The Problem

Shipping suppliers use proprietary algorithms to formulate offers. These algorithms are driven by multiple parameters and thresholds which can significantly impact the cost or performance of the service.

Most web based shipping services (both proprietary and comparison) provide a simplistic query interface with an incomplete view of the market, which makes it difficult for users to identify & select optimum shipping solutions for their transac-

Shipping Comparison Hub

We have developed a novel framework for discovering, configuring and consuming online services. We applied it to the shipping domain. Benefits:

• Impartial comparison of shipping options
• Advanced search requests (e.g., package weight ranges, multiple source addresses)
• Automation of multi-step interactions with shipping websites

Applications

The framework could be used to:

• develop B2B and B2C shipping platforms
• to enhance the shipping features of ecommerce systems.
• Other service discovery opportunities

Features

• Ability to discover, configure and consume any web-based shipping services, with minimal incremental effort.
• Ability to present a “normalized” shipping interface to applications, regardless of service provider.
• Support for advanced search requests (weight ranges & multiple sources & destinations).
• Ability to integrate with eBay & Amazon

Benefits

• Reduced time, effort and costs for users.
• Reduced integration and maintenance costs for platform suppliers.

For More Information Contact:

Patrick Mulrooney
Digital Enterprise Research Institute
tel: +353 (83) 346 7887
E-mail: commercialisation@deri.ie
www.deri.ie

This material is based upon works supported by the Science Foundation Ireland under Grant Nos. 08/CE/I1380. The opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the Science Foundation Ireland. Also funded from Ireland’s EU Structural Funds Programmes 2007 – 2013, co-funded by the Irish Government and the European Union. Financial support

Shipping Comparison

Currently, users spend considerable time online comparing different shipping options. Typically they first use keyword search to find shipping companies.

Next, they have to enter shipping details using provided forms on shippers websites and manually compare different shipping options.

Finding out details of shipping options requires time-consuming and multi-step interactions with shipping websites. Shipping is an example of highly configurable service and shipping offers frequently change.
The Problem

The development of web applications is a resource intensive exercise. While there are tools and components to make application build easier, they still require significant effort from software developers to integrate them into applications. Software engineers are relatively scarce compared to the number of unique applications required.

We need a way to enable collaboration between the developers and consumers of components to empower users to “compose” their own applications which fulfill their requirement more completely.

Sqwelch

We are developing a platform for creating codeless, personalised applications. Users compose applications by selecting “Widgets” from a library, dropping them on a dashboard and “authorising” them to communicate.

At its heart is a semantically-powered publish/subscribe engine which understands the data concepts & mediates on the terminology used by various web widgets and is integrated with a social networking platform (Pinax).

Applications

We are currently developing this platform and believe that through collaborating with industrial partners we can extend this offering into domains such as Telehealth, single customer view applications, and data integration projects.

Personalised Applications

Research suggests that less than 20% of enterprise software projects are completed on time and on-budget. Even when these projects are completed many are a shadow of their original specification, often loosing up to 60% of their features.

This problem is compounded on the Web, where there are orders of magnitude more diversity, complexity and velocity of change.

We are familiar with web applications which “almost” satisfy our requirements, or “nearly” help us in our daily jobs.

Features

- Codeless application composition
- Hot swappable / distributed components
- Integrated social networking platform (Pinax)
- Standards based communications and easy-to-follow widget registration and deployment.

Benefits

- No requirement on users of the technology to learn new concepts or languages.

For More Information Contact:

Patrick Mulrooney
Digital Enterprise Research Institute
tel: +353 (83) 346 7887
E-mail: commercialisation@deri.ie
www.deri.ie
Saffron
“Extracting the Valuable Threads of Expertise”

Expertise Identification

Expertise identification is often cited as one of the top benefits of Enterprise 2.0.

An expertise topic is the lexical realisation of a knowledge area & experts are individuals that have the highest level of knowledge about a topic.

In the past, if a particular skill was required for a project, candidates were identified by personal references or interviews. Unfortunately a persons job title, CV or interview performance do not necessarily reflect their real work involvements, expertise or interests. And the result such techniques can be unsatisfactory.

