

# Enterprise **CO**llaboration & **IN**teroperability



**COIN Winter School**

**COIN System Demos**

**Ljubjana, Nov 29th 2011**

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**TXT e-solutions S.p.A.**



# After COIN Strategic Assets

- 1. EI/EC services commoditization** to be extracted & separated from state-of-the-art Enterprise Applications in order to constitute a Service Utility (ISU) available to all the Enterprises
- 2. Interoperability Service Utility** as an essential component of the European Future Internet service infrastructure currently under development in the RTD Framework Programme 7
- 3. FInES Arch**, a new reference architecture for next generation Enterprise Applications, integrating Public and Private Clouds & specific methods & tools for Business Innovation Management
- 4. Open-Trusted Platform Federation**, as the implementation paradigm for evolutionary and scalable distributed architectures of Global Service Delivery Platforms

The background of the slide features the European Union flag, which consists of a blue field with twelve five-pointed gold stars arranged in a circle. The flag is slightly blurred and occupies the top portion of the slide.

# **COIN IP Lessons Learned**

## **1. COIN VISION**

- Anticipating EU2020 Strategy, DAE, IU initiatives**
- DAE Pillar II “Interoperability & Standards”, Act 25**
- SME orientation, breaching the Digital Divide**
- Inspiring FInES Research Roadmaps and vision**

# EU 2020 Strategy priorities



- 1 Innovation Union
- 2 Youth on the move
- 3 **A digital agenda for Europe**
- 4 Resource efficient Europe
- 5 An industrial policy for globalisation
- 6 An agenda for new skills and jobs
- 7 European platform against poverty

José Manuel BARROSO (2010): EUROPE 2020, A European strategy for smart, sustainable, inclusive growth

**A strategy for smart, sustainable and inclusive growth**

- **Innovation Union**
- Youth on the move
- **A Digital Agenda for Europe**

- Resource efficient Europe
- **An industrial policy for the globalisation era**

- An agenda for new skills and jobs
- European platform against poverty

# 5 years Priorities for a Digital Europe



- 1 Access to Digital Content
- 2 European m-payment Space
- 3 Open Digital Economy to SMEs
- 4 ICT for a low-carbon economy

VIVIANE REDING 2009 Ludwig Erhard lecture on Digital Europe, July 9<sup>th</sup> 2009

**3. Europe's digital economy should be opened up to small businesses.** In Europe, we have 23 million small and medium sized enterprises (SMEs) which make up 99% of all firms. Accounting for over 100 million jobs, SMEs can be the mainspring of Europe's economic resurgence. But in the use of productivity-boosting ICT tools, SMEs lag substantially behind big firms: only 9% of SMEs use electronic invoices, and only 11% of them have technology-based human resource management. If SMEs could access computing power over the web, they would no longer need to buy and maintain technologies or IT applications and services. Such web based services – called "cloud computing" – are the medicine needed for our credit squeezed economy: they can make businesses more productive by shifting from fixed costs (i.e. hiring staff or buying PCs) to variable costs (i.e. you only pay for what you use). However, today these new services are nearly all US-owned and US-based. Once again, the US has started to exploit a business model before Europe has managed to do so. We cannot let this continue. In my view, we need a major effort to set up Europe-hosted "clouds" to give European SMEs access to fast, open and productivity enhancing services. A recent study estimated that online business services could add 0.2% to annual GDP growth, create a million new jobs and allow hundreds of thousand of new SMEs to take off in Europe over the next five years.

**So what are we waiting for?**

# EUROPE 2020: EU Digital Agenda

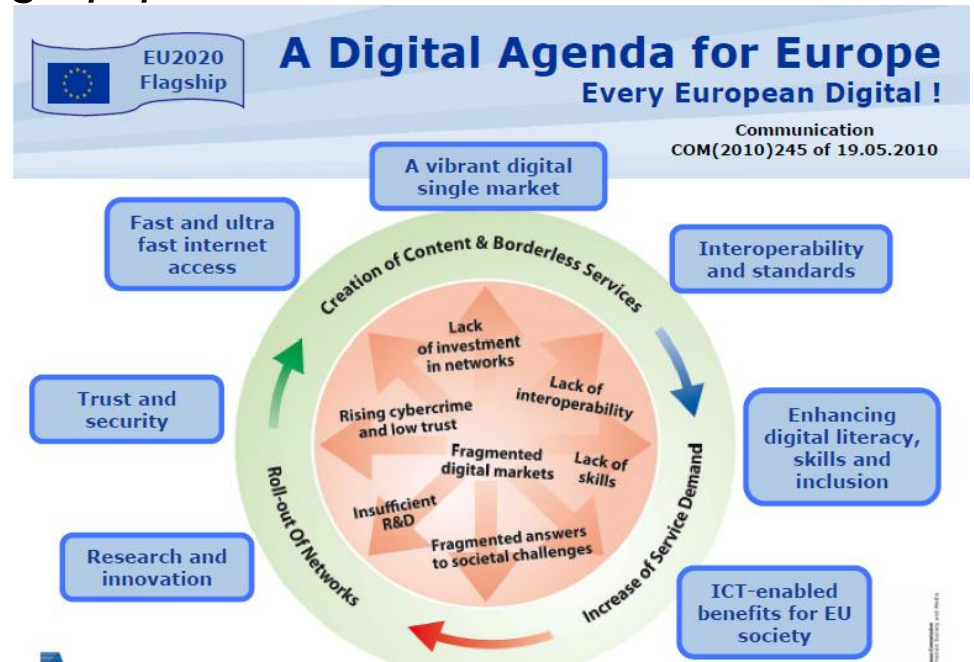


Neelie KROES, Commissioner for the Digital Agenda (2010): Economic Growth in EUROPE (Maastricht, The Netherlands, March 12<sup>o</sup> 2010)

*Action 25: ... significant market players to licence information about their products or services. ... measures that could lead significant market players to license interoperability information. If their products are incompatible ... users feel locked into the dominant company's product range angequipment.*

**Digital Agenda** will consist of 7 key themes, which will have an impact on your daily life – both as business people and as citizens:

**2. Interoperability and Standards:** a digital society can only take off if its different parts and applications are interoperable and based on open platforms and standards



# Future Internet Enterprise Systems



- 1 Inventive Enterprise
- 2 Cloud Enterprise
- 3 Cognizant Enterprise
- 4 Community-oriented Enterprise
- 5 Green Enterprise
- 6 Glocal Enterprise

Cristina Martinez (FInES Cluster Chair) and Gerald Santucci (DG INFSO D4 Head of Unit)

The shift from management-centric to **innovation-centric enterprise systems** will represent a major discontinuity in current ICT solutions and will pose key research problems. This research will be successful only if, in parallel, Future Internet, and the supporting technologies (from **Internet of Things to Software as a Service, from Social Networking to Semantic Knowledge Management**) will be consolidated and openly available. In particular, the paradigm of the Cloud Technologies appears able to provide the necessary flexibility and agility that today's enterprise systems are far from exhibiting.

**How to make next generation Enterprise Systems compliant not just to FI architecture and philosophy but also at the service of the Enterprise new Qualities of Being? What about an Enterprise Innovation Management System?**



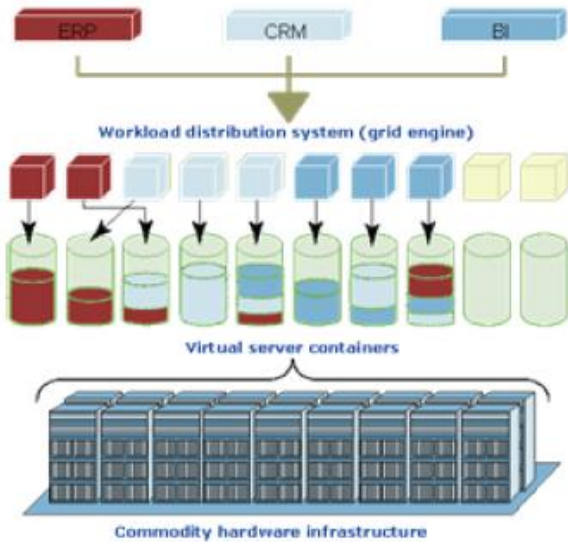
# **COIN IP Lessons Learned**

## **1. COIN Generic Service Platform**

- Linking Collaboration Networks with the IoS**
- Professional- and User-generated E/EC services**
- A double Cloud of federated open platforms**
- An evolutionary system for IT providers/consumers**

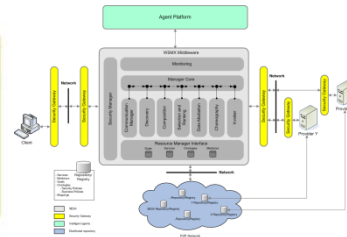


# COIN General Concept

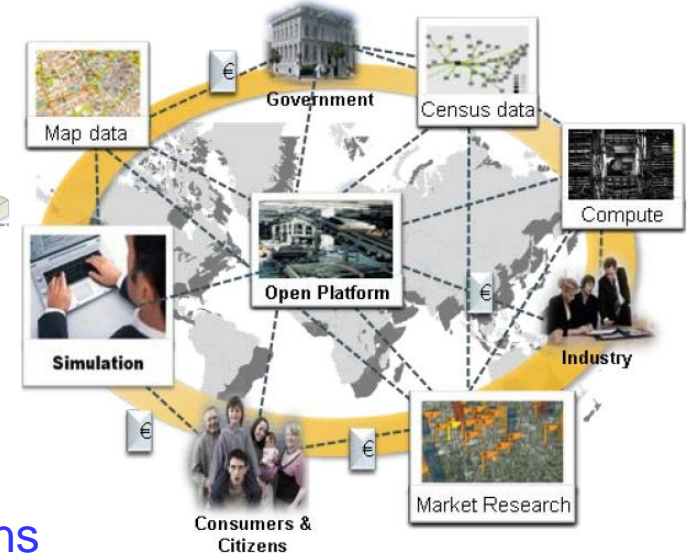


Service Parks  
(Cloud Computing)

! Workload management, reporting and billing  
\$/CPUhr  
\$/GB  
\$/Gbps

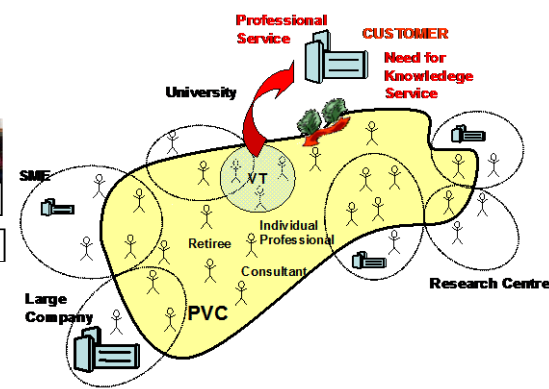
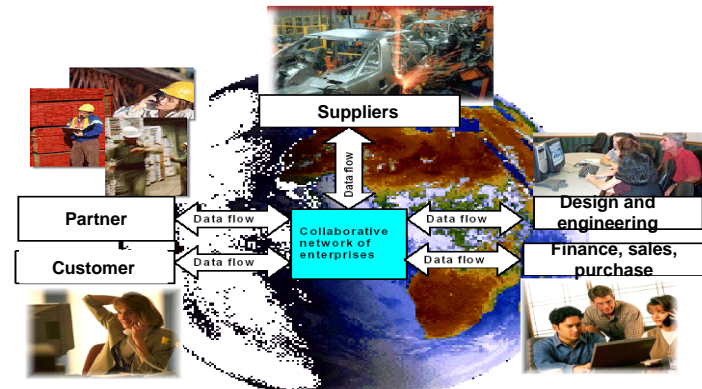
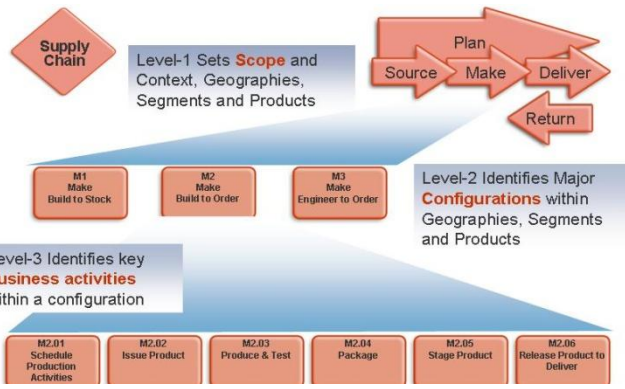


Service Federations  
(incl. E/EC Service Platforms)  
INTERNET OF SERVICES



Service Galaxies  
(Billions of Services)

## ENTERPRISE COLLABORATIVE ENVIRONMENTS



# COIN and Cloud Computing IoS

## Data Storage

Utilize servers, storage, or network infrastructure via an Internet connection.

*"Infrastructure as a Service"*

Example: Amazon S3 Storage



Windows Azure Platform

## App Development

Design, develop, test, deploy and host applications on Web-based platforms.

*"Platform as a Service"*

Example: Google App Engine



## Applications

Use a Web browser as a platform from which to run Web-based applications and services.

