



Virtual Dave Lankes

P r e s e n t a t i o n

<http://www.DavidLankes.org>

TITLE: Reference Authoring

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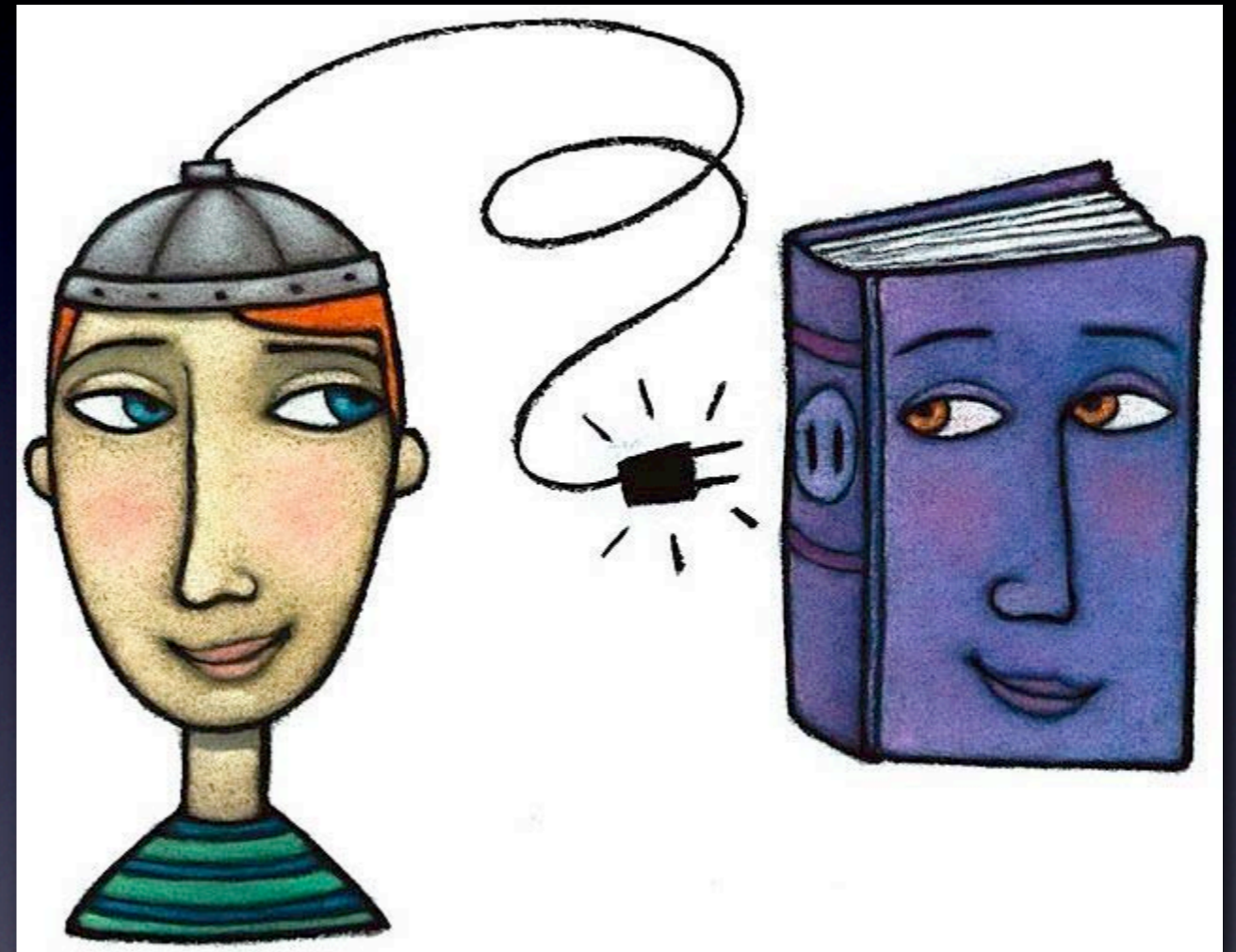
ABSTRACT: Discussion of how virtual reference output can be reused into new products.

KEYWORDS: digital reference, virtual reference, complexity theory, reference authoring

Reference Authoring

R. David Lankes

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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”

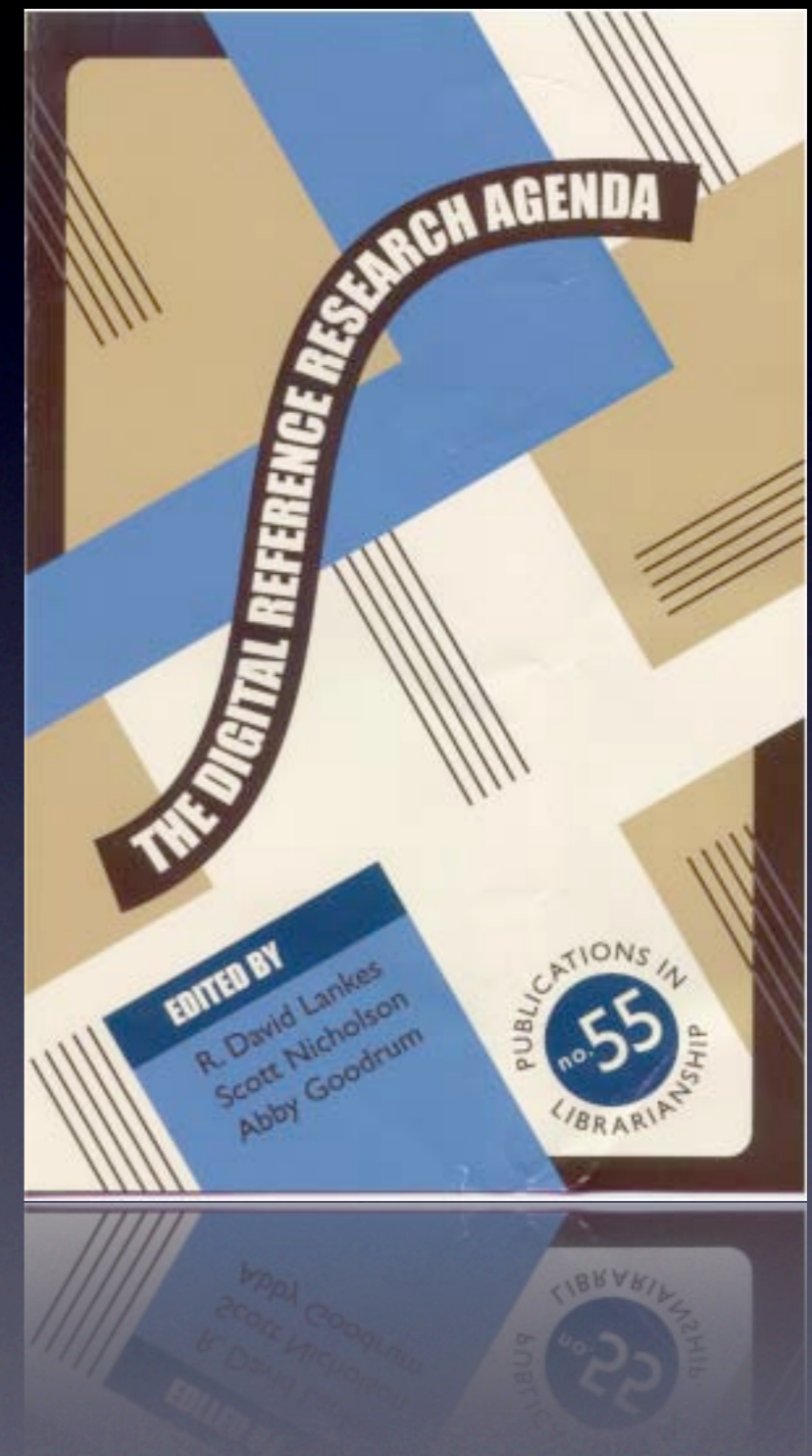
- *The Digital Reference Research
Agenda*



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

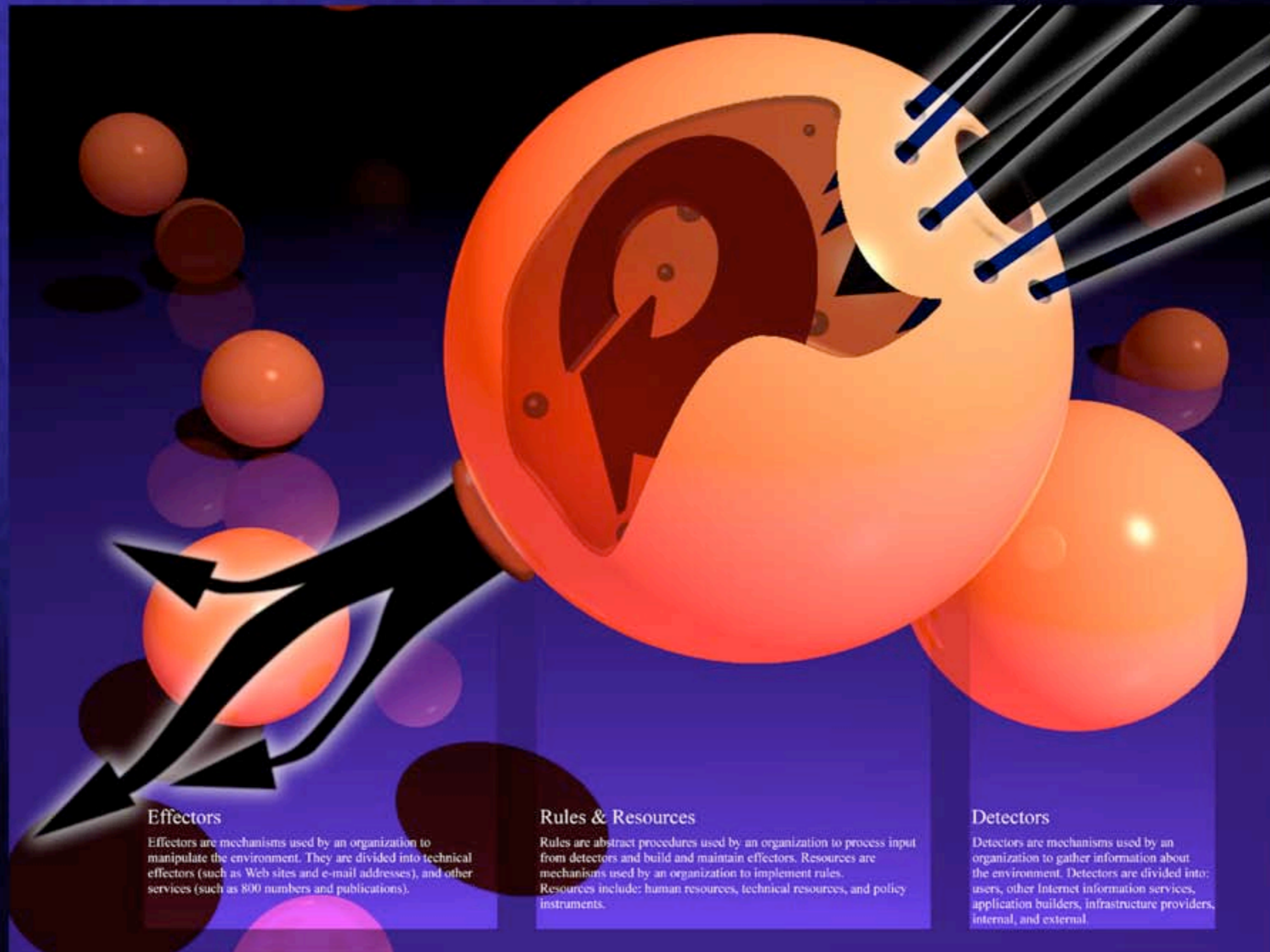
- *The Digital Reference Research
Agenda*

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



Effectors

Effectors are mechanisms used by an organization to manipulate the environment. They are divided into technical effectors (such as Web sites and e-mail addresses), and other services (such as 800 numbers and publications).

Rules & Resources

Rules are abstract procedures used by an organization to process input from detectors and build and maintain effectors. Resources are mechanisms used by an organization to implement rules. Resources include: human resources, technical resources, and policy instruments.

Detectors

Detectors are mechanisms used by an organization to gather information about the environment. Detectors are divided into: users, other Internet information services, application builders, infrastructure providers, internal, and external.

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

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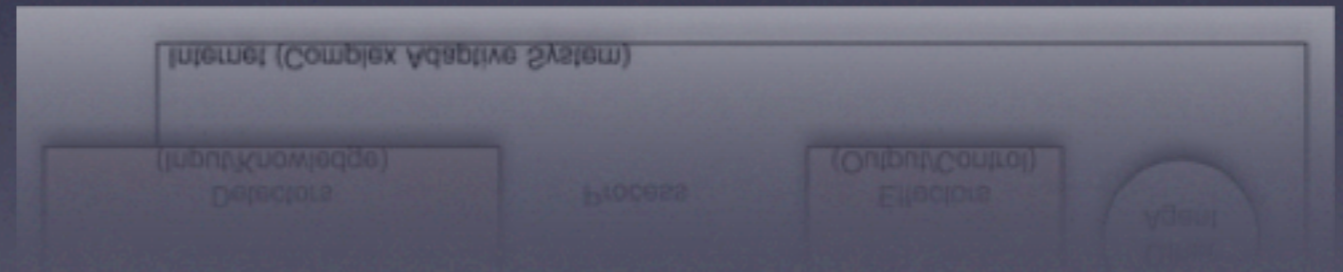
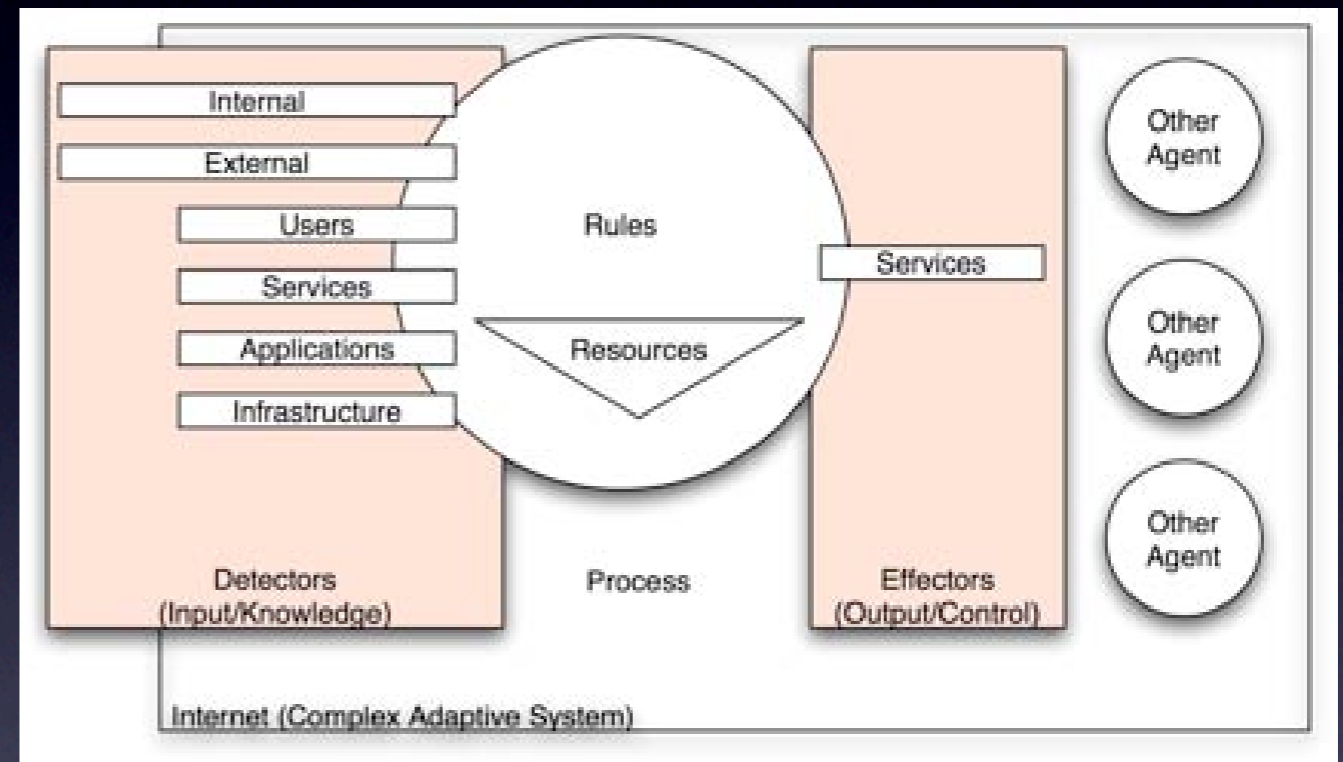
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Virtual Reference

