

# **Eureka!**

## **Enabling KM through search**

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### Intranet Focus Ltd.

- Founded in 1999
- Intranet strategy
- CMS specification and selection
- Search specification and selection
- Enterprise information strategy

### Martin White

- Information scientist since 1970
- Author of
  - The Content Management Handbook (2005)
  - The Enterprise Search Handbook (2007)
- Visiting Professor, Dept. of Information Studies, University of Sheffield

### Some clients

- International Monetary Fund (USA)
- Bank for International Settlements (Switzerland)
- United Nations (USA)
- Pfizer (USA)
- Boehringer Ingelheim (Germany)
- Ipsen Pharmaceuticals (France)
- British Museum (UK)
- Open University (UK)
- Rolls-Royce (UK)
- International Paper (USA)
- Alghanim Industries (Kuwait)

# Agenda

- The two Johns
- Looking but not finding
- The purpose and process of search
- Defining user segmentations
- The elements of search technology
- Ten steps to search success
- The challenge of implementation
- Resources

No man is an island, entire of itself;

Every man is a piece of the continent, a part of the  
main

John Donne

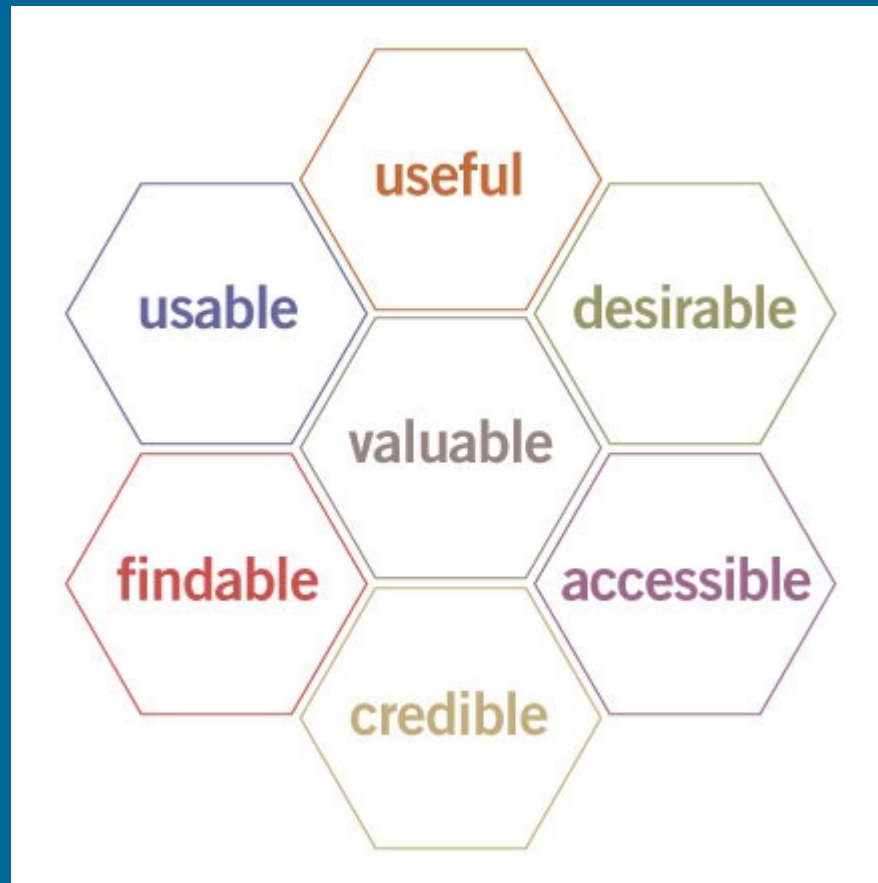
I get by with a little help from my friends

