/> Federal <input type="checkbox"/> State <input type="checkbox"/> Local Private: <input type="checkbox"/> Private Nonprofit For-profit: <input type="checkbox"/> General <input type="checkbox"/> Small Business	
		11. ORGANIZATIONAL COMPONENT CODE	
		12. ENTITY IDENTIFICATION NUMBER Congressional District	
13. ADMINISTRATIVE OFFICIAL TO BE NOTIFIED IF AWARD IS MADE Name Title Address Telephone FAX E-Mail Address		14. OFFICIAL SIGNING FOR APPLICANT ORGANIZATION Name Title Address Phone FAX E-Mail Address	
15. PRINCIPAL INVESTIGATOR/PROGRAM DIRECTOR ASSURANCE: I certify that the statements herein are true, complete and accurate to the best of my knowledge. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. I agree to accept responsibility for the scientific conduct of the project and to provide the required progress reports if a grant is awarded as a result of this application.		SIGNATURE OF PI / PO NAMED IN 3a. (In ink. "Per" signature not acceptable.)	DATE
16. APPLICANT ORGANIZATION CERTIFICATION AND ACCEPTANCE: I certify that the statements herein are true, complete and accurate to the best of my knowledge, and accept the obligation to comply with Public Health Service terms and conditions if a grant is awarded as a result of this application. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties.		SIGNATURE OF OFFICIAL NAMED IN 14. (In ink. "Per" signature not acceptable.)	DATE

PHS 398 (Rev. 5/95)

Face Page

AA

BB

Principal Investigator/Program Director (Last, first, middle): _____

DESCRIPTION. State the application's broad, long-term objectives and specific aims, making reference to the health relatedness of the project. Describe concisely the research design and methods for achieving these goals. Avoid summaries of past accomplishments and the use of the first person. This description is meant to serve as a succinct and accurate description of the proposed work when separated from the application. If the application is funded, this description, as is, will become public information. Therefore, do not include proprietary/confidential information. **DO NOT EXCEED THE SPACE PROVIDED.**

PERFORMANCE SITE(S) (organization, city, state)

KEY PERSONNEL. See instructions on Page 11. Use continuation pages as needed to provide the required information in the format shown below.

Name	Organization	Role on Project

PHS 398 (Rev. 5/95)

Page 2

Number pages consecutively at the bottom throughout the application. Do not use suffixes such as 3a, 3b.

BB



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CC

Principal Investigator/Program Director (Last, first, middle)

Type the name of the principal investigator/program director at the top of each printed page and each continuation page. (For type specifications, see instructions on page 6.)

RESEARCH GRANT TABLE OF CONTENTS

Page Numbers

Face Page	1
Description, Performance Sites, and Personnel	2-
Table of Contents	
Detailed Budget for Initial Budget Period	
Budget for Entire Proposed Period of Support	
Budgets Pertaining to Consortium/Contractual Arrangements	
Biographical Sketch—Principal Investigator/Program Director (Not to exceed two pages)	
Other Biographical Sketches (Not to exceed two pages for each)	
Other Support	
Resources	

Research Plan

Introduction to Revised Application (Not to exceed 3 pages)	
Introduction to Supplemental Application (Not to exceed 1 page)	
a. Specific Aims	} (Items a-d: not to exceed 25 pages*)
b. Background and Significance	
c. Preliminary Studies/Progress Report	
d. Research Design and Methods	
e. Human Subjects	
f. Vertebrate Animals	
g. Literature Cited	
h. Consortium/Contractual Arrangements	
i. Consultants	
Checklist	
Personnel Report (Competing Continuation only)	

*Type density and type size of the entire application must conform to limits provided in instructions on page 6.

Appendix (Five collated sets. No page numbering necessary for Appendix.)

Number of publications and manuscripts accepted or submitted for publication (not to exceed 10) _____
Other items (if): _____

Check if Appendix is included

PHS 398 (Rev. 5/95)

(Form Page 3) Page _____

CC

Number pages consecutively at the bottom throughout the application. Do not use suffixes such as 3a, 3b.

DD

Principal Investigator/Program Director (Last, first, middle)

DETAILED BUDGET FOR INITIAL BUDGET PERIOD DIRECT COSTS ONLY

FROM _____ THROUGH _____

PERSONNEL (Applicant organization only)					DOLLAR AMOUNT REQUESTED (omit cents)		
NAME	ROLE ON PROJECT	TYPE APPT. (months)	% EFFORT ON PROJ.	INST. BASE SALARY	SALARY REQUESTED	FRINGE BENEFITS	TOTALS
	Principal Investigator						
SUBTOTALS							
CONSULTANT COSTS							
EQUIPMENT (Itemize)							
SUPPLIES (Itemize by category)							
TRAVEL							
PATIENT CARE COSTS							
					INPATIENT		
					OUTPATIENT		
ALTERATIONS AND RENOVATIONS (Itemize by category)							
OTHER EXPENSES (Itemize by category)							
SUBTOTAL DIRECT COSTS FOR INITIAL BUDGET PERIOD							\$ _____
CONSORTIUM/CONTRACTUAL COSTS							
DIRECT COSTS							
INDIRECT COSTS							
TOTAL DIRECT COSTS FOR INITIAL BUDGET PERIOD (Item 7a, Face Page)							\$ _____

PHS 398 (Rev. 5/95)

(Form Page 4) Page _____

DD

Number pages consecutively at the bottom throughout the application. Do not use suffixes such as 3a, 3b.



EE

Principal Investigator/Program Director (Last, first, middle)

**BUDGET FOR ENTIRE PROPOSED PERIOD OF SUPPORT
DIRECT COSTS ONLY**

BUDGET CATEGORY TOTALS	INITIAL BUDGET PERIOD (from Form Page 4)	ADDITIONAL YEARS OF SUPPORT REQUESTED			
		2nd	3rd	4th	5th
PERSONNEL: Salary and fringe benefits Applicant organization only					
CONSULTANT COSTS					
EQUIPMENT					
SUPPLIES					
TRAVEL					
PATIENT CARE COSTS	INPATIENT				
	OUTPATIENT				
ALTERATIONS AND RENOVATIONS					
OTHER EXPENSES					
SUBTOTAL DIRECT COSTS					
CONSORTIUM/ CONTRACTUAL COSTS	DIRECT				
	INDIRECT				
TOTAL DIRECT COSTS					

TOTAL DIRECT COSTS FOR ENTIRE PROPOSED PERIOD OF SUPPORT (Item 8a, Face Page) \$

JUSTIFICATION. Follow the budget justification instructions exactly. Use continuation pages as needed.

PHS 398 (Rev. 5/95) (Form Page 5) Page
Number pages consecutively at the bottom throughout the application. Do not use suffixes such as 3a, 3b.

EE

FF

Principal Investigator/Program Director (Last, first, middle)

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed on Form Page 2.
Photocopy this page or follow this format for each person.

NAME		POSITION TITLE		
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)				
INSTITUTION AND LOCATION		DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY

RESEARCH AND PROFESSIONAL EXPERIENCE: Concluding with present position, list, in chronological order, previous employment, experience, and honors. Include present membership on any Federal Government public advisory committee. List, in chronological order, the titles, all authors, and complete references to all publications during the past three years and to representative earlier publications pertinent to this application. If the list of publications in the last three years exceeds two pages, select the most pertinent publications. **DO NOT EXCEED TWO PAGES.**

PHS 398 (Rev. 5/95) (Form Page 6) Page
Number pages consecutively at the bottom throughout the application. Do not use suffixes such as 3a, 3b.

FF



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Software to use the documents may be obtained on line.

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Address http://www.nih.gov/grants/phs398/forms_toc.html Links

HS 398 Document

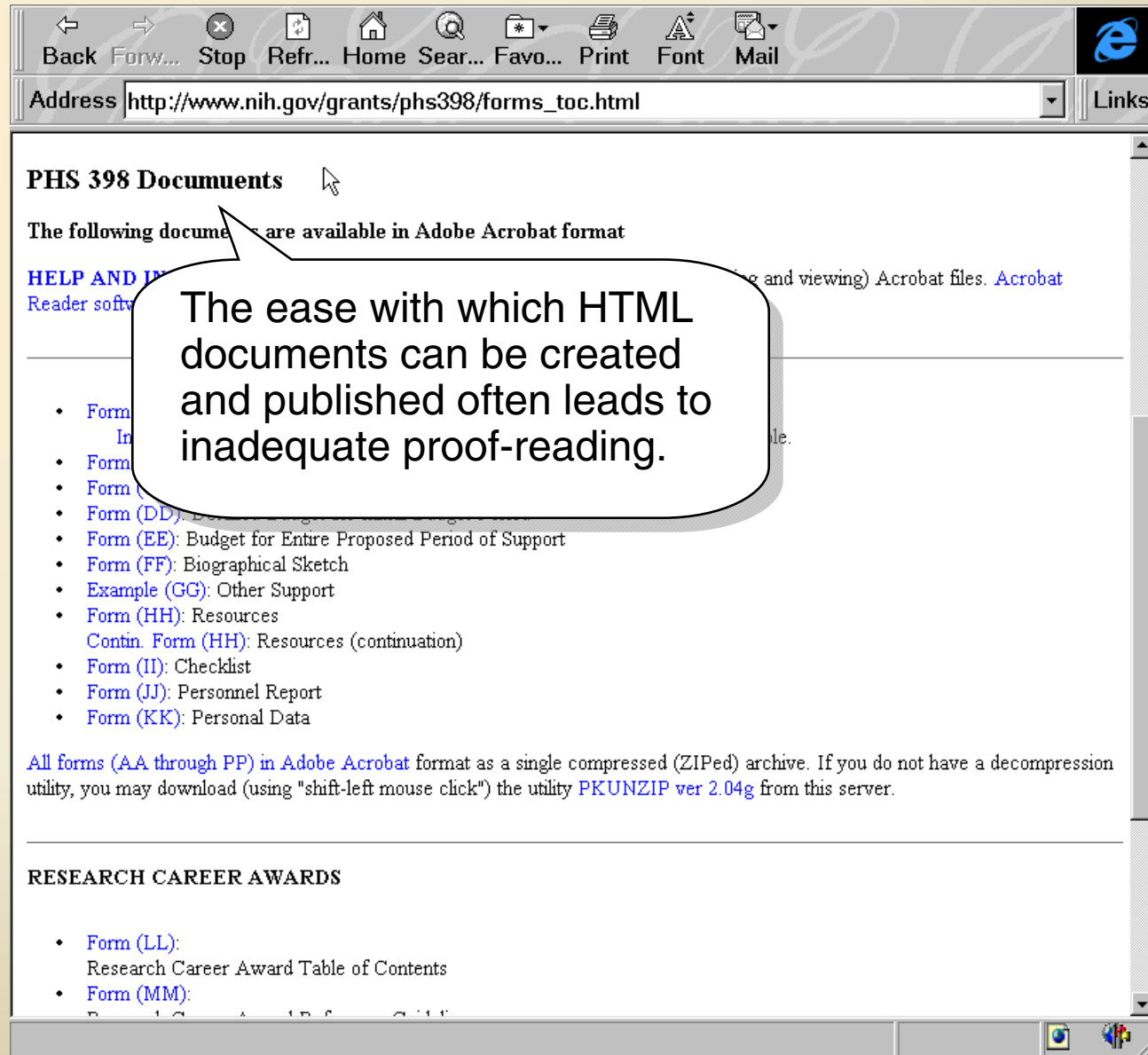
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Software for uncompressing the full set of documents is also readily available.




The ease with which HTML documents can be created and published often leads to inadequate proof-reading.



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ENGINEERING RESEARCH
AND EDUCATION

PROGRAM AREAS

- ▶ Biology
- ▶ Computer, Information Sciences
- ▶ Crosscutting Programs
- ▶ Education
- ▶ Engineering
- ▶ Geosciences
- ▶ International
- ▶ Math, Physical Sciences
- ▶ Polar Research
- ▶ Social, Behavioral Sciences

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Grants & Awards

Documents Online

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The National Science Foundation
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 Telephone: 703-306-1234 ~ TDD: 703-306-0090

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 Help with FastLane, fastlane@nsf.gov



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GRANTS & AWARDS

Announcements

- * Recent Announcements
- * Search or Browse
- * Guide to Programs
- * NSF Bulletin

Proposals

- * [Grant Proposal Guide \(GPG\)](#)
- * [Grant Proposal Forms \(GPF\)](#)

Grant and Award Opportunities

Grants and award opportunities at the NSF are announced via Program Announcements and Solicitations, which can be searched via the [Online Document System](#). They are also described in the NSF's [Guide to Programs](#). Program Areas also publish Program Announcements within their web pages. Application deadlines and Announcement updates are provided in the Announcements themselves and in the [NSF Bulletin](#).

Program Deadlines

Application deadlines and announcement updates are provided in the Program Announcements themselves and in the monthly *NSF Bulletin*.

Preparing Proposals and Applications

Program Announcements carry information concerning appropriate application procedures and guidelines. The Grant Proposal Guide (GPG) provides important general information. Many forms necessary for applications are available in electronic formats; The GPG and individual forms may be ordered from the NSF Forms and Publications Unit

(Telephone: (703) 306-1130 ~ email: pubs@nsf.gov)

Shortcut to <http://www.nsf.gov/bfa/cpo/forms/start.htm>



The screenshot shows a web browser window with the address bar containing <http://www.nsf.gov/bfa/cpo/forms/start.htm>. The browser's menu bar includes Back, Forward, Stop, Refresh, Home, Search, Favorites, Print, Font, and Mail. The page content is titled "Grant Proposal Forms" and includes the following text:

Electronic forms are available in a variety of formats. Choose the appropriate format based on your computer resources.

Please read the [HINTS!](#) file if you have any problems with the forms.

Forms Kits (NSF 95-28)

These files contain all the forms for proposal submission, plus instructions.

- [Word for Windows 6.0 Forms Kit \(461KB\)](#)
- [Word for Mac 6.0 Forms Kit \(309KB\)](#) **Save as a .doc file**

Individual Forms (Microsoft Word 6.0 and Word 7.0 Formats) (20-80KB)

- [Form 1030 \(Word 6.0\) Summary Proposal Budget](#)
- [Form 1207 \(Word 6.0\) Cover Sheet](#)
- [Form 1225 \(Word 6.0\) Information about P.I.'s](#)
- [Form 1239 \(Word 6.0\) Current and Pending Support](#)
- [Form 1263 \(Word 7.0\) NSF Grant Transfer Request](#)
- [Form 1328 \(Word 6.0\) Grant Progress Report](#)
- [Form 1358 \(Word 6.0\) Project Summary](#)
- [Form 1359 \(Word 6.0\) Table of Contents](#)
- [Form 1360 \(Word 6.0\) Project Description](#)
- [Form 1361 \(Word 6.0\) References Cited](#)
- [Form 1362 \(Word 6.0\) Biographical Sketch](#)
- [Form 1363 \(Word 6.0\) Facilities](#)
- [Form 98a \(Word 6.0\) Project Report](#)
- [Form Cert \(Word 6.0\) Certification Page](#)

At the bottom of the browser window, there is a shortcut icon and the text: Shortcut to <http://www.nsf.gov/bfa/cpo/forms/nsf9528.doc>

Arial 10 TimesFnt Fmt Font Abc B I U [Color] [Font] [Align] [List] [Table] [Page] [Print] [Exit]

Normal Box RevNote Stan H1 H2 H3 H4 Ft-Note Fig F-Cap B1 B2 B3 B4 BQ1 BQ2 Q1 Q2

InsSect FmtSect Fmt Page# PageSetup InsFootnote InsSymbol InsDate Ins-EmSp Ins-EnSp FmtCase FmtBorders


EXIT | FileOpen Save SaveAs Close Print InsFile DocStats Fmt Para Hang-Indent Fmt Hdr

1 2 3 4 5 6 7 8

NSF-95-28
Replaces NSF-94-31

Proposal

Forms Kit



NATIONAL SCIENCE FOUNDATION
 → Arlington, Virginia 22230
 → August 1995

End of Protected Section...

1. INTRODUCTION

1. → This Proposal Form Kit is designed to serve as a supplement to the Cover Sheet (CDS), the NSP brochure that provides guidance to the preparator of formal proposals to NSP. An uncompleted proposal prepared by a Principal Investigator and submitted by an organizational unit or administrative unit in response to a formal invitation solicitation from NSP. Complete study agencies use NSP program brochures to help determine if participation in formal proposals is appropriate.

1. → This kit contains only those necessary for the preparator of formal proposals. While these forms are generally applicable, some NSP programs will require specific program requirements and information which may have additional forms required for the submission of proposals to NSP or which may modify the general guidance of the CDS.

1. → Please give careful attention to the requirements established in the CDS and the instructions contained on each Form. Proposals that fail to meet such requirements may be returned without further consideration by NSP. Specific information on the page breaks, lines and other requirements is indicated on the forms and/or small sheets throughout the CDS. All properly prepared proposals will receive the administrative processing and return review that are standard for formal proposals to NSP.

