



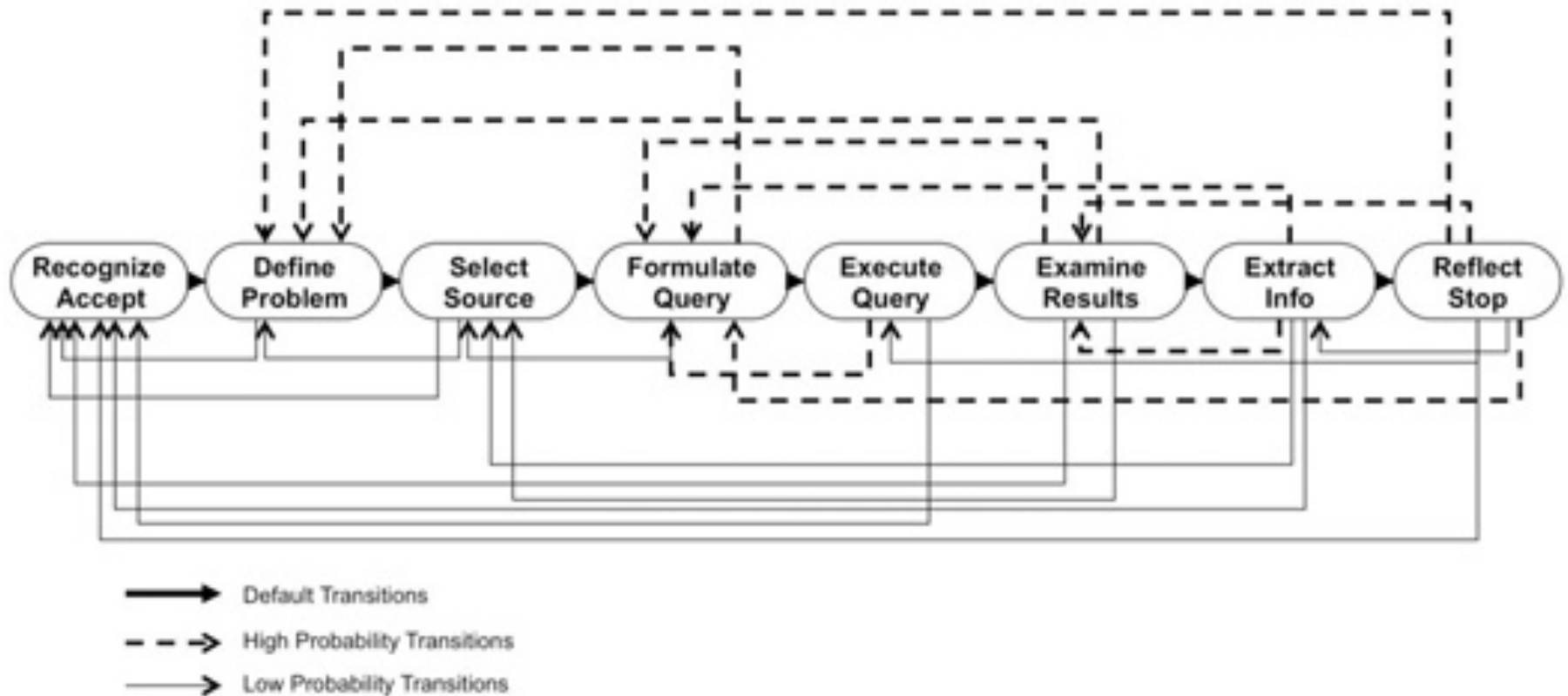
Visualization in Interactive Patent Systems

+ Patent Retrieval - Difficulties



- Data size (> 50 million patents)
- Language (technical/legal/“patentese”)
- Temporal (and financial) resources
- Quality of results

+ Model





Why Information Visualization?



*„...can be **processed much more quickly** than a comparable page of words” (p. 1)*

*“Humans use sight as one of their **key senses for information understanding.**” (p. 3)*

*“There is a growing need to find mechanisms for communicating information to people in an efficient and effective manner. In **virtually any domain**, visualization can be, and is becoming, an **effective tool** to assist in analysis and communication. ” (p.6)*

Ward et al. (2010)