John Lennon

# The role and value of search

# Looking but not finding

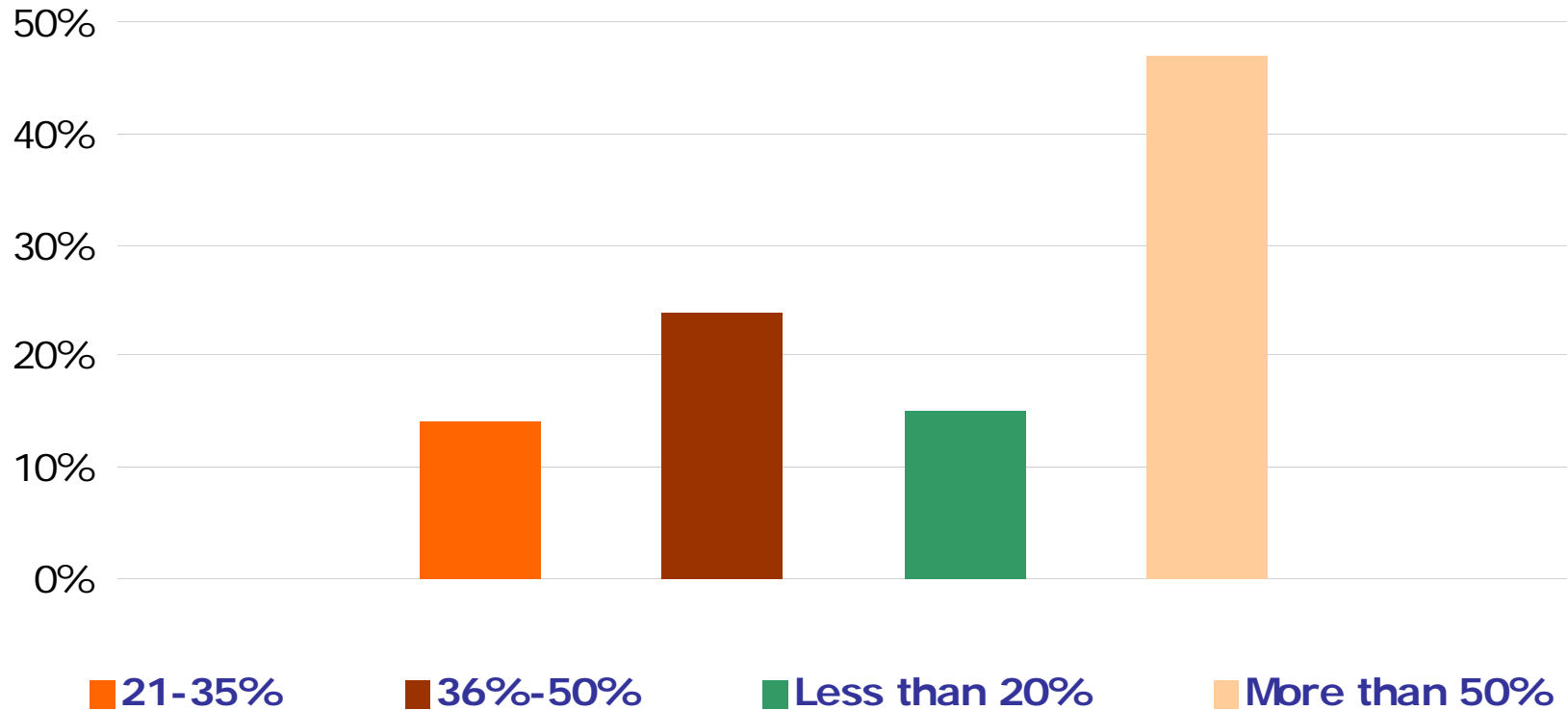
- McKinsey Quarterly executive survey July 2005
  - Survey of 7800 executives in 132 countries
  - 20% of respondents at 'C' level
  - 29% of C-level respondents reported that they found it difficult to find information to make company-wide decisions
  - 40% of senior managers reported the same problem
- IDC research
  - 9.5 hours a week being spent searching for information
  - Of this time 3.5 hours is wasted not being able to find relevant information



Peter Morville [www.findability.org](http://www.findability.org)