2. FORMS INCLUDED IN THE NSF PROPOSAL KIT

1. → KIT

1. → The NSP Proposal Form Kit consists of the following forms:

1. Use of Form Kit
2. Use of Proposal Form Kit
3. Information about Principal Investigator/Project
 - Director (NSP Form 1320)
 - Cover Sheet for Proposal to the National Science Foundation (NSP Form 1307)
 - Project Summary (NSP Form 1154)
 - Table of Contents (NSP Form 1159)
 - Project Description (NSP Form 1160)
 - Reference List (NSP Form 1161)
 - Biographical Sketch (NSP Form 1163)
 - Supplementary Proposal Budget (NSP Form 1010)
 - Current and Pending Support (NSP Form 1319)
 - Policies, Support and Other Resources (NSP Form 1167)

The copy of each Form page is provided in the kit.


..... Column Break.....

..... Page Break.....



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- ▶ Polar Research
- ▶ Social, Behavioral Sciences

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Shortcut to <https://www.fastlane.nsf.gov/>

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Address <https://www.fastlane.nsf.gov/> Links



FastLane
Hours of Availability:
4:00am - 1:00am
Eastern Time



Finalist
Government
Winner!

FastLane is for official National Science Foundation use only. FastLane is an experimental program utilizing advanced technology to re-design and streamline the way NSF does business. Click on the links for more info [About FastLane](#) and [What's New in FastLane](#).

How to Use FastLane

Information About FastLane

FastLane Registration Information



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[Graduate Research Fellowships](#)



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Applications available to [Registered FastLane Institutions](#):

<p style="text-align: center;">PI & Co-PI Functions</p> <ul style="list-style-type: none"> • Proposal Status • Proposal Preparation • Final Project Report 	<p style="text-align: center;">Sponsored Program Office Functions</p> <ul style="list-style-type: none"> • Institutional Mgmt of FastLane <p style="text-align: center;">Business Office Functions</p> <ul style="list-style-type: none"> • Cash Request
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Local Information Publishing

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Grant & Contract Administration

ALPHABETICAL INDEX

SEARCH GCA WEB PAGES

HOME
NIH
FELLOWSHIPS
PRE-AWARD
POST-AWARD

Home Page

Welcome to the Grant and Contract Administration Home Page. The information below can be found by using the purple toolbar to navigate:

NIH
On this page is NIH information, such as hotlinks to the NIH World Wide Web page, the NIH Guide to Grants & Contracts, selected funding program guidelines, PHS forms, deadlines, policy statements and NIH e-mail/phone directories.

Fellowships
Just about everything a fellow, P.I. or administrator needs to know about the fellowship process, including funding sources, internal policies and procedures, requirements for institutional review, information about fringe benefits, indirect costs and more.

Pre-Award
Before beginning the search for funding, start here to find agency information, on-line applications, institutional review requirements, center forms, policies and procedures, and how to route an application for funding.

Post-Award
After the fellowship/grant/or contract is awarded, check here for information about how to track funds, how to account for time, reimbursement for travel, post-award institutional review details, and relationships with business partners/consultants/subcontractors.


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Grant & Contract Administration

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Post-Award Information

Post Award Center Policies / Procedures

- [Accounts Payable Staff and Vendor Assignments](#) * [BudgeTrak](#) * [Commercial Research Agreements](#) * [Commitment of Funds](#)
- * [Consultants](#) * [Equipment](#) * [Expenditure Reports](#) * [Expiration of Grant](#) * [Guidelines for Cost Transfers](#) * [Institutional Review Board](#) * [Patient Care](#) * [Prior Approval Requirements, IPAS, and Changes to the Project](#) * [Program Income](#) * [Setting Up New Account / Category](#) * [Staff Assignment Mechanisms](#) * [Subcontracts](#) * [Time and Effort Due Dates](#) * [Time and Effort Reporting](#)
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Address <http://www.fhcrc.org/~grants/docs/equiptm.htm> Links

EQUIPMENT

Equipment is defined as an item which

1. has a useful life of two years or longer; and
2. costs more than \$1,000 excluding freight and tax. The cost of the equipment is based on all of the components combined to make the equipment perform the job intended when it was purchased. For example, if you buy a computer, the cost of the computer includes the monitor, keyboard, CPU, cables, internal cards/modems, operating software etc., regardless of their individual cost. You should not break apart a single piece of equipment into its components when calculating the cost.

Items which do not meet these criteria are considered expendable equipment and are charged to your account as a supply item (i.e. category 40500).

Most agencies restrict the purchase of equipment. Please refer to the terms of your award and the policies of your awarding agency when planning to purchase equipment. For NIH and NSF grants, equipment purchases may need Center or agency approval. The following summarizes the requirements for equipment purchased with NIH/NSF funding:

Description of item	Type of Approval
a. if the item costs < \$5,000 and will not cause your equipment budget to overspend by more than 5% of your total budget or \$5,000 (whichever is less)	NONE
b. if the item is \$5,000-\$24,999 or more and was not included in your grant application budget	IPAS* APPROVAL
c. if the item will cause your equipment budget to be overspent by 5% TDC or the item cost \$5,000 (whichever is less)	IPAS* APPROVAL
d. cost will exceed \$24,999	AGENCY

Done



FULL ERA: CHALLENGES & PROBLEMS

Full Electronic Research Administration

Requirements and Expectations

- *Fully electronic interactions with agencies*
- *Integrated administrative databases*
- *Automated grant preparation*

Full Electronic Research Administration

Requirements and Expectations

- *Fully electronic interactions with agencies*

... are very hard to achieve. Requires ability to integrate and interoperate with **all** of the systems of **all** of the relevant agencies, and requires the ability to track and match all of their changes.

Full Electronic Research Administration

Re True database integration is very difficult to achieve. Necessary trade-offs between flexibility and tractability can lead either to integrated systems no one wants to use, or popular systems that cannot be integrated.

- *Integrated administrative databases*
- *Automated grant preparation*

Full Electronic Research Administration

Requirements and Expectations

- *Fully electronic interactions*

Requires user participation and thus must be easier (or more valuable in some other way) than traditional methods. The absence of electronic white-out offers real challenges...

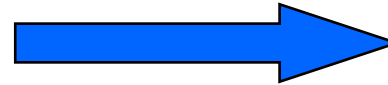
- *Automated grant preparation*

Full Electronic Research Administration

Requirements and Expectations

- *Fully electronic interactions*

Example of very useful system likely to attract user participation: object-oriented budget preparation software, closely linked to budget justification module...