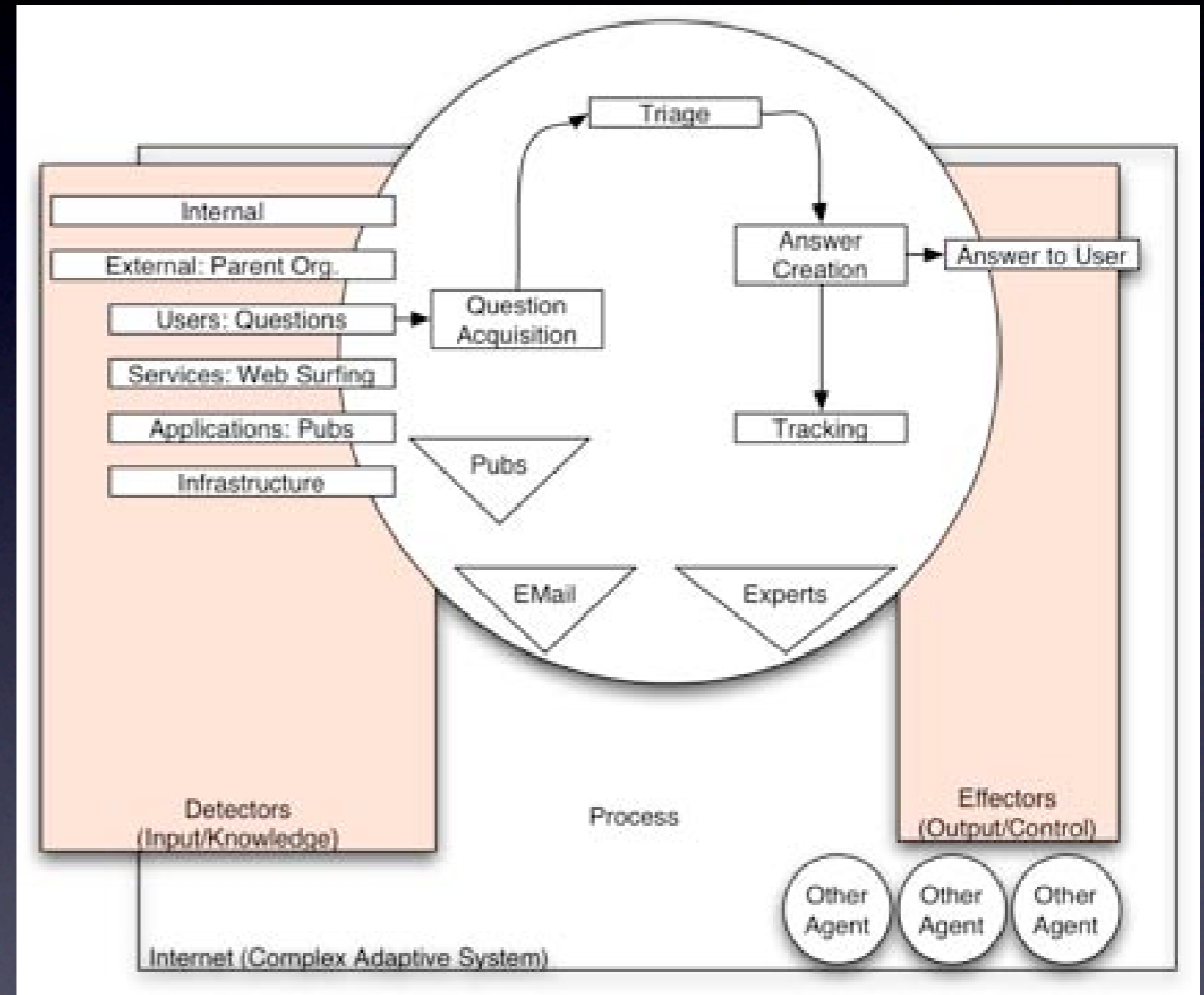
Virtual Reference

- General Digital Reference Model



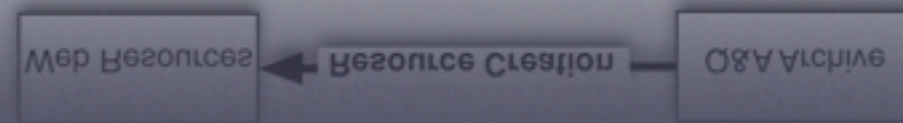
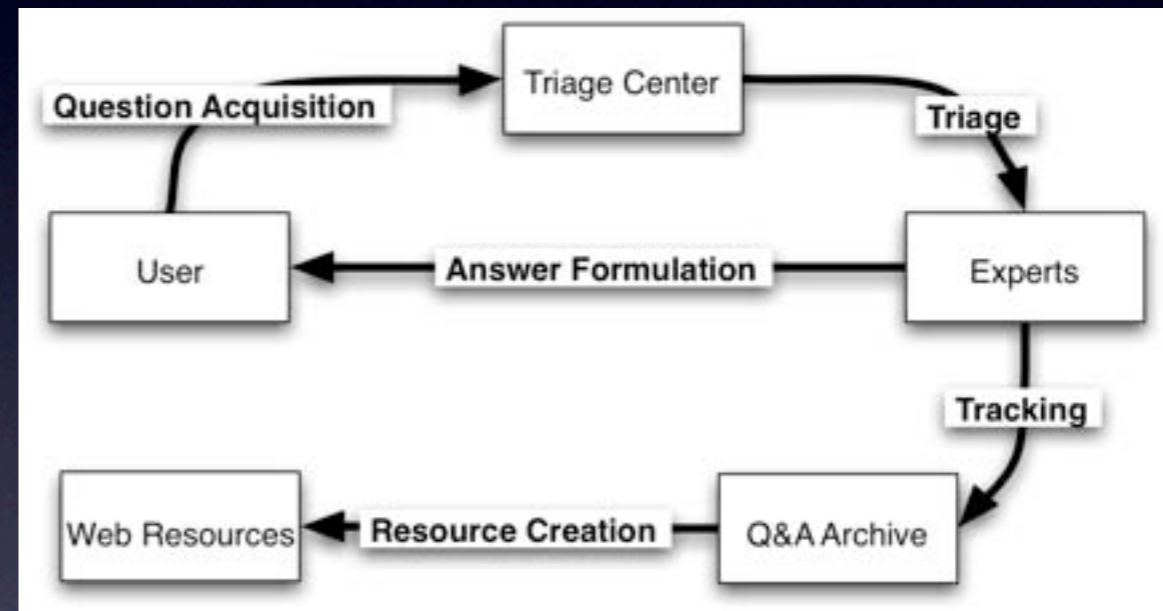
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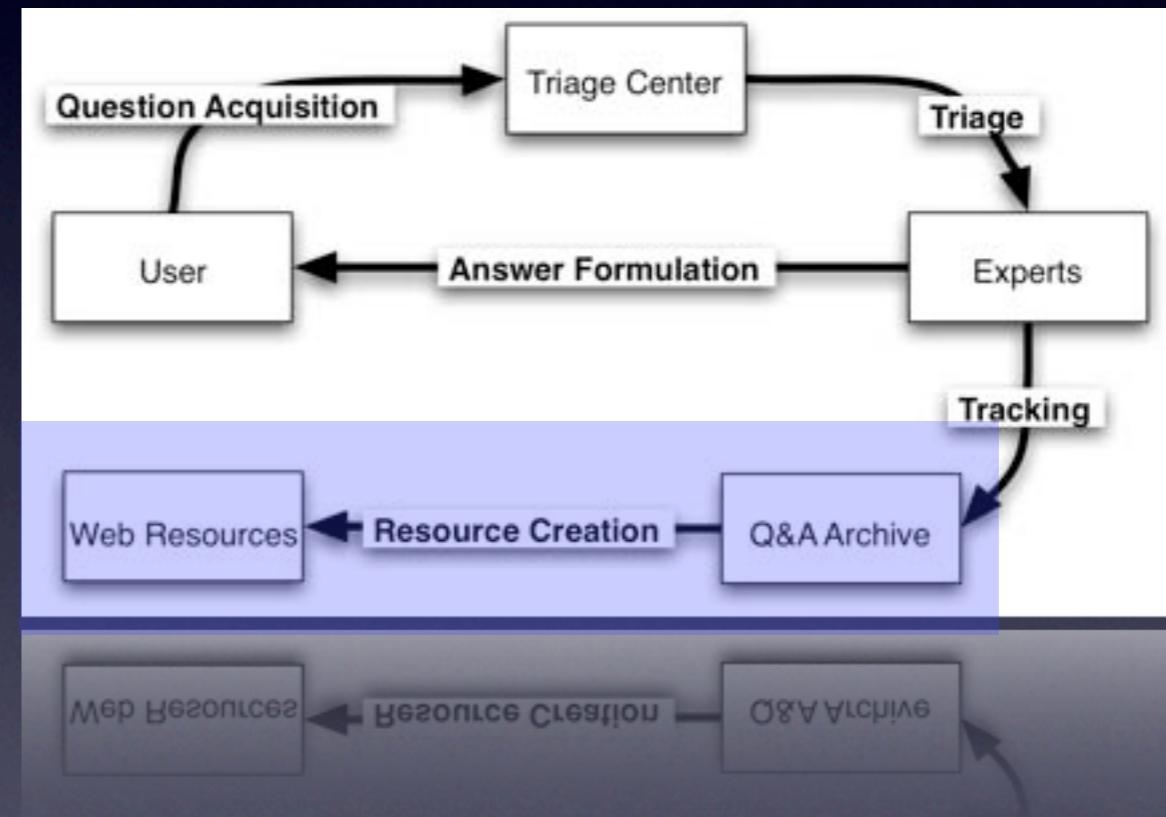
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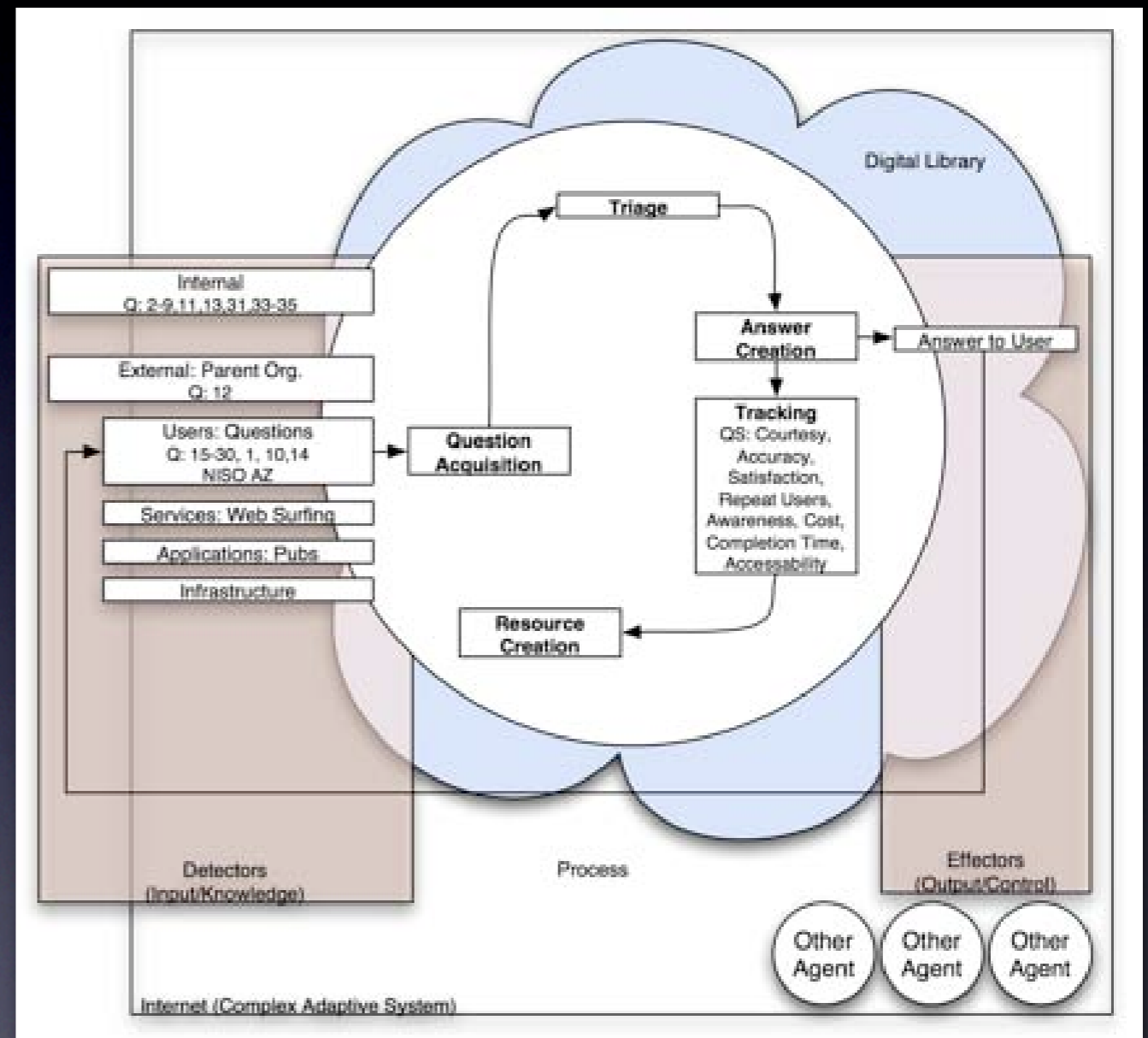
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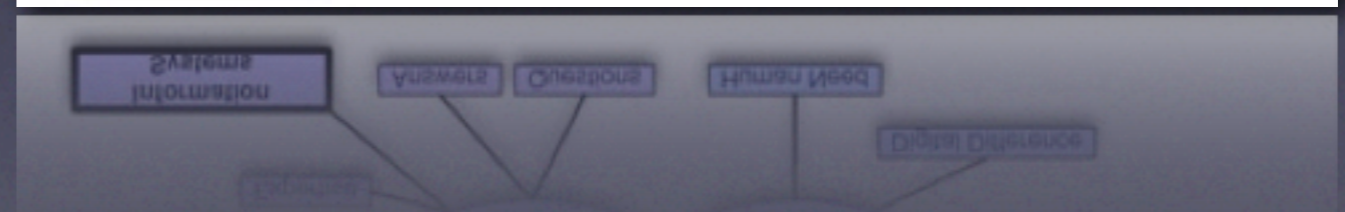
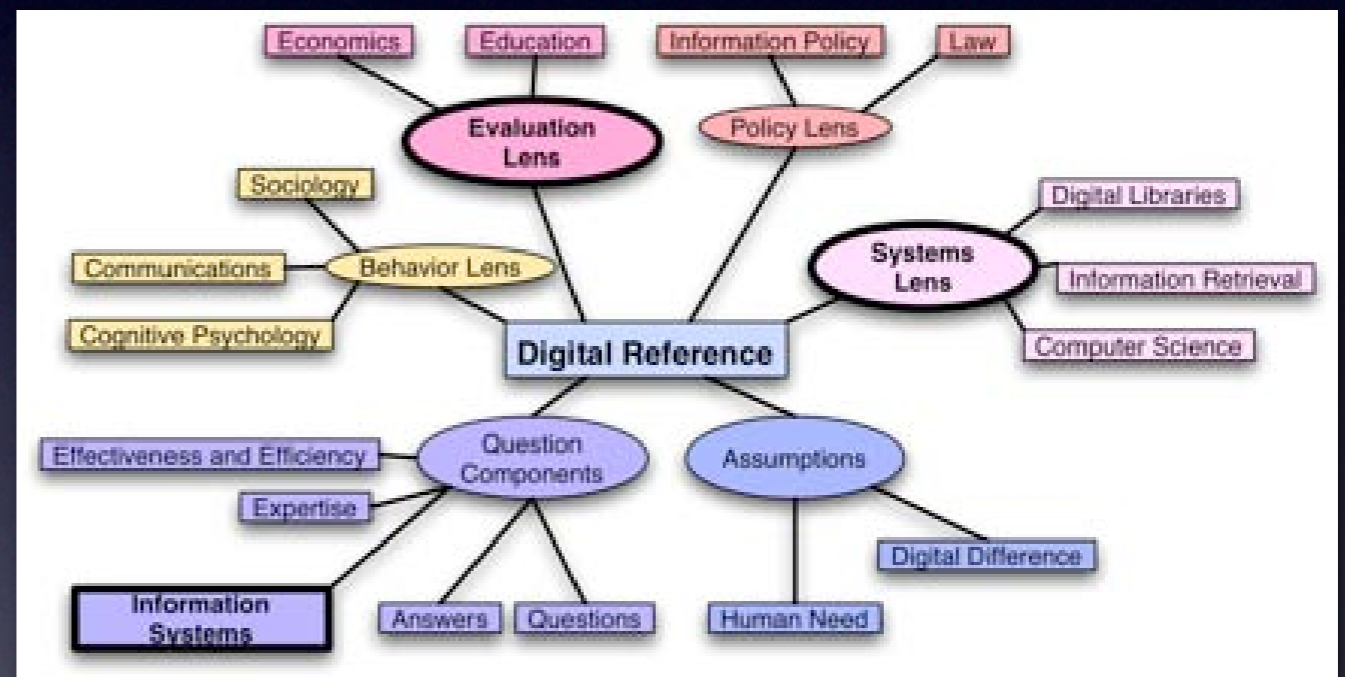
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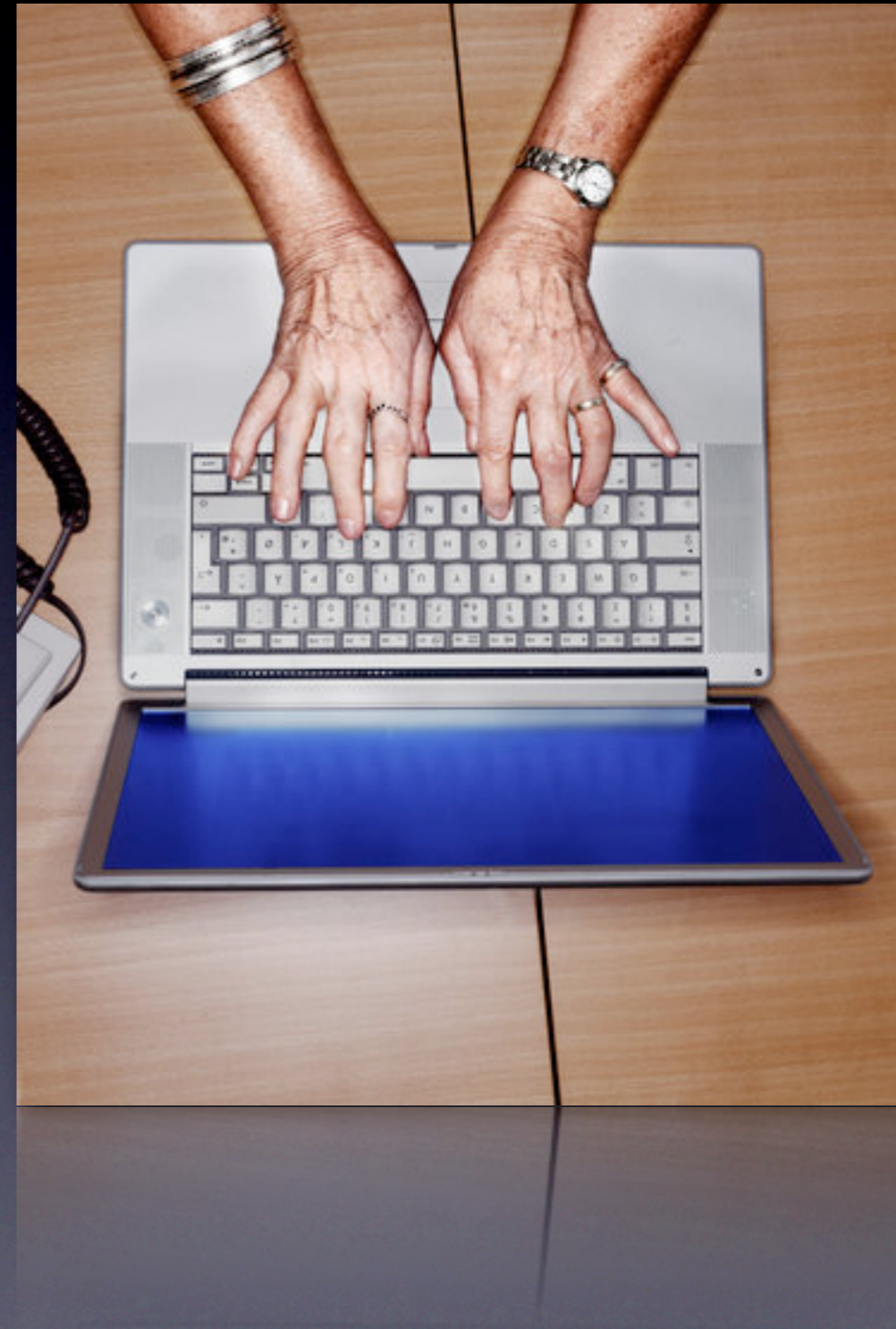
Virtual Reference