Today’s enterprise 2.0 system attempt to link people to content and people to people using audit logs, shallow meta data (user id, document title, tags) and analysis of keyword frequency in document text.

While this makes the task easier, it does not solve the problem, considerable manual effort is still required to identify topics and experts

Saffron

Saffron is an innovative expertise mining platform.

- It combines linguistic, statistical and ontological techniques to mine unstructured text for topics and experts.
- Topics are detected in the context of “skill types” (domain specific works that indicate skills) and defined by patterns that describe a sequence of part-of-speech tags.
- A combination of statistical measures and web filters are then used to rank the candidate topics, taking into consideration the relevance of an expertise topic relative to individuals.

Applications

- Expertise Mining in scientific publications
- Expertise mining in domain specific unstructured data

Features

- Automatic identification & ranking of expertise topics in a knowledge area.
- Automatic generation of expertise profiles of individuals (ranked list of topics & evidence)
- Analyses social connections between experts

Benefits

- Significantly increases user efficiency & effectiveness when analyzing unstructured information for expertise topics and individuals.
- Has been applied to corpuses from web science and life sciences.

For More Information Contact:

Patrick Mulrooney
Digital Enterprise Research Institute
tel: +353 (83) 346 7887
E-mail: commercialisation@deri.ie
www.deri.ie

This material is based upon works supported by the Science Foundation Ireland under Grant No. 08/CE/I1380. The opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the Science Foundation Ireland. Also funded from Ireland’s EU Structural Funds Programmes 2007 – 2013, co-funded by the Irish Government and the European Union. Financial support
"Meaningless Bags Of Words"

Online scientific publishing is a flourishing field: the “ISI Web Of Knowledge” alone contains over 40 million source items and is used by over 20 million users.

Despite this, tools to exploit the knowledge contained in publications are crude, predominantly text search of raw publication data and shallow meta-data (authors, key words, citations, etc.).

The much needed economical mass exploitation of the knowledge implicitly contained in publication texts is still largely an uncharted territory.

Example

Imagine that you want to find authors supporting the claim that “acute granulocytic leukemia is disjoint with T-cell leukemia”.

The Problem

With the current life science publication search engines (e.g., ScienceDirect, PubMed or Medline29), this task requires manual analysis of possibly huge amounts of results, which can be tedious or even impossible.

With CORAAL, the task is simple – you just enter the “acute granulocytic leukemia: is a T-cell leukemia query” into the Knowledge tab and a list of relevant contexts appears.

CORAAL

Corraal is an innovative knowledge discovery platform.

- Extracts asserted publication meta-data together with the knowledge implicitly present in the text.
- Integrates the emergent content and exposes it via a multiple perspective “search & browse” interface.
- Allows for fine-grained publication search combined with convenient and effortless large scale exploitation of the knowledge associated with and hidden in the publication texts.

Applications

- Knowledge discovery “Front End” for publication platforms.
- Knowledge extraction engine for analytics platforms.

Features

- Multiple perspective search & browse interface.
- Automatically analyses collections of documents to identify explicit & implicit facts.
- Light-weight framework for coping with noisy and sparse emergent knowledge.
- Results are supported by heuristically computed confidence measures.

Benefits

- Significant increase user efficiency & effectiveness when analyzing large bodies of unstructured information.
- Lower effort & higher flexibility (vs ontology based front ends) for creators & publishers.

For More Information Contact:

Patrick Mulrooney
Digital Enterprise Research Institute
tel: +353 (83) 346 7887
E-mail: commercialisation@deri.ie

www.deri.ie

This material is based upon work supported by the Science Foundation Ireland under Grant No. 08/CE/I1380. The opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the Science Foundation Ireland. Also funded from Ireland’s EU Structural Funds Programmes 2007 – 2013, co-funded by the Irish Government and the European Union. Financial support

Enabling Networked Knowledge
Opinion Miner for eCommerce

“Improving consumer buying decisions using product reviews”

The problem

For many sectors there are an overwhelming number of product reviews available. This increases the effort required by consumers to make a buying decision.

The majority of the product reviews are available as unstructured text. This means that consumers usually need to read each review or options.