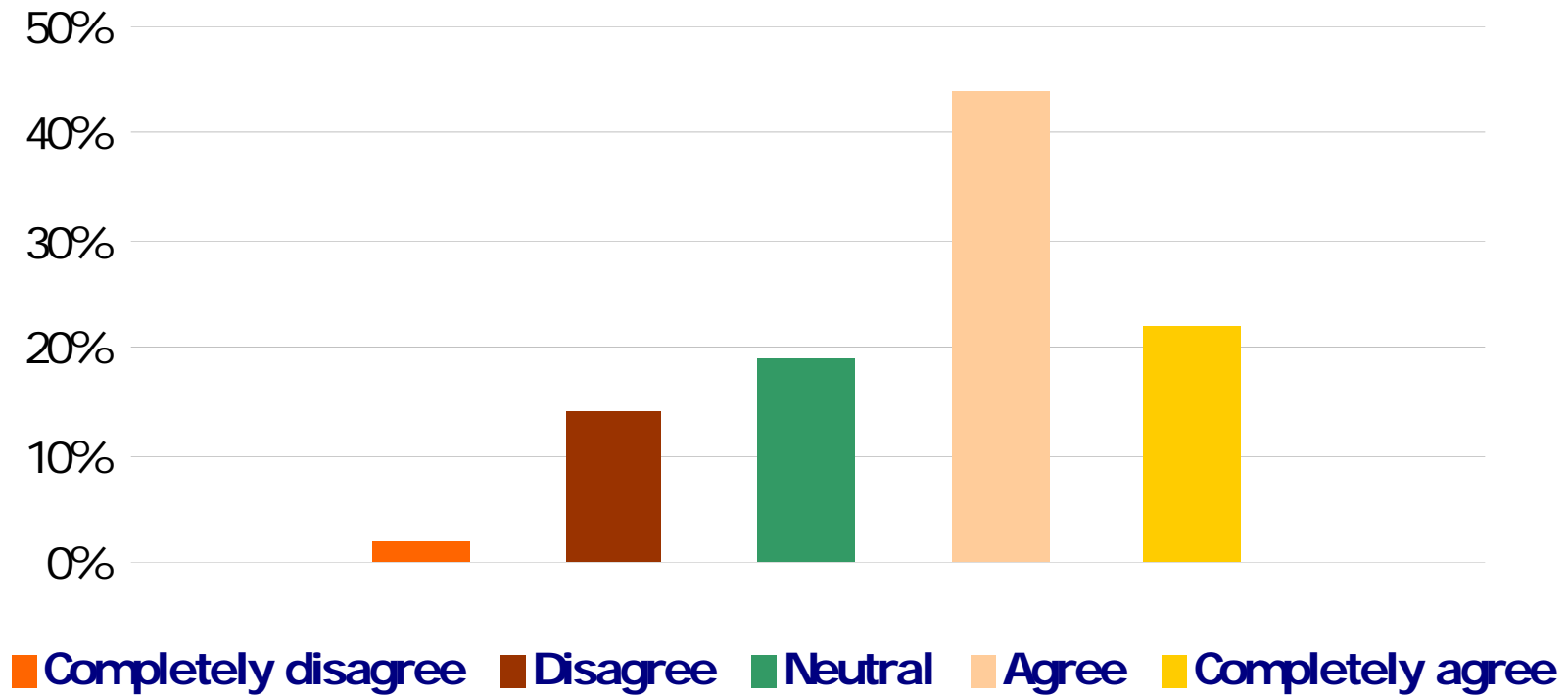
[www.intranetfocus.com](http://www.intranetfocus.com)