- 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

SEARCH INSIDE!™

Learning Pre-Algebra is Easy!

$-3x+5x+4x=?$
 $11y-2y=?$

JOIN AND BE A MATHS!

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MATH FORUM

The book cover features a yellow background with a green banner at the top. It includes mathematical equations, a cartoon illustration of a man and a woman, and a red button that says 'JOIN AND BE A MATHS!'.

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:

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

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Next Go

The screenshot shows a search results page with a table of questions and answers. The page includes navigation buttons like 'Next' and 'Go'.

Virtual Reference Training

The Complete Guide to Providing Anytime Anywhere Answers

BUFF HIRKO MARY BUCHER ROSS

The book cover has a light green background with a central image of a person in a blue uniform. The title 'Virtual Reference Training' is in large, bold, black letters. Below the title, it says 'The Complete Guide to Providing Anytime Anywhere Answers'. At the bottom, the authors' names 'BUFF HIRKO' and 'MARY BUCHER ROSS' are listed.

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



Raw



Edited



Refined

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

Transformation



Raw



Edited



Refined

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

- Effect: The Utility of the End Result

Transformation



Raw



Edited

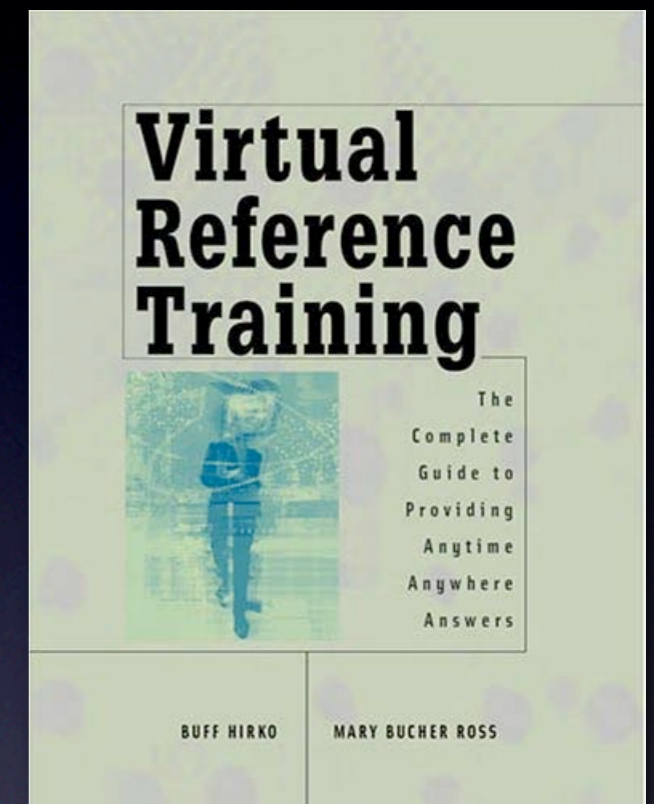
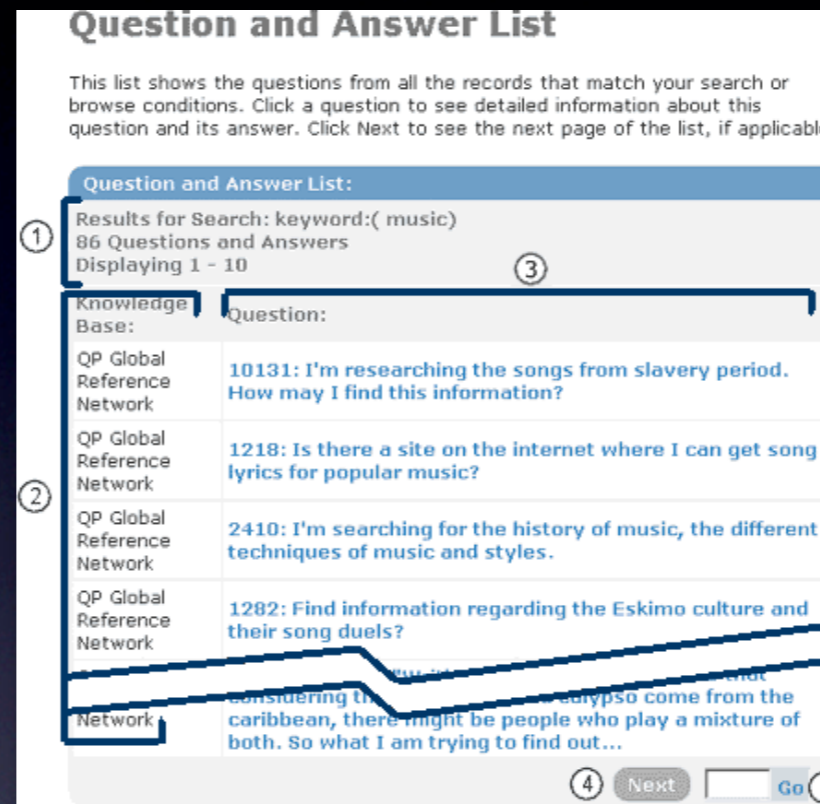
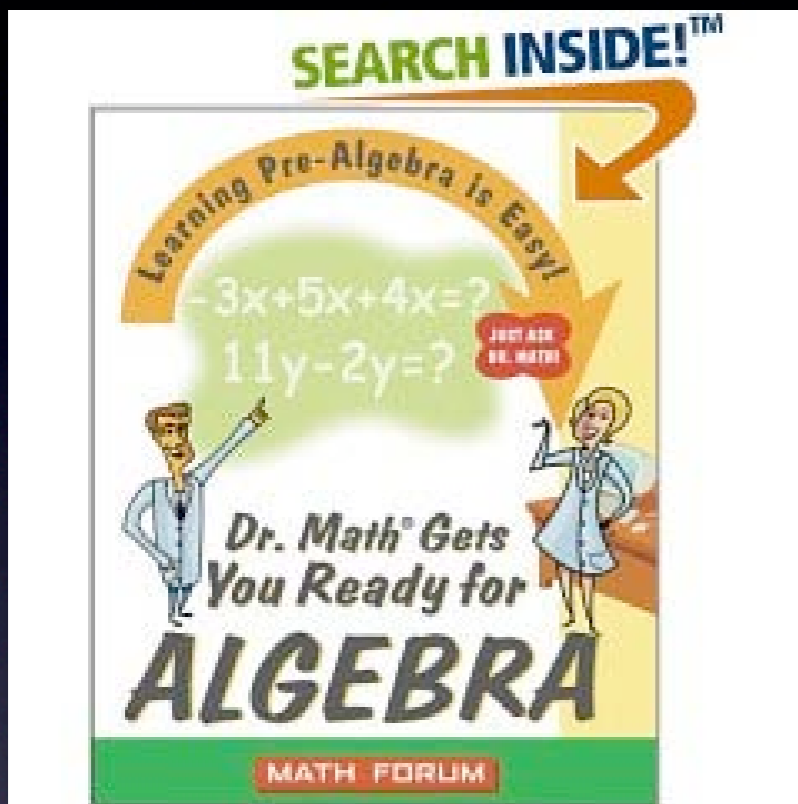


Refined2

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

- Effect: The Utility of the End Result

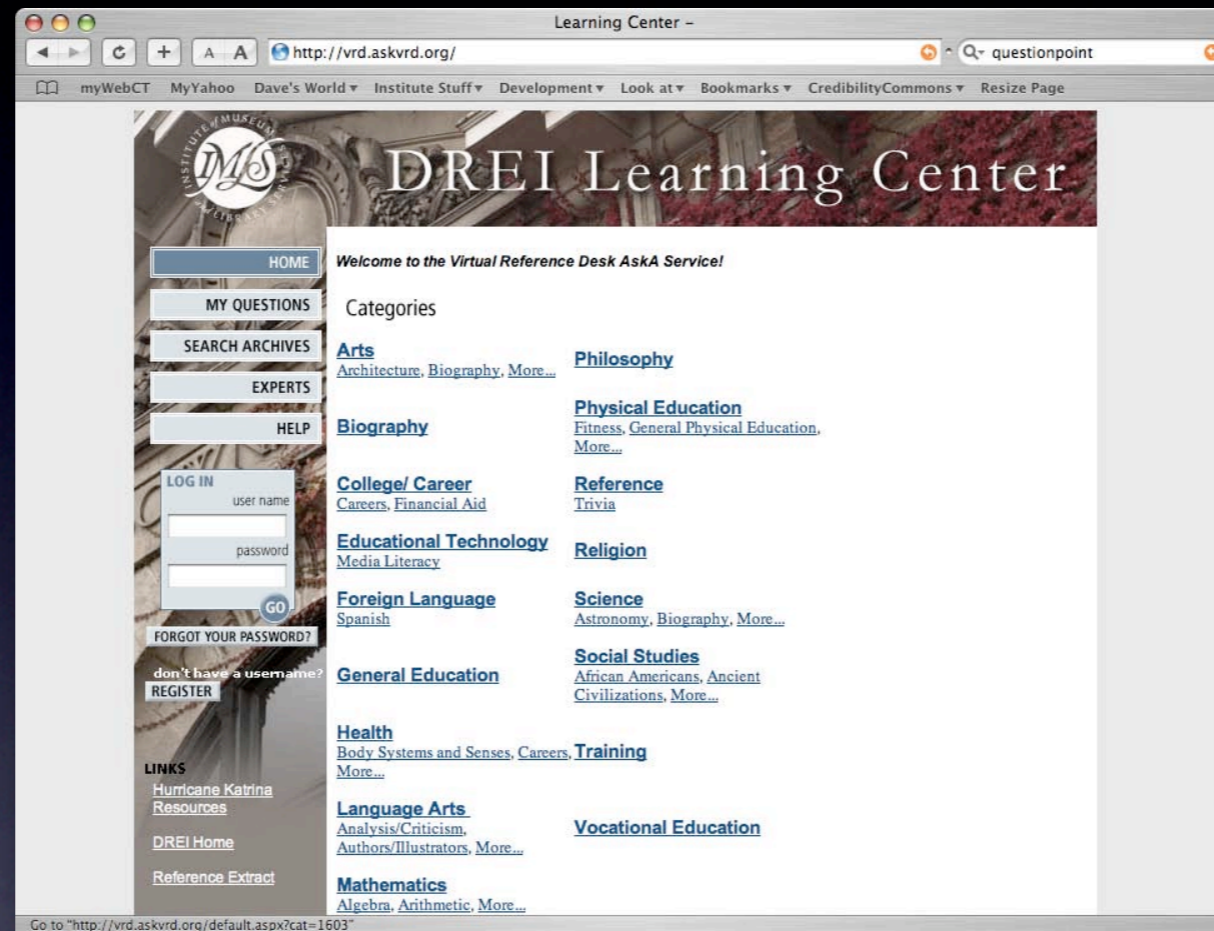
High Effect, High Effort



- 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?

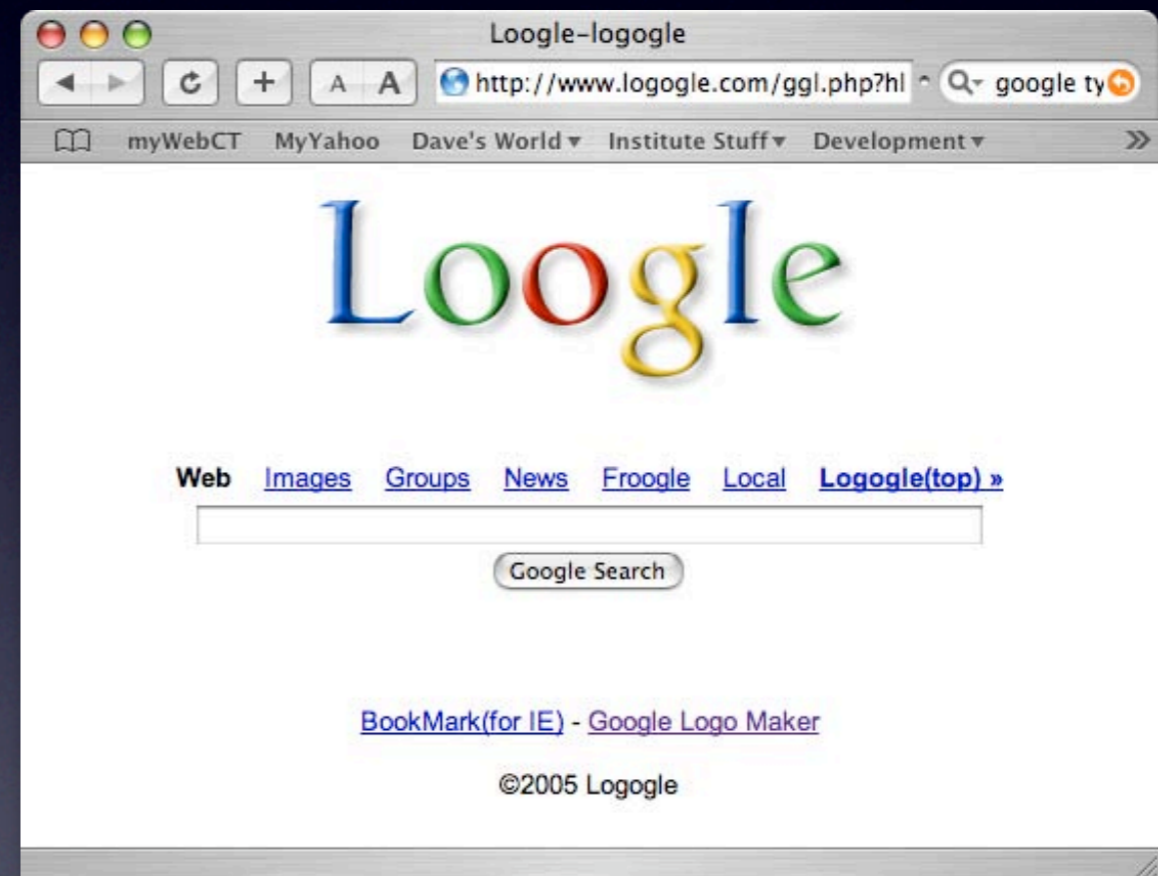
- Search Seems Promising
 - High Use in the Internet
 - Matches Reference Domain
- Preserves Patron Privacy
 - URL Stripping

