Virtual Dave Lankes

Presentation

http://www.DavidLankes.org

TITLE: Reference Authoring
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ABSTRACT: A look on emerging research on virtual reference archives and knowledge bases.
KEYWORDS: digital reference, virtual reference, reference authoring, knowledge bases, complexity, research

Reference Authoring

R. David Lankes

Agenda

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- What We Know About Virtual Reference
- From One Researcher's Perspective

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- What is Reference Authoring

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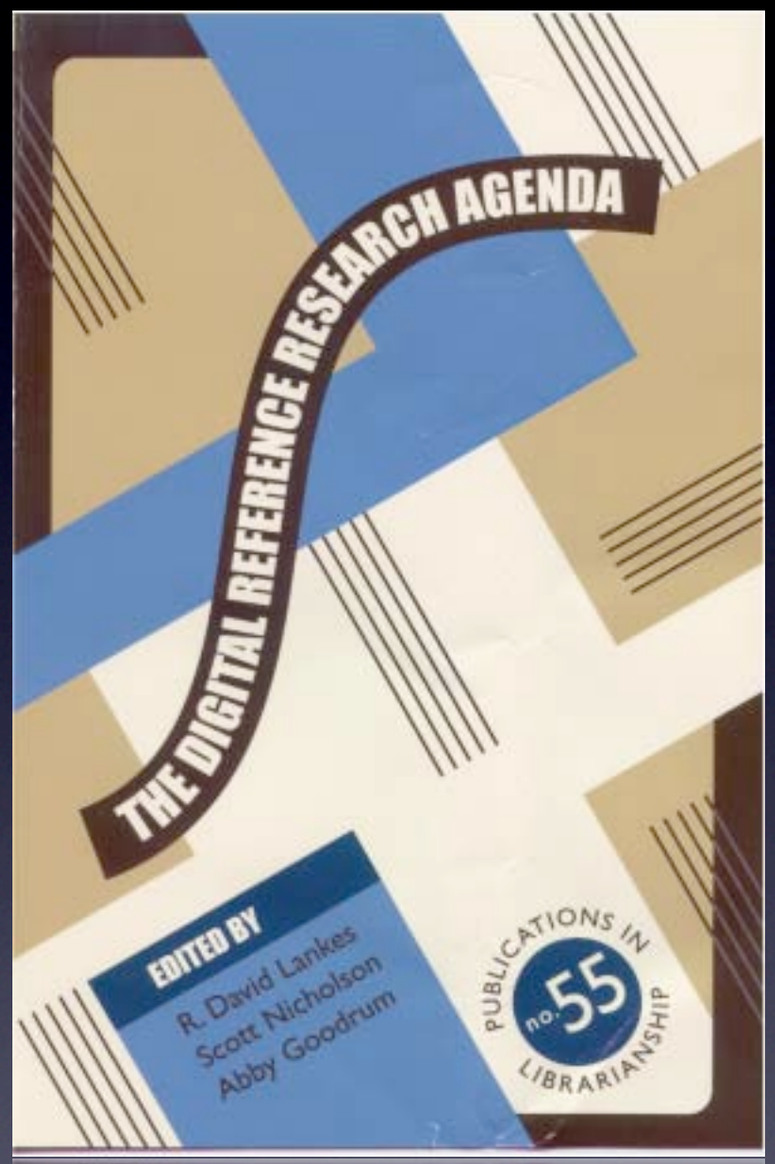
  - Reference Weighting
  - Complexity and Induction

"The use of human intermediation to answer questions in a digital environment"

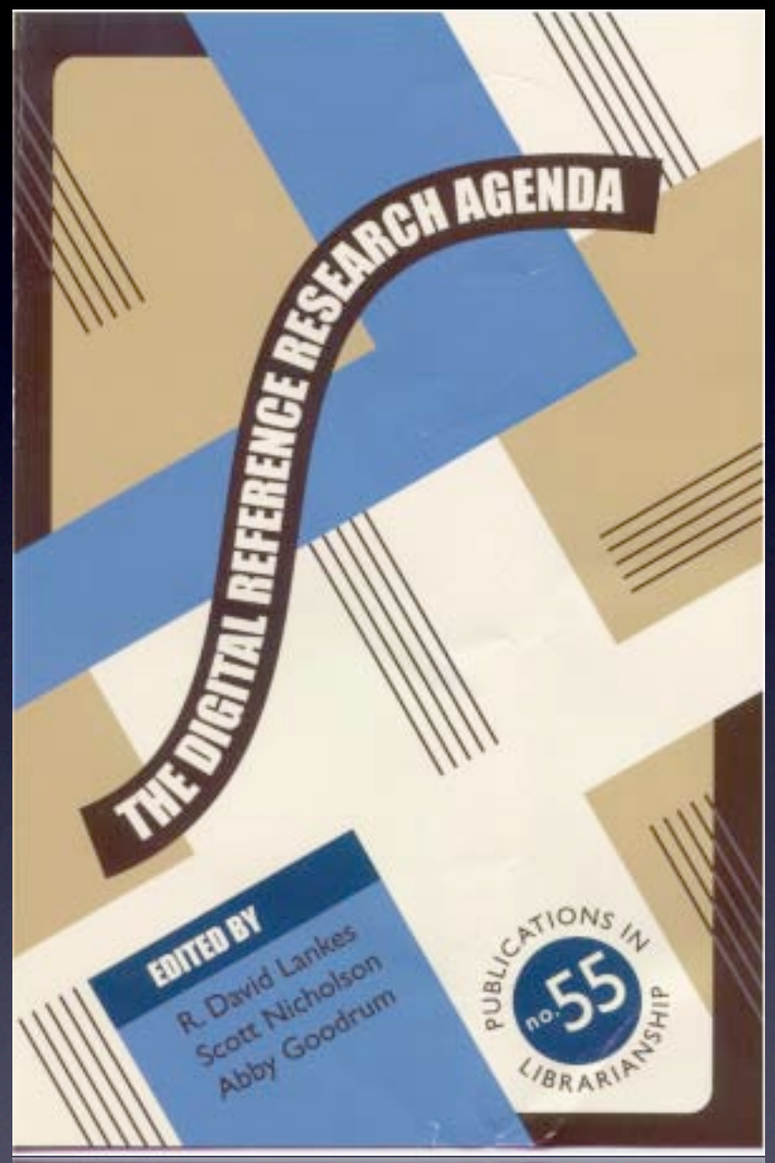
- *The Digital Reference Research Agenda*



"The use of human intermediation to answer questions in a digital environment"

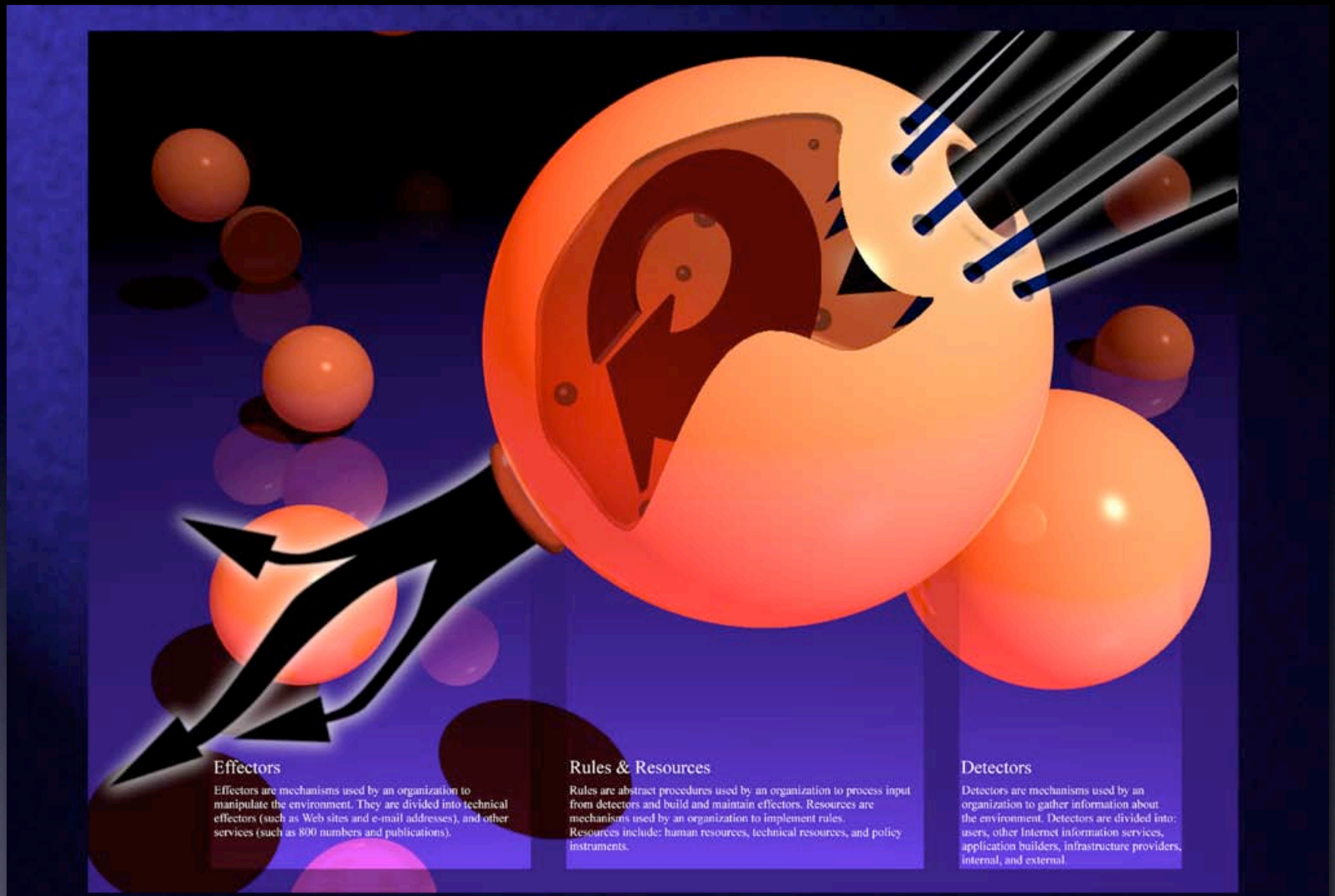
- The Digital Reference Research Agenda

An agenda to increase the technical knowledge (and capacity) of libraries and to build bridges (and respect) to the digital library and other communities.



Lankes' Virtual Reference Perspective

- Reference is an Island of Chaos in a Sea of Library Order...That's a Good Thing
- Virtual Reference is Different from Traditional Reference - It Creates Artifacts by Default/Design
- Virtual Reference is Beyond Libraries
- Virtual Reference Services are Complex Adaptive Systems



An information service's performance system gathers information from the complex adaptive system (the Internet) through detectors, processes that information with rules & resources, and then manipulates that environment through effectors.

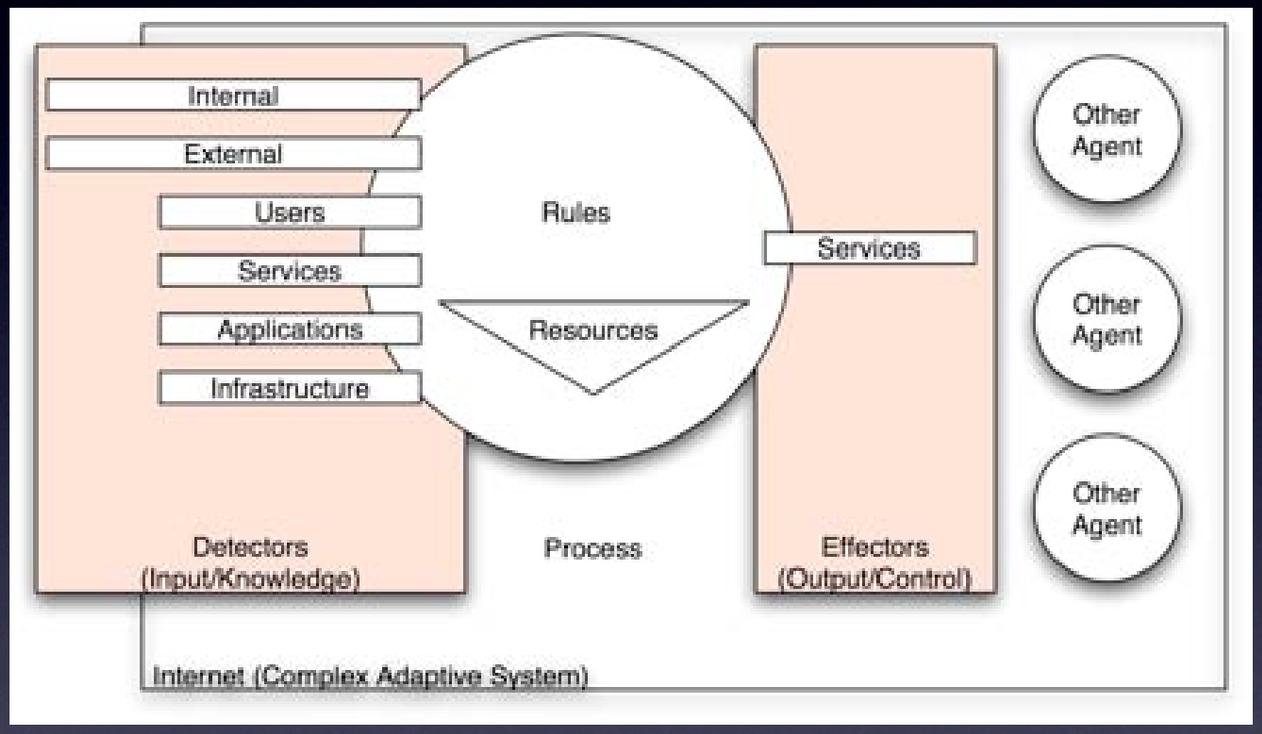
A Complexity Framework for Internet Information Services

