



Beyond the Labyrinth

Take a bird's eye view!
Navigate your SharePoint the smart way.

Semantic SharePoint

Technical Briefing

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What is Semantic SP?

- a **bundle of web parts** to make a SharePoint server ‘smarter’
- a **joint venture** between iQuest and Semantic Web Company
- a **network of partners** with high expertise in the fields of SharePoint, enterprise search, and search-driven applications
- an **architecture** to link and mash content from SharePoint with content from other sources
- a **facilitator** for *smart content management* which is based on semantic technologies: automatic text analytics, automatic semantic tagging, and semantic search



Who is Semantic Web Company?



<http://www.semantic-web.at/>

- Headquartered in Vienna
- More than 20 experts in the fields of
 - software engineering
 - semantic technologies
 - semantic IT consulting
- Product: **PoolParty Semantic Suite** (launched in 2009)
- Serving customers from all over the world
- Working for leading companies in Life Sciences, Finance, Health Care, Public Administration and Energy
- EU- & US-based consulting services
- Large network in the enterprise and academic community



Who is iQuest?

IQUEST

<http://www.iquestgroup.com>

- Headquartered in Germany, with local teams in
 - Switzerland
 - Romania
 - U.S.
- Currently employs more than 500 people
- More than 15 years experience
- Extensive portfolio of professional services and customised software solutions across Europe, MEA and the U.S.
- Working for leading companies in Life Sciences, Telecom, Financial Services, Transportation and Energy.
- Microsoft Gold Independent Software Vendor and Gold Content Management Partner
- Microsoft Germany near shore Partner.



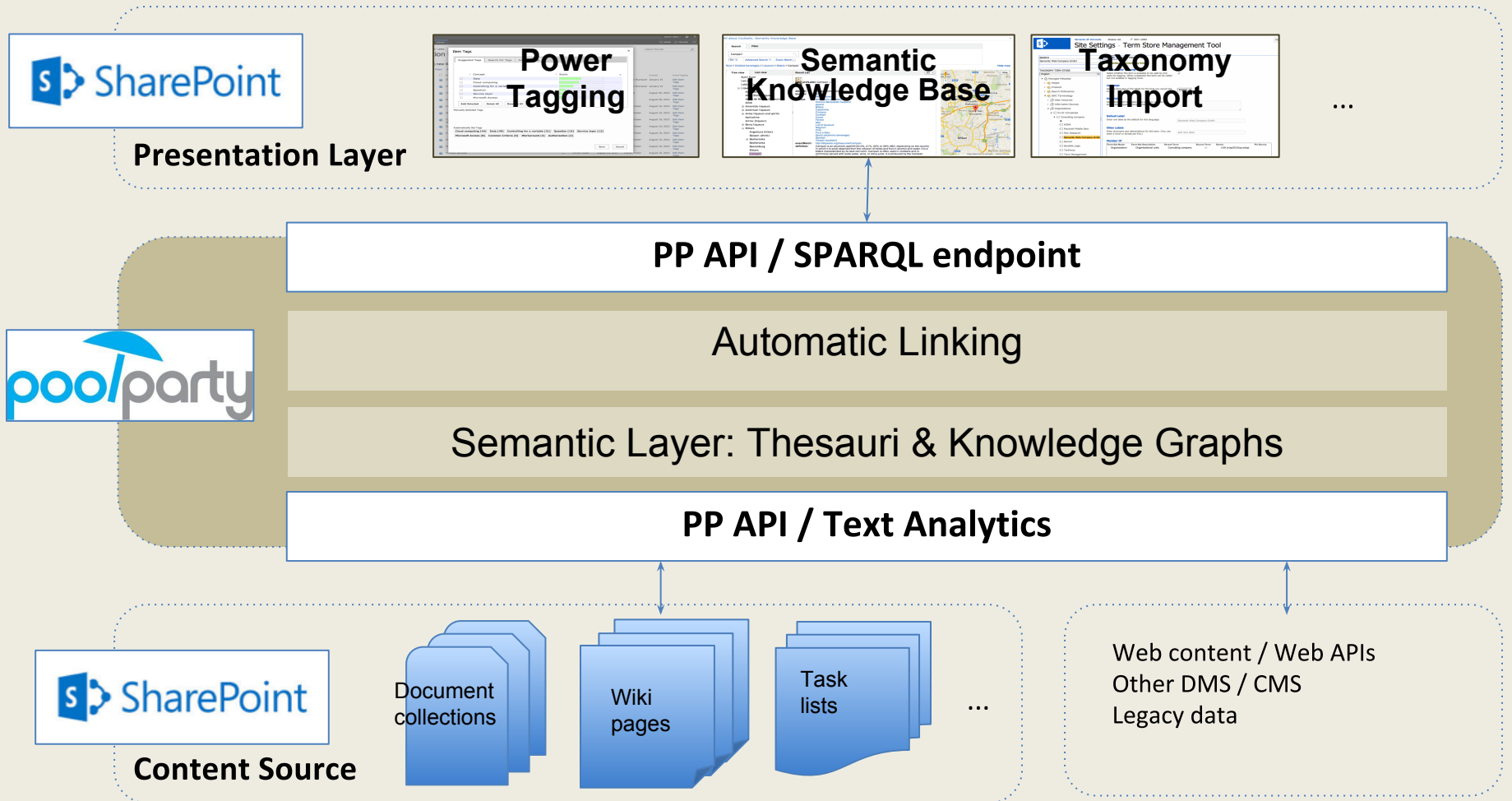
Why is Semantic SP important?