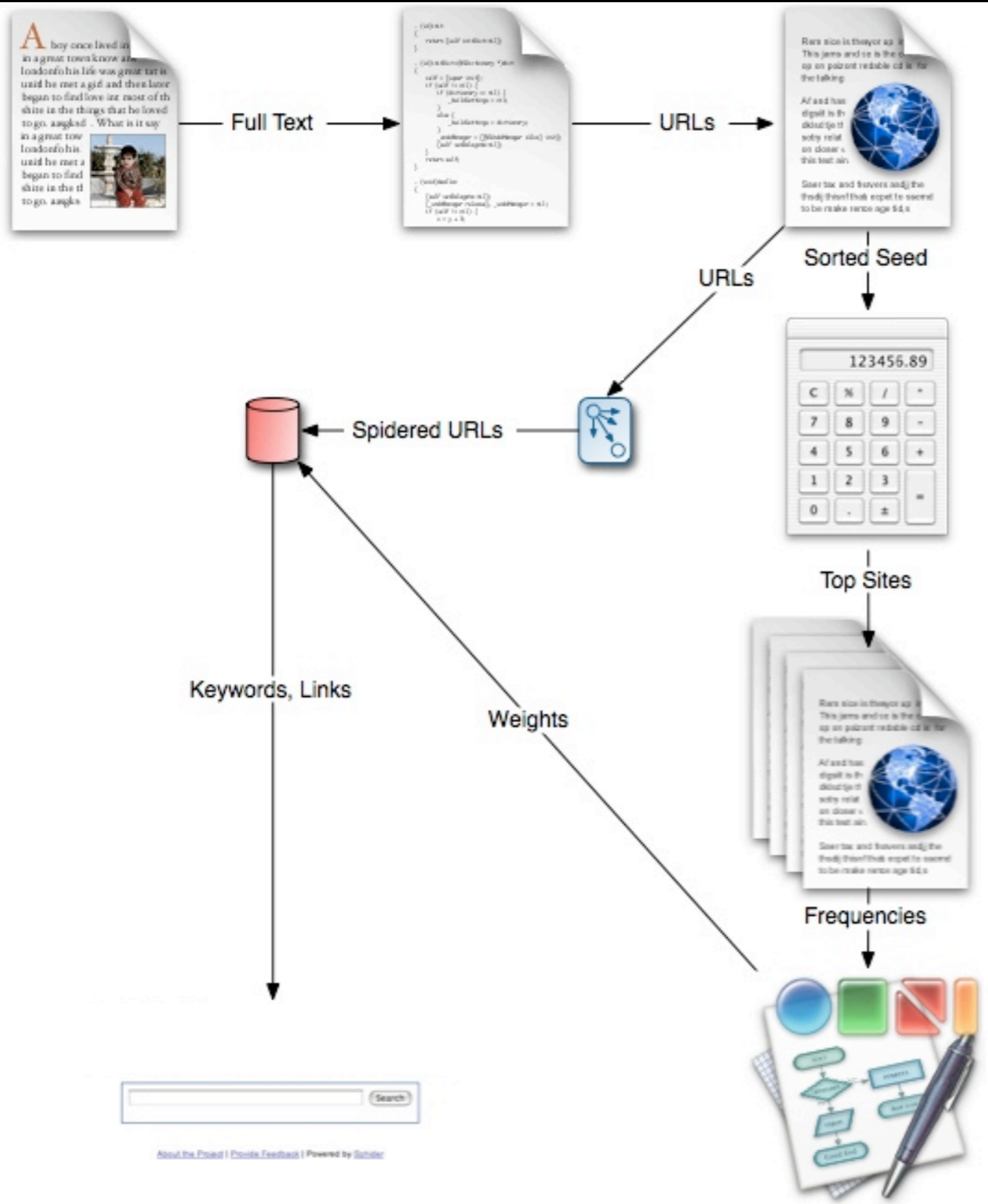
Credibility

- 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)

What if Librarians Built Google?

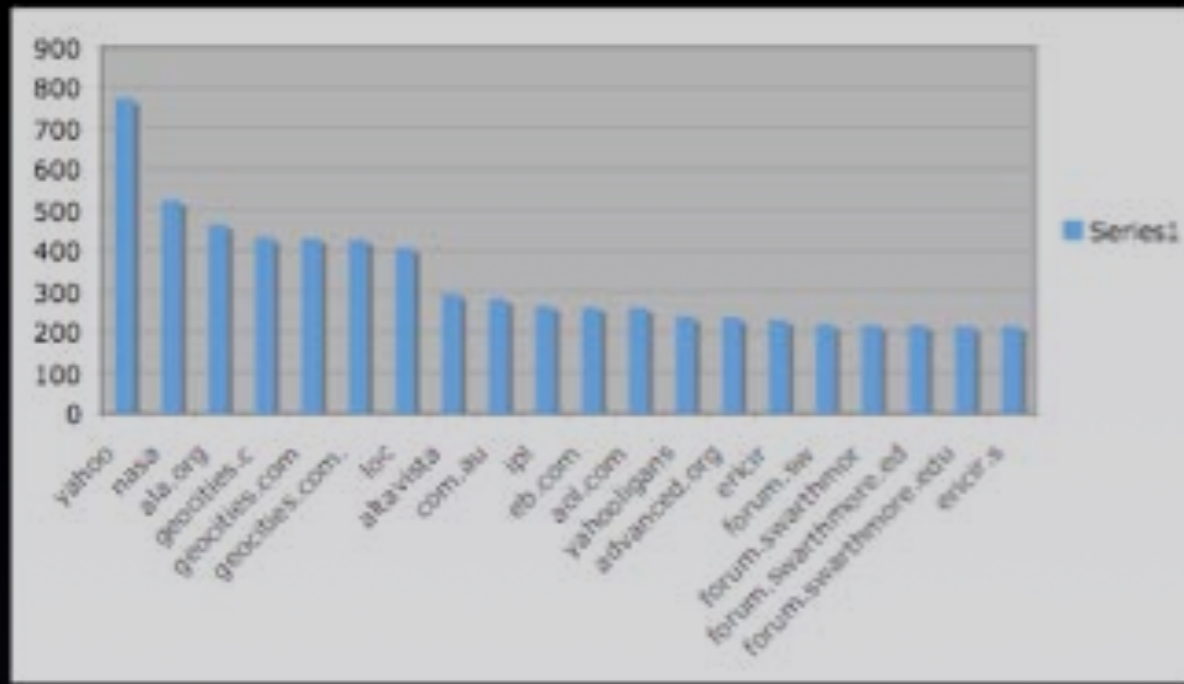
- Built Inductively from Actual Use
- Reference Weighting
 - Using “Citedness” as a Surrogate for Relevance like Google uses Page Ranking
- “Boost” Results by Use/Citation



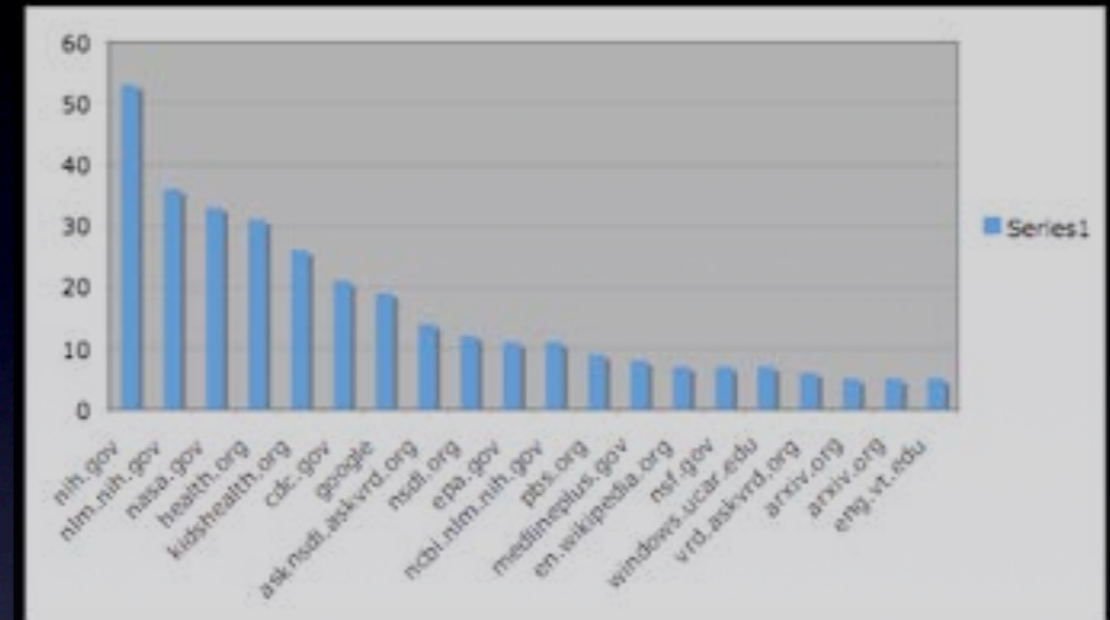
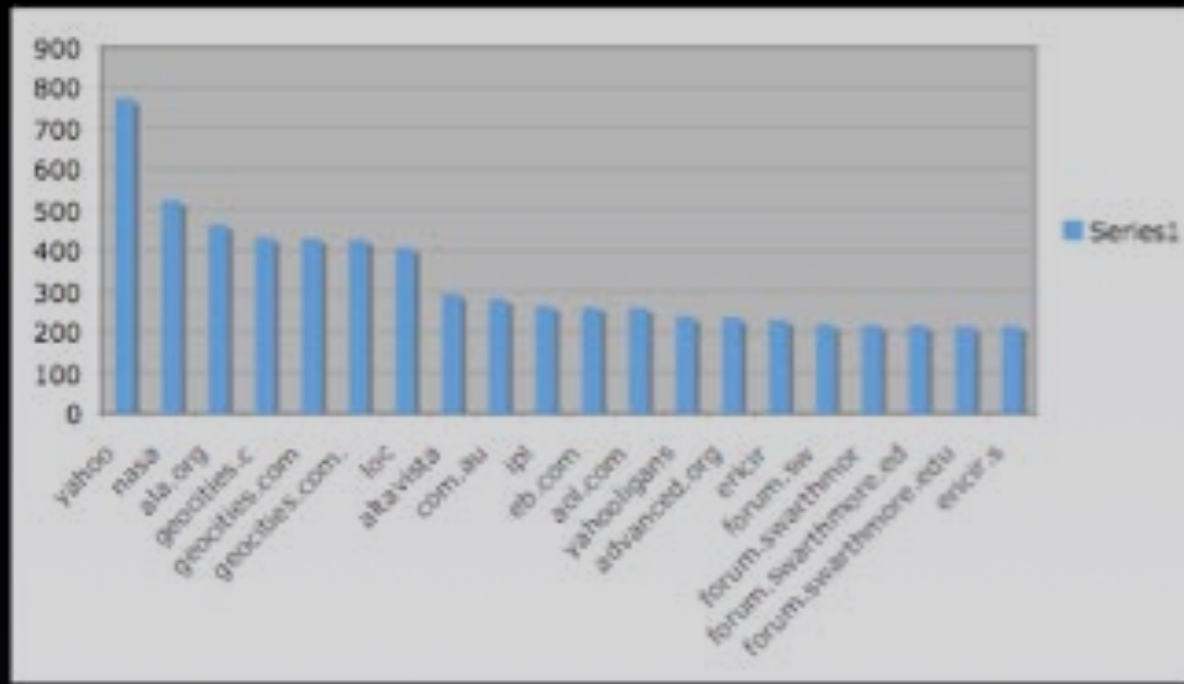


- Raw Text File
- Extracted URL's
- Frequencies

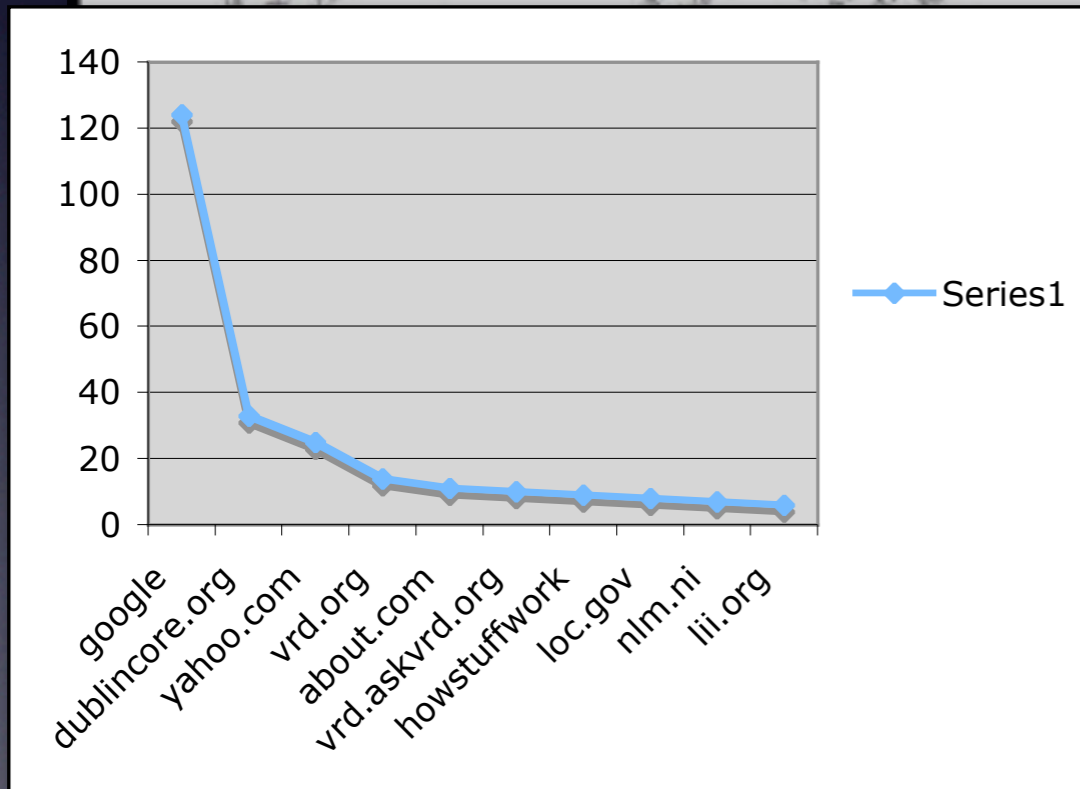
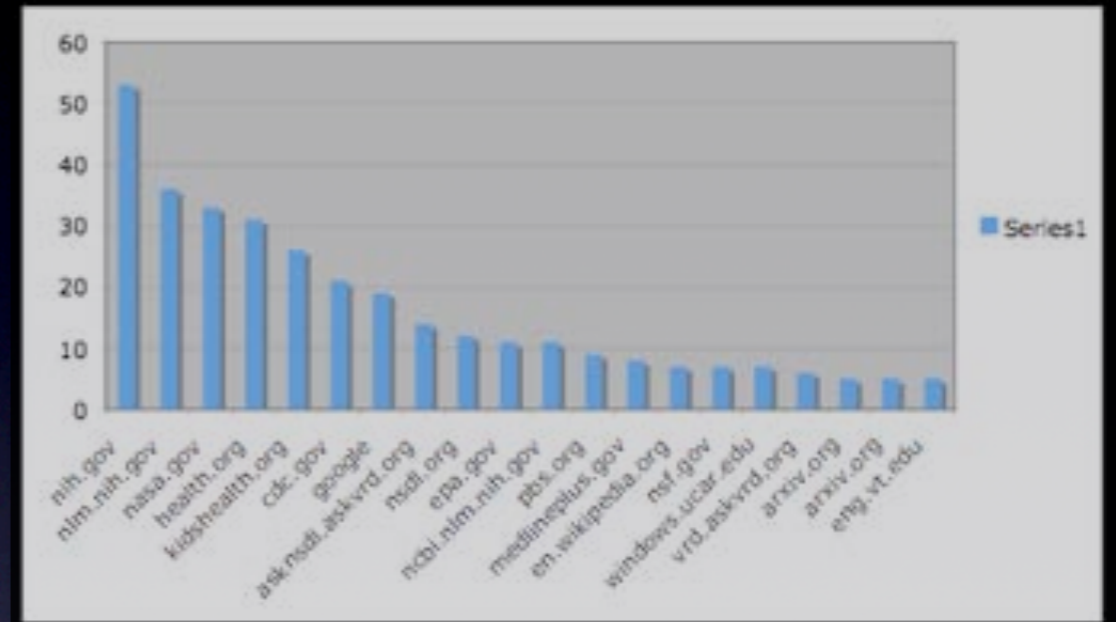
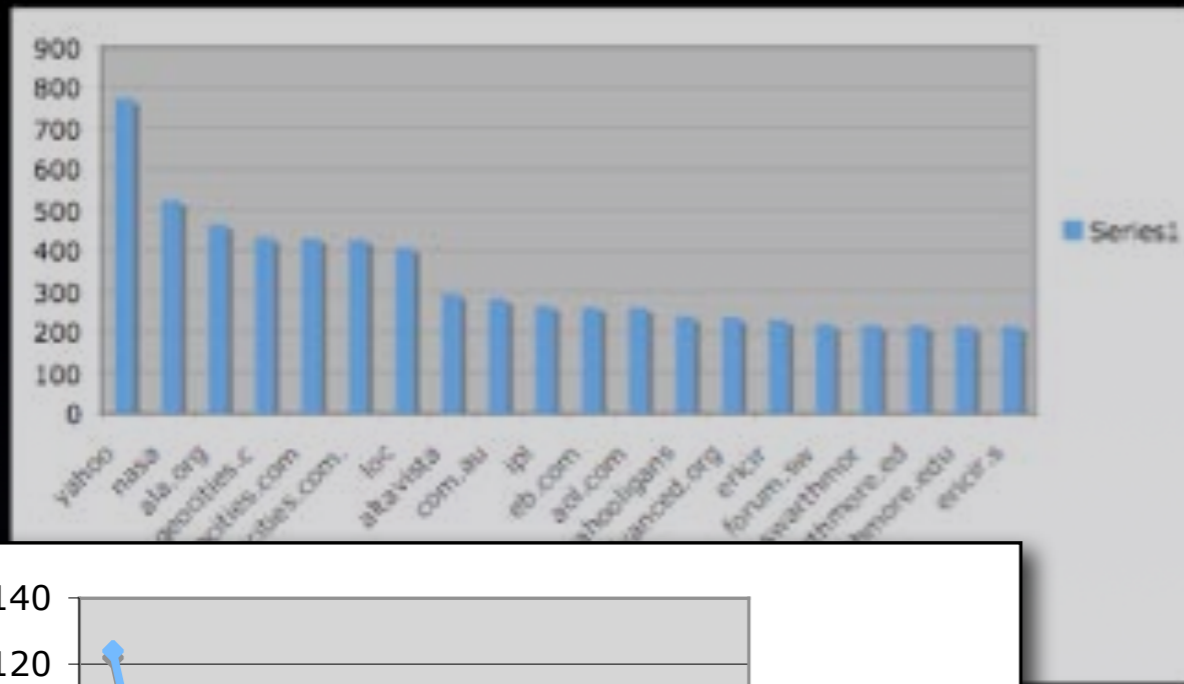
Reference Weighting