R. David Lankes, Syracuse University

Virtual Reference

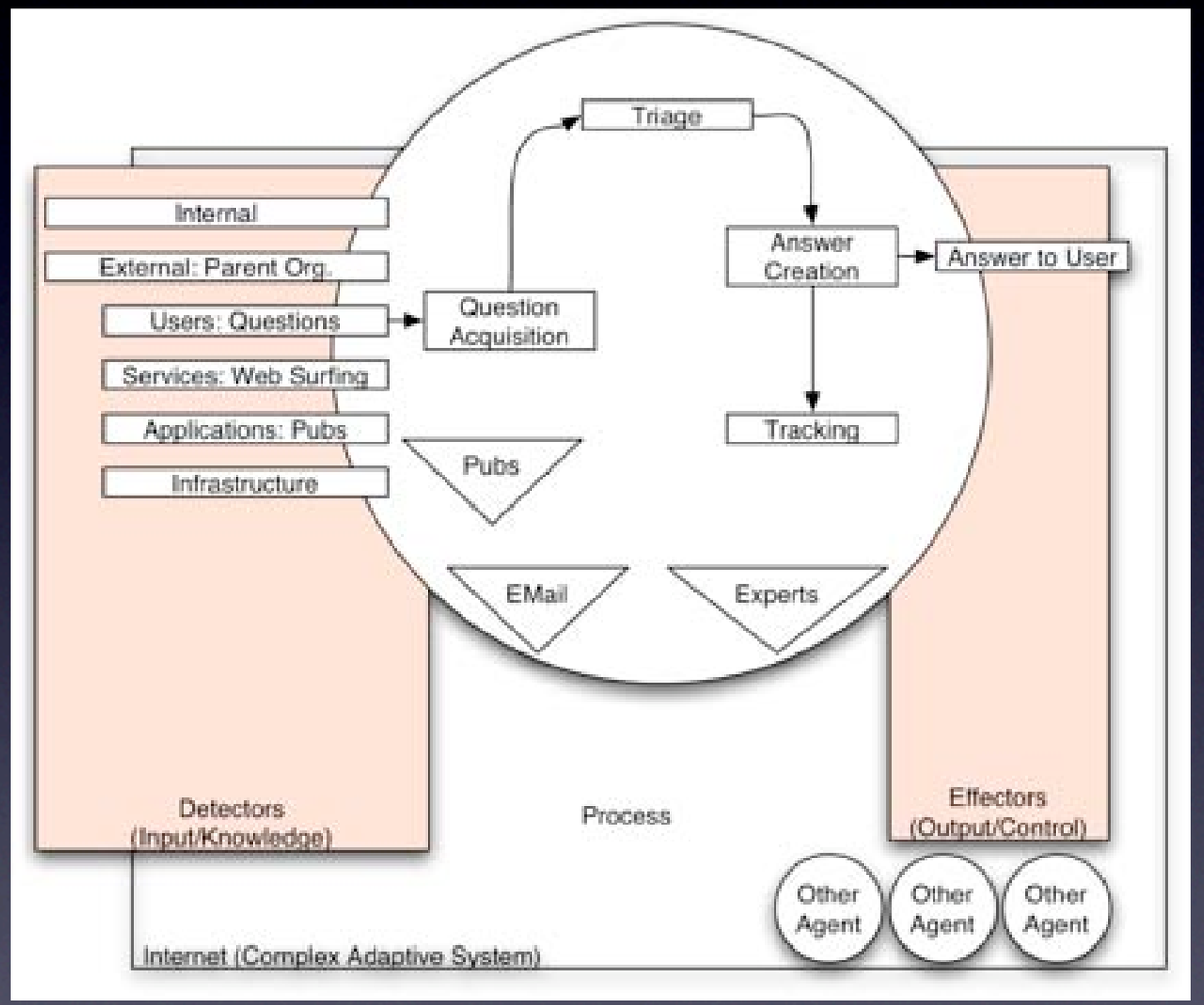
Virtual Reference

- General Digital Reference Model



Virtual Reference

- General Digital Reference Model



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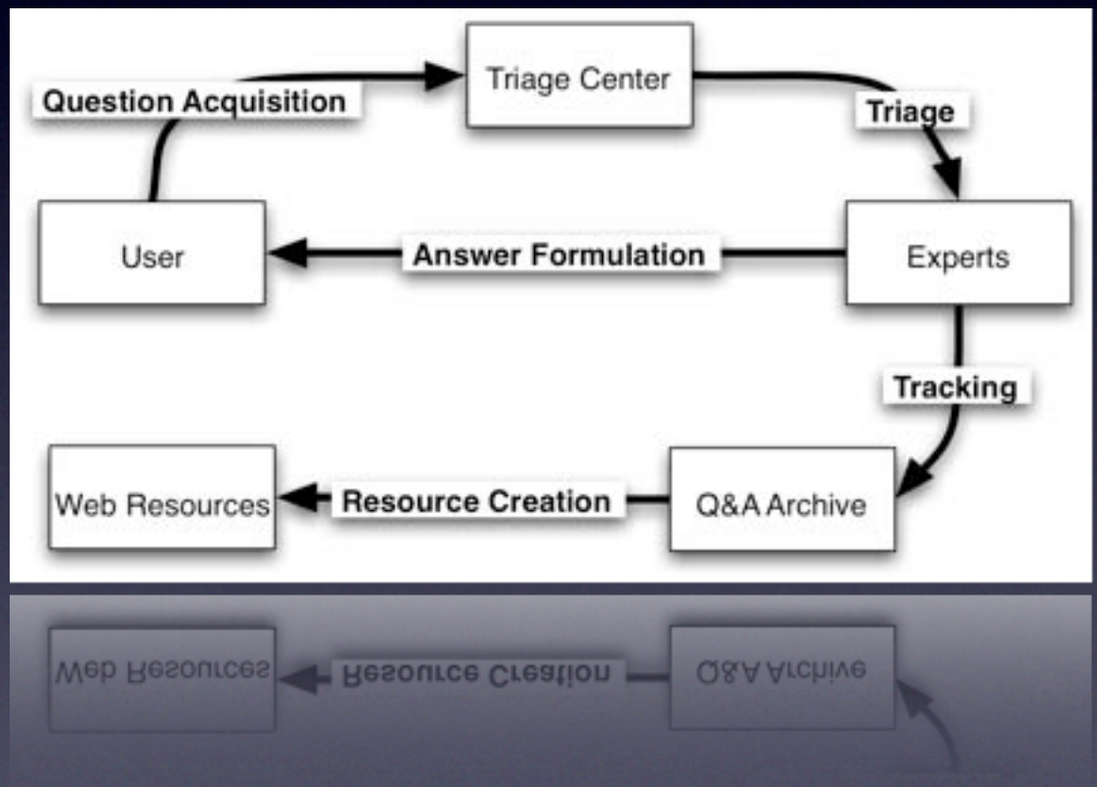

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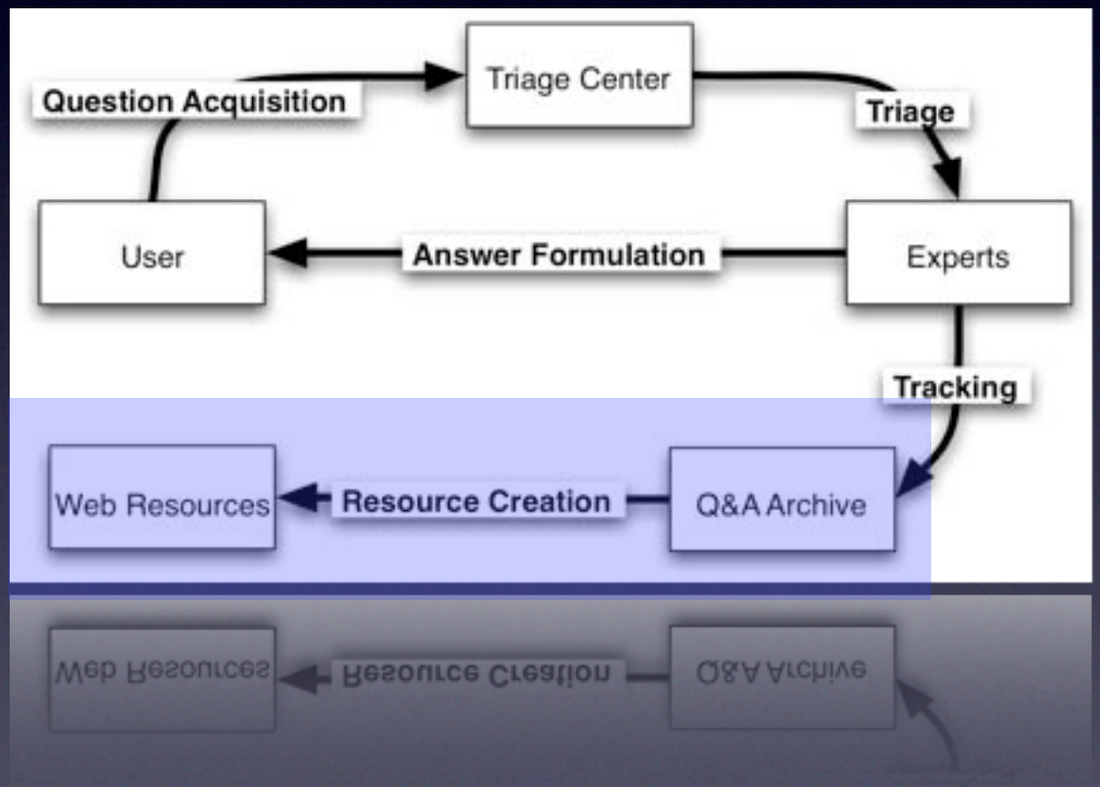

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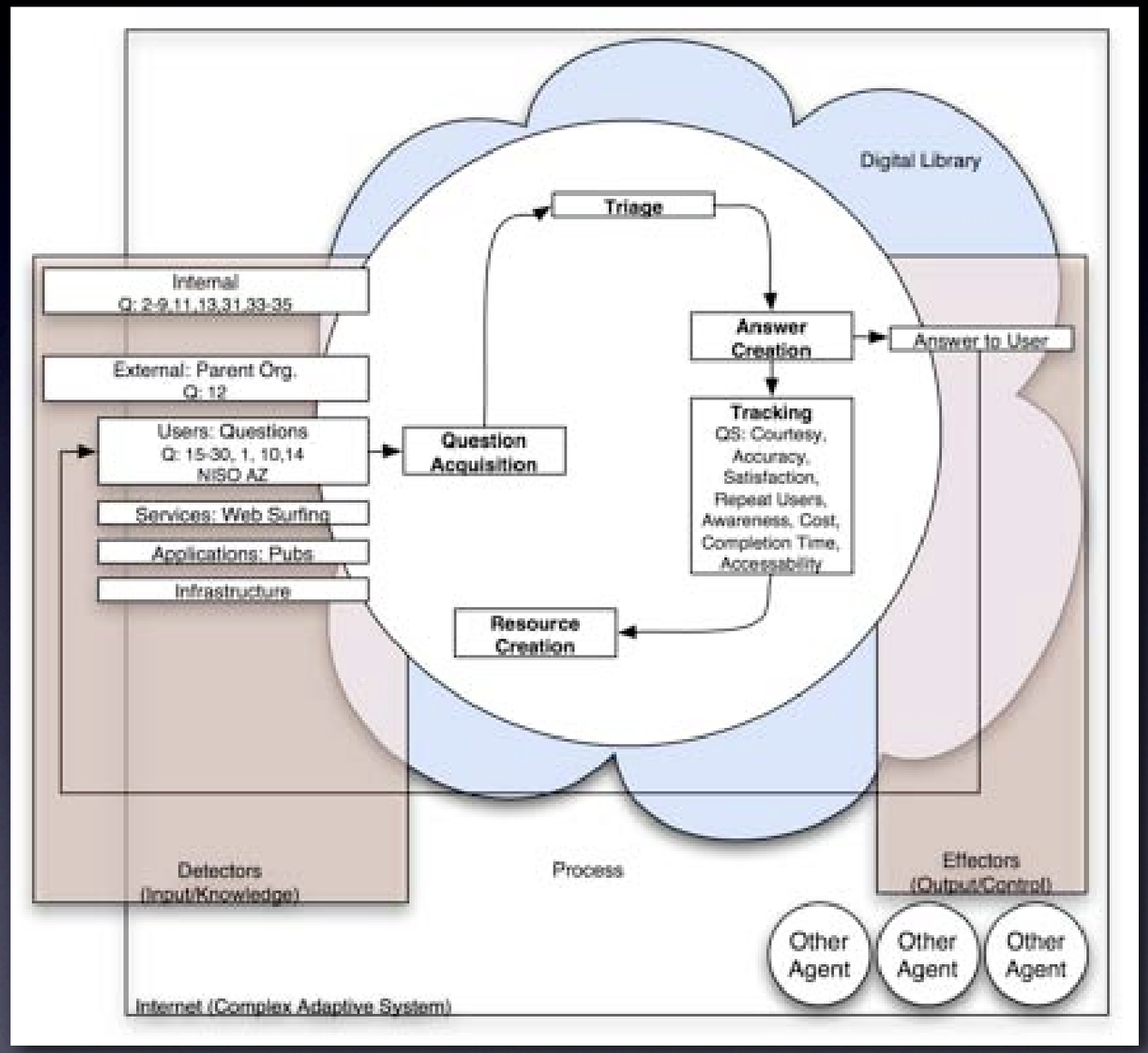
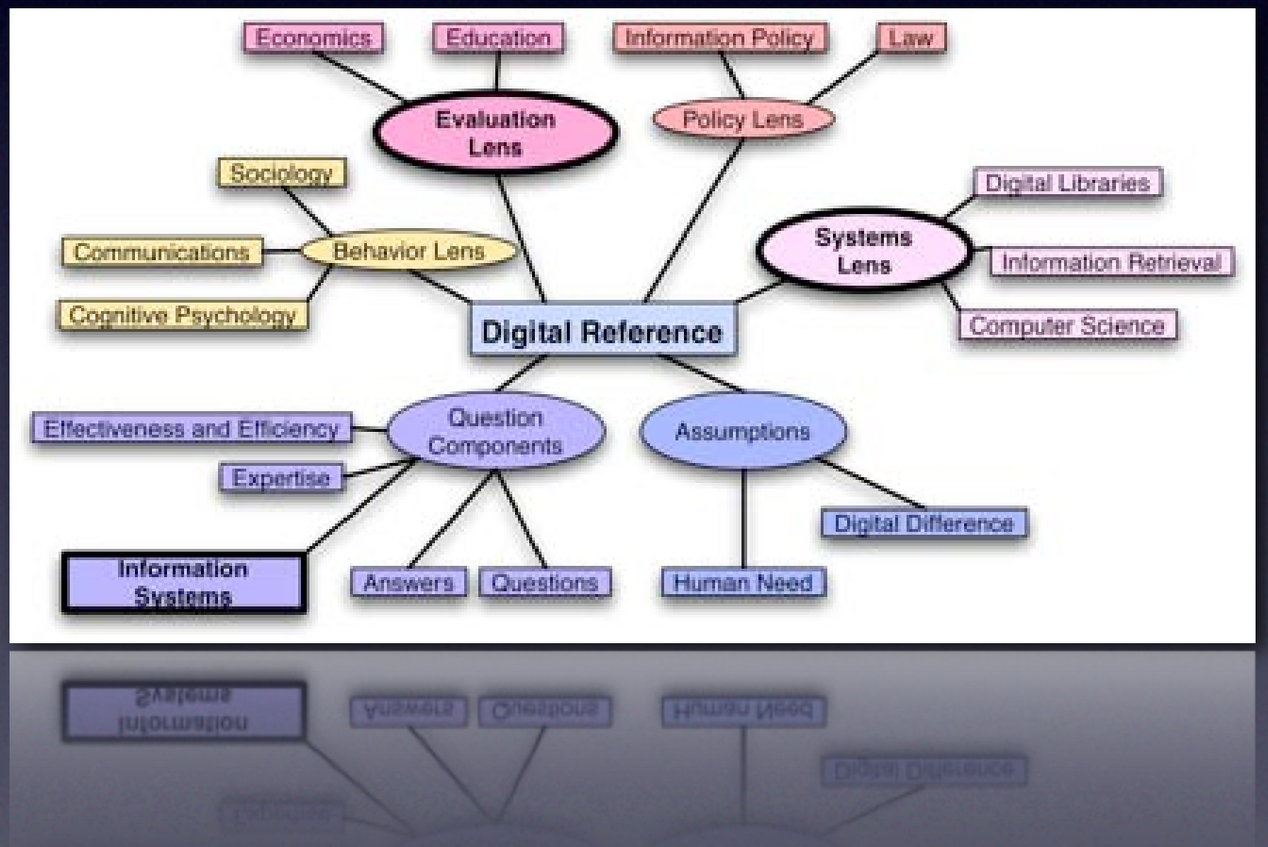


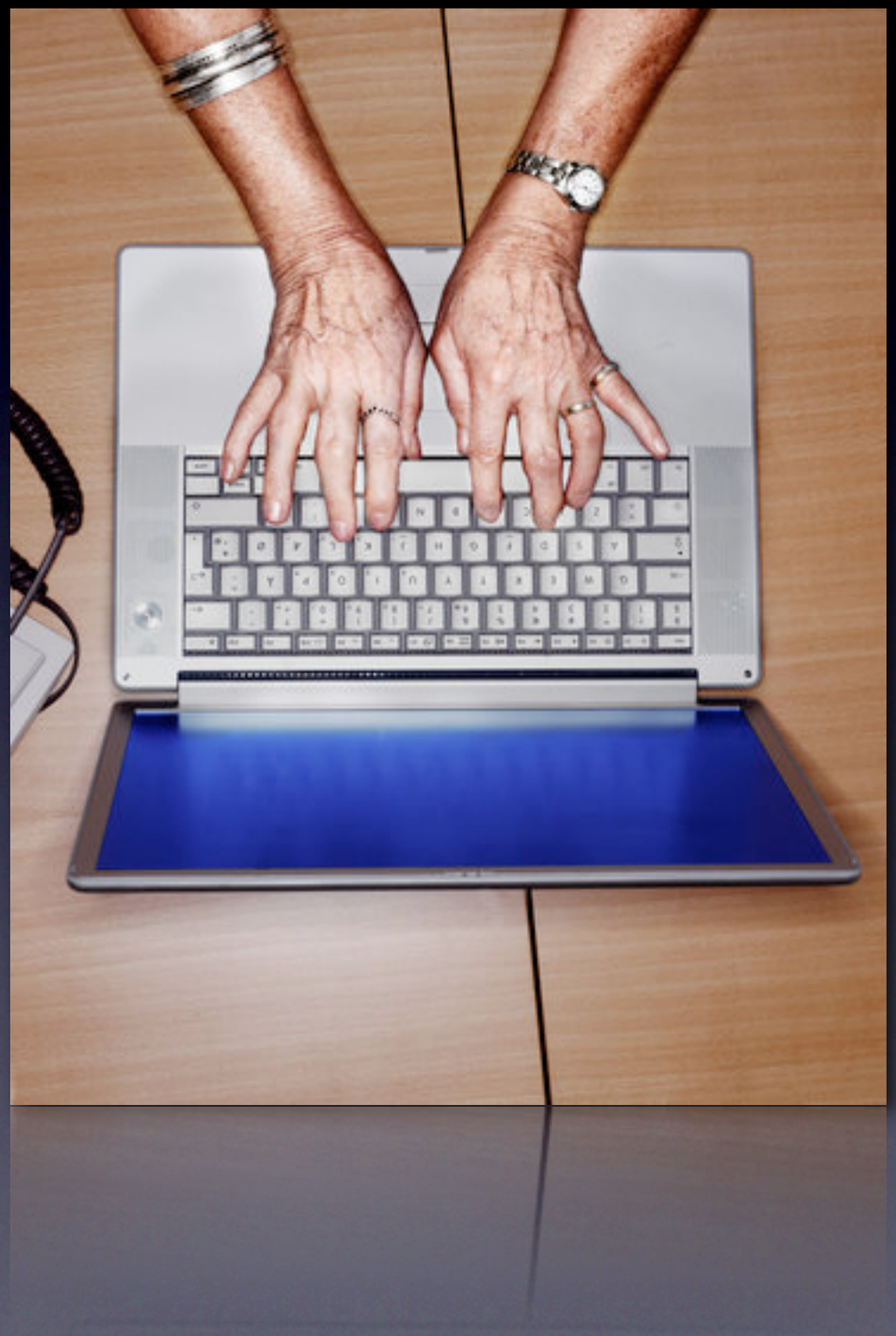
Virtual Reference

- General Digital Reference Model
- Digital Reference Research Agenda



Reference Authoring

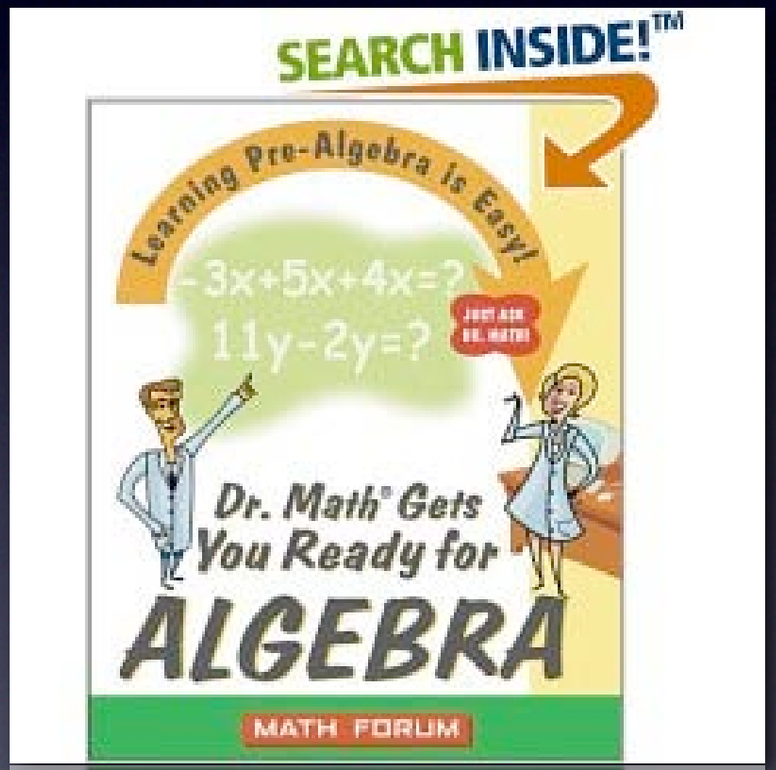
The Use of Reference Interactions to Create Secondary Artifacts