1. information retrieval systems have increasing demand for **better precision and recall** of search results
2. in order to generate new knowledge, information from various sources has to be **linked and integrated**
3. **smart content management** has become an important issue in many knowledge-intensive industries
4. need for **facilitated access to complex content** through more context around single pieces of information



Architecture (High-Level)

SharePoint serves as content source and as presentation layer





Semantic SP: Applications



PowerTagging for SharePoint 2013

Annotate content and documents from SharePoint automatically or semi-automatically and benefit from semantic search features.



Semantic Knowledge Base

Browse your knowledge graphs within SharePoint 2010 or 2013.



Taxonomy Creator

Manage your knowledge graphs & taxonomies with PoolParty Thesaurus Server and provide import files for SharePoint Term Store.



Taxonomies in SharePoint: Managed Metadata Term Store

The screenshot shows the SharePoint interface for the "Term Store" configuration. The top navigation bar includes "Home", "Projects", "Search", "Hebrew", and "Know How". The main heading is "Site Settings > Term Store". On the left, a "TAXONOMY TERM STORE" sidebar shows a tree view under "Managed Metadata Service" > "aghy-demo" > "Geography". The "Geography" folder is expanded, showing a list of regions: Africa, Asia, Australia and Oceania, Europe (expanded), and United Kingdom. The "Europe" folder is also expanded, showing sub-locations: Austria, Belgium, Denmark, Finland, Germany (expanded), Hungary, Spain, Sweden, Switzerland, and United Kingdom. The "Germany" folder is expanded, showing sub-locations: Berlin, Frankfurt, Hamburg, and Munich. The right pane shows the configuration for the "Geography" term set, with tabs for "GENERAL", "INTENDED USE", and "CUSTOM PROPERTIES". The "GENERAL" tab is active, showing fields for "Term Set Name", "Description", "Owner", "Contact", "Stakeholders", and "Submission Policy".

- Hierarchical collection of centrally managed terms
 - Managed Terms (“Taxonomy”)
 - Enterprise Keywords (“Folksonomy”)
- (Limited) Multi-Lingual Support
- Synonyms
- Custom Properties



Taxonomies in SharePoint: Managed Metadata Term Store

The screenshot shows the SharePoint interface for the "Term Store" configuration. The top navigation bar includes "Home", "Projects", "Search", "Hebrew", and "Know How". The main heading is "Site Settings > Term Store". On the left, a search bar is present above a "TAXONOMY TERM STORE" section. A dropdown menu is set to "English". Below it, a tree view shows the "Managed Metadata Service" expanded to "aghy-demo", which is further expanded to "Geography". Under "Geography", a list of regions is shown with expandable arrows: Africa, Asia, Australia and Oceania, Europe (expanded), Germany (expanded), Hungary, Spain, Sweden, Switzerland, and United Kingdom. The "Europe" and "Germany" categories are expanded to show sub-terms like "Austria", "Belgium", "Denmark", "Finland", "Berlin", "Frankfurt", "Hamburg", and "Munich".