## What percentage of your employees need to search for information as part of their job?



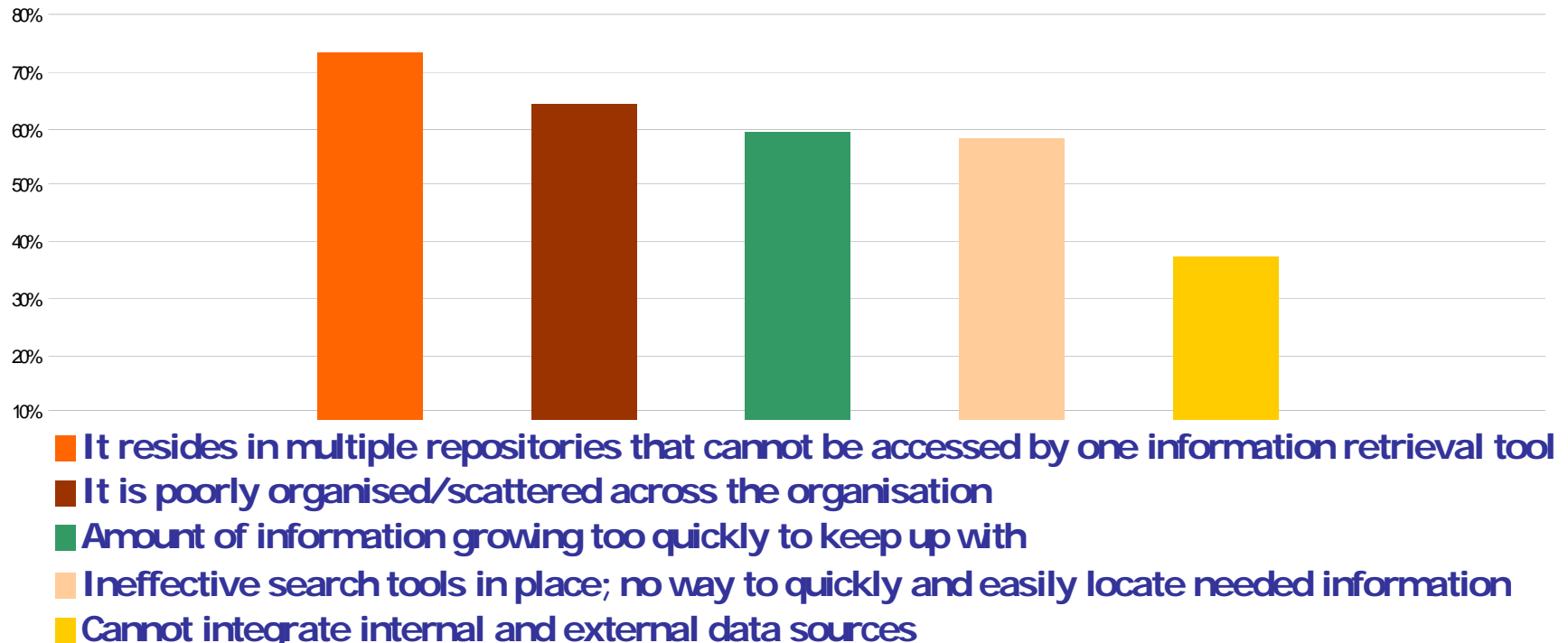
Inight Software/Vascom Bourne - IT Managers in the UK Financial Sector 2004

**Workers re-invent or re-generate information because they don't know if that information already exists in the business**



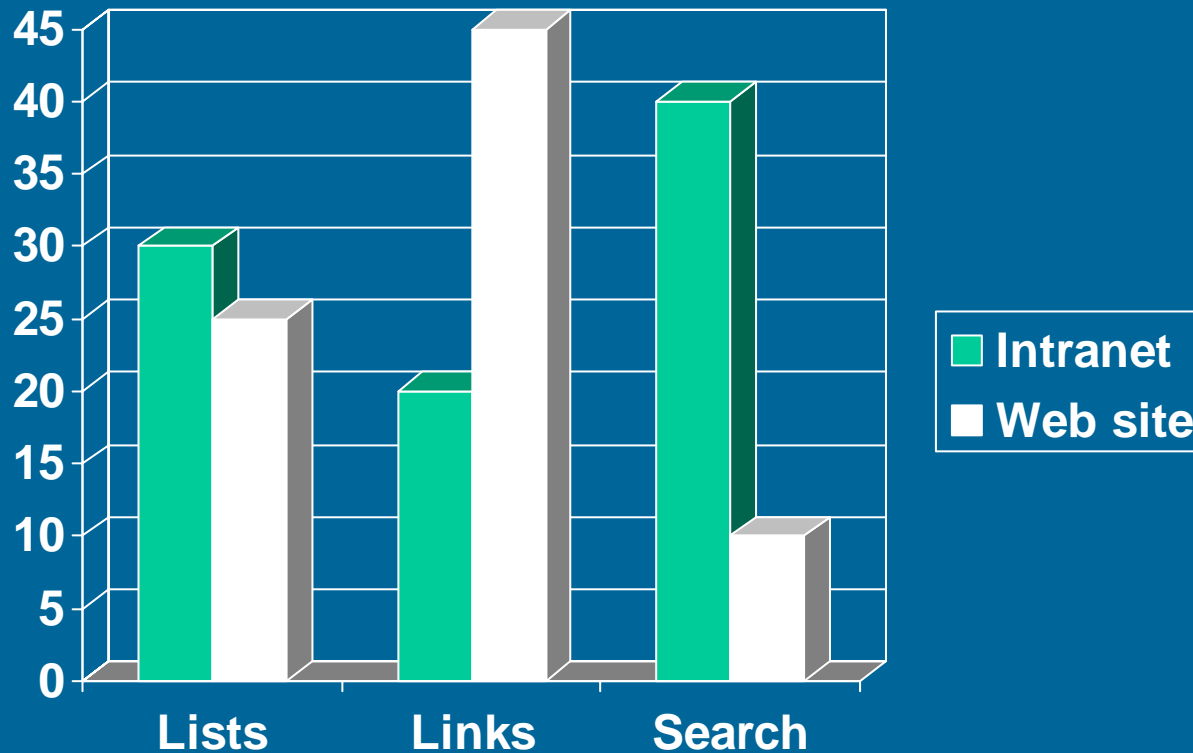
Inight Software/Vascom Bourne - IT Managers in the UK Financial Sector 2004