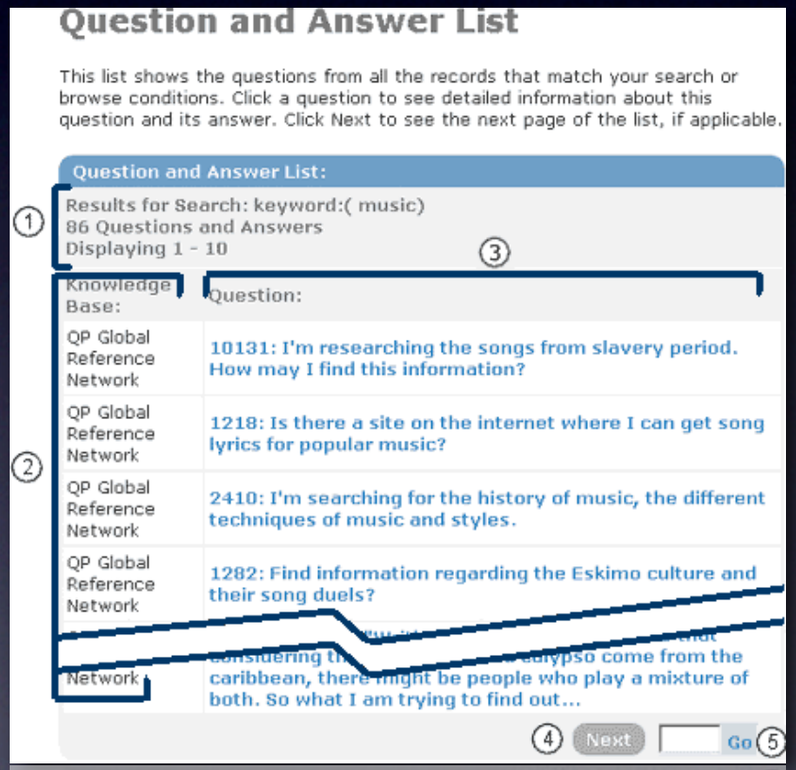


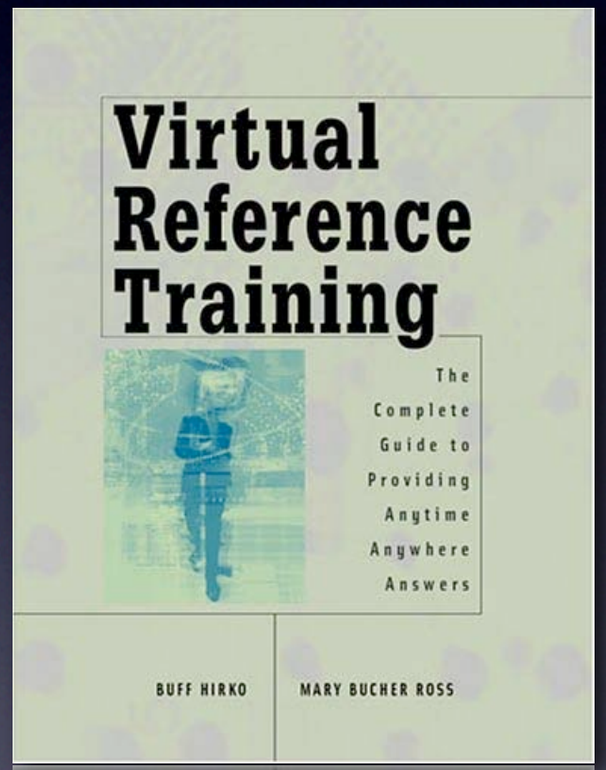
WARNING:
Exploration Ahead

- Work is Based on Theory, Exploration and Initial Experiments
- Later Work Lacks Evaluation and Rigorous Testing
- More Agenda than Results

Some Examples

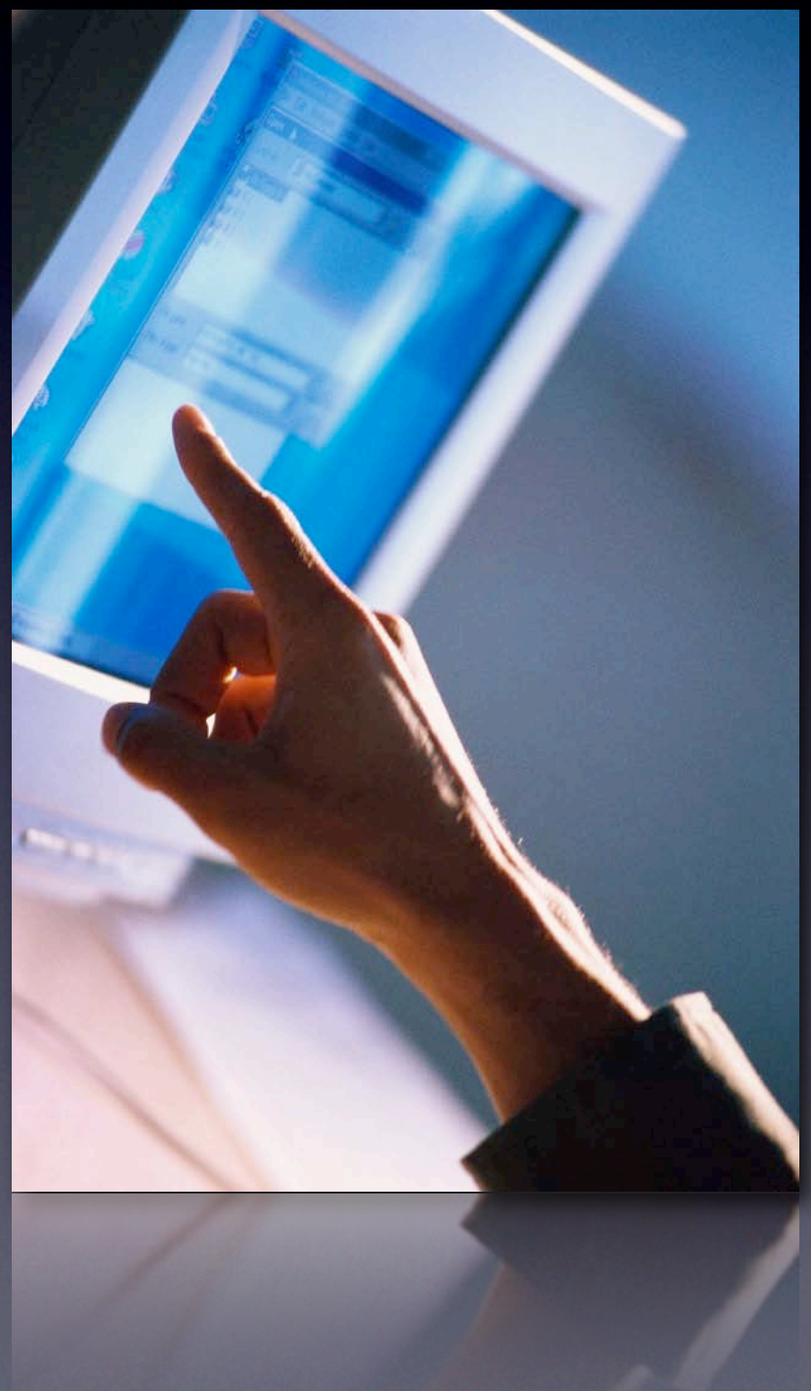






Knowledge Bases

- Many Doubt their Usefulness
- Yet Used All the Time
  - Statistics
  - Patron Follow-Up
  - Evaluation



Inherent Problems in Deductive Approach

- Context Dependencies

  "I need a good restaurant in Austin for the lactose intolerant"

- Metadata Creation

  What's the LC class for swimming pools in the Kremlin?

- Chunking

  "I need all the articles by Robert Taylor and Tefko"

- Fact Shifting & Temporal Dependencies

  "What is the height of Mount Everest?"

Transformation

Transformation

Raw

Transformation

Raw

Edited

Transformation

Raw

Edited

Refined

Transformation

Raw

Edited

Refined

Transformation

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Edited

Refined

- Effort: The Amount of Resources (Time, Money, Automation) Expended to Transform

Transformation

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Edited

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- Effect: The Utility of the End Result

Transformation

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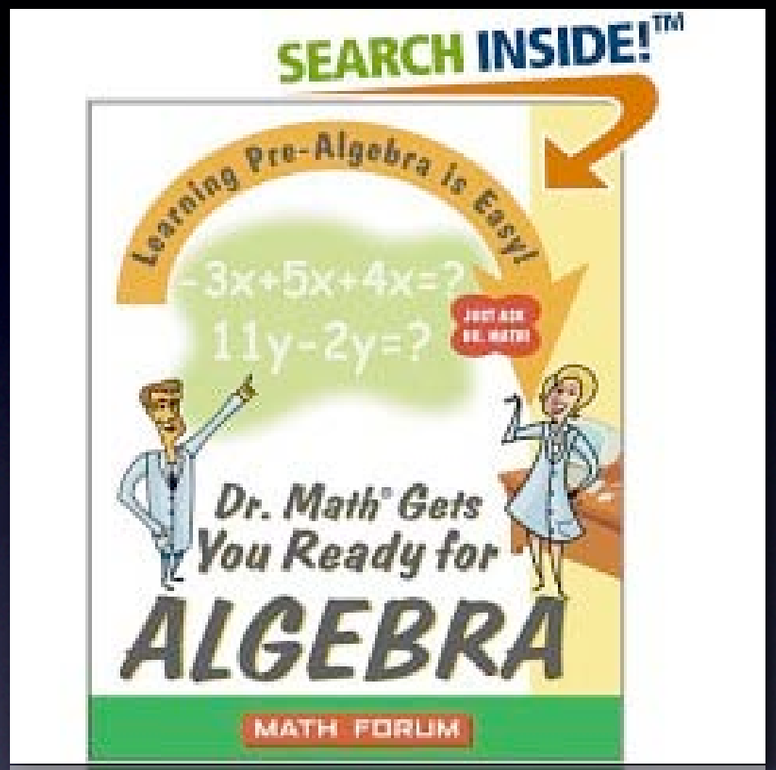
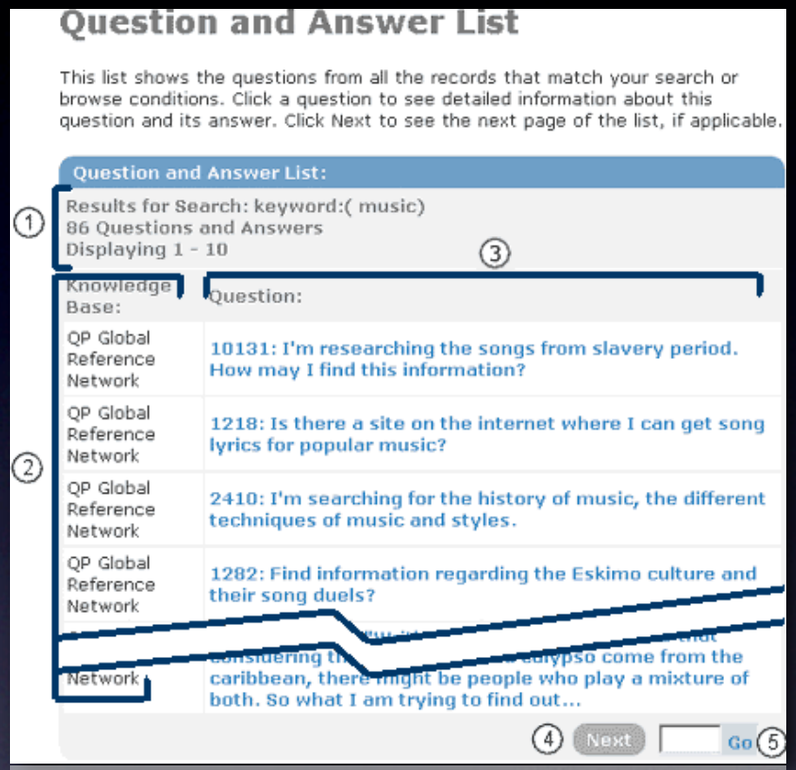
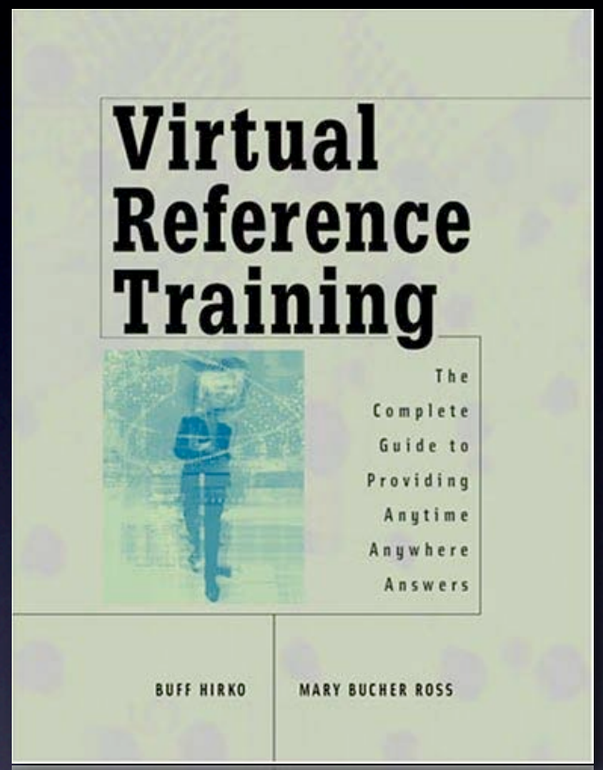
High Effect, High Effort



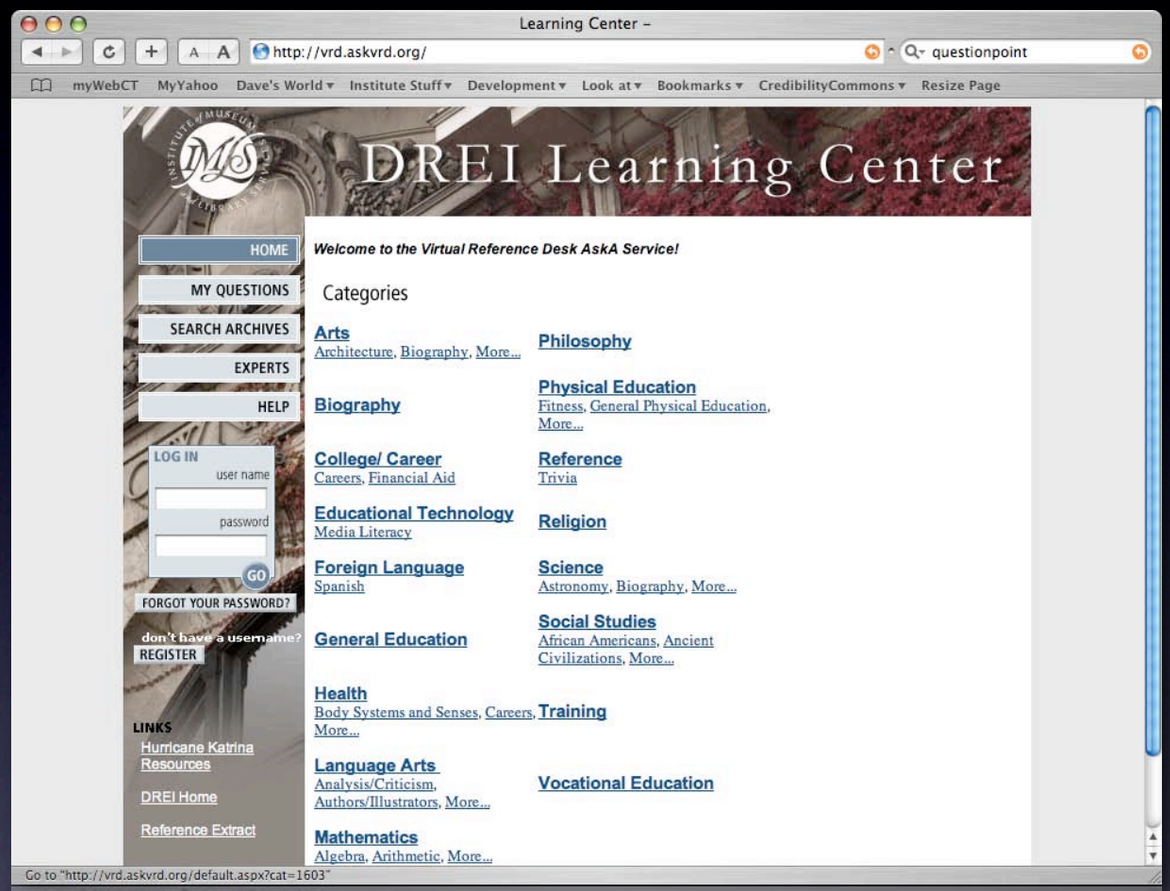




- Each Requires a High Amount of Effort to Effect

Low Effect*, Low Effort

* Low Effect Simply Reflects Susceptibility to the Draw Backs of Deductive Knowledge Bases



- Requires Low or Distributed Effort to Effect

What has Low Effort and High Effect?