- What's missing:
 - No term types & metadata about terms
 - No relationship between terms
 - No Version Management on Term Sets
 - No Synchronization between Term Sets/Taxonomies
 - No Auto-Tagging
 -



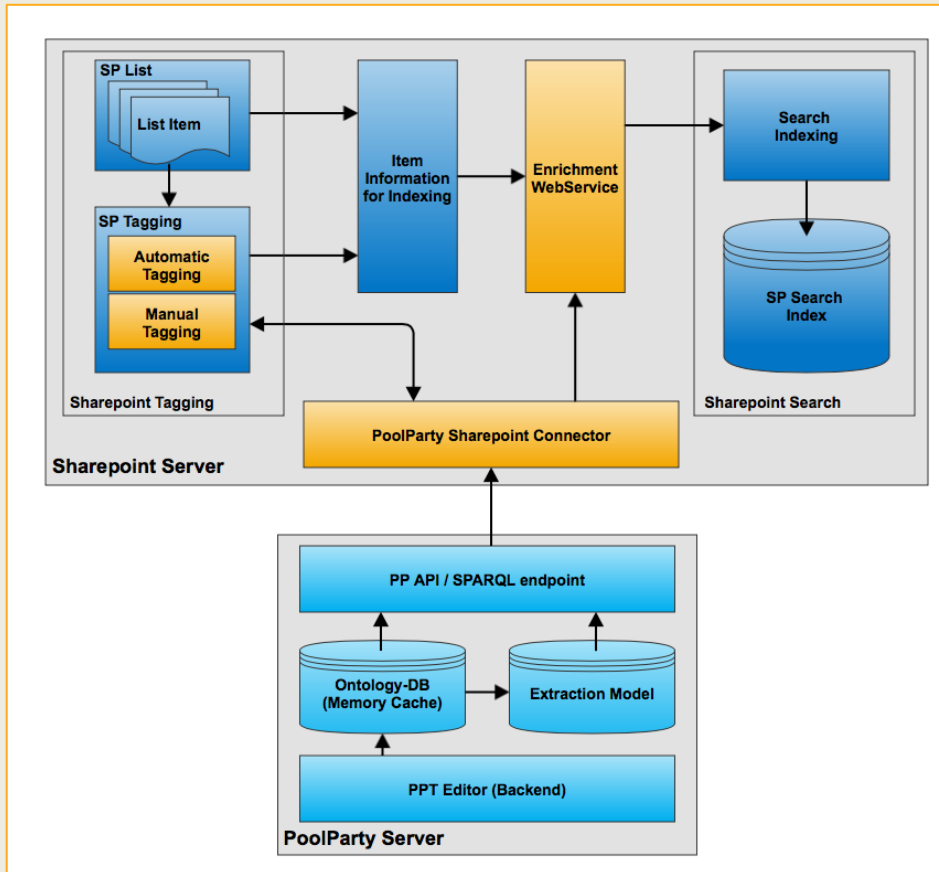
Use Cases for PowerTagging

What are the typical scenarios and use cases when PowerTagging comes into play?

- **search experience:** existing search should be improved
- **time saving:** auto-tagging plays an essential role
- **consistent tagging:** use of controlled enterprise vocabularies is important