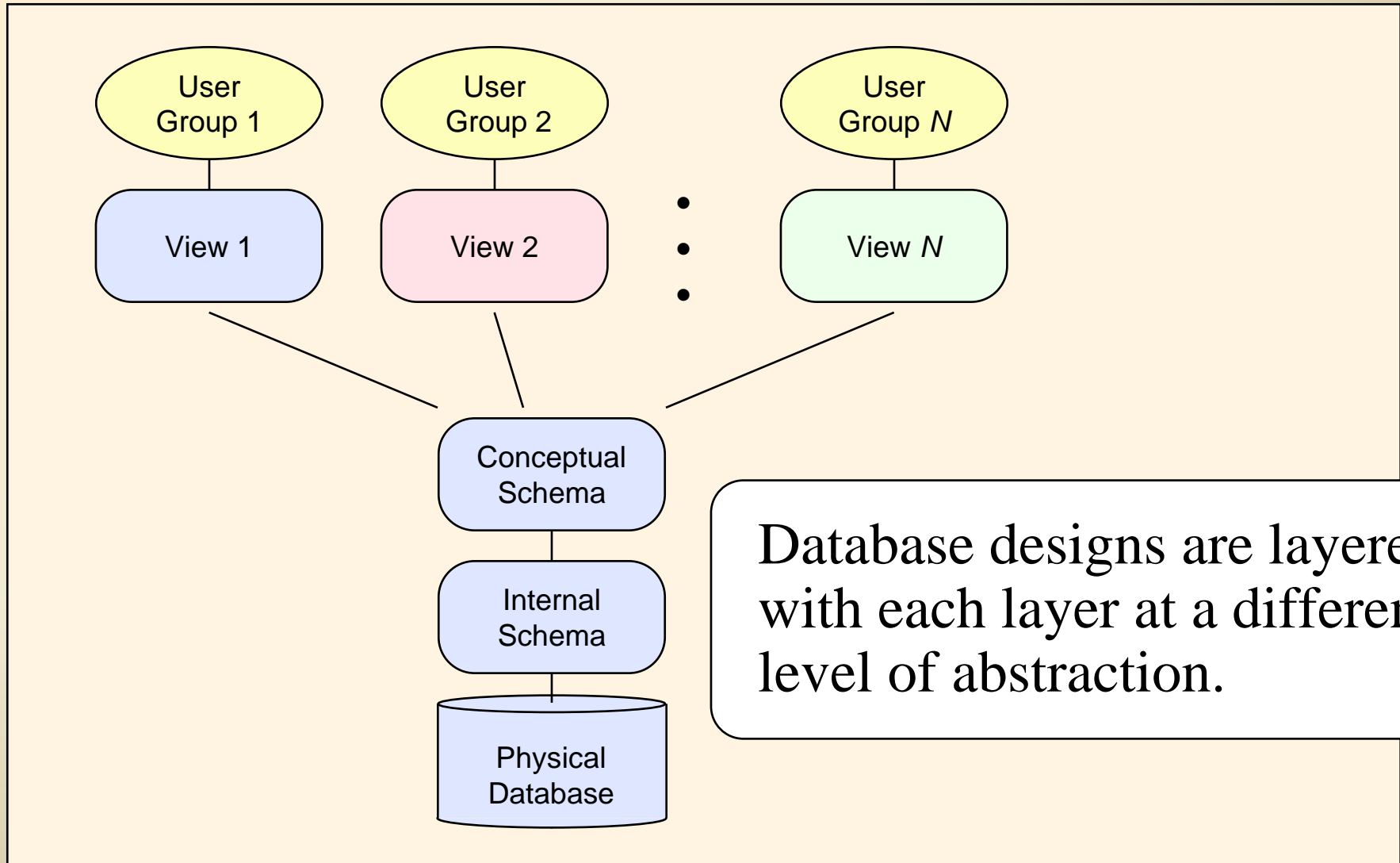


- *Automated grant preparation*

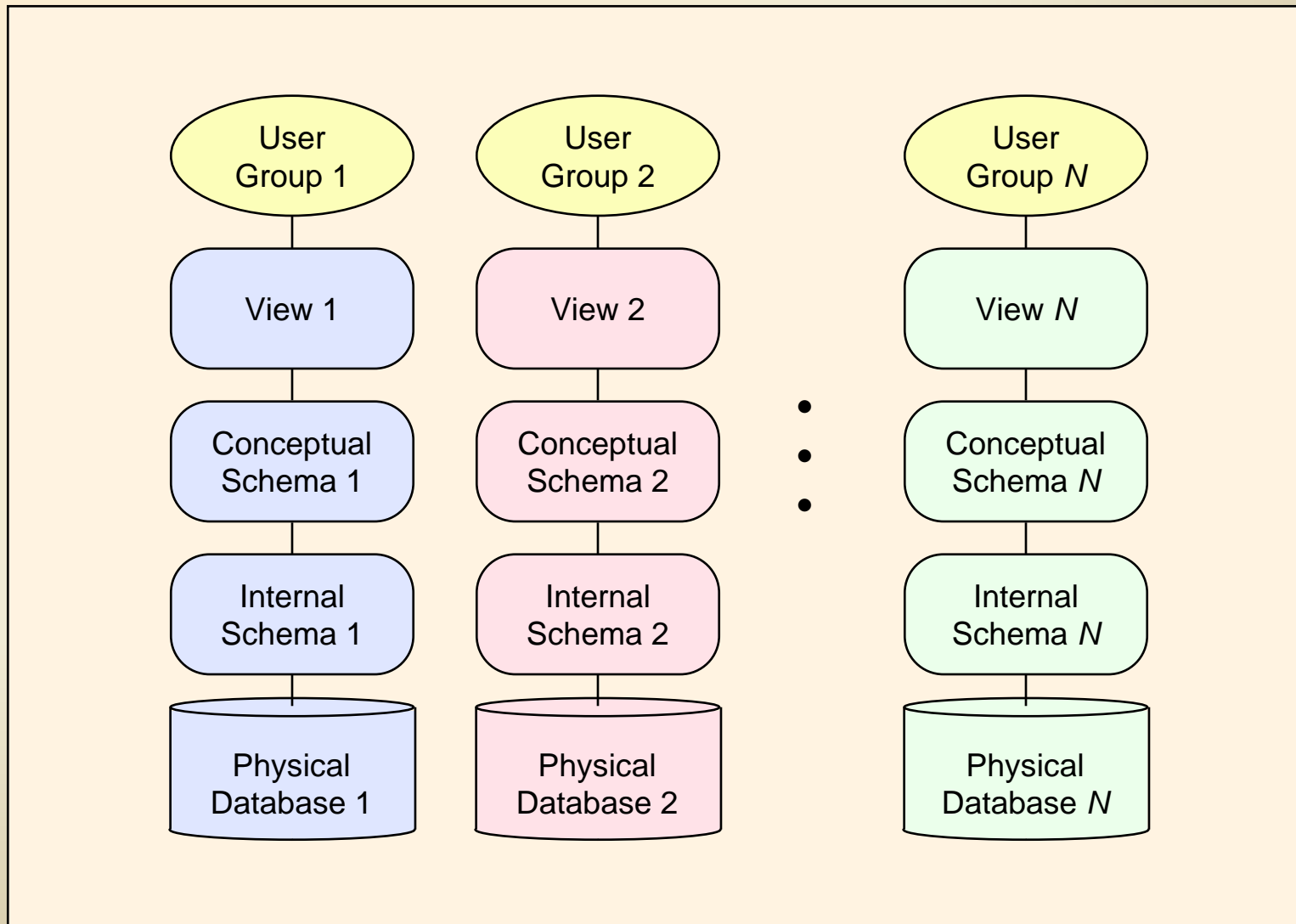
UNDERLYING TECHNOLOGIES

Database Integration

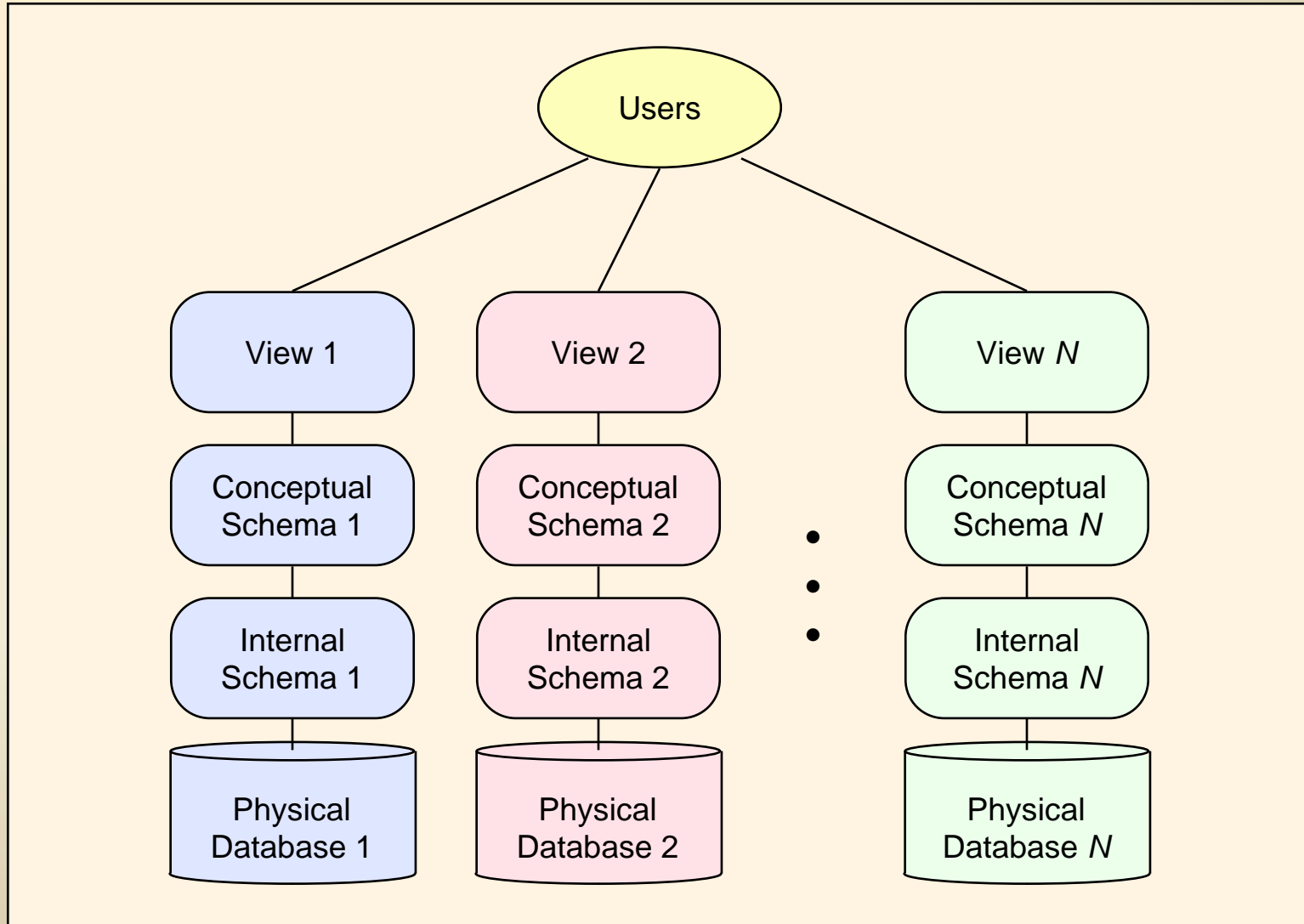
Multiple Views



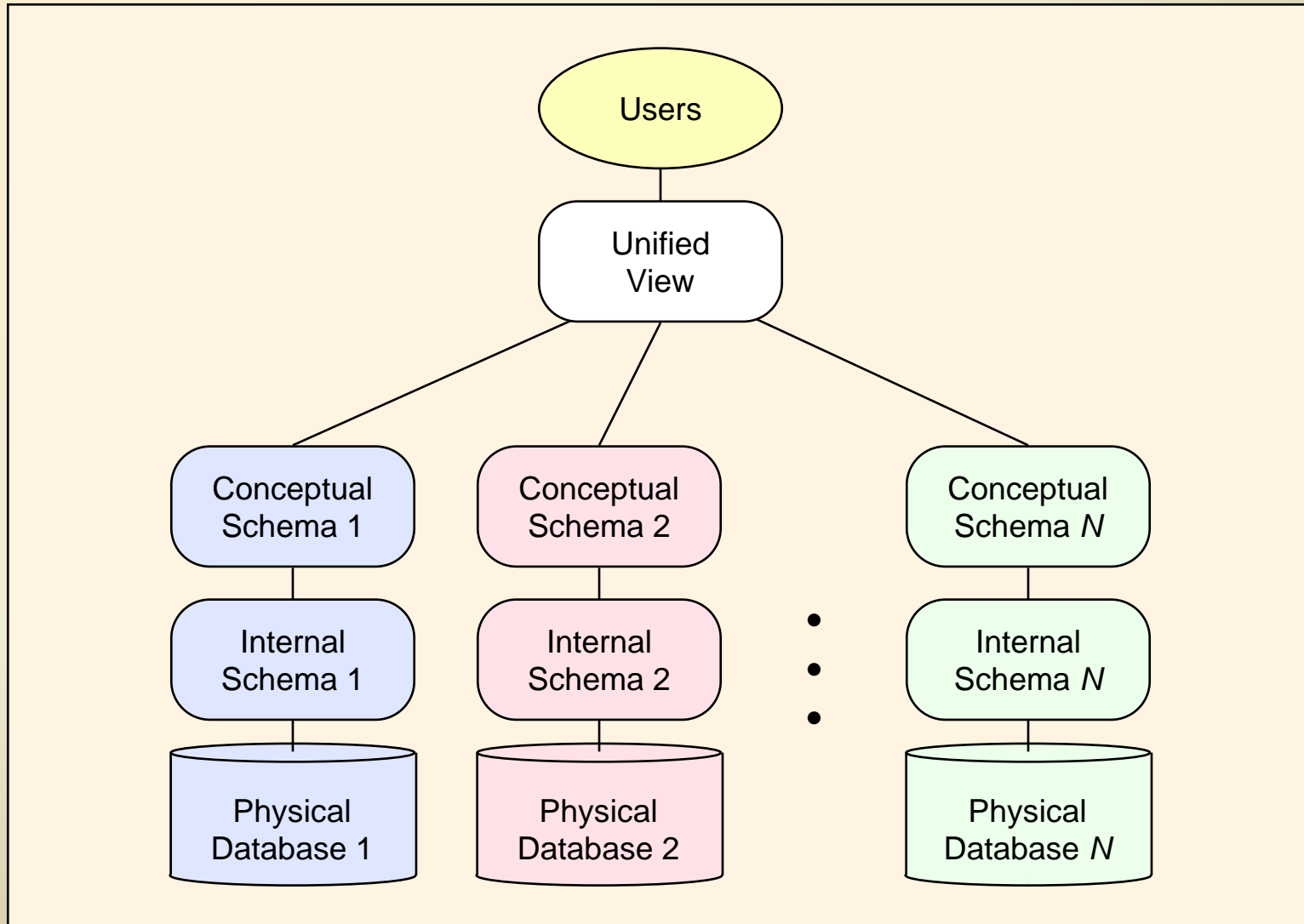
Multiple Databases



Common Situation



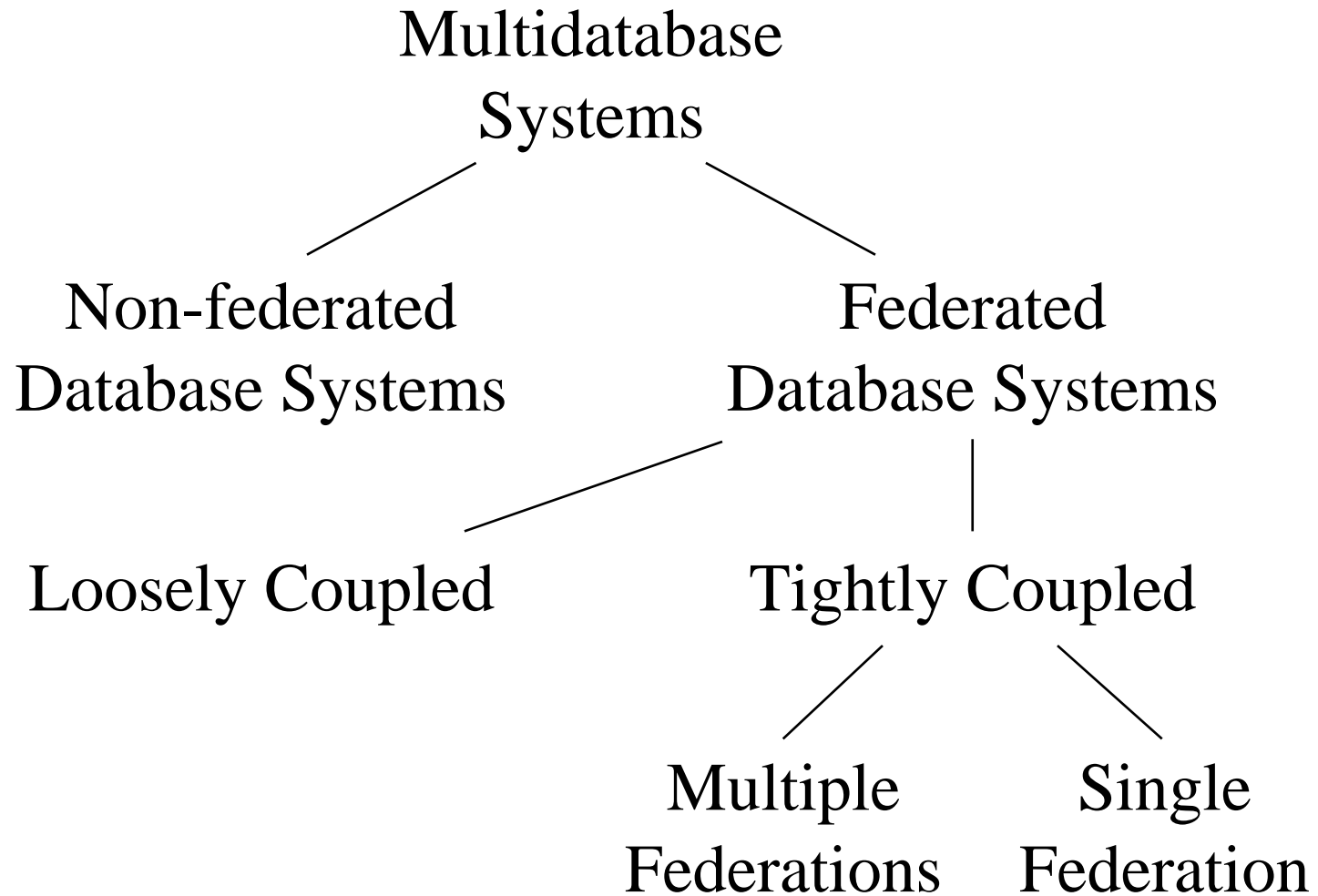
Desired Situation



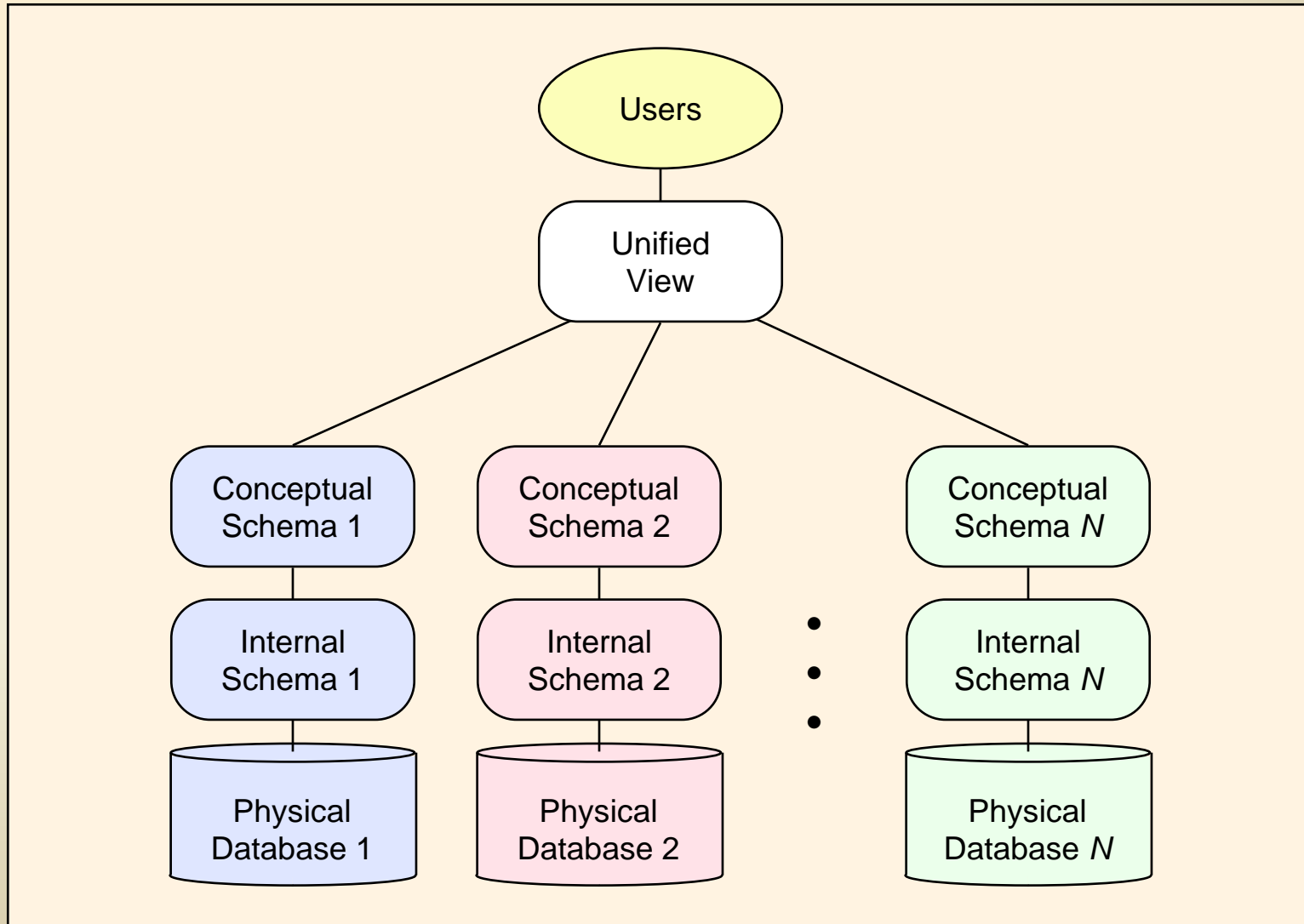
Taxonomy of Multidatabase Systems

A *multidatabase system* (MDBS) supports simultaneous operations on multiple (perhaps different) component databases. A *federated database system* (FDBS) has autonomous components, whereas *non-federated database systems* are unitary. A federated system with no strong central federation management is considered *loosely coupled*. One with strong central management and with federation database administrators controlling access to the components is *tightly coupled*. A *single federation* allows only one centrally managed federated schema; a *multiple federation* allows multiple centrally managed schemas.