*"Software as a Service"*

Example: Zoho.com

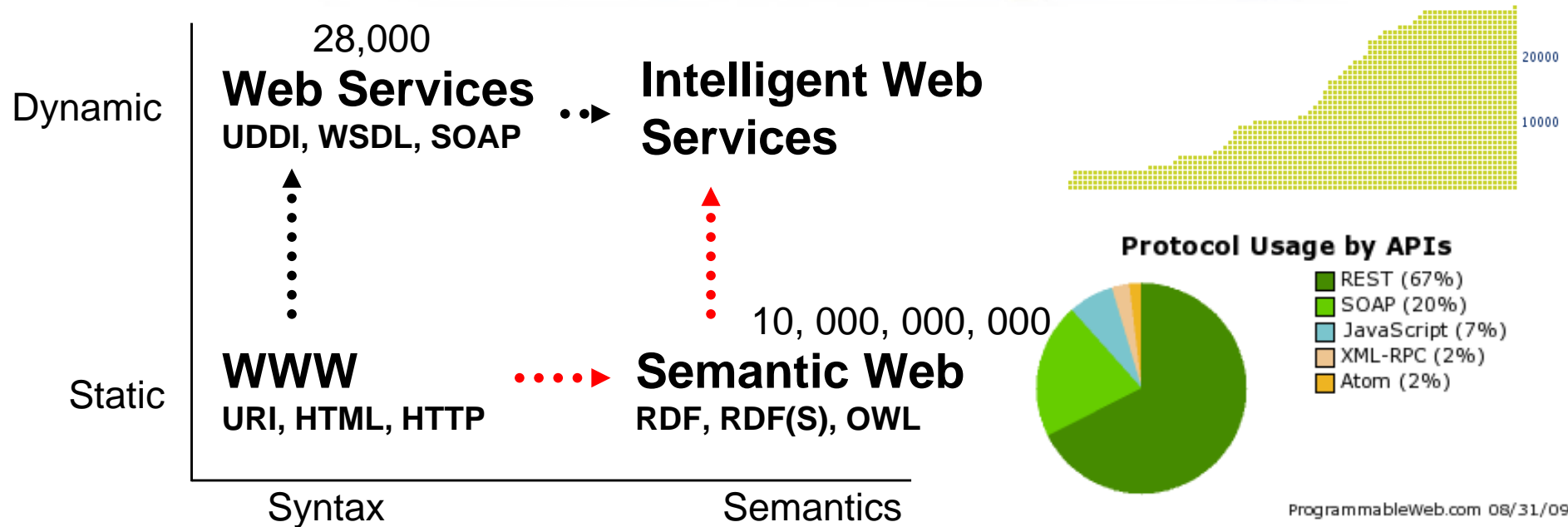


Source: Sebastian Muller, Google EU Policy Manager. The Future of Cloud Computing, DG INFSO D3, Bruxelles Jan 26th 2010

## COIN related Research Issues:

- ICT Commoditization: from Applications to Platforms, from Platforms to Infrastructure
- EI & EC services/platforms Value Added & Utility Services/Platforms (SaaS-U BModel)
- Platforms federations: IaaS & SaaS are already here, what about PaaS? In the FI?
- Service Delivery / Development Platforms / Platforms Interoperability

# COIN and Service Web IoS



## COIN related Research Issues:

- More powerful/expressive Service Description languages
- Semantic crawling & search engines for providers
- Need for easy-to-use development platforms (beyond delivery): Front-End, pro-sumers
- Long-lasting Service Level Agreements for Enterprises and Business Processes

Tuesday 15 September 2009

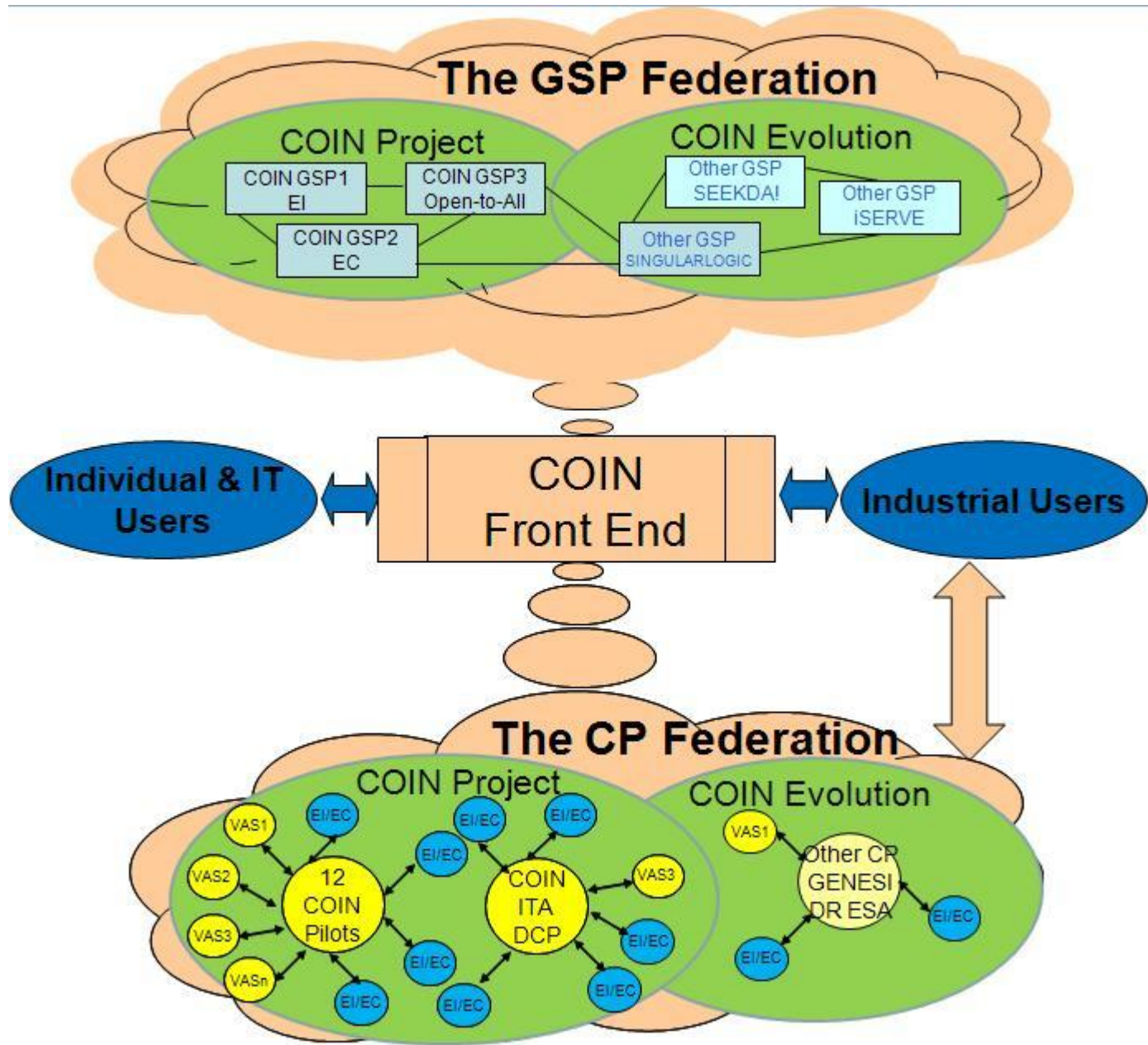
### PM welcomes Sir Tim Berners-Lee to Downing Street

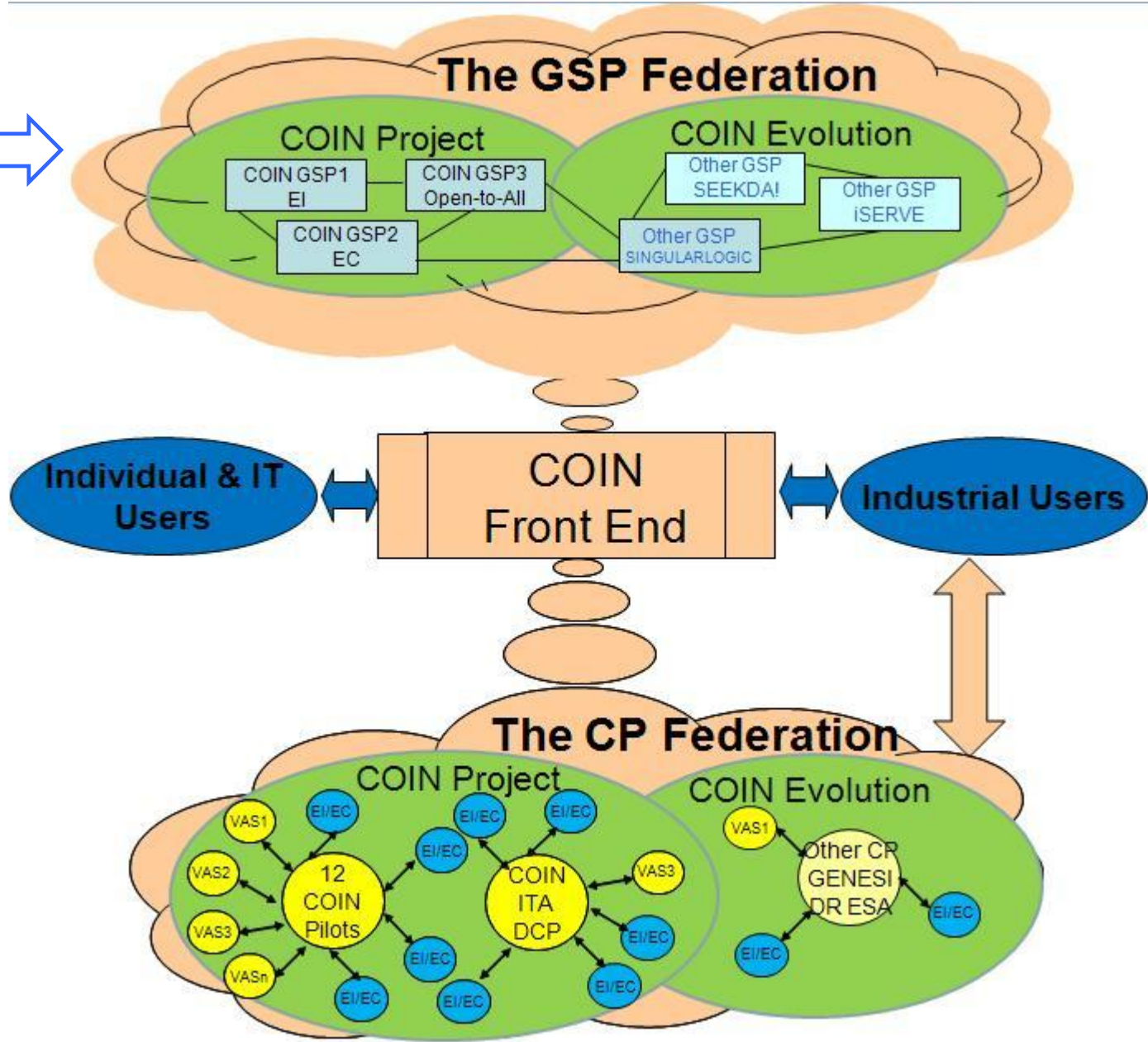
The Prime Minister welcomed the creator of the World Wide Web, Sir Tim Berners-Lee, and Professor of Artificial Intelligence at the University of Southampton, Nigel Shadbolt, to Downing Street this morning.

Mr Berners-Lee and Mr Shadbolt presented an update to Cabinet on their work advising the Government on how to make data more accessible to the public.

Gordon Brown has already spoken publicly about his aim of making the UK a world leader in opening up government information on the internet, an important element of [Building Britain's Future](#).









# GSP Evolution Scenarios

## *“Emergent” scenario*

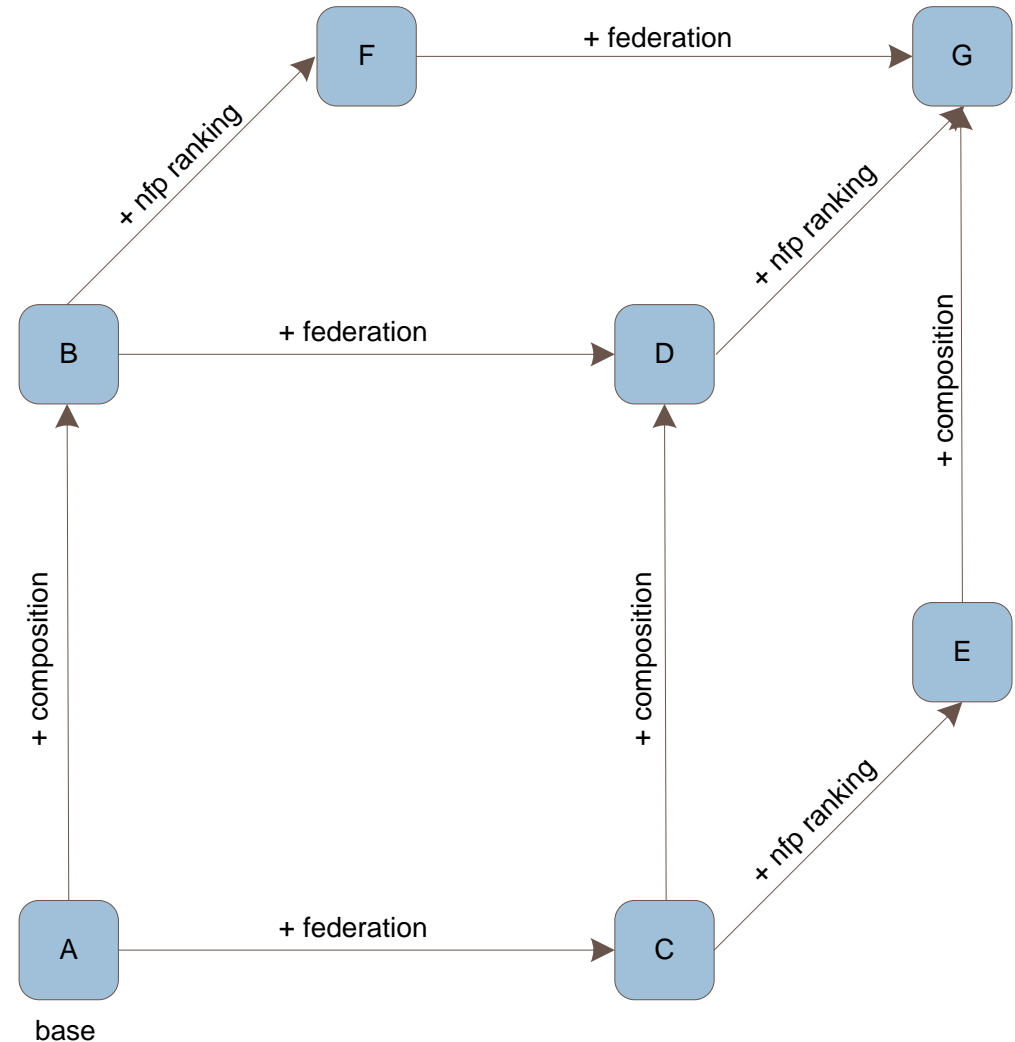
- **Different authorities**
- Different GSP instances established **independently**, then federated
- Platform instances may be specialised to some extent, but not by design
- Federation may not be transparent to users

## *“Planned” scenario*

- **Single authority**
- Different GSP instances deployed as a distributed architecture
- **Specialisation** of instances can be by design
- Distributed architecture is transparent to users (logically a single entity)

# GSP Evolution Hypercube

- Incremental scenarios
- Three dimensions:
  - service composition
  - federation
  - NFP-based ranking