PowerTagging - Overview

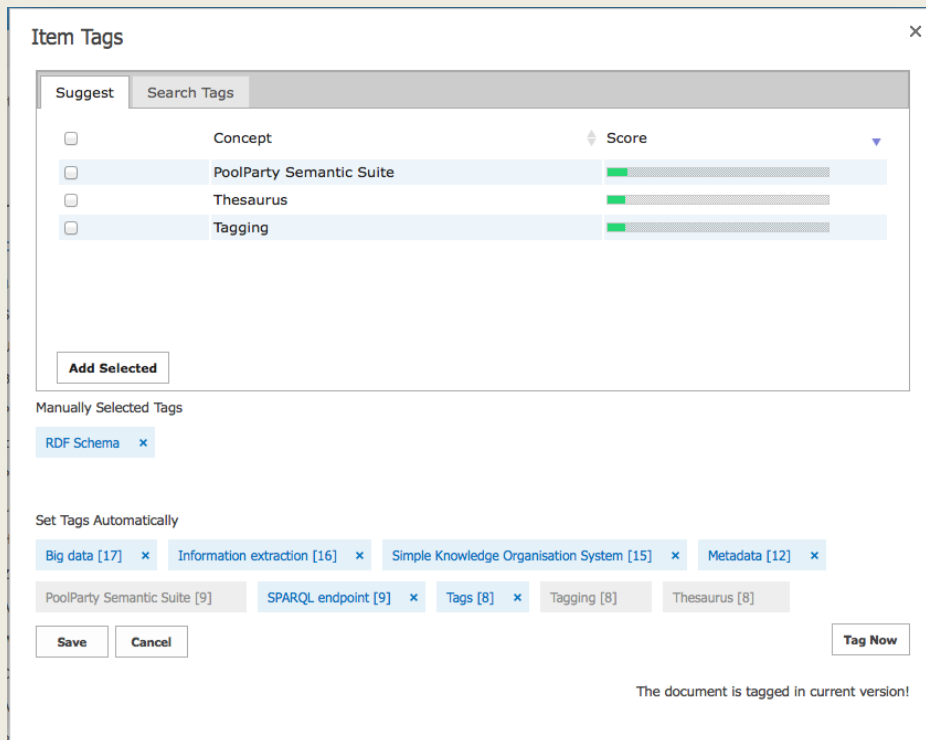


The PowerTagging integration adds the following features:

- Automatic and manual tagging of SharePoint list items and uploaded documents
- Enrichment of the SharePoint search index based on the tagged content. The search index can be enriched by:
 - labels of tagged concepts
 - relations of tagged concepts and their labels (top concepts, broader concepts, related concepts)



PowerTagging - Tagging



- Tagging is done for
 - **content** created in SharePoint
 - **documents** uploaded to SharePoint
- Tagging is done
 - on content creation
 - triggered via jobs running in background
- Tagging can later be reviewed and **manually refined**
- Additional tags can be added manually on demand



PowerTagging - Semantic Search

Semantic Search

SKOS|

- SKOSEd
- SKOS eXtension for Labels
- PoolParty Linked Data Harvester
- Simple Knowledge Organisation System

Principles

- Semantic web (10)
- Linked data (6)
- Controlled vocabulary (6)
- Computer science (6)
- Ontology (5)
- Artificial Intelligence (4)
- Metadata (4)
- Tags (4)

Specifications

- Simple Knowledge Organisation System (8)
- Resource Description Framework (7)
- Web Ontology Language (4)
- W3C recommendations (2)

[SSW with PowerTagging - Documents - MainPage](#)
PoolParty 4 Webinar - public Edit Item Tags ...
[Knowledge_representation_and_reasoning](#) Edit Item Tags ...
[Simple_Knowledge_Organization_System](#) Edit Item Tags
demo.semantic-sharepoint.com/sites/ssw/ppt/.../Forms/MainPage.aspx

[Online checker for SKOS vocabularies now available](#)
Simple Knowledge Organisation System, Controlled vocabulary, PoolParty quality checker, **Knowledge** management, Linked data, Ontology ...
demo.semantic-sharepoint.com/.../Online_checker_for_SKOS_vocabulari...

[Simple_Knowledge_Organization_System](#)
Simple Knowledge Organisation System (SKOS) is a W3C recommendation designed for ... between the world of **knowledge organization systems** - including thesauri, classifications, subject ...
demo.semantic-sharepoint.com/.../Simple_Knowledge_Organization_Syst...

Based on the search enrichment the following features are available:

- Autocomplete
- Additional search navigators based on thesaurus structure
- Query expansion

All features can be configured (e.g. number of results for autocomplete) in the search web part configuration.



See how it works: PowerTagging for SharePoint 2013

Create and maintain controlled vocabularies

The screenshot shows the Semantic SP interface. On the left is a hierarchical tree of concepts, including categories like 'Cerebrovascular Trauma', 'Spinal Cord Injuries', and 'Nutritional and Metabolic Diseases'. The main area displays the 'Spinal Cord Injuries' concept with a URL and various tabs for 'Details', 'Notes', 'Documents', etc. A 'Relations' section is visible, showing 'Broader Concepts' like 'Spinal Cord Diseases' and 'Trauma_Nervous System', and a 'Preferred Label' set to 'Spinal Cord Injuries'.

