Research Reporting and Visualization

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HERUG, April 2016

Customer

All is about creating the perfect conditions to boost
Creativity !
of researchers

Motivation

Problem
Knowing current and future research trends
Overview of existing project and opportunities
Get the information needed to take a decision

Solution
Digital first
Proper Data sanitization
Complete/Uptodate information
Fast Access & Results
Sexy GUI

Unfair advantage
Big & Fast Data
Complete oversight of research performance
Benchmarking platform
Predefined (albeit customizable) KPIs attached to solutions
Share experience across customers
Influence donors to use STANDARD best practices

Unique Value Proposition
Have the answer before you know the questions

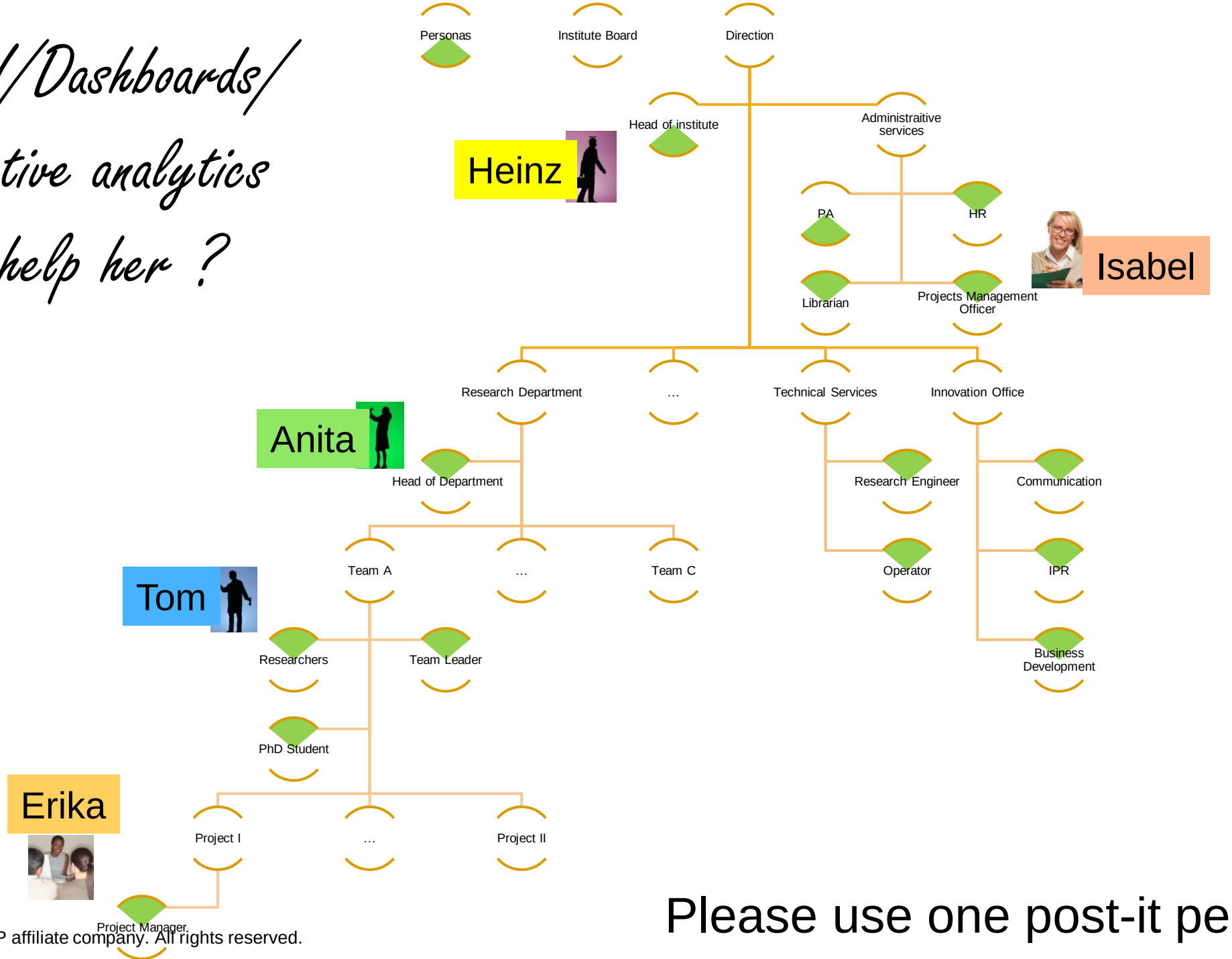
Customer Segment
Top management of universities
High profile Research Managers

Key Activity
Capture experience & reuse
Quantitative & Quaitative KPIs
Set of pertinent KPIs

Channels
Creating jealously between institutions
Testimonials by users

Bad news !
We want to use your brain
1 – Pick a persona
2 – Take a bunch of post-it of the persona's color
2 – Write all that come to your mind on How BI/Dashboards/Predictive analytics can help her ?
Please use one post-it per idea !

How BI/Dashboards/ Predictive analytics can help her ?



Please use one post-it per idea !

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“I’ll be back !”
Do I sound like Terminator ?

Motivations

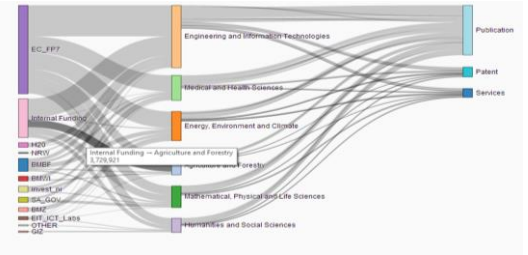
- Forecasting in projects and finance
- Standalone data model
- Ad-Hoc KPIs

Today

Remaining Challenges

- 360 Vision
  - Research effectiveness
  - Reputation
- Support for open data model
  - CERIF
  - SnowBall Metrics
- Role of predictive Analytics

- Extend the scope to research and decision support
- Cerif based Data Model
- KPI Based on SnowBall Metrics
- Integrate external data sources



