

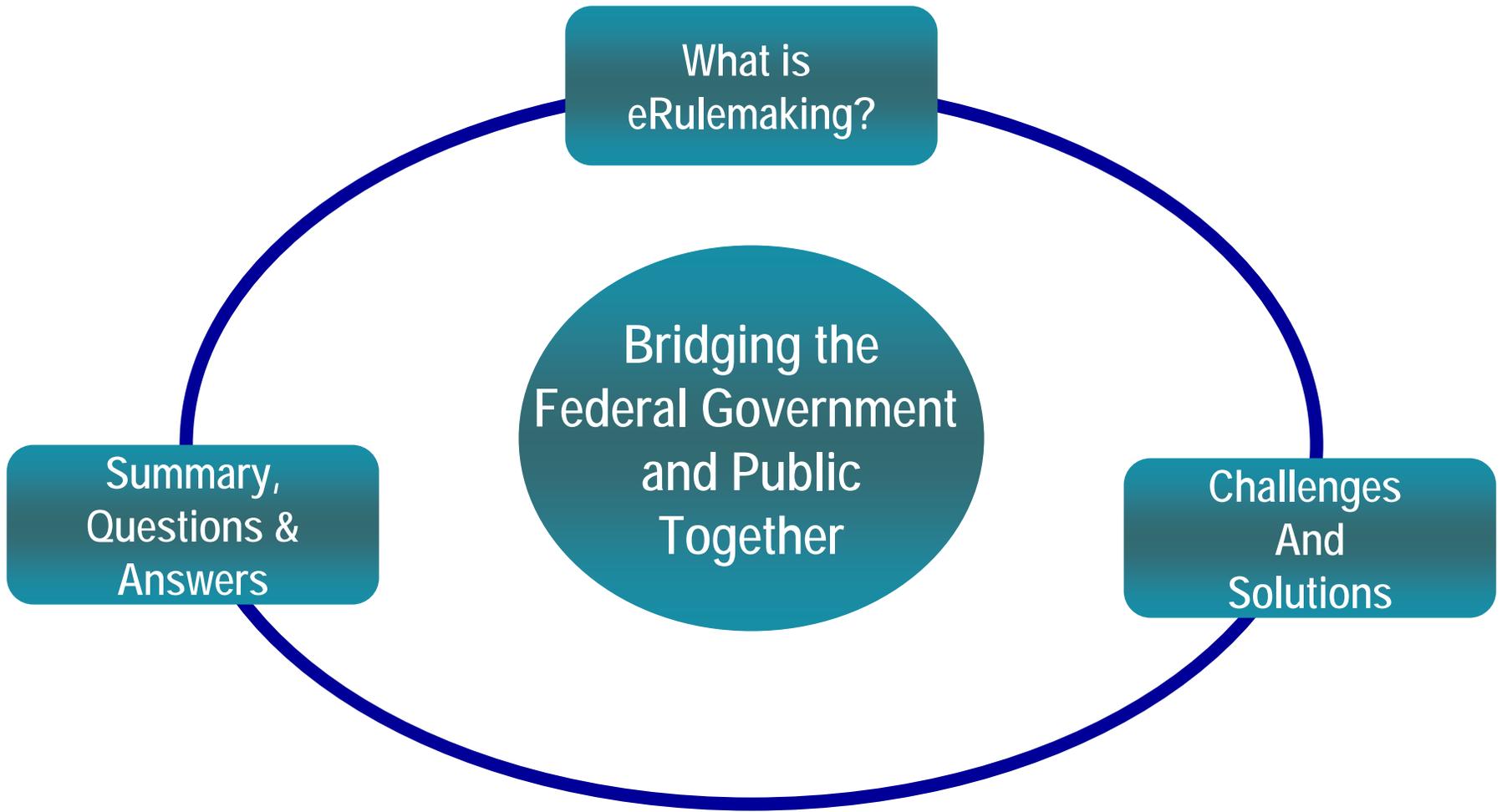


***Power to the People -  
Enabling Every U.S.  
Citizen to Participate in  
Federal Rule Making***

Patrick Micielli  
EPA, OEI, OIC, CSTD  
eRulemaking  
micielli.patrick@epa.gov

Vic Forney  
eRulemaking  
Lockheed Martin  
s.v.forney@lmco.com

# Agenda



# eRulemaking Initiative

## ◆ Objective:

The eRulemaking Program's Federal Docket Management System (FDMS) provides a secure, robust electronic rulemaking repository, enabling Federal Agencies to post their rulemaking documents for public access and comment while reducing the cost of creating and maintaining electronic dockets.