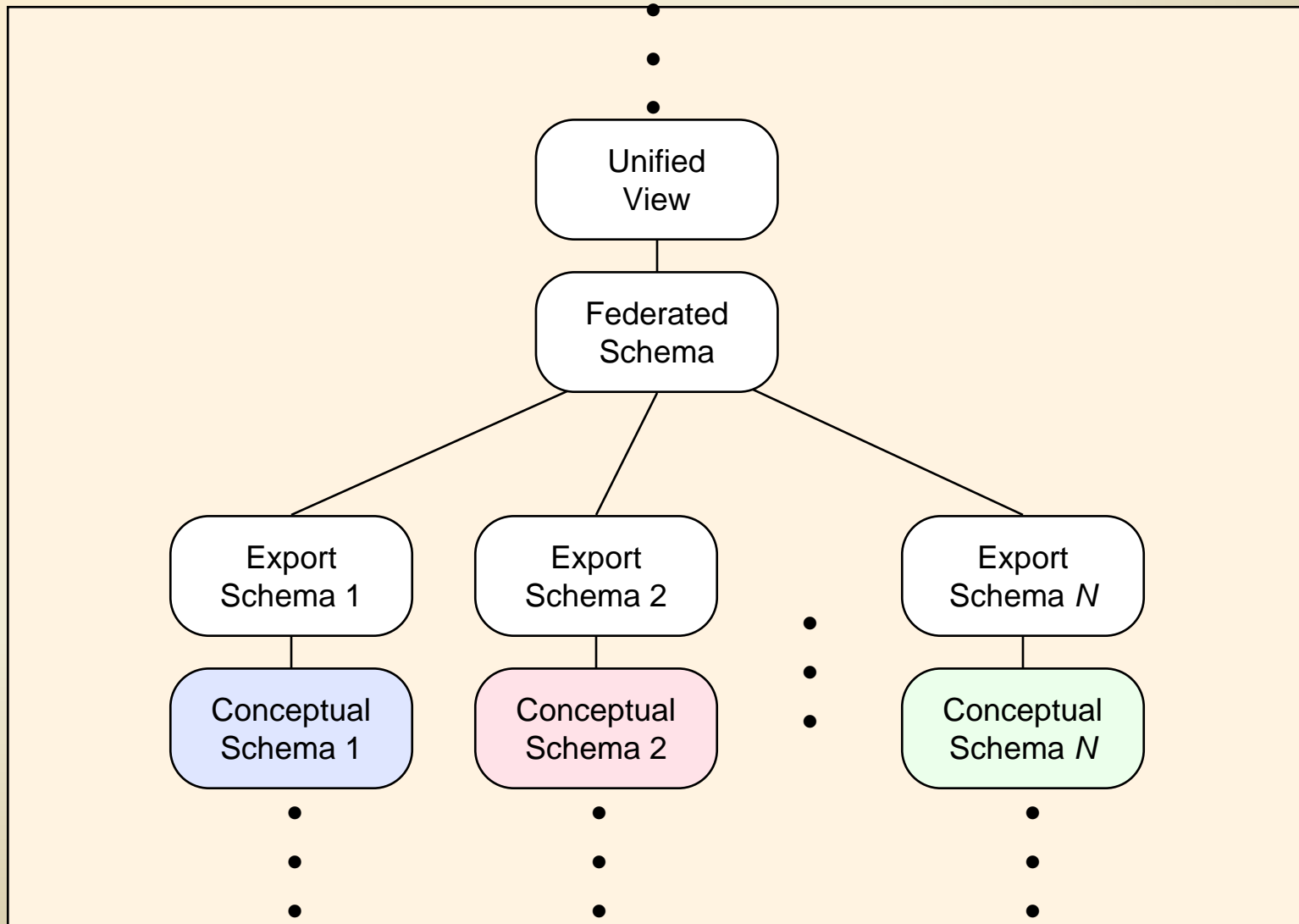
Taxonomy of Multidatabase Systems



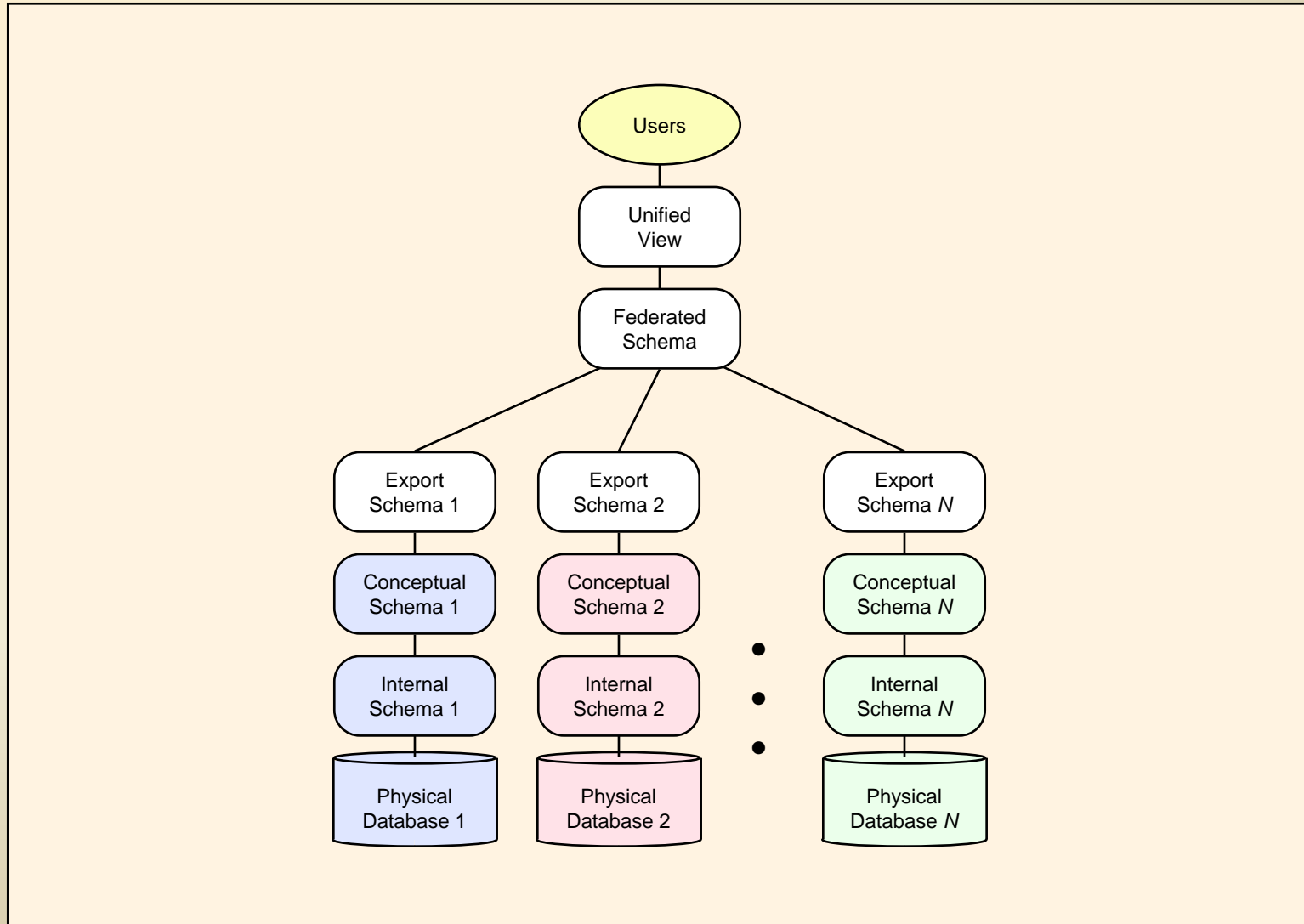
Desired Situation



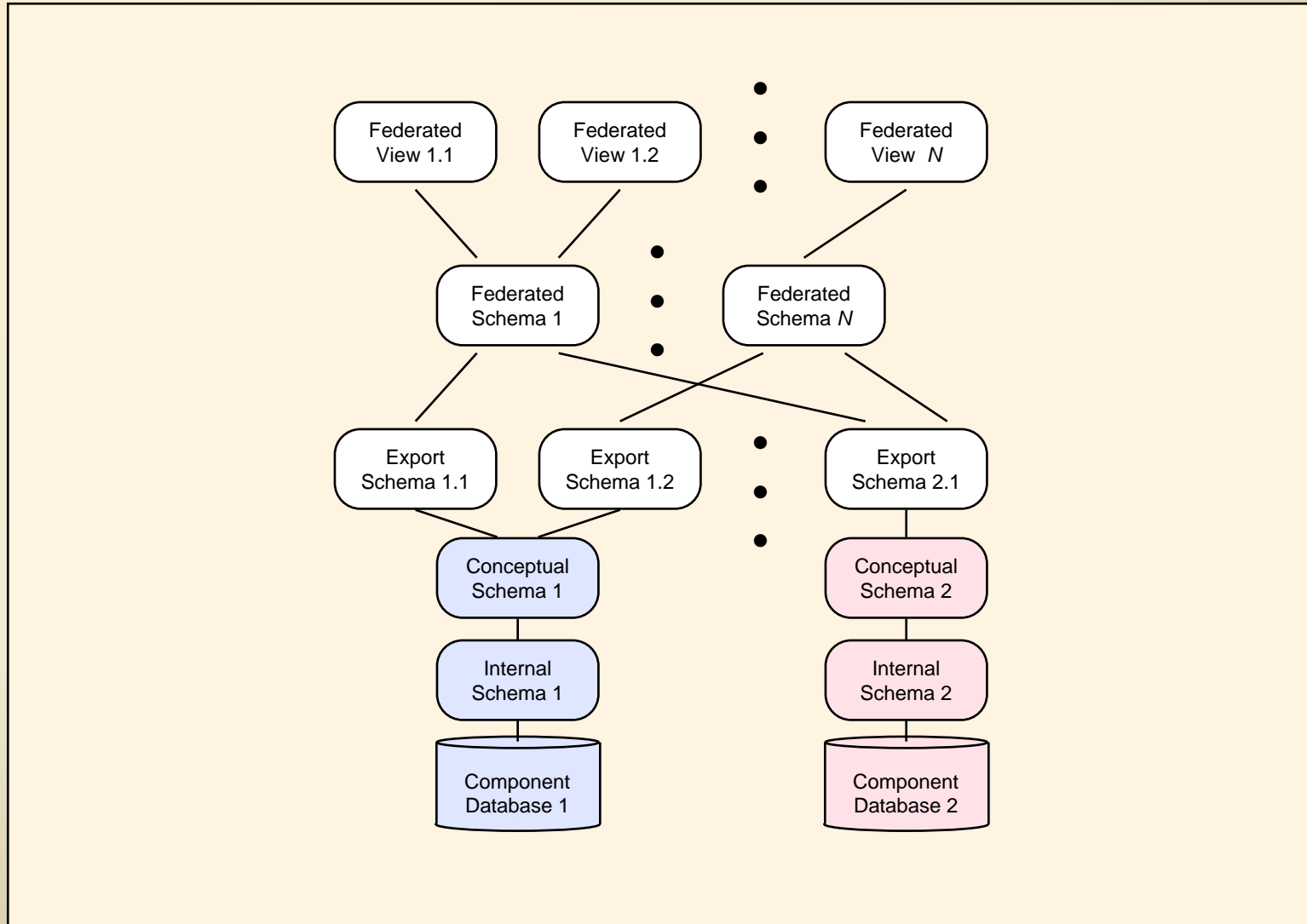
More Layers



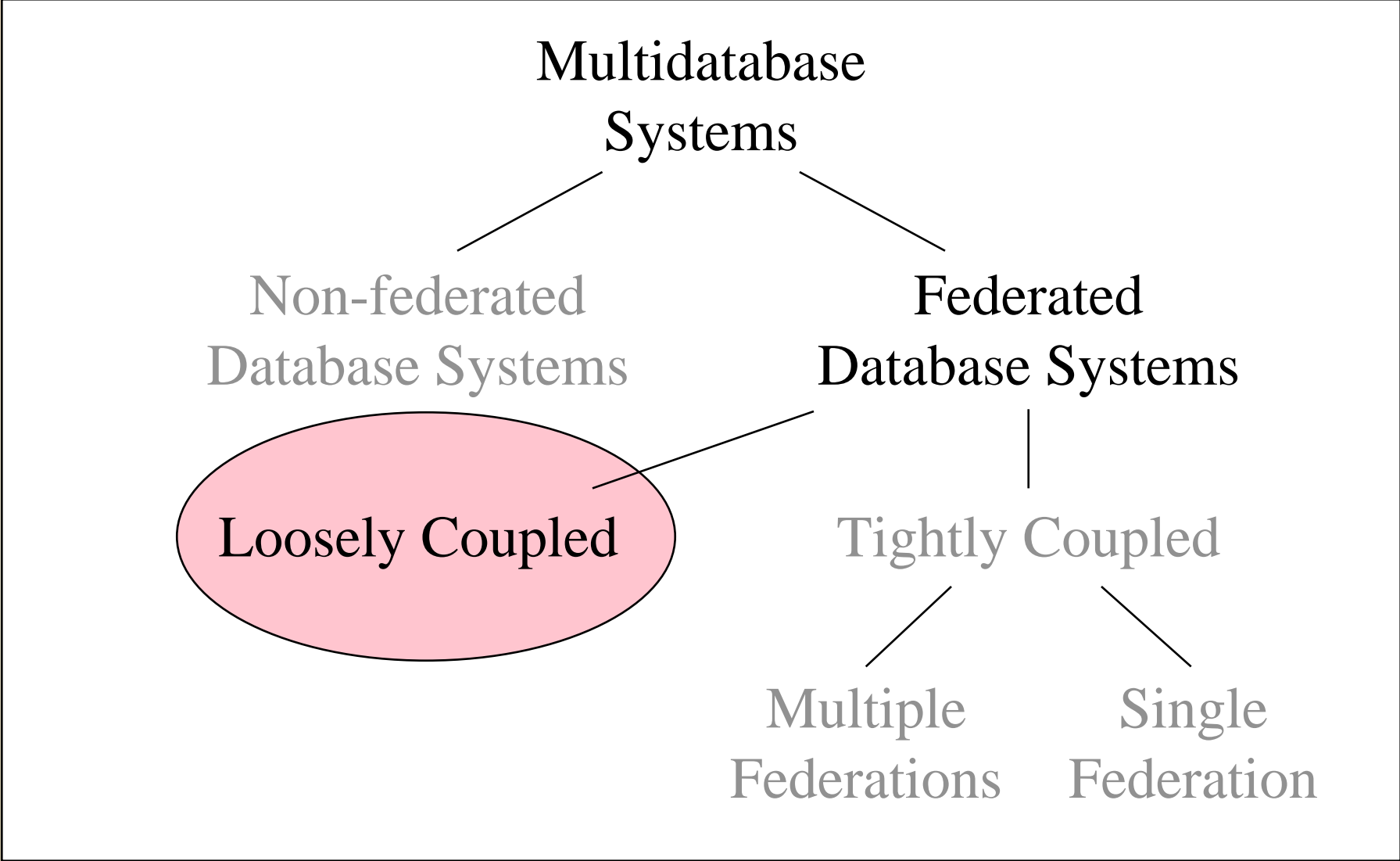
Federated Schema



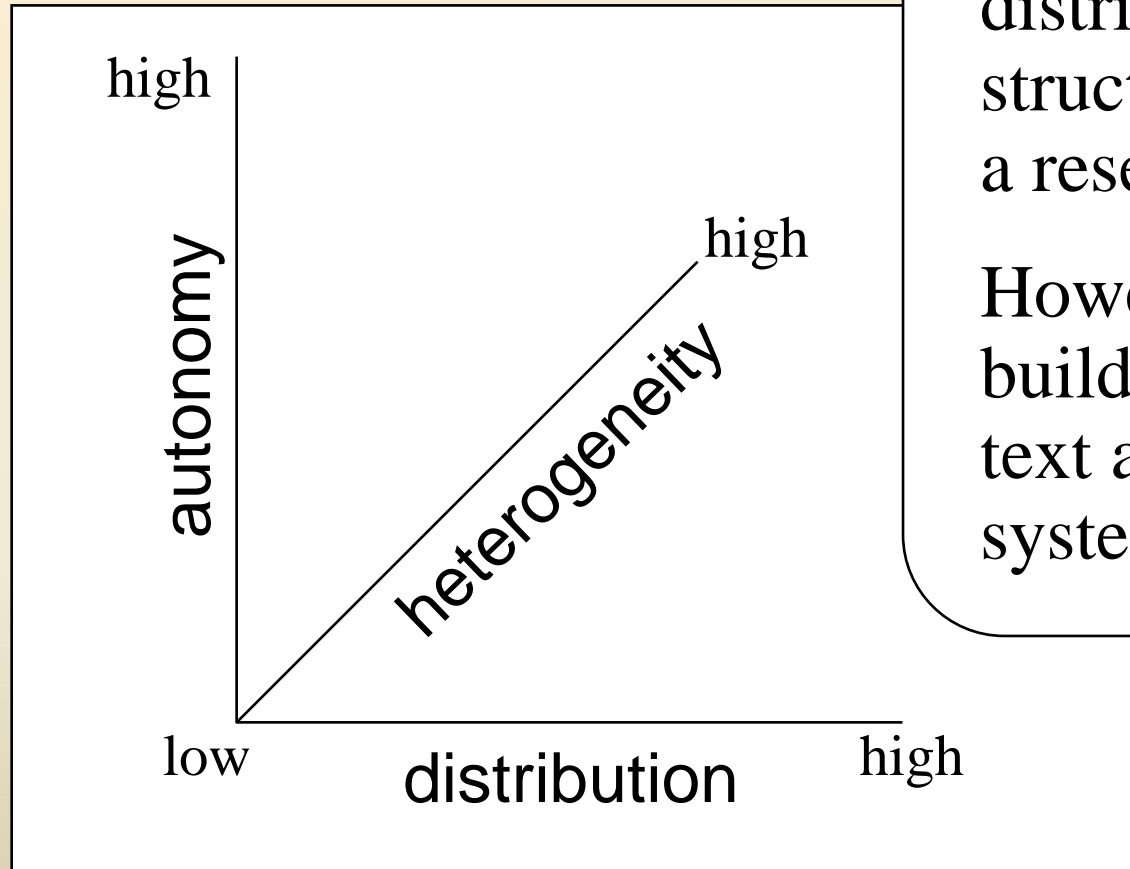
Multiple Federations



Taxonomy of Multidatabase Systems



Multidatabase Systems: Difficulty Dimensions



Building tightly coupled distributed, heterogeneous, structured databases is still a research problem.

However, methods for building loosely coupled text and file retrieval systems are proliferating...

Generic Client-Server Systems

Early information systems operated as complete packages on single computers.

Client-server systems moved the information resource to the server, leaving only dedicated client software on the user's computer.

Generic client-server systems are data-driven systems that allow access to multiple servers through a single client.

The Internet & the WWW

What Are They

How They Work

Limitations and Future Changes

Who's in Charge ...

main3.htm at www.esp.org - Microsoft Internet Explorer



File Edit View Go Favorites Help

ESP
ELECTRONIC
SCHOLARLY
PUBLISHING


NEWS
YOU
US
WRITE
about
help
search
CREDITS

Copyright, 1996
Electronic Scholarly
Publishing

Classical Genetics: Foundations *Early Mendelism*

(395,699 bytes; 41 pages, no figures)  

[Mendel, Gregor. 1865. Experiments in plant hybridization. *Verhandlungen des naturforschenden Vereines in Brünn, Bd. IV für das Jahr 1865, Abhandlungen*, 3-47.](#)



Gregor Mendel, 1862

In February and March of 1865, the Brünn Natural History Society in Brünn, Czechoslovakia, heard Gregor Mendel present the results of his investigations into the mechanisms governing inheritance in pea plants. The next year, the work was published as Mendel, Gregor. 1866. "Versuche über Pflanzen Hybriden." *Verhandlungen des naturforschenden Vereines in Brünn*, 4:3-47.

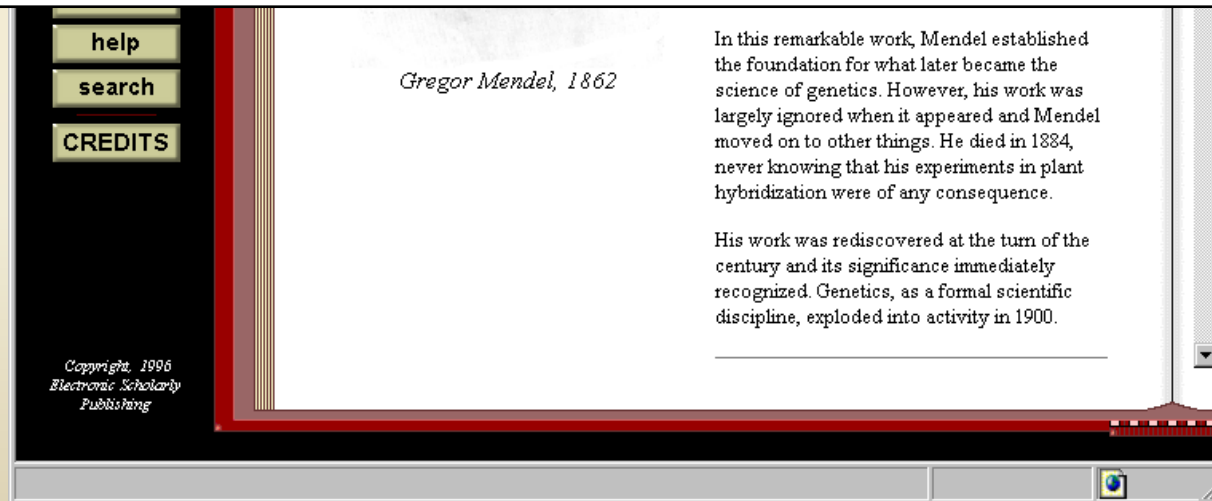
In this remarkable work, Mendel established the foundation for what later became the science of genetics. However, his work was largely ignored when it appeared and Mendel moved on to other things. He died in 1884, never knowing that his experiments in plant hybridization were of any consequence.