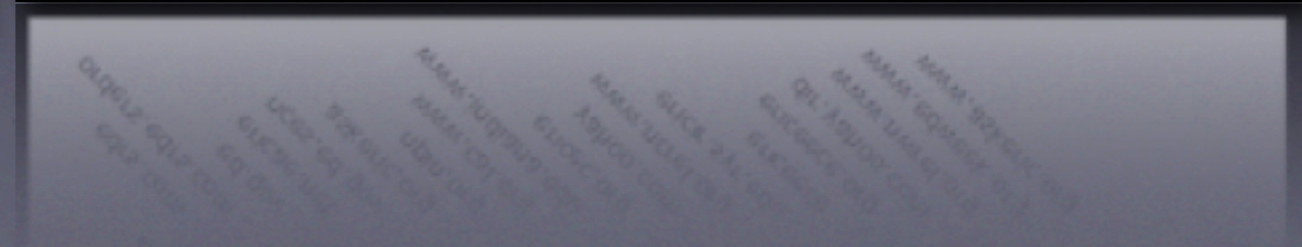
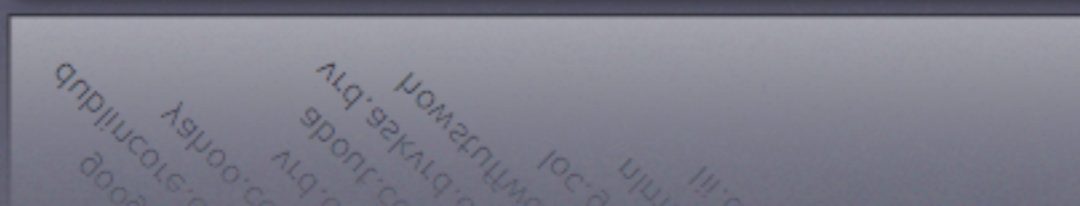
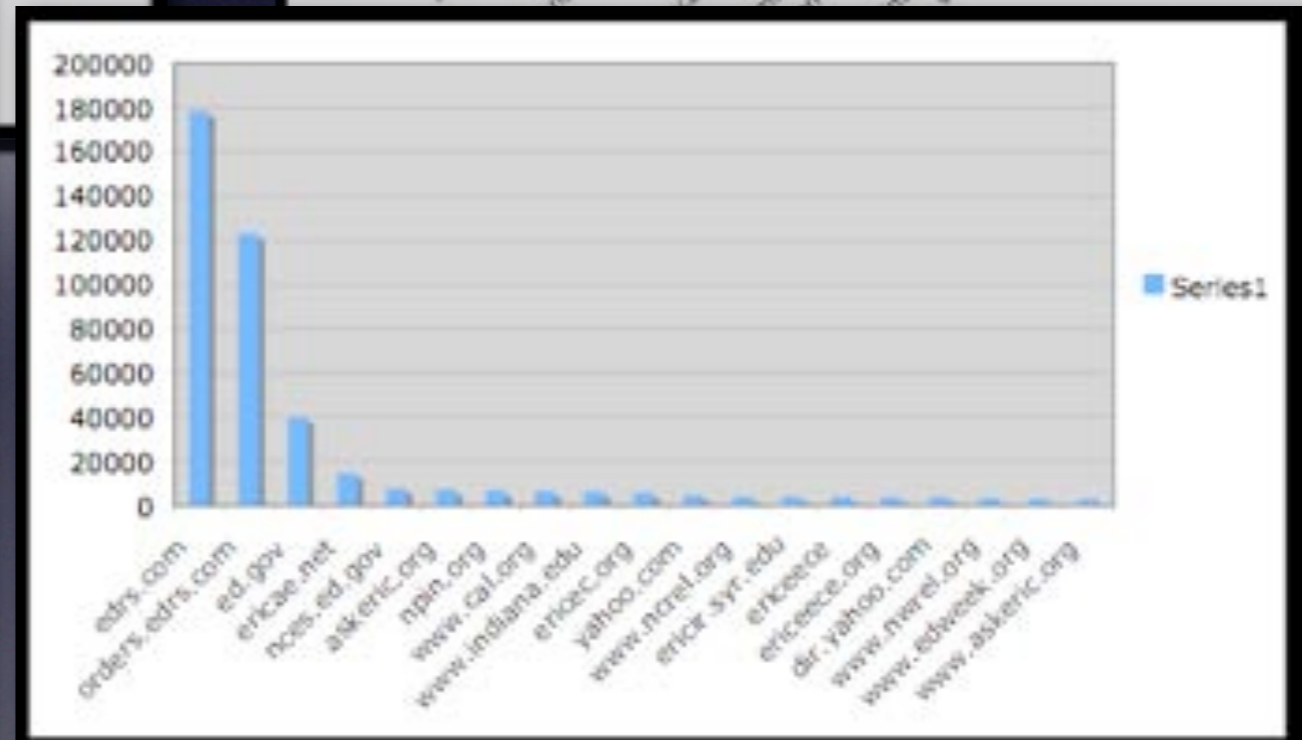
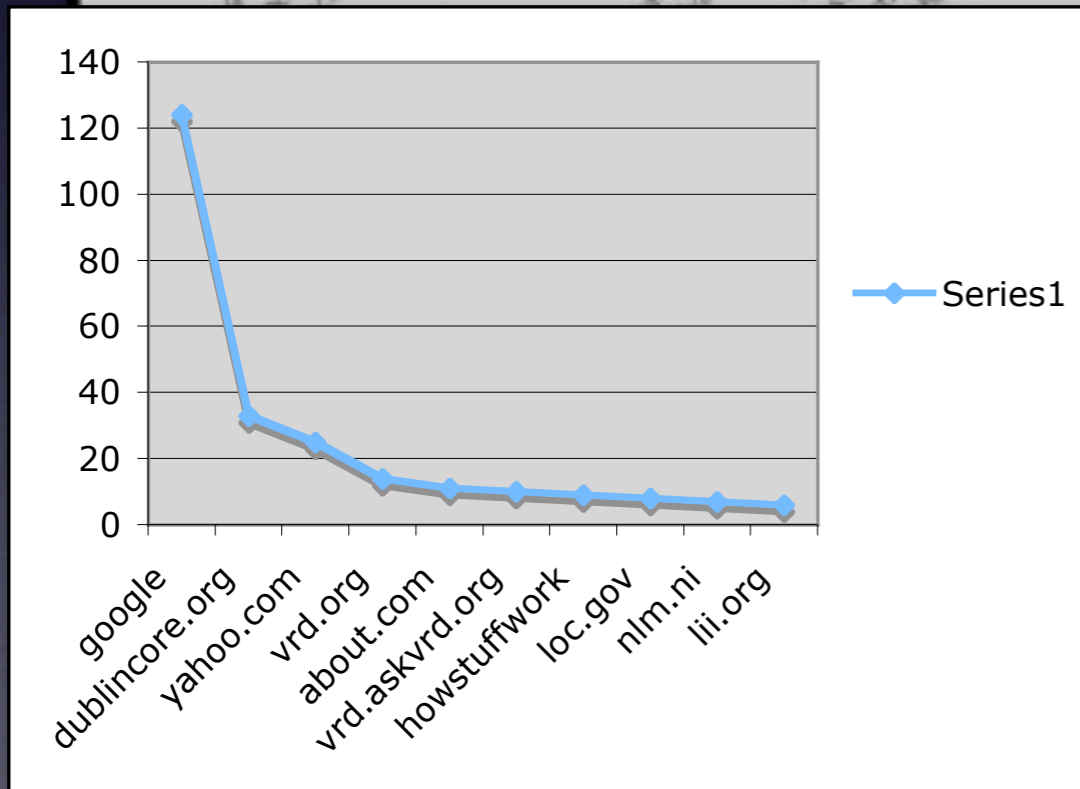
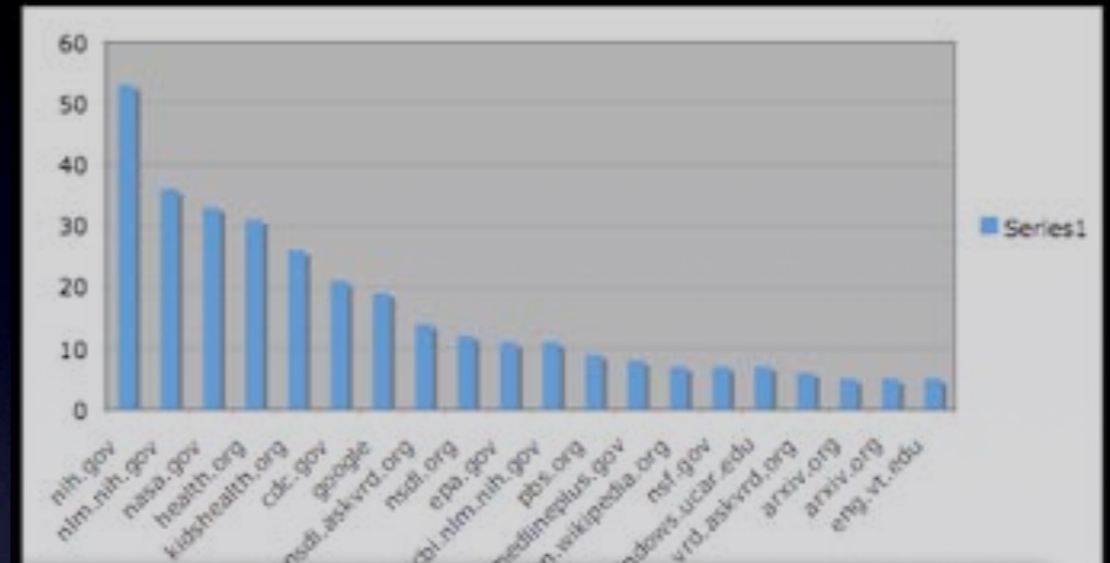
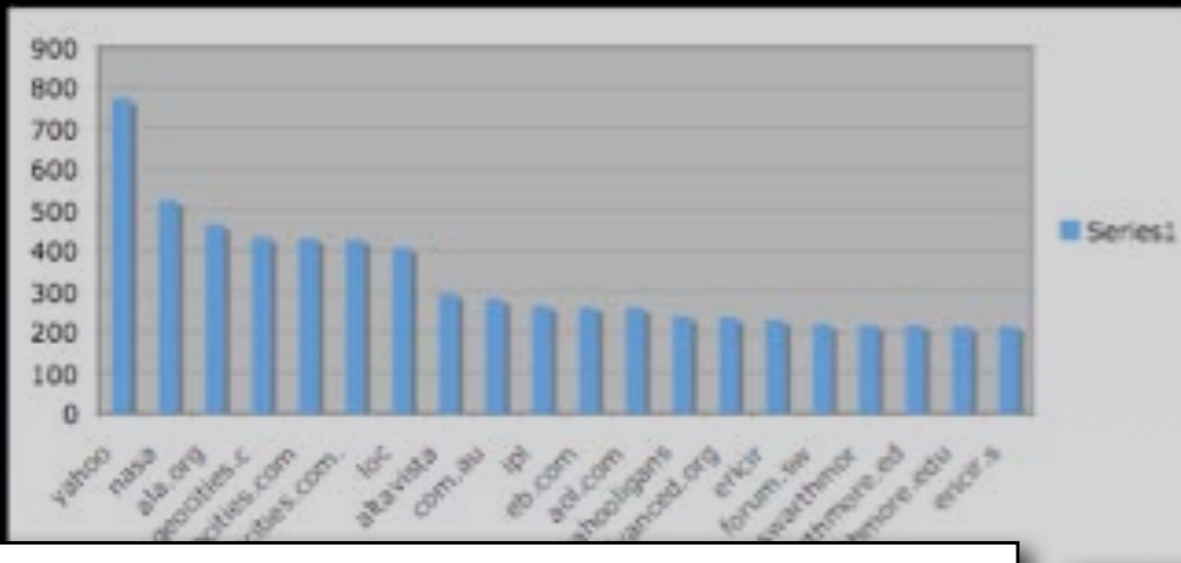
Reference Weighting