*Regulations.gov* provides Agency rulemaking documents to the public offering improved search, view, and comment options.

## Key Architectural Requirements:

- Enable agencies to manage content and workflow processes using variable access controls and role definitions
- Provide a robust and scalable web-based solution that supports the capture, conversion, and dissemination of high volumes of information
- Provide the public with the ability to search, view, and comment upon documents across multiple Agencies
- Minimize total cost of ownership to the Federal Agencies while delivering responsive service to the Agencies, businesses, and the public

# Improving the ability of the public to access federal rulemaking information

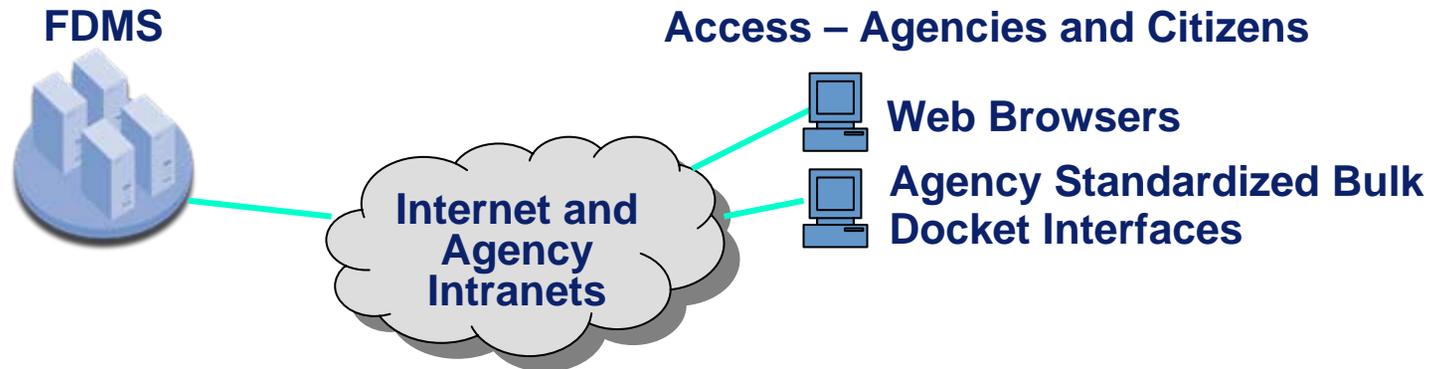
**Before – picture reading room with stacks of documents and copier**