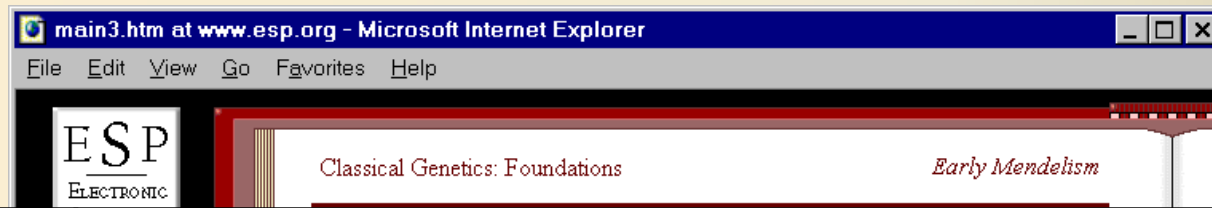
His work was rediscovered at the turn of the century and its significance immediately recognized. Genetics, as a formal scientific discipline, exploded into activity in 1900.



The Internet and the World-Wide Web is the most wonderful, amazing, greatest communication medium since Gutenberg and sliced bread. It is transforming the world more rapidly than any other technology in the history of history, blah blah ...

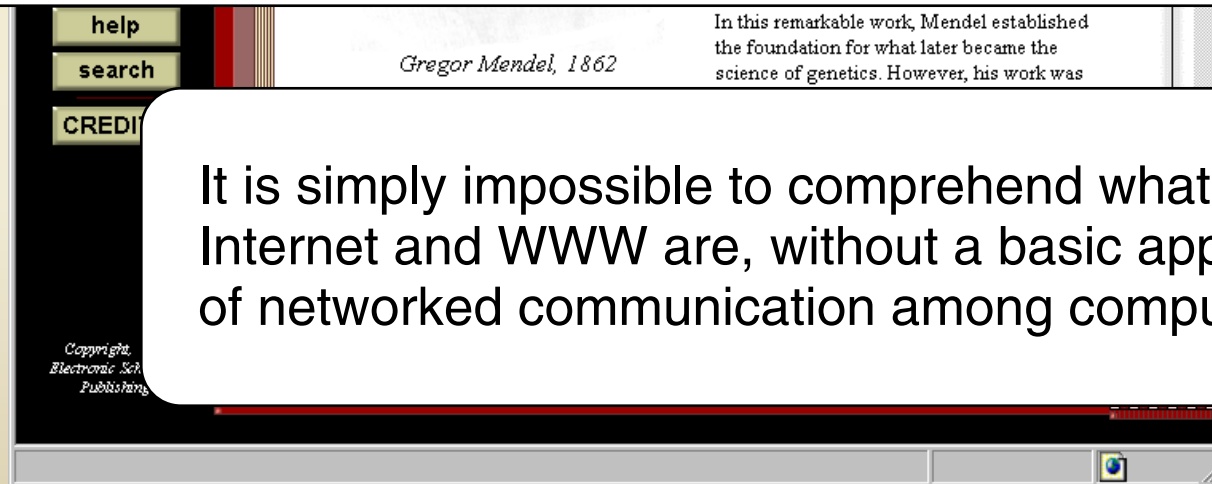
BUT FIRST: *Some Homework*





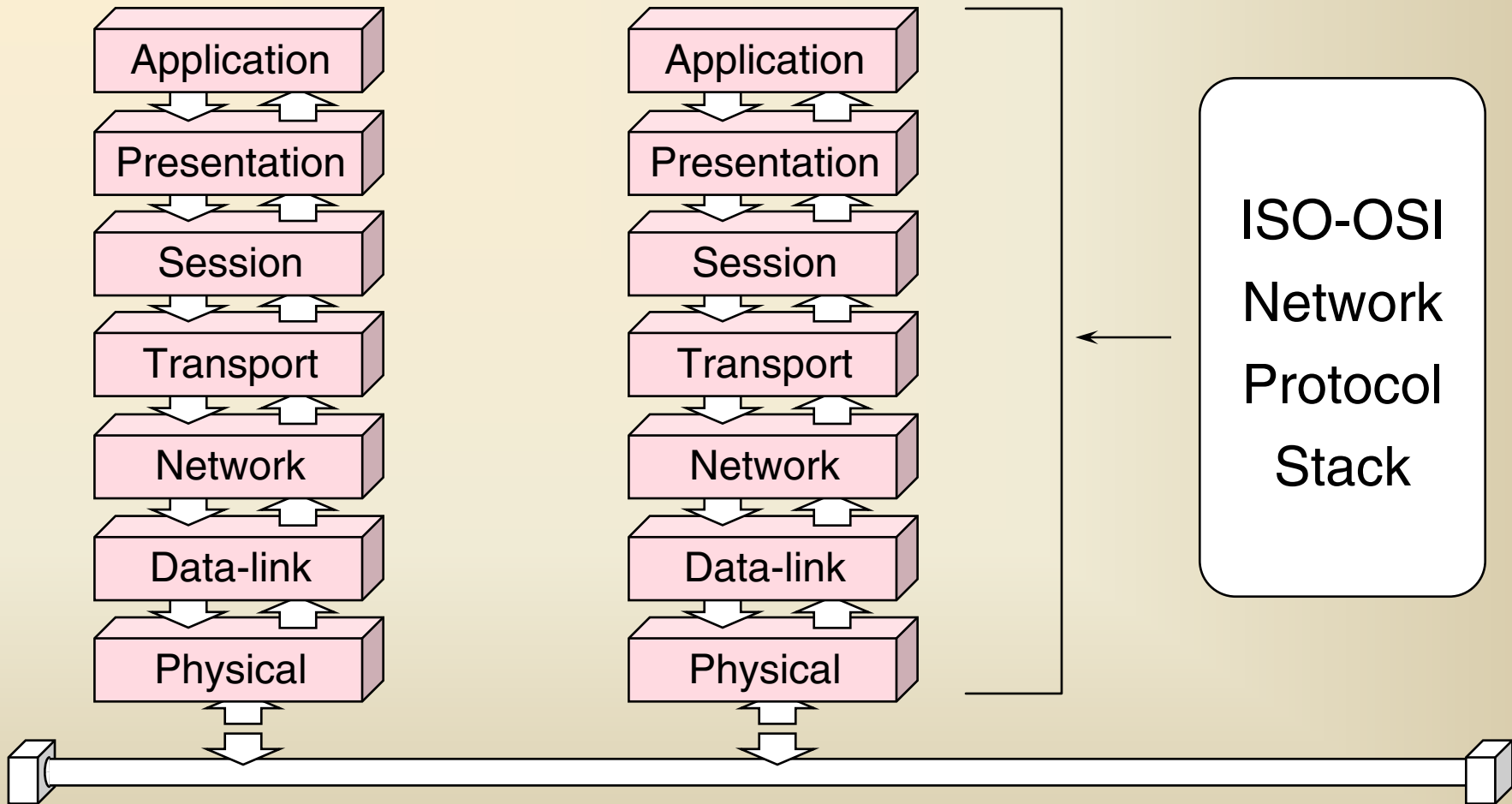
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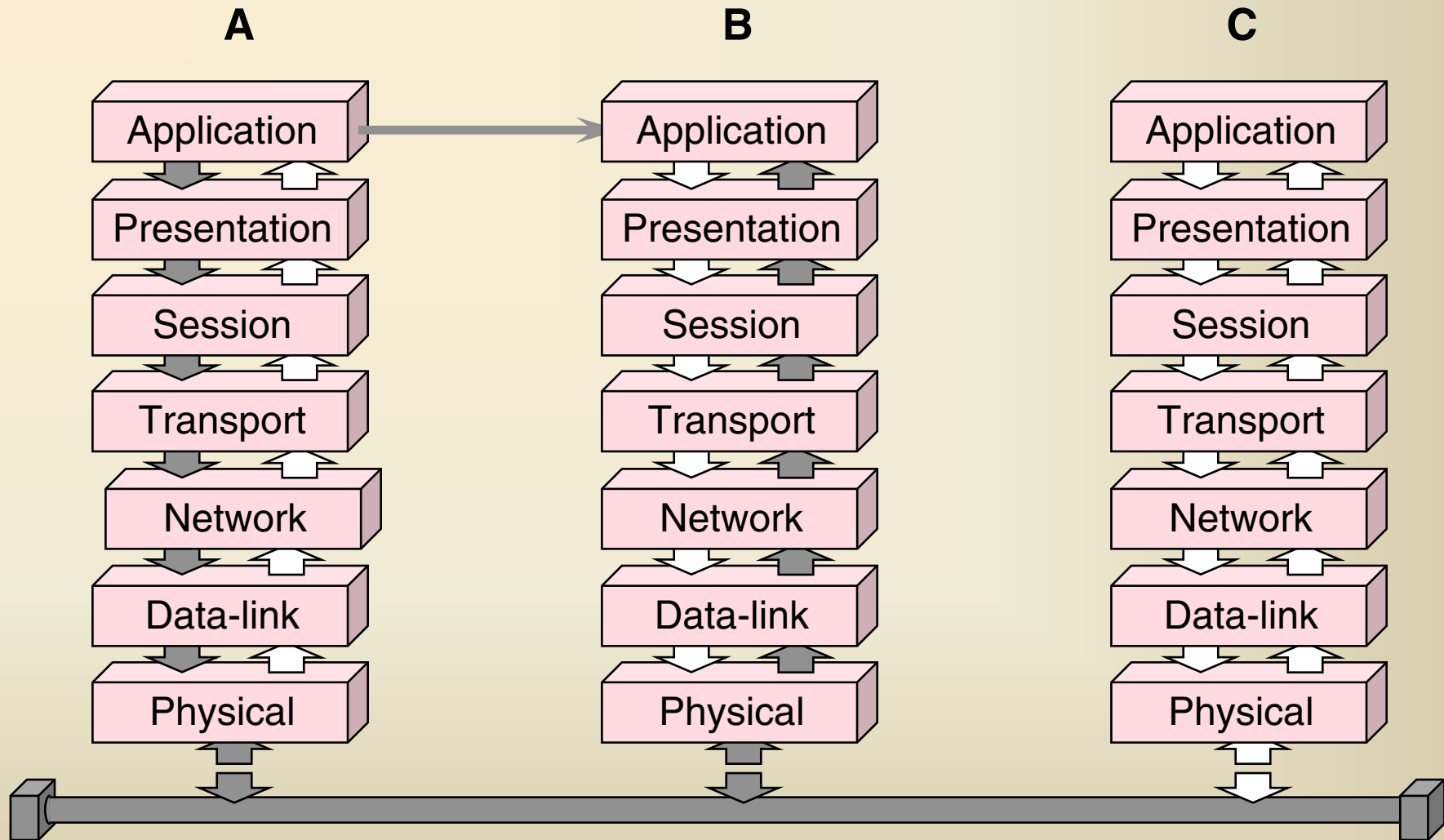


It is simply impossible to comprehend what the Internet and WWW are, without a basic appreciation of networked communication among computers, so...