- Search Seems Promising
  - High Use in the Internet
    - Matches Reference Domain
- Preserves Patron Privacy
  - URL Stripping

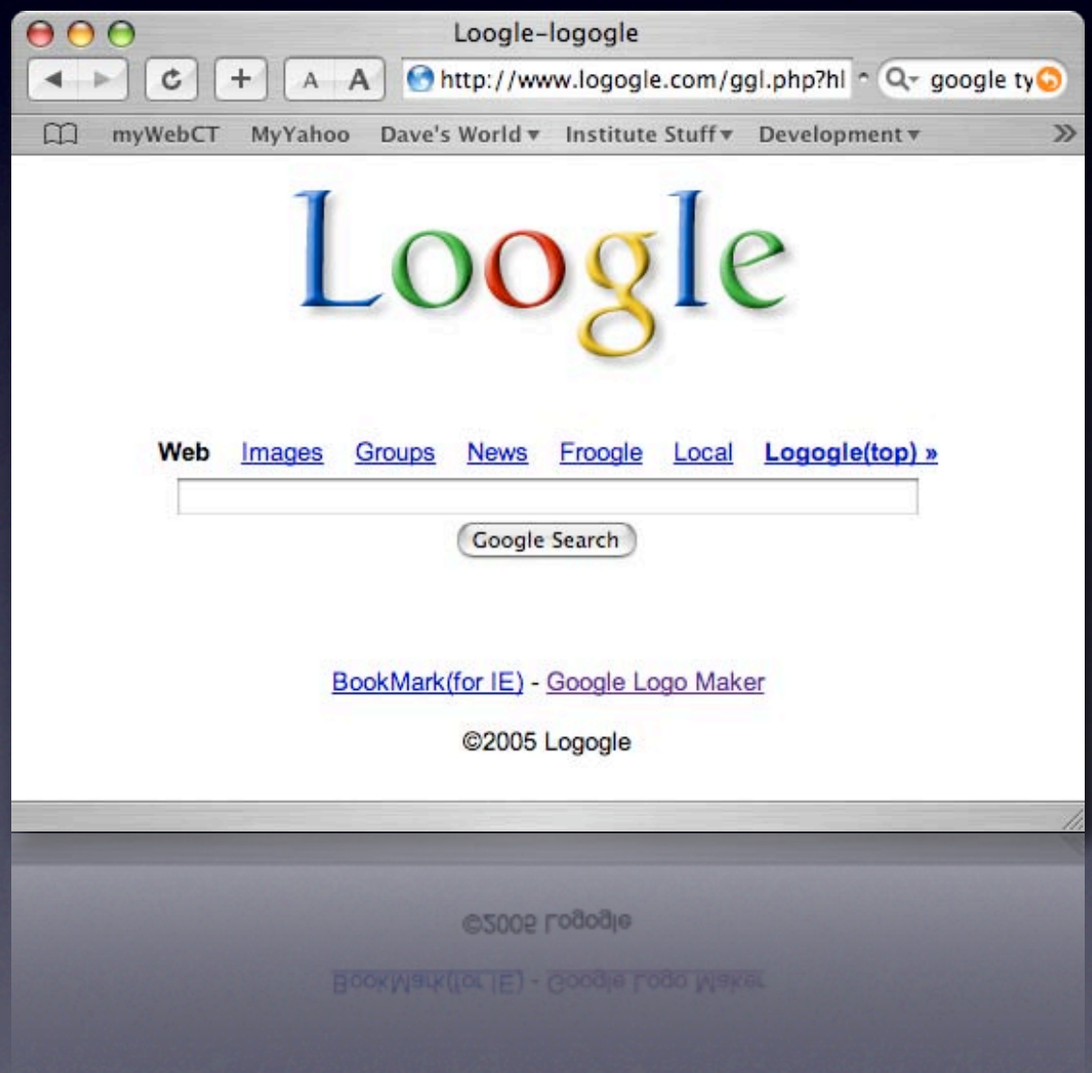
Credibility

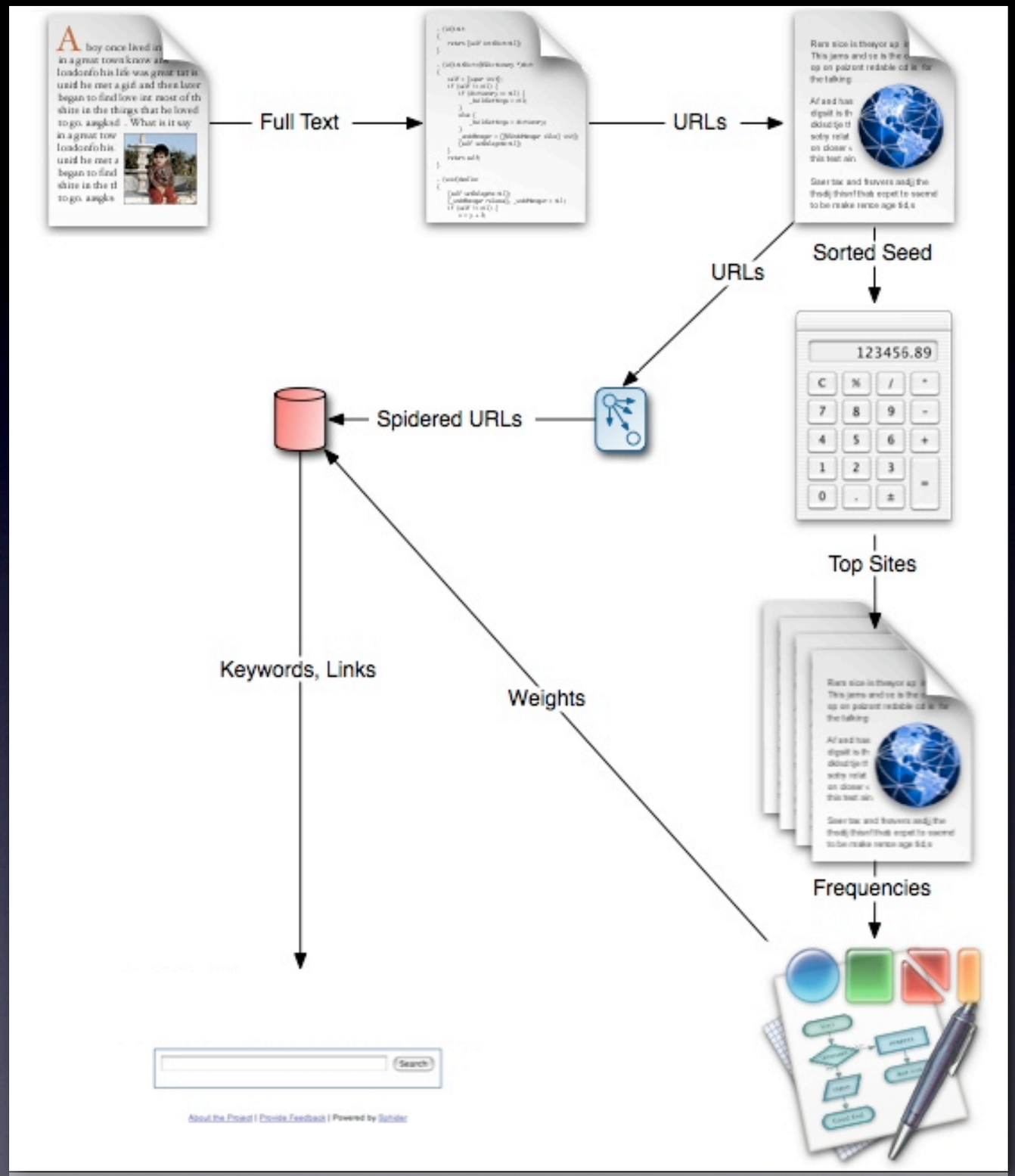
- What Makes Information Credible on the Internet?
  - Tool Based Decisions
  - Methods of Determination
    - Checklist (accuracy, authority, objectivity, currency, and coverage or scope)
    - Cognitive (presentation, information, motives, reputation)

"Understanding How Internet Users Make Sense of Credibility: A Review of the State of Our Knowledge and Recommendations for Theory, Policy, and Practice" - Miriam J. Metzger

What if Librarians Built Google?

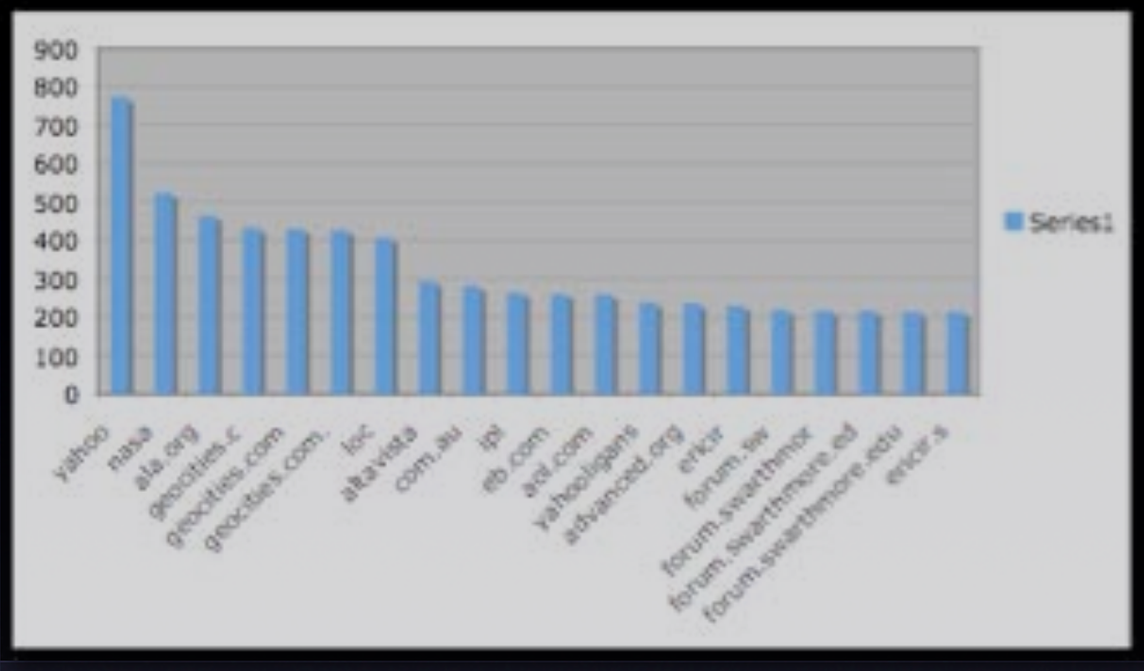
- Built Inductively from Actual Use
- Reference Weighting
- Using "Citedness" as a Surrogate for Relevance like Google uses Page Ranking
- "Boost" Results by Use/Citation





- Raw Text File
- Extracted URL's
- Frequencies

Reference Weighting



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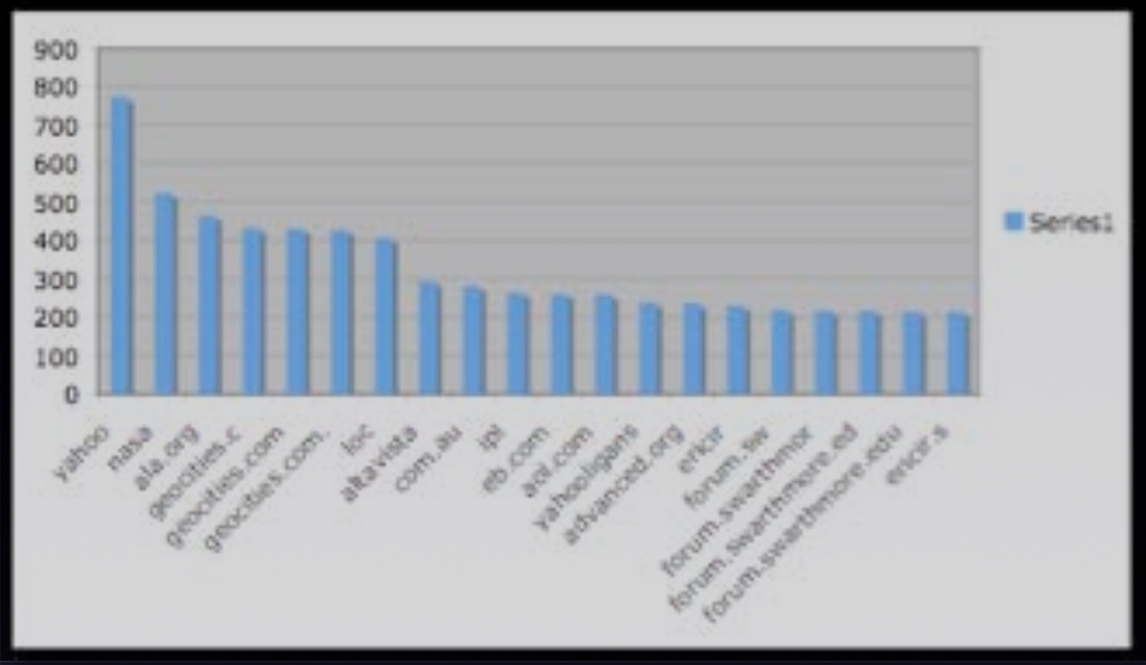

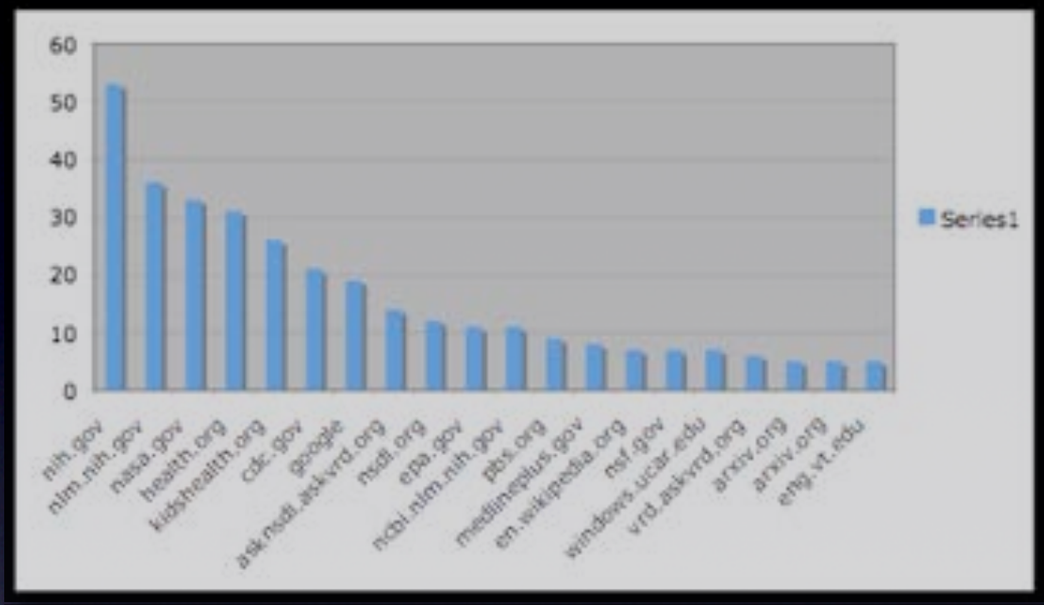

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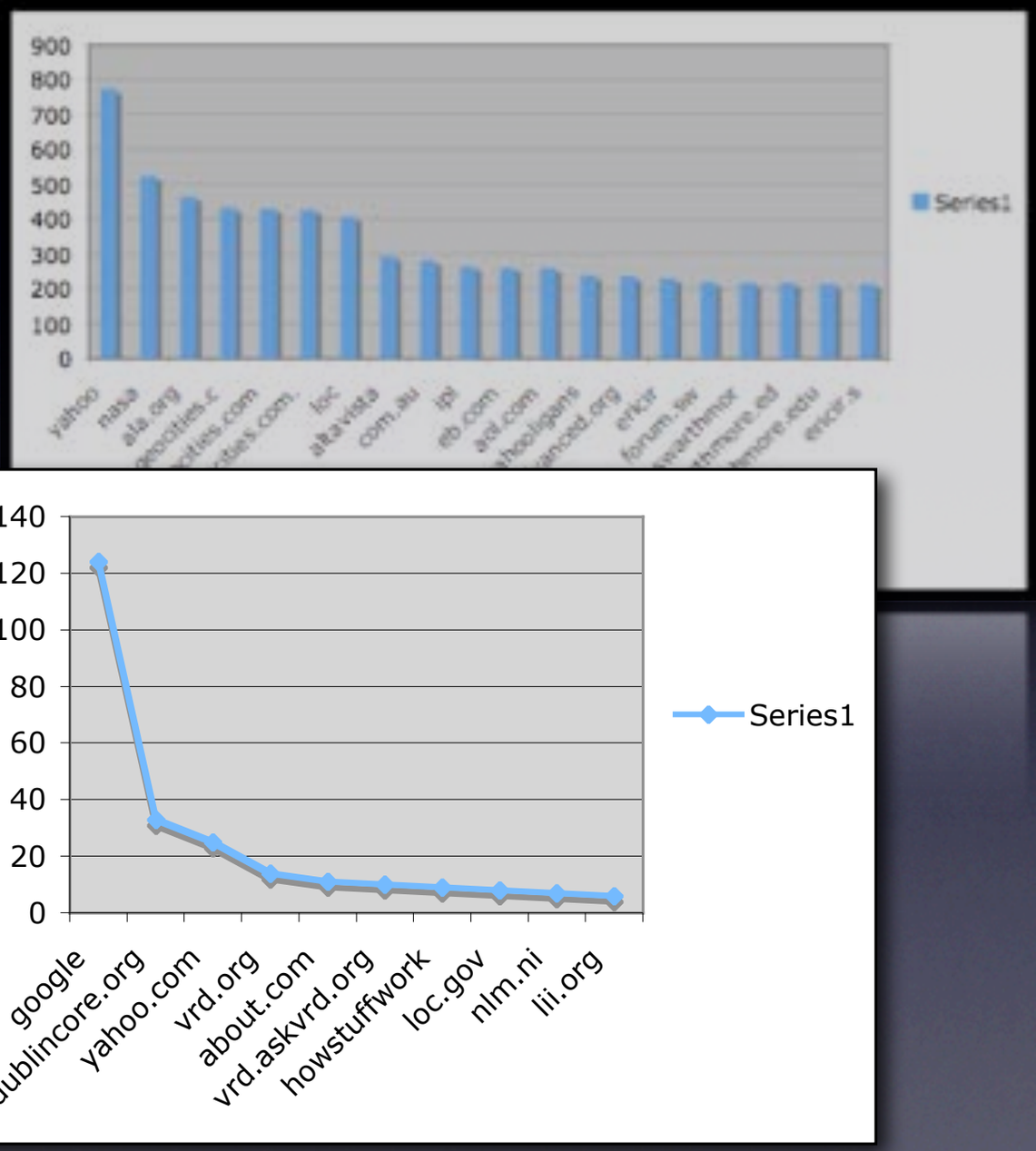

