



Publications Office
of the European Union



<https://op.europa.eu>



Publio

Publications Office intelligent assistant

Webinar, 14th June 2022



Agenda



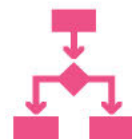
About US



OP Portal



OP Chatbot
features



Technical
Architecture



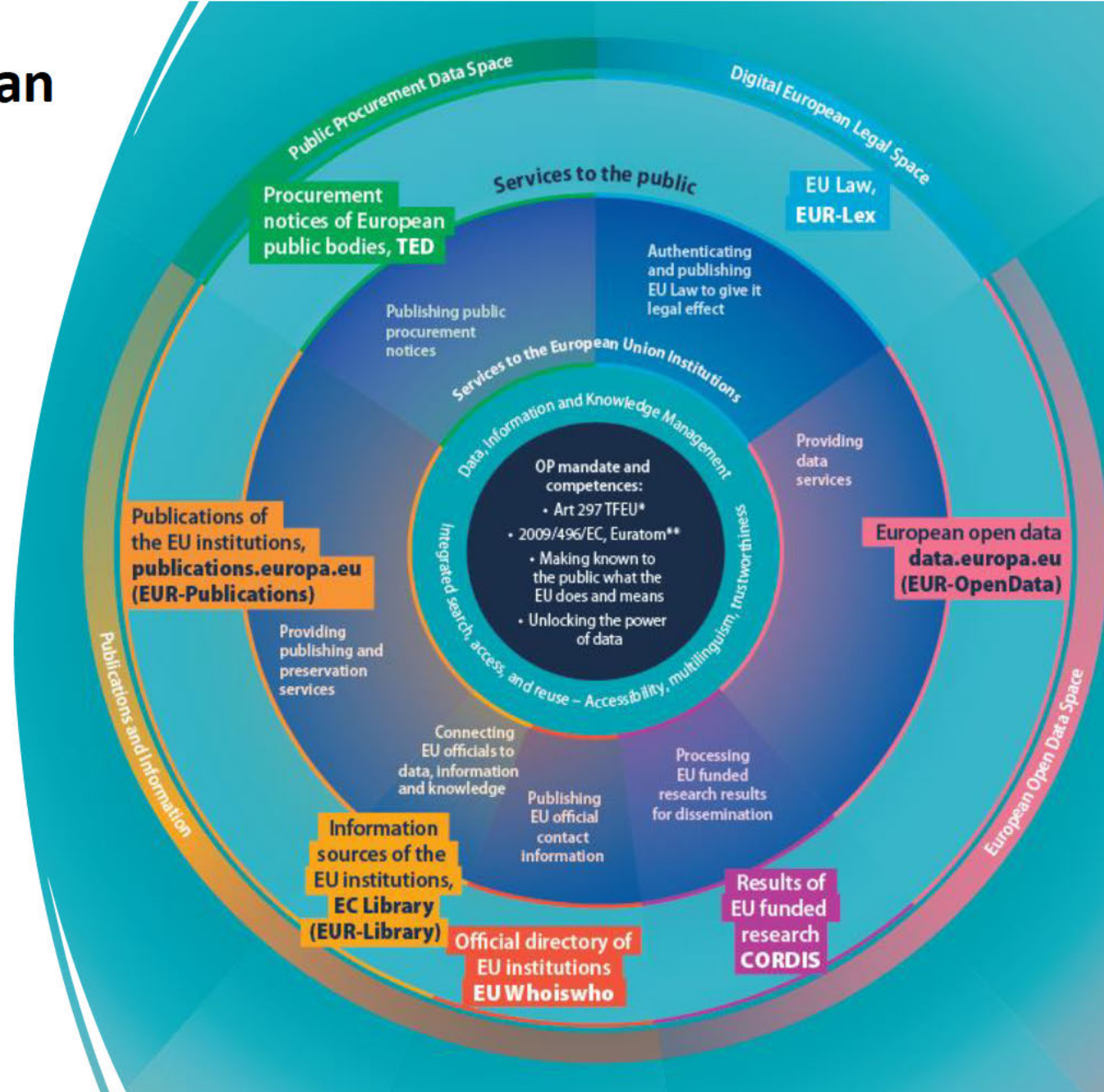
Roadmap



Q&A project

Publications Office of the European Union

- OP: a central point of access to and reuse of EU Publications, EU Law, public data and information
- Digital publishing and digital user experience is core of our activities





Content managed and stored by the Publications Office

In a nutshell:

- EU Law : over 1,1 million legal documents available in all 24 official EU Languages
- EU Publications : over 300 000 publications available in 24 official EU Languages and non EU Languages
- EU Vocabularies: over 5000 publications
- EU officials (Who is who): over 43 000 persons & 8 000 entities
- EU Tenders: (TED) over 2 500 notices per day

