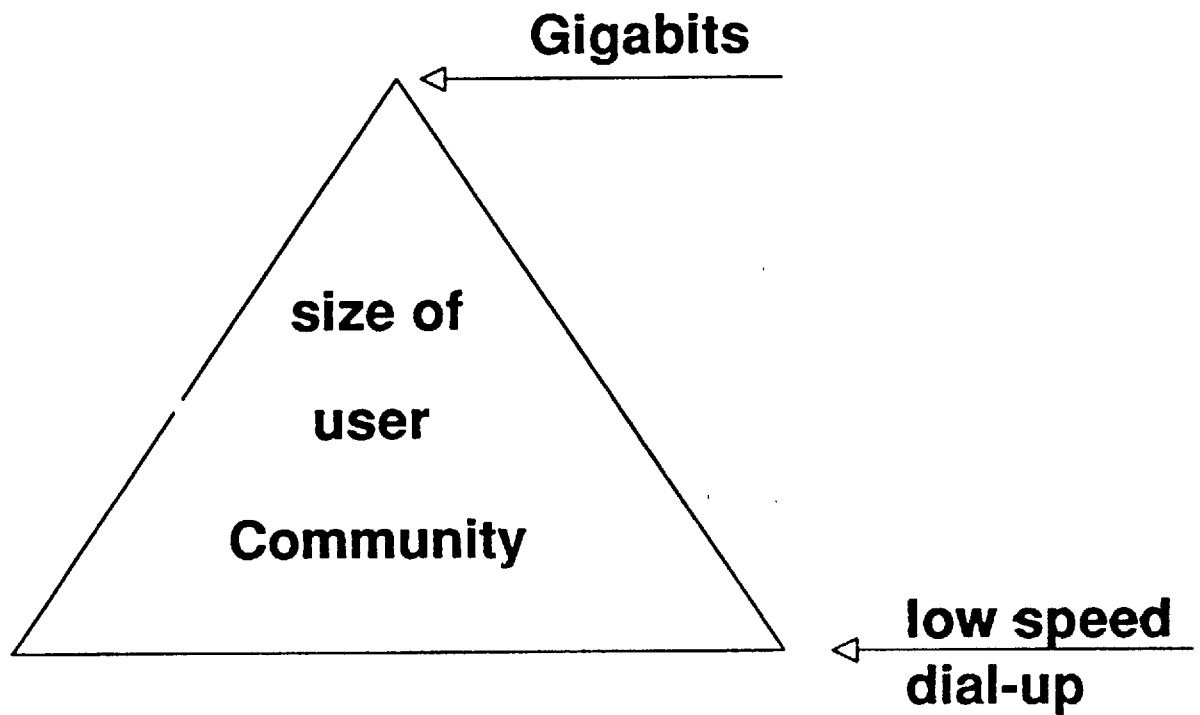
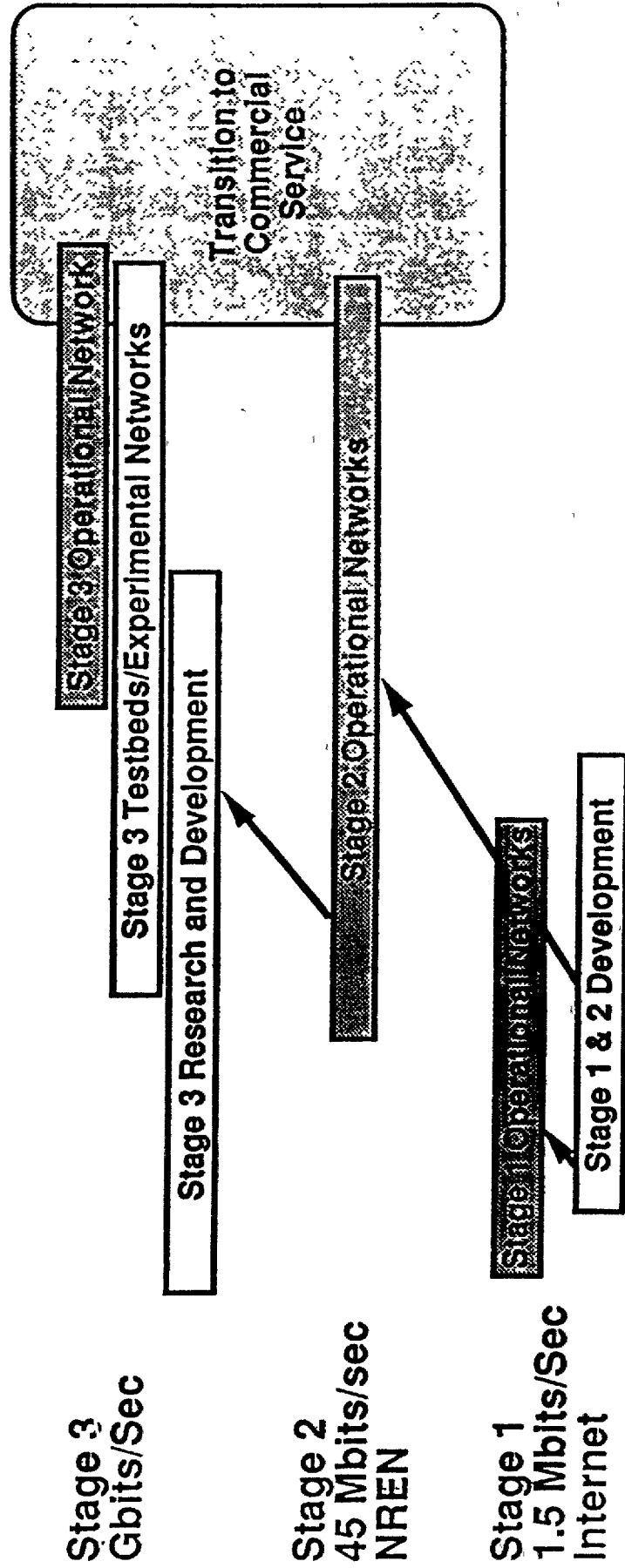