Which of the following challenges do knowledge workers in your company have when it comes to using the wealth of corporate knowledge and information?



Inxight Software/Vascom Bourne - IT Managers in the UK Financial Sector 2004

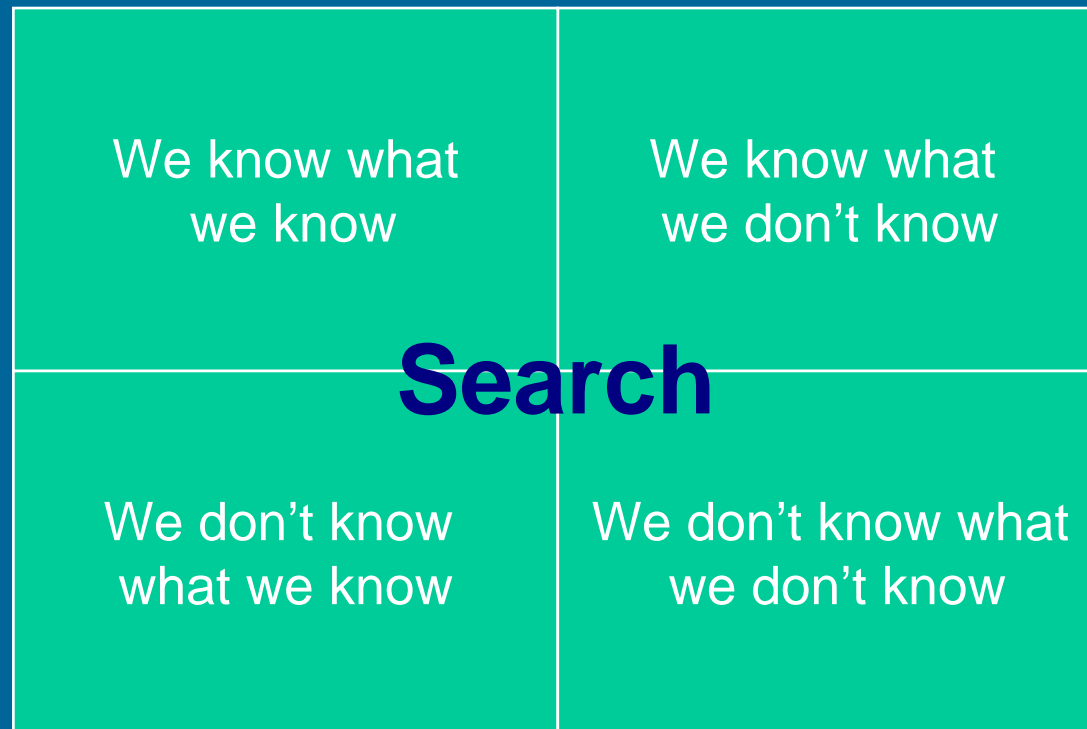
# Access routes – Intranet vs web



# The Rumsfeld Matrix

We know what we know	We know what we don't know
We don't know what we know	We don't know what we don't know