**After – single portal to current and historical documents allowing users to access anywhere at anytime**



# Centralized Solution – Single solution in one location



## Centralized Standard Components:

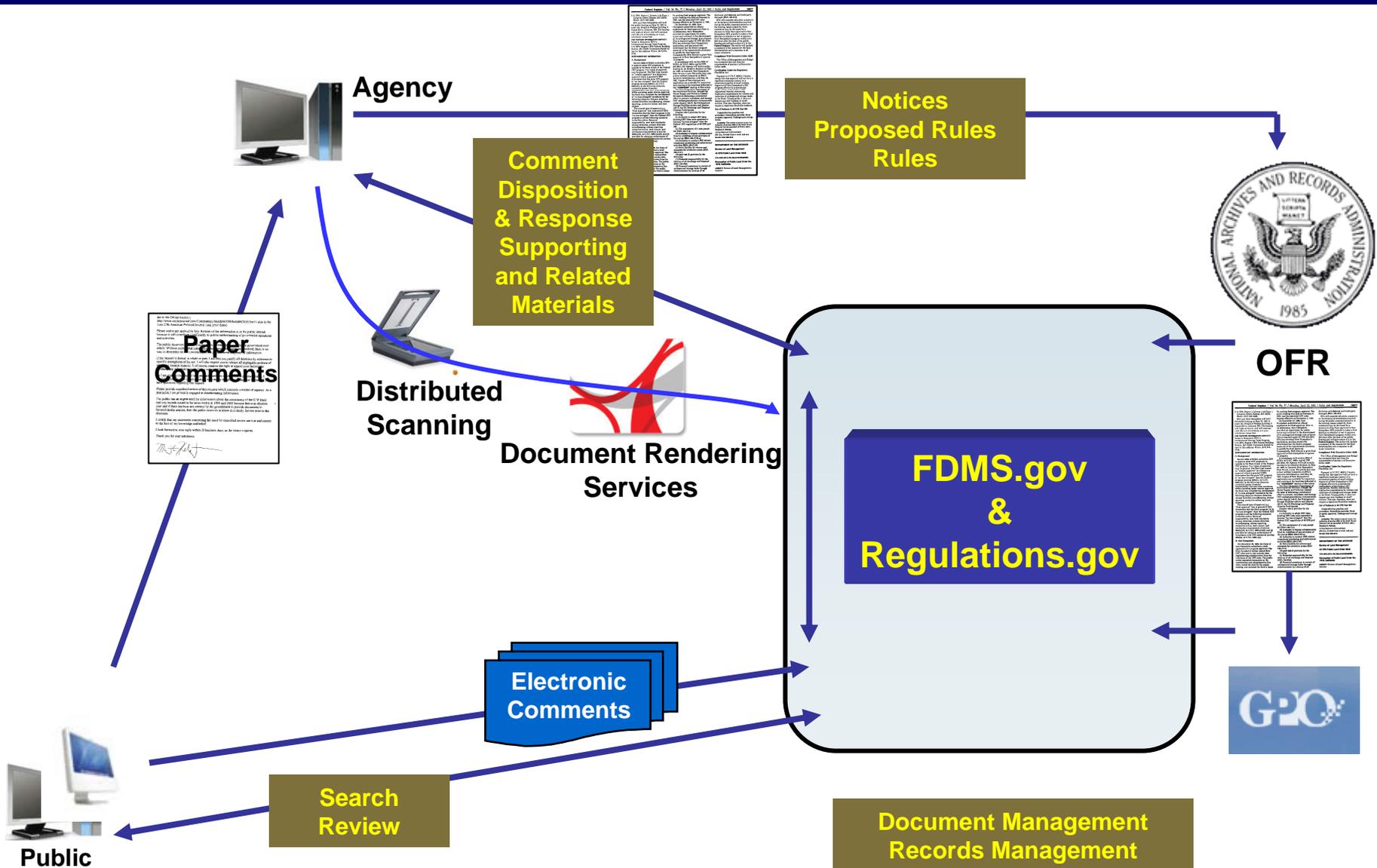
- Cross Agency storage, searching (including full text), commenting and retrieval
- Centralized security management
- Central systems management
- Full computing resources
- Full Docket Information storage

**Single Solution**  
Physically and Logically Centralized

**Distributed Ownership of Data and Roles**  
Agencies own and Manage Content and Permissions

<http://www.regulations.gov>

# eRulemaking Concept of Operations



# Challenge - How are we doing?

## Question:

Can public users find information and what level of satisfaction do they have using Regulations.gov?

## Help Desk

- 82% of reported Change Requests relate to Search and User Interface Improvements
- 41% of reports are from users seeking services outside the scope of eRulemaking

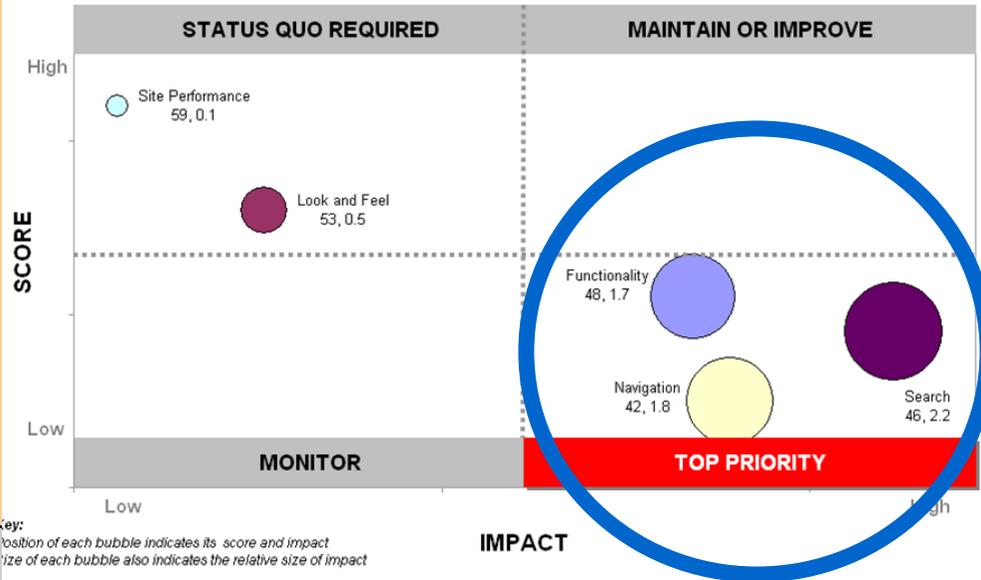
## Approach:

Implement the American Customer Satisfaction Survey. Baseline measurable results.