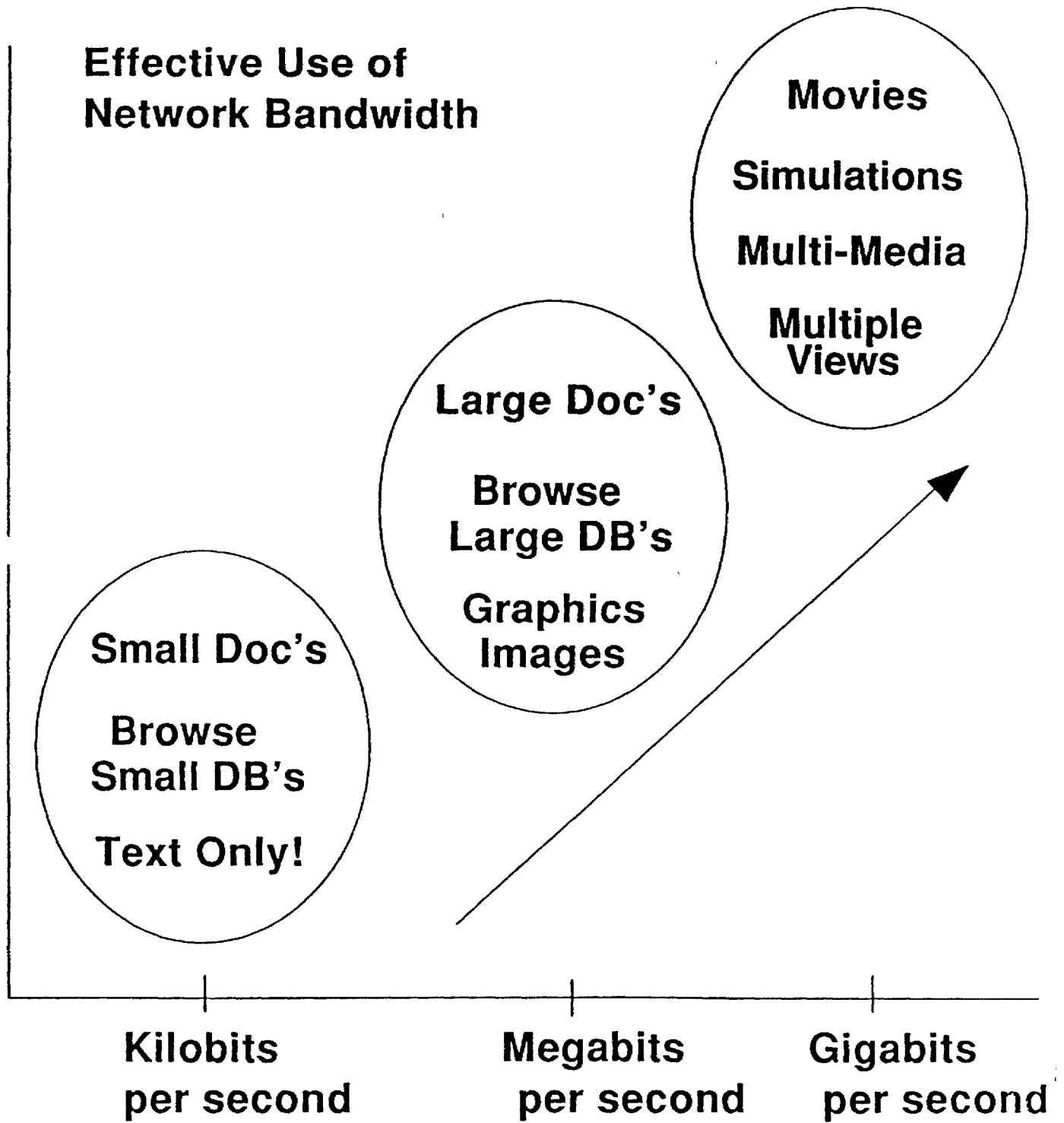
Three Driving Forces

- **Network Growth**
 - the community
 - the size of the networks
 - the amount of traffic
- **Higher Speeds and Technology**
 - Gigabits
 - All Optical Networks
 - Advanced Workstations and Supercomputers
- **Grass Roots**
 - K-12
 - Small Businesses
 - Libraries
 - State and Local Governments