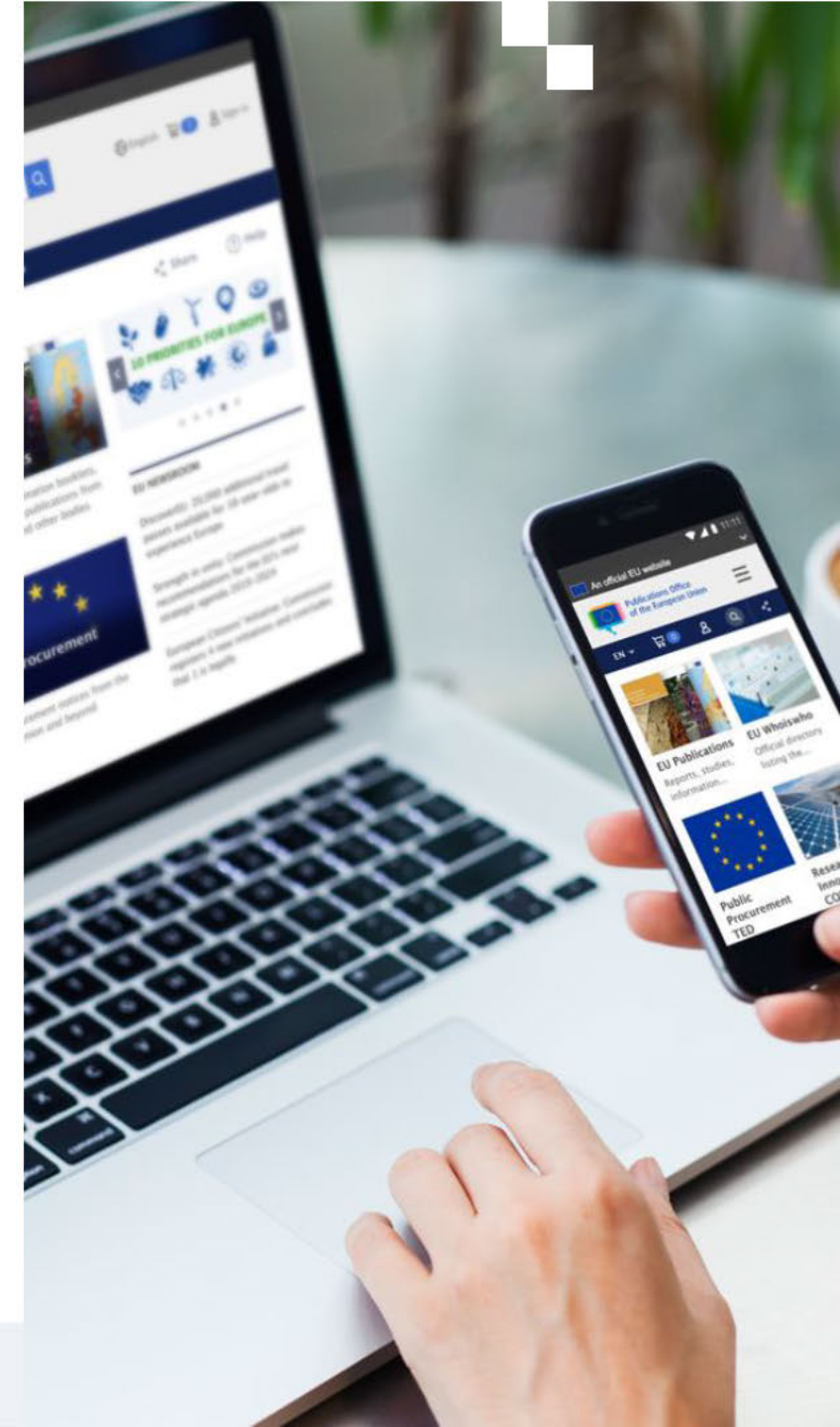


In total: over **30 million documents** (pdf, epub, xhtml,...) in more than **80 languages**



OP Portal

- OP Portal is built as a **platform as a service** allowing instant provisioning of desktop and mobile digital dissemination solutions
- The core activities of the OP Portal **include dissemination of legal and general publications** in a variety of paper and electronic formats, managing a range of websites providing EU citizens, governments and businesses with digital access to official information and data from the EU
- It also provisions multiple **inter-institutional sites**: event sites, inter-institutional Committees, etc.
- Fully **digital experience** to end-users as well as to content managers from the institutions



Publications Office (OP) Portal in 24 official languages

<https://op.europa.eu>

An official website of the European Union How do you know? ▾

Publications Office of the European Union

Search All collections ▾

Advanced search Browse by subject Expert Search

Law European data Public procurement EU Publications Research & Innovation EU Whoswho

Home

Law
EU law, national law and related information

European data
Datasets from the European countries and the EU institutions

Public procurement
Business opportunities in the European Union and beyond

EU Publications
The publications of the EU institutions in various formats

Research & Innovation
Information about the results of EU-funded projects

EU Whoswho
The directory of the European institutions

RESOURCES

EU Vocabularies EU Vocabularies
EU reference data and resources for knowledge management.

EU Web archive
Archive of websites of EU institutions and agencies.

Librarian's corner
Metadata services and European Commission Library resources.

English (en)

Espanol (es)

español (es)

Filipino (tl)

français (fr)

Deutsch (de)

Deutsch (de)

čeština (cs)

čeština (cs)

Ελληνικά (el)

Ελληνικά (el)

English (en)

français (fr)

Gaeilge (ga)

hrvatski (hr)

italiano (it)

latviešu valoda (lv)

litovų kalba (lt)

magyar (hu)

Malta (mt)

Nederlands (nl)

polSKI (pl)

português (pt)

română (ro)

An official website of the European Union How do you know? ▾

Publications Office of the European Union

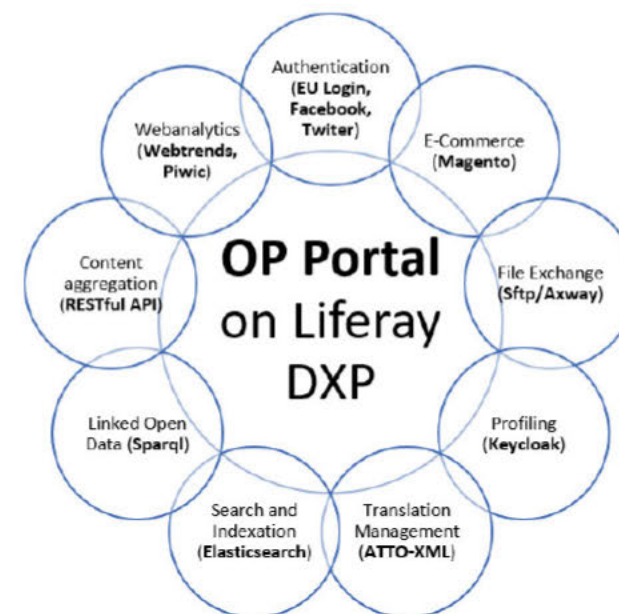
Search EU publications ▾

Advanced search Browse by subject Expert Search

English (en)