# Search comes centre stage



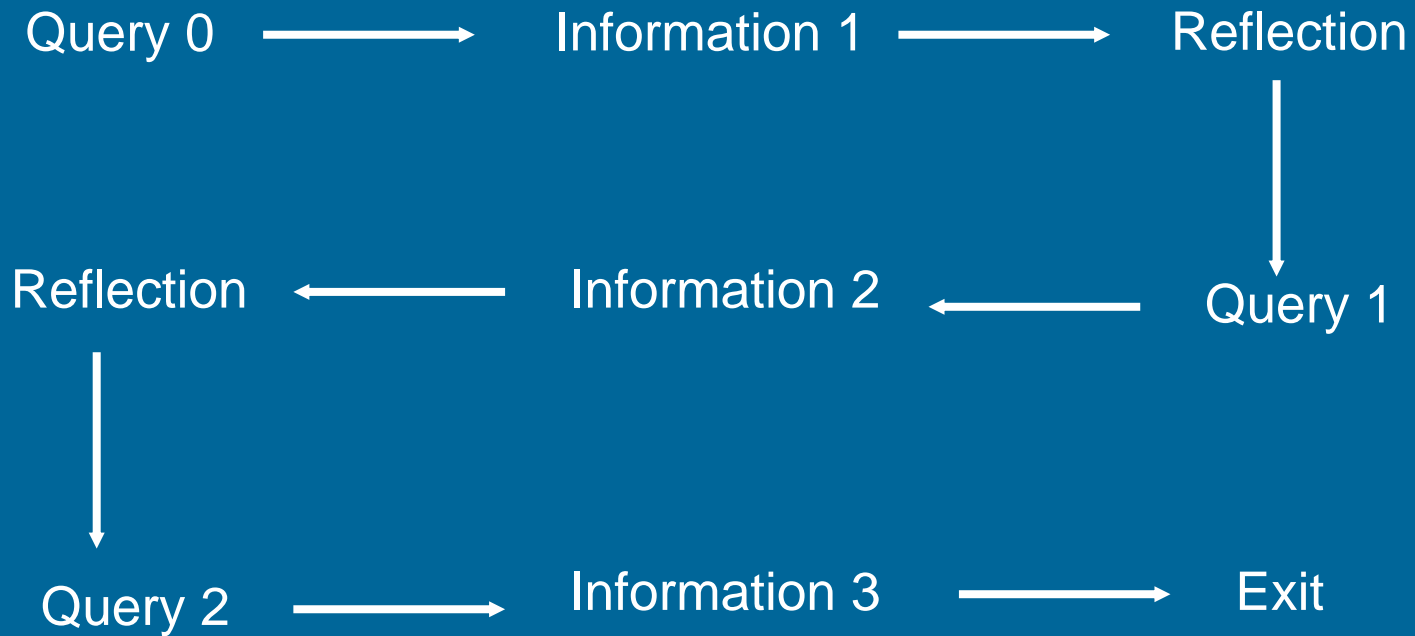
# The purpose of search

- We search to
  - Confirm our knowledge base
  - To add to our knowledge base
  - To define our knowledge base
- Search is always
  - Contextual
  - A dialogue
  - Dynamic
  - Of the moment

# The process of searching

- Marcia Bates transformed our thinking on searching in her work published in 1989 on 'berrypicking'
- This was subsequently picked up by Peter Pirolli and Stuart Card (Xerox PARC) in their development of information foraging and "information scent"
- Both take account of how the brain processes information
  - Short term versus long term memory
  - Information chunking
  - Learning through doing
  - Pattern recognition
  - Visual bias

# Berry picking



# Search is mission-critical

- Integration platform
  - Searching through multiple repositories of structured and un-structured content
- Knowledge platform
  - Provides links to tacit and explicit knowledge
- Compliance platform
  - Supports due-diligence and regulatory audits
- Learning platform
  - Identifies and addresses knowledge gaps
- Collaboration platform
  - Identifies communities and groups