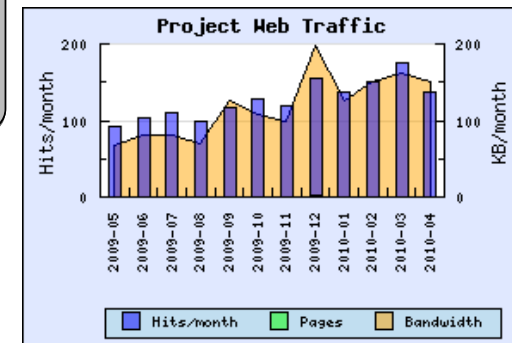
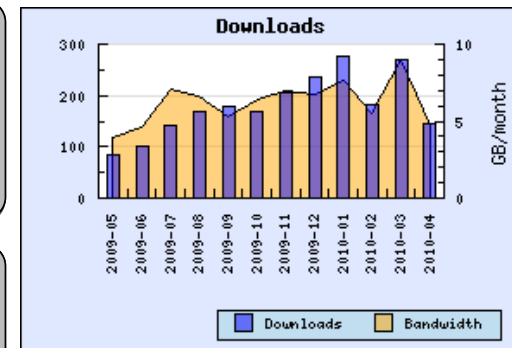
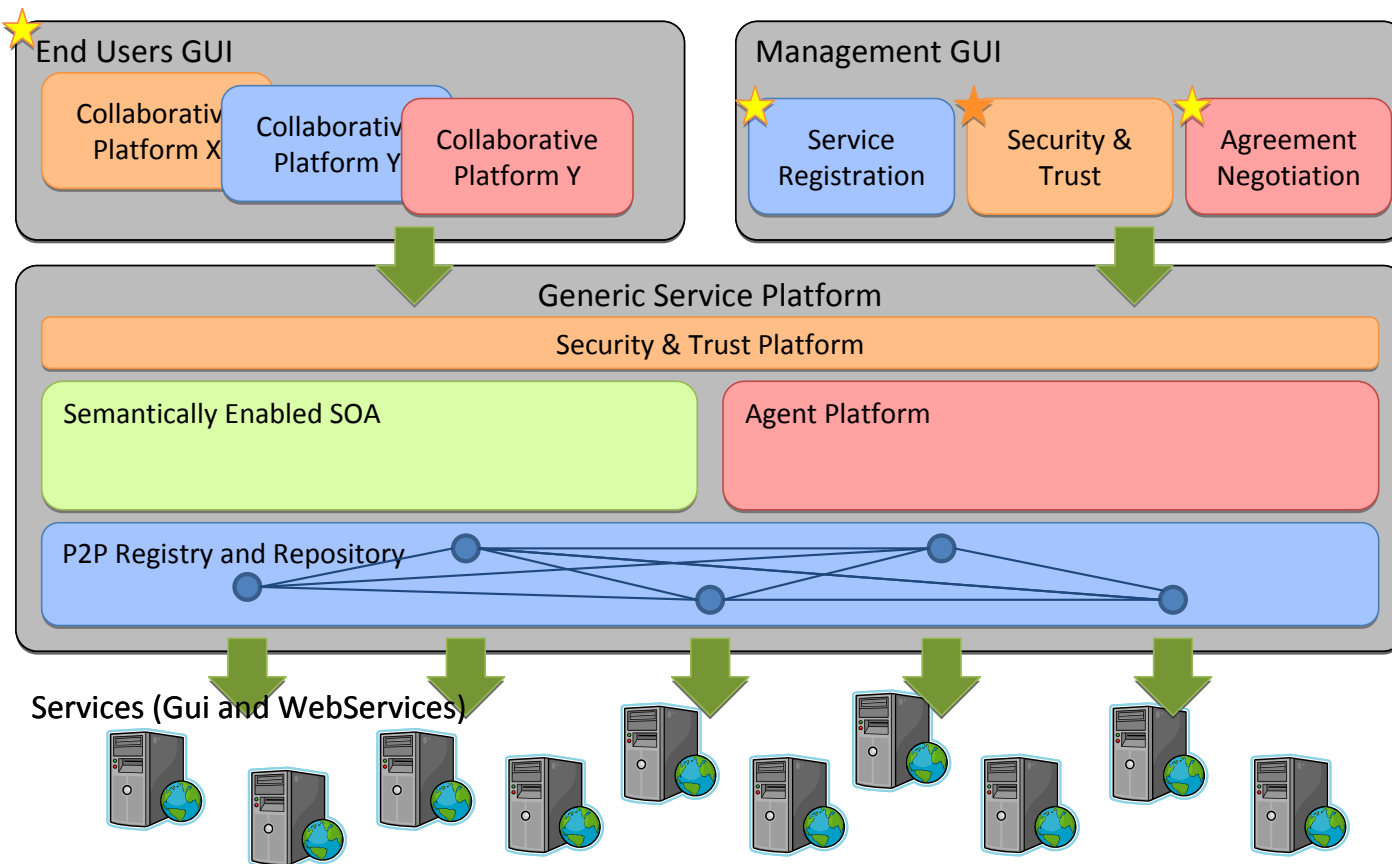


GSP Evolution "cube"

# The COIN GSP: a WSMX evolution

<http://sourceforge.net/projects/wsmx/>

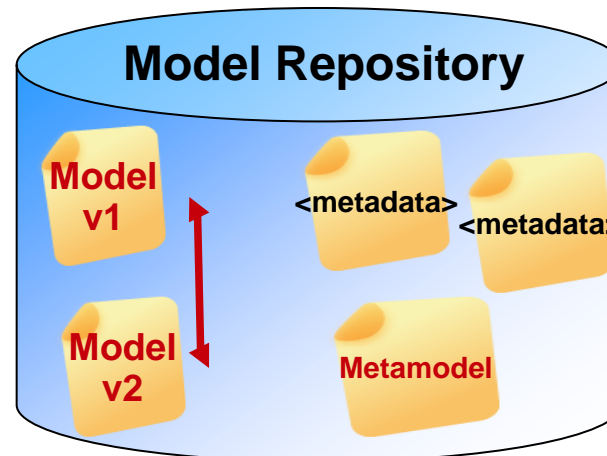
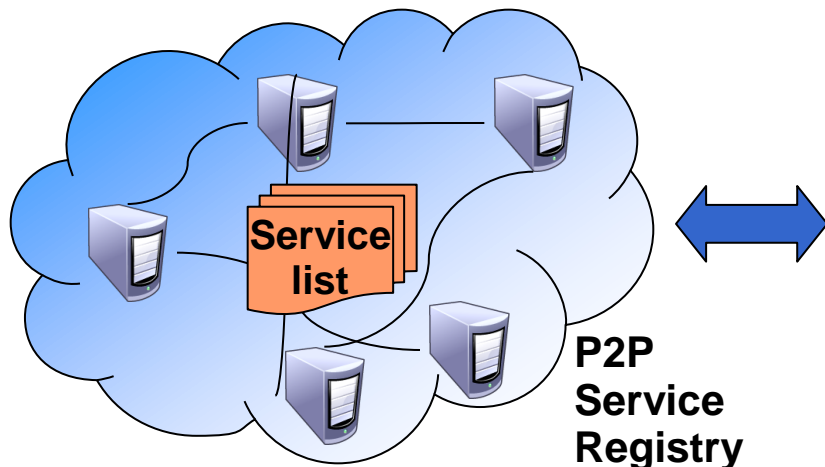
- More than 800 downloads in the last year of the version 1.0 beta (the one delivered by COIN)
- 8 active developers communities
- More than 5k read transactions on SVN





# The COIN P2P Models

- In line with Digital Ecosystem: avoid having a single central server
  - Use of a decentralization technique to create the Registry network.
- Evolutionary aspect: tracing of model versions
  - Implementation of model versioning
- Decoupling between:
  - Service model (IT and Business)
  - Service data
  - Service endpoint
- The registry is an index of services; the repository is a meta-data container



A model is never deleted, but a link is created between versions (Evolutionary aspect).

# The COIN Security Gateway

- Reputation Manager
  - Complete Reputation Conceptual Model, with weighed measurements from SLA (QoS metrics), service descriptions, external references, service provider descriptions, etc
  - Distribution of adapted Reputation measurements among different Partners and Platforms
  - Integration with WSMX
- Trust Negotiation
  - To establish a sufficient level of trust on-line between two negotiating parties through bilateral credential disclosure
    - Definition of negotiation objects, protocols and decision-making model.
    - Specification of Trust Negotiator Architecture.
- Policy Administration
  - Storing and managing of Policy documents (includes wrapping and combination of several Policies in a PolicySet)
  - Analysis of SME Consortium Agreement policy enforcement (based on own COIN Grant Agreement and Consortium Agreement) to obtain a digital Consortium Policy and Semantics
  - Specification of how each Policy Component (Enforcement, Decision, Administration, Information) will behave under the constraints of each kind of Policy.

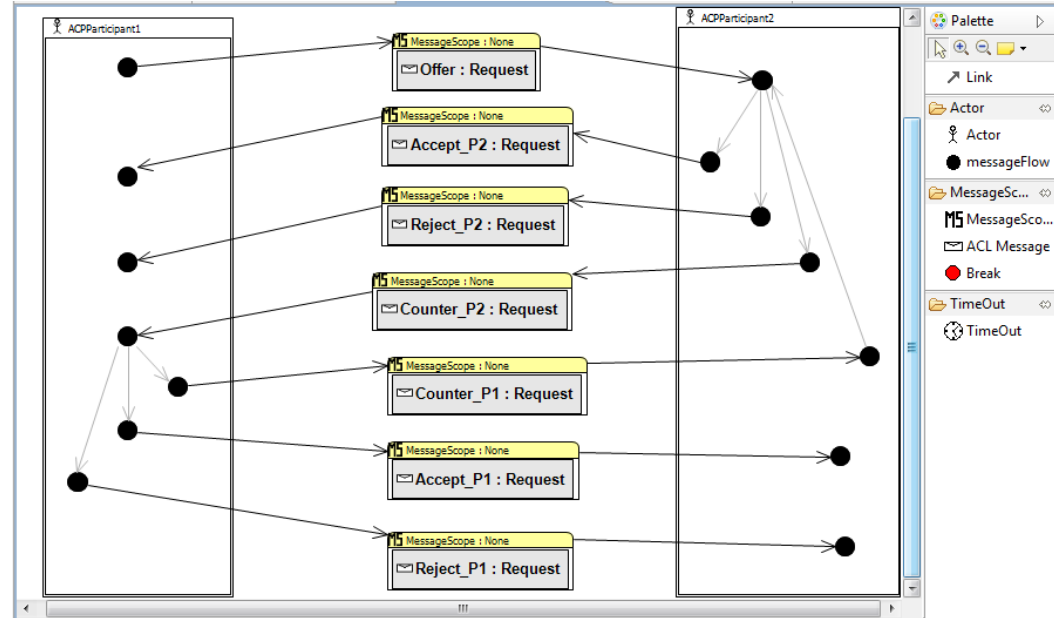
The screenshot shows the COIN Enterprise Reputation Manager web interface. At the top, there is a navigation bar with links for Home, Service Providers, Services, and Reputation. Below this is a section for Reputation Information, which includes input fields for Service ID (containing '4') and Provider ID, along with buttons for 'Get Service Reputation' and 'Get Provider Reputation'. Below the input fields is a table titled 'Reputation Results' showing the following data:

Service ID	4
General Reputation	0.0
Measure Reputation	3.6
Capability Reputation	0.0
Reference Reputation	0.0

The interface also features a COIN logo and the text 'Enterprise Collaboration & Interoperability' at the top. The bottom right corner of the page indicates 'COIN Global Gateway Portal'.



# COIN Reasoning / Negotiation



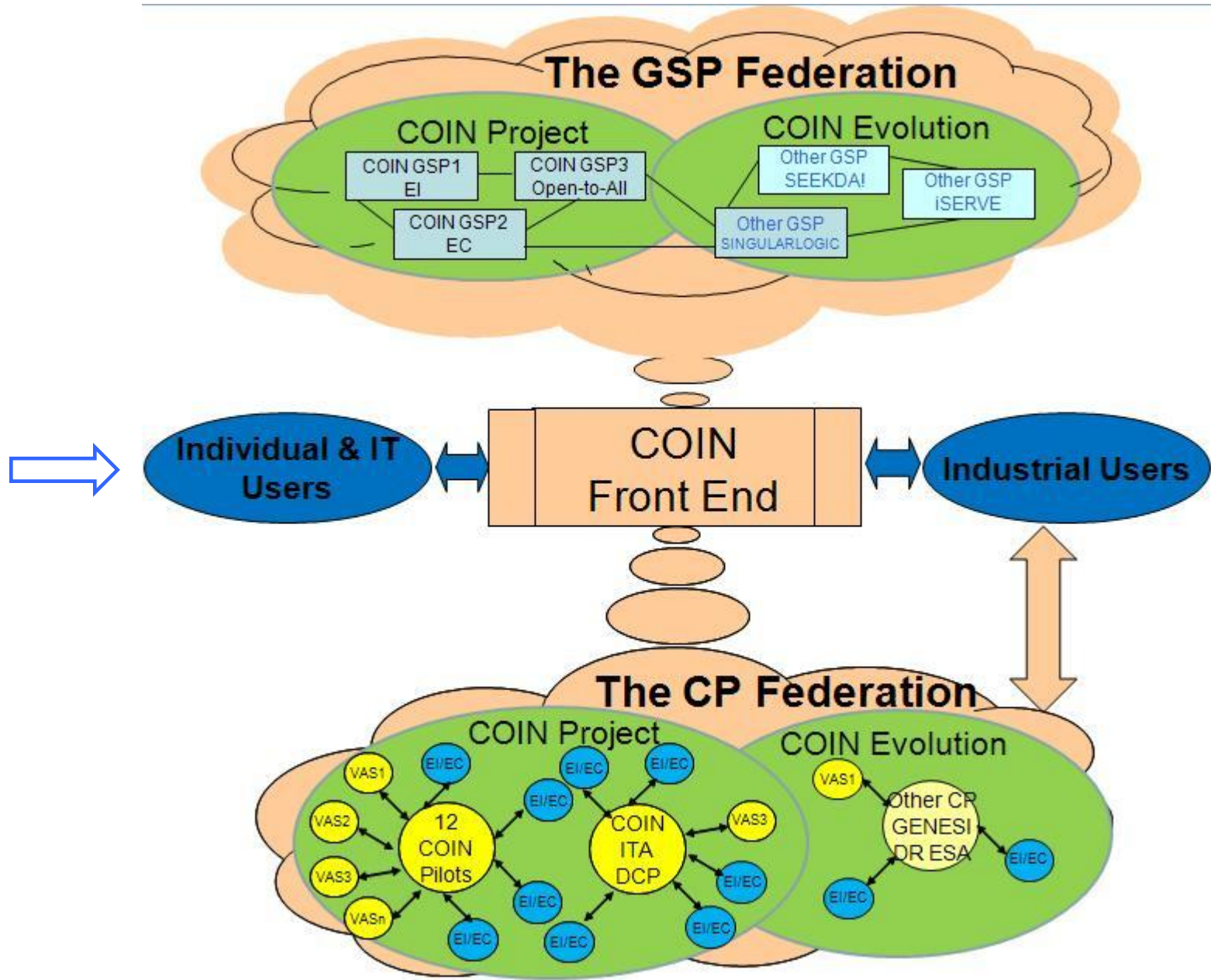
- **Methodology & Tools for „Negotiation as a service“ (NaaS):**

- Create a generic negotiation protocol description
- MDA Transformations to PSM agent-based web application-service
- Configure preparation phase
- Connect to the COIN GSP for service/provider selection