## Results / Value:

- Baseline of customer Satisfaction
- Categorized user behavior and expectations
- Defined user knowledge and skill
- Defined categories of users
- Defined focus area for quick improvement

# Survey Results - Focus Areas for Improvement



- ◆ **Functionality** – Users have the ability to complete the functions (search, review, comment) efficiently and intuitively
- ◆ **Navigation** – The ability to easily traverse the site depending on past, present and future needs
- ◆ **Search** – Ability to execute search functions that return data in the right context for a given user

- ◆ **First time usage will remain high as new users discover the site. In addition, the casual users who rarely visit will continue to act as a “new user” due to lack of site familiarity.**



# Bottom Line

Indicators	Comments
<b>ACSI Baseline results indicate that 56% of visitors to Regulations.gov are first time users</b>	<b>Users report difficulty in searching, navigation and functionality (commenting)</b>
<b>Help Desk Analysis reveals that 42% of tickets are unrelated to the intended purpose of the site</b>	<b>Visitors are unable to intuitively determine what information is on the site. Frequently looking for compliance information, federal job searches, etc...</b>
<b>E-Write informal assessment found that the purpose of the site was not clearly communicated on the homepage</b>	<b>Purpose, function, and use of the site are not intuitive.</b>
<b>Public Usability Workgroup reports that agencies often have to help the public with searching and commenting on rules</b>	<b>Unable to find specific information</b>

**Expert System Designed For Experts But Used By Novices**

# More Questions

## Challenge:

What exactly do users mean when they say "search".

## Approach:

- Education
- Classifying users
- Develop Persona's
- Build Use Cases
- Analyze System data
- Evaluate Technology

## Results / Value:

- Understand system and search technologies
- Established an Agency understanding of their public users
- Identify requirements and approaches

# Search Technology



**fast**  
**What does Search mean to you?**  
**Answer, It depends!**



# Interface Design Factors: *Understanding Content, Data Structure, and Users to Improve Usability*

Design Factors		Regulations.gov
Relationship of the content	Does the source content have a common basis or purpose or does it contain unrelated information from many different sources?	Single data repository with highly related content
Structured or Unstructured data	Is the data highly structured in format with enforced data types and data values or is it free form text?	Highly structured meta data with associated unstructured data
User knowledge of the information held within the repository	Does the user know specifically what they are looking for or do they need to browse information to narrow down what they are looking for?	Wide range of users expectations

**Use the types of content, structure, and user knowledge to develop the best interface that will deliver the right information through the simplest method.**

# Balancing Accuracy and Relevancy

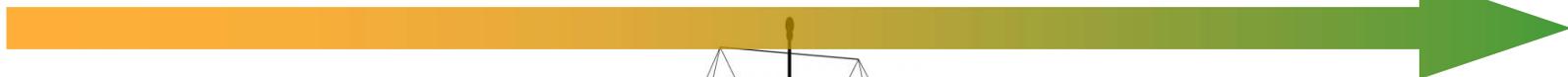
Have I found the most relevant material or am I missing something?

I don't want results I am not interested in!

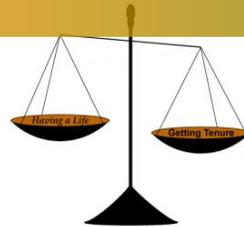
Mix of relevant and irrelevant information

