iKnow
Use Cases

Michael Brands
Senior Product Manager
Agenda

- iKnow in the InterSystems offering
- Breakthrough Characteristics
- Steps in Deployment
- New Features
- Use Cases
The InterSystems Technology

Unlock 100% of the data

Insight Connectivity

Information

No Product Integrated Technology

use unstructured as effectively easily as structured data

• Create
• Link
• Consume
• Understand

THE KEYS TO BREAKTHROUGH APPLICATIONS
iKnow enables breakthrough applications by removing the barriers to knowledge.
The iKnow breakthrough

- **Domain-Independent**: Uses in Healthcare, Contact Centers, Media, Real Estate, Legal, Police, ...
- **Multi-Purpose**: Content routing, discrete data extraction, intelligent browsing, tone analysis, ...
- **Multi-Lingual**: Simultaneous support for English, Spanish, French, Portuguese, German, Dutch, ...
- **Pro-Active**: No need for training, upfront knowledge, dictionaries, expert input, ...
Technical Architecture

Ensemble

Caché

DeepSee

Loading API

Query APIs

iKnow engine

iKnow Global Structures

any content
Typical Implementation

1 – Create a domain

2 – Set up metadata

3 – Add data (lister, loader, converter)

4 – Create dictionaries, match the data

5 – Setup filters

6 – Use the query API
## New Features

<table>
<thead>
<tr>
<th>New Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Automated Equivalents</strong></td>
<td>identifies concepts that have an equivalent meaning in the corpus based on a large dataset</td>
</tr>
<tr>
<td><strong>Detection</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Semantic Dominance</strong></td>
<td>determines the most dominant elements in a text (based on that text only or in comparison with a corpus)</td>
</tr>
<tr>
<td><strong>Semantic Proximity</strong></td>
<td>determines for a concept its most closely related other concepts in a corpus</td>
</tr>
<tr>
<td><strong>Semantic Overlap Detection</strong></td>
<td>determines which dominant terms occur in which sources</td>
</tr>
<tr>
<td>New Feature</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Proximity Based Text Clustering</td>
<td>Clusters texts based on their common proximity clusters. This clustering is fuzzy because documents can pertain to more than 1 cluster</td>
</tr>
<tr>
<td>Proximity Profile Matching</td>
<td>Allows to determine which proximity clusters are the best represented in the text</td>
</tr>
<tr>
<td>Breaking Source Determination</td>
<td>Determines which sources substantially contain content that is atypical for the domain</td>
</tr>
<tr>
<td>Typical Source detection</td>
<td>Determines which sources are the most representative for a domain</td>
</tr>
</tbody>
</table>
Success Stories: Media

Purpose

- Add advanced search functions to an editorial system.
- Test semi-automated categorization & summarization.
- Enable **cost cutting**

Outcome

A fully integrated semantic publishing system supporting: content selection and routing, story writing and summarizing, geo-tagging, automated page filling, profile tailored news, relevant ads, dynamic advertisement embedding

Break-through

Support for **new revenue**:
- new uses for existing content
- new advertisement money
Success Stories: Media

**Effort**
- Initial effort: 12 man days (6 iKnow, 6 Partner)
- Total Effort: 3 man months (Partner)

**Results**
- ISC Innovator award 2009
- Sales outside of Media
- Cost cuts for customers of 30%
- Dynamic regional advertising
Success Stories: Media

How
• Smart Index data into 4 domains
• Set up filters
• Use of almost all API-calls
Success Stories: HealthCare

Purpose
Enabling search on free text data in an EMR-system for rehabilitation medicine.

Outcome
- Overview screen of notes per patient segmented by dynamic time intervals
- Intelligent notes browsing

Break-through
- Doctors are actually using it.
- Sales opportunities outside of rehabilitation, even outside of Healthcare
**Success Stories: HealthCare**

**Effort**
- Initial effort: 4 man days (2 iKnow, 2 Partner)
- Total Effort: 1.5 man months (10 iKnow, 20 Partner)

**Results**
- No Coding, No Matching, No Search
- New corporate positioning
- First Update of the Product in 4 years that hospitals actually want to pay for
Success Stories: Healthcare

How
- Smart Index data into 2 domains
- Set up filters
- Use of entities, related entities, similar documents and paths
Success Stories: Real Estate

Purpose

Extracting discrete metadata out of textual descriptions of houses for sale. Attracting more input and users by improving quality

Outcome

- 100% of requested metadata extracted
- Quality checks and feedback on property descriptions

Break-through

- More than just improving ease-of-use
- Feedback on quality and hints for success
Success Stories: Real Estate

**Effort**
- Initial effort: 6 man days (4 iKnow, 2 Partner)
- Total effort: 10 man days (10 iKnow, 20 Partner)

**Results**
- Rather than a contract for a study, a contract for implementation was awarded.
- Extension of the project to other domains.
How

• Smart Index data into 1 domains
• Set up Filters
• Create Dictionary with entities and formats
• Use of semantic dominance, overlap and similar documents
Success Stories: Contact Centers

Purpose: Matching incoming questions with an ontology of operator skills

Outcome:
- Questions routed based on similarity with known questions
- No ontologies to maintain
- Insight into answer consistency

Break-through: “One call answer” efficiency achieved
Success Stories: Contact Centers

**Effort**
- Initial effort: 6 man days
- Total Effort: 15 man days

**Results**
- System maintenance reduced by 90%
- No unanswered calls
- Insight into knowledge of collaborators
- Increased customer satisfaction
Success Stories: Contact Centers

**How**

- Smart Index data into multiple domains
- Set up filters
- Use of similar documents, semantic dominance queries
Success Stories: Police Research

Purpose

Using a dictionary to measure aggression in messages

Outcome

Objective analysis of text tone by:
• Determining most important concepts per text
• Using overlap of concepts per text to show corpus dominant terms
• No dictionary used

Break-through

Unbiased extraction of sentiment
Success Stories: Police Research

Effort
- Initial effort: 20 man days
- Total Effort: 23 man days

Results
- Analysts can start from objective material
- iKnow output used as proof in trial
- Suspect on the run
Success Stories: Police Research

**How**

- Smart Index data into 1 domains
- Set up filters
- Use of semantic dominance, semantic overlap
Wrap Up

Focus on what Not on How

Try to capture the real functional need. Do not start from common practice

Determine what data you need where

Do not assume you need all the available data in all parts of your solution
Translate the answer to domains, metadata and filters and a loading strategy

Find out how you’ll access the data

How does the data need to be presented to the different users
Translate the answer to combinations of iKnow API calls
Developer Connection

developer.intersystems.com

Your Global Summit Every Day
The End

Thank You

?