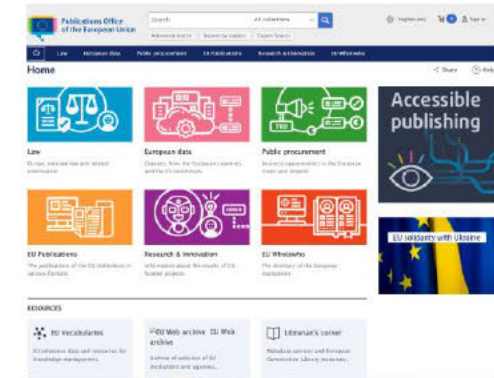
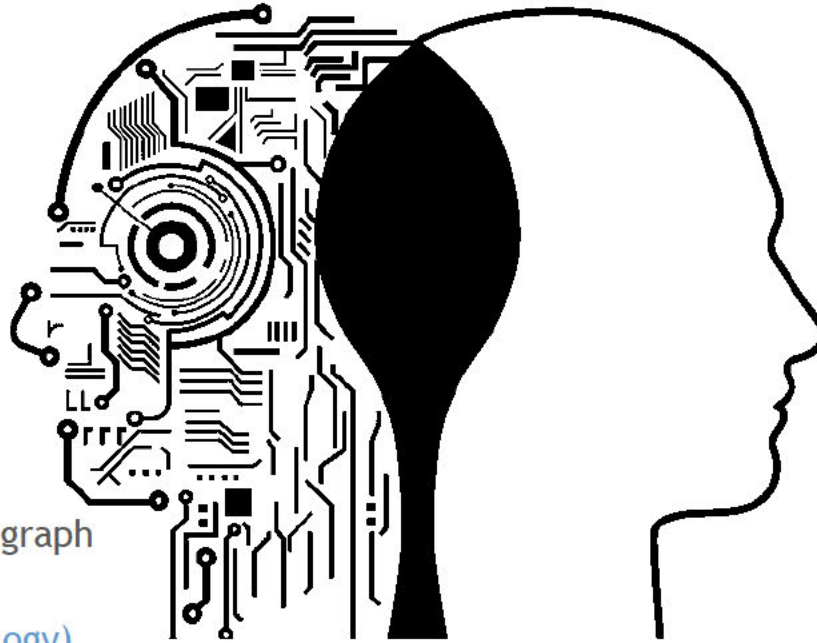
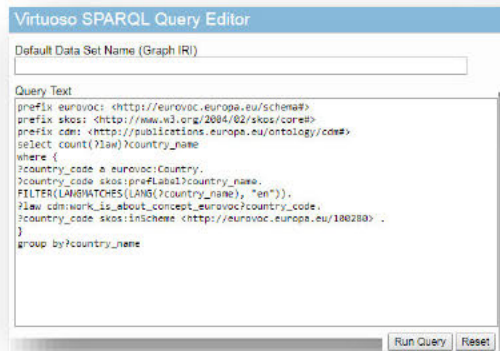
Sign in

LAW EU PUBLICATIONS RESEARCH AND INNOVATION OPEN DATA PUBLIC PROCUREMENT EU WHOISWHO



Access and Reuse - Machine or Human?

End-users, Libraries, Search Engines (Google, Bing), Social Networks, Applications, Catalogues



- SPARQL endpoint - access to knowledge graph
- Identifier based redirections
- [CELLAR Semantic repository \(CDM/ontology\)](#)
 - CDM (Common Data Model) -FRBR-compliant OWL ontology
 - basis for European Legal Identifier implementation
- Reference (master) multilingual data in SKOS/XML
- http content negotiation

- Search, advanced search and refining tools (facets)
- Detail page (access to content, files, metadata)
- Saved publications
- Saved searches and email alerts
- RSS feed
- Widgets