**Precision**  
Relevant records compared to irrelevant records

Results are highly relevant with few irrelevant records



High Recall  
Less Precision



High Precision  
Less Recall



Results match exactly the request

**Recall**  
Relevant records returned out of all relevant records

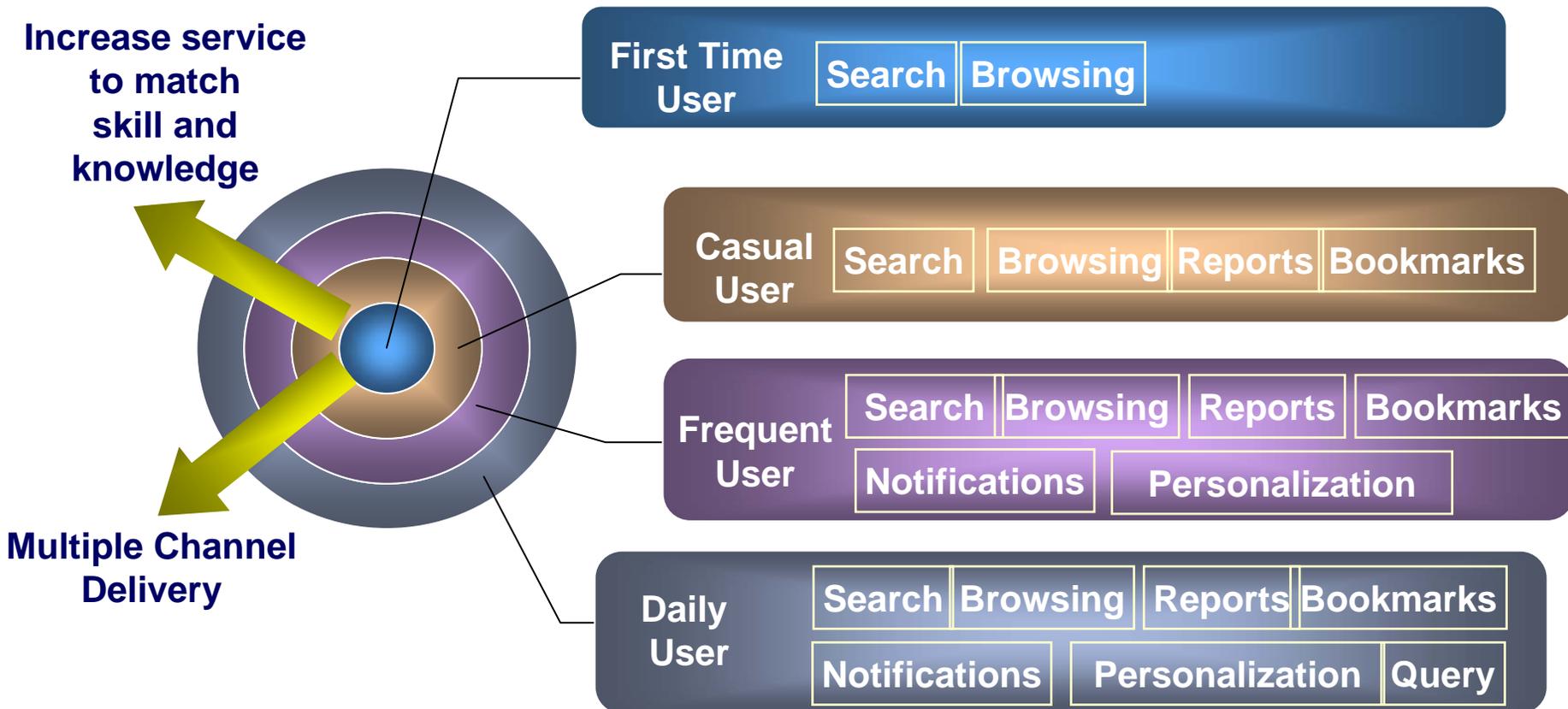
May not return similar or close matches

**Precision and Recall are inversely related – Increase precision will reduce recall. Must provide methods to address both ends of the spectrum.**

\* Measuring Search Effectiveness, Richard Jizba, Creighton University Health Sciences, 2002

# Connect User to Technology

The way a user navigates for information will change based on the purpose, skill, objective and knowledge over time.



# Applying Search Technology To Regulations.gov

Search Method	Target User	User Goal	Potential Changes to Regulations.gov	Benefits for Regs.gov Users
Search	Frequent and Daily user	User knows what they want and understand the site	Full text keyword search	Quick method to get to a set of documents using ID's
Browse	New and infrequent user	They don't know exactly what is on the site, may not know where to start or even what they are looking at	Make eDoc's Subject Taxonomy more prominent (e.g., accessible on Home Page)	Provides government standard topics for all FR documents
Query	Frequent and Daily user	User wants a specific set of related documents	Improve Advanced Search; Save Queries; format output	Allow user to narrow the results set to a specific criteria
Dimensional	All users	<p>Browse and traverse information</p> <p>New and Infrequent users – provide multiple starting places and ability to understand the content and relationships.</p> <p>Daily Users, needs to navigate through data to analyze information from different views</p>	Navigation and improved information delivery	<p>Presents new views of information based on where the user came from to help guide.</p> <p>Presents related information to give picture of whole site contents.</p>

# Target Objectives

- ◆ **Enhance the experience of new and novice visitors to the site so they understand what they can do quicker**
- ◆ **Introduce new enhancements that makes the site easier and more intuitive to the New and novice visitors**
- ◆ **Visitors coming to the site in error will move to an appropriate site before becoming frustrated**
- ◆ **Frequent users will continue to see the key search and comment functions and layouts that they are familiar with**
- ◆ **Users should have a more satisfying experience on the site. User feedback will continue to be monitored and applied.**

# Challenges - Selection of Search

## Challenge:

What search products are best for Regulations.gov?