The 'Item Tags' dialog box is shown, featuring a 'Suggest' tab with a list of tags and their scores. The 'Manually Selected Tags' section contains a list of tags such as 'Heart Failure [71]', 'Women [60]', 'Patients [56]', 'Men [47]', 'Heart [29]', 'Death [29]', 'Defibrillators [19]', 'Cardiac Resynchronization Therapy [16]', 'Hospitalization [15]', and 'Risk [14]'. There are 'Save' and 'Cancel' buttons at the bottom, and a 'Tag Now' button on the right.

Tagging and search based on text mining and controlled vocabularies

The background shows a SharePoint page with a list of items. Each item has a title and a list of tags. For example, one item is 'Environmental contaminants in the food chain' with tags like 'Food Safety', 'Health', and 'Risk'. Another item is 'Women sometimes benefit more from cardiac resynchronization therapy than men' with tags like 'Cardiac Resynchronization Therapy' and 'Heart Failure'. The page also shows a search bar and navigation options.



Comparison: Standard Tagging vs. PowerTagging

Standard Tagging

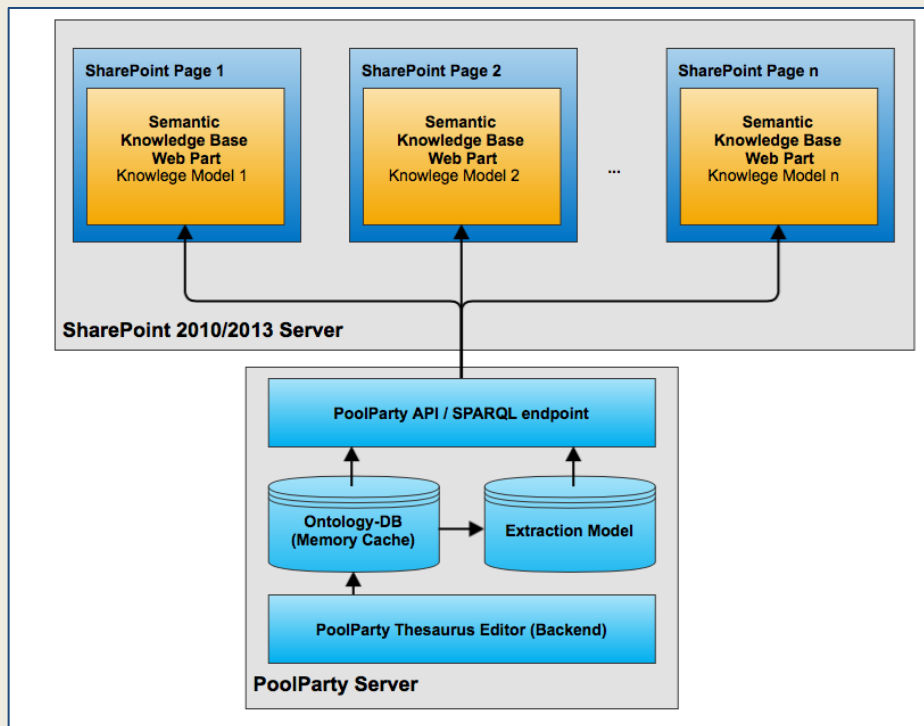
- limited support of translations
- no auto-tagging
- no query expansion
- 'flat' refiners
- separated handling of search suggestions and term sets
- no versioning of terms
- limited workflow management
- no non-hierarchical relations
- no poly-hierarchies
- no text corpus analysis
- annotation restricted to SharePoint
- maximum number of levels is 7
- limited number of terms

PowerTagging

- support of translations
- auto-tagging
- query expansion (by synonyms/hierarchies)
- refiners alongside the taxonomy hierarchy
- taxonomies build the basis for search suggestions
- versioning of concepts/terms
- full-blown workflow management
- non-hierarchical relations, also for indexing
- poly-hierarchies supported
- integrated text corpus analysis
- annotation of various content sources
- no limits of size of taxonomy
- no limits of number of terms



Semantic Knowledge Base - Overview



Most important features:

- Browse through your knowledge graphs within SharePoint
- Visualisation of multilingual enterprise vocabularies
- Search for terms and display details including images and geographic information
- Filter terms that share common features
- Export lists of terms