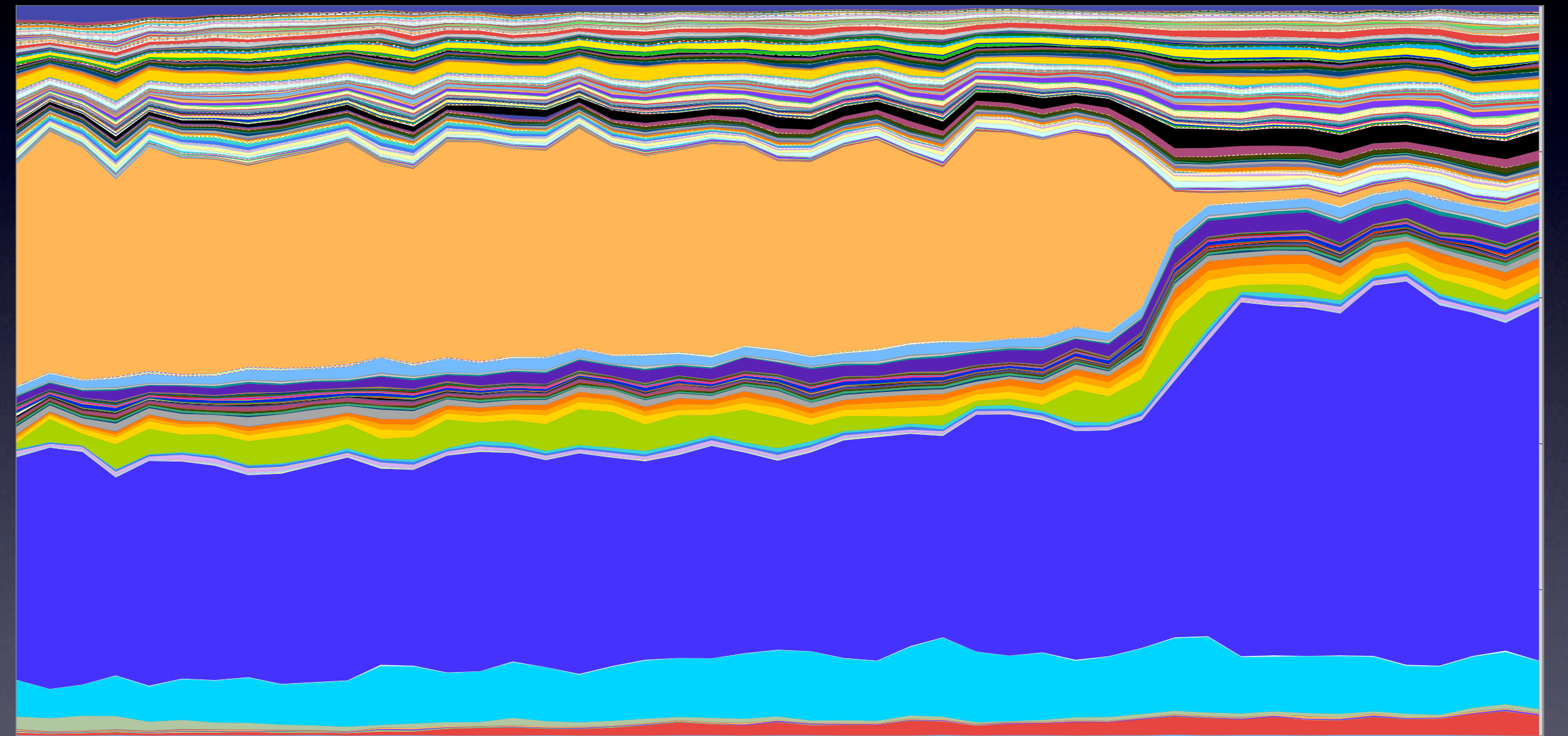
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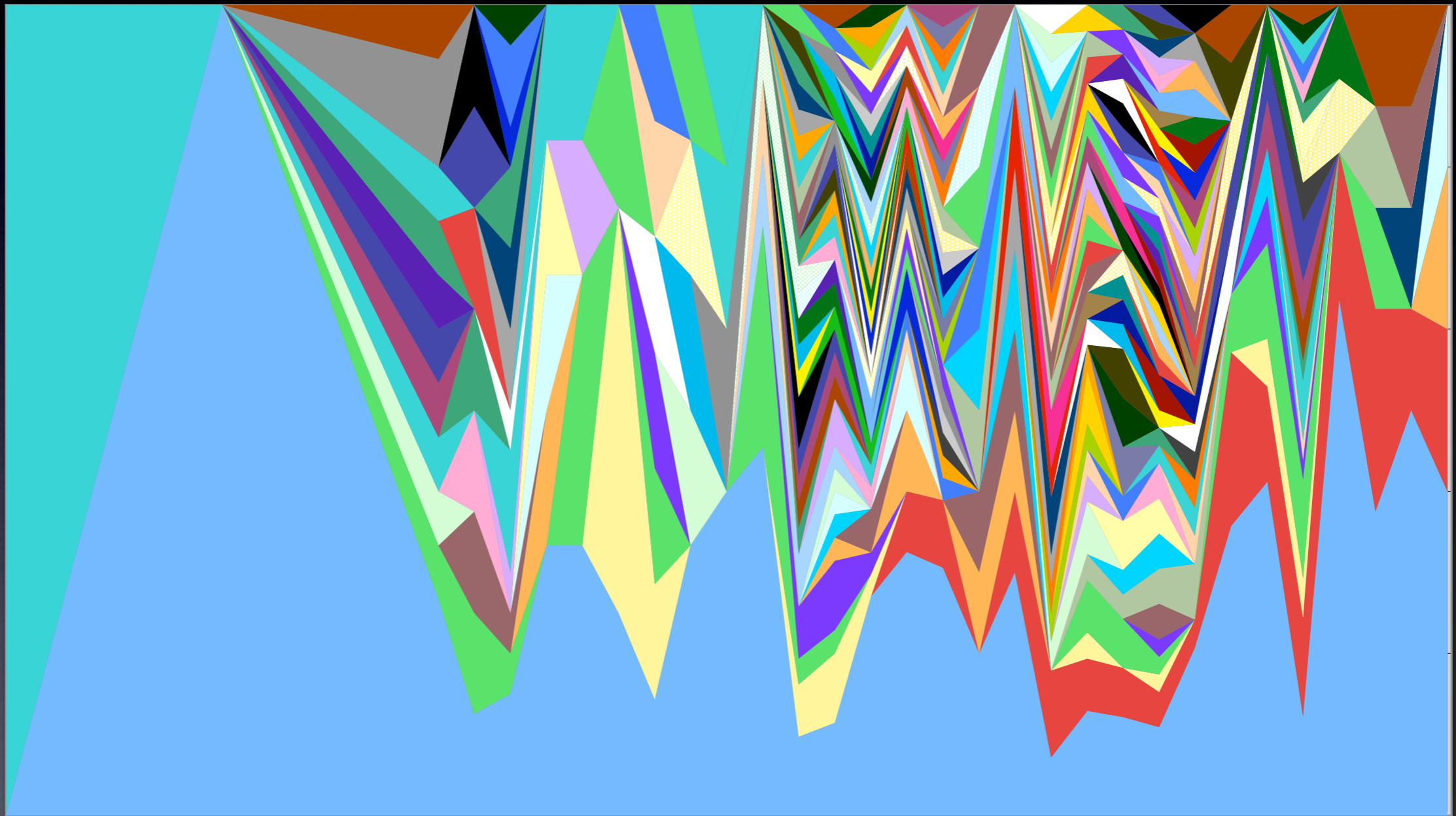
AskERIC Histogram



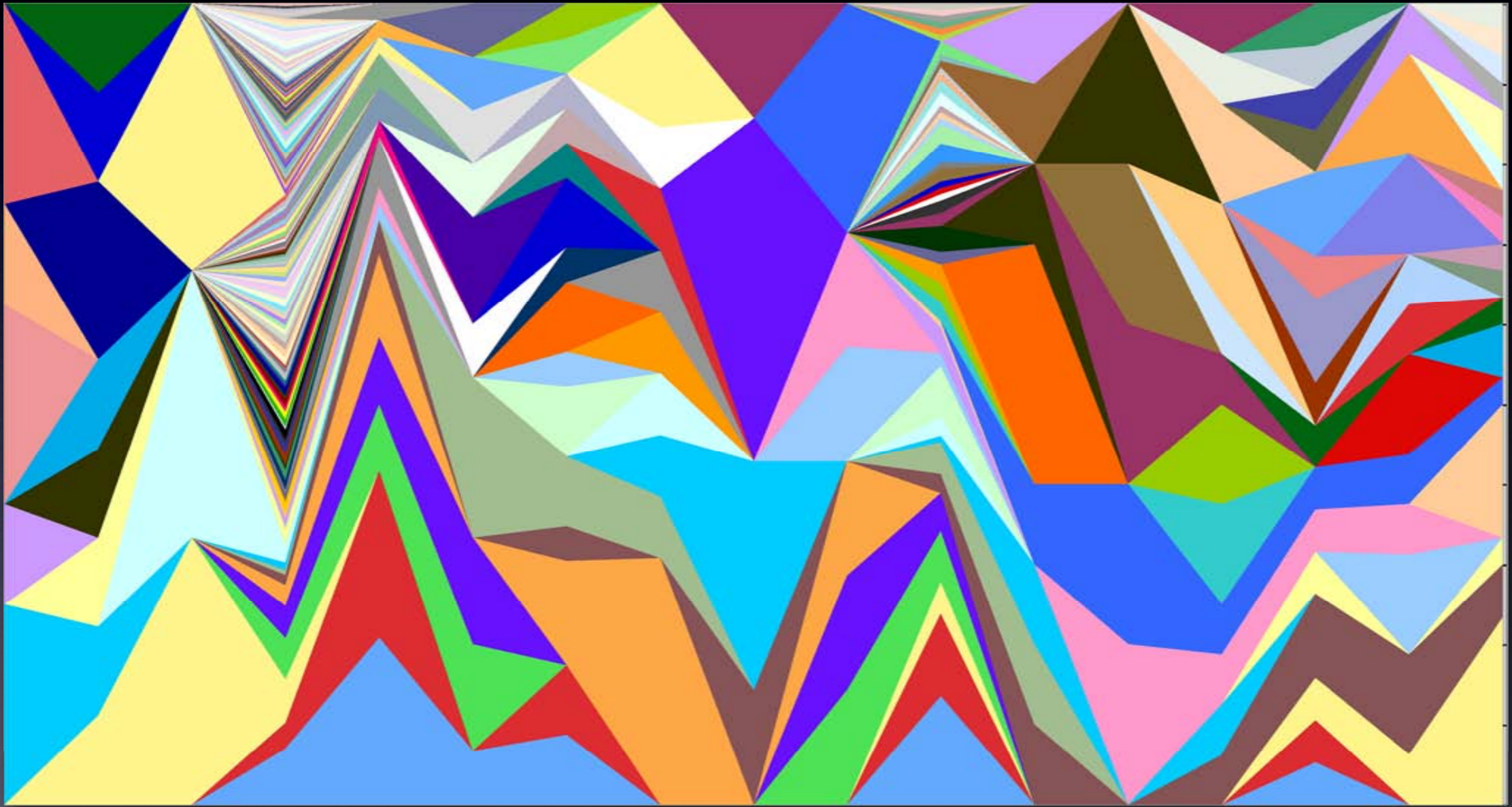
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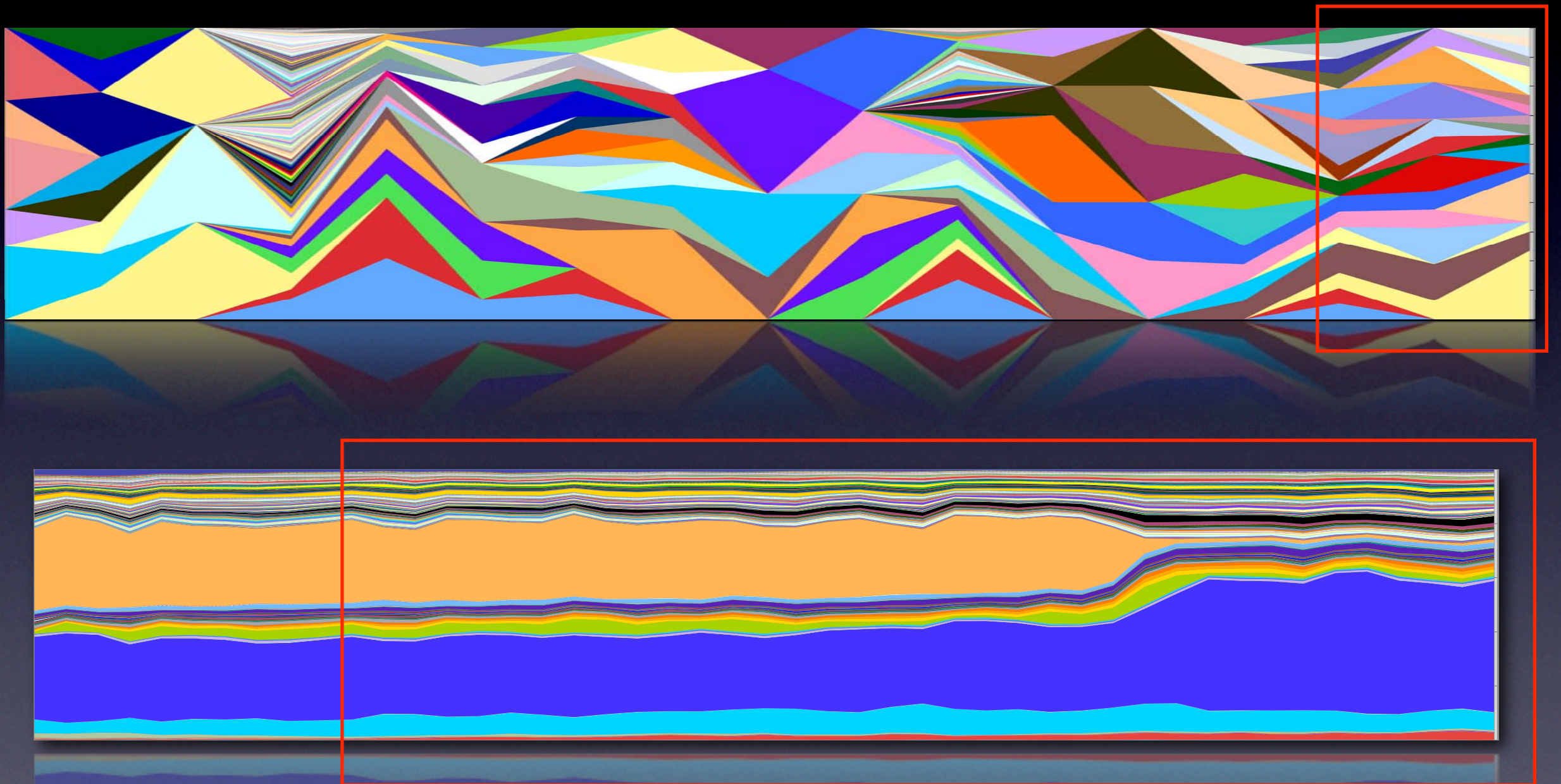
VRD Histogram



AskNSDL Histogram



“Weighting Window”

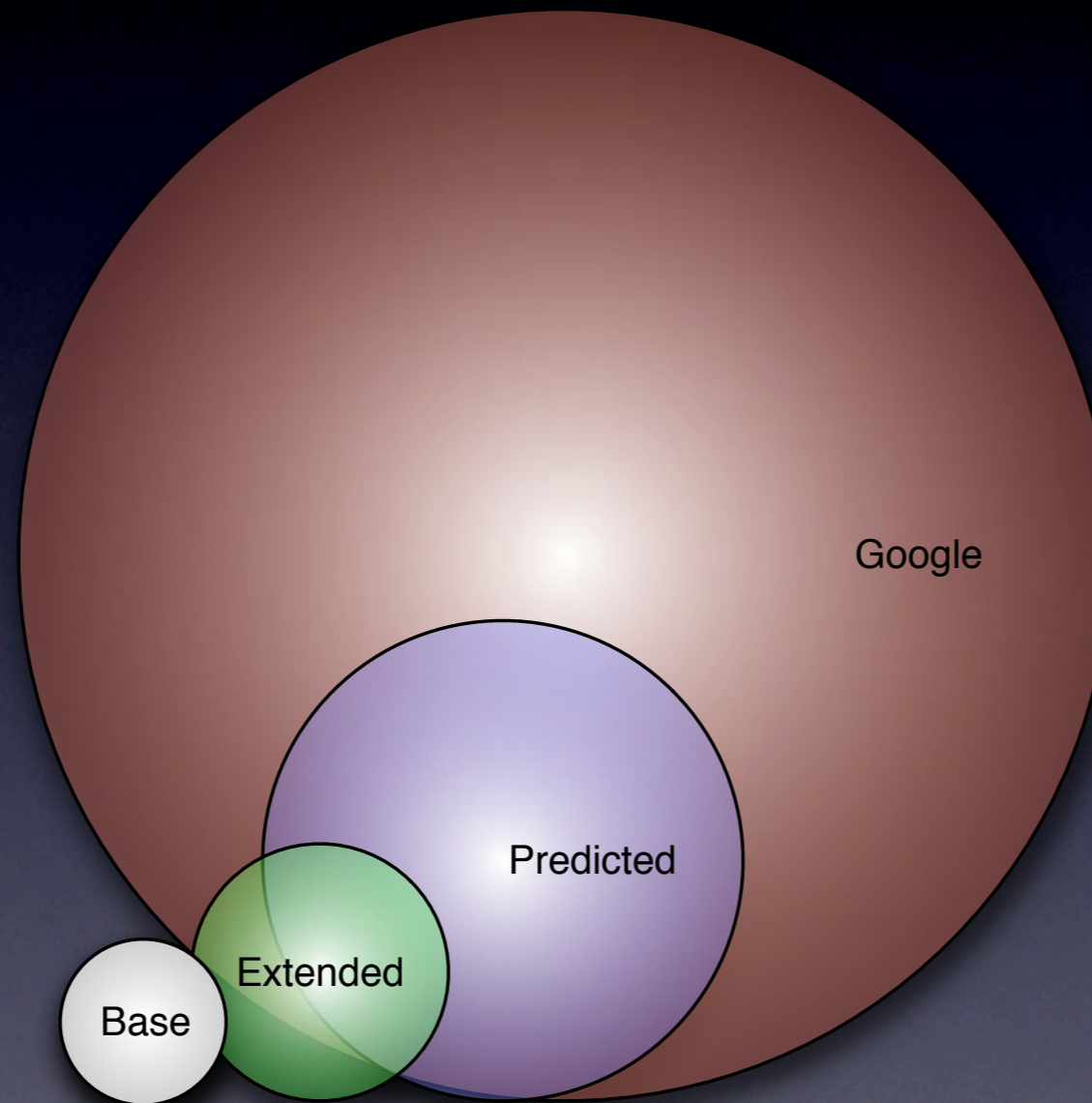


Reference EXTRACT

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



Zones of Credibility?