## Approach:

- Refine Requirements
- Vendor Search
  - State of art technology
  - Longevity of vendor
  - Ability to integrate with Documentum
  - Vision within technology

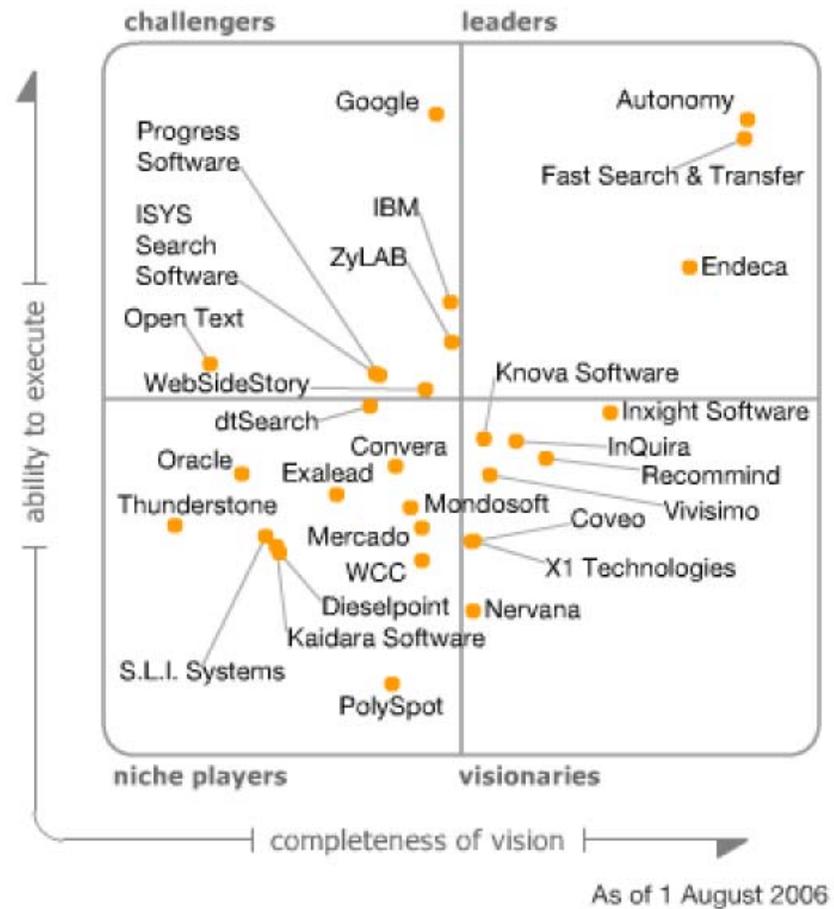
## Results / Value:

- Down selected list of vendors
- Increase assurance of vendor viability
- Reduce integration risks
- Higher confidence in delivery