- **Service composition on top of COIN GSP**

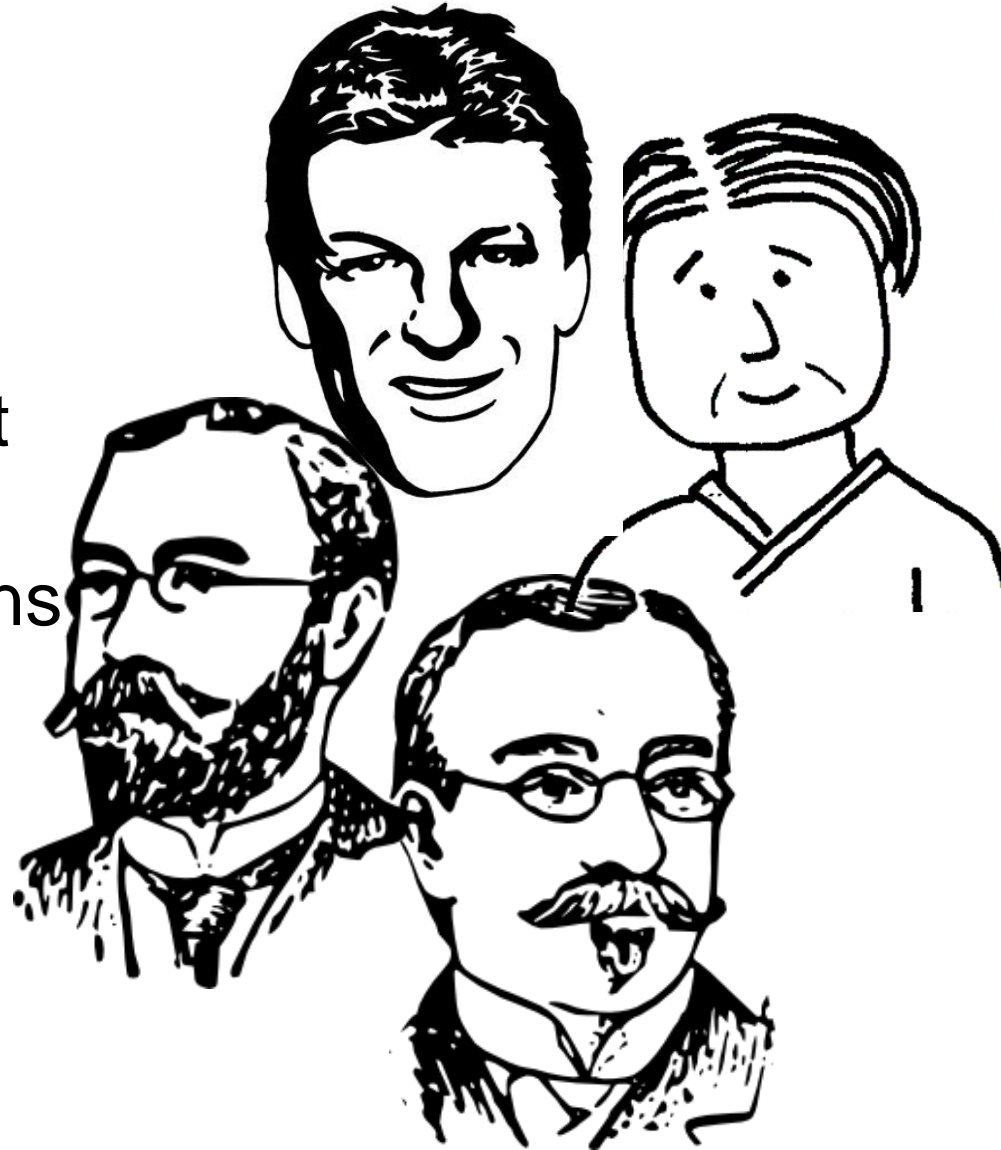
- Model-driven approach
- Flexible composition based on planning techniques

Rapid prototyping of  
new/configurable  
negotiation services

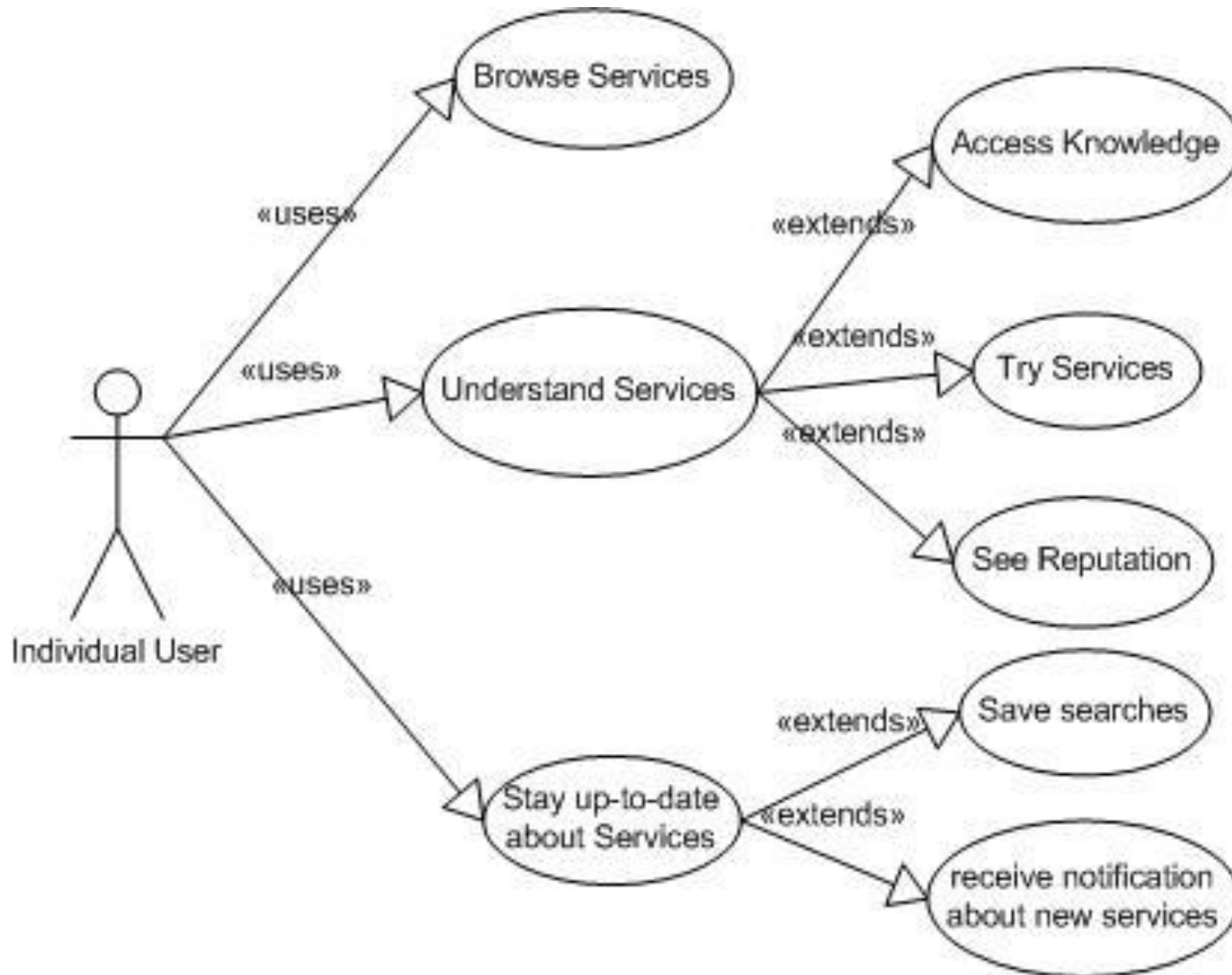


# Who is the individual user?

- Individual user
  - Few or No IT experience
  - No knowledge about ontologies - PRE/POST conditions
  - No time/willing to learn technical stuff



# Which are the offered functionalities?



# Where we were (Y2)

- Single Graphic User Interface role access
  - Search by PRE and POST conditions
  - Rank and display services
  - Show simple information about services
- Search by NFP
  - New services notification in Push

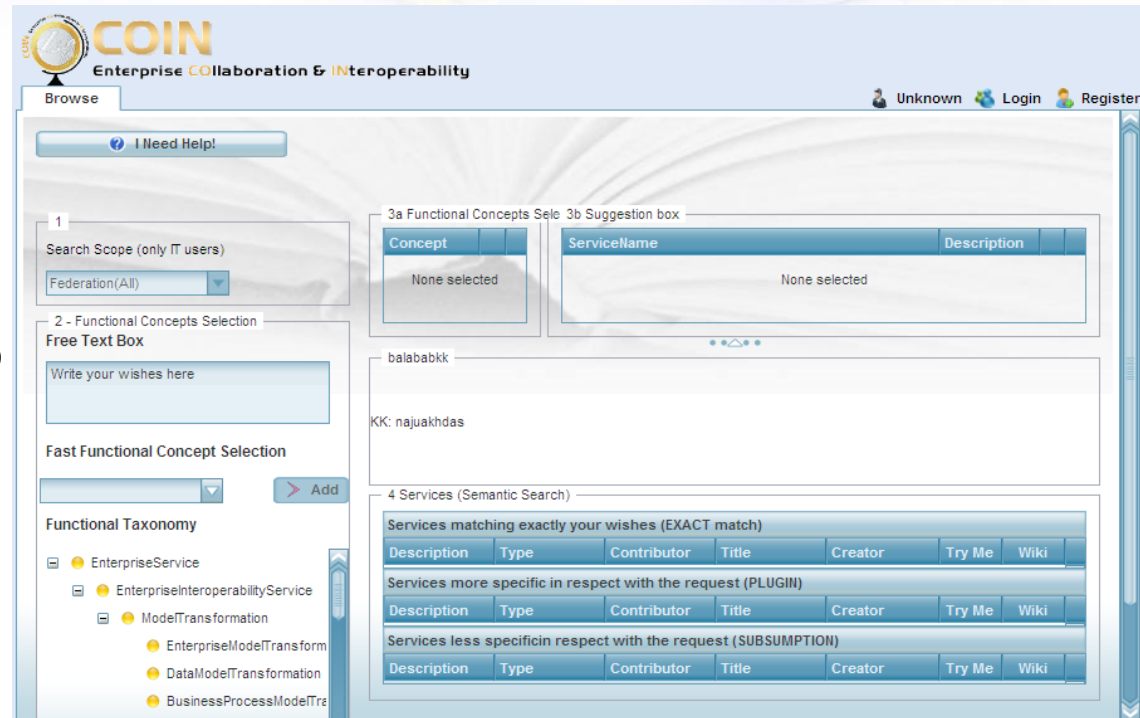
The screenshot displays the 'GSP Goal Composition Form' interface, which is divided into several sections:

- Enterprise Collaboration:** The top header section.
- Preconditions:** A section on the left with the text 'Preconditions describe conditions on the input of the service'. It includes a tree view for selecting research terms and a list of NFP (Non-Functional Properties) with checkboxes and values: Price (checked, 0.3), Time (unchecked), and Quality (unchecked). A 'Remain' field is set to 1.
- Postconditions:** A section on the right with the text 'Postconditions describe the relation between the input and the output of the service'. It also includes a tree view for selecting research terms.
- Type Of Match:** A pop-up window on the right showing search results for 'EXACT' matches. It contains a table with columns for Project, Title, and Description. The results are: COIN (button) and ISURF (button). Below this, the 'PLUGIN' and 'SUBSUMPTION' sections both show 'NO Entries'.

Enterprise Interoperability

# Advancements

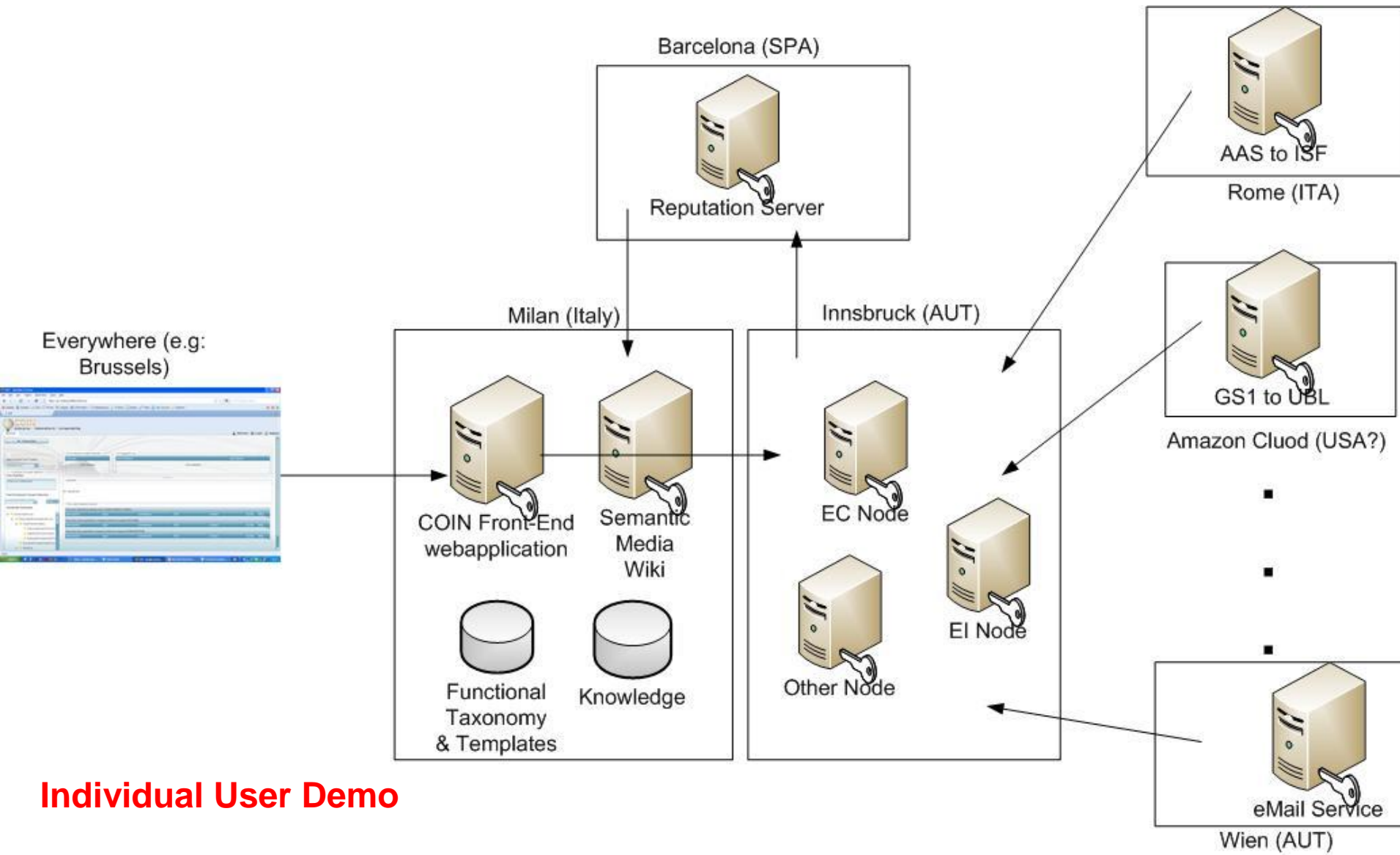
- Totally **new GUI**
  - Labels improved
  - Content displayed improved
  - GUI Integrated support to user
- **New way to browse repository**
  - Functional taxonomy & templates (!)
- Free access to the **knowledge** associated to services (**new**)
- Free access to the **reputation** of services (**new**)



- Functionalities under development
  - New ways to express wishes (e.g: free text)
  - Private page to stay up-to-date with desired services
  - Others will come



