



# Language Technologies for Europe:

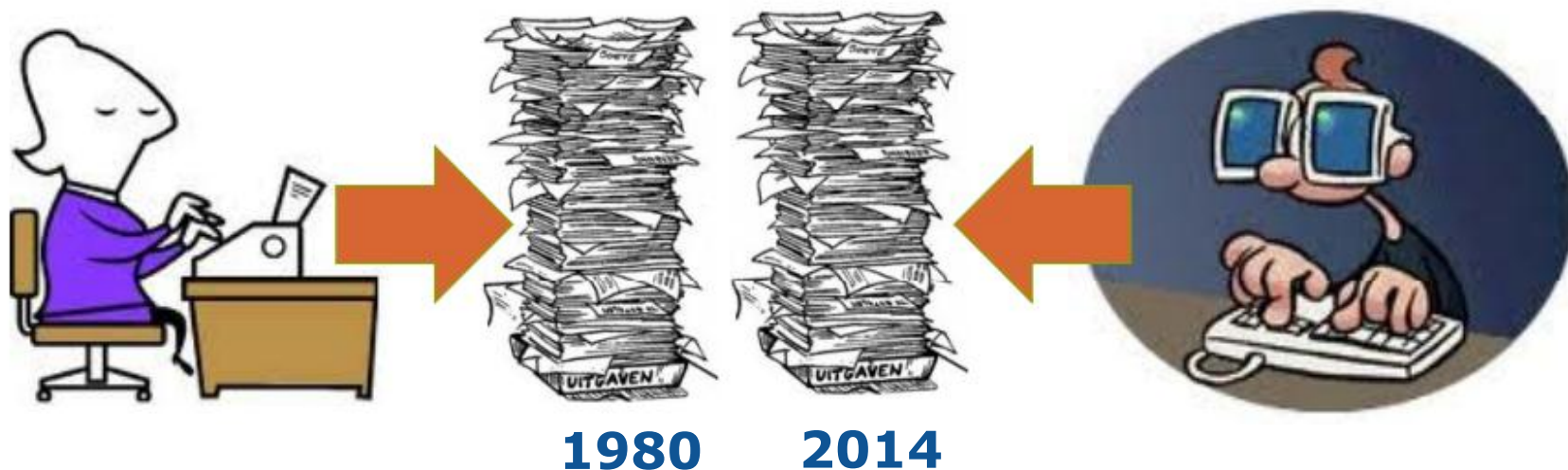
## Public Sector, new approaches for old problems

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## A "stand-still" problem in Public Sector



- ⇒ Most platform's document still 100% narrative
- ⇒ "Structured" documents contain narrative/non-structured information elements
- ⇒ Current controlled vocabularies are insufficient
- ⇒ New "modes/channels" starting to be used





## Real cases of application in Public Sector: Using Language technologies to break the e- Procurement “stand-still inertia”

