

User-Driven Design

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...their [users'] mental models of these problems may be very different from the developers' mental models.”

three tools, three lessons

- **<http://arrowsmith.psych.uic.edu>**
- **Arrowsmith:** Identify meaningful links between two sets of Medline articles
- **Author-ity:** Identify Medline articles written by a particular individual
- **Anne O'Tate:** Summarize, drill-down and browse the results of a PubMed query
- **WETLAB:** An open source electronic lab notebook
- **ADAM:** Another database of abbreviations in Medline

Arrowsmith

- “Two node search” - perform 2 PubMed searches that cover two disparate disciplines or define 2 complementary sets of articles
- Well defined, 2 step strategy
- Causal links connecting the literatures
- A affects B which affects C
- Comprehensive analysis
- novel links

Field testers (HBP)....

- NEVER did two step strategy
- Most searches were not for causal links
- Never comprehensive
- Interested in systematic list of items regardless of novelty
- Need for speed (minutes, not days)
- Even MORE useful than expected....

thought

- Despite the value in putting data into a common format and conceptual framework,
- Cases in which the same concept/item has been studied in two different contexts provide especially promising opportunities for new hypotheses, new research directions

Anne O'Tate

- “adds value” to conventional PubMed searches
- summarization, drill down and browsing all in one
- Invented because we noticed how field testers did their searches...
- NEVER refined or iterated their queries,
- NEVER comprehensive,
- Searches often not topic-based

Many tools “almost” like Anne O’Tate, but....

- Many use pre-defined categories to divvy up a set of articles returned by a query
- Some guess at needs of biologists or physicians (type of query or protein/gene terms; narrows the utility)
- Some don’t fit into PubMed workflow
- Some are proprietary or demos
- None have our navigational scheme or “cluster by topic”

thought

- tools that address specific types of queries or specific user communities are easier to make,
- But generic tools that cross communities and viewpoints are ultimately essential

WETLAB

- A SIMPLE open source ELN
- Has fewer features than existing ELNs
- No security, no database, no standardized ontology, no automatic sharing, simply attach files
- Aimed at grad student, small science
- Templated fields for experimental design

Released for comment...

- No hue and cry about lack of security, etc.; the public's reaction is much more positive than the experts...
- How to archive expts that last more than a day?
Attach a file and then change it?
- Need to create hard copies, almost forced
- Requests for server-client ftp'ing of entries
- Requests for separate ELNs (bioinformatics, not bench work)

thought

- Should we insert tools into user workflow,
- Or create tools to DIRECT the workflow?