# Architecture & Deployment



**Individual User Demo**



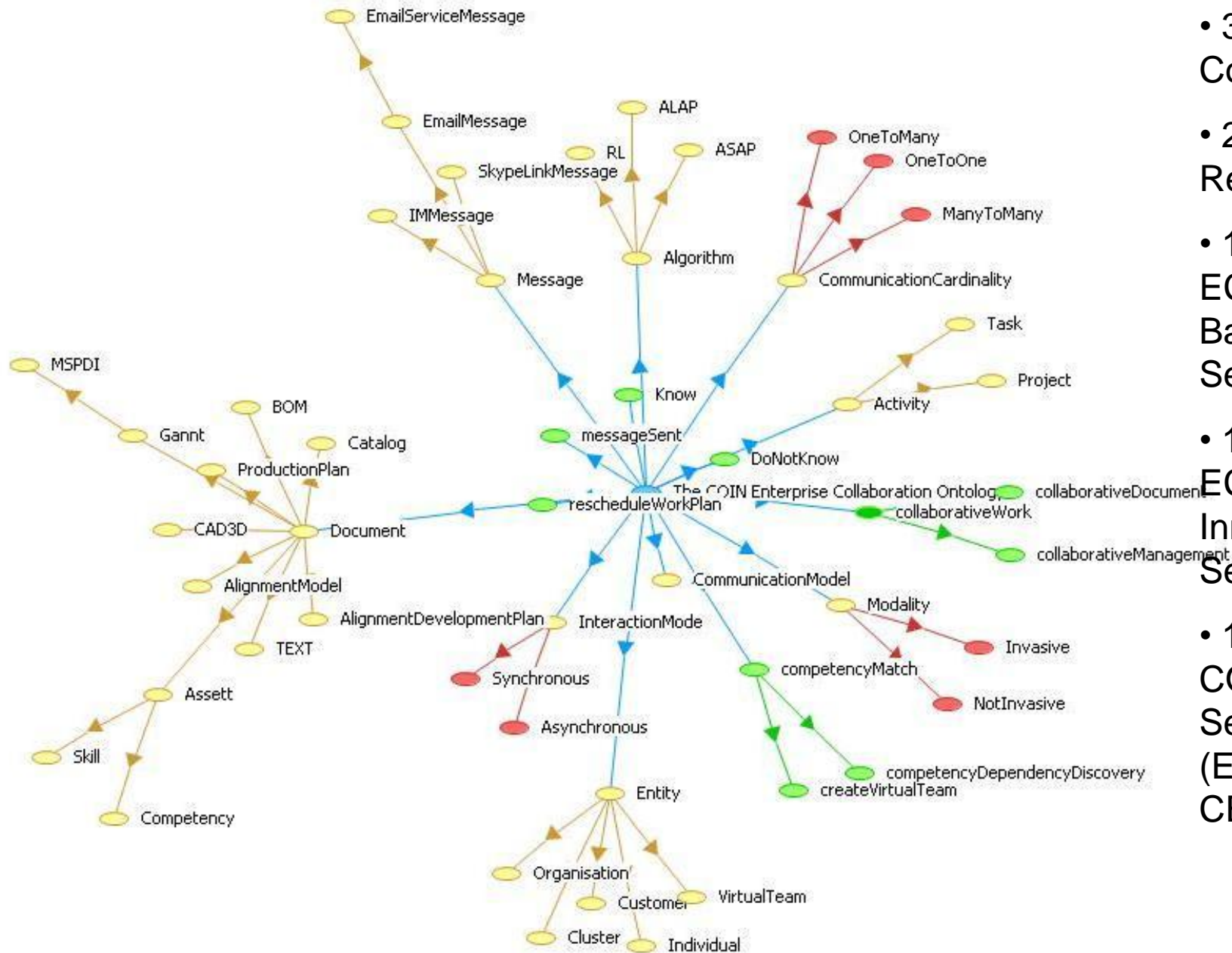
# Who is the IT user?

- IT user
  - IT company
  - Service provider
  - Node provider
  - With or without knowledge about ontologies

# What teh IT User can do?

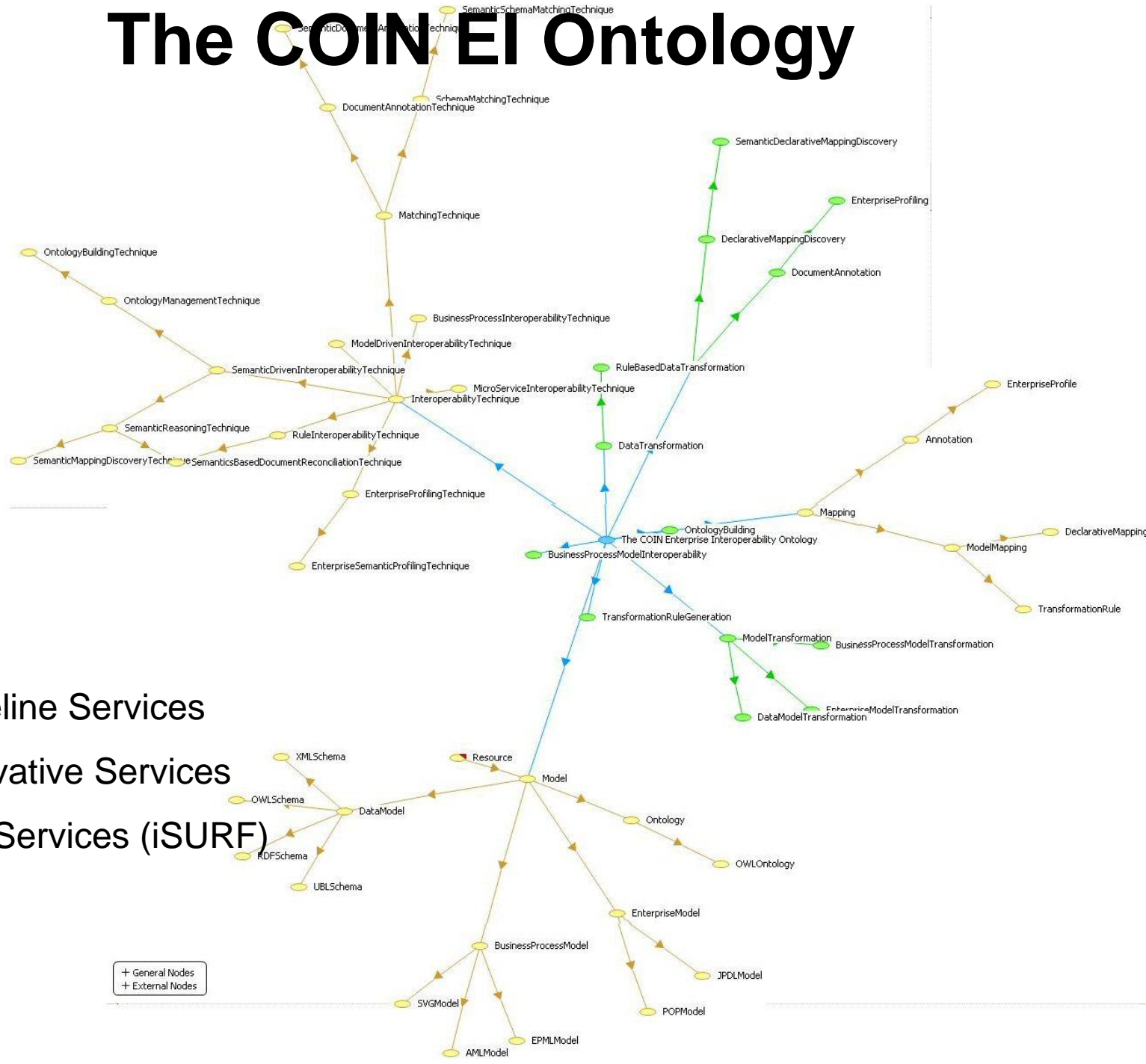
- Individual User Functionalities
- Register a new node
- Register a new service
- Download COIN assets (Open Source)

# The COIN EC Ontology



- 35 Concepts
- 22 Relations
- 10 COIN EC Baseline Services
- 15 COIN EC Innovative Services
- 1 non-COIN EC Service (ECOSPACE)

# The COIN EI Ontology



• 39 Concepts

• 14 Relations

• 7 COIN EI Baseline Services

• 9 COIN EI Innovative Services

• 2 non-COIN EI Services (iSURF)

# Registration process

- Selecting namespace and SWS identifier

The screenshot shows a web browser window titled "WSXM Registry UI" with the address bar displaying "localhost:8050/wsmx-registry-ui/". The page content includes a header with "WSMX Registry UI" and links for "Change EndPoint" and "Logout". A left-hand menu contains options: "List Existing Services", "Add New Service", "New Subscription", and "List Existing Subscriptions". The main content area is titled "Select an existing name space and a name for the service" and contains the following form elements:

- Select Namespace:** A dropdown menu with the selected value "http://www.coin-ip.eu".
- Service Name:** A text input field containing "STIEmailService".
- Next:** A button to proceed to the next step.

# Registration process

- Importing ontologies

The screenshot displays the WSMX Registry UI in a browser window. The page title is "WSMX Registry UI" with links for "Change EndPoint" and "Logout". The main content area is titled "Select ontology and create pre- and post-conditions".

**Menu Pane:**

- List Existing Services
- Add New Service
- New Subscription
- List Existing Subscriptions

**Select Ontology:**

**Imported Ontologies:**

- 
- 

**Pre conditions:**

**Post conditions:**

**Ontology List:**

- EnterpriseCollaborationProcess
- EnterpriseCollaborationOntology
- CommonOntology

# Registration process

- Building pre- and post-conditions

The screenshot displays the WSXM Registry UI interface. The main window title is "WSXM Registry UI" and the address bar shows "localhost:8050/wsmx-registry-ui/". The interface is divided into several sections:

- Menu Pane:** Contains options like "List Existing Services", "Add New Service", "New Subscription", and "List Existing Subscriptions".
- Select ontology and create pre- and post-conditions:** The main dialog area. It features a "Select Ontology:" dropdown menu with "http://www.coin-ip.eu" selected. Below it, "Imported Ontologies:" lists two URLs with "Remove" buttons. There are also "Pre conditions:" and "Post conditions:" sections with "Previous" and "Next" navigation buttons.
- Ontology Tree:** A hierarchical list of ontologies on the right side, including "EnterpriseCollaborationProcess", "MessageAcknowledgment", "EnterpriseCollaborationOntology", "CommunicationModel", "CommunicationCardinality", "InteractionMode", "Modality", "Entity", "Algorithm", "Activity", "Message", "EmailMessage", "Knowledge", "Don't know", "messageSent", "rescheduleWorkPlan", "collaborativeWork", "competencyMatch", "expertDiscovery", "collaborationNetwork", "clusterAlignment", and "CommonOntology".
- Modal Dialog:** A small dialog box is open over the "EmailMessage" ontology, showing a dropdown menu with "memberOf EmailServiceMessage" selected, a "New Variable" button, and "OK" and "Cancel" buttons.



# Registration process

- Building pre- and post-conditions

The screenshot displays the WSMX Registry UI in a browser window. The page title is "WSMX Registry UI" with links for "Change EndPoint" and "Logout". The browser address bar shows "localhost:8050/wsmx-registry-ui/".

**Menu Pane:**

- List Existing Services
- Add New Service
- New Subscription
- List Existing Subscriptions

**Select ontology and create pre- and post-conditions**

Select Ontology:

**Imported Ontologies:**

- <http://www.coin-ip.eu/ontologies/ec#EnterpriseCollaborationOntology> [Remove]
- <http://www.coin-ip.eu/ontologies/ec#EnterpriseCollaborationProcess> [Remove]

**Pre conditions:**

- ?m memberOf <http://www.coin-ip.eu/ontologies/ec#EmailServiceMessage> [Remove]
- ?e memberOf <http://www.coin-ip.eu/ontologies/ec#Individual> [Remove]
- ?d memberOf <http://www.coin-ip.eu/ontologies/ec#Individual> [Remove]

**Post conditions:**

- [http://www.coin-ip.eu/ontologies/ec#EmailmessageSent\(?e, ?m, ?d\)](http://www.coin-ip.eu/ontologies/ec#EmailmessageSent(?e, ?m, ?d)) [Remove]

**Ontology Tree:**

- EnterpriseCollaborationProcess
- MessageAcknowledgment
- EnterpriseCollaborationOntology
  - CommunicationModel
  - CommunicationCardinality
  - InteractionMode
  - Modality
  - Entity
    - Cluster
    - Organisation
    - Individual
    - Customer
    - VirtualTeam
  - Algorithm
  - Activity
  - Message
    - EmailMessage
      - EmailServiceMessage
      - IMMessage
      - SkypeLinkMessage
    - Know
    - DoNotKnow
  - messageSent
    - SMSmessageSent

Buttons: Previous, Next, Add to precondition

# Registration process

- Defining annotations

The screenshot shows a web browser window titled "WSMX Registry UI" with the address bar displaying "localhost:8050/wsmx-registry-ui/". The page header includes "WSMX Registry UI" with links for "Change EndPoint" and "Logout".

The main content area is titled "Insert the annotation you want to add to the service". It contains the following form fields:

- Contributor:**
- Title:**
- Description:**
- Type:**  (dropdown menu)

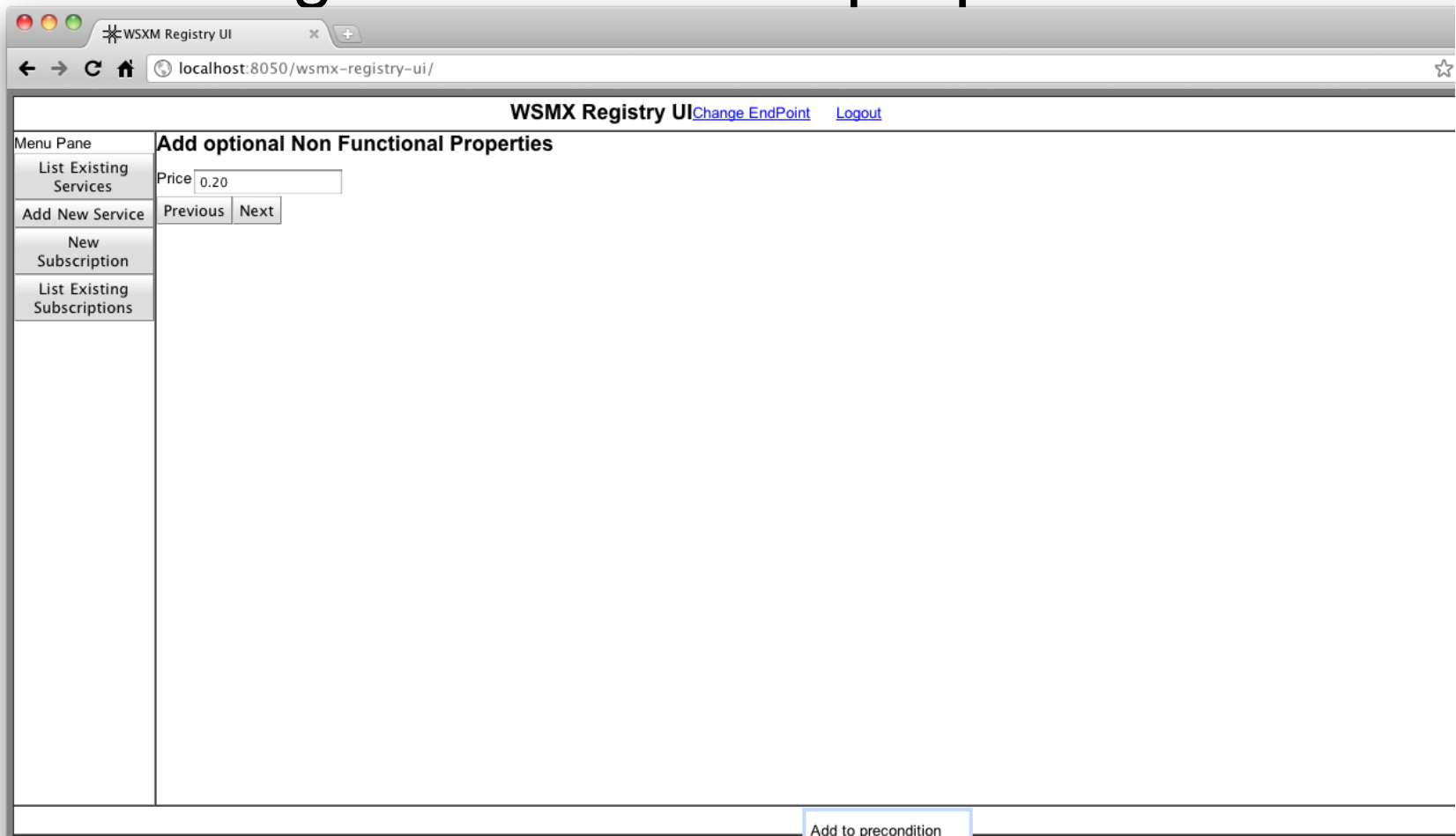
Navigation buttons "Previous" and "Next" are located below the form fields. A "Menu Pane" on the left side contains the following options:

- List Existing Services
- Add New Service
- New Subscription
- List Existing Subscriptions

At the bottom right of the page, there is a button labeled "Add to precondition".