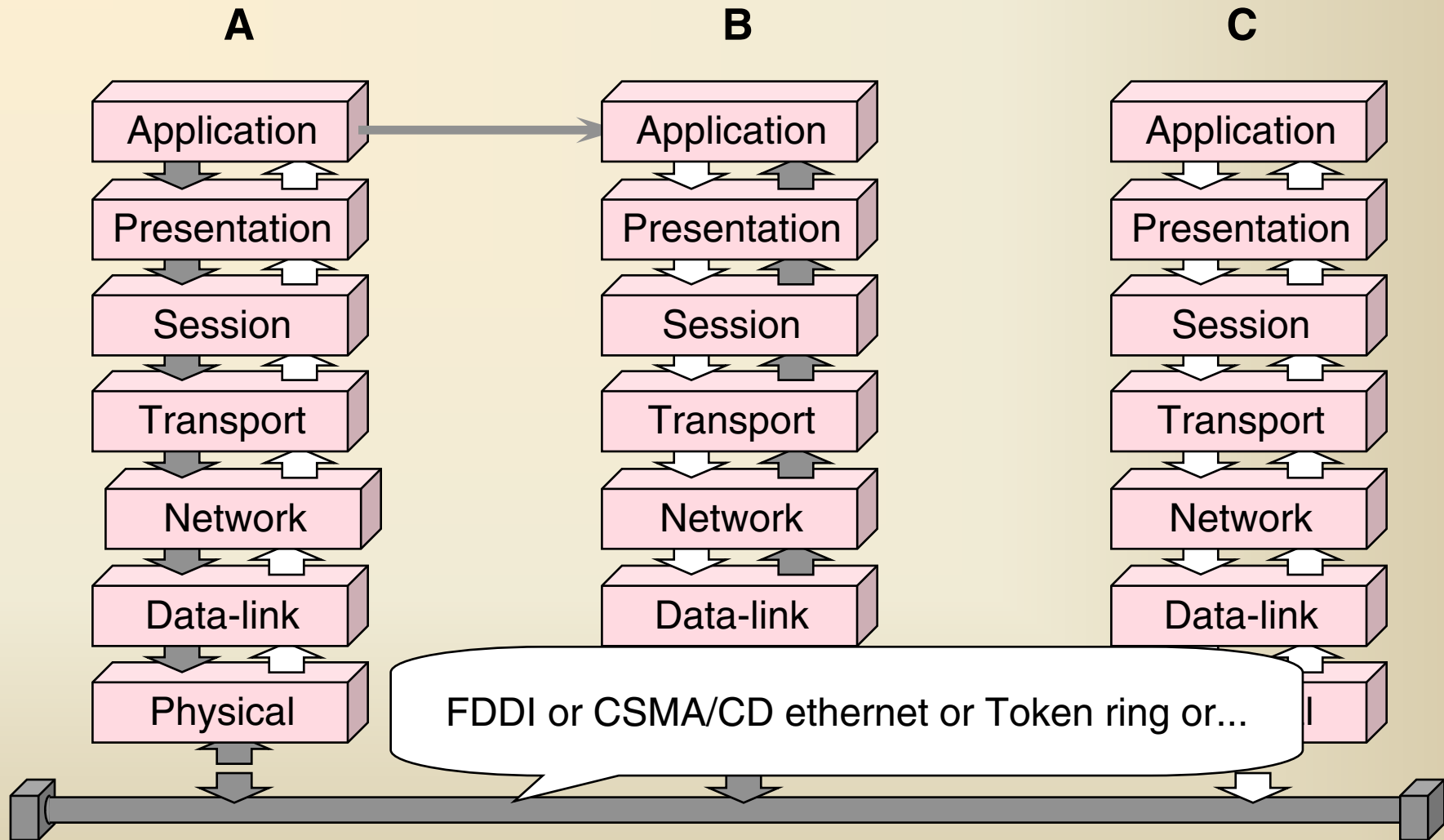
ISO-OSI Network Model



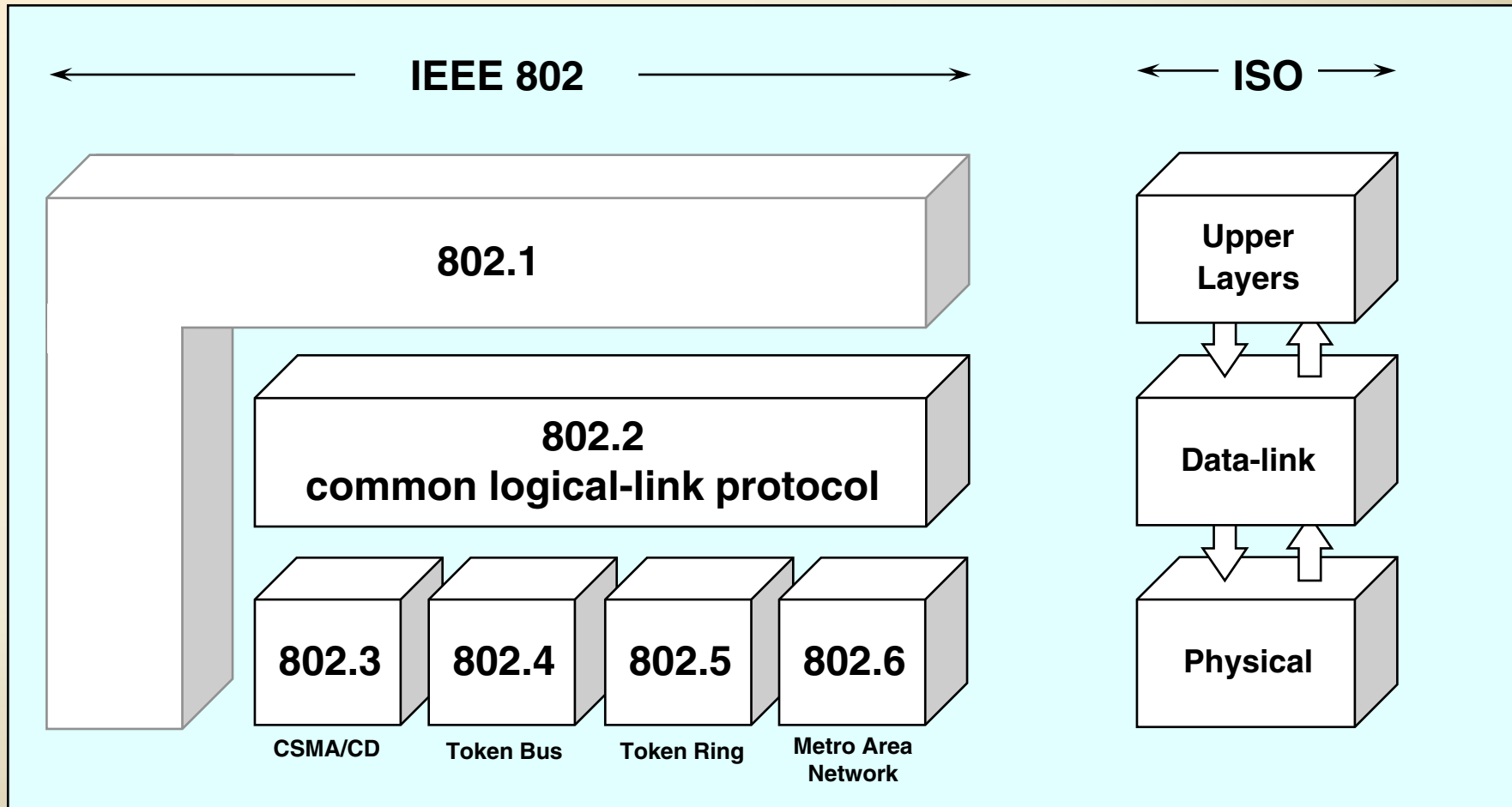
ISO-OSI Network Model



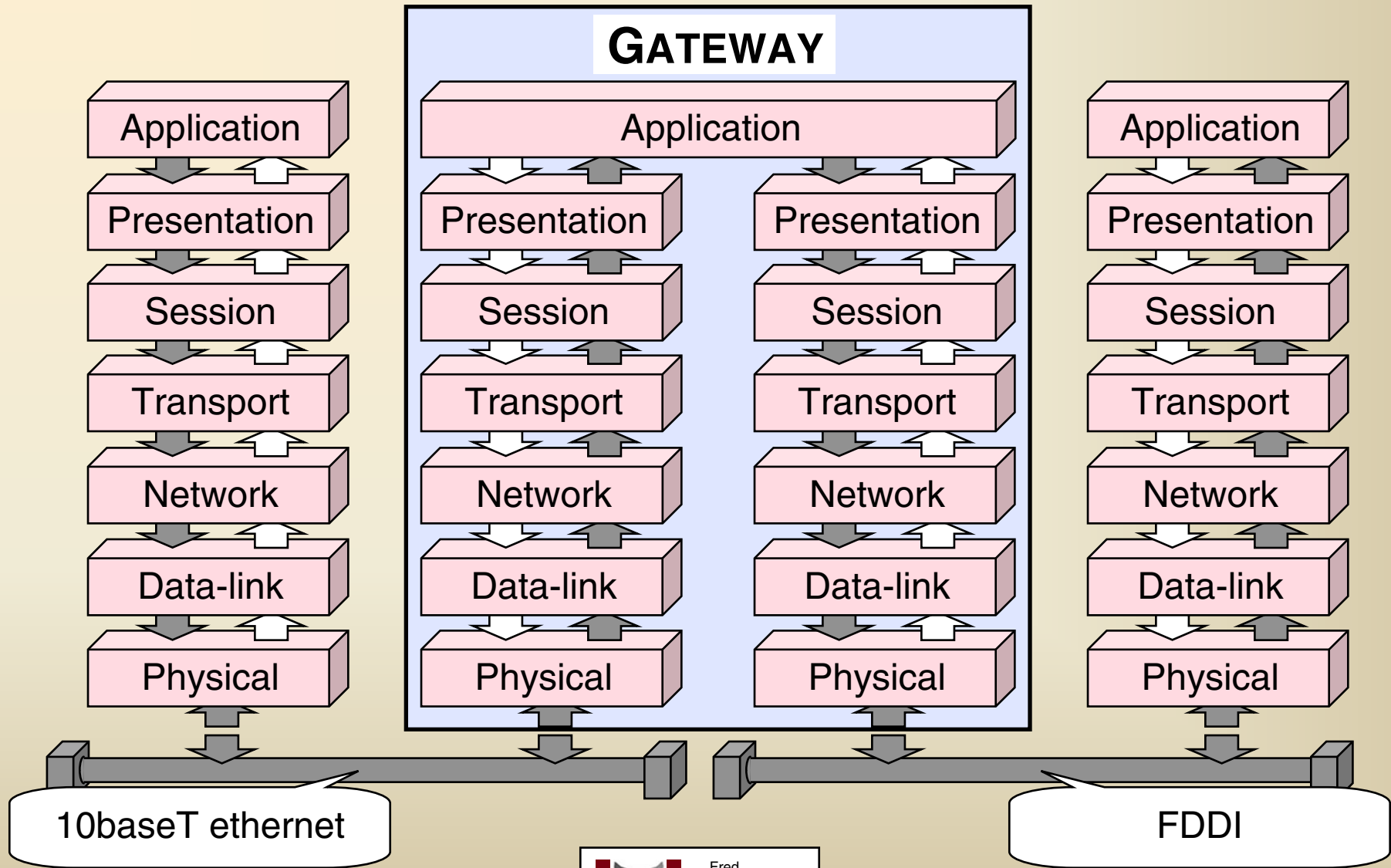
ISO-OSI Network Model

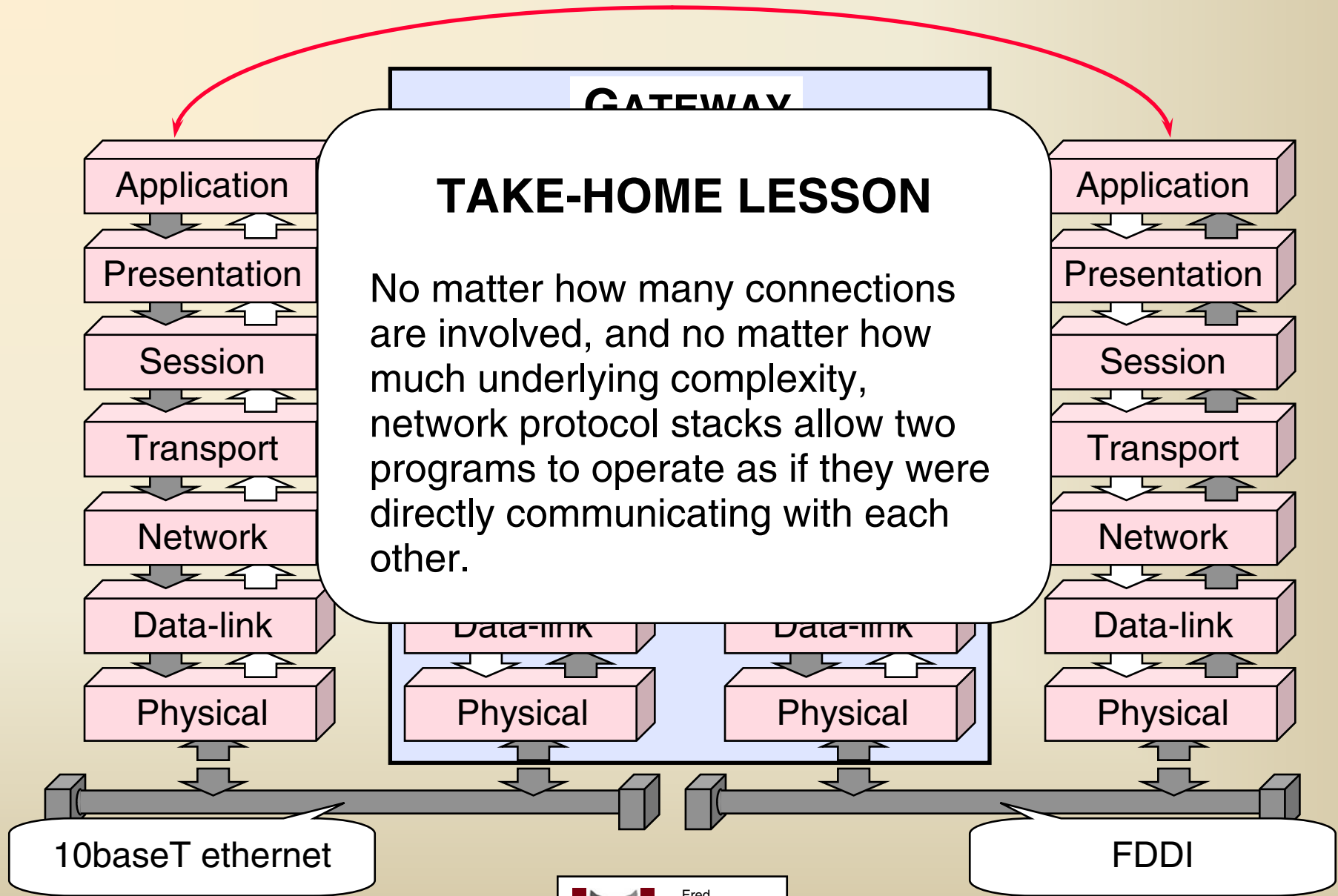


Physical Layer Protocols

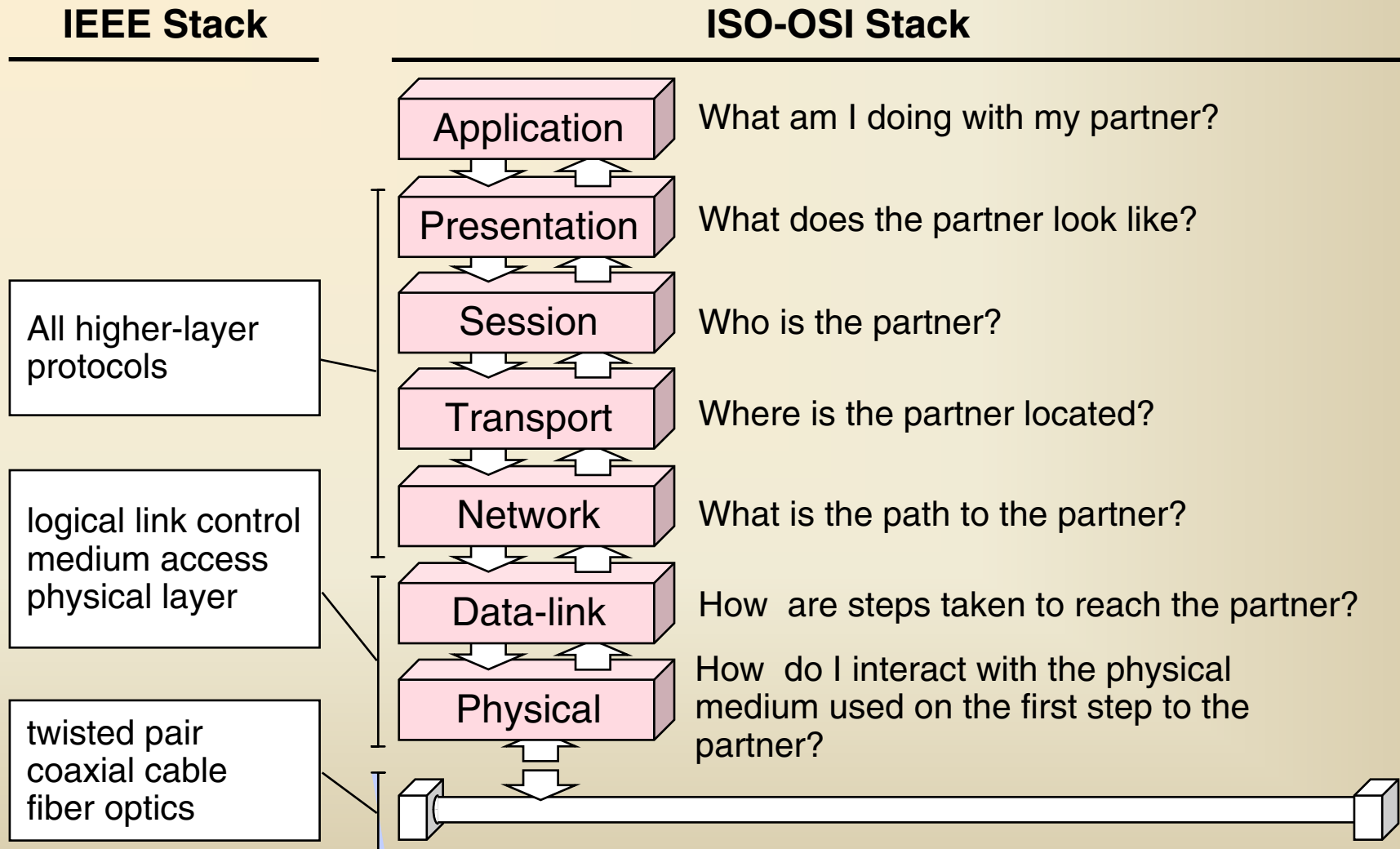


ISO-OSI Network Model





ISO-OSI Network Model



Network Protocol Stacks

layer	ISO	TCP / IP	SNA	DECNET
7	Application	User	End User	Application
6	Presentation	ftp, telnet	NAU Services	
5	Session	(none)	Data-Flow Control	(none)
4	Transport	Host-Host	Transmission Control	
3	Network	Source to destination IMP	Path Control	Network Services
2	Data-Link	IMP-IMP	Data-Link Control	Transport
1	Physical	Physical	Physical	Data-Link Control
				Physical

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				Physical

TCP / IP protocols were developed by the Department of Defense to allow robust communication among distributed, heterogeneous computer systems, even under severely adverse conditions.



Network Protocol Stacks

The Internet uses TCP / IP

layer	ISO	TCP / IP	SNA	DECNET
7	Application	User	End User	Application
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add HTTP, create the WWW



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1	Physical	Physical	Physical	Data-Link Control
				Physical

add HTTP, create the WWW
and get very, very rich...



Buzzword Alert...

An ***intranet*** is any set of locally connected ***computers*** running the TCP/IP protocol stack.

An ***internet*** is any set of connected ***networks*** running the TCP/IP protocol stack.

Buzzword Alert...

The Internet is the global set of connected networks running the TCP/IP protocol stack ***and*** sharing a common naming convention.

Internet Naming Conventions

Name: www.fhcrc.org

Address: 140.107.42.20

Internet Naming Conventions

Name: **www.fhcrc.org**
 host **domain**

Address: **140.107.42.20**
 network **host**

What is the World-Wide Web?

The machinery of the WWW consists of all *Internet computers* that use *http* to communicate information represented in the *HTML* syntax.