+ Purpose of visualizations

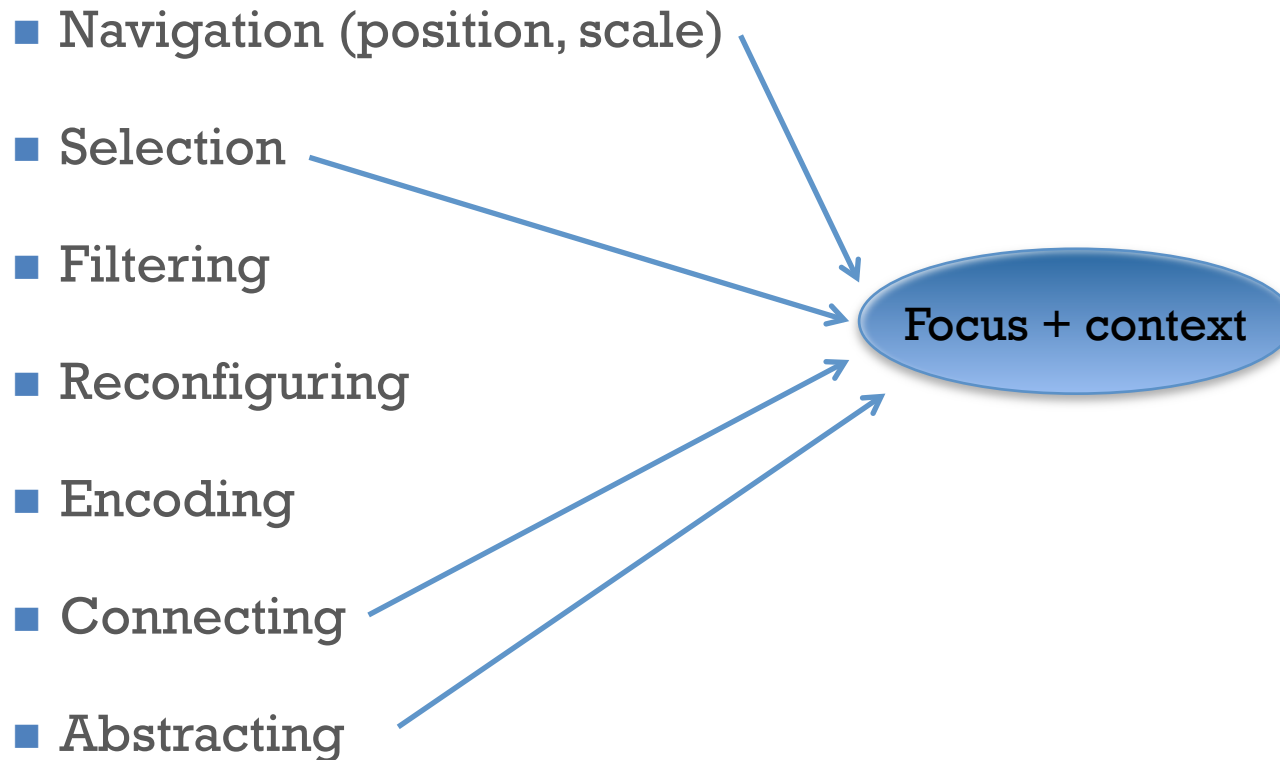
- Presentation
 - communication of insights
 - emphasize features
- Exploration
 - ascertain the content
 - look for patterns or features
 - no hypotheses
- Confirmation
 - look for facts
 - verification of hypotheses



Interaction

Ward et al (2010), p. 40/41

+ Interaction techniques





Requirements of patent searchers



Query formulation

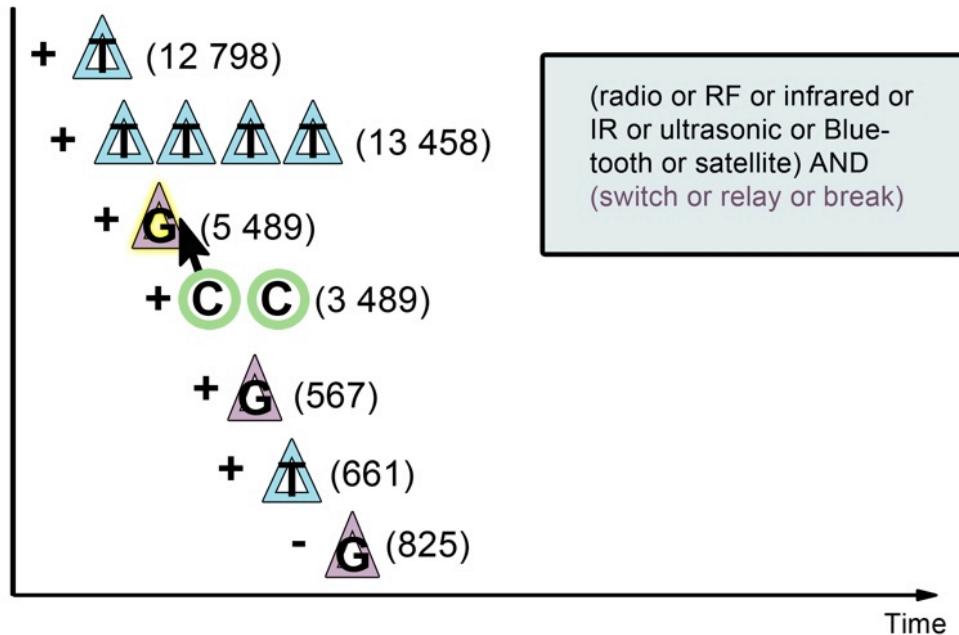
- Combine and organize search queries
- Query history
- Query expansion
- Query translation
- Weighting of terms

Examine Results

- Filter & manipulate results
- Combine multiple sets
- Sort & categorize results
- Term highlighting
- Navigation in result set
- Metadata access (citations, IPC, patent family,...)