Semantic Knowledge Base - Browse your knowledge graphs

Semantic Knowledge Base

Social Semantic Web Thesaurus

Search Filter

Vienna

Advanced Search Exact Match

Root > Places > Europe > Western Europe > Austria > Vienna

Tree view List view Result List

- Eastern Europe
- Northern Europe
- Southern Europe
- Western Europe
 - Austria
 - Graz
 - Innsbruck
 - Linz
 - Salzburg
 - Vienna**
 - Belgium
 - France
 - Germany
 - Netherlands
 - Switzerland
 - Oceania

prefLabel: Vienna (en) , Wien (de)

type: Concept

contributor: nagyhel

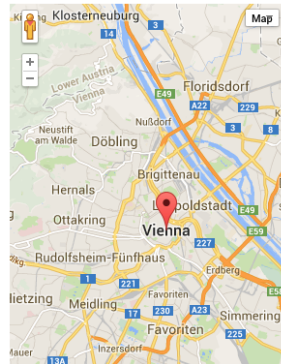
creator: nagyhel

modified: 2014-02-12T12:50:45Z

related: Altova, Austrian Research Promotion Agency, Gñowis, Information Retrieval Facility, Ixto, punkt. netServices, Semantic Web Company GmbH, Smart Information Systems, System One, Technical University of Vienna, The Telecommunications Research Center Vienna, University of Vienna, Vienna Semantic Web Meetup

hasVersion: 7

broader: Austria



The Semantic Knowledge Base web part allows to browse a semantic knowledge graph or an enterprise vocabulary within SharePoint and offers the following features:

- Search including autocomplete
- Tree View
- List View
- Configurable Details View including
 - Map view
 - Images



Use Cases for Semantic Knowledge Base

What are the typical scenarios and use cases when Semantic Knowledge Base comes into play?

- **knowledge visualisation:** provide information about complex knowledge domains
- **enterprise glossaries:** quick finder for the meaning of words and acronyms
- **e-learning:** provide applications to people who need to understand relations



See how it works: Semantic Knowledge Base for SharePoint

SharePoint Andreas Blumauer

BROWSE PAGE SHARE FOLLOW EDIT

Home

- Semantic Knowledge Base
- Semantic Search
- Power Tagging
- Wiki Pages
- Documents
- Recent
- Site Contents

EDIT LINKS

Medical Knowledge Base (MeSH)

Search Filter

Queensland


En | Advanced Search | Exact Match

Root > Geographicals > Geographic Locations > Australia > Queensland

Tree view List view

- Americas
- Antarctic Regions
- Arctic Regions
- Asia
- Australia
 - Australian Capital Territory
 - New South Wales
 - Northern Territory
 - Queensland**
 - South Australia
 - Tasmania
 - Victoria
 - Western Australia
- Cities
- Europe
- Historical Geographic Locations

Result List All



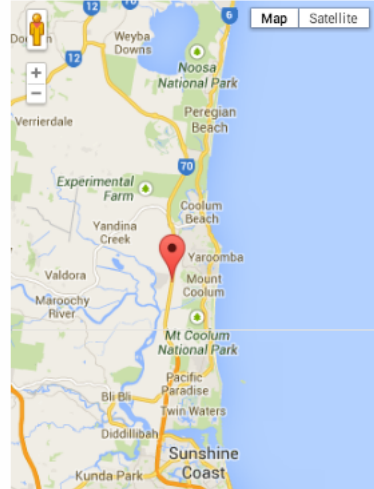
prefLabel: Queensland (en)

type: Concept

altLabel: Qld (en)
Sunshine State (en)

definition: Queensland (abbreviated as Qld) is the second-largest and third-most populous state in Australia. Situated in the northeast of the country, it is bordered by the Northern Territory, South Australia and New South Wales to the west, southwest and south respectively. To the east, Queensland is bordered by the Coral Sea and Pacific Ocean. Queensland has a population of 4,580,700, concentrated along the coast and particularly in the state's South East. The state is the world's sixth largest subnational entity, with an area of 1,852,642 km. The capital and largest city in the state is Brisbane, Australia's third largest city. Referred to as the 'Sunshine State', Queensland is home to 10 of Australia's 30 largest cities and is the nation's third largest economy. Queensland was first occupied by Australian Aboriginals and Torres Strait Islanders, who arrived at least 40,000 years ago. The first European to land in Queensland (and Australia) was Dutch navigator Willem Janszoon in 1606, who explored the west coast of the Cape York Peninsula near present-day Weipa. In 1770, Lieutenant James Cook claimed the east coast of Australia for the Kingdom of Great Britain. The colony of New South Wales was founded in 1788 by Governor Arthur Phillip at Sydney; New South Wales at that time included all of what is now Queensland, Victoria and Tasmania. Queensland was explored in subsequent decades until the establishment of a penal colony at Brisbane in 1824 by John Oxley. Penal transportation ceased in 1839 and free settlement permitted in 1842. Queensland was separated from New South Wales, forming a self-governing colony, on 6 June 1859, a date now