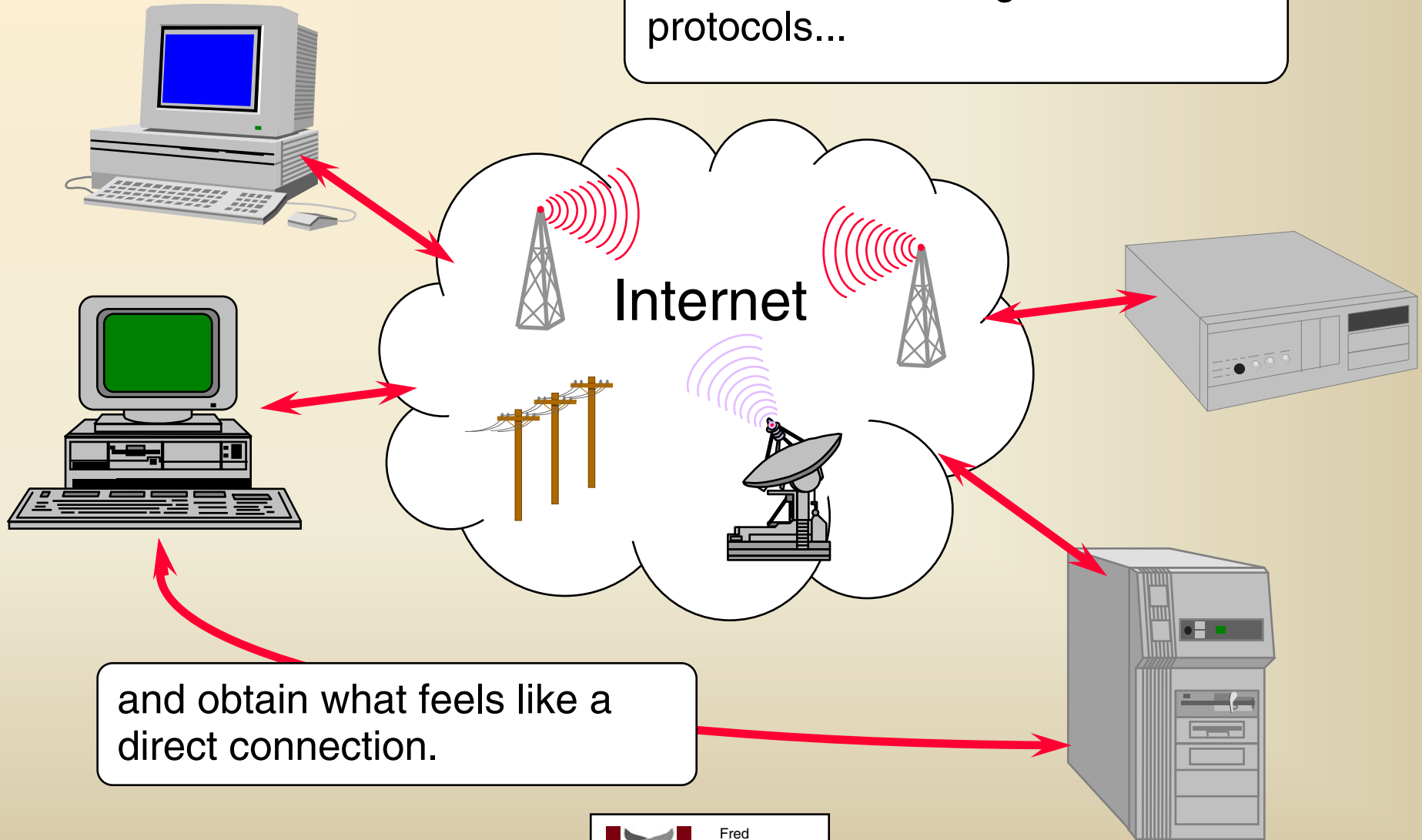
What is the World-Wide Web?

The machinery of the WWW consists of all *Internet computers* that use *http* to communicate information represented in the *HTML* syntax.

The ***content*** of the WWW is the set of all files that are distributed using WWW technology.

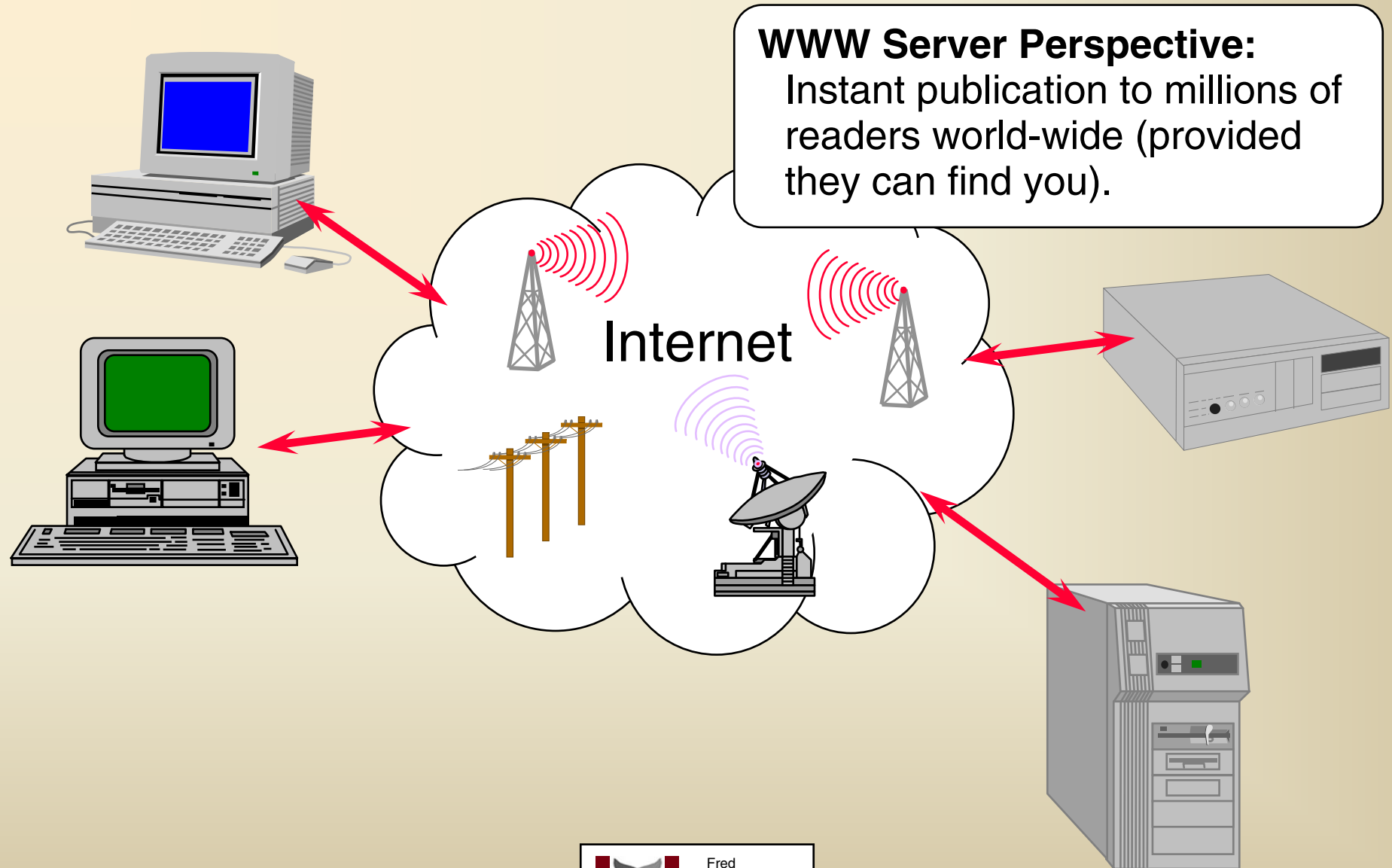
The Internet

Any machine can connect to any other machine using TCP/IP protocols...

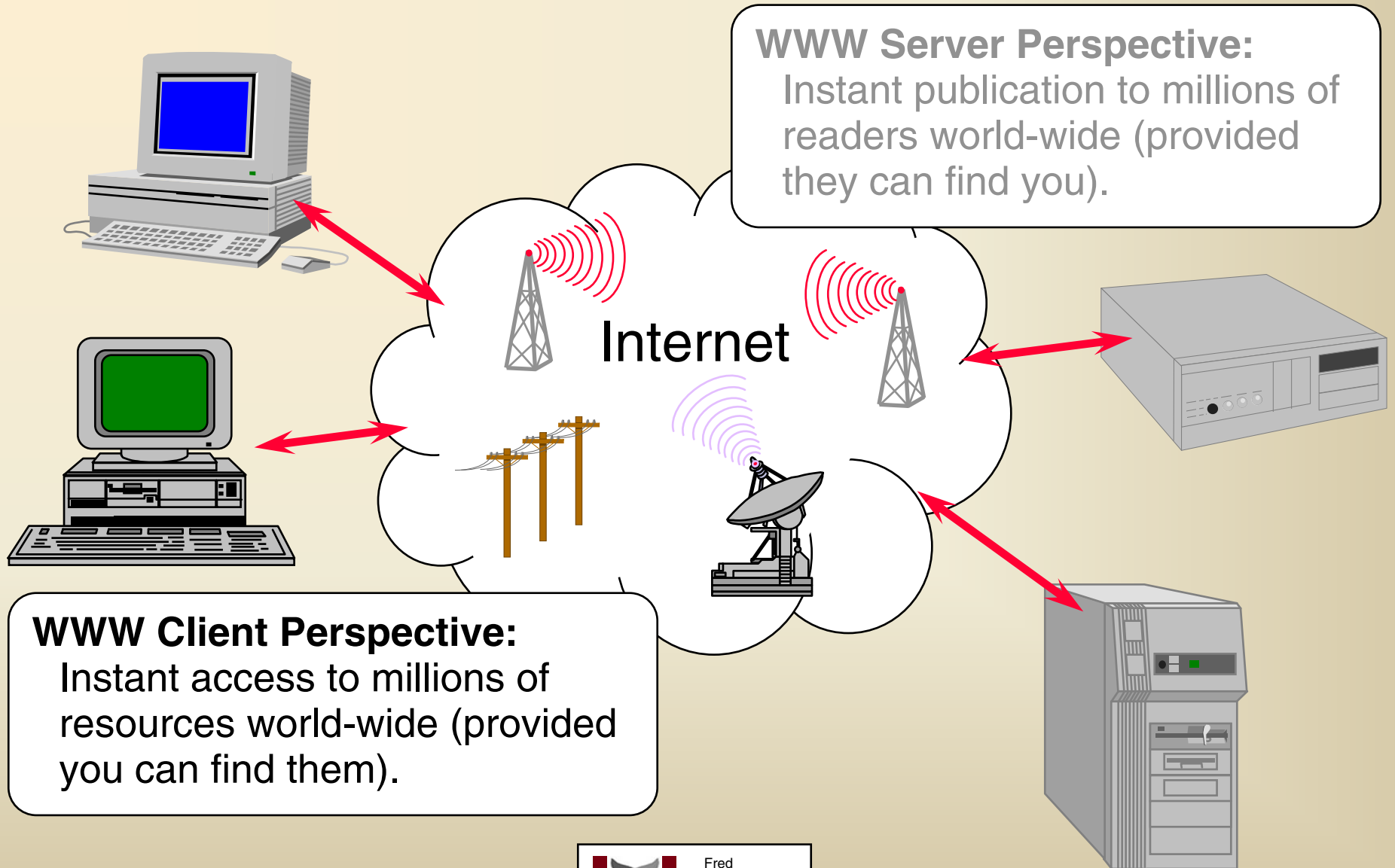


and obtain what feels like a direct connection.

The World-Wide Web



The World-Wide Web



A Problem

The WWW is a disorganized set of unclassified publications.

Consequently, on the WWW, it can be difficult to distinguish between publications of the National Academy and the National Inquirer.

Example

An AltaVista search for “cancer treatment” returns both:

- NCI Kidney Cancer Treatment and Research: Bibliography
- Paul Hagemeister's Lung Cancer Treatment

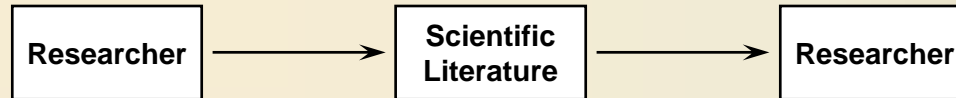
Comparison with Traditional Publishing

There is no shortage of dreadful trash published via traditional means.

Why does sorting out the good, the bad, and the ugly seem easier with paper?