# Search Technology Vendors

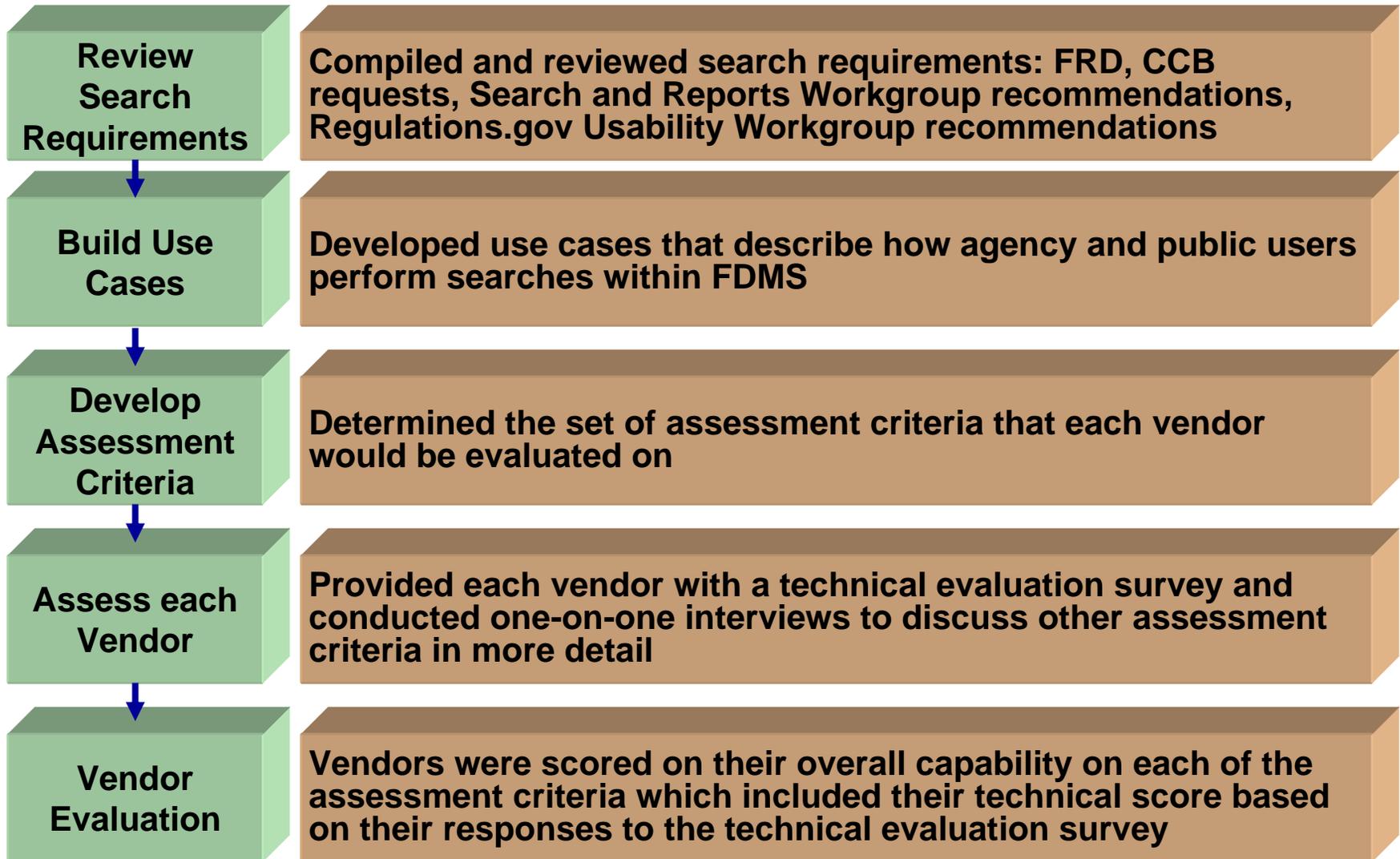
- ◆ Endeca
- ◆ FAST Technology
- ◆ Autonomy