OP Portal - Search and Discoverability

Google like Search

Browse by subject

Advanced Search

Search Wizard

Expert Search

Related publications

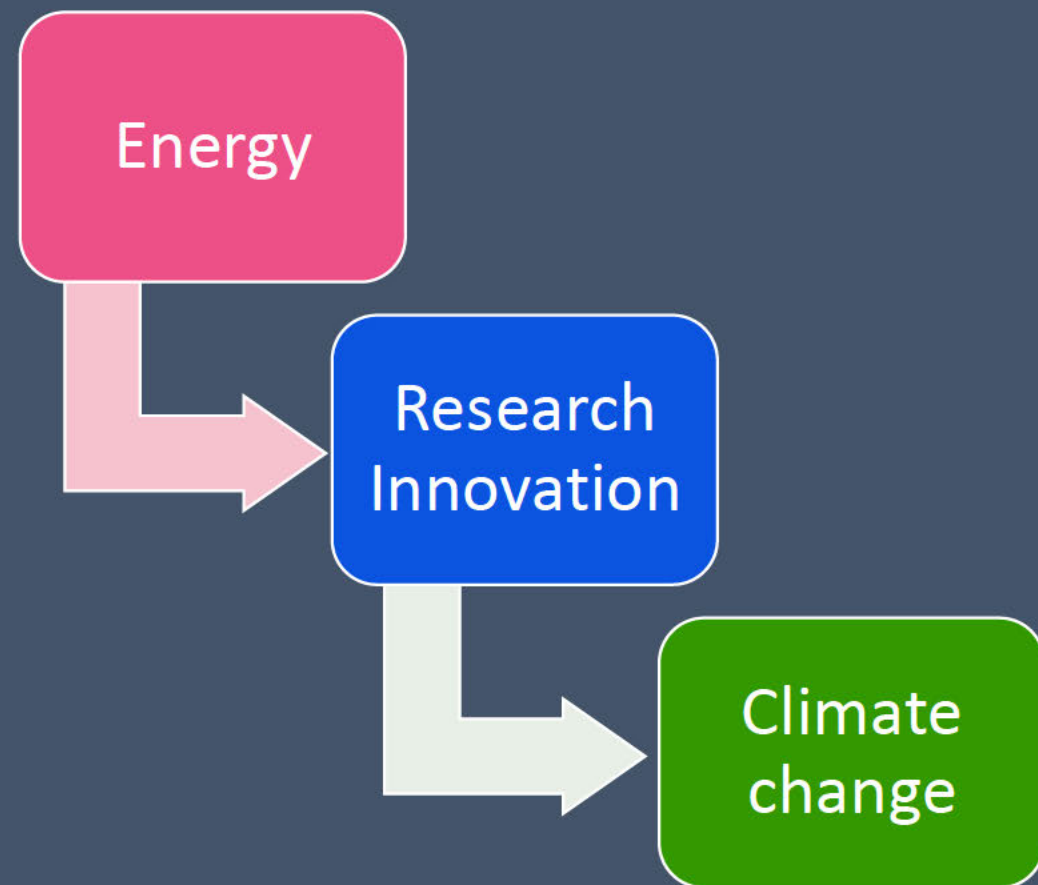
Autocomplete

ELIF

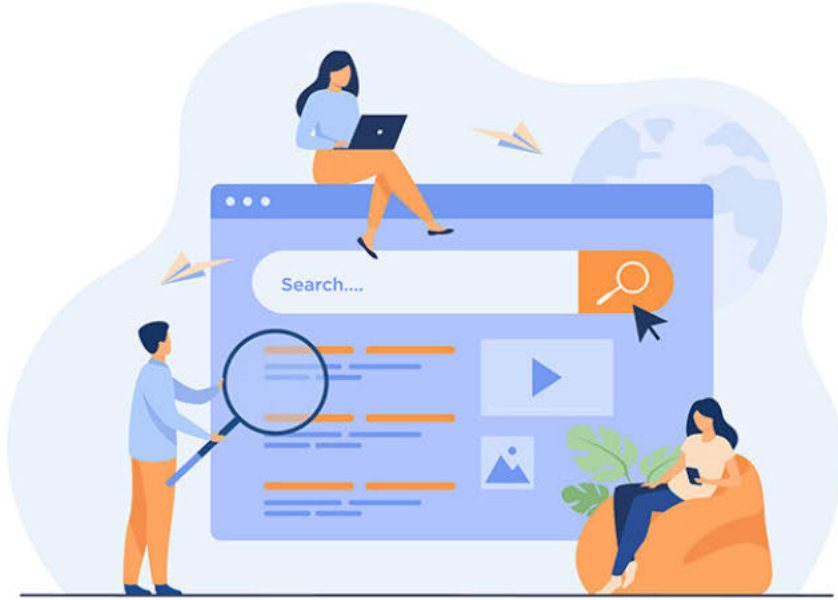


OP ChatBot – problem statement

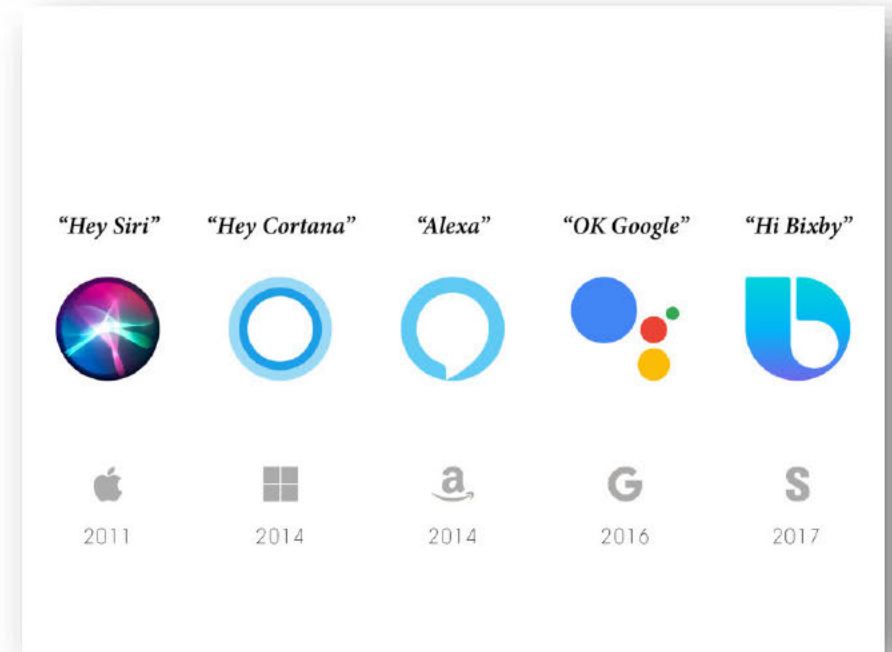
- 5 Search behaviours are detected
 - Corrective Search Refinement
 - Forward Search Refinement
 - Backward Search Refinement
 - Alternative Search Refinement
 - Exploratory Search Refinement
- Only **5%** of the sessions have strongly related keywords
- Only **13%** of the search sessions have two or more keywords
- The existing search functionality meets the needs of a significant plurality of users (Short sessions)**



Search? Seriously?



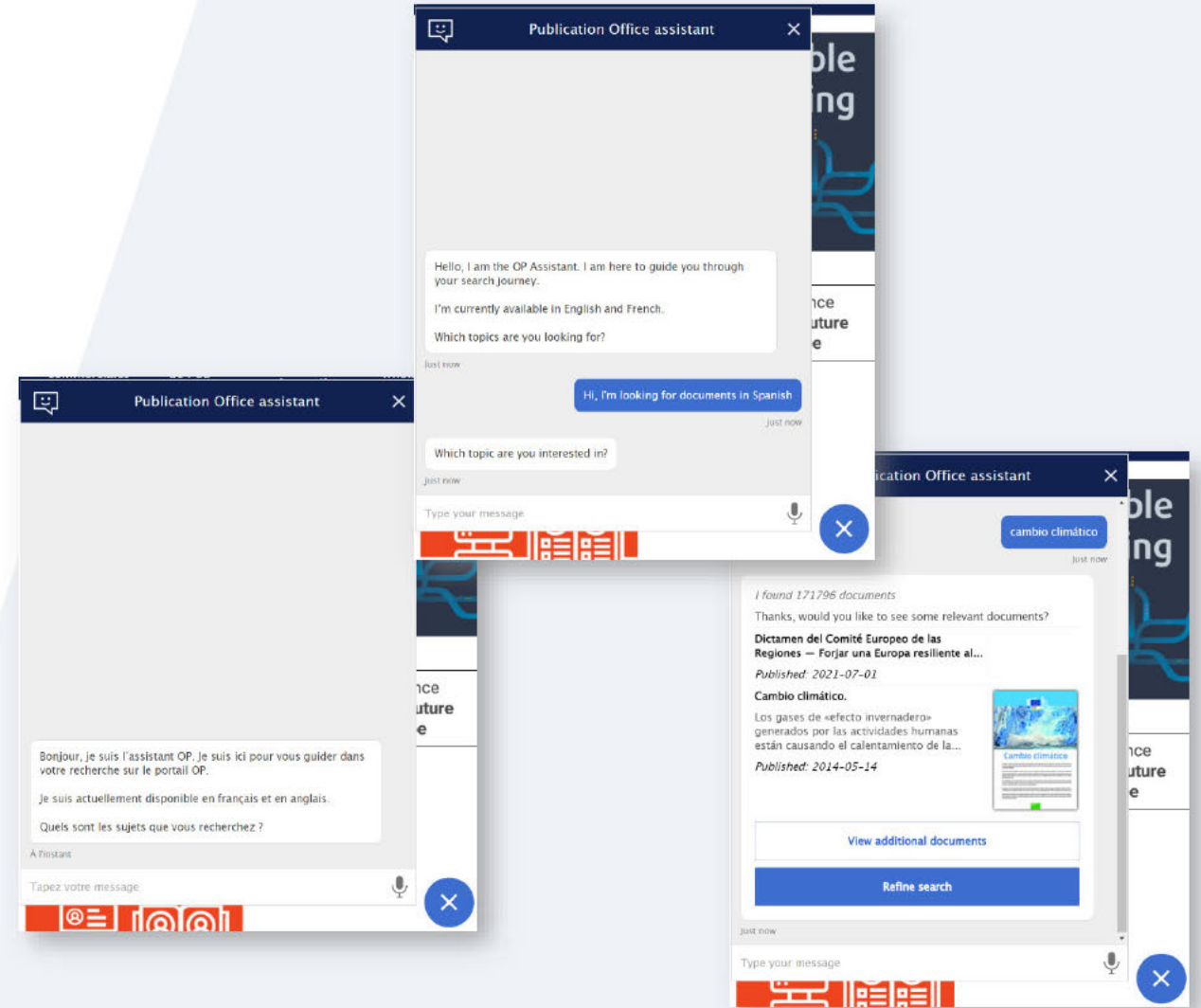
Better, Smarter, Faster



Redefine User Xperience



OP Portal Intelligent assistant – chatbot





OP Portal Intelligent assistant - Demo

Publiclio



<https://op.europa.eu>

OP Portal Intelligent assistant - at glance



Type of interactions

Text

Speech

Domains

EU Law

EU Publications

EU WhoIsWho

Languages

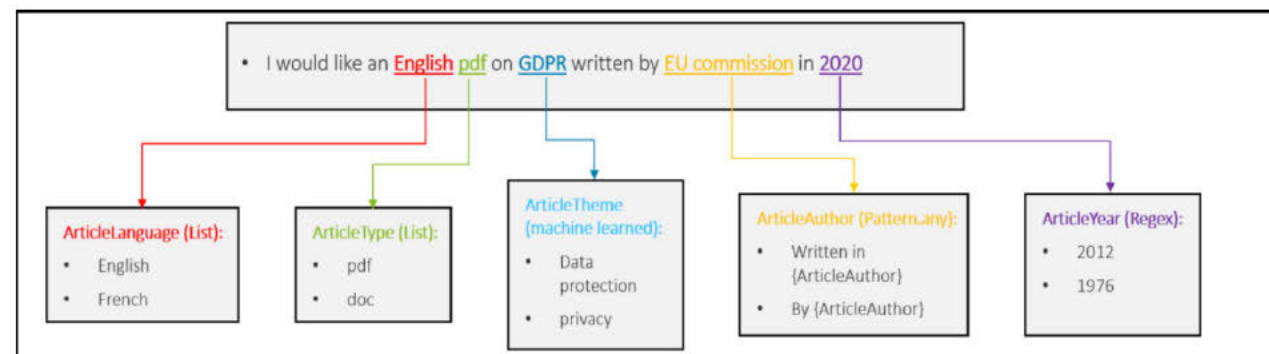
English

French

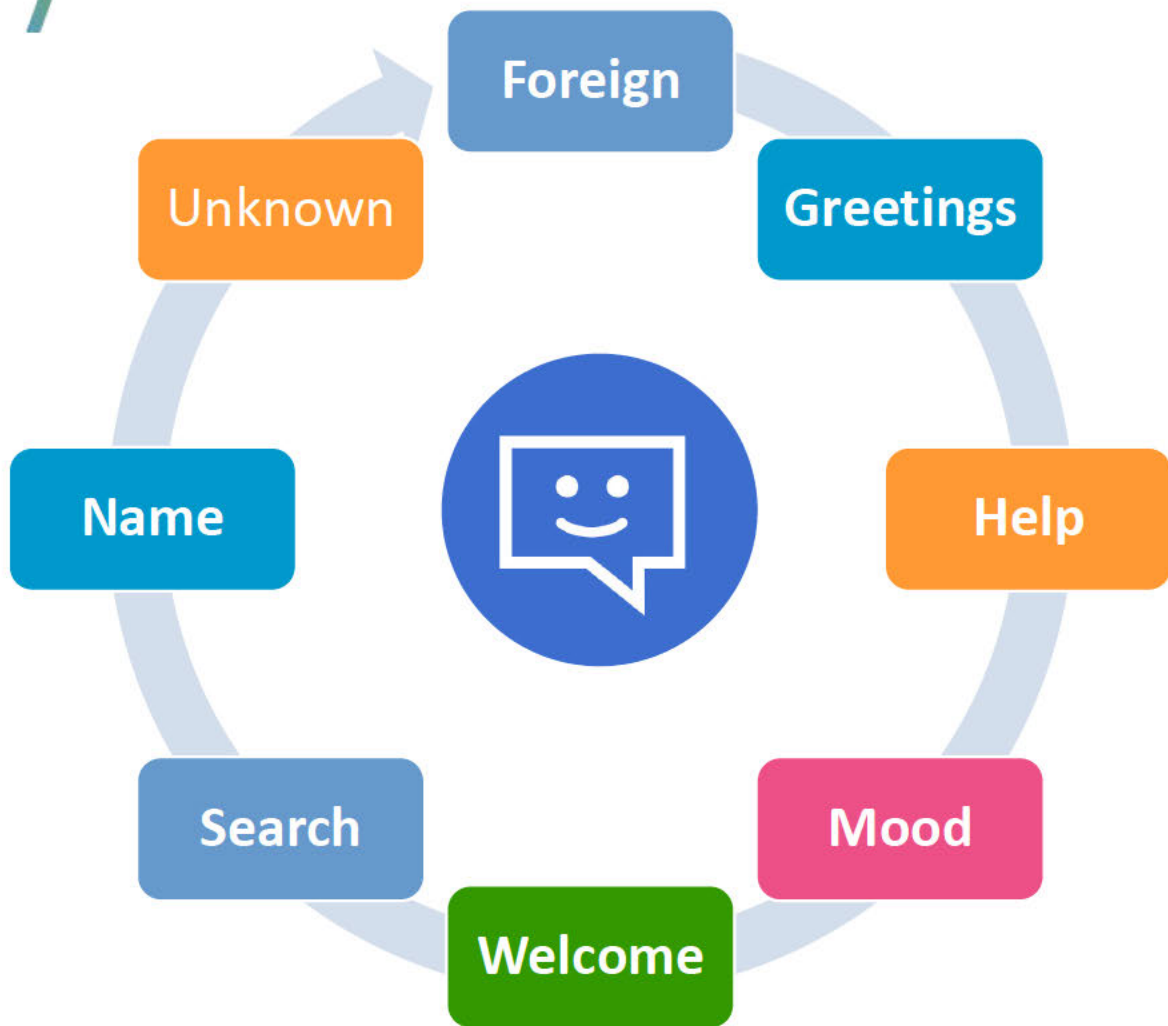
German or Spanish



OP Portal Intelligent assistant - features



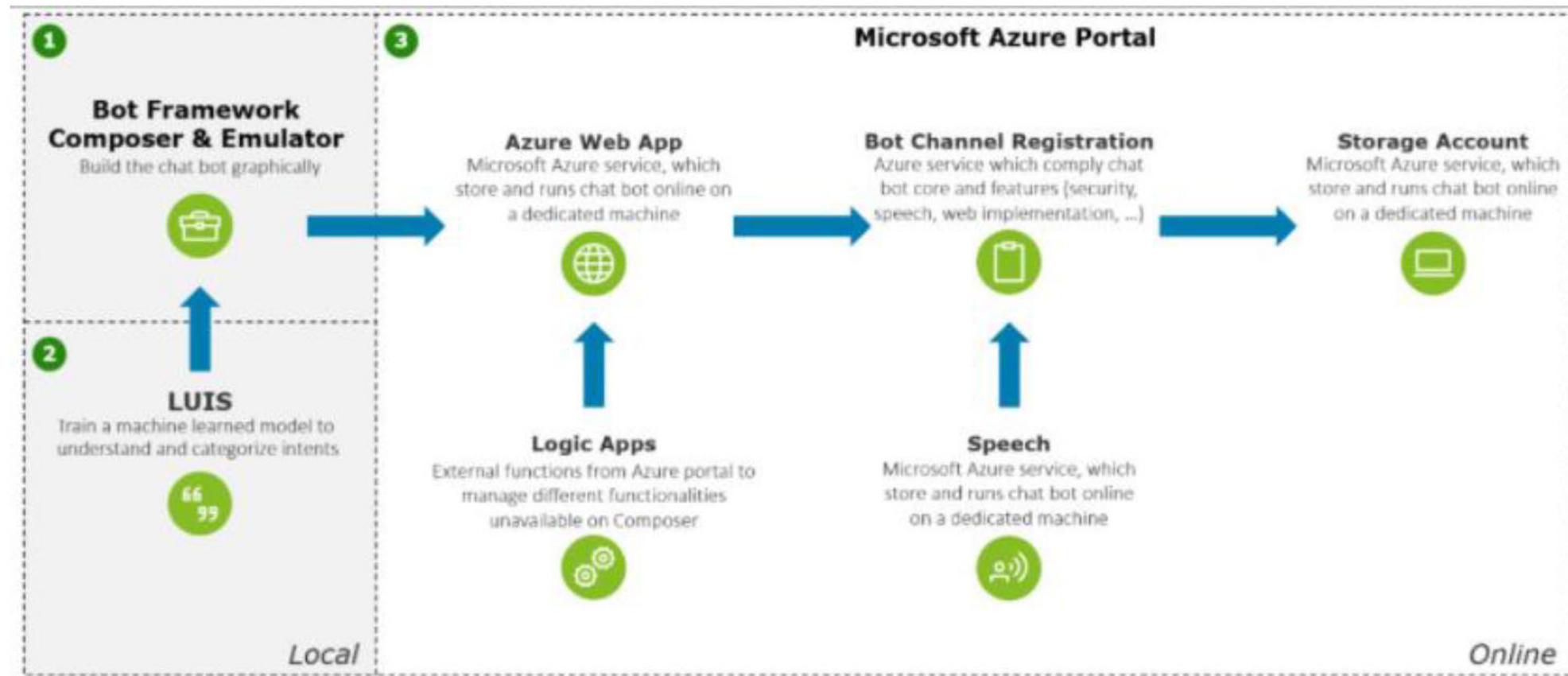
OP Portal Intelligent assistant - Intents



what do you do comment va la vie
enchanté halo
Je dois chercher une revue discutant de le droit d'expression
can you find a doc about immigration
I need a fr article in relation to blockchain
what's new ciao guten tag
c'est quoi ton nom good morning
svp aidez moi
how do we call you



OP Portal Intelligent assistant - Azure services



Technology used



Elastic search



Liferay



Microsoft Azure



Microsoft AI



LUIS

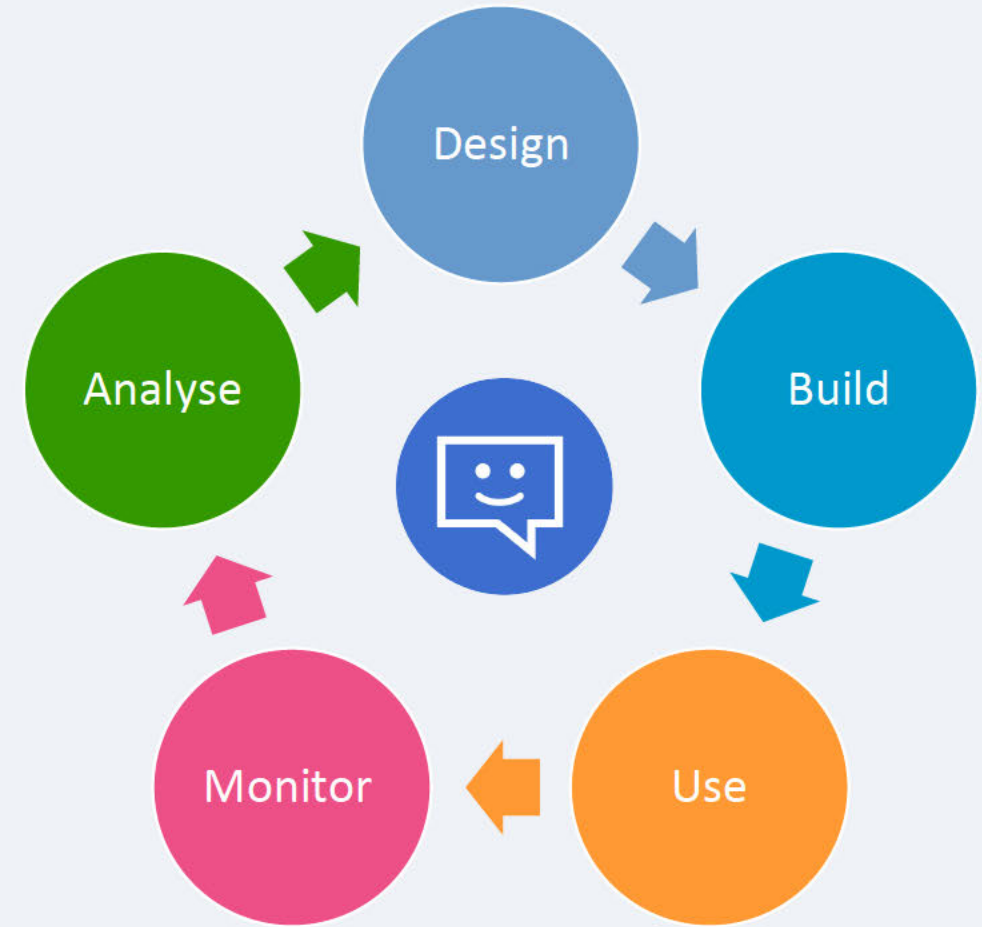


Microsoft Bot Framework

OP Portal Intelligent assistant – Lessons Learned

- Focus on conversation design
- Use two steps approach – Proof of Concept and industrialization
- Use expert knowledge and best in breed technologies and services
- Design the architecture to embrace changes
- Analytics driven improvements

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OP Portal Intelligent assistant -2022 Roadmap



Add EU Whoiswho domain

Add a new language

Re-train and improve the entity recognition

Add a feedback mechanism

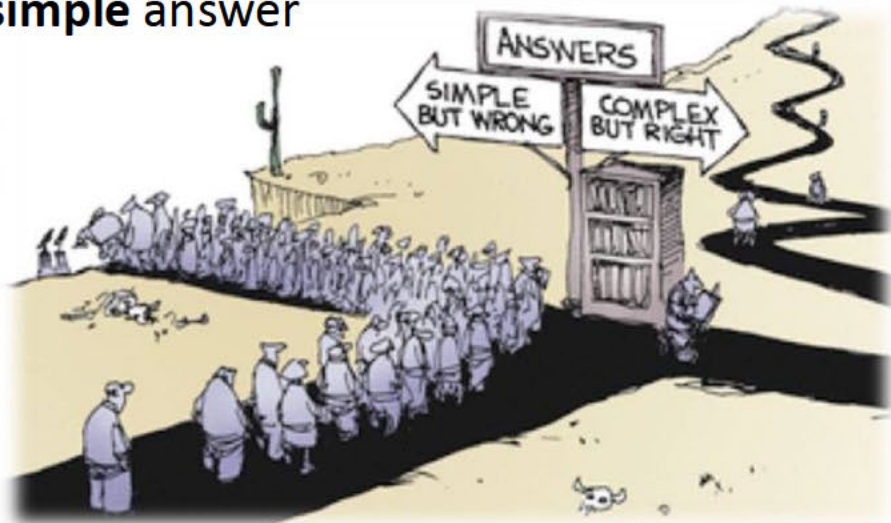
Improve the monitoring

Extend the conversation scope and improve the human-like behaviour



Q&A Project Expectations

- Users expect applications and websites to provide them **direct answers to complex questions on about any topic**
- **The paradox: direct answer is not simple answer**



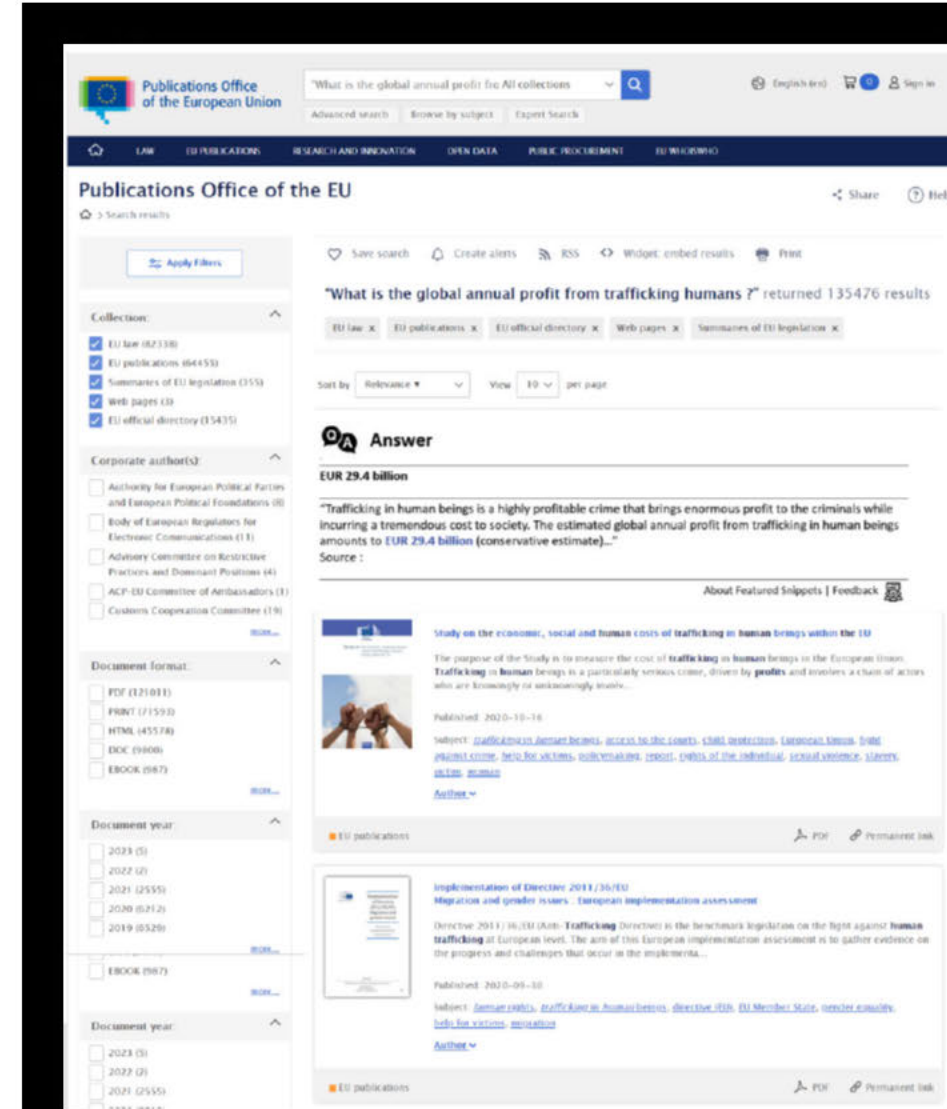
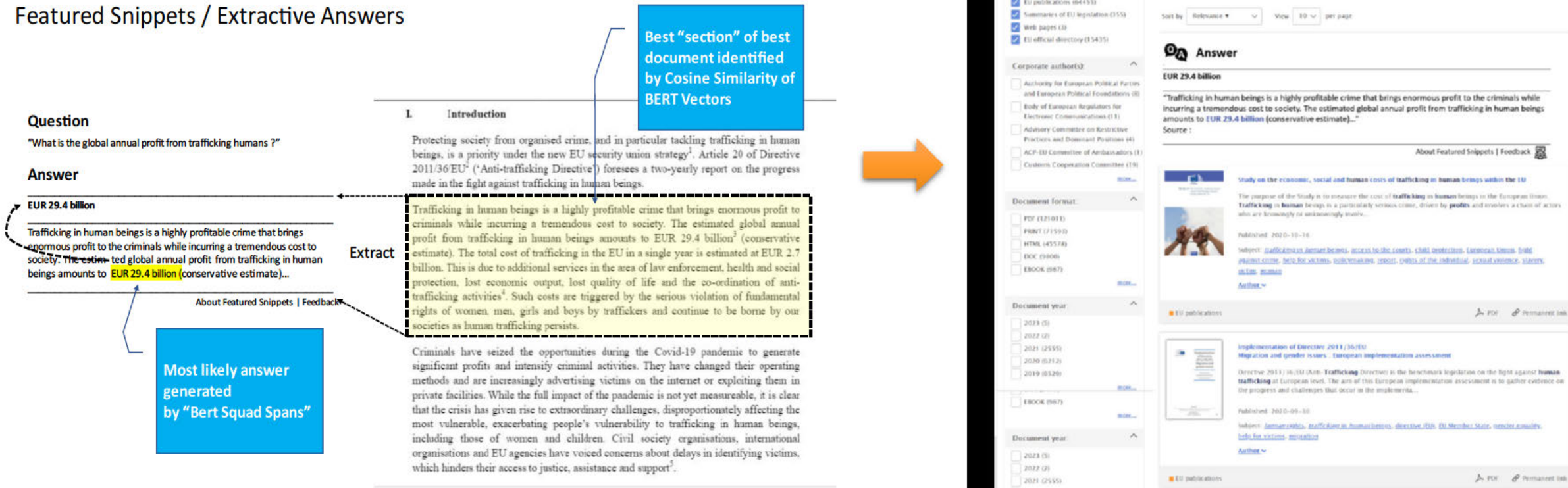
The screenshot shows the search results page for the query "what is the global annual profit for trafficking humans?". The page is from the Publications Office of the European Union. The search results are filtered to show 110,726 results. The filters applied are: EU law (60,786), EU publications (58,730), Summaries of EU legislation (111), Web pages (6), and EU official directory (14,068). The results are sorted by Relevance, with 10 items per page. The first result is a study titled "Study on the economic, social and human costs of trafficking in human beings within the EU", published in 2020-10-16. The second result is a document titled "Supporting judicial authorities in the fight against trafficking in human beings", published in 2022-01-26. The page also includes options to save the search, create alerts, and export results.



OP Portal Questions and Answers (Q&A)

- **Extractive answers** independently **deduced** and **summarized** instead of just curated from existing text index or content

Featured Snippets / Extractive Answers



OP Portal Questions and Answers (Q&A)

- Answer to the question is located directly in the **Knowledge Graph** and is served as an answer without involving extractive answers or the search engine

Knowledge Graph Answer

Question

"What are the topics of Directive 2011/36/EU?"

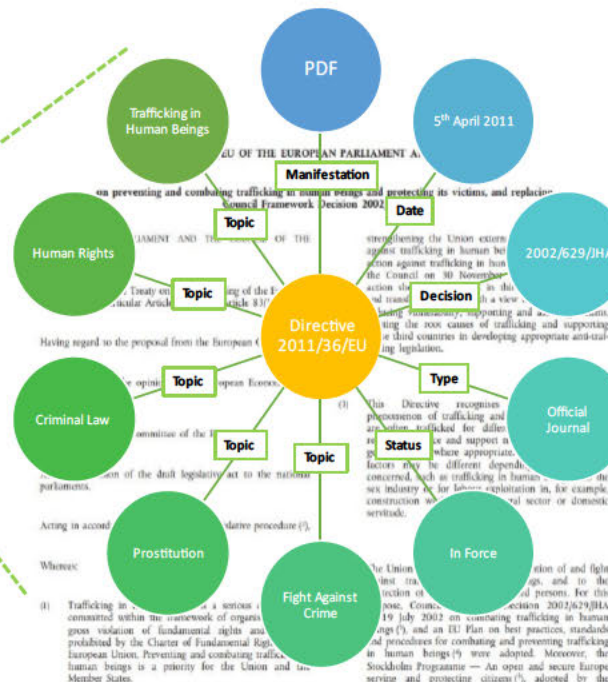
Answer

2011/36/EU / TOPICS

- Fight Against Crime
- Trafficking in Human Beings
- Prostitution
- Criminal Law
- Human Rights

Feedback

15.4.2011 Official Journal of the European Union L 101/1



The screenshot shows the Publications Office of the European Union search results page. The search query is "What are the topics of Directive 2011/36/EU?". The results show 237212 results. The answer is displayed as a list of topics: Fight Against Crime, Trafficking in Human Beings, Prostitution, Criminal Law, and Human Rights. The page also includes filters for document format (PDF, HTML, PRINT, DOC, XML) and a feedback button.





THANK YOU

Add links or contact information if needed