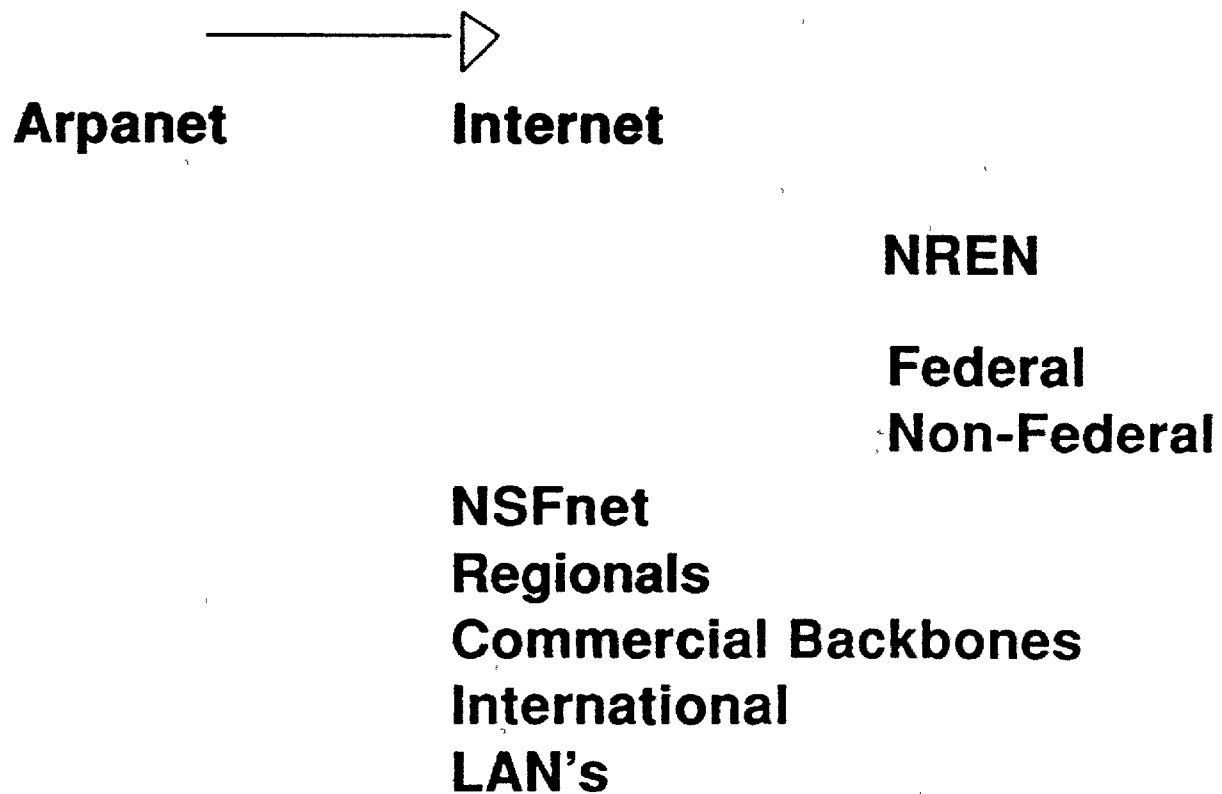


Proposed National Research and Education Network





National and International Networking: From Non-Commercial to Commercial



INNOVATIONS FOR CHANGE

- MOVING TO AN IMAGE BASED NETWORKING ENVIRONMENT
- INUNDATING WORKSTATIONS OR LANS WITH AN ABUNDANCE OF INPUT FROM WHICH TO SELECT
- LINKING HIGH PERFORMANCE COMPUTERS AT GIGABIT SPEEDS
- INTEGRATING REMOTE SOURCES OF HIGH SPEED DATA AND LARGE DB'S
- TIME-COMPRESSSION

THE NATIONAL NETWORK

- AS A COMMUNICATIONS INFRASTRUCTURE
- AS A HIGH SPEED BACKPLANE
- AS A METACOMPUTER
- AS A CATALYST FOR CREATIVITY AND INNOVATION
- AS THE SPRINGBOARD FOR ITS SUCCESSOR

MOTIVATION

- ECONOMICS
- COMPETITIVE REQUIREMENT
- BIG ENABLER

SCIENCE
MEDICINE
BUSINESS
NATIONAL SECURITY
FINANCIAL
GOVERNMENT
EDUCATION

Main Goals of the Project

- **Evaluate the Utility of "Gigabit Networks to the End User"**
- **Explore Architectural Alternatives for Gigabit Networks**
- **Obtain Hands-on Experimental Use of Gigabit Networks and Applications**

Note: Assumes availability of carrier facilities and supercomputer resources at no cost to the project.