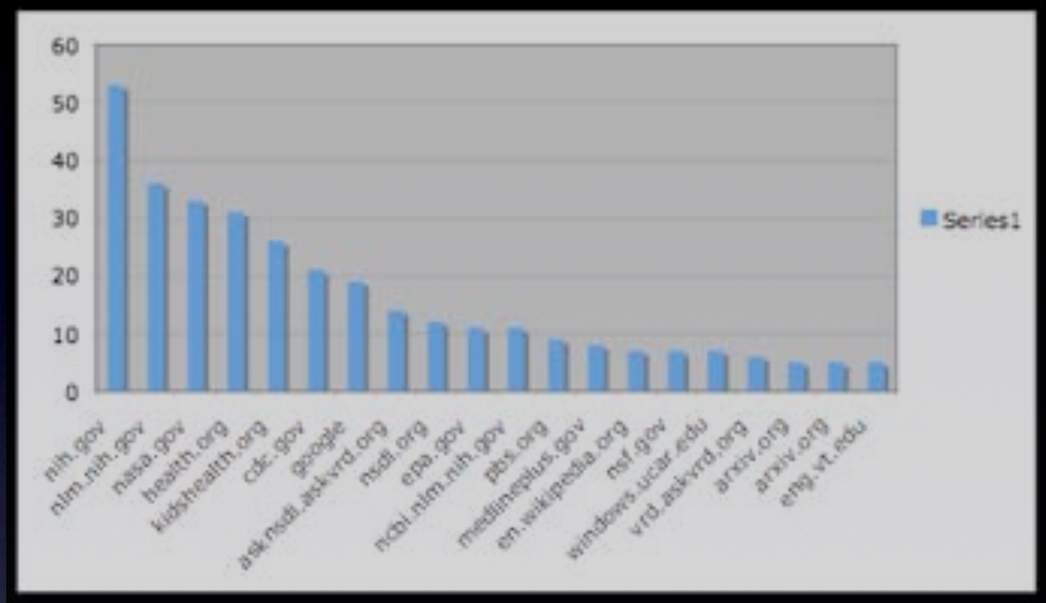

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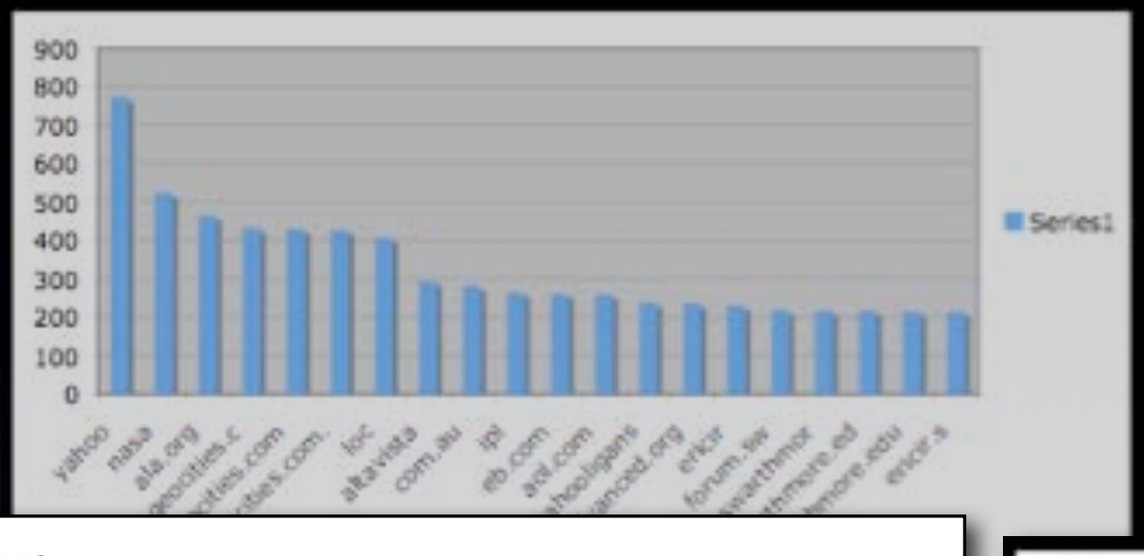
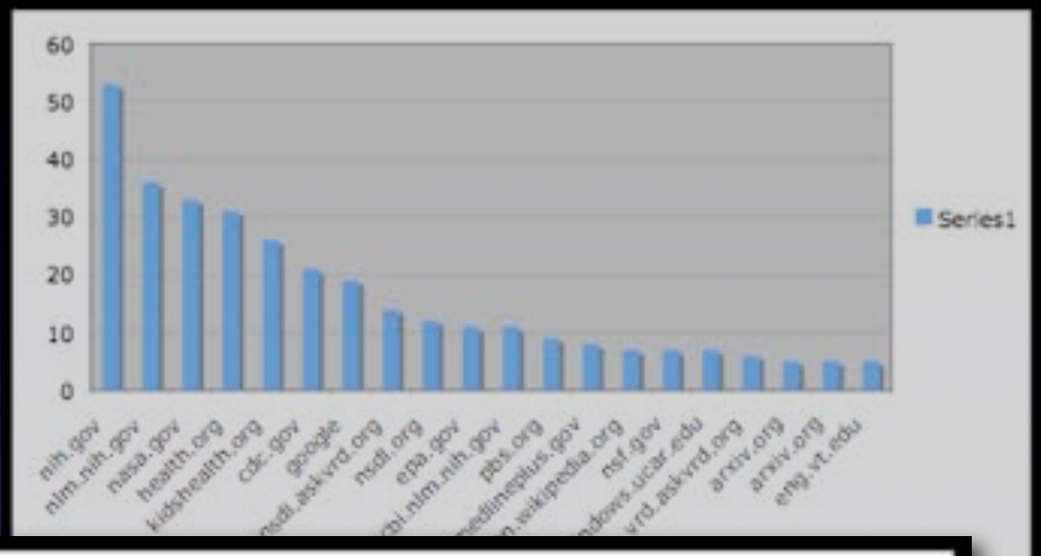
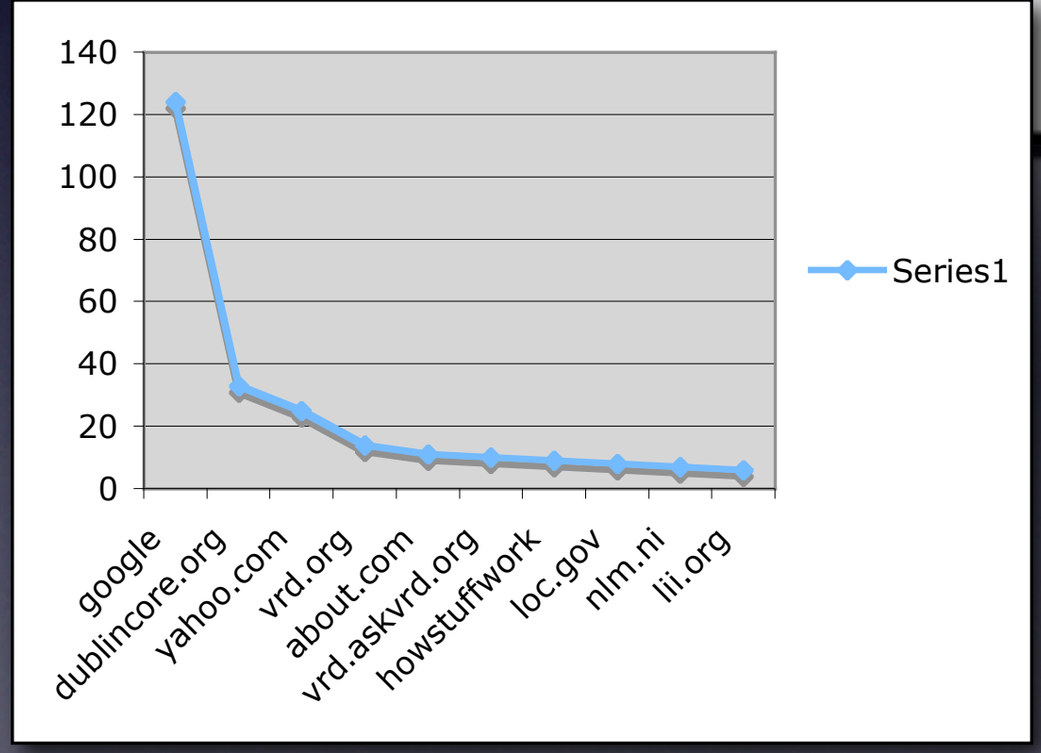
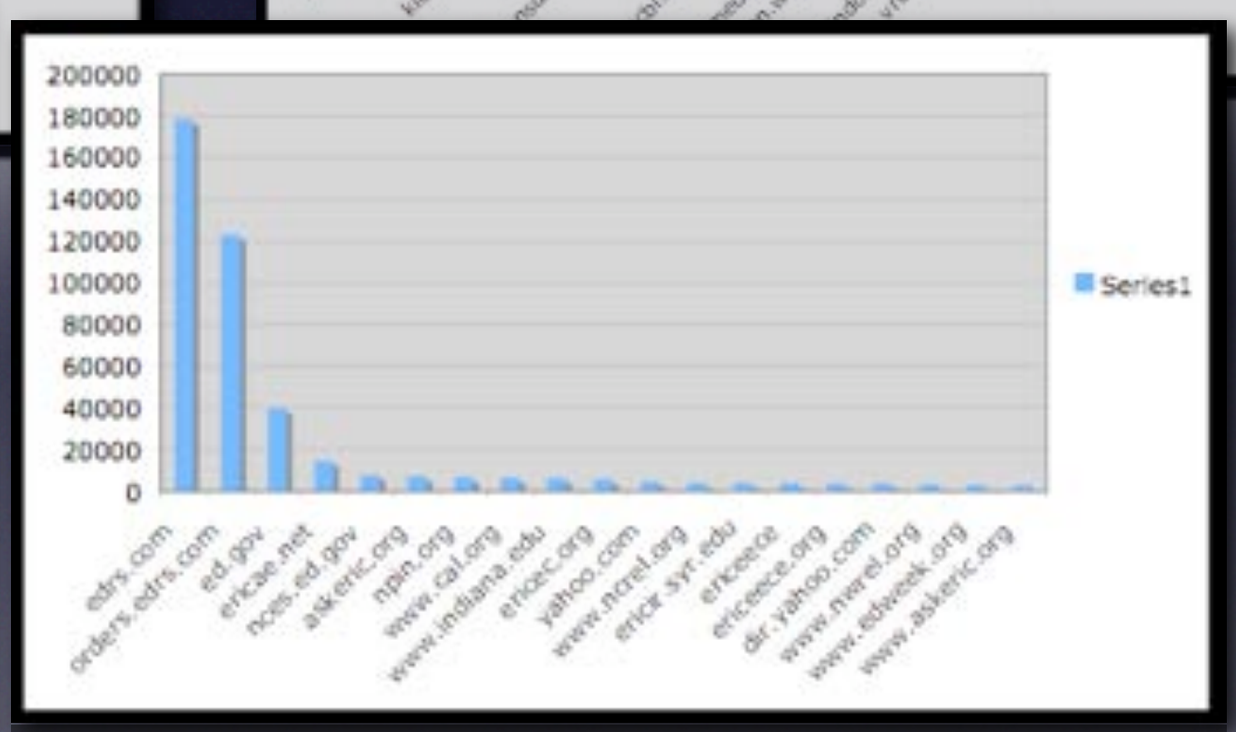
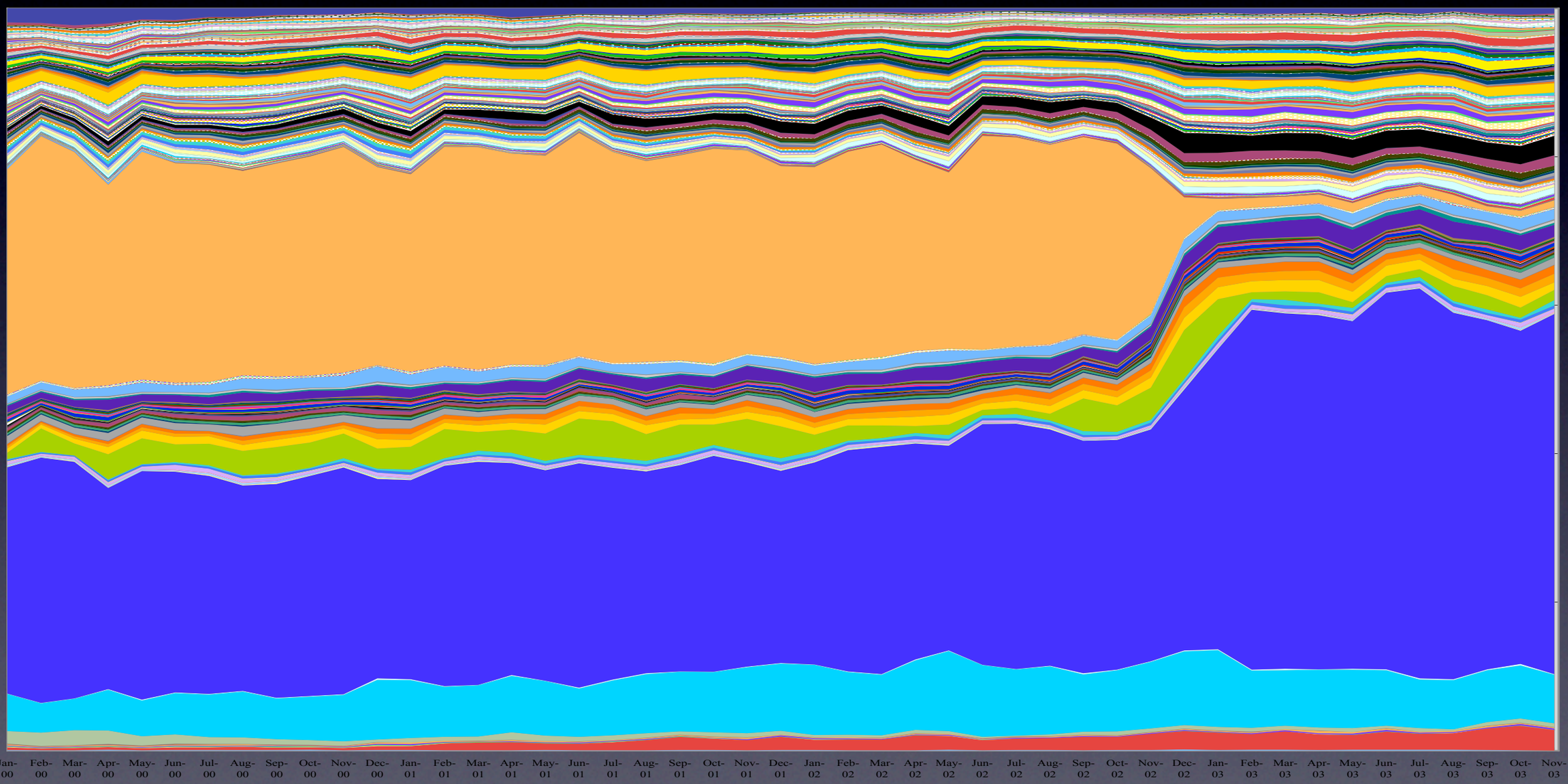