# Registration process

- Defining non-functional properties



The screenshot shows a web browser window titled "WSMX Registry UI" with the address bar displaying "localhost:8050/wsmx-registry-ui/". The page content includes a header with "WSMX Registry UI" and links for "Change EndPoint" and "Logout". A left-hand menu pane contains options: "List Existing Services", "Add New Service", "New Subscription", and "List Existing Subscriptions". The main content area is titled "Add optional Non Functional Properties" and features a "Price" input field with the value "0.20" and "Previous" and "Next" navigation buttons. At the bottom right, there is a button labeled "Add to precondition".

Menu Pane	Add optional Non Functional Properties
List Existing Services	Price <input type="text" value="0.20"/>
Add New Service	<input type="button" value="Previous"/> <input type="button" value="Next"/>
New Subscription	
List Existing Subscriptions	

# Registration process

- Final shape of the service description

The screenshot displays the WSXM Registry UI in a browser window. The address bar shows 'localhost:8050/wsmx-registry-ui/'. The interface is divided into a left sidebar and a main content area.

**Menu Pane (Left Sidebar):**

- List Existing Services
- Add New Service
  - New Subscription
- List Existing Subscriptions

**Select type of service (Main Content Area):**

- Upload
- URL
- WSDL URL:
- Select Ontology:
- Buttons: Previous, Preview, Register!

**Service Description (Main Content Area):**

```
wsm:variant _"http://www.wsmo.org/wsm/wsm-syntax/wsm-rule"
namespace { _"http://www.coin-ip.eu/services/ec#"
'
  def _"http://www.coin-ip.eu/services/ec#"
  pref _"http://www.wsmo.org/ontologies/nfp/preferenceOntology#"
  disc _"http://wiki.wsmx.org/index.php?title=DiscoveryOntology#"
  ns1 _"http://www.coin-ip.eu/ontologies/ec#"
  ns2 _"http://www.coin-ip.eu/ontologies/ecp#" }

webService def#STIEmailService
nonFunctionalProperties
  _"http://purl.org/dc/elements/1.1/description" hasValue "This service is capable of sending email over
by accessing SMTP server in background"
  _"http://purl.org/dc/elements/1.1/type" hasValue _"http://www.coin-ip.eu/service/type#WebService"
  _"http://purl.org/dc/elements/1.1/contributor" hasValue _"http://www.coin-ip.eu/"
  _"http://purl.org/dc/elements/1.1/title" hasValue "STI Innsbruck Email Service"
  pref#Price hasValue def#price
endNonFunctionalProperties

importsOntology
{ _"http://www.coin-ip.eu/ontologies/ec#EnterpriseCollaborationOntology",
  _"http://www.coin-ip.eu/ontologies/ecp#EnterpriseCollaborationProcess"}

capability def#STIEmailServiceCap
nonFunctionalProperties
  disc#discoveryStrategy hasValue {disc#HeavyweightDiscovery, disc#NoPreFilter}
endNonFunctionalProperties

sharedVariables {?d, ?e, ?m}

precondition def#STIEmailServicePre
  definedBy
    ?m memberOf ns1#EmailServiceMessage
  and ?e memberOf ns1#Individual
  and ?d memberOf ns1#Individual.

postcondition def#STIEmailServicePost
  definedBy
    ns1#EmailmessageSent(?e, ?m, ?d).
```

Close

# Registration process

- The service has been registered in the GSP

The screenshot shows a web browser window titled "WSXM Registry UI" with the address bar displaying "localhost:8050/wsmx-registry-ui/". The main content area is divided into two panes. The left pane contains a list of web services, each with a URL. The right pane displays the WSMO description for the selected service, "STIEmailService".

**Web services list:**

- Web service: <http://www.coin-ip.eu/services/ec#ProductManagementService>
- Web service: <http://www.coin-ip.eu/services/ec#CustomerSupportService>
- Web service: <http://www.coin-ip.eu/services/ec#cQMSService>
- Web service: <http://www.coin-ip.eu/services/ei#ARESService>
- Web service: <http://www.coin-ip.eu/services/ec#C3PService>
- Web service: <http://www.coin-ip.eu/services/ec#TISService>
- Web service: <http://www.coin-ip.eu/services/ei#InteroperabilitySpacesAlign>
- Web service: <http://www.coin-ip.eu/services/ec#EmailCommunicationService>
- Web service: <http://www.coin-ip.eu/services/ei#POPService>
- Web service: <http://www.coin-ip.eu/services/ec#NotifyAllIndividualsService>
- Web service: <http://www.coin-ip.eu/services/ec#PAIService>
- Web service: <http://www.coin-ip.eu/services/ec#TOHSService>
- Web service: <http://www.coin-ip.eu/services/ei#ModelTransformationService>
- Web service: <http://www.coin-ip.eu/services/ec#CAMService>
- Web service: <http://www.coin-ip.eu/tutorial/USWeather#USWeatherService>
- Web service: <http://www.coin-ip.eu/services/ec#CVTService>
- Web service: <http://www.coin-ip.eu/services/ec#SkypeService>
- Web service: <http://www.coin-ip.eu/services/ec#STIEmailService>**
- Web service: <http://www.coin-ip.eu/services/ei#GS12UBLExceptionCriteria>
- Web service: <http://www.coin-ip.eu/services/ei#InteroperabilitySpacesAlign>
- Web service: <http://www.coin-ip.eu/services/ec#TXTEmailService>
- Web service: <http://www.coin-ip.eu/services/ei#MassiveService>
- Web service: <http://www.coin-ip.eu/services/ec#TeamBuildService>

**WSDL Description for STIEmailService:**

```
wsm:variant _"http://www.wsmo.org/wsm/wsm-syntax/wsm-rule"
namespace { _"http://www.coin-ip.eu/services/ec#"
'
  def _"http://www.coin-ip.eu/services/ec#"
  pref _"http://www.wsmo.org/ontologies/inf/pref/ontology#"
  disc _"http://wiki.wsmx.org/index.php?title=DiscoveryOntology#"
  ns1 _"http://www.coin-ip.eu/ontologies/ec#"
  ns2 _"http://www.coin-ip.eu/ontologies/ecp#" }

webService def#STIEmailService
  nonFunctionalProperties
    _"http://purl.org/dc/elements/1.1/description" hasValue "This service is capable of sending email over
    by accessing SMTP server in background"
    _"http://purl.org/dc/elements/1.1/type" hasValue _"http://www.coin-ip.eu/service/type#WebService"
    _"http://purl.org/dc/elements/1.1/contributor" hasValue _"http://www.coin-ip.eu/"
    _"http://purl.org/dc/elements/1.1/title" hasValue "STI Innsbruck Email Service"
    pref#Price hasValue def#price
  endNonFunctionalProperties

  importsOntology
    { _"http://www.coin-ip.eu/ontologies/ec#EnterpriseCollaborationOntology",
      _"http://www.coin-ip.eu/ontologies/ecp#EnterpriseCollaborationProcess" }

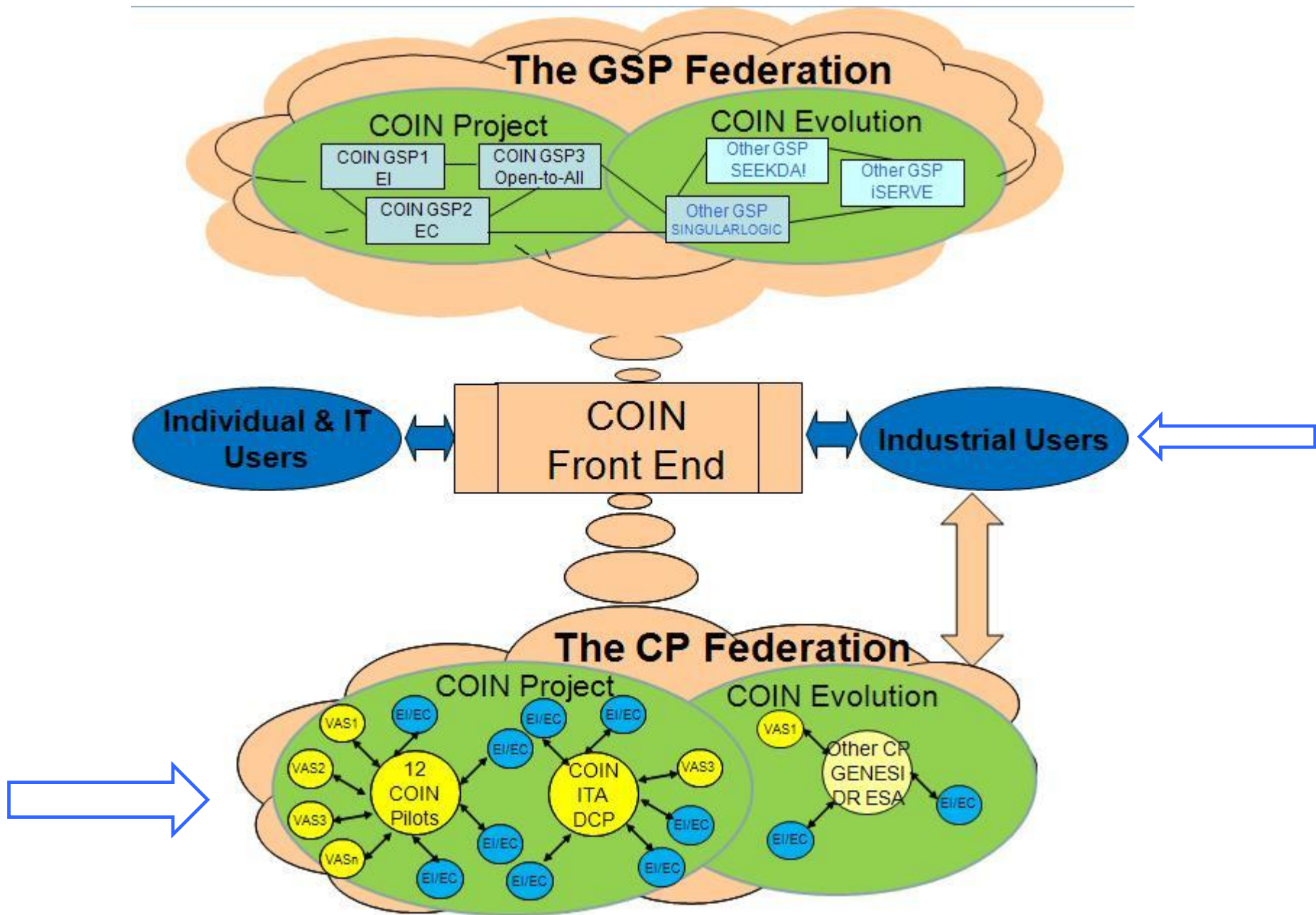
  capability def#STIEmailServiceCap
    nonFunctionalProperties
      disc#discoveryStrategy hasValue { disc#HeavyweightDiscovery, disc#NoPreFilter }
    endNonFunctionalProperties

  sharedVariables {?d, ?e, ?m}

  precondition def#STIEmailServicePre
    definedBy
      ?m memberOf ns1#EmailServiceMessage
      and ?e memberOf ns1#Individual
      and ?d memberOf ns1#Individual.

  postcondition def#STIEmailServicePost
    definedBy
      ns1#EmailMessageSent(?e, ?m, ?d).
```

Close



# Business Process

**COIN**  
Enterprise Collaboration & Interoperability

Welcome Administrator!