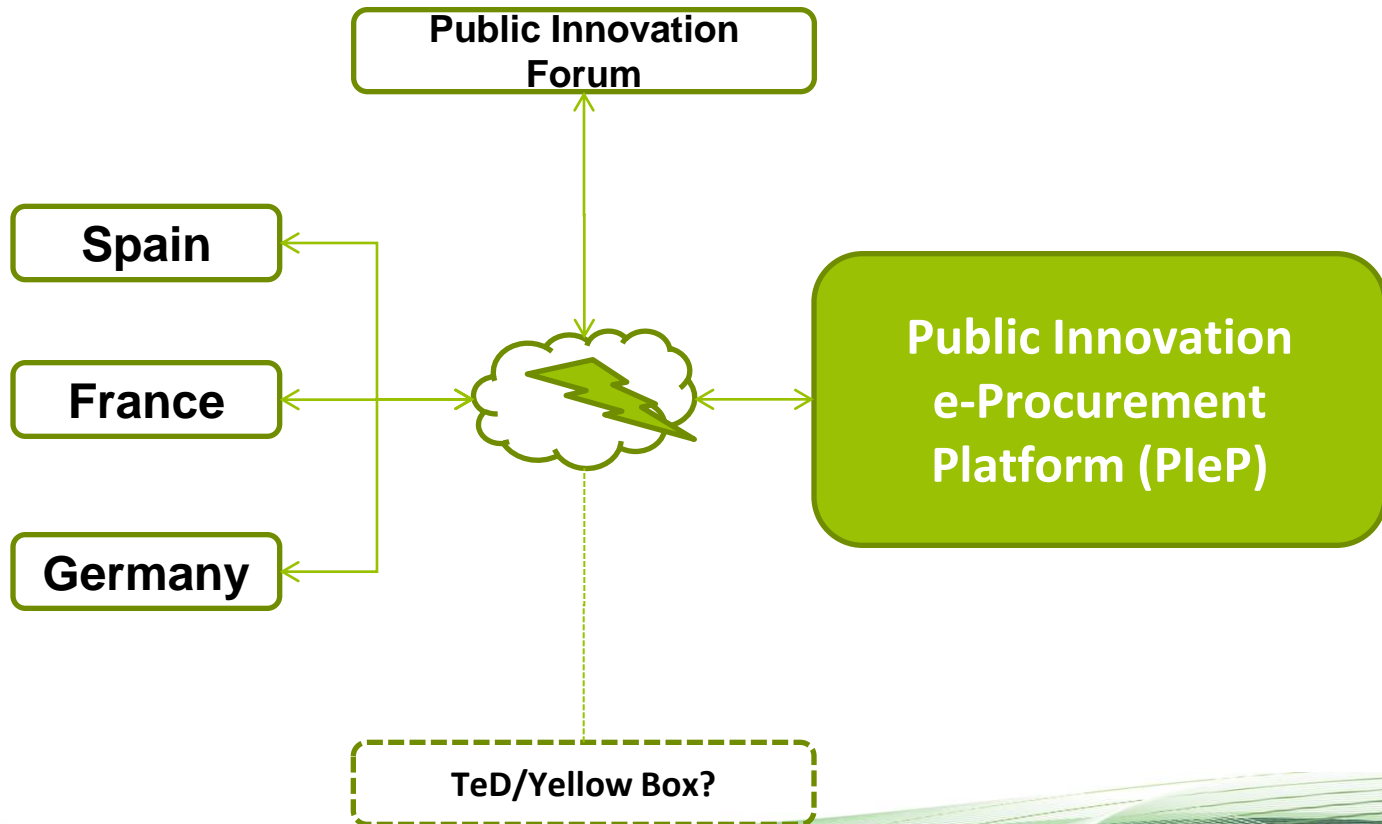
- **Objectives:**

1. For existing narrative multimodal information sources: extract data from them and structure it based on the current e-Procurement standard vocabularies (e.g. OASIS UBL)
2. For new document drafting: Facilitate the user the generation of a kind of narrative information that can be easily (i.e. automatically) transformed into structured data (e.g. special Procurement document drafting assistants)
3. e-Proc. Use Cases: Use the structured data in combination with knowledge/intelligent artefacts to generate added value services (e.g. matching offer and demand. Need for new artefacts: Terminologies, Ontologies, Landscapes, other).



## Public Innovation e-Procurement platform (pilot proposal, based on MS technologies)

Evolve language technologies for Public Sector procurement purposes.





## Public Innovation e-Procurement platform (pilot proposal, based on MS technologies)

*Captures data from different linked sources containing both structured and narrative information.*

Analyses

Assists

*Helps the user to build new contents in a very user-friendly manner. Supports the user on decision-making operations.*

Structures

*Independently of the incoming format it transforms it into structured queryable data. Produces logical inference axioms.*

Public Innovation  
e-Procurement  
Platform  
(PIeP)

Learns

*Integrates the inputs and feeds-back from its own outcomes, the transactional operations and the user behavioural analysis (data access and interoperability as source of knowledge).*

Automates

*Automated operations are launched to provide added-value services such as the discovery of good opportunities for Economic Operators and Contracting Authorities, and **many more**.*

**The PIeP essentials are (1) capturing, (2) structuring and (3) analysing data, most of them generated during the public procurement activity, published in different formats and EU languages**