# Specifying search requirements

# There is no such person as a “user”

- Case study - Anglo-German pharmaceutical company
  - Research scientists working on new drug formulations, needing access to highly confidential internal documents, to external databases and to the knowledge of their colleagues
  - Clinical trials teams working through the drug registration process, again involving highly confidential information, much of it in a numeric format
  - Medical information specialists dealing with enquires from doctors and pharmacists about the correct use of the drugs, or initially reporting on adverse reactions. Speed of response is essential to deal with these enquiries

# And yet more!

- Further categories
  - **Product development teams** working on formulations and product packaging, which may need to look at images of packing, and need to be aware of what is happening in the market place
  - **Sales and marketing teams** looking for information on sales channels, sales reports, and the activities of competitors, which often requires graphical reporting
  - **Managerial and support staff** looking for policy and procedure documents which may be in any one of nine languages

# Personas in search development

- Multiple benefits from persona development
  - Use in the RFP to illustrate the way in which searches are carried out
  - Use to help define pilot document set for product evaluation
  - Use to define user interfaces
  - Use to identify application integration requirements
  - Use as the basis for usability testing
  - Use to assess emergence of new search groups and requirements

# The magic of search

- Search must be magical
- The search engine has to do all the work
- The usability of the search interface has to be intuitive to users with different search experiences and search requirements
- If people have to be trained to use a search engine then you have lost before you begin
- Relevance is intensely personal
- Getting to “Eureka!” is not easy for the user or for the intranet search team

(From James Robertson, Step Two Designs)

# Trust is the primary metric

- Users want to know that they can trust that
  - That the search engine has indexed all the relevant documents
  - That the desired information can be found if it has been indexed
  - That it will be easier and quicker than any other approach
  - That if the information can't be found it is because there is no relevant document in the system
  - That the search engine is working properly

# Enterprise search

- Enterprise search solutions need to cope with
  - Structured (SQL) and unstructured information
  - Information held in specialised applications such as a document management system or a client management system
  - Wide range of document types
  - Wide range of language issues
  - Complex and poorly-defined access privileges
  - IT infrastructure and network issues
  - Disarray in metadata
  - The knowledge dialogue

# The elements of search technology

- Content acquisition
  - Spidering and scripts
- Indexing
  - Categorisation and taxonomies, synonyms, numeric ranges
- Query management
  - Boolean, natural language, 'same as'
- Ranking
  - RSJ, BM25, BM25F etc or through Bayesian analysis
- Result formatting
  - Wide range of options requiring careful usability testing
- Document access
  - IT capacity management issues

# Ten steps to success

- Assess the benefits and the risks
- Manage the selection process as a project
- Be certain about what there is to be searched
- Understand user requirements segmentation
- Understand how search technology works
- Undertake rigorous testing as part of the product evaluation
- Anticipate performance, scalability and extensibility issues
- Continuously test for usability
- Resource a search engine management team
- Analyse search logs and user feedback
- Monitor the benefits to the organisation

# Implementation

- Implementation never stops!
- There will always need to be
  - Fine tuning of the relevance algorithms
  - Dealing with feedback about broken searches
  - Undertaking usability tests
  - Modifying the user interfaces
  - Developing and managing application integration
  - Managing metadata and taxonomies
  - Deciding on whether to upgrade
  - Enhancing system performance

# Resources

- CMSWatch report on Enterprise Search, by Steve Arnold
  - [www.cmswatch.com](http://www.cmswatch.com)
- Enterprise Search Guidebook, by Martin White
  - <http://www.freepint.com/shop/report/>
- The Enterprise Search Handbook, by Martin White
  - Facet Publishing, 2007
- Improving Intranet Search, by James Robertson
  - <http://www.steptwo.com.au/products/search/index.html>
- Ambient Findability, by Peter Morville
  - [www.findability.org](http://www.findability.org)
- Search Analytics for Your Site
  - <http://www.rosenfeldmedia.com/books/searchanalytics/>

The fire of progress is lit by inspiration  
Fuelled by information  
And sustained by hope and hard work

# Questions and comments?

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