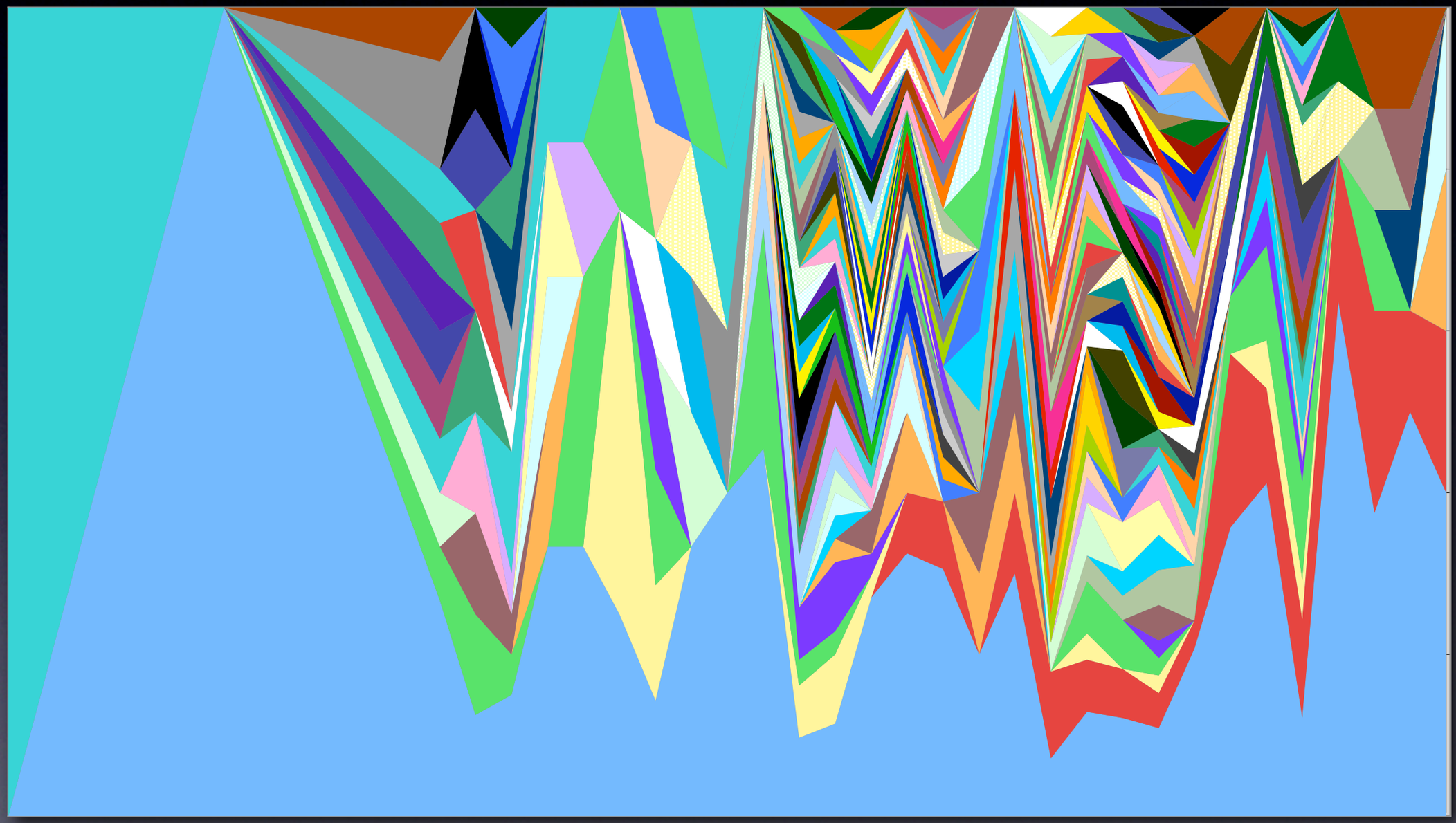




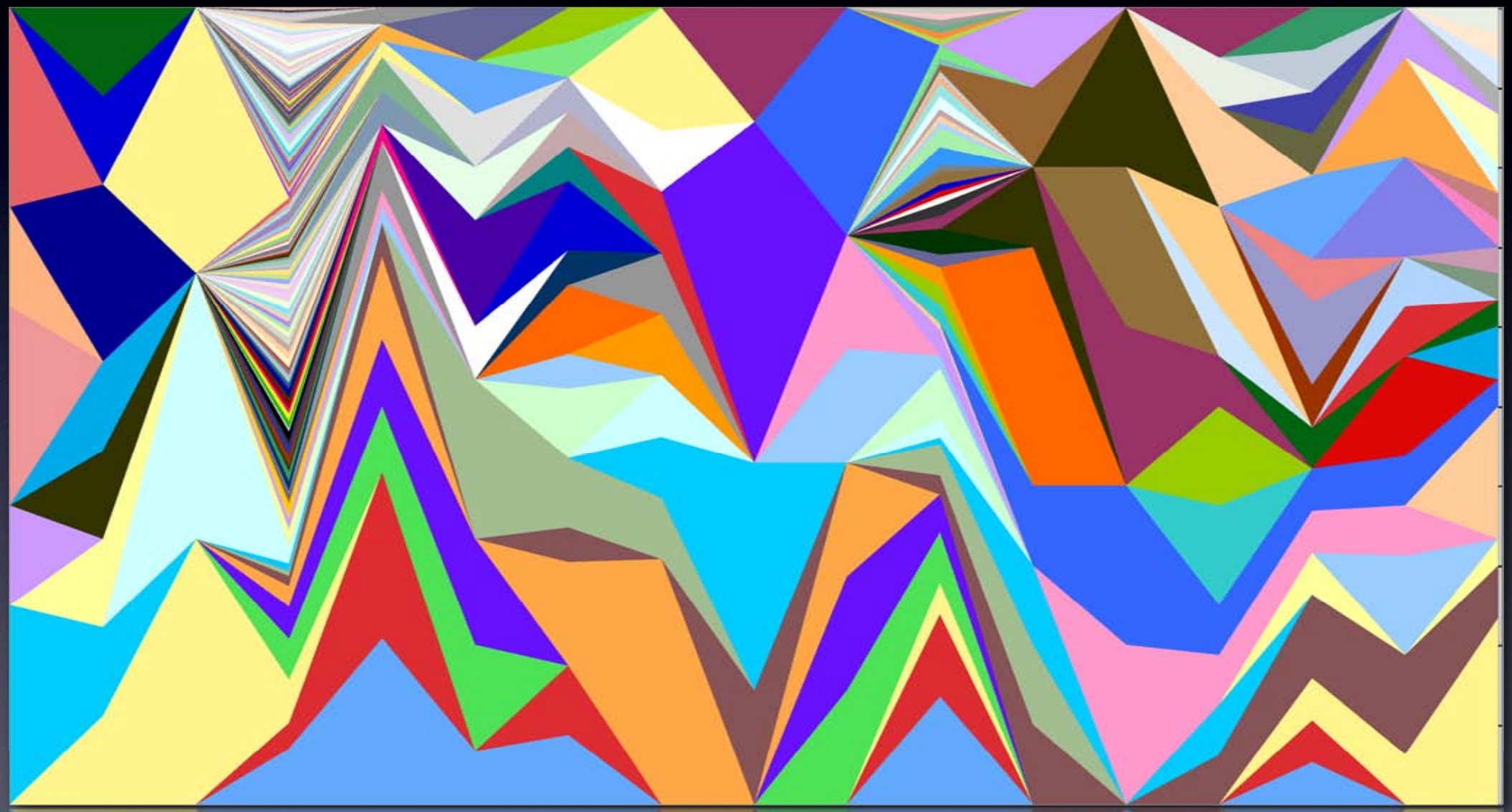
AskERIC Histogram



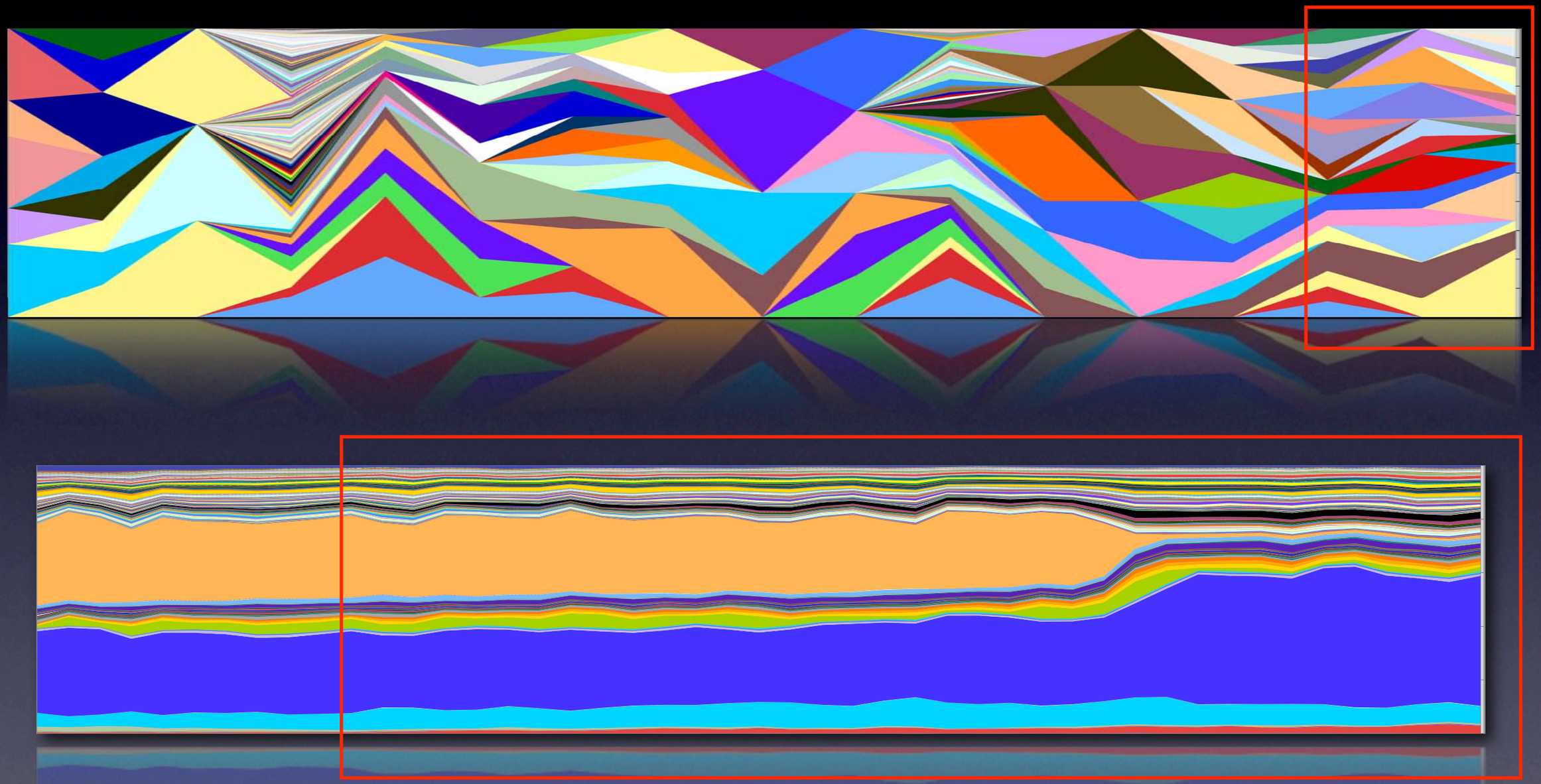
VRD Histogram



AskNSDL Histogram



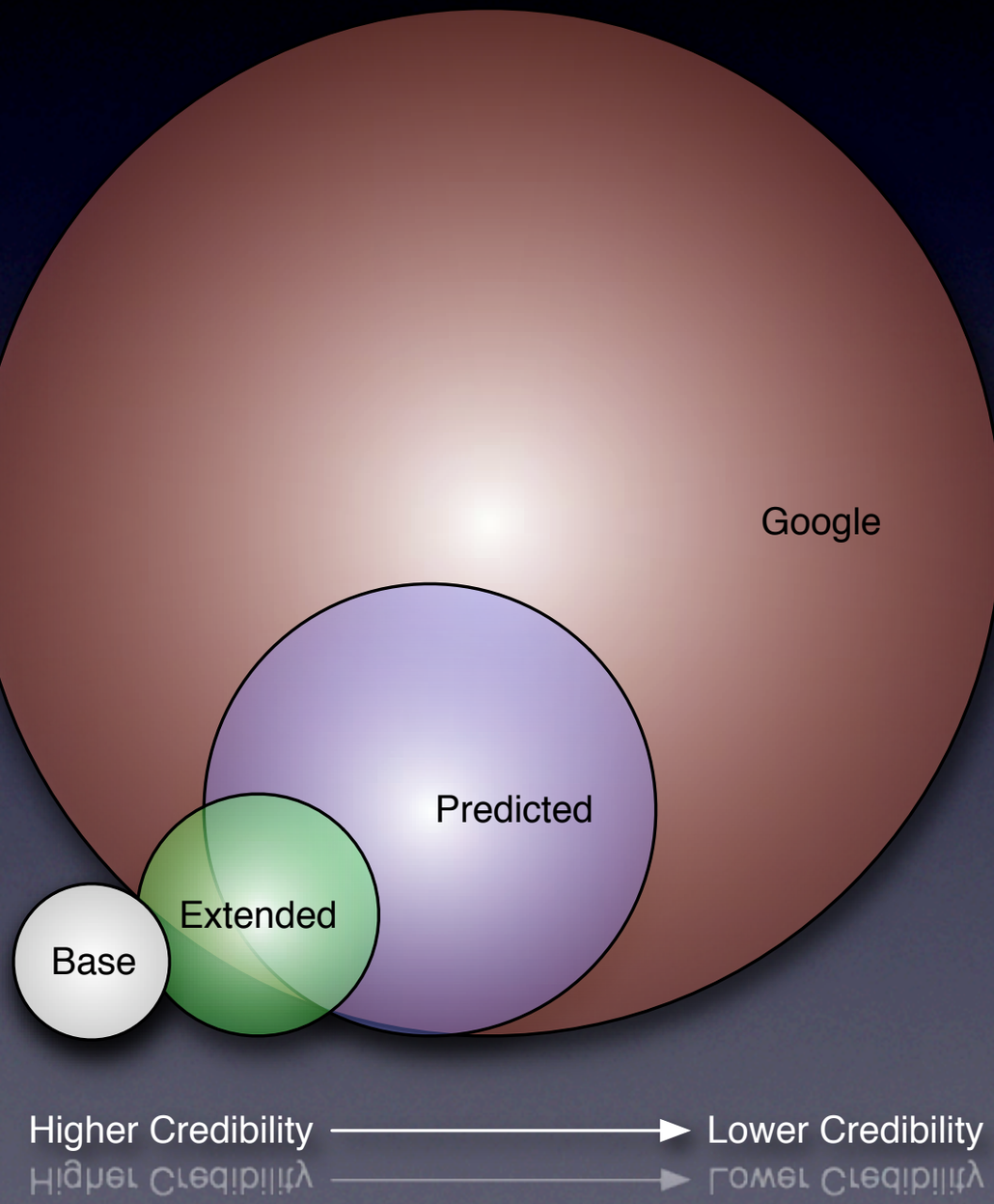
“Weighting Window”



Reference EXTRACT

- "What is the utility of a knowledge base?"
- High Effect, Low Effort, High User Privacy
- Low Context
- High Credibility?

Zones of Credibility?

