OUTCOMES: ONTOLOGY DEVELOPMENT AND DEPLOYMENT TOOLKIT

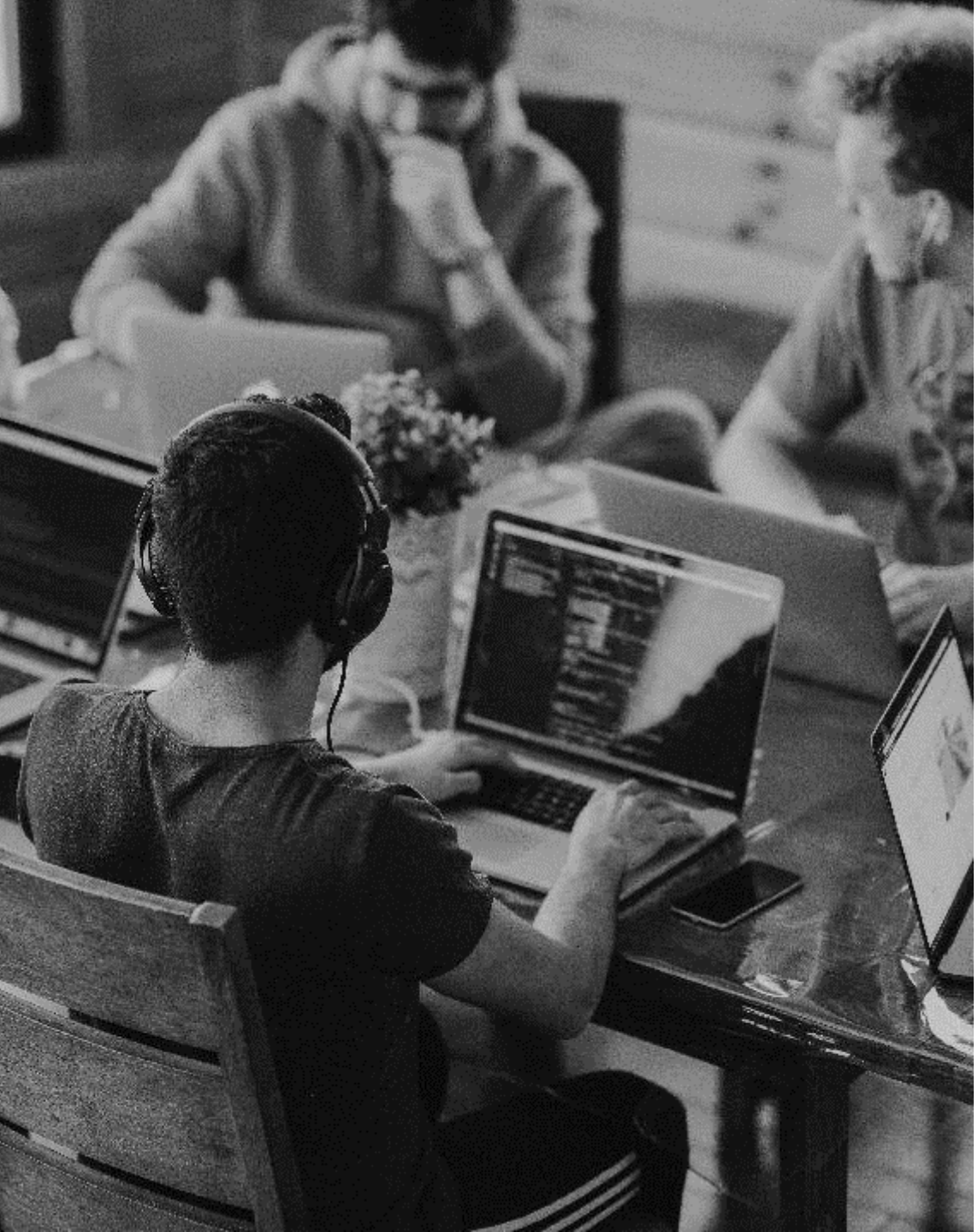
OPEN INDUSTRIAL DIGITAL ECOSYSTEM SUMMIT

2024-02-09

OAGi

ASU Arizona State University

NIST



INTRODUCTION

BACKGROUND

WHY: How to accelerate the use and adoption of ontology?

- Solution: Ontology development and deployment toolkit
- Objective of the working session: Define a starter toolkit

WHAT: IOF Event

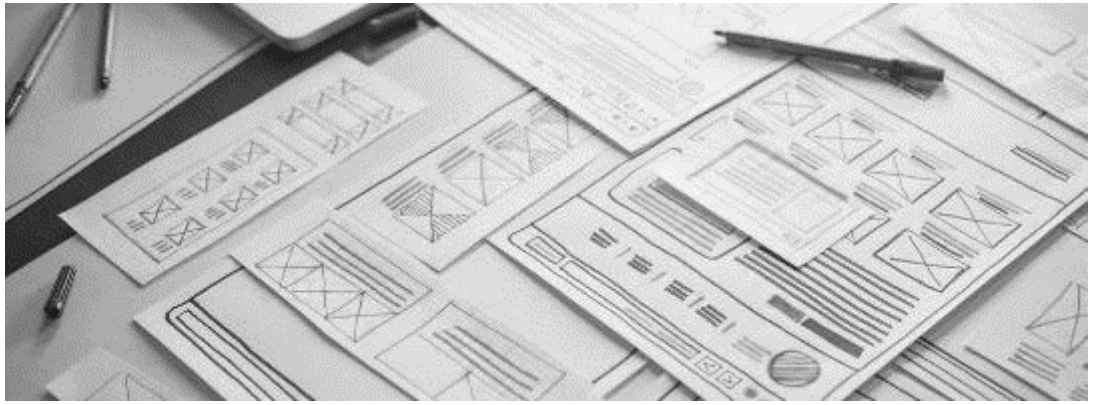
TIME: 1h10

WHEN: 6-9 February, in Arizona, USA

WHO: **16 participants** to the working session:

- **Cross-industry** (Biopharma, Defense, Food, Logistics, Oil & Gas,…)
- **Academics**
- **Government Research**

COLLABORATIVE SESSION: FRAMEWORK



PART I: IDENTIFY NEEDS

- **Objectives:** gather use cases, based on persona's needs/industry.
- Identify the current usages of ontology (which tools, how they use them…) & the associated challenges
- What do they dream about for the future?
- Highlight the for their dreamed solution

PART II: DEFINE FUNCTIONALITIES

- **Objectives:**
- Define the capabilities for the toolkit
- Define the functionalities required to support/deliver the capabilities

Join the **Miro board**!

2024 IDE Summit - Ontology Toolkit, Visual Workspace for Innovation (miro.com)

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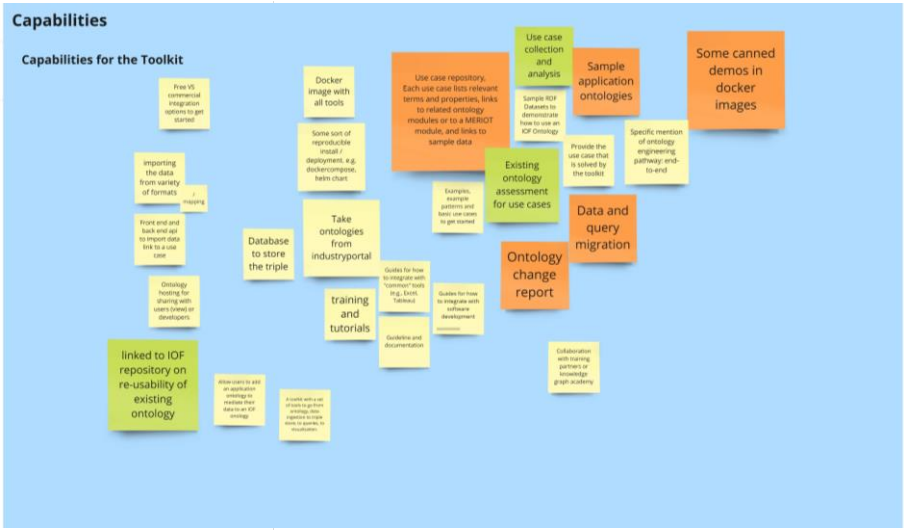
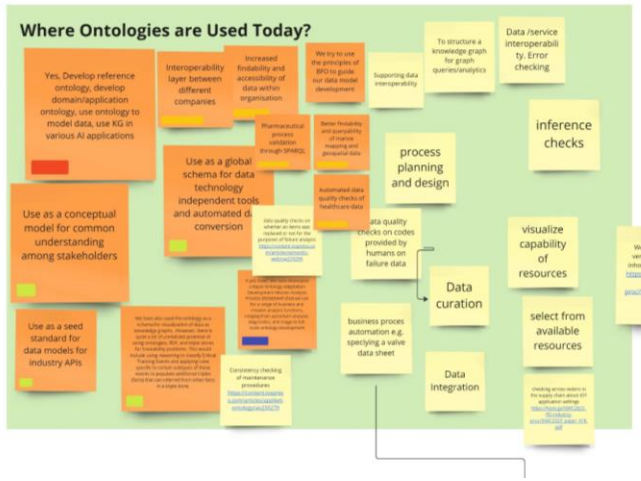
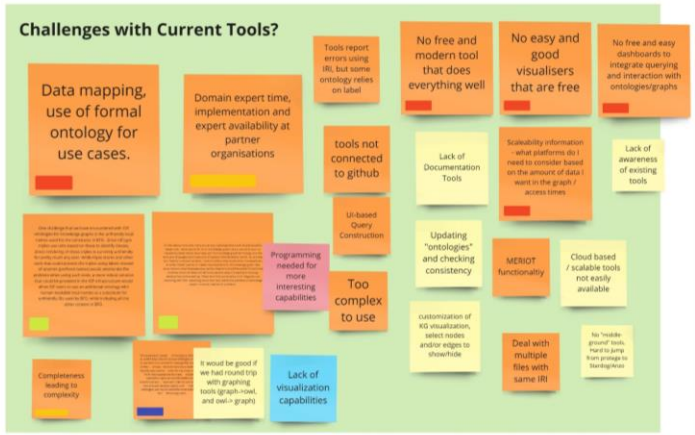
STICKY NOTE DURING THE SESSION



Current Usage





BACKGROUND

USE CASES

Biopharma: Linking data across different systems

Defense: Maintenance and repair.

Aerospace: Automated detection and targeting small & unmanned systems

Academia: From planning, operator assignment, to resources

Food: Data quality checking

TOOLS USED TODAY

Ontology development: Protege, Topbraid Composer, Mobi

Data base: Virtuoso, Anzo, Neptune, Stardog, GraphDB, PostgresQL

Data manipulation: Python, Rdflib, Rdf4j, OntoRefine

Inference: Pellet, Hermit

Vizualization: Drawio, Reactjs angular

CHALLENGES

- Lack of skill sets and understanding of ontologies inside the organization.
- Navigation through data schema
- Too complex to use/ completeness leading to complexity
- Lack of visualization capabilities
- No free & easy to use modern tool
- Lack of documentation
- UI-based query construction

TOOLKIT EXPECTATIONS

ALL IN ONE!

END-TO-END USER EXPERIENCE

WHICH CAPABILITIES WOULD YOU LIKE TO SEE IN THE FUTURE STARTER KIT?

- **Docker image incl. all tools**
- **Guidelines & documentation**
- **Showcase based on a use case (incl. Data)**
- **Data visualisation**
- Importing data: From multiple sources, and formats
- Graphical UI to ingest the data
- Training & tutorial
- How to integrate 'common tools' (e.g. Excel…)
- Best practices: for data mgt, with software development
- Collaboration with training partners & CoP

PARTICIPANTS TO THE SUMMIT

THANK YOU!

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