Basic Approach

- **Establish Five Gigabit Network Testbeds**

Aurora

Blanca

Casa

Nectar

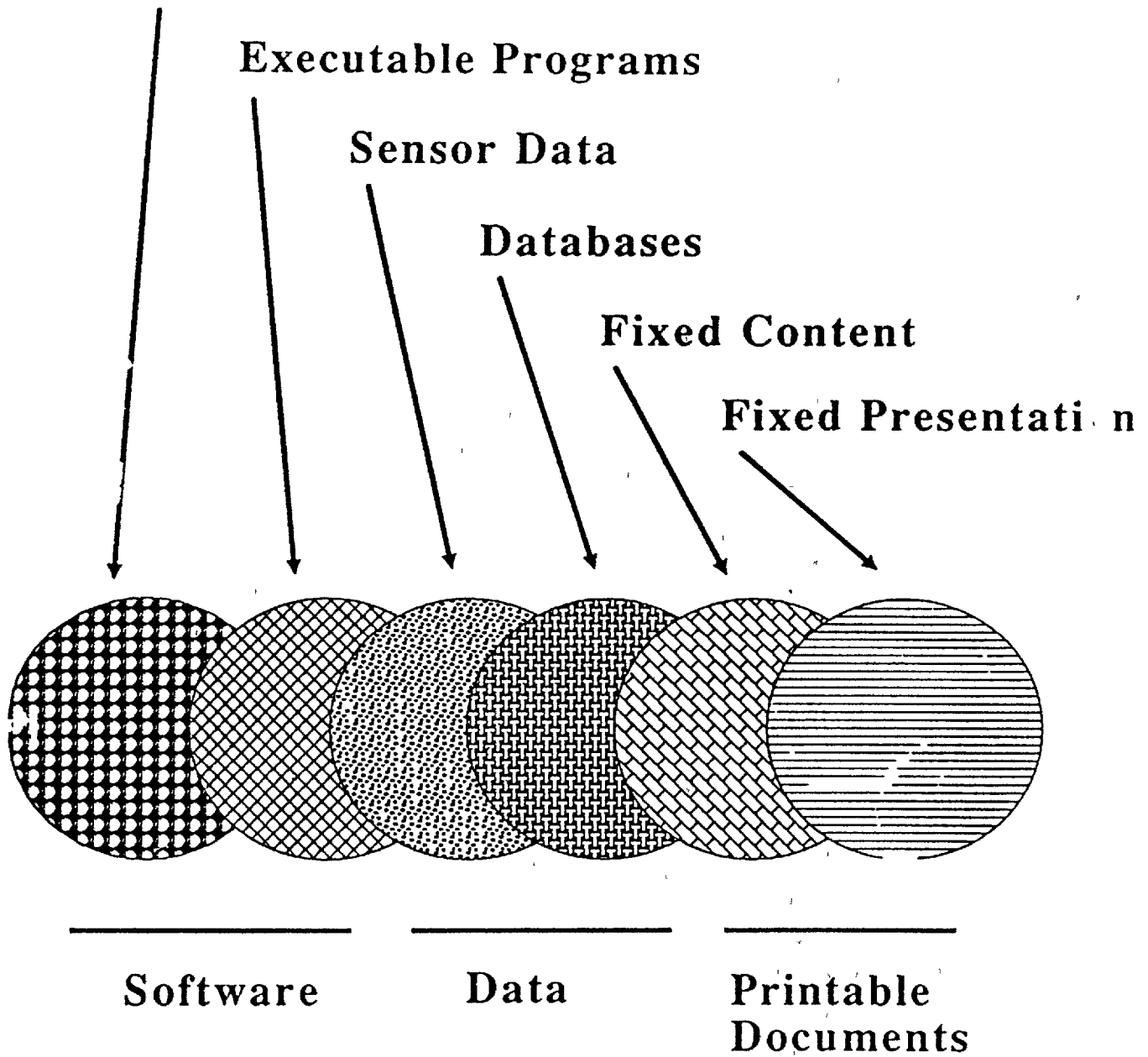
Vistanet

- **Enable a Small Set of Realistic Applications
for demonstration and Evaluation Purposes**