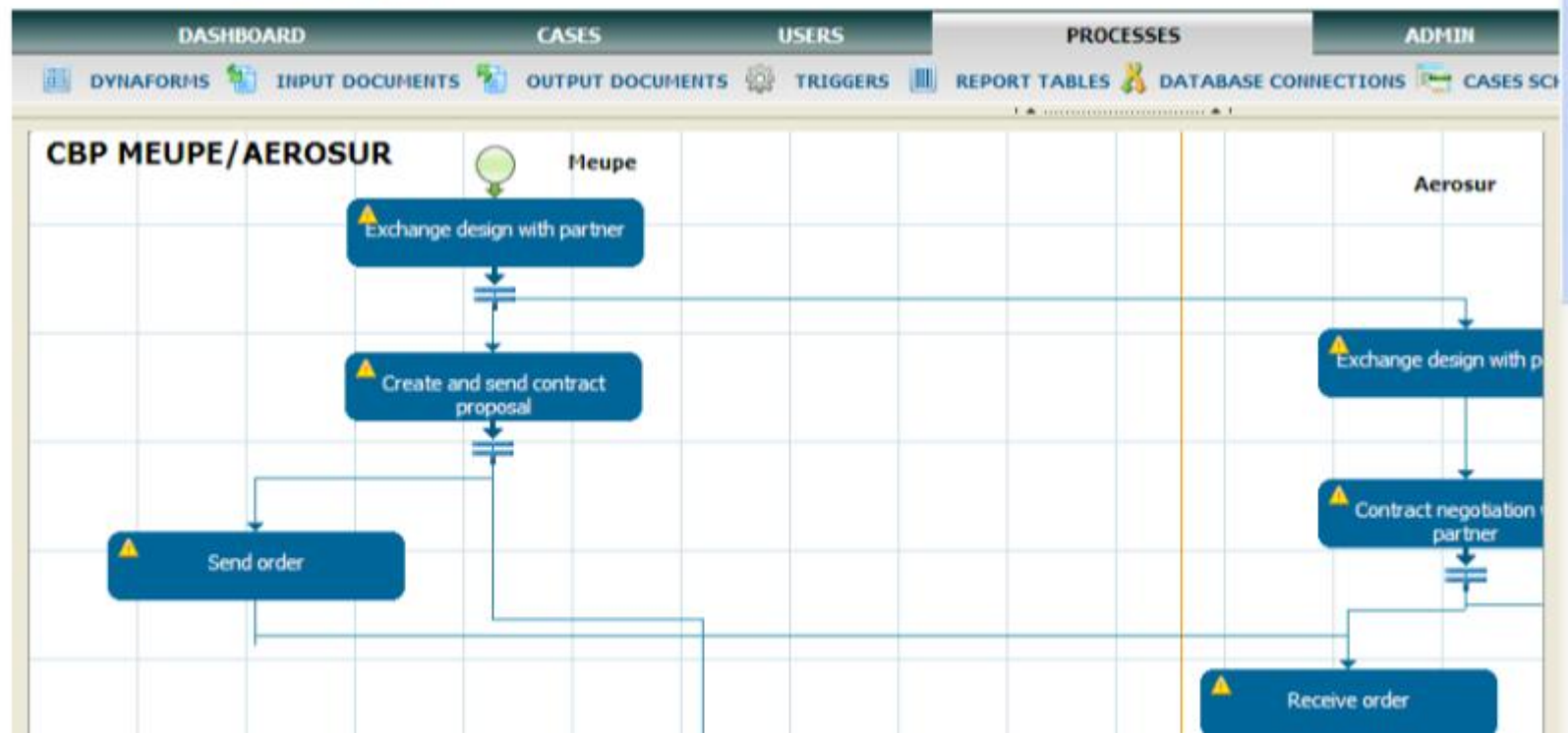
FILAS

Add Page

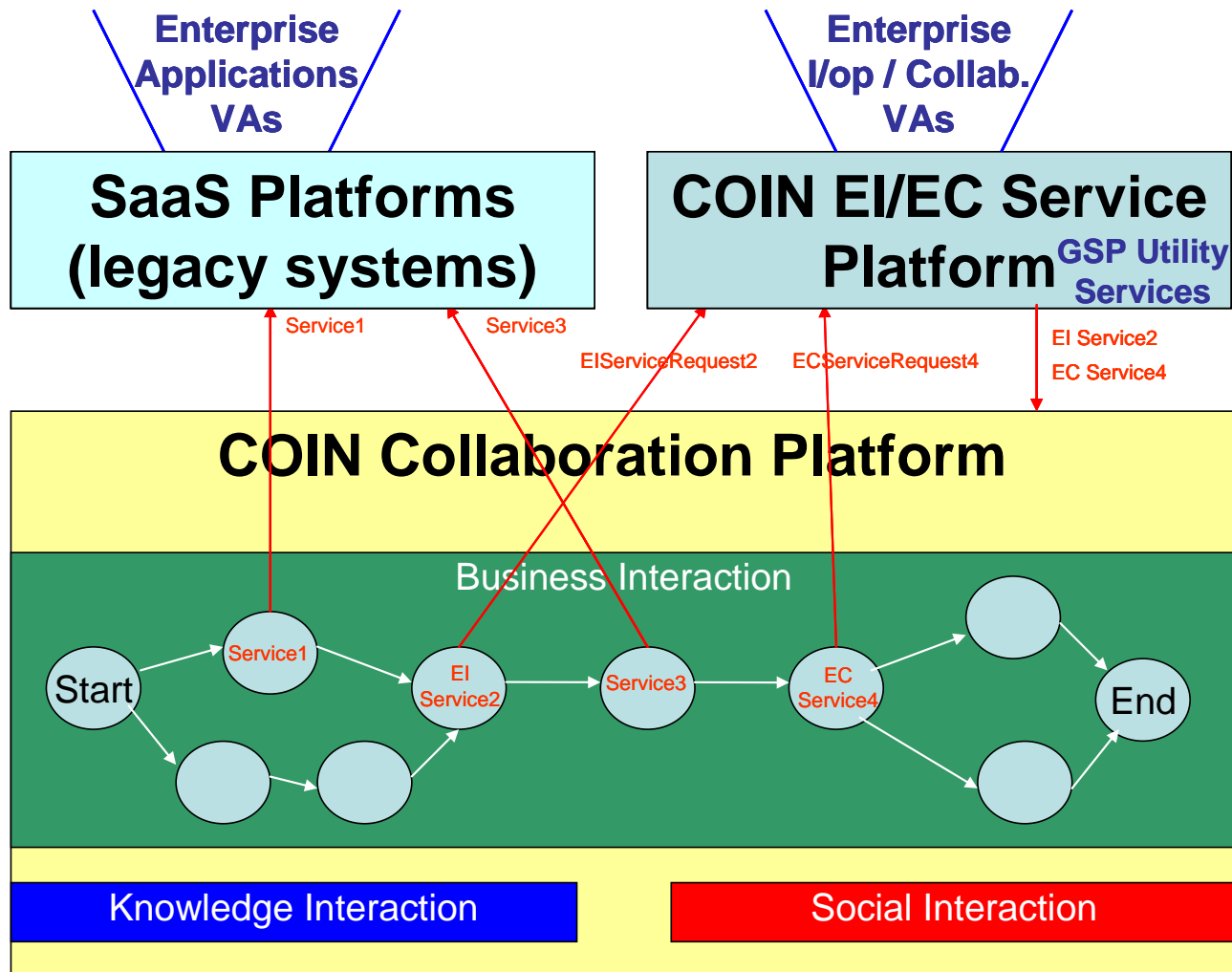
Business Management | Innovative Services | Semantic Reconciliation Suite | Business Opportunity | Calendar | Test

Business Process - [Look and Feel](#) - [Configuration](#) - [Close](#)

**ProcessMaker**<sup>®</sup>  
Workflow Simplified

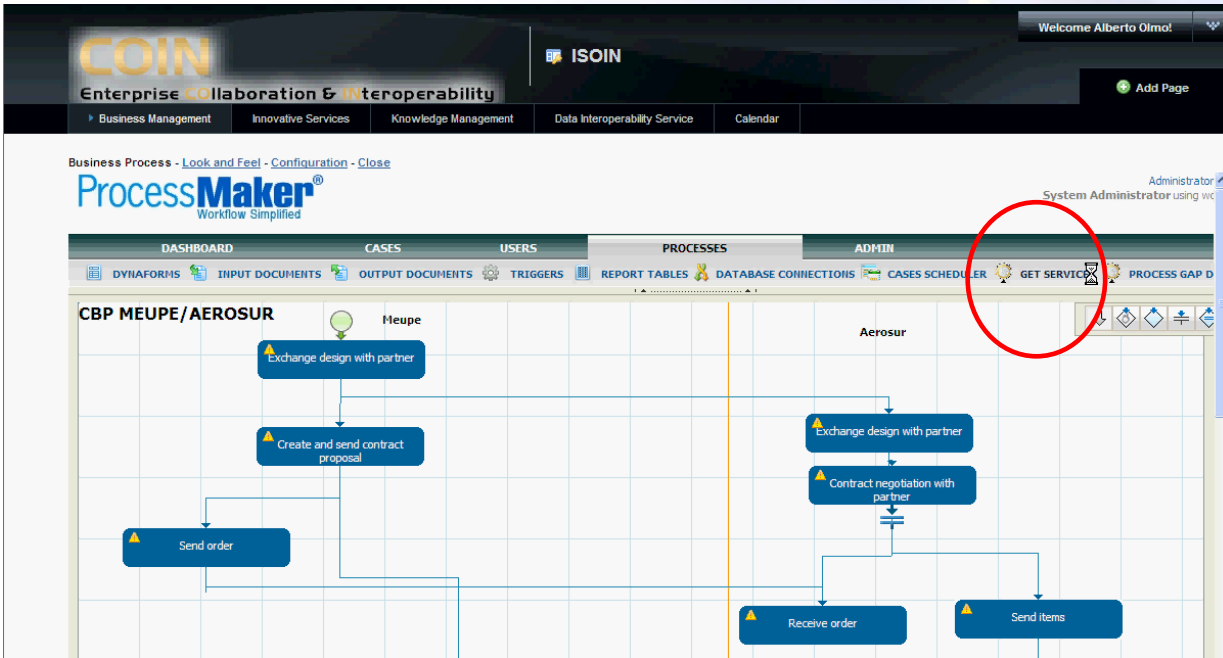


# Services access from the COIN CP (integration Step 2)

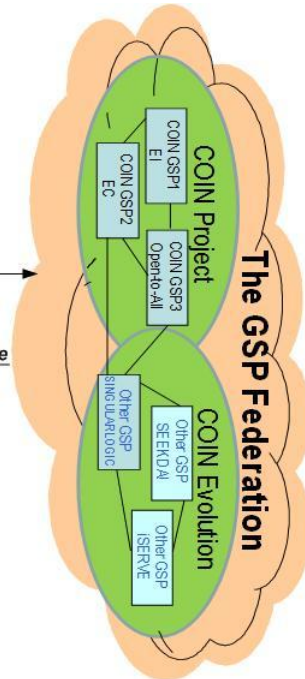
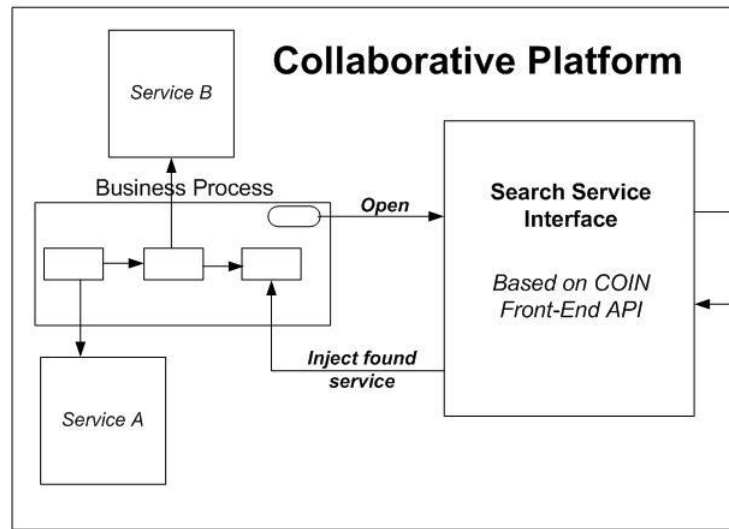