Higher Credibility → Lower Credibility
Higher Credibility → Lower Credibility

Story Starters

- High Context
- Builds on Blogs
- Reference as Community

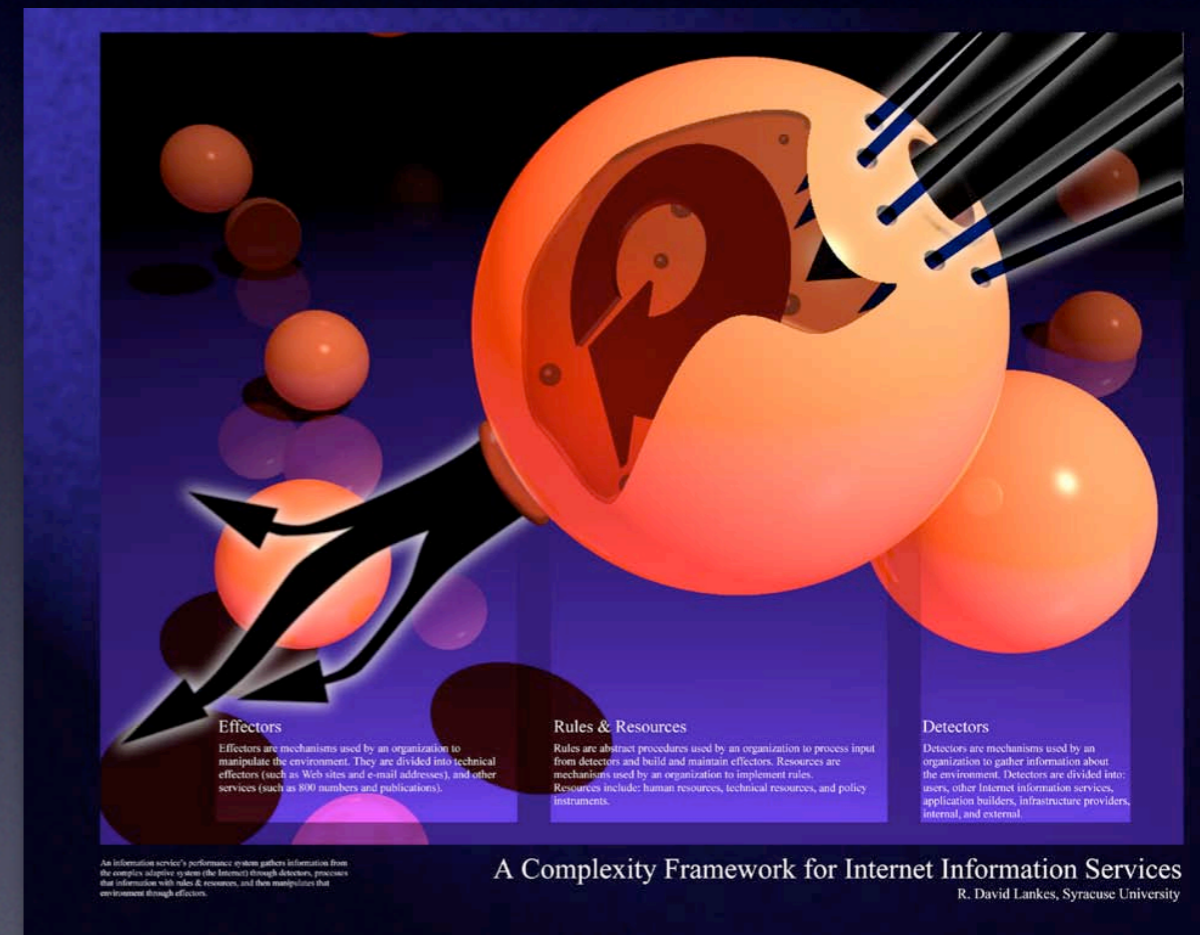


Story Starters

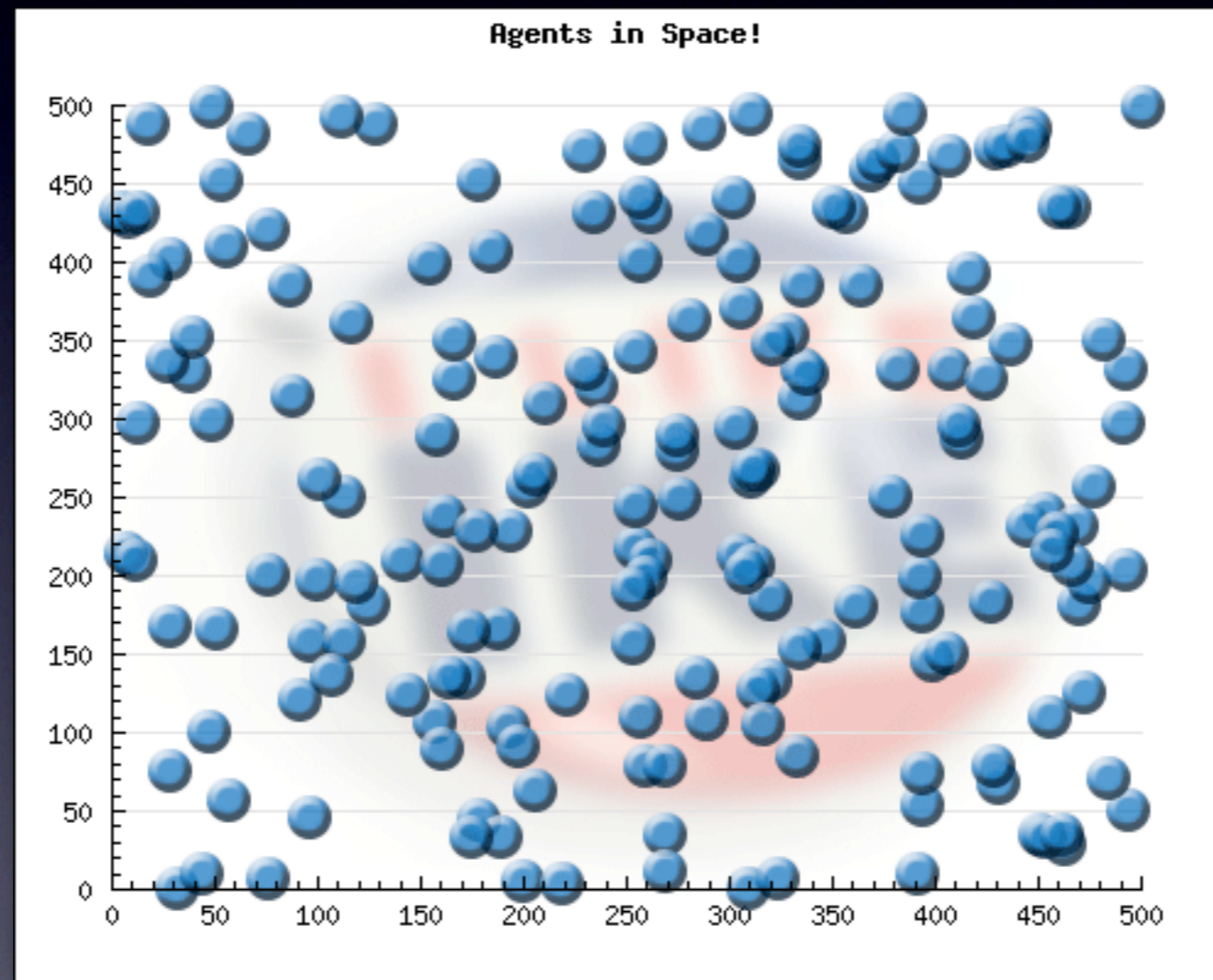
Story Starters

Inductive Knowledge Engine

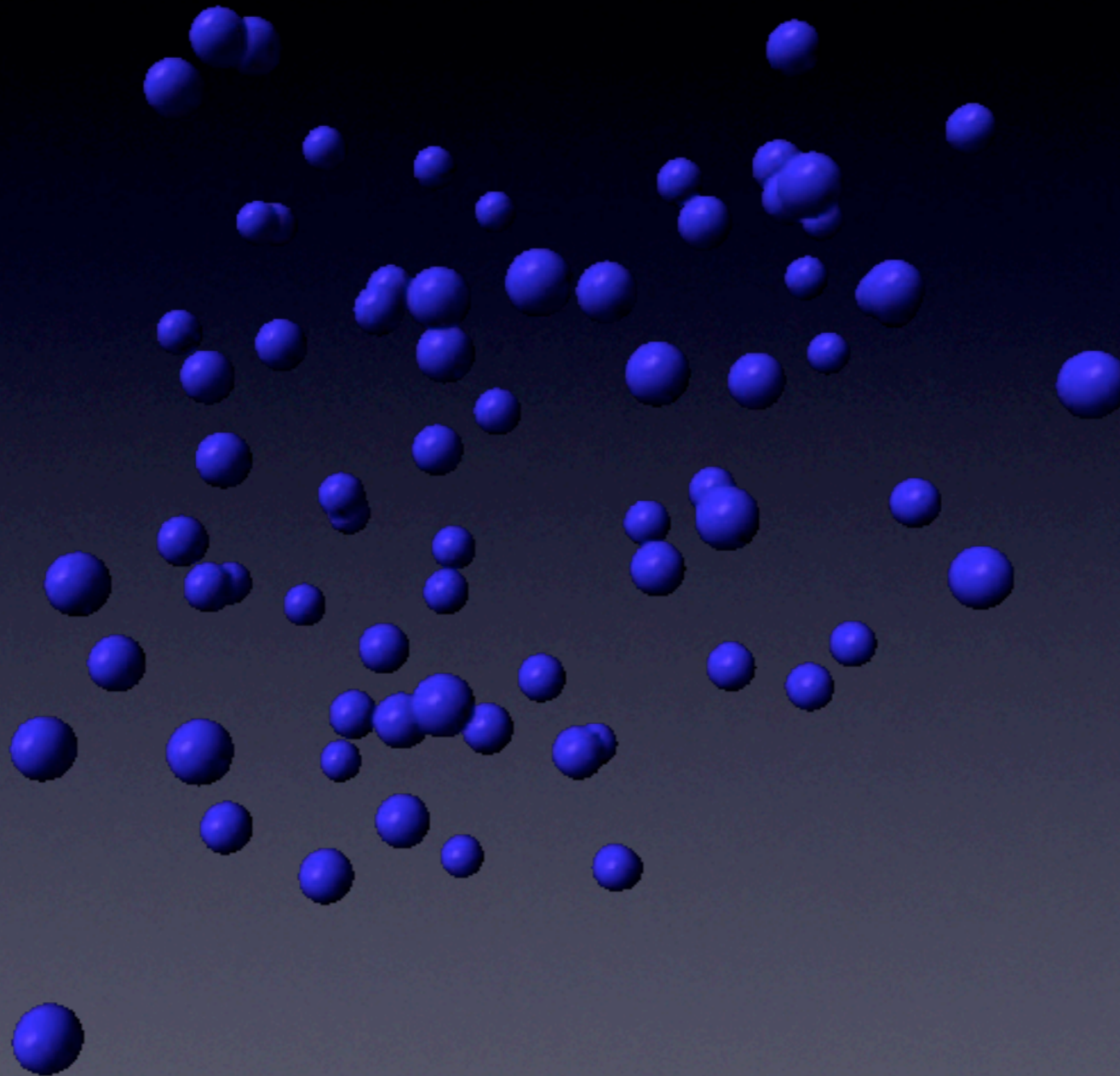
- Each Response is an Agent
- Each Agent has: Rules, Resources, Tags, Detectors, and Effectors
- Compared in a “Space”
- Geometry, Timing, Rule



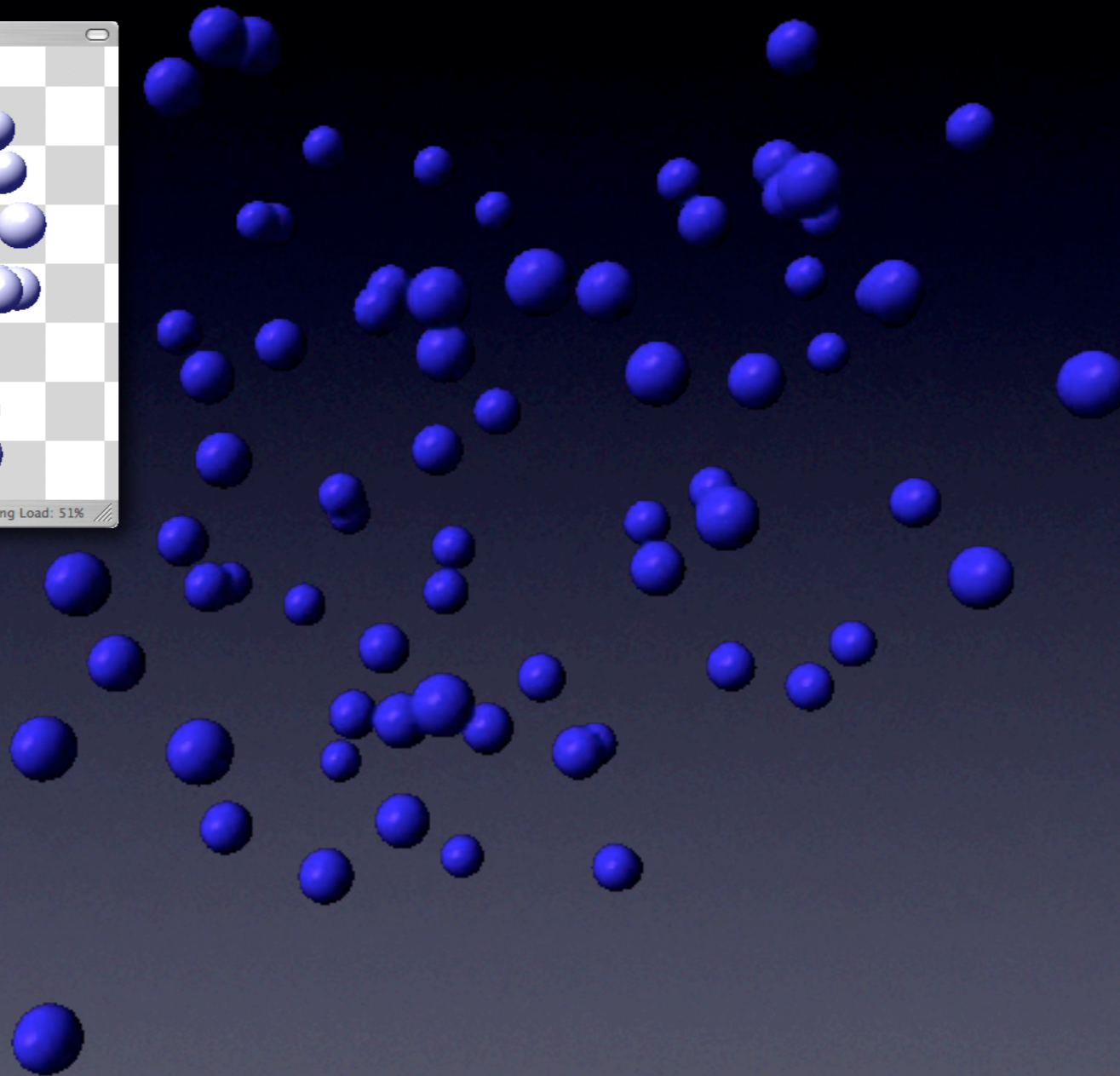
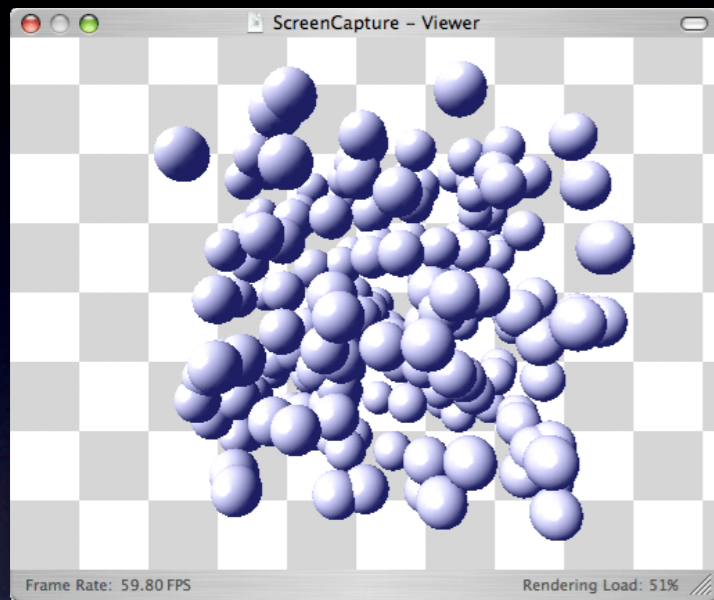
Induction Example