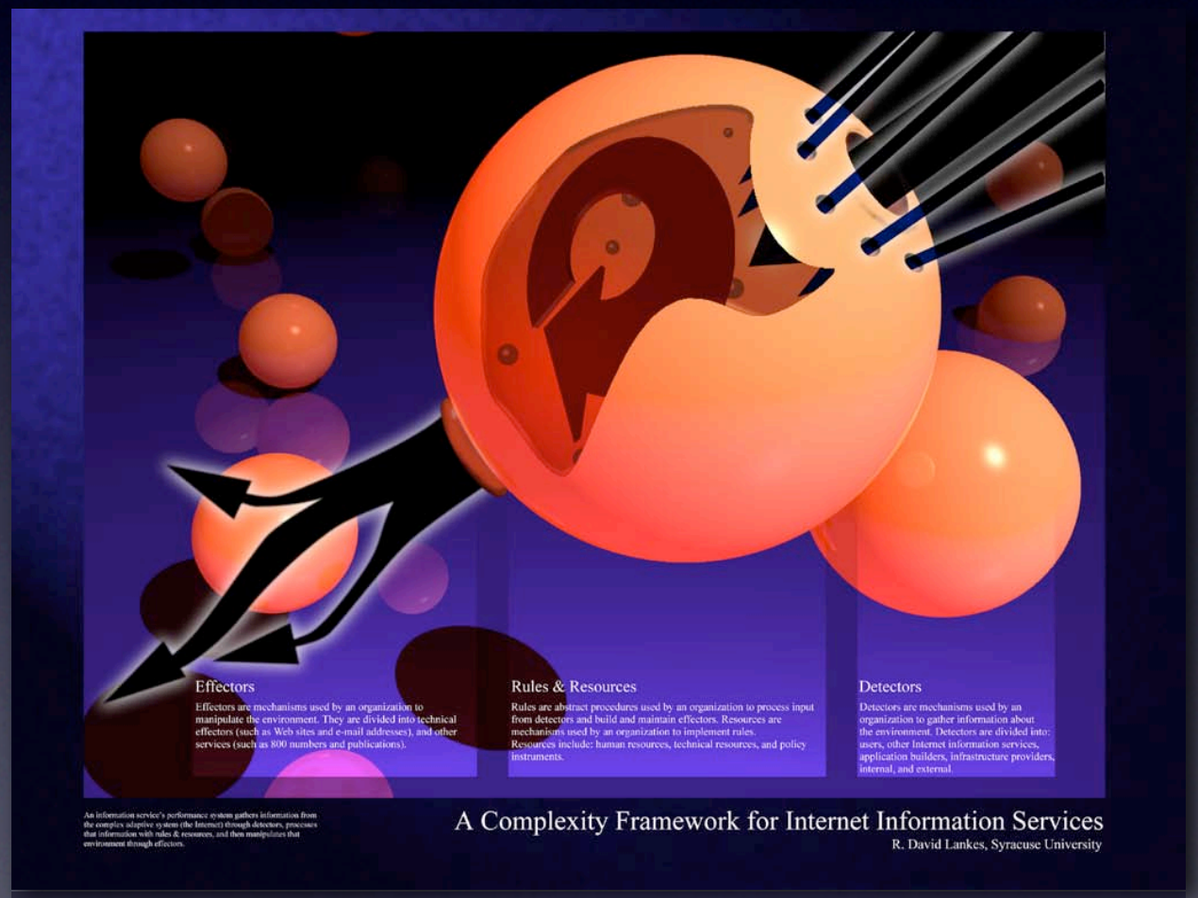


Story Starters

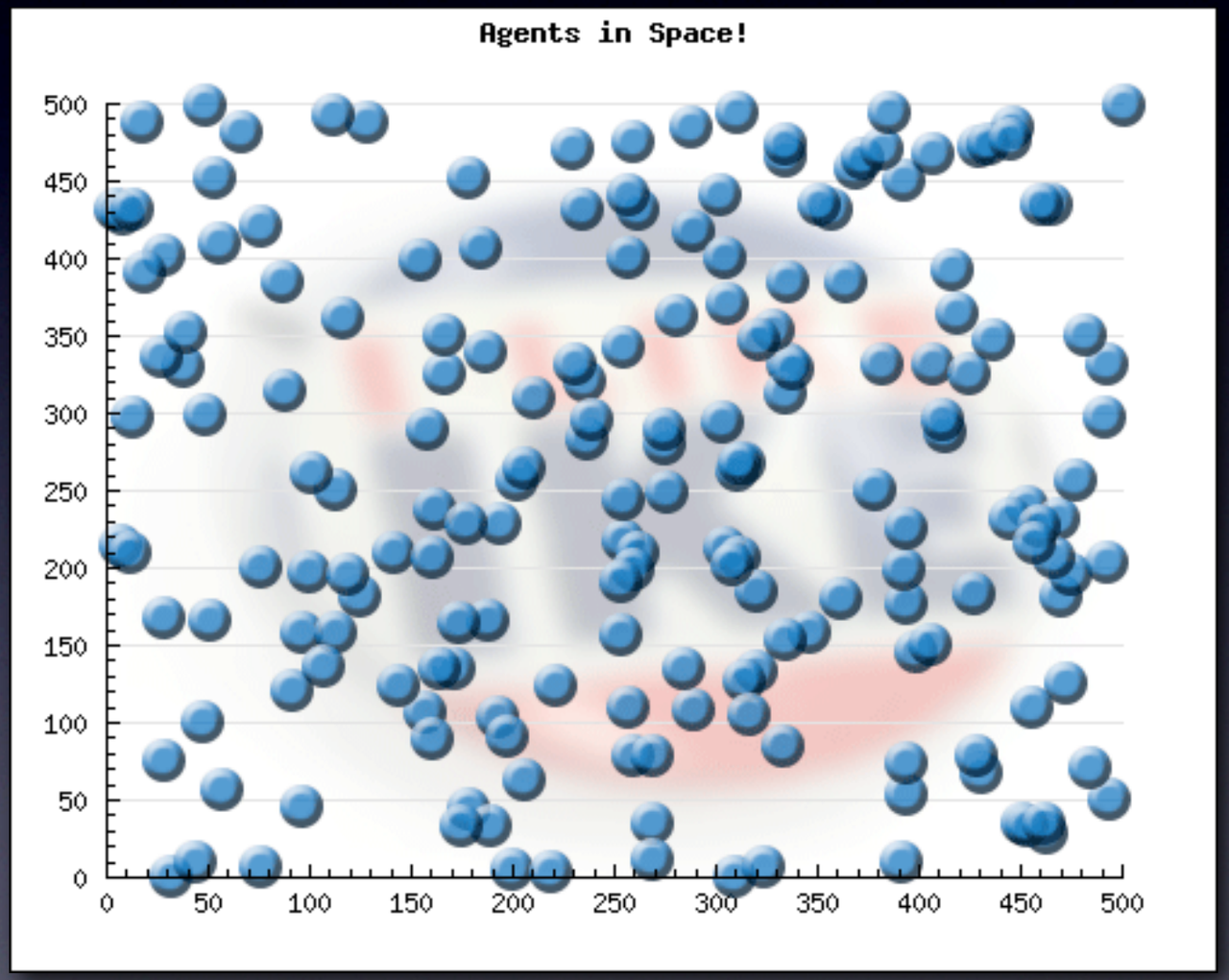
- High Context
- Builds on Blogs
- Reference as Community

Inductive Knowledge Engine

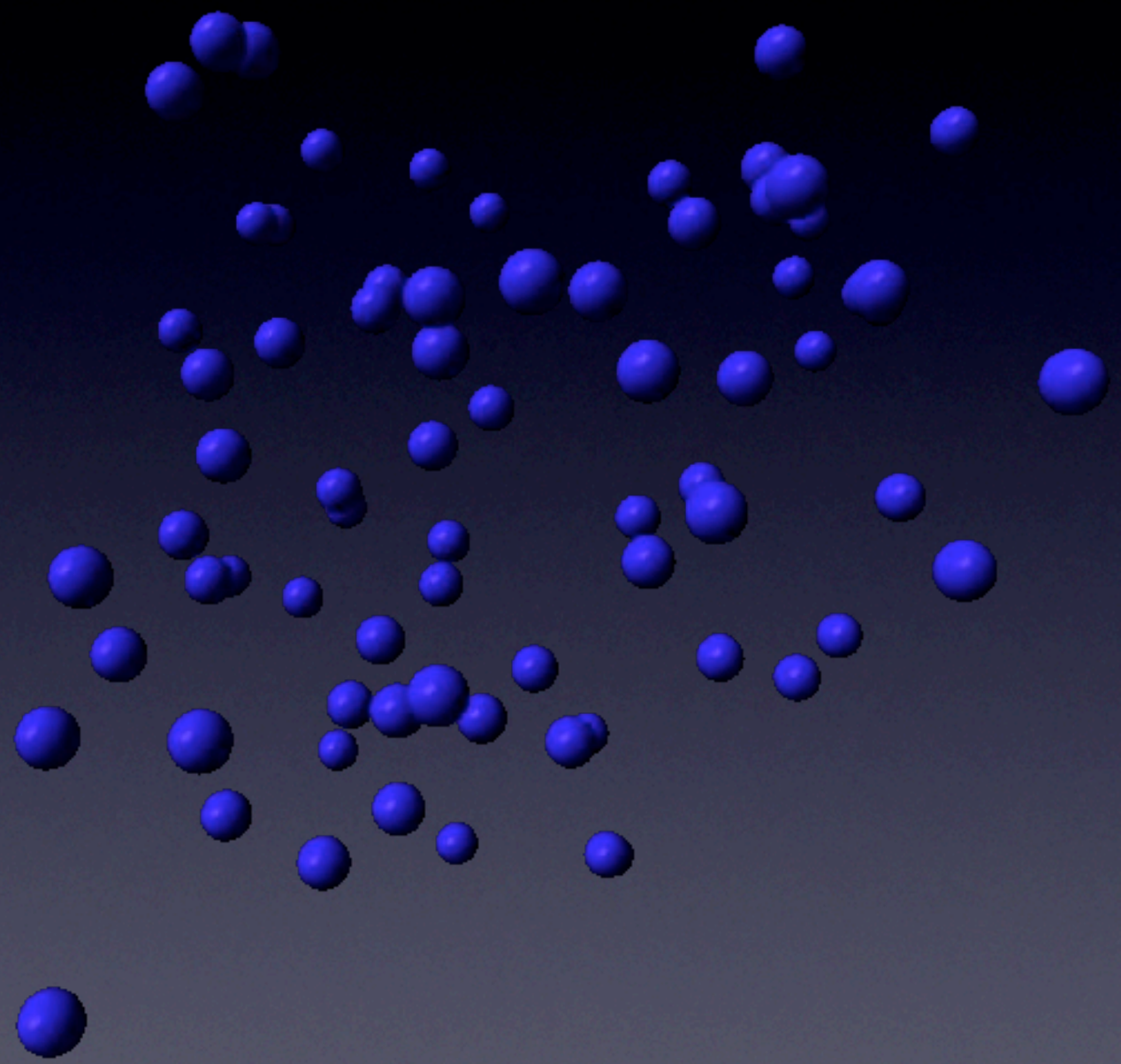
- Each Response is an Agent
- Each Agent has: Rules, Resources, Tags, Detectors, and Effectors
- Compared in a "Space"
  - Geometry, Timing, Rule



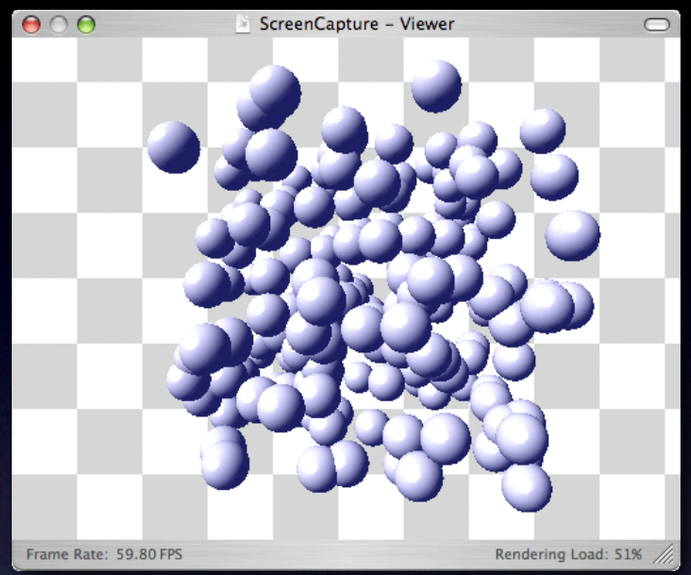
Induction Example



Induction in 3D

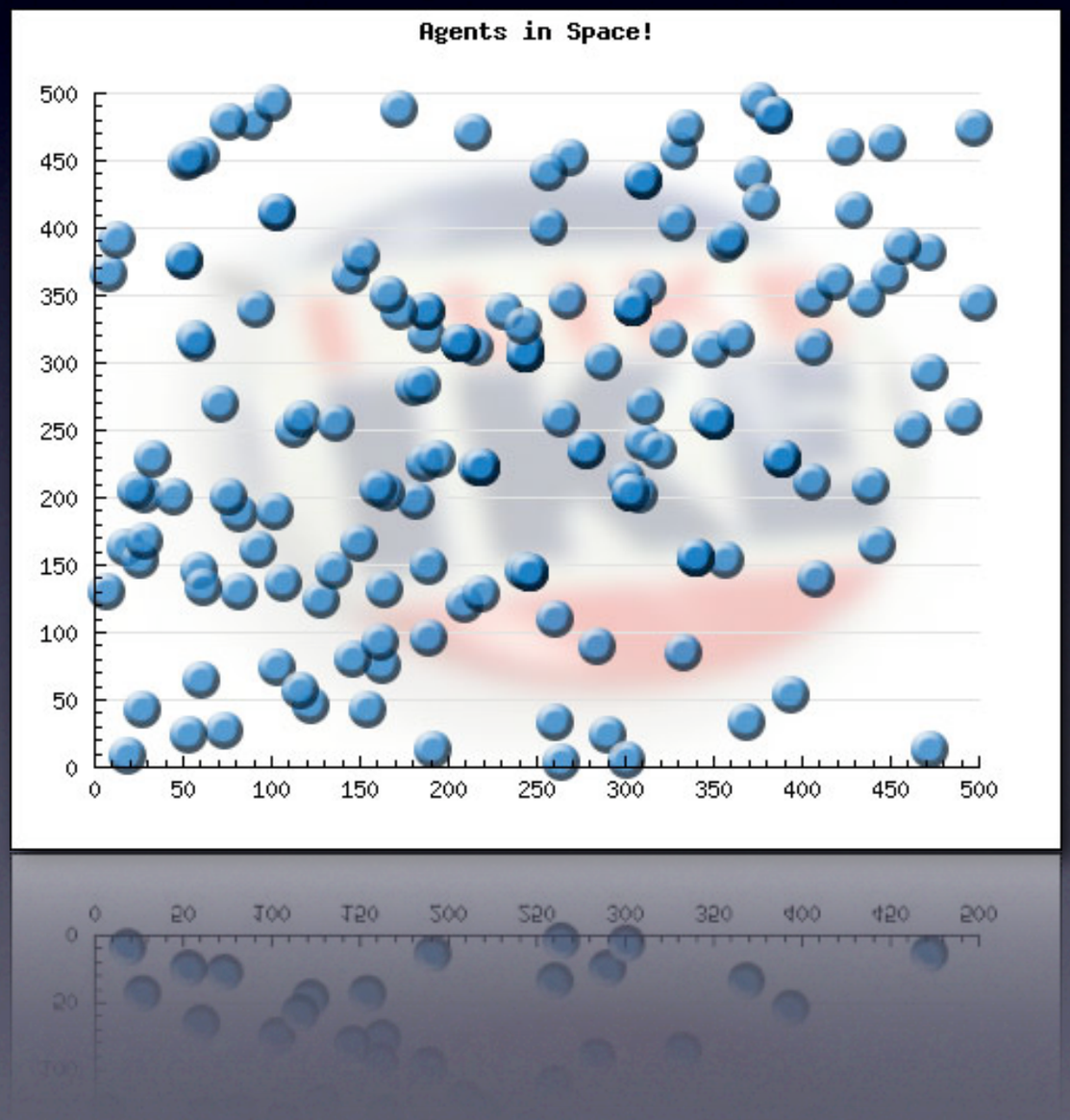


Induction in 3D



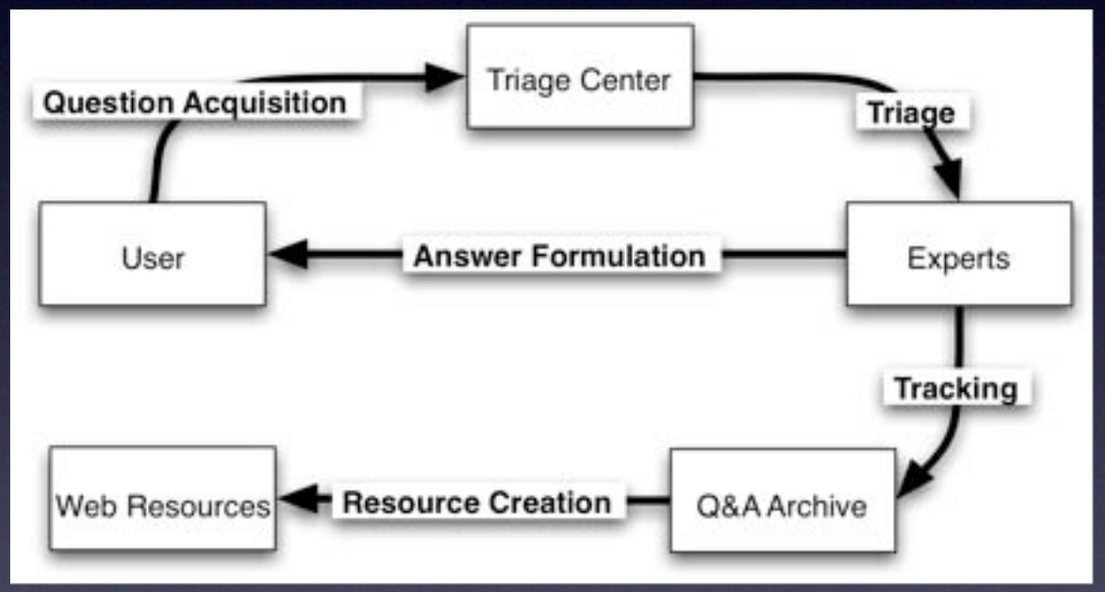
Anticipated Benefits of a Complexity Approach

- Self Organization
- Integration of Diverse Agent
- Heuristic Rule Discovery
- Serendipitous Correlations



The Long and Winding Road

The Long and Winding Road



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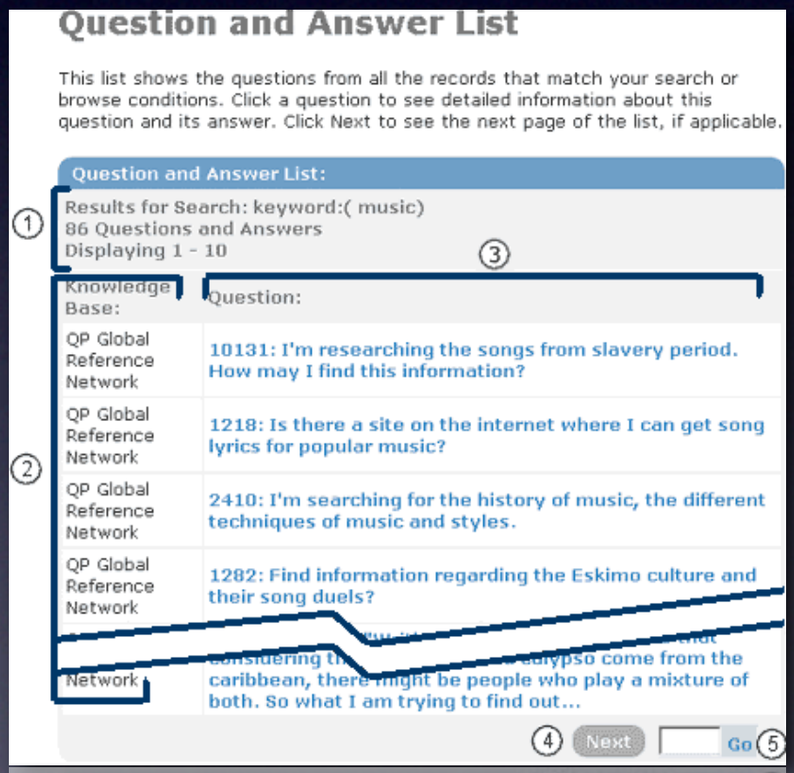


Question and Answer List

This list shows the questions from all the records that match your search or browse conditions. Click a question to see detailed information about this question and its answer. Click Next to see the next page of the list, if applicable.