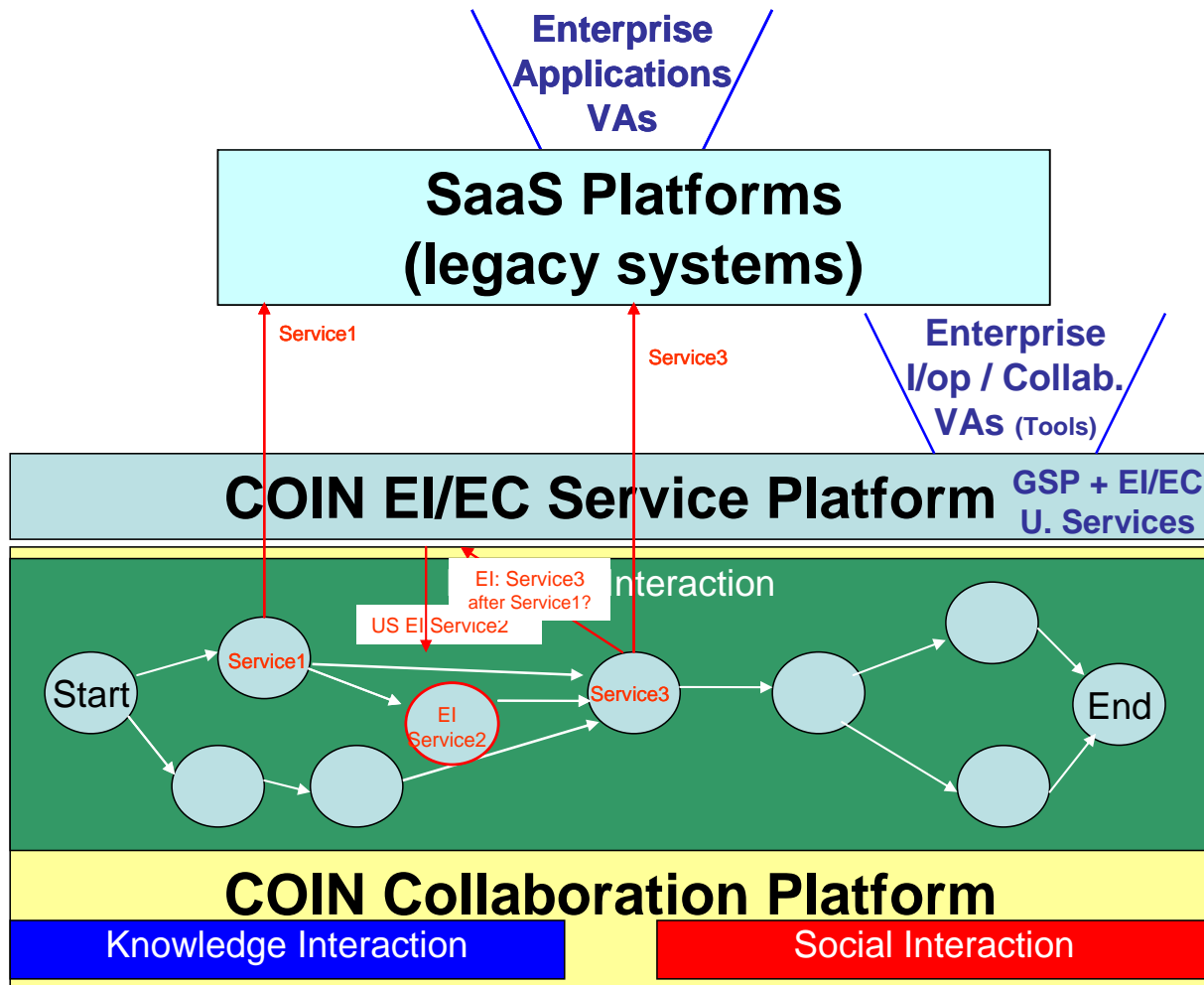
# Services access from the COIN CP



**Step 2 Video**

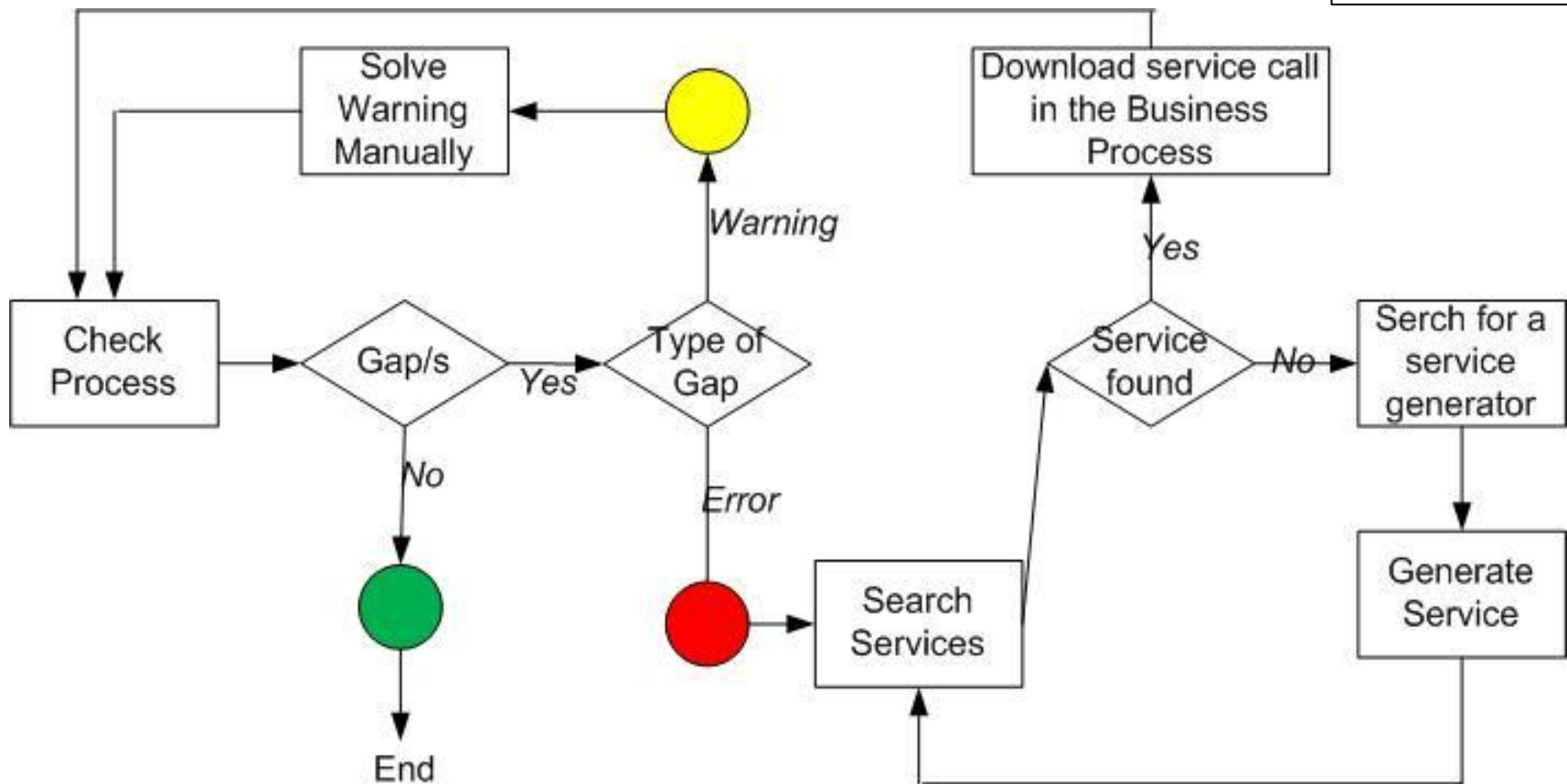


# Services access from the COIN CP (Integration Step 3 - EI)

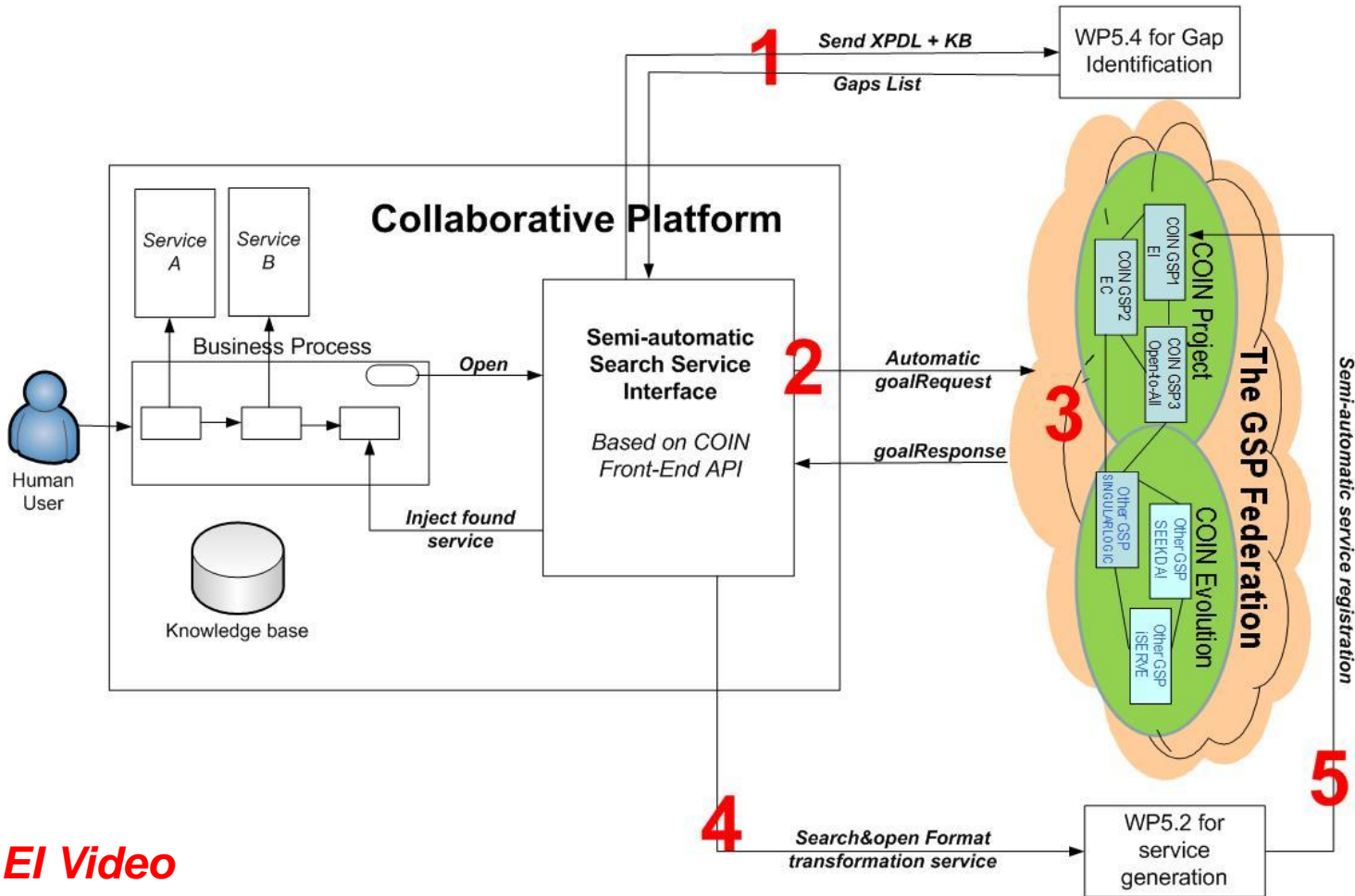


# Services access from the COIN CP (Integration Step 3 - EI)

- Mismatch
- loop

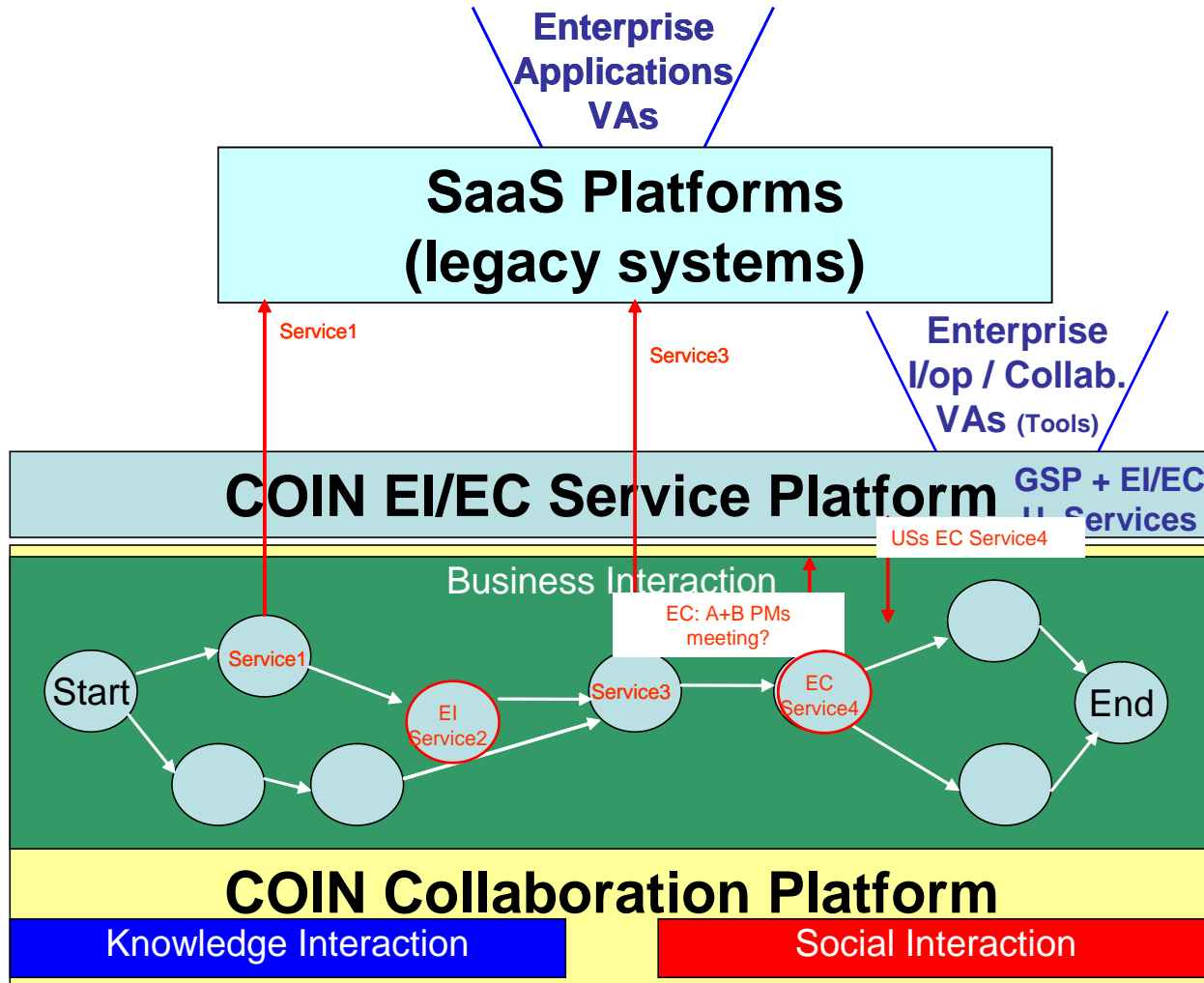


# Services access from the COIN CP (Integration Step 3 - EI)



Step 3 EI Video

# Services access from the COIN CP (Integration Step 3 - EC)



# Services access from the COIN CP (Integration Step 3 - EC)

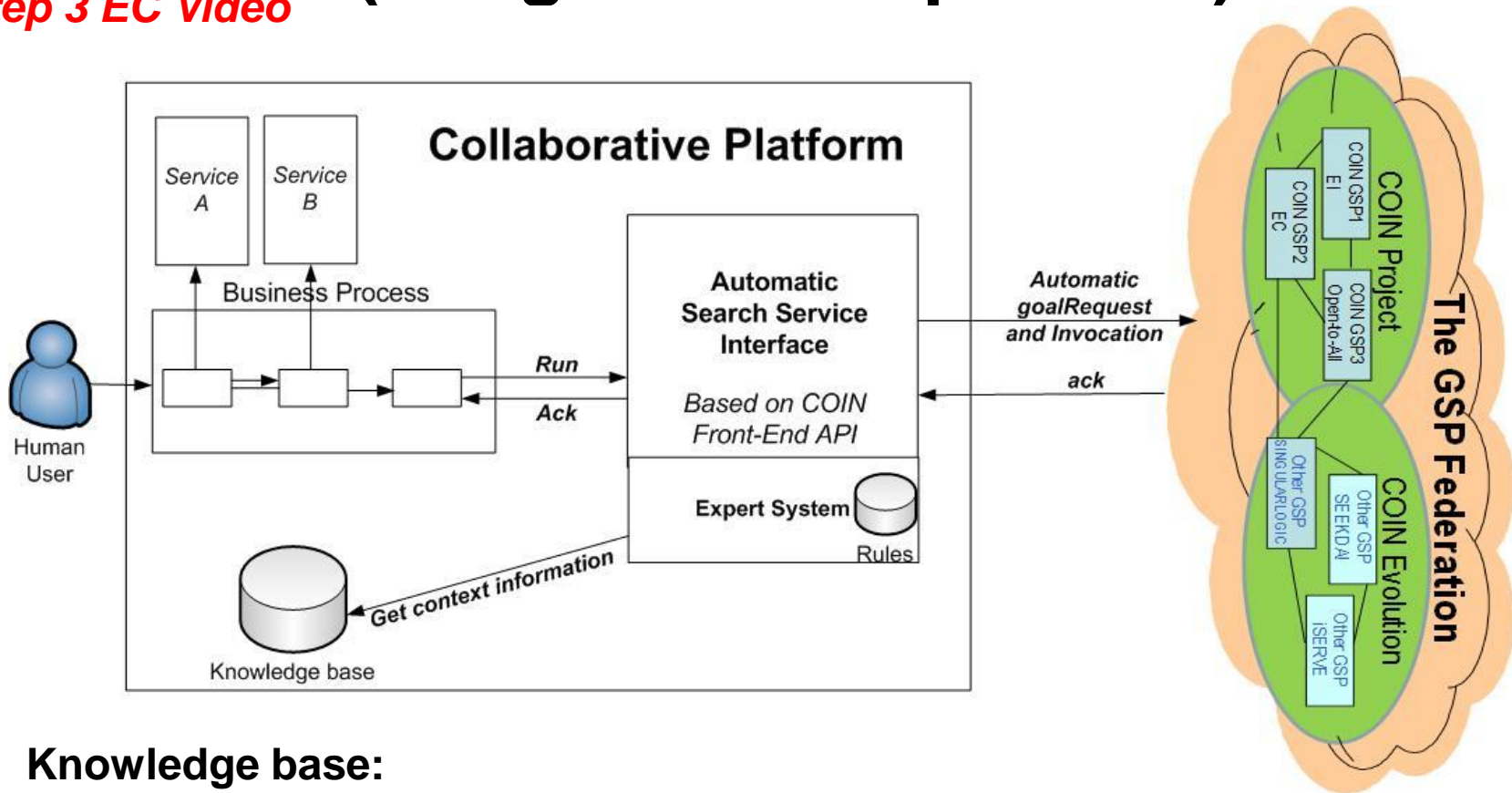
Meeting Process Steps	Meeting Process Templates						
	Kick-off Meeting	Periodic project meeting	Idea generation	Technical meeting	Completion meeting,	Work transition meeting	Ad-hoc meeting
Agenda preparation	■	■	■	■	■		
Selection of Participants	■	■	■	■	■	■	■
Scheduling	■			■	■		
Meeting Invitation	■	■	■	■	■	■	
Asynchronous contribution	■	■	■	■	■	■	
Meeting reminder	■	■	■	■	■	■	
Hosting Meeting	■	■	■	■	■	■	■
Online Collaboration		■	■	■		■	■
Distribution of memo	■	■	■	■	■		■
Follow up		■		■			■

Meeting Invitation

eMail / SMS / IM / Skype chat / Phone call

# Services access from the COIN CP (Integration Step 3 - EC)

Step 3 EC Video



## Knowledge base:

trust == Low/Medium/High (trust among sender and receiver)

priority == Low/High (priority of the task)

availability == free/busy (from the shared agenda) – available in skype (Y/N)

communication profiles == has email (Y/N) has skype (Y/N), etc.

# Enterprise **CO**llaboration & **IN**teroperability



**COIN Winter School**

**COIN System Demos**

**Ljubjana, Nov 29th 2011**

**Michele Sesana**

**TXT e-solutions S.p.A.**