Induction in 3D

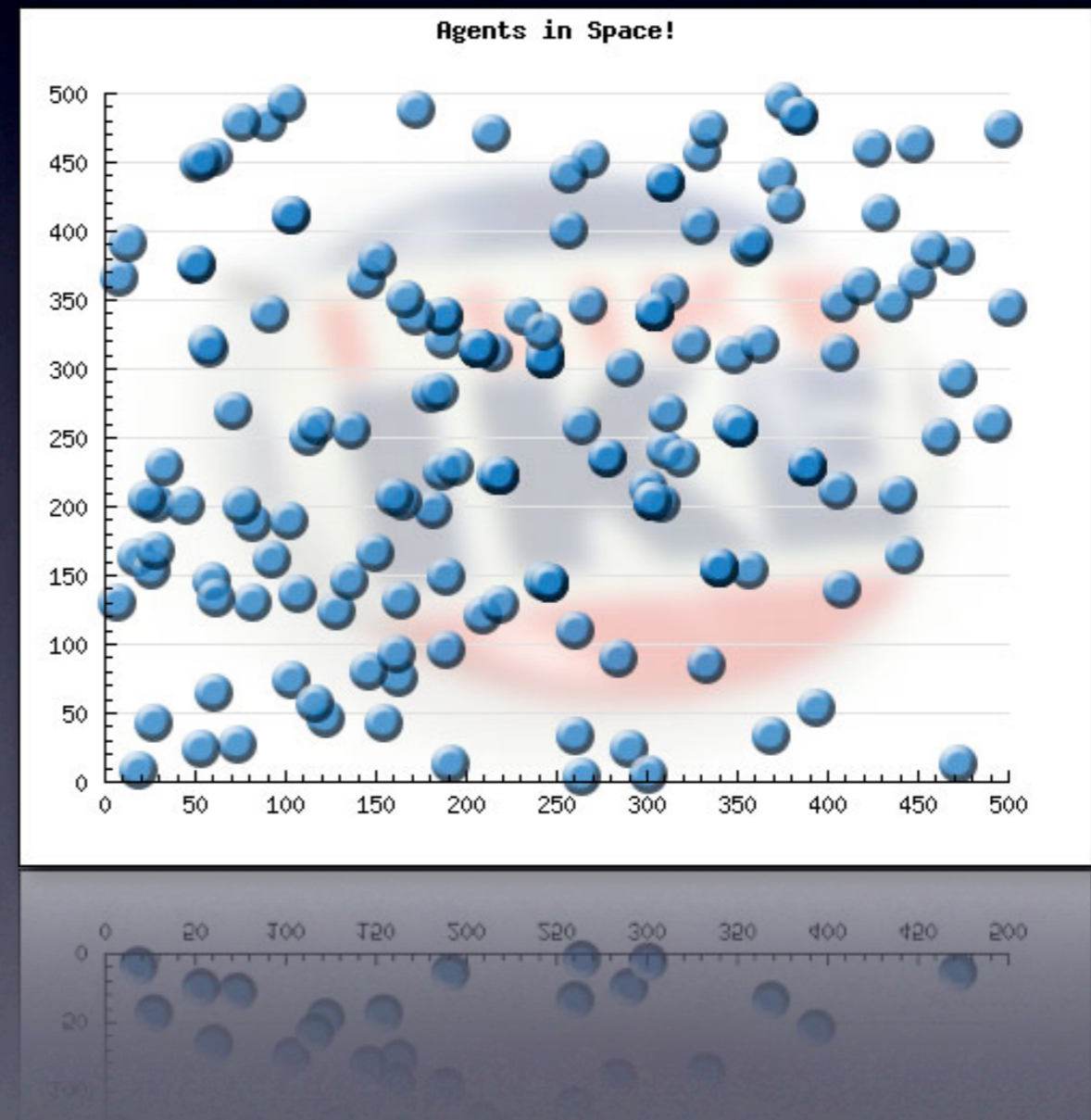


Induction in 3D



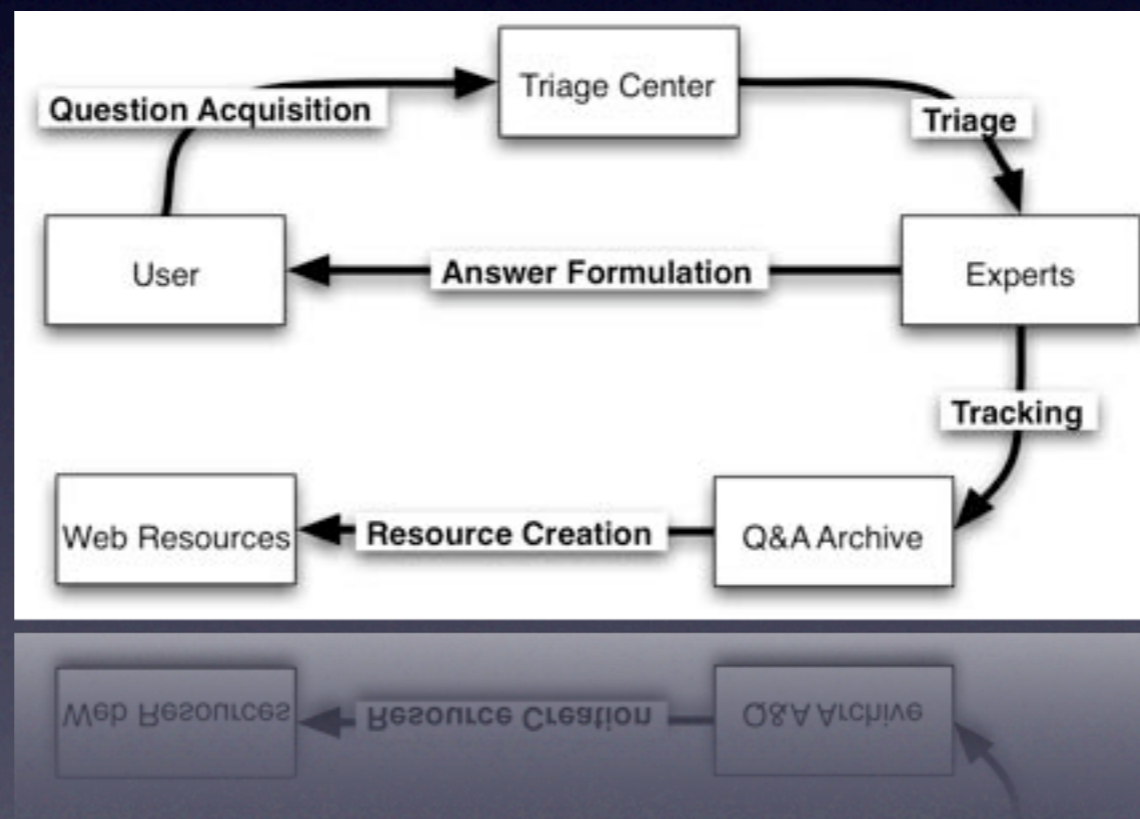
Anticipated Benefits of a Complexity Approach

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



The Long and Winding Road

The Long and Winding Road



The Long and Winding Road

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Network	considering the... edyppo come from the caribbean, there might be people who play a mixture of both. So what I am trying to find out...

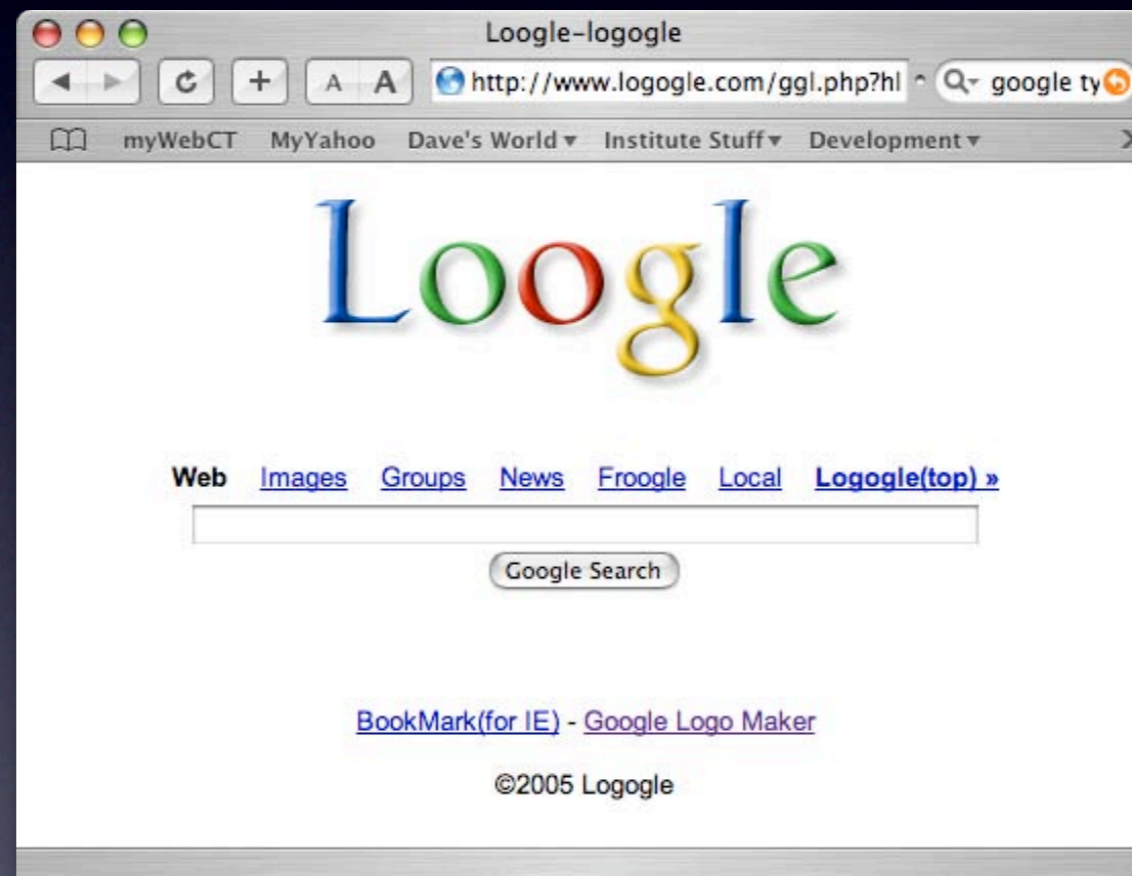
Next Go

Next Go

The Long and Winding Road



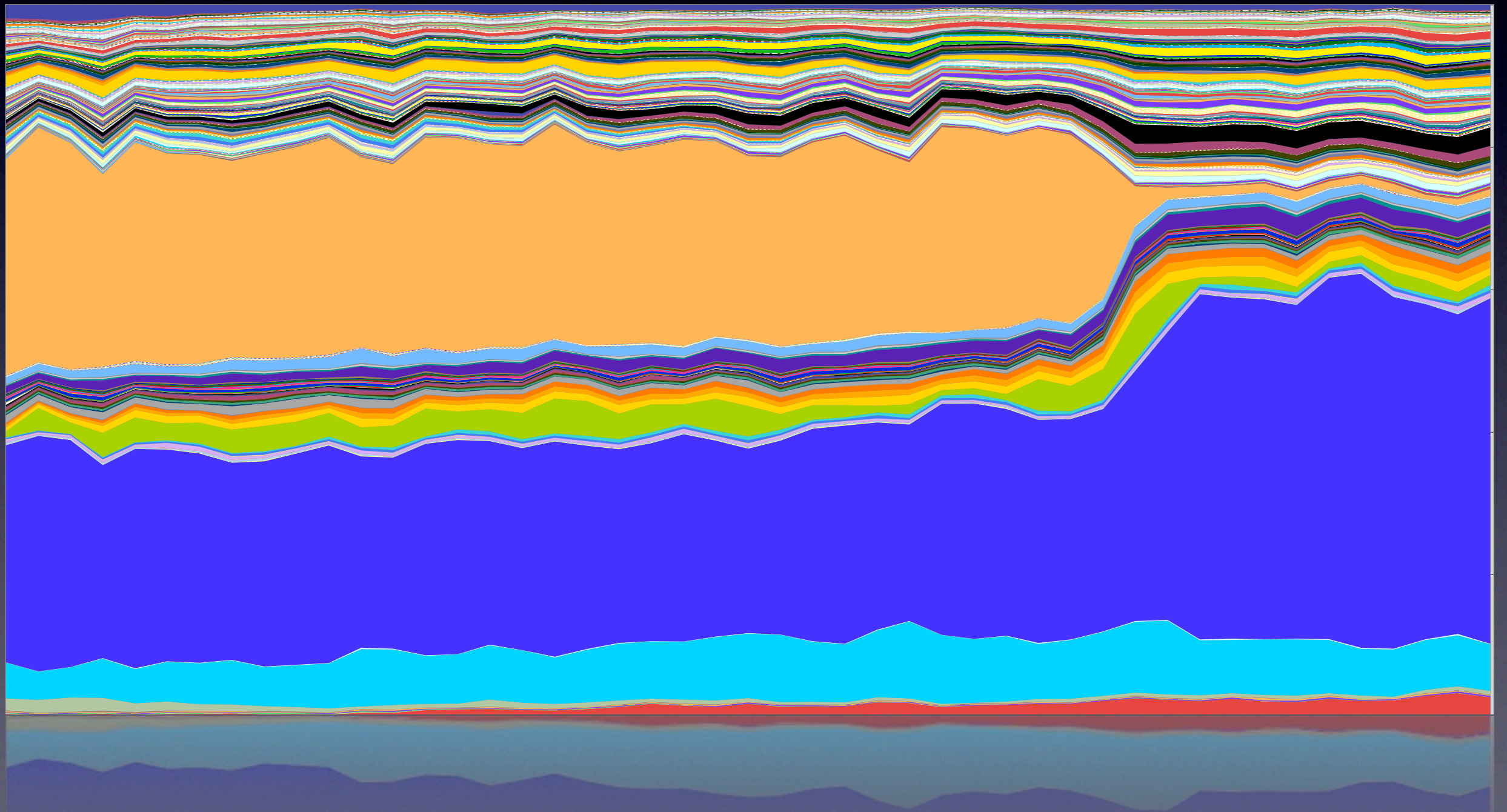
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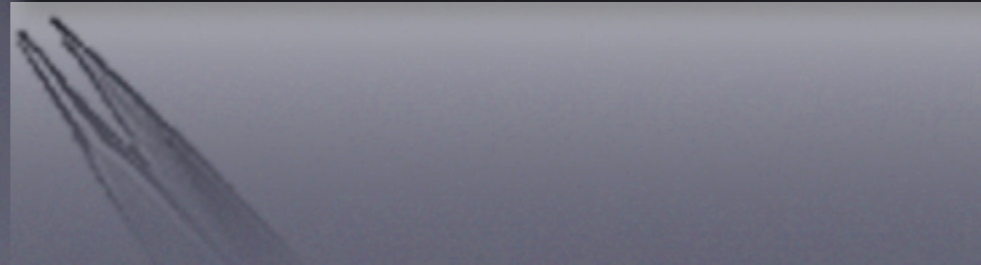
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BookMark(for IE) - Google Logo Maker

The Long and Winding Road



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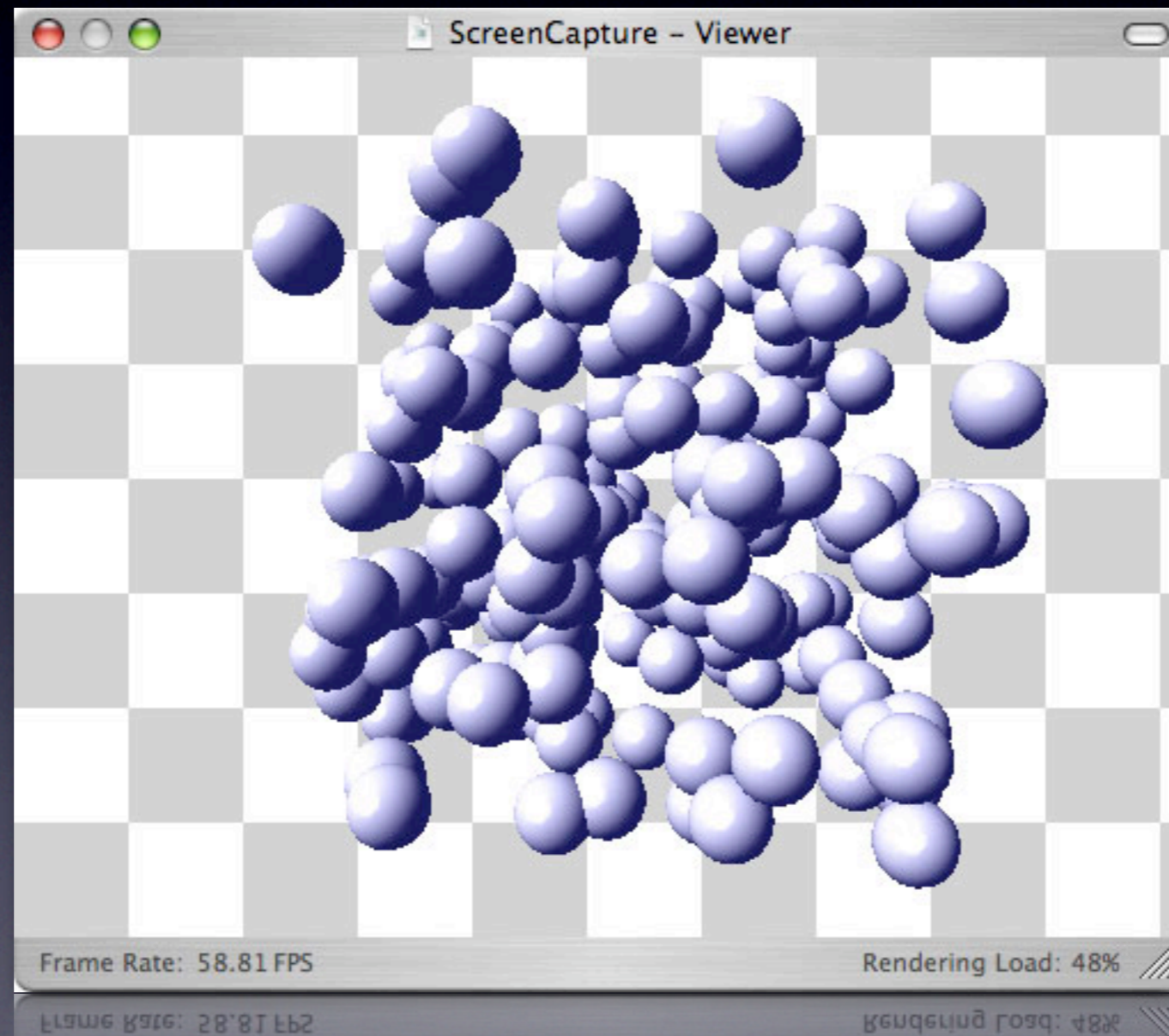
The Long and Winding Road



Story Starters

Story Starters

The Long and Winding Road



So What - ILS

The Perceived Benefits 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?)

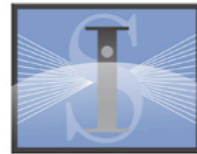
So What - Metadata

- 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?



The Information Institute of Syracuse's New
Weapons of Mass Instruction



R e f e r e n c e E X T R A C T & S t o r y S t a r t e r s

R e f e r e n c e E X T R A C T & S t o r y S t a r t e r s