Question and Answer List:

1. Results for Search: keyword:(music)
   86 Questions and Answers
   Displaying 1 - 10

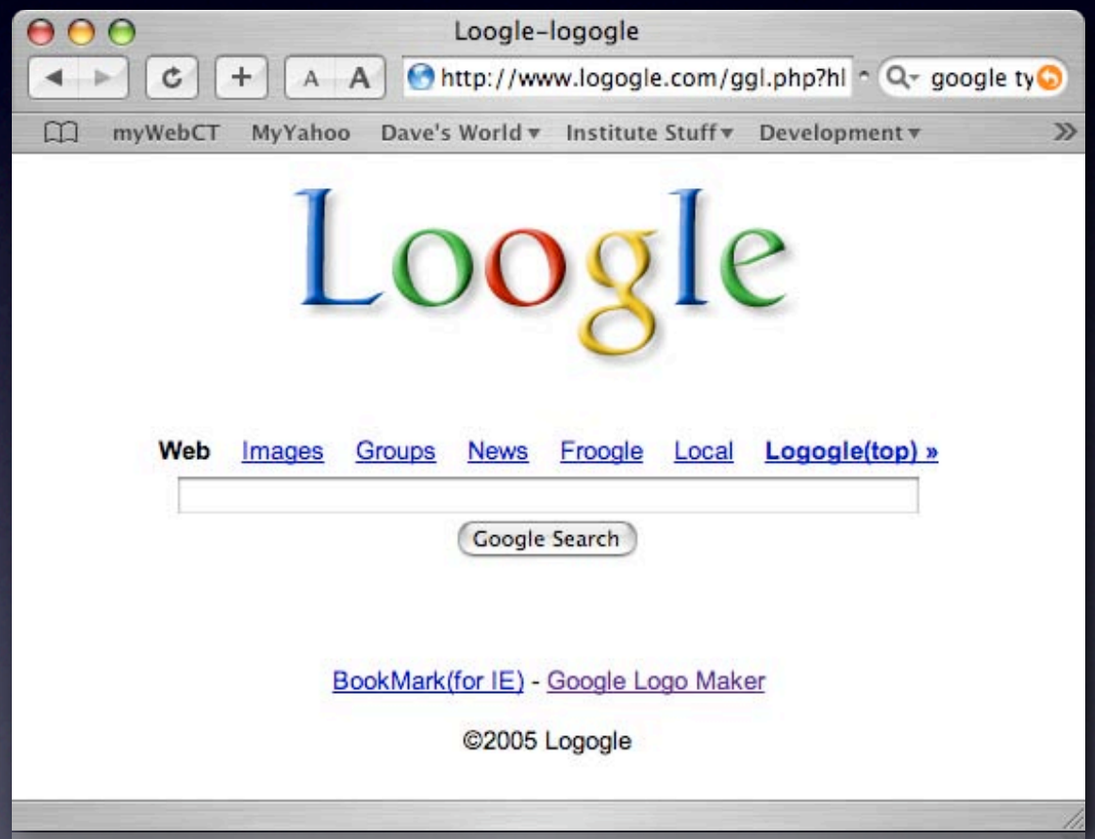
2.

Knowledge Base:	3. Question:
QP Global Reference Network	10131: I'm researching the songs from slavery period. How may I find this information?
QP Global Reference Network	1218: Is there a site on the internet where I can get song lyrics for popular music?
QP Global Reference Network	2410: I'm searching for the history of music, the different techniques of music and styles.
QP Global Reference Network	1282: Find information regarding the Eskimo culture and their song duels?
Network	considering th… calypso come from the caribbean, there might be people who play a mixture of both. So what I am trying to find out…

4. Next 5. Go

The Long and Winding Road

The Long and Winding Road



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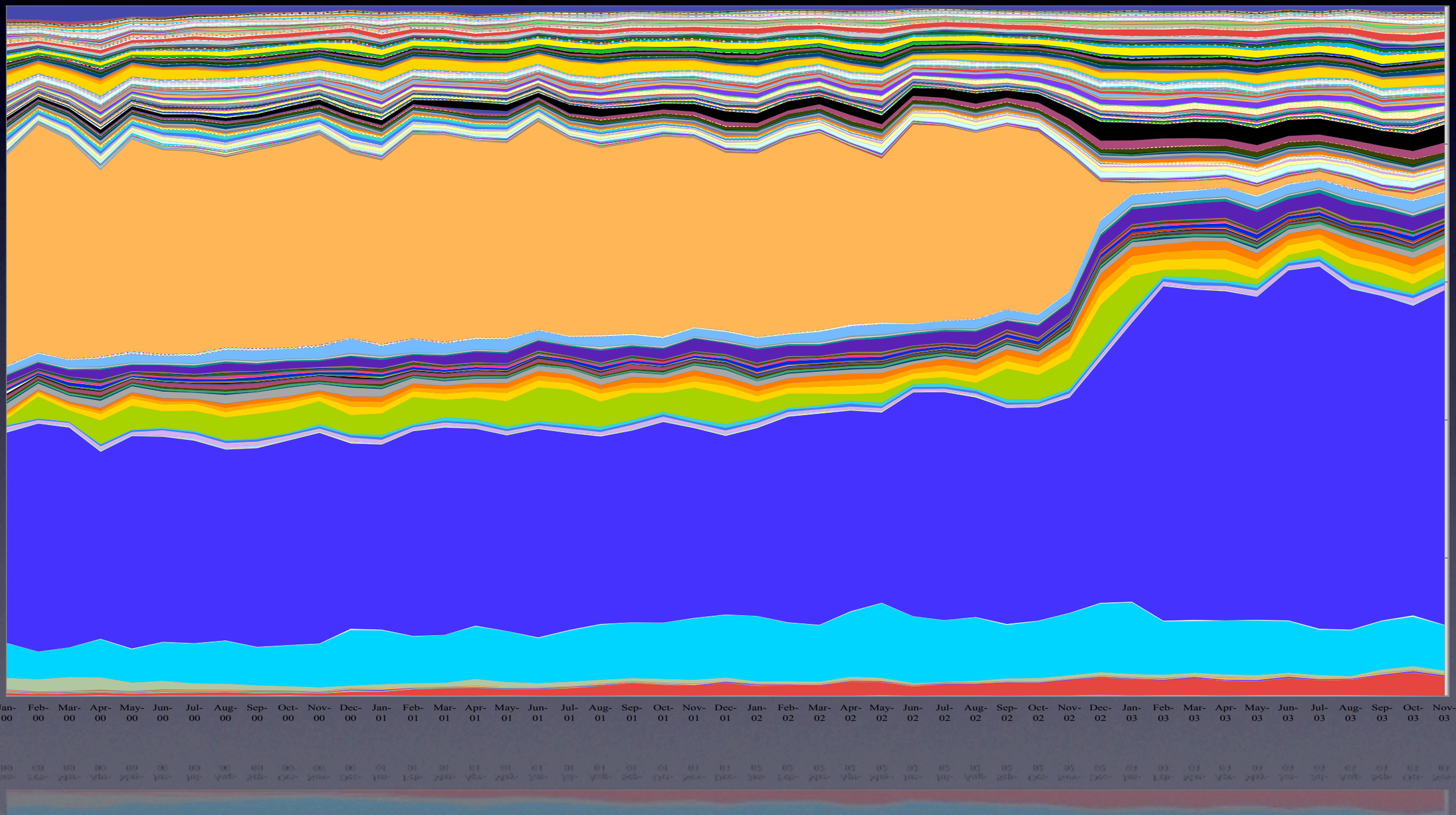
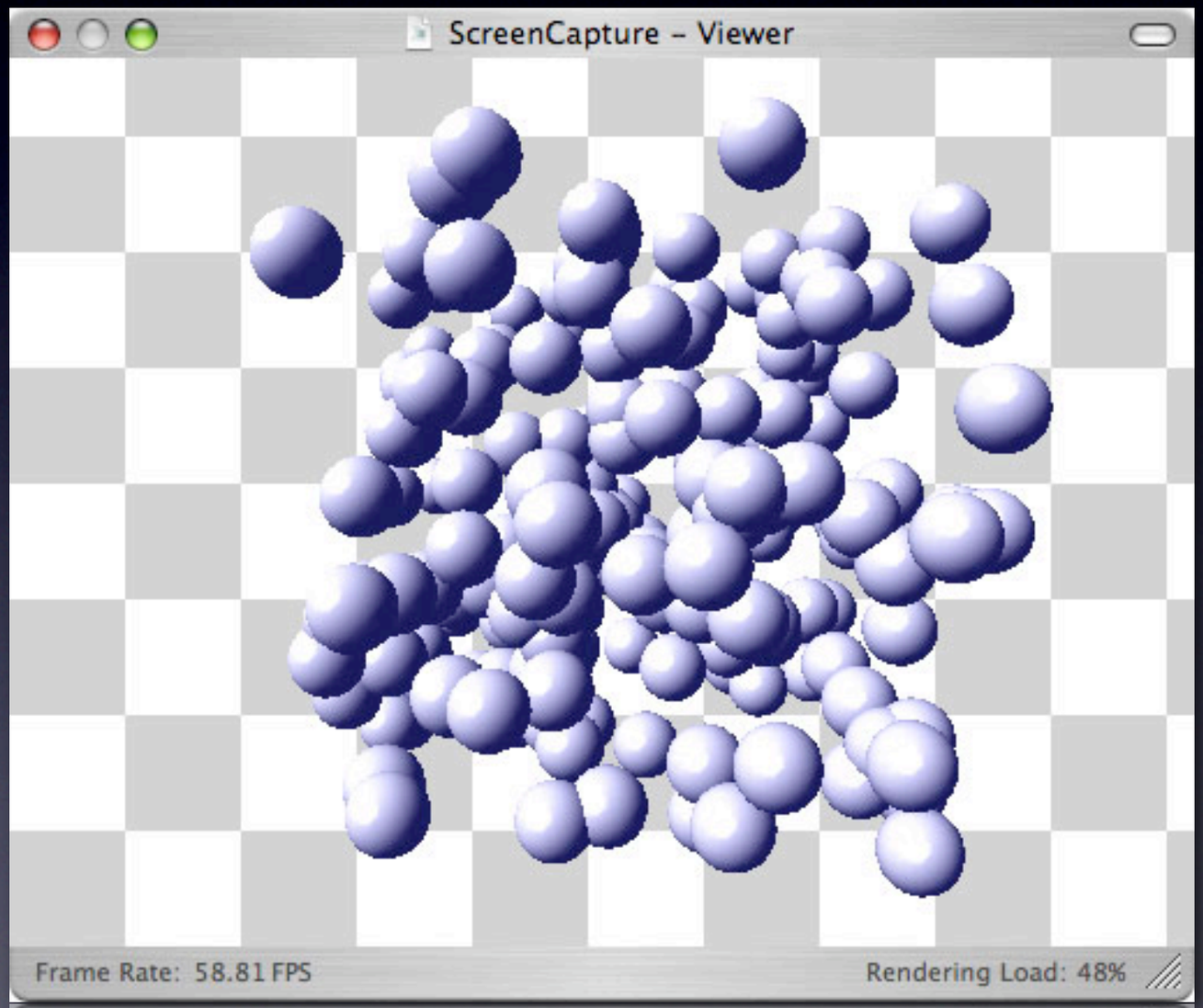


The Long and Winding Road

The Long and Winding Road

Story Starters

The Long and Winding Road



So What - ILS

The Perceived Befits of Induction in Libraries

- Library Systems Based on Use
- Catalogs that Order Results by Circulation Data and/or Referrals
- STI and Readers Advisory (TiVO + Library...LiVO?)

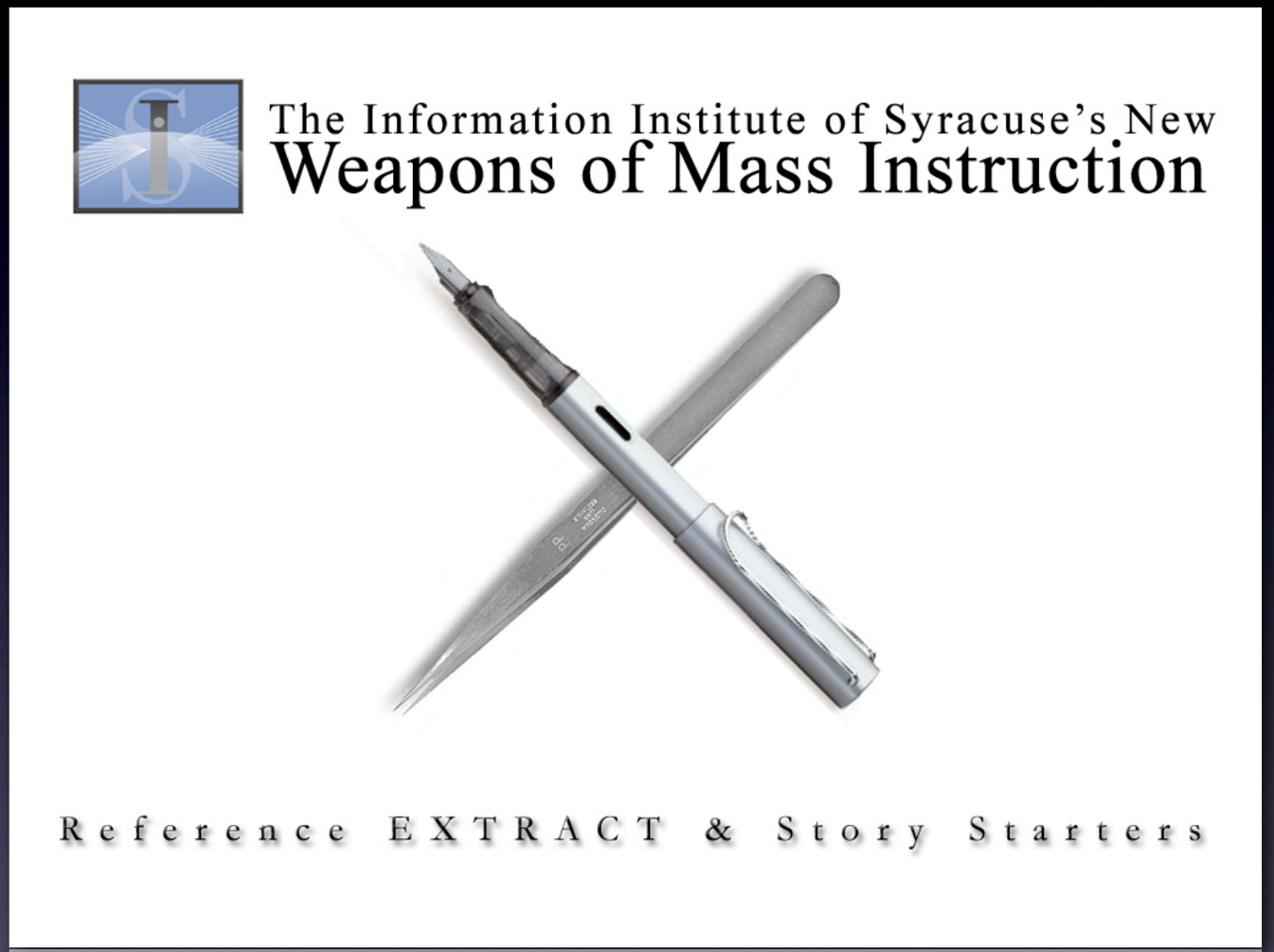
So What - Metadata

- Automated Metadata Creation and Enrichment
  - Inheritance of Metadata from Like Objects
  - Metadata Agents Adopt Element Refinements from Like Objects - Viewing Metadata as an Interconnected Lattice of Elements
- Outlier Detection in Digital Libraries
  - The Problem of OAI Ingest
  - The Introduction of Dynamic Metadata Elements for Collection Development

So What - Credibility

- Using Tools to Make Credibility on the Internet a Tractable Problem
- Development of a "Credibility Measure" Akin to Relevance Ranking
  - Heuristic and Comparable Profiles

Question?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