Hide map



Map Satellite



Taxonomy Creator

Semantic SP Demosite Abakus Ltd. EDIT LINKS

Site Settings > Term Store Management Tool

SEARCH
Semantic Web Company GmbH

TAXONOMY TERM STORE
English

- Managed Metadata
 - People
 - Products
 - Search Dictionaries
 - SWC Terminology
 - Data resources
 - Information Sources
 - Organisations
 - 01.01 Companies
 - Consulting company
 - KONA
 - Mouchell Middle East
 - Pew Research
 - Semantic Web Company GmbH**
 - Seme4
 - Sensible Logic
 - TenForce
 - Term Management

GENERAL CUSTOM PROPERTIES

Semantic Web Company GmbH

Available for Tagging
Select whether this term is available to be used by end users for tagging. When unselected this term will be visible but not enabled in tagging tools.

Language
Select a language of the labels for the term you would like to edit. English

Description
Descriptions will help users know when to use this term, and to disambiguate amongst similar terms.

Default Label
Enter one label as the default for this language. Semantic Web Company GmbH

Other Labels
Enter synonyms and abbreviations for this term. (You can enter a word or phrase per line.) add new label

Member Of

Term Set Name	Term Set Description	Parent Term	Source Term	Owner	Pin Source
Organisations	Organisational units	Consulting company		i:0#.w sp2013 sp.setup	

PoolParty thesauri can be imported into the SP Term Store to be used for SharePoint's native tagging feature.

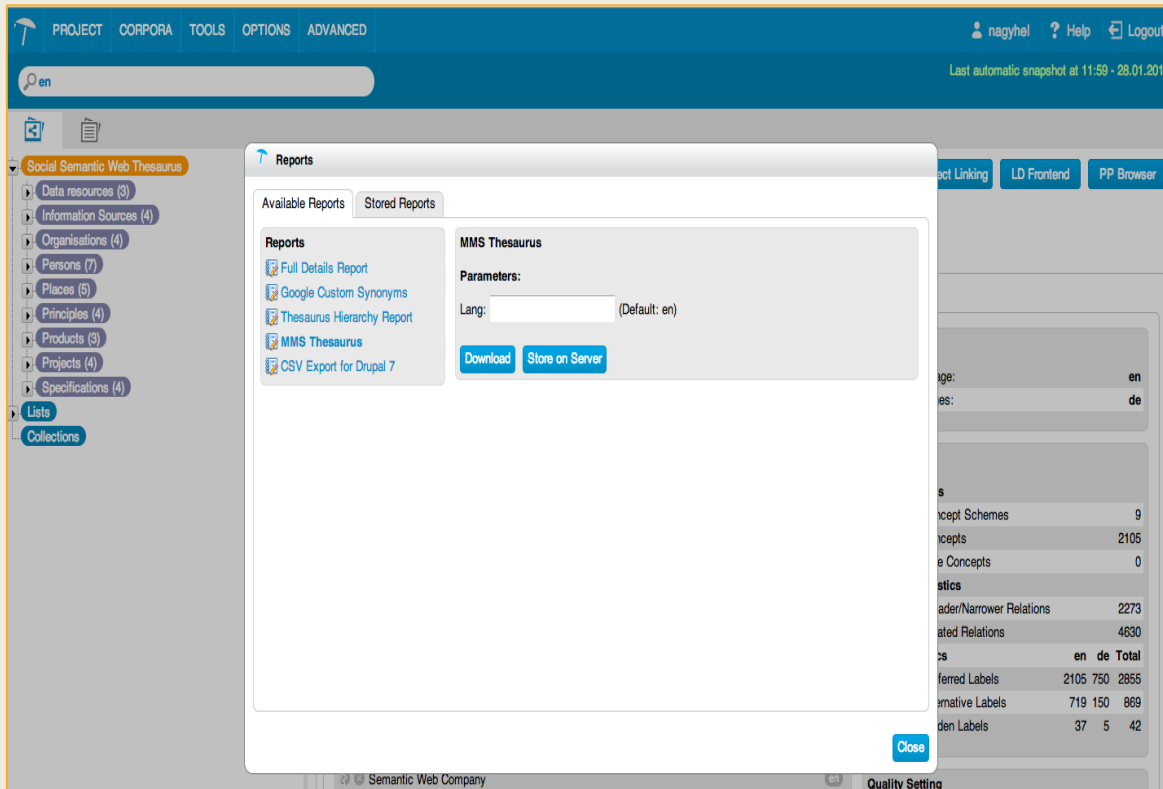
In addition, also a thesaurus that can be used to expand search queries with synonyms can be imported