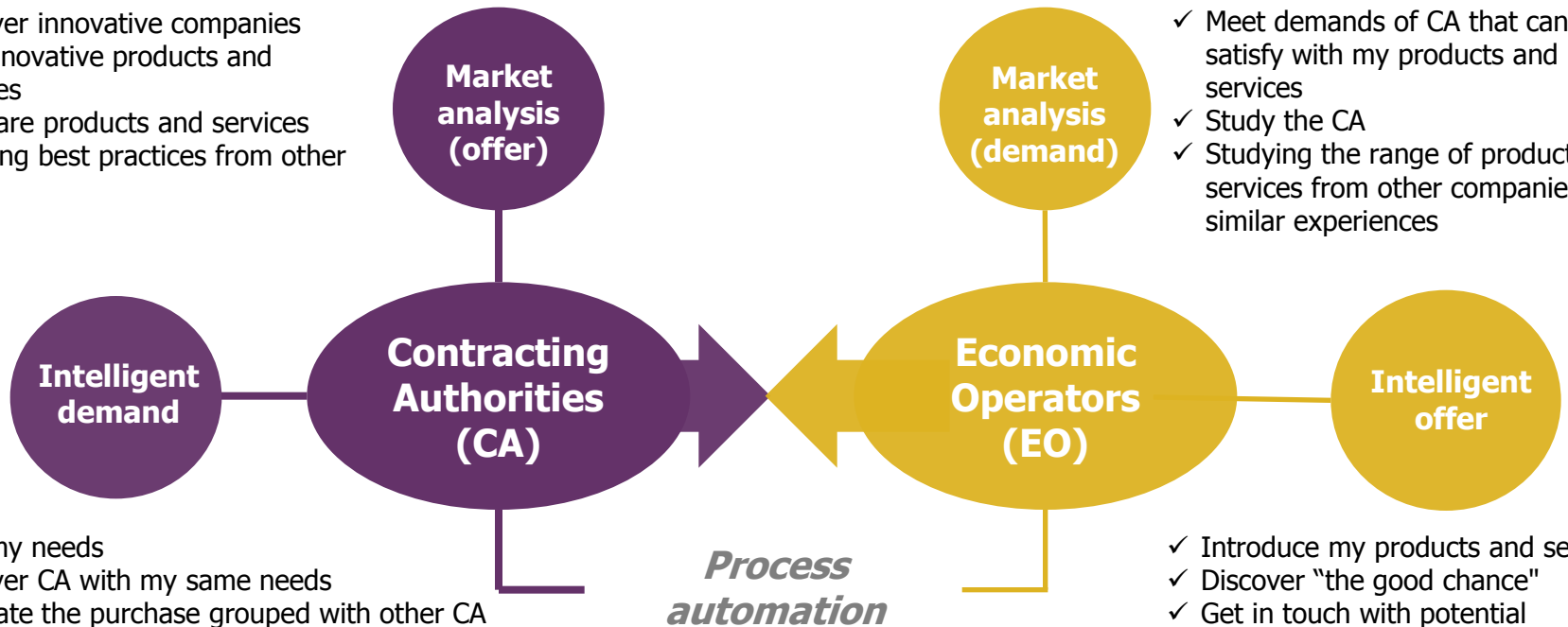


## Public Innovation e-Procurement platform (pilot proposal, based on MS technologies)

**Possible services:** The amount of information generated in the public procurement allows to design a platform with an ambitious functional scope. Its implementation could be limited to a pilot to guarantee automatic and intelligent intersection of supply and demand, as higher value-added service for system agents and basis for the development of downstream services.

- ✓ Discover innovative companies and innovative products and services
- ✓ Compare products and services
- ✓ Knowing best practices from other CA

- ✓ Meet demands of CA that can satisfy with my products and services
- ✓ Study the CA
- ✓ Studying the range of products and services from other companies, and similar experiences



- ✓ Post my needs
- ✓ Discover CA with my same needs
- ✓ Facilitate the purchase grouped with other CA
- ✓ Receive proposed solutions that help configure my final demand

- ✓ Introduce my products and services
- ✓ Discover "the good chance"
- ✓ Get in touch with potential "partners"
- ✓ Receiving "feedback" on my offer



## Elements of the Platform



USER ASSIST.	BASES	MODULES	INTEROP	PRESENTATION
<b>A1</b> CA Profile Tool	Operational	<b>M1</b> Contextual Analysis	<b>I1</b> Between Platforms	<b>P1</b> CA web site
<b>A2</b> EO Profile Tool	Triple Graphs	<b>M2</b> Automatic Translation	<b>I2</b> Between Layers	<b>P2</b> EO web site
	Documents & Artefacts	<b>M3</b> Conceptual Analysis	<b>I3</b> Between Modules	<b>P3</b> Syndication (pull)
	Procurement Ontology	<b>M4</b> Integration & Enrichment	<b>I4</b> With 3rd Parties	<b>P4</b> Notification (push)
	Innovation Landscapes	<b>M5</b> Structuring & Persisting		<b>P5</b> SPARQL End-point
	Controlled Vocabularies	<b>M6</b> Data matching + Inferences		<b>P6</b> UE Federation Linked Open Data
	Non-ontolog. resources	<b>M7</b> Weighting & Summarizing		<b>P7</b> RESTFUL Services
				<b>P8</b> API







## Summary of LT-related needs in e-Procurement

- MULTILINGUALISM: Huge need for translating user interfaces, structured transactional documents, and large narrative documentation into all the EU official languages -> Translations are currently done manually. Automatic translation is perceived a powerful tool for a sound pan-European e-Procurement.
- CONCEPT EXTRACTION: Most information that is narrative could be structured into existing standard e-Documents. Concept extraction could facilitate this task (Need for an Ontology of the Public Procurement)
- MATCHING OFFER AND DEMAND: Both CA and EO have to identify the good business opportunities manually. A Matching engine could be built based on the automatic extraction and comparison of essential concepts.
- SUMMARIZATION: Presenting accurate summaries of the essential content of a Call for Tender (and vice-versa of the essence of a Tender) is critical for swift and balanced man-made decisions.



# MULTISENSOR

- **FP7 research project**

- ⇒ Develops user-driven LT technologies and solutions

- ⇒ Supports e-procurement

- ⇒ Multilingual analysis and machine translation tools

- ⇒ Semantic analysis and concept extraction tools

- ⇒ Semantic reasoning oriented decision support and risk assessment

- ⇒ Decision support and risk assessment for business opportunities

- ⇒ Summarisation of multilingual market information

- <http://www.multisensorproject.eu/>





# Thank you!



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