Focus on ability to perform with vision for the future

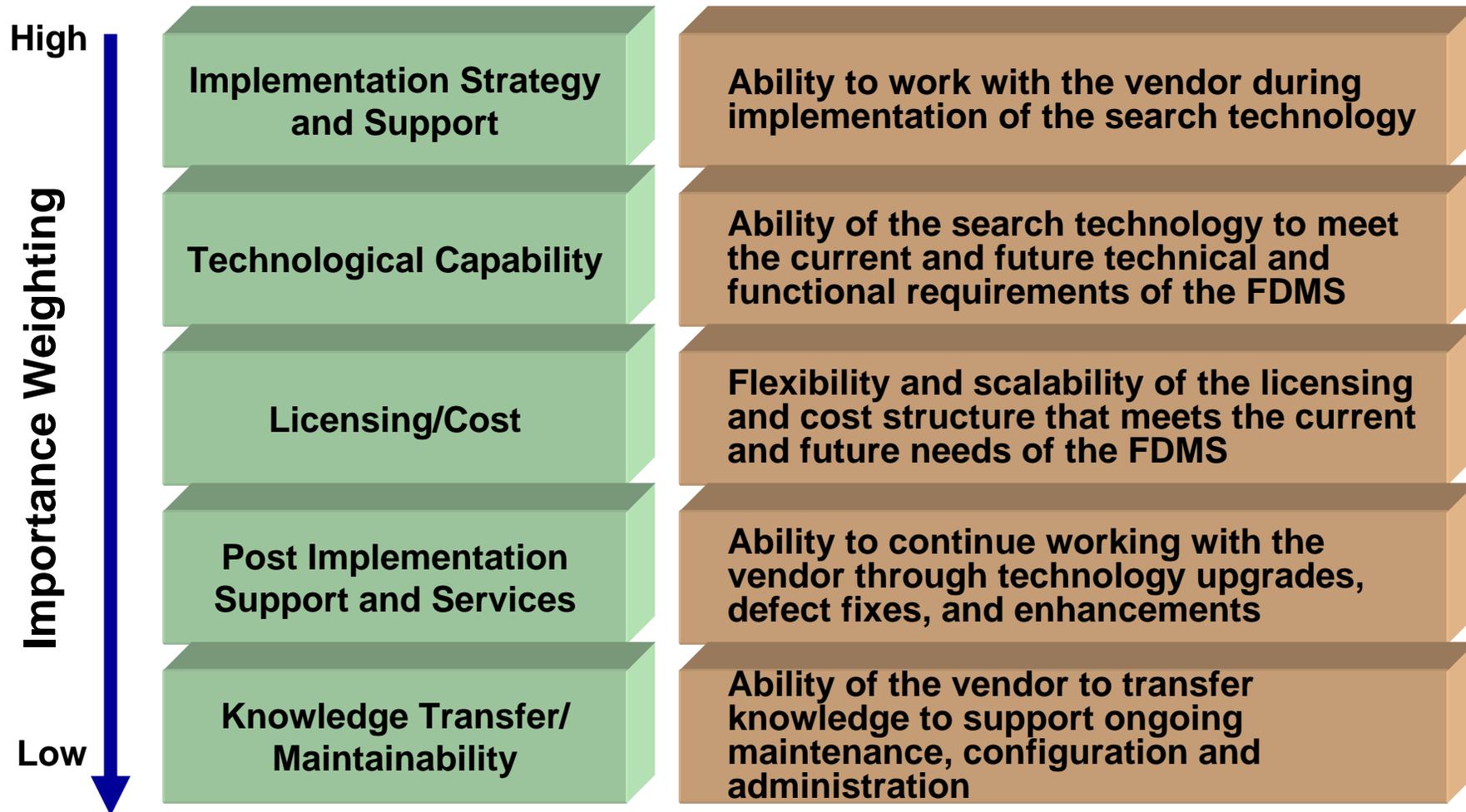


Source: Gartner (September 2006)

# Evaluation Methodology



# Assessment Criteria



# Challenges - Implementation

## Challenge:

Gain understanding of how the users might use Regulations.gov.

## Approach:

Cross federal workgroup  
Classifying users  
Developing Persona's  
Building Use Cases

## Results / Value:

- Established understanding and empathy by the agency users on different public needs
- Break agencies from thinking about how agencies use the system

# Established Search Work Group

- ◆ **Participation from Agencies and Program Management Office**
  - **Review and Refine Requirements**
  - **Participate in requirements and design concept reviews**
    - **Act as adopted persona's**
  - **Communicate results to other stakeholders**

# Sample Persona - Thomas

## General Public



**Occupation:**

Fisherman

**Age:**

44

**Gender:**

Male

**Education:**

Bachelors

**Employer:**

Alaskan Salmon Corporation

**Annual Income:**

\$45,000 per year

**Frequency of use:**

Rarely

**Memberships & Affiliations:**

Alaska Salmon Council

**Primary Use of Regulations.gov:**

- Search/Browse
- Comment
- Run Reports
- View Others' Comments

**Relationship to the Federal rulemaking process:**

None

**Location (City, State):**

Fairbanks, Alaska

**Interests/Hobbies/Community**

**Activities:** Fishing, playing poker and reading

**Marital Status:** Single

**Other Persons In Household:**

None

**What issues/social problems are of concern to this persona?**

Water pollution, animal testing, and hot topics that he receives from his Congressman and newsletters.

**What are two of this persona's goals in life**

Inform the public of causes of water pollution and show the effect it has on the fishing industry

# Summary Points

<b>Never stop asking questions about the specific system and how it is being used.</b>	✓
<b>Search means different things to different people</b>	✓
<b>Technology must be reliable and secure to ensure trust is maintained with all stakeholders.</b>	✓
<b>Success is driven by effective organizational change processes.</b>	✓
<b>Use sound engineering principals of decision analysis</b>	✓
<b>Work to create a rich partnership between the Government, Contractors, Vendors, and subject matter experts to increase probability of building a sound solution that allows the solution to grow.</b>	✓

# Contacts

## **John Moses**

Chief, eRulemaking Program Branch  
EPA, OIC, CSTD  
moses.john@epa.gov  
202-564-2734

## **Vic Forney**

Project Technical Manager  
Lockheed Martin  
s.v.forney@lmco.com  
703-647-5814

## **Mary Eward**

Federal Civilian Manager  
Endeca Technologies  
meward@endeca.com  
703-860-7006

## **Jason Perkins**

Director  
Blue Fish Development Group  
jperkins@bluefishgroup.com  
512-469-9300