- **Promote Cross-fertilization and sharing of
insights and results**

- **Engage Carriers and Computer Vendors
in the process**

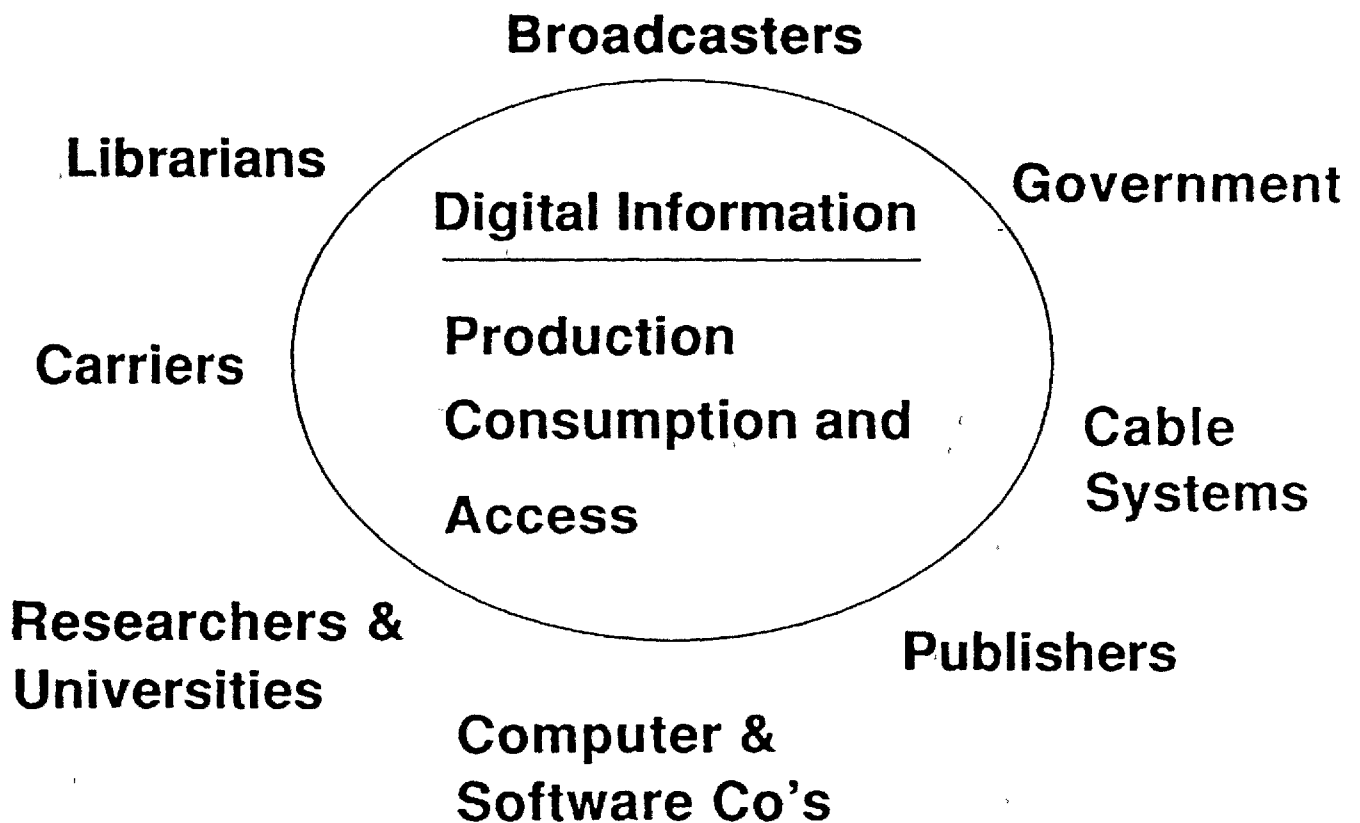
Knowledge Structures



(c) Corporation for National Research Initiatives

Interested Parties

A partial List of Interested Parties is shown below:



WHAT IS "IP"?

- **Information Processing**
- **Internet Protocol**
- **Intellectual Property**
- **Important Person**
- **Interested Party**
- **Information Provider**
- **NOT! in Public!**

IP IN THE NETWORK ENVIRONMENT

- **Copyright in the Network Environment**
- **Electronic Copyright Management**
- **Copyright Owners and Users
Government; System Providers**
- **Opportunities and Concerns**
- **NREN Internet and the Future**
- **Multiple Electronic Libraries and DB's**

Intellectual Property Issues

- **Ease of Reproduction and Manipulation
in a Computer Network Environment**
- **Lack of Control by Rightsholders**
- **Authenticity of Material**
- **Warranties**
 - Accurate Citations**
 - Best Efforts Protection & Preservation**
 - Errors & Omissions Exemption**
- **Copyright Management Systems in a
network environment**
- **Rights beyond the canonical five
reproduction, distribution, derivative works
public performance, public display**