Use Cases for Taxonomy Creator

What are the typical scenarios and use cases when Taxonomy Creator comes into play?

- **enterprise taxonomies:**
provide tooling for large and more complex taxonomies & thesauri
- **multi-linguality:**
create and use multilingual taxonomies in term store
- **text corpus analysis:** derive taxonomies from documents



PoolParty supports the export of vocabularies and knowledge graphs in SharePoint format via Custom Reports.

- [Managed metadata Import file format](#)
- [Create and deploy a thesaurus in SharePoint](#)

“PoolParty Custom Reports” is a generic feature of PoolParty Thesaurus Server which allows the creation of customized exports of selected taxonomies and thesauri.



PowerTagging - Configuration

Social Semantic Web SSW with PowerTagging SSW with Standard Tagging EDIT LINKS

PowerTagging Sitecollection Configuration

General Tagging Configuration Sharepoint Content Types Websites List

PoolParty Server

URL

PoolParty API

User

Password

SharePoint Tagging Settings

Content Tagging Interval (mins)

Document Tagging Interval (mins)

- Search Enrichment configuration is done on site collection level
- Semantic meta-information to be added to the search index can be defined
- Information can be written to more than one custom field

- Basic tagging configuration is done on site collection level
- Configuration can be modified on site level
- Tagging can be configured per list/app for a SharePoint site

Social Semantic Web SSW with PowerTagging SSW with Standard Tagging EDIT LINKS

PowerTagging Search Enrichment Configuration

id +

prefLabel +

altLabel +

hiddenLabel

relatedConceptId

relatedConceptPrefLabel

relatedConceptAltLabel

relatedConceptHiddenLabel

transitiveBroaderId

transitiveBroaderPrefLabel +



Semantic Knowledge Base - Configuration

A screenshot of the "Social Semantic Web Thesaurus" configuration window. The window has a title bar with a close button. On the left, there is a navigation pane with expandable sections: "Appearance", "Layout", "Advanced", and "Search customization". The "Search customization" section is currently expanded, showing a "Select Project" dropdown menu. Below this, there are input fields for "Server URL" (containing "http://demo.semantic-sharepoint.com:8080"), "Username" (containing "nagyhel"), and "Password" (containing "*****"). There is also a dropdown menu for "Social Semantic Web Thesaurus". Further down, there are sections for "Default Language" (set to "En"), "Location" (set to "prefLabel"), "Approval" (set to "(none)"), "Image" (set to "(none)"), and "Alert Predicate".

The Semantic Knowledge Base web part is highly configurable:

- PoolParty Server & Knowledge graph to be used
- Default language
- Default search behaviour
- Default view
- Limit results
- Properties to be displayed
 - Order of Properties
- Display image
- Display map

Works for SharePoint 2010/2013



Semantic SP: Business Cases

- **Business dashboards**
Benefit from integrated views on your business objects!
- **Semantic Search**
Find information by using smart search assistants!
- **Knowledge Bases**
Reuse and visualize information to learn about complex knowledge domains
- **Enterprise Vocabulary Management**
Overcome the Babylonian language confusion in your company!



How to get involved

1. Refine your use cases
(in the course of a private webinar with us)
2. Get a demo server for your own tests
3. Receive support for requirements elicitation
4. Receive support for use case development
5. Dive deeper into technical questions, learn more about architecture, performance & security
6. Learn more about possible partnerships



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