+ Visualizations

Query History



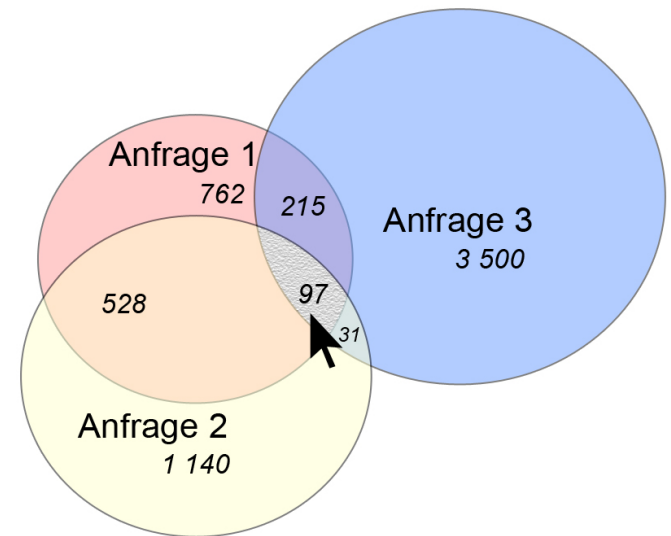
new Term added



new Keyword Group added



new Classification Code added






Visualizations

★ ★ ★

United States Patent [19]
Fernandez et al.



US005441063A

[11] Patent Number: **5,441,063**

[45] Date of Patent: **Aug. 15, 1995**

[54] **HIGH SPEED BOTTLE WASHING MACHINE**

[75] Inventors: **Antonio Fernandez, Danbury, Conn.; Attila Soti, Mississauga, Canada; Steve Miller, Vienna, Austria**

[73] Assignee: **PepsiCo, Inc., Purchase, N.Y.**

[21] Appl. No.: **90,503**

[22] Filed: **Jul. 13, 1993**

[51] Int. Cl.⁶ **B08B 9/08**

[52] U.S. Cl. **134/142; 134/144; 134/157; 134/153; 134/181; 134/167 R; 134/172; 134/66; 134/62**

[58] Field of Search **134/66, 167 R, 172, 134/181, 153, 158, 157, 144, 152, 142, 113, 58 R, 57 R, 62**

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Primary Examiner—Frankie L. Stinson

Attorney, Agent, or Firm—Scully, Scott, Murphy & Presser

[57] **ABSTRACT**

A high-speed bottle washing machine provides concurrent rotational motion to a workpiece as it is conveyed through a washing treatment zone for internal and external spray treatments. The machine comprises a plurality of moving bottle receiving stations for sequentially receiving and rotating inverted bottles received from a bottle infed conveyor, a plurality of reciprocating spray nozzles, with at least one spray nozzle moving with each bottle receiving station, wherein each of the spray nozzles reciprocates from a first position below the inverted bottles, to a second position within the bottles, and a manifold assembly for sequentially supplying a caustic wash fluid under pressure to each of the plurality of spray nozzles to clean the bottles by impingement of the wash fluid in a predetermined pattern within the bottles as the bottles are rotated. The washed bottles are finally discharged at a bottle outfeed conveyor.

☐ title

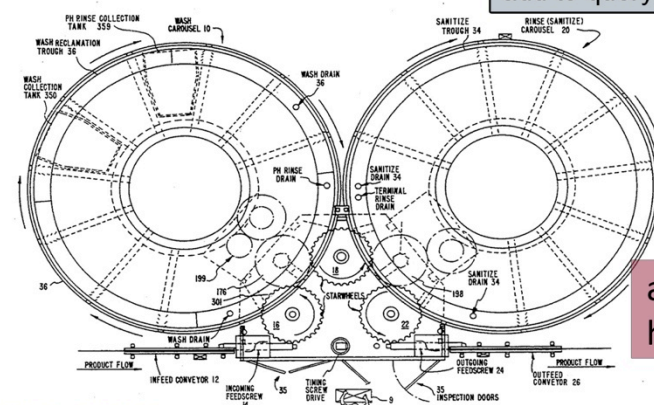
☒ abstracts

☐ claims

☐ description

add to query

58 Claims,



PATENT_VIEW

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automatic update & highlighting

GRID_VIEW

KISTI workshop, University of Hildesheim

06.11.13

+ Future plans



- Implementation of ideas (Image Editing Software/D3)
- Focus group with patent searchers
- Iterative refinement of visualizations
- User tests



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Thank you for
your attention!