In many cases the eCommerce website is distinct from the product review web site, which introduces a risk of abandoned shopping carts.

Opinion Miner

We have developed novel techniques for large scale, automated analyses of “free text” product reviews & opinions.

- Identification of important product features, themes or concepts across a body of reviews
- Provision of numerical ratings for each product by mined feature / theme / concept

These mined data can be used as additional options in preference based product search systems.

Applications

eCommerce Product Search

Analytics for product manufactures & retailers

Features

- Automatic extraction of important product features, themes or concepts from “free text” product reviews
- Numerical ratings for each product by mined feature / theme / concept

Benefits

- Better purchasing decisions can be made with less effort
- Lower incidence of abandoned shopping carts

For More Information Contact:

Patrick Mulrooney
Digital Enterprise Research Institute
tel: +353 (83) 346 7887
E-mail: commercialisation@deri.ie
www.deri.ie

This material is based upon works supported by the Science Foundation Ireland under Grant No. 08/CE/I1380. The opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the Science Foundation Ireland. Also funded from Ireland’s EU Structural Funds Programmes 2007 – 2013, co-funded by the Irish Government and the European Union. Financial support

Enabling Networked Knowledge
The problem

Knowledge workers need the ability to link various important concepts and structures within their “mental models” with the visual exploration and analysis activity.

These “personalisation” features are not available in current information visualisation tools which limits the effectiveness of analysis and significantly reduces productivity.

IVEA

We have developed an innovative visualization tool called IVEA, which allows for interactive and user-controlled exploration processes in which the knowledge workers can gain meaningful, rapid understanding about a text collection via intuitive visual displays.

Easy enrichment of their PIMO (Personal Information Management) ontologies with entities matching their evolving interests.

Applications

Can be used in information analysis tools for science, intelligence, defence, or business knowledge workers.
Intelligent Preference Relaxation

“Improving product search for eCommerce systems”

Preference Relaxation

Preference relaxation can be used to automatically widen or relax one or more of the search attributes thereby increasing the quantity of results.

Our research has found that basic preference relaxation can significantly increases a consumers effort, without improving the quality of the purchasing decision.

Intelligent Preference Relaxation

We have developed novel techniques for relaxing preferences without compromising on the quality or quantity of results.

Our system automatically identifies “high value” options within the “relaxed” set of results.

The new options can be added to the original result set, or a can be used to replace lower value options.

Preference Based Product Search

Modern Web based retailers frequently offer tens of thousands and in some cases millions of products to consumers. Most eCommerce system offer a search capability which elicits preferences from the consumer & respond with a list of product which match the requirements.

If the preferences are too narrow, then the query may fail or “quality” products may be missed.

Our research has found that product search can be an iterative, time consuming and often frustrating process.

Benefits

- Better purchasing decisions can be made with less effort (100% increase in non dominated products)
- Consumers consider & accept a higher diversity of products (42% increase)

Applications

- Product search for eCommerce systems
- Preference / parameterised search engines
- Decision Support Systems

For More Information Contact:

Patrick Mulrooney
Digital Enterprise Research Institute
tel: +353 (83) 346 7887
E-mail: commercialisation@deri.ie
www.deri.ie

This material is based upon works supported by the Science Foundation Ireland under Grant No. 08/CE/I1380. The opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the Science Foundation Ireland. Also funded from Ireland’s EU Structural Funds Programmes 2007 – 2013, co-funded by the Irish Government and the European Union. Financial support
Informal learning is not new, but it is only now that organisations are beginning to realise how technology can help.

Pergamon

Pergamon combines lightweight semantic technologies and social networking with conventional learning management features to delivers an innovative learning management system (LMS) for informal and collaborative eLearning.

It takes a practical middle ground in the semantic spectrum for structuring data and includes support for:

- Folksonomies (used for collaboratively creating and managing tags to annotate and categorize content)
- Taxonomies (used to support entity recognition and to arrange data in hierarchical structures)
- Ontologies (used to interconnect people, content and interactions)

Applications

- Can be used as the basis of a next generation eLearning platform, or can be integrated into a “traditional” LMS.
- Can be used as the basis of a next generation enterprise collaboration platform or can be integrated into an existing system

For More Information Contact:

Patrick Mulrooney
Digital Enterprise Research Institute
tel: +353 (83) 346 7887
E-mail: commercialisation@deri.ie
www.deri.ie
Social Lens
“Business insight platform for enterprise social media”

Social Media: The Problem

Gartner identified social computing as one of the top 10 strategic technologies for enterprises. Over 100 Enterprise 2.0 platform providers exist and they estimate double-digit growth in this area, with annual sales to reach $15 billion by 2015.