Intellectual Property Issues

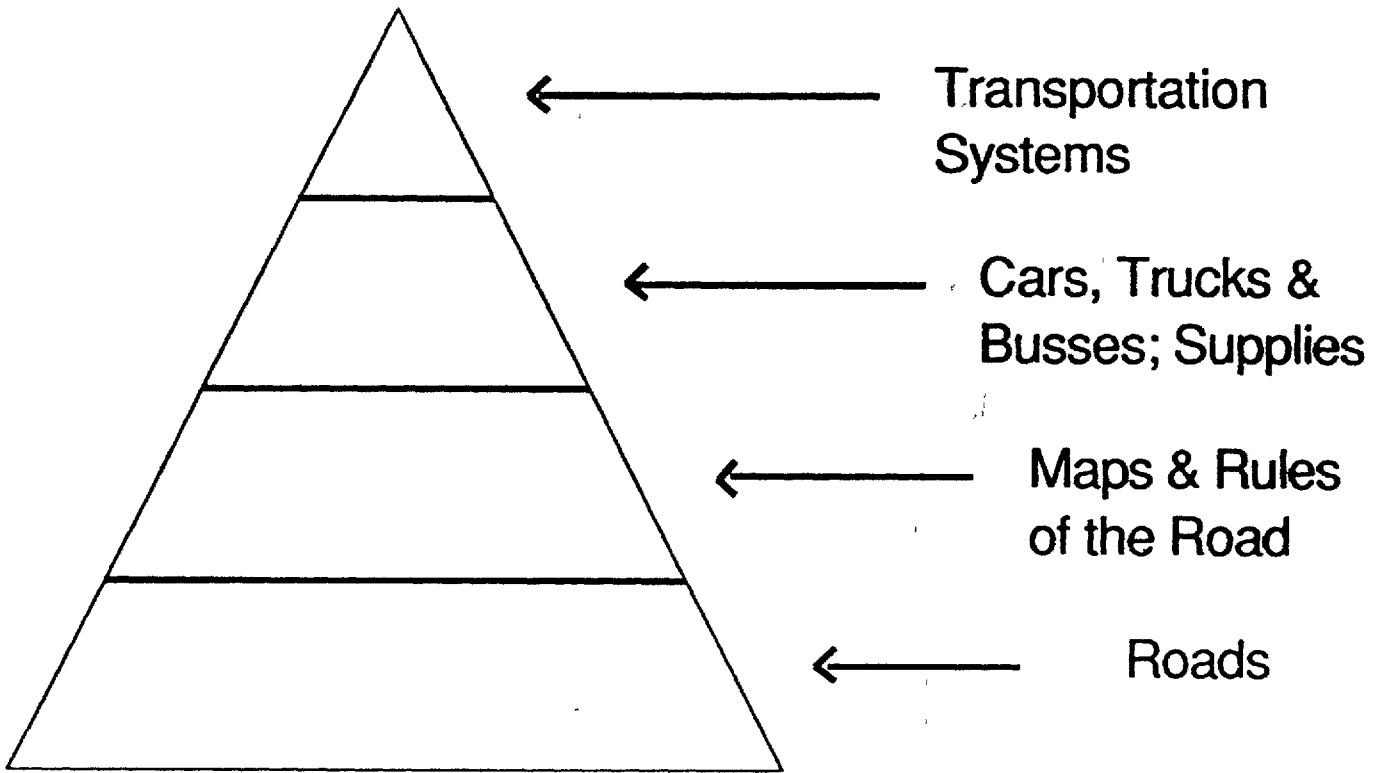
- **Role of the Library as a Carrier? Supplier?**
- **Fair use in a Database System?**
- **Feist v. Rural Telephone**
- **Transactional, Block and other forms of Billing**
- **Digital Works in Copyright**