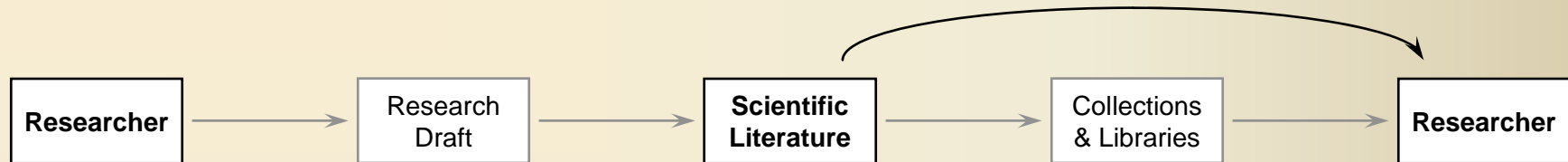
Paper Publishing

Apparent Process



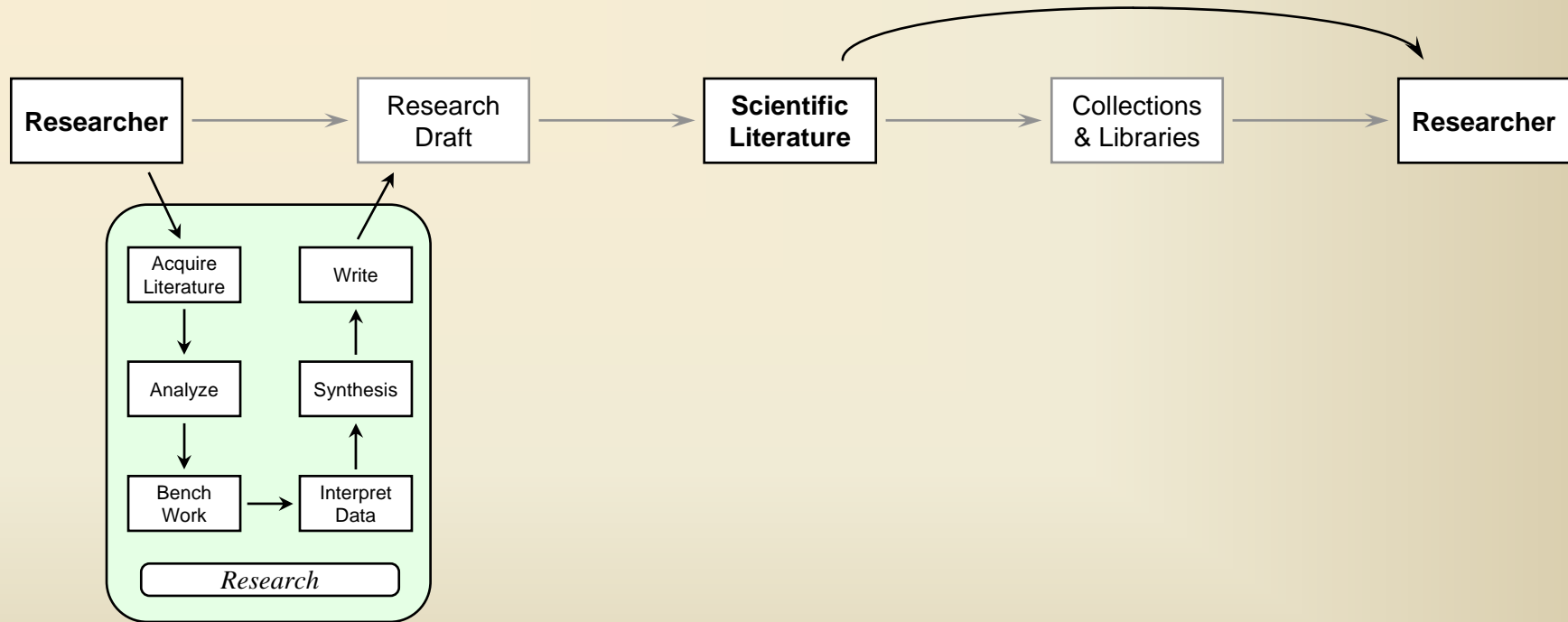
Paper Publishing

Actual Value-adding Infrastructure



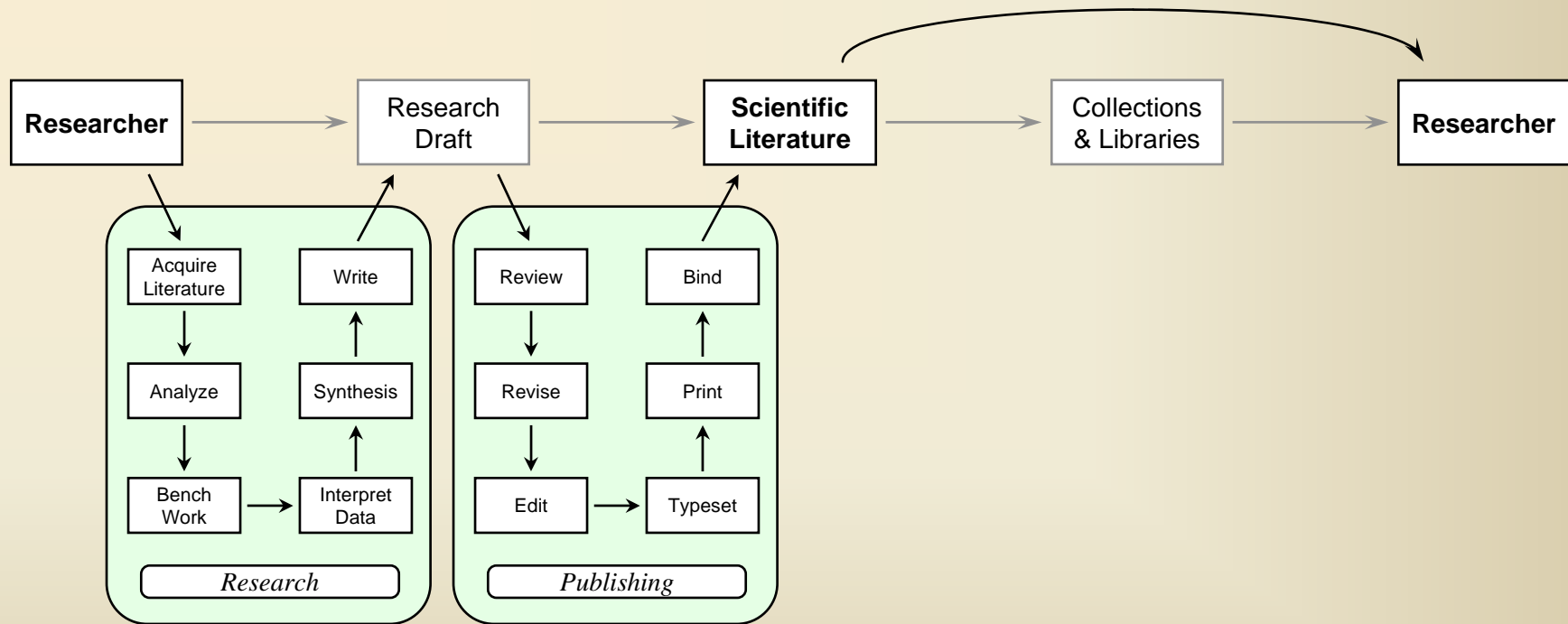
Paper Publishing

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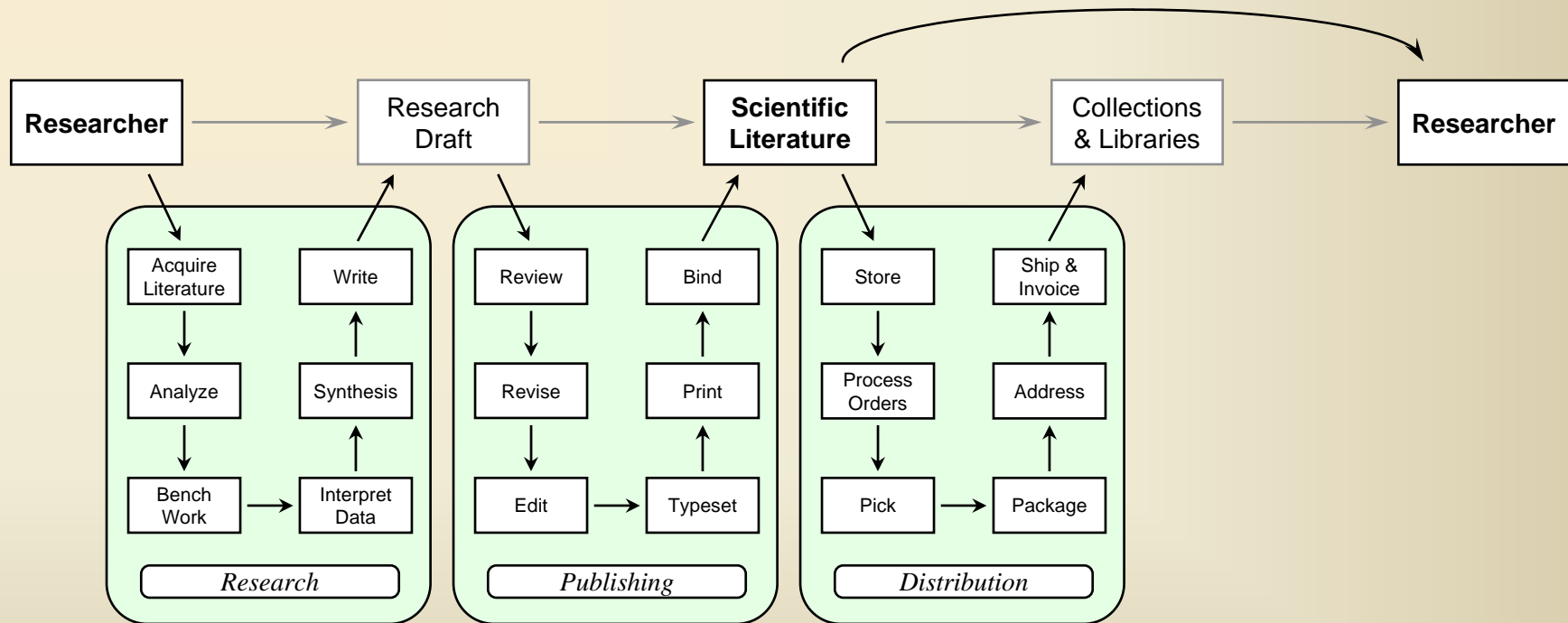
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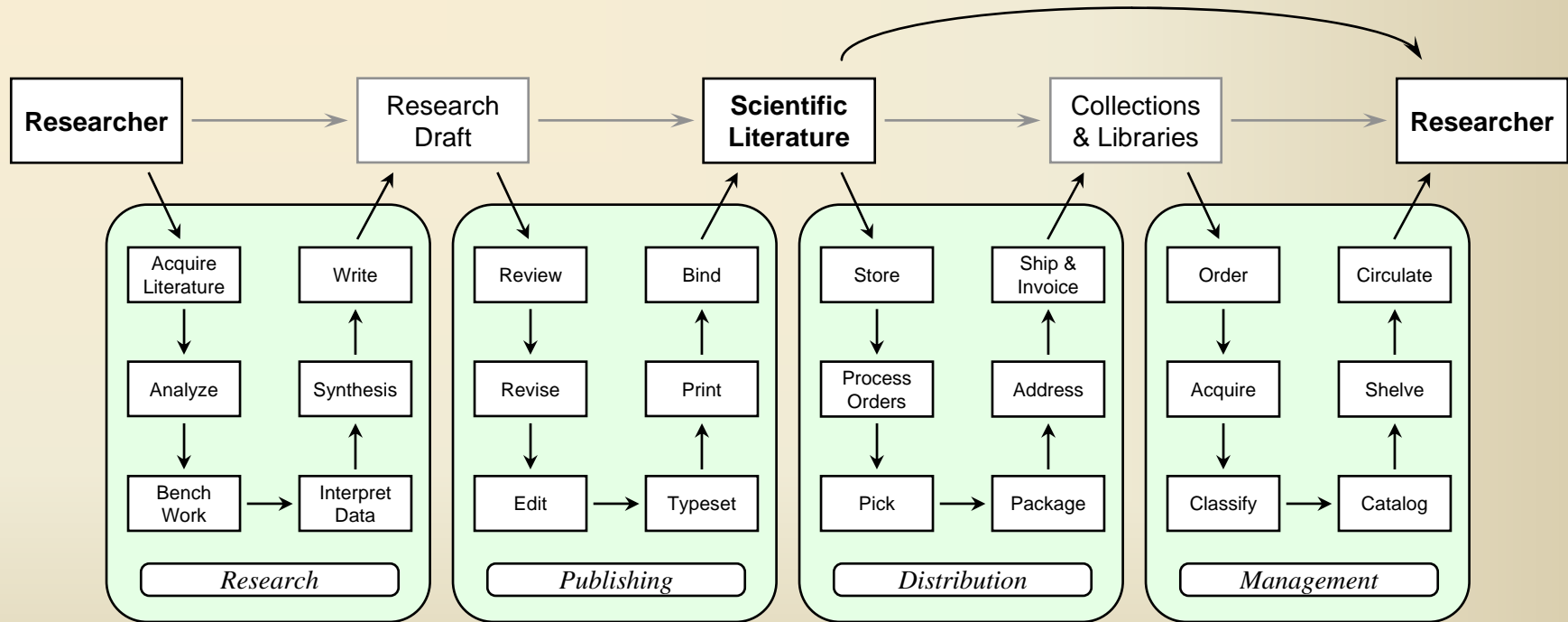
Paper Publishing

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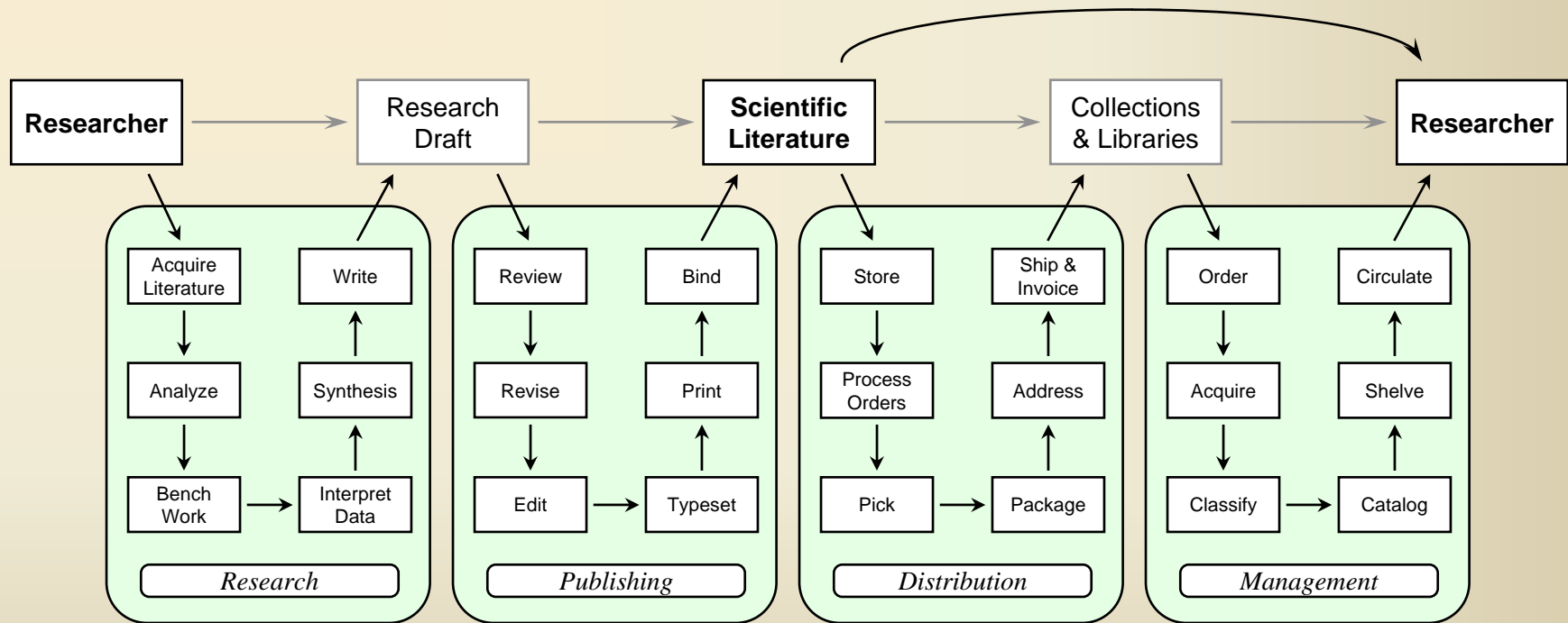
Paper Publishing

Actual Value-adding Infrastructure



Paper Publishing

Actual Value-adding Infrastructure

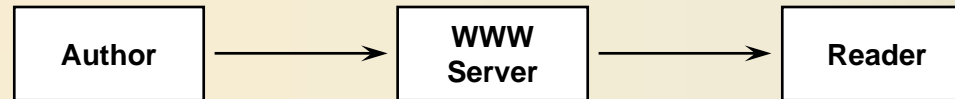


Now, for WWW...



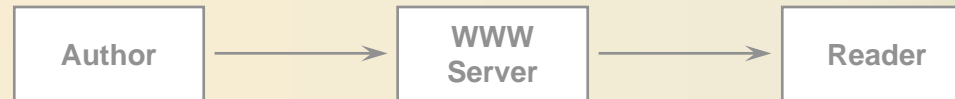
WWW Publishing

Apparent Process

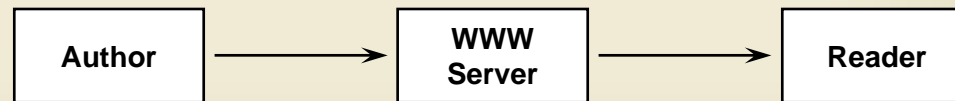


WWW Publishing

Apparent Process

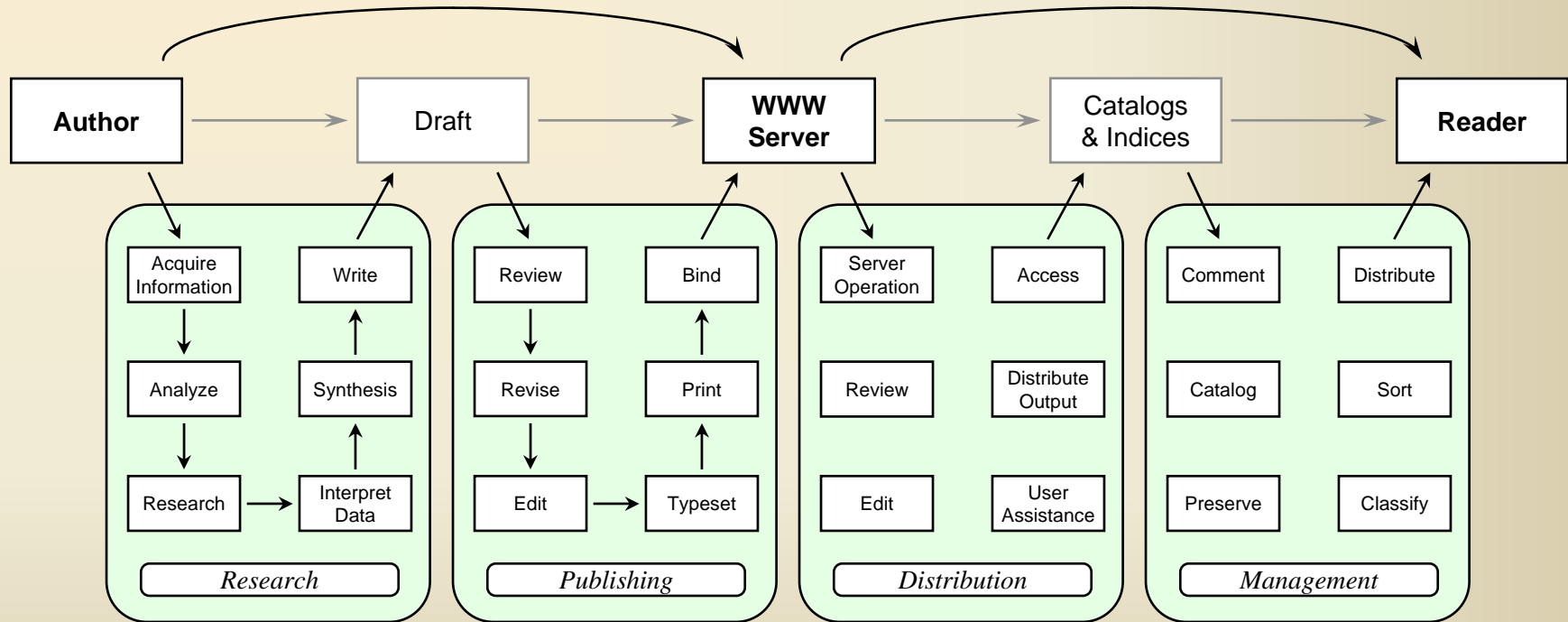


Actual Process



WWW Publishing

Possible Value-adding Infrastructure



Problems...



WWW Naming Conventions (URLs)

<http://www.abc.org:80/admin/stats.html>

WWW Naming Conventions (URLs)

protocol process document

<http://www.abc.org:80/admin/stats.html>

host

path

Problem

URLs cannot support value-adding activities, because:

- They are too specific.
- They are not guaranteed stable.

URLs as (mis)Identifiers

Users should beware that there is no general guarantee that a URL which at one time points to a given object continues to do so, and does not even at some later time point to a different object...

Berners-Lee, T. 1994. Uniform Resource Locators
(draft-ietf-uri-url-03.ps)

Who's In Charge

The Internet consists all connected computers on earth running TCP / IP protocols:

- Who's in charge of the Internet?

Who's In Charge

The Internet consists all connected computers on earth running TCP / IP protocols:

- Who's in charge of the Internet?
- Who's in charge of the world's phone system?

Who's In Charge

The WWW consists all internet computers on earth sharing HTML files via http:

- Who's in charge of the WWW?

Who's In Charge

The WWW consists all internet computers on earth sharing HTML files via http:

- Who's in charge of the WWW?
- Who's in charge of speaking English on the world's phone system?

The Internet and the World-Wide Web is the most wonderful, amazing, greatest communication medium since Gutenberg and sliced bread. It is transforming the world more rapidly than any other technology in the history of history, blah blah ...

BUT FIRST: *Some More Homework*

The WWW is truly an amazing source of information, but it can be an equally great source of frustration. Using it effectively, despite its limitations, means learning to **search** it systematically, but...

...that's another story.

END
SLIDES

<http://www.esp.org/sra/sra.pdf>