The value of a social network is crucially dependent on the behaviour and content provided by its members.

Current diagnostic and moderation solutions have shallow analytical features and largely rely on manual processes.

Manual processes usually involve one or more employees in an organisation dedicated to building & maintaining profiles of platform usage, extracting & aggregating statistics and verifying the suitability of user-generated content.

The end result is that platform operators are forced to risk the management of internal knowledge and customer relationships to a complex system that they do not understand, and whose weaknesses and strengths they cannot diagnose.

Social Lens

Social Lens uses novel analytical techniques and algorithms developed by the Clique Strategic Research Cluster which can automatically analyse and diagnose the health of complex social networks, in real-time.

The core component of the final product will be a cross-platform Social Media Diagnostic Suite, providing deep & automated analysis, diagnosis and moderation capabilities for social platforms in a range of application areas.

Applications

- The suite will be targeted at organisations who are either involved in the development of social media platform platforms, or end-users that have deployed or intend to deploy social media systems in a commercial context.
- It can be deployed as an interactive web application or as a set of APIs that can be integrated into other systems/solutions.

Features & Benefits

Commercially focused product being developed & based on mature research.

Diagnostics Dashboard— to support the monitoring of the health of online communities, and the subsequent rapid application of corrective measures to deal with issues identified during the monitoring process.

Real-time Metrics for quantifying social media usage & identifying individuals who perform specific roles (e.g. key “influencers”)

Visual analytics to represent the composition of the network in terms of:
- emergent topics
- user roles
- emergent trends
- churn of key individuals

For More Information Contact:

Patrick Mulrooney
Digital Enterprise Research Institute
tel: +353 (83) 346 7887
E-mail: commercialisation@deri.ie
www.deri.ie

Enabling Networked Knowledge
On the Web, semantics standards are being incorporated into the vast majority of search optimised web sites, through Google Rich Snippets. This includes reviews, ratings, people, events, recipies, organisations, products and videos.

One year after its launch, Facebook claim 2.5 million web sites have integrated the “Like Button”, and in excess of 10,000 new sites are adding it every day.

Semantic standards have been adopted in the pharmaceutical sector to enable ‘pre-competitive data sharing and reduce the costs of drug discovery’. 

Sindice Dataspaces

Our research indicates that Sindice Datasaces is the only platform capable of “Web Scale” integration of semantic data.

We have developed novel techniques, algorithms, data structures and technologies which enable us to:

- Continuously, discover and index the “Web of Data”
- Provide a rich query interface for applications: enabling the Web of Data to be accessed like a database.
- Provide a computational space for real-time, continuous pre-processing and transformation of data.
- Create clean “data spaces” constructed out of billions of messy facts distributed across thousands of web sites.

Applications

- A “web scale” data integration platform.
- An integration layer for enterprise “Big Data” applications.

Features & Benefits

- Mature technology, in the process of being spun-out & ready for licensing or collaboration.
- An up to date index of the “Web Of Data”, refreshed every 24 hours.
- Includes a major evolution of the “SIREn” (Semantic Indexing & Retrieval) plugin for Lucene & Solr.
- Ability to create “Web Scale” and niche data spaces.
- Rich query interface to enable
- Out of the box support for any structured data formats.

For More Information Contact:

Patrick Mulrooney
Digital Enterprise Research Institute
tel: +353 (83) 346 7887
E-mail: commercialisation@deri.ie
www.deri.ie

This material is based upon work supported by the Science Foundation Ireland under Grant No. 08/CE/I1380. The opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the Science Foundation Ireland. Also funded from Ireland’s EU Structural Funds Programmes 2007 – 2013, co-funded by the Irish Government and the European Union. Financial support