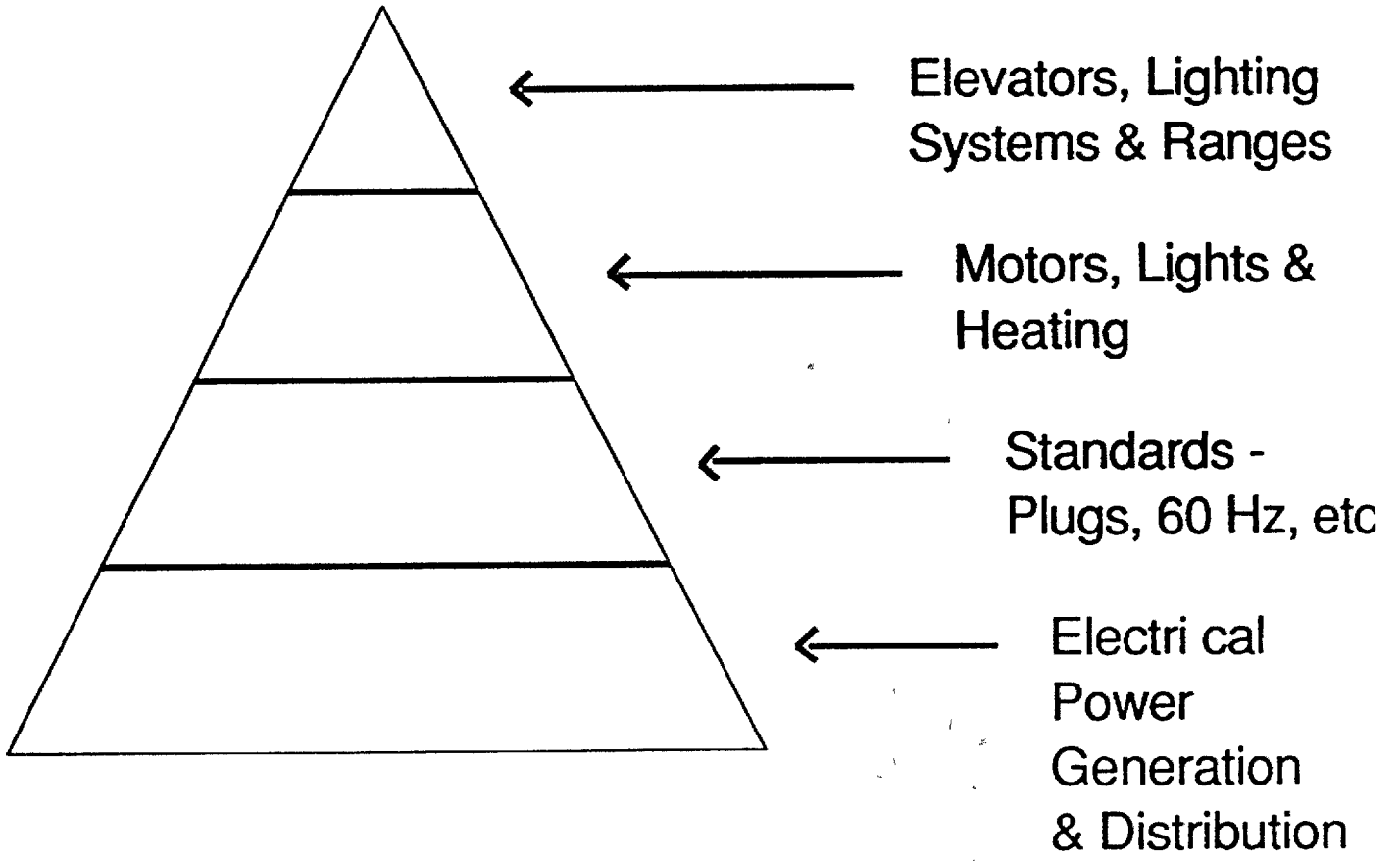
ROLE OF THE TESTBED

- **Explore Architectural Models for Managing IP in a Network Environment**
- **Develop Techniques for Handling Electronic Rights and Permissions**
- **Demonstrate Integrated Distributed Systems for Automated Management of Copyright**
- **Obtain "hands-on" experience with Electronic Copyright Management in the Network Environment**
- **Work together with Interested Parties in the IP community to understand the issues, concerns, problems and opportunities**

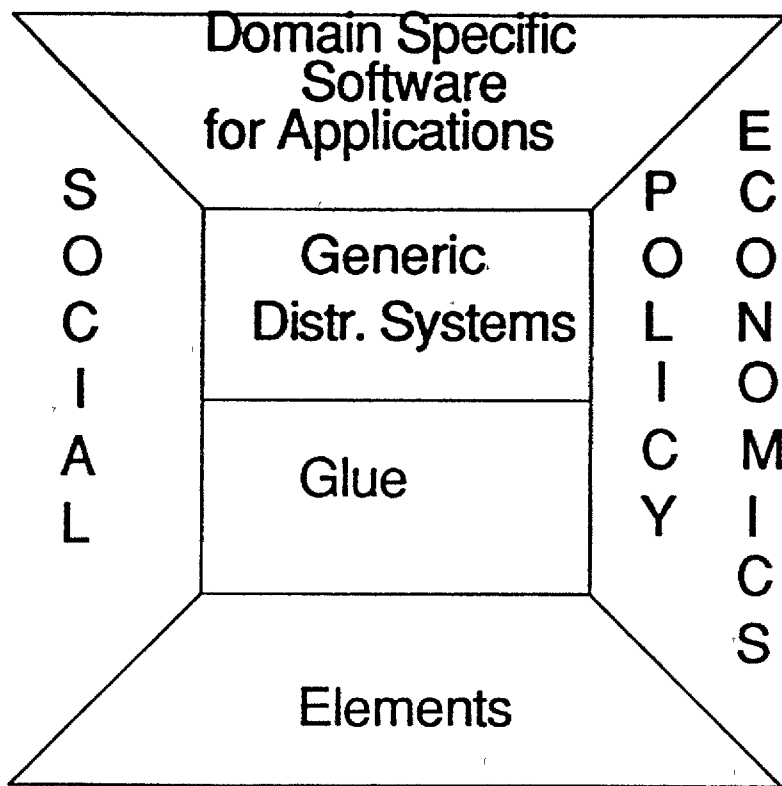
PROPERTIES OF INFRASTRUCTURE

- * Shareable
- * Ubiquitous
- * Easy to use
- * Cost Effective

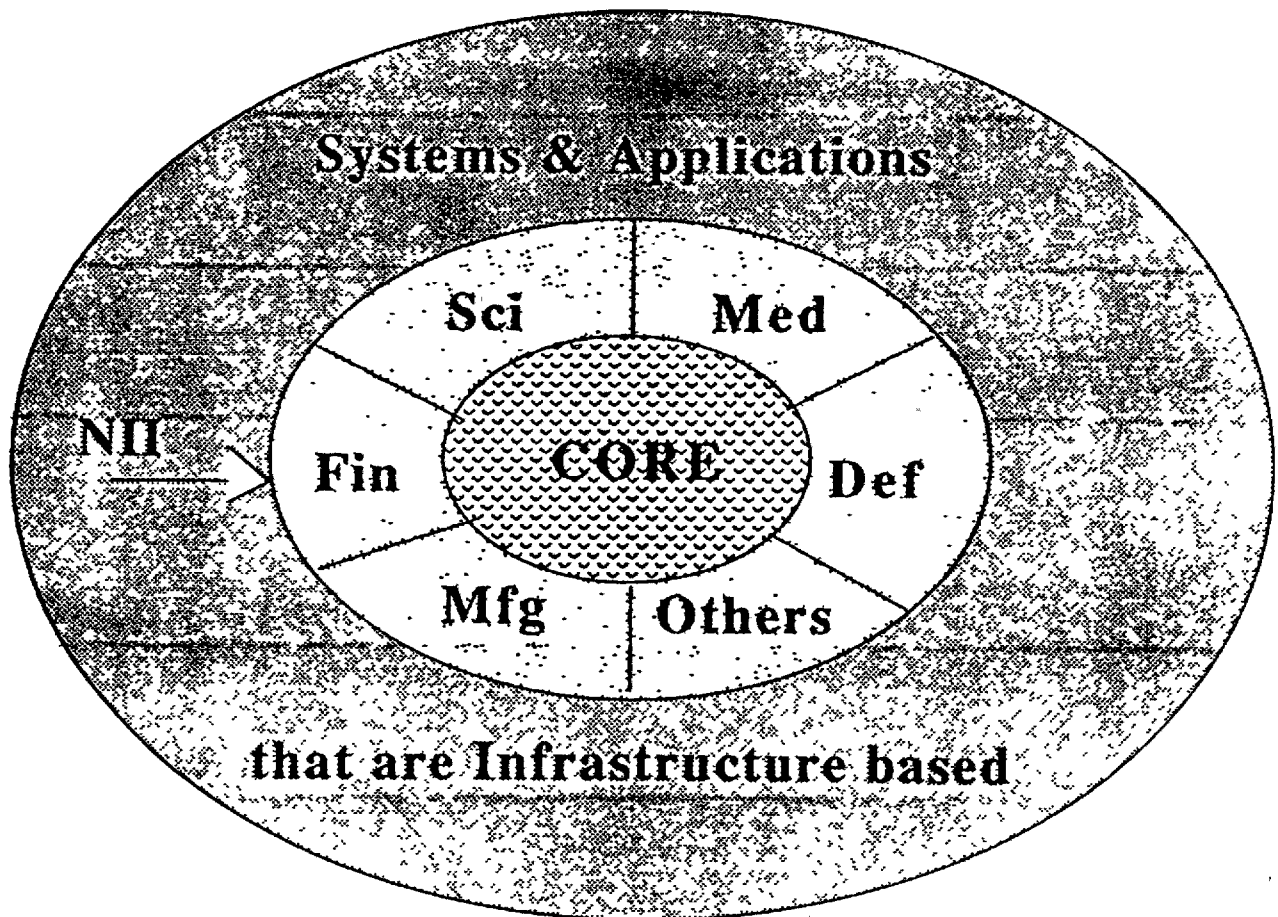




NETWORKING INFRASTRUCTURE



**A National Infrastructure for
Information Technology and its Application**



FIRST INTERNATIONAL SYMPOSIUM: NATIONAL SECURITY & NATIONAL COMPETITIVENESS: OPEN SOURCE SOLUTIONS Proceedings, Volume II - Link Page

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