Prototype

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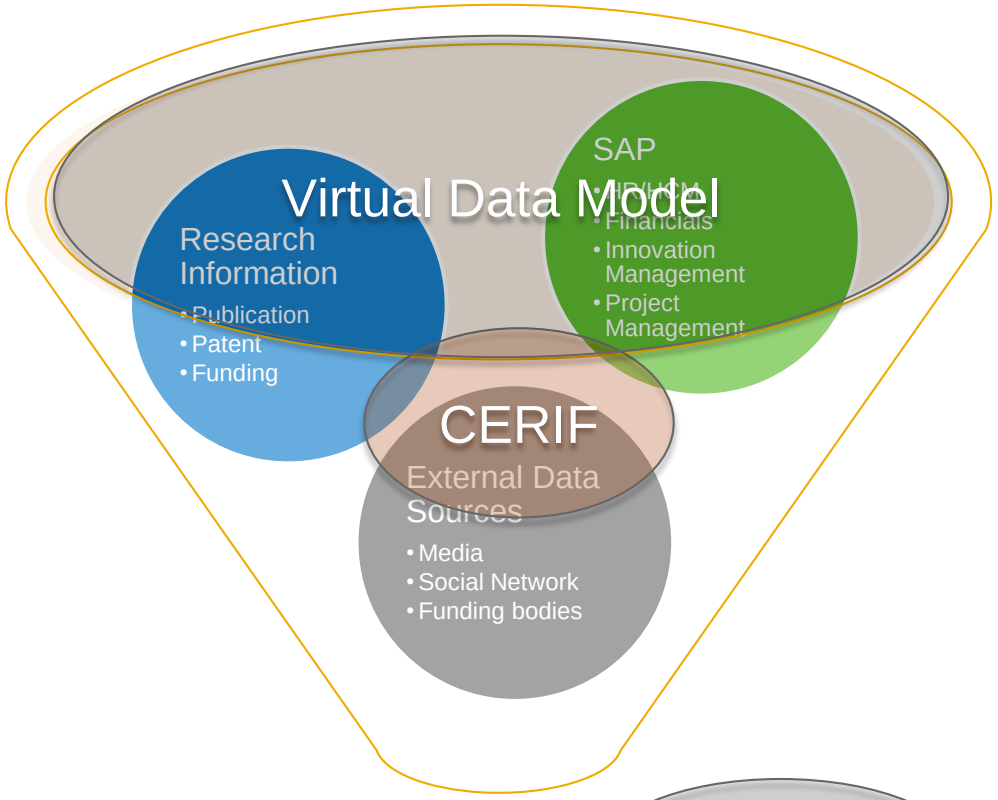
Using Data to Understand and Pilot your Research



Snowball metrics

360 degrees analyze of the institute

Recruitment

- To predict recruitment needs based on current and future effort

Proposals

- To predict number/amount of proposals to run/grow the institute

Projects

- To understand Overall Situation for HR and budget based on start and ending dates of ongoing and upcoming projects

Research

- To analyse publication and reputation
- To optimize patent production

Strategy

- To create *what if* scenarios for the worst *case* and the *best case based* on acceptance or rejection of submitted proposals

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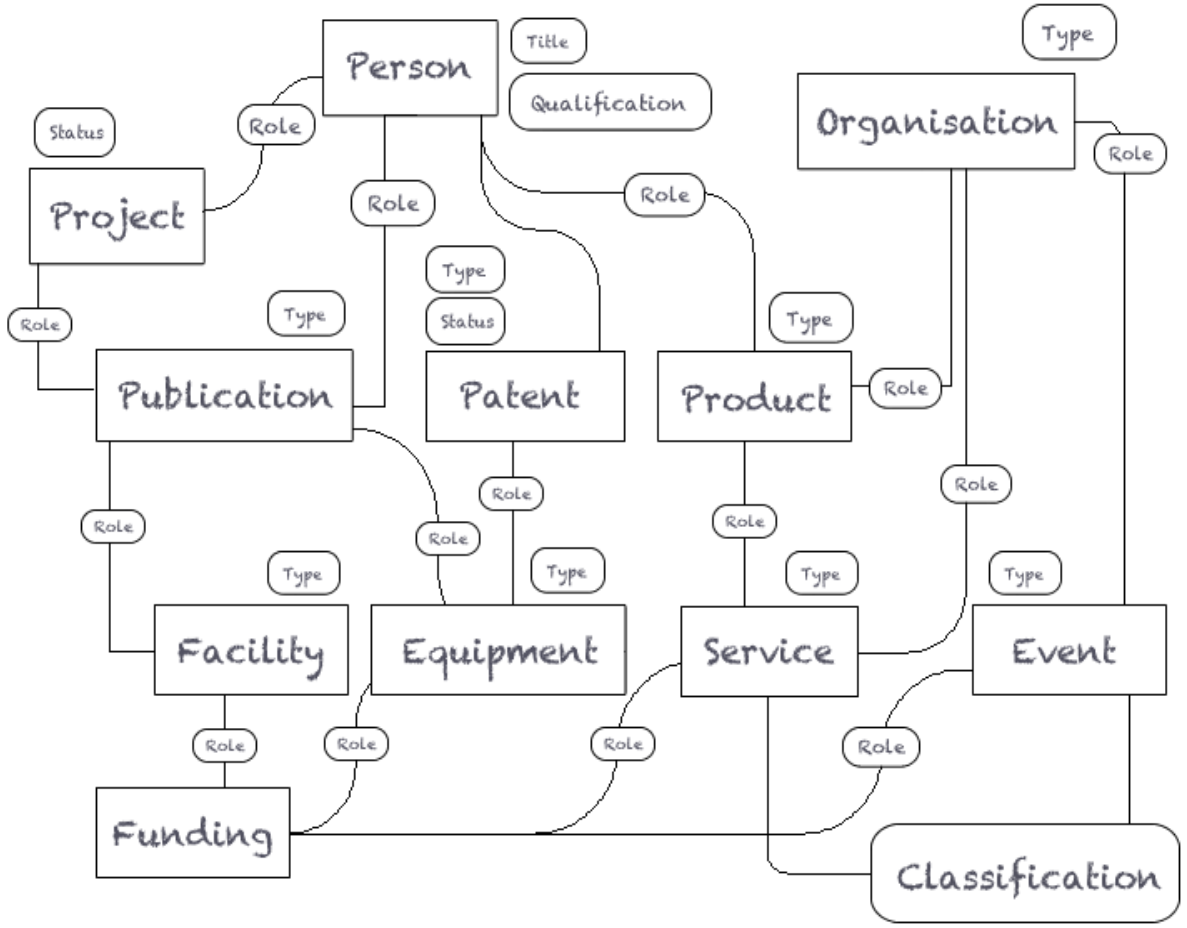
CERIF Based Data Model

- CERIF is a global data standard for managing and exchanging data such as information about researchers, organizations, projects, outputs and funding..
- It provides a data model that can be used to describe the research domain, including relationships between the constituent parts, and how this changes over time.



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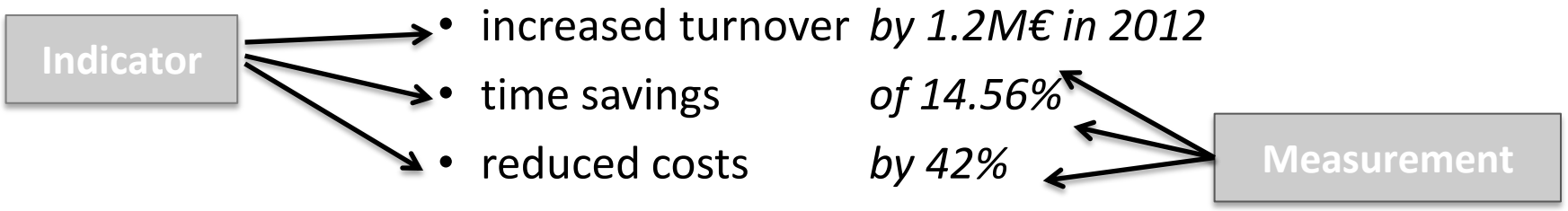
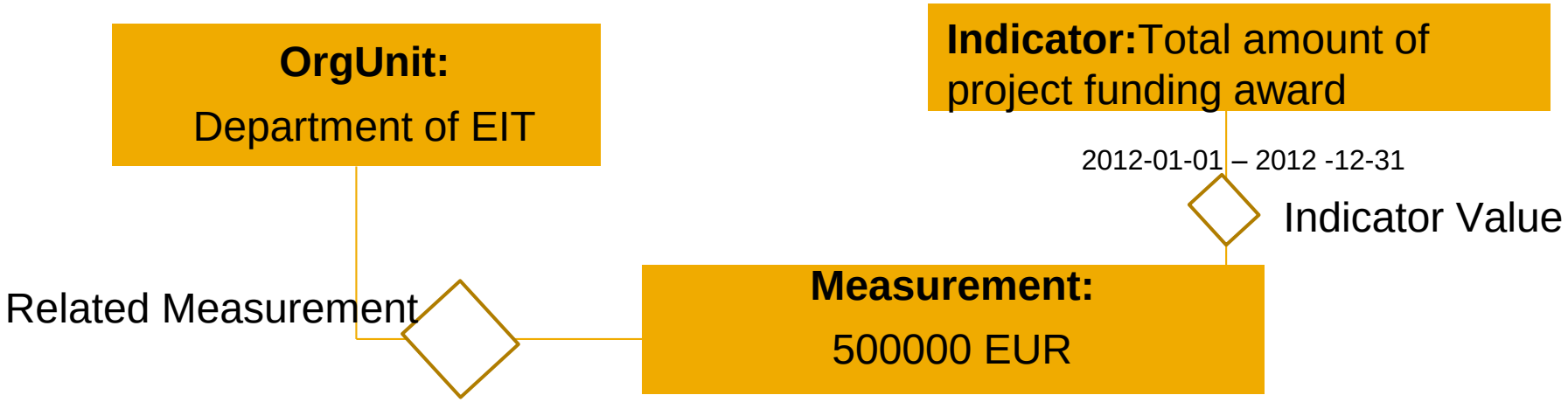
How to use the CERIF Model for KPIs

Metrics through Measures & Indicators



Example of a Metric Representation in CERIF :Total amount of project funding awarded



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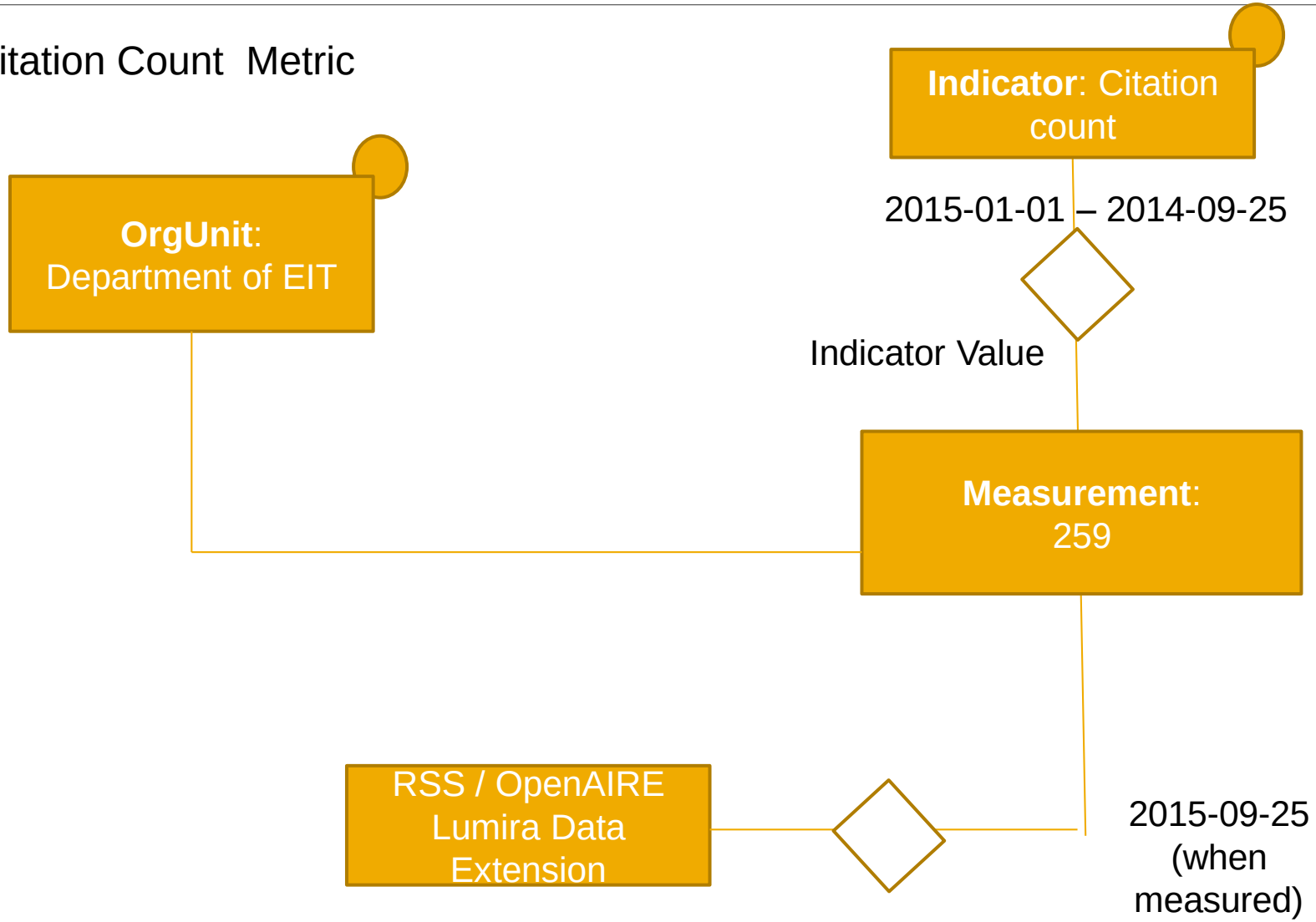
KPIs Based on Snowball Metrics

Example of a CERIFied Citation Count Metric



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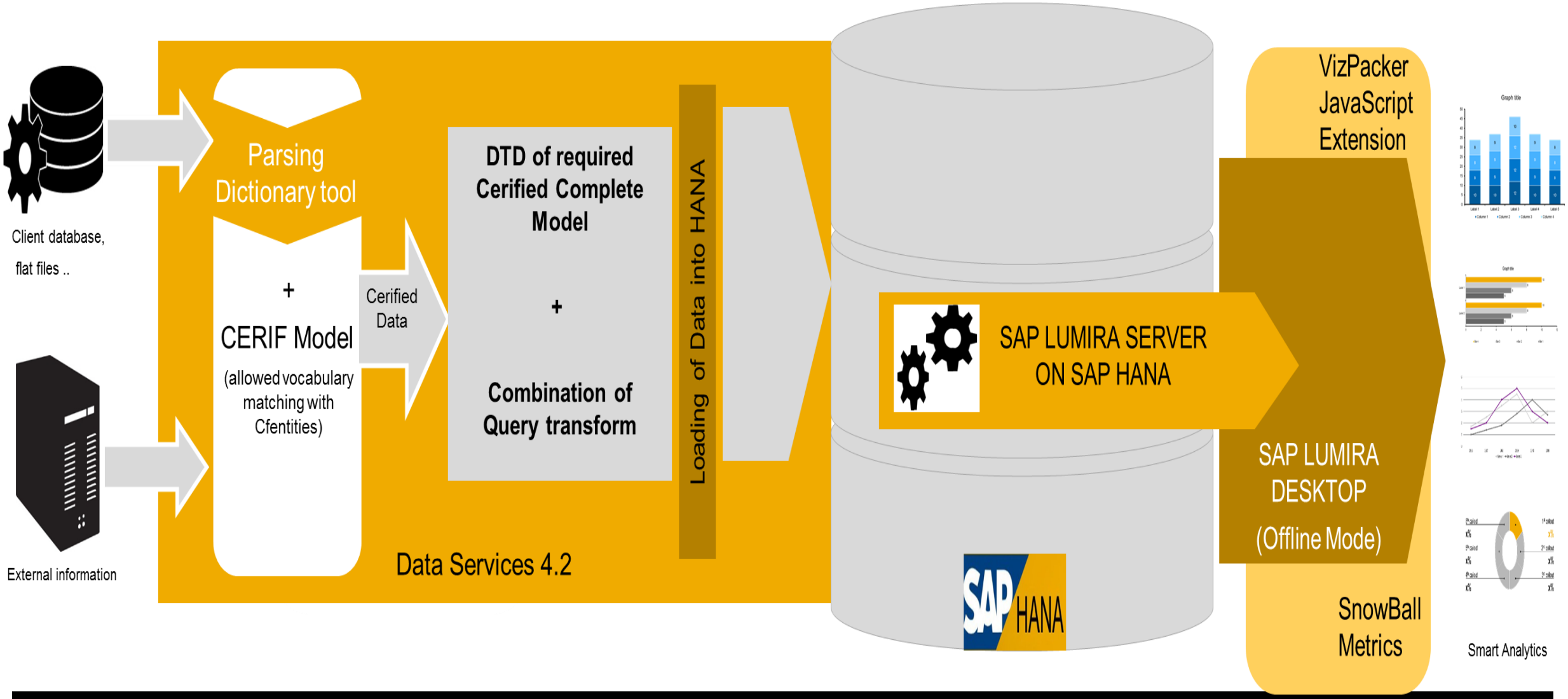
Foreseen Technical Architecture



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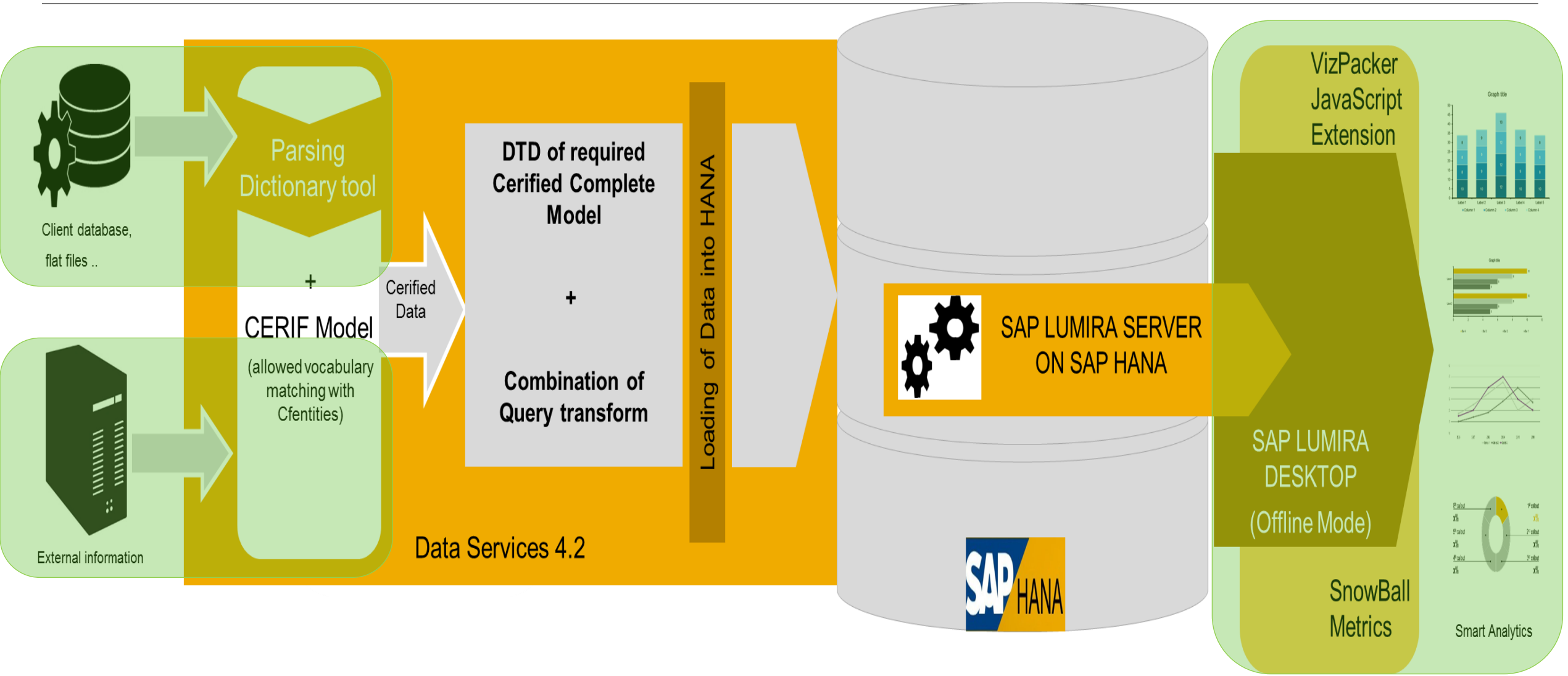
Scope of the Prototype



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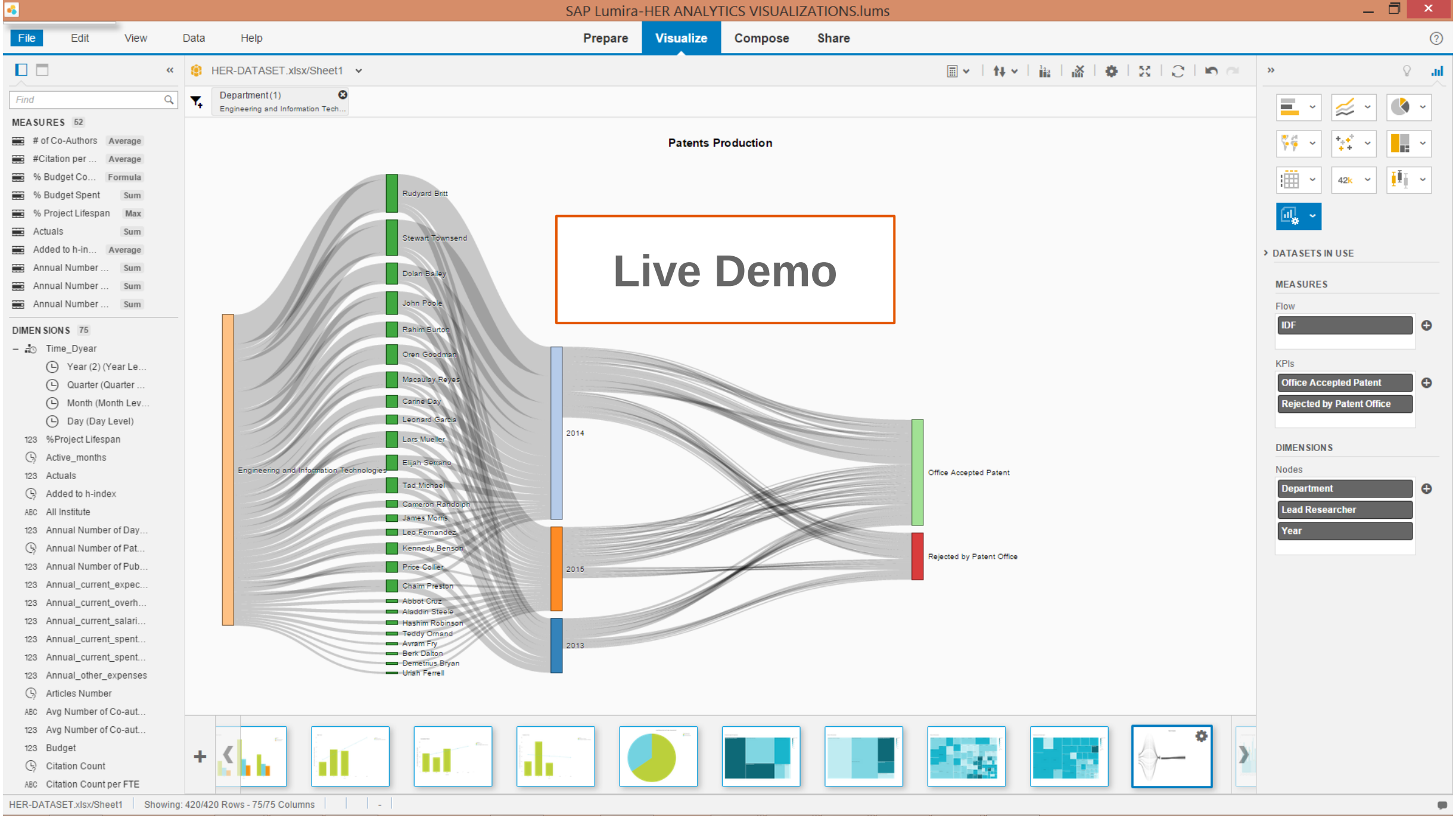

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Conclusion

- **Higher Education and Research peculiarities:**
  - Financial gain is not the main KPIs
  - Project based funding with low selection rate (<20%)
  - Efficiency based on IPR (eg. publications, patent portfolio, spin-off)

- **This PoC is centered around those specificities**
  - Adopt sector initiatives in terms of global data standards and metrics (eg. CERIF, Snowball)
  - Different country wide initiatives to assess research ‘excellence’ (eg. Scandinavia, UK, Italy, Netherland, Germany…)
  - Accurate analytics and prediction for different key stakeholders

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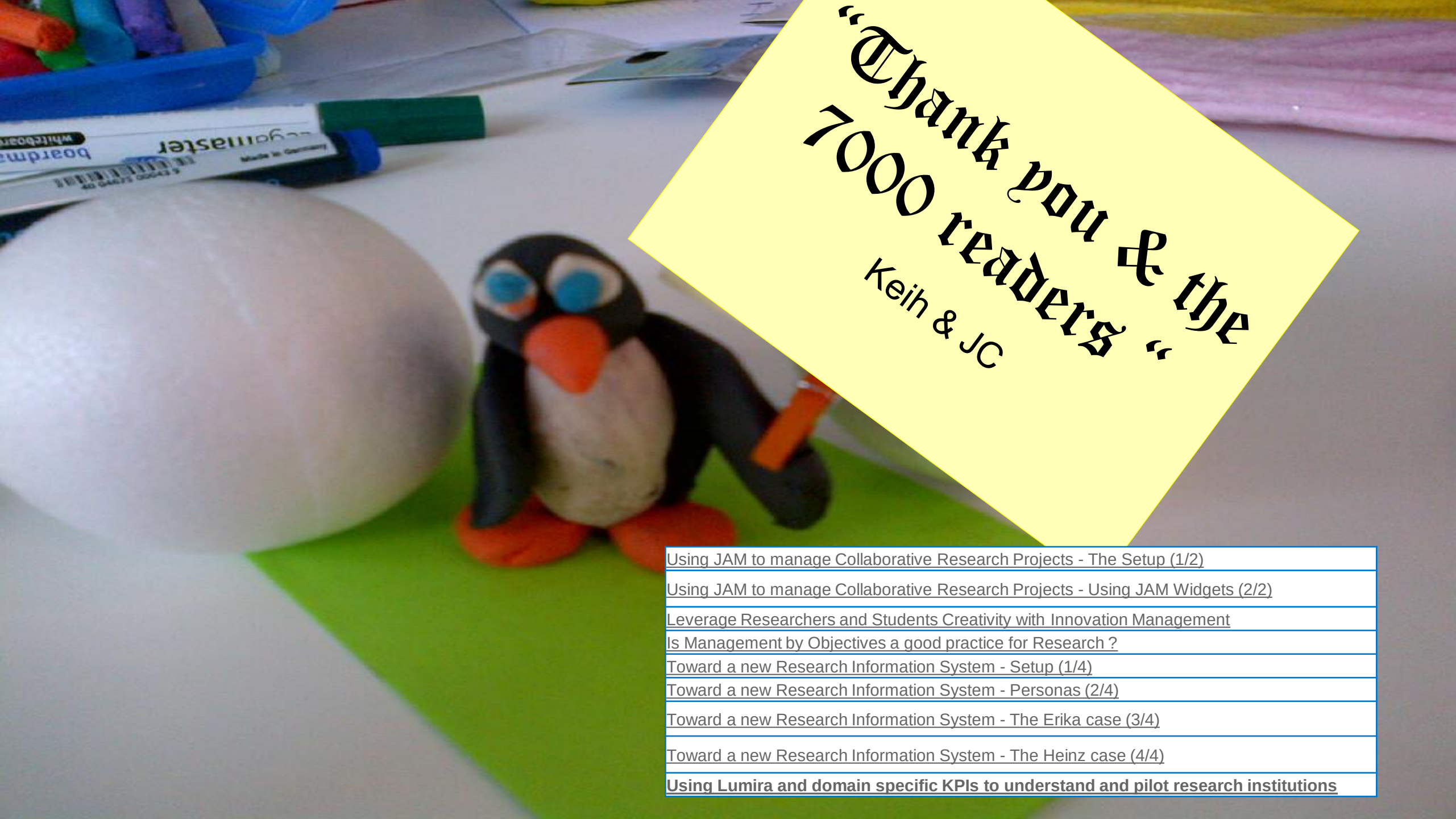

Using JAM to manage Collaborative Research Projects - The Setup (1/2)
Using JAM to manage Collaborative Research Projects - Using JAM Widgets (2/2)
Leverage Researchers and Students Creativity with Innovation Management
Is Management by Objectives a good practice for Research ?
Toward a new Research Information System - Setup (1/4)
Toward a new Research Information System - Personas (2/4)
Toward a new Research Information System - The Erika case (3/4)
Toward a new Research Information System - The Heinz case (4/4)
Using Lumira and domain specific KPIs to understand and pilot research institutions

Further Examples

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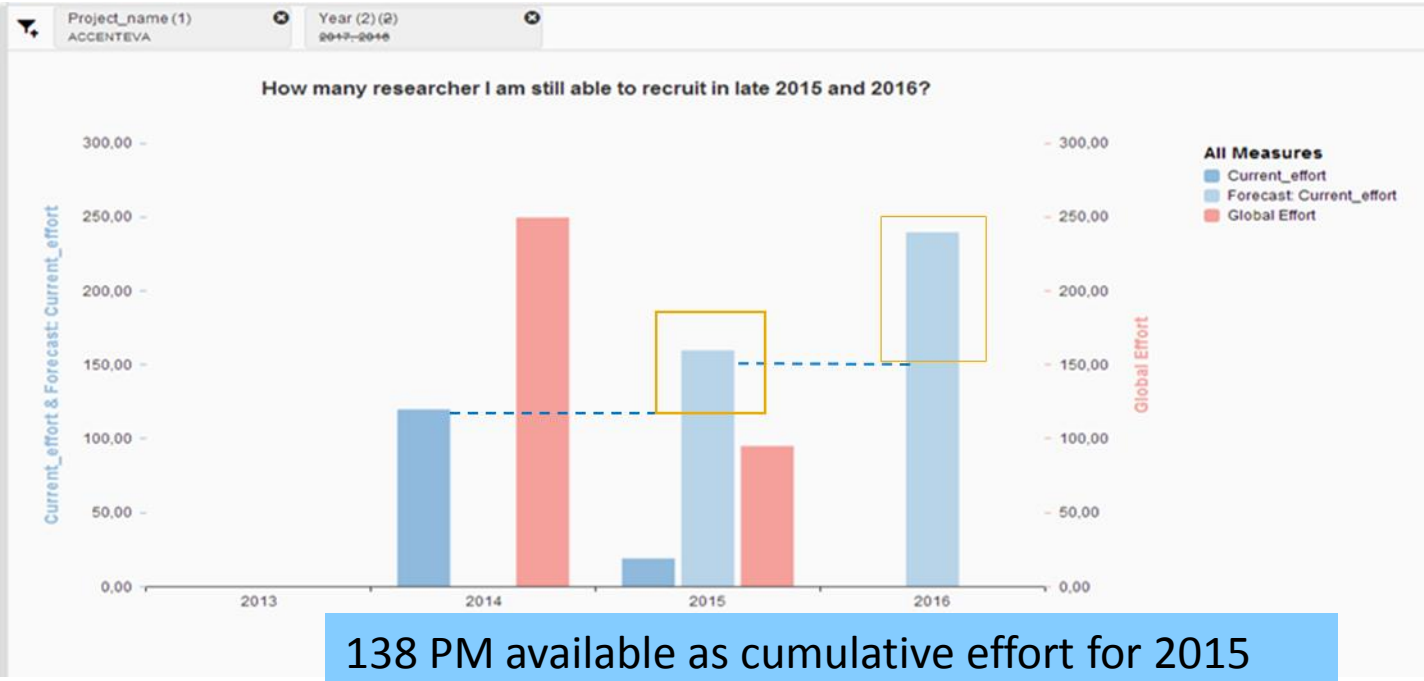
Example : HR Forecast for ACCENTEVA project

- 1,75 FTE needed for 2015
- 5, 83 FTE needed for 2016

Baseline for the discussion between PM and Head of Department

All numbers computed with SAP forecasting functions.



138 PM available as cumulative effort for 2015
➔ Committed effort of 159 PM by end 2015
➔ Committed effort of 239 PM by end 2016

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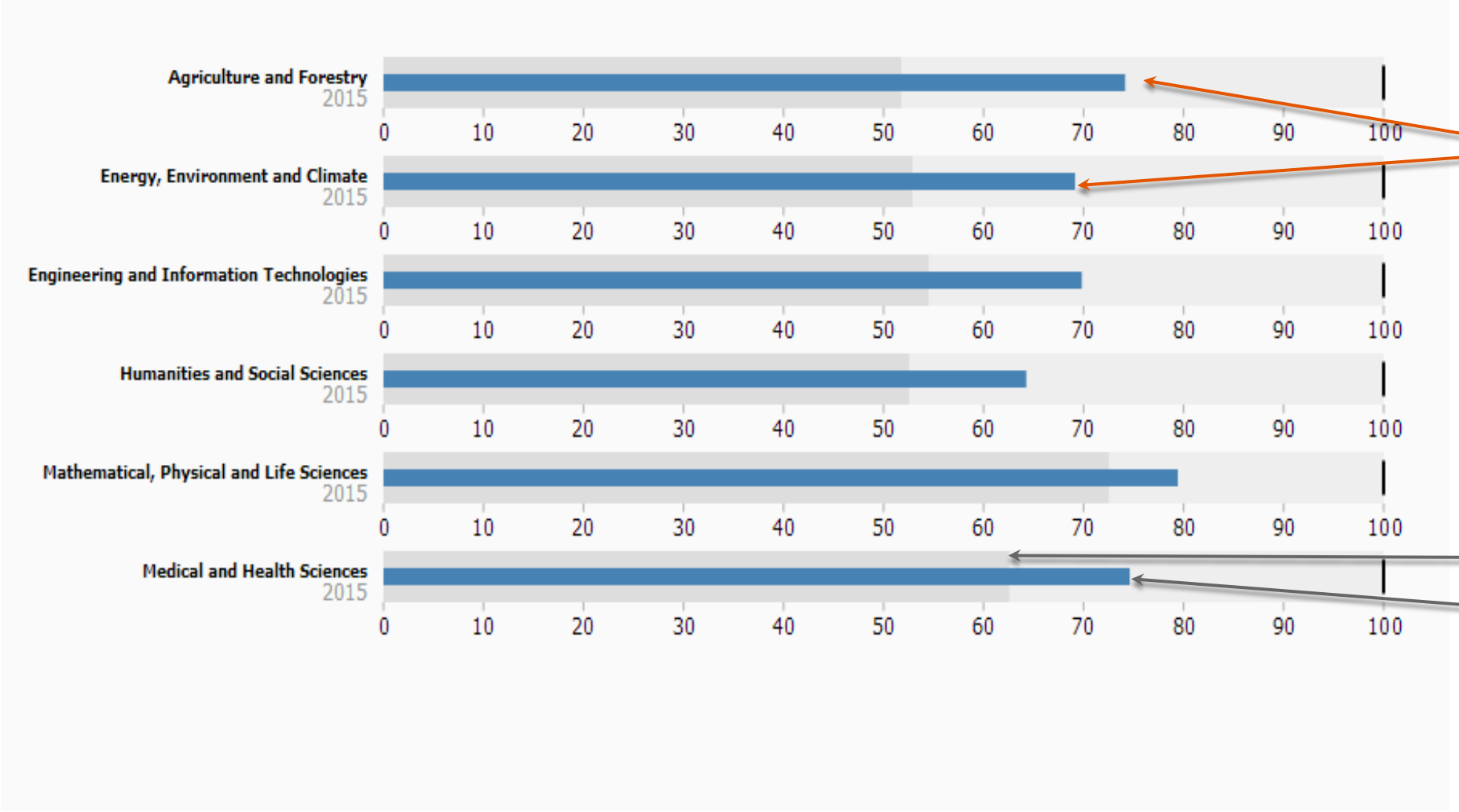
Example : Spending State By Department



Department with **critical** budget consumption |(> 130%)

Budget spending forecast (linear)

Current budget consumption

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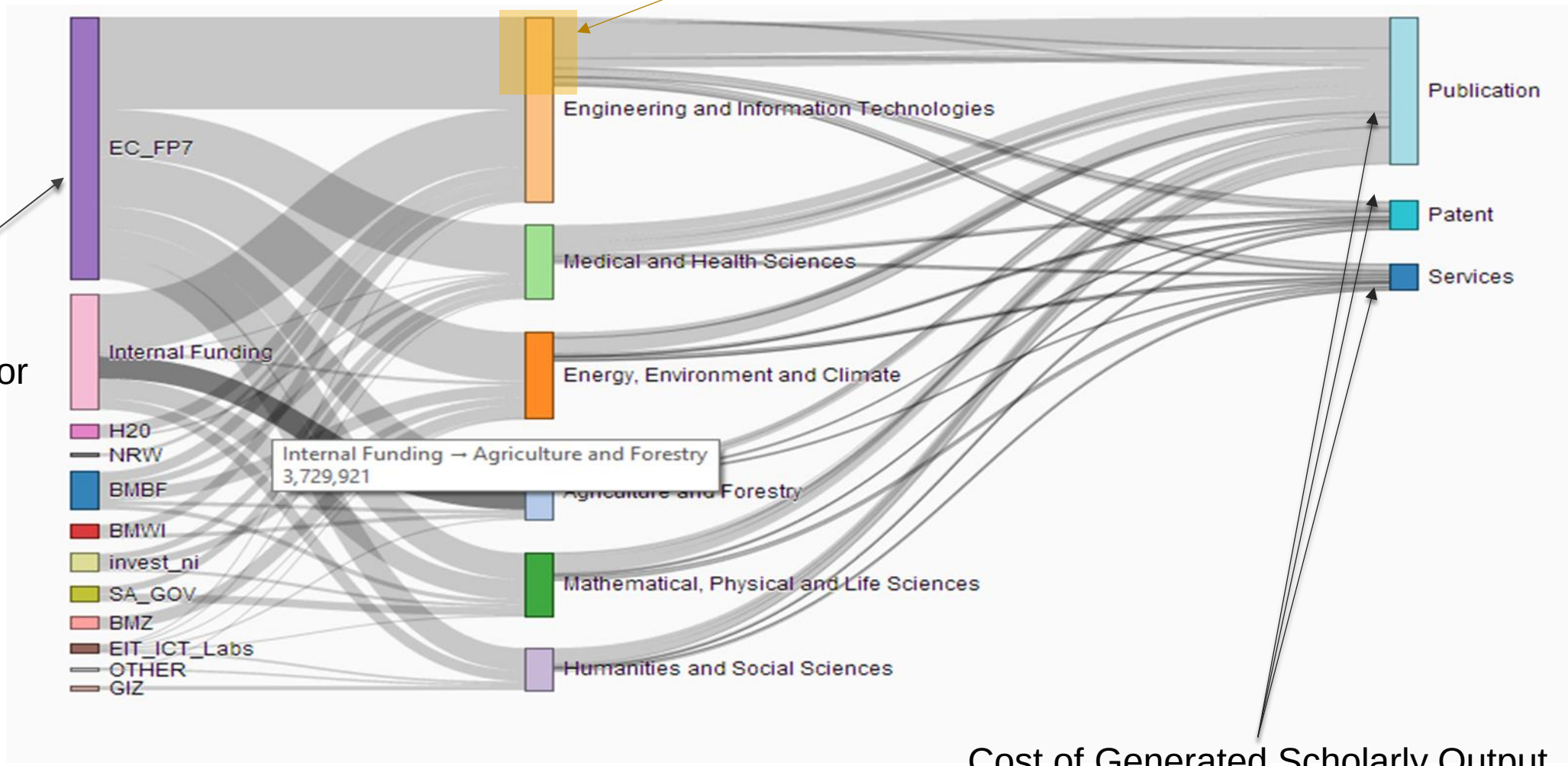
Example: Funding Tracking

Percentage of Funding allocated for output generation

Budget granted by Funding Program for all department ongoing projects



Cost of Generated Scholarly Output
(Calculated using FTE made available for output generation, administrative costs…)

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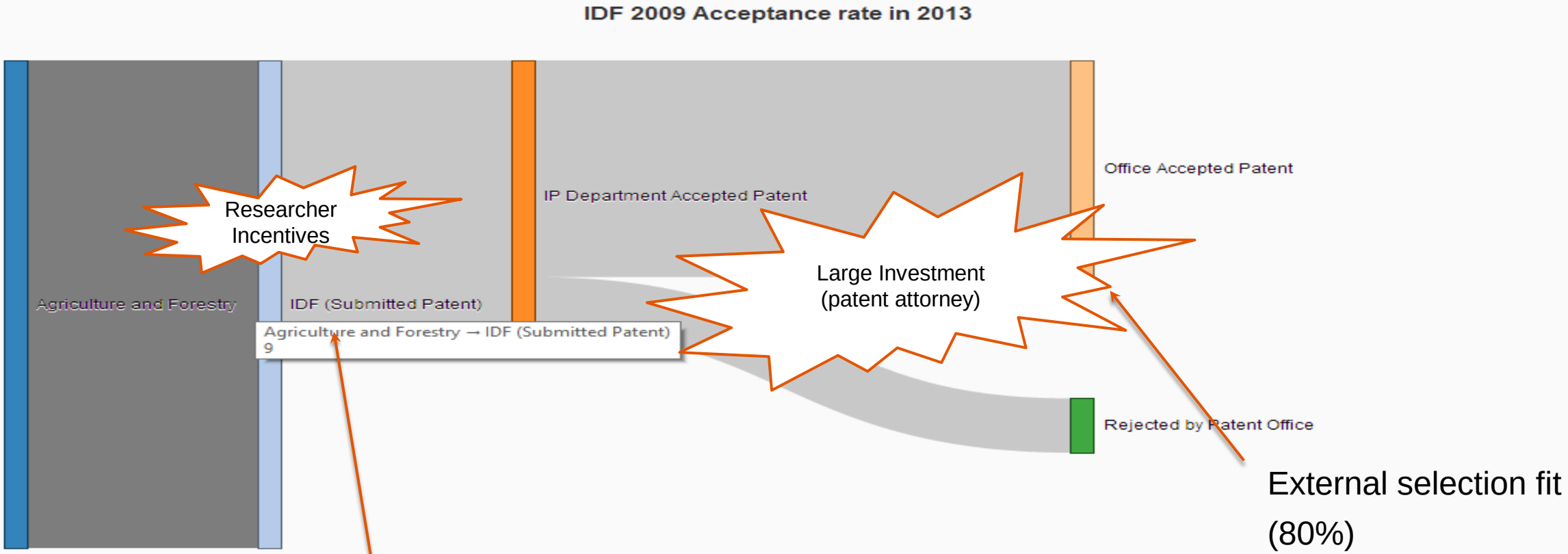
Example: From Ideas to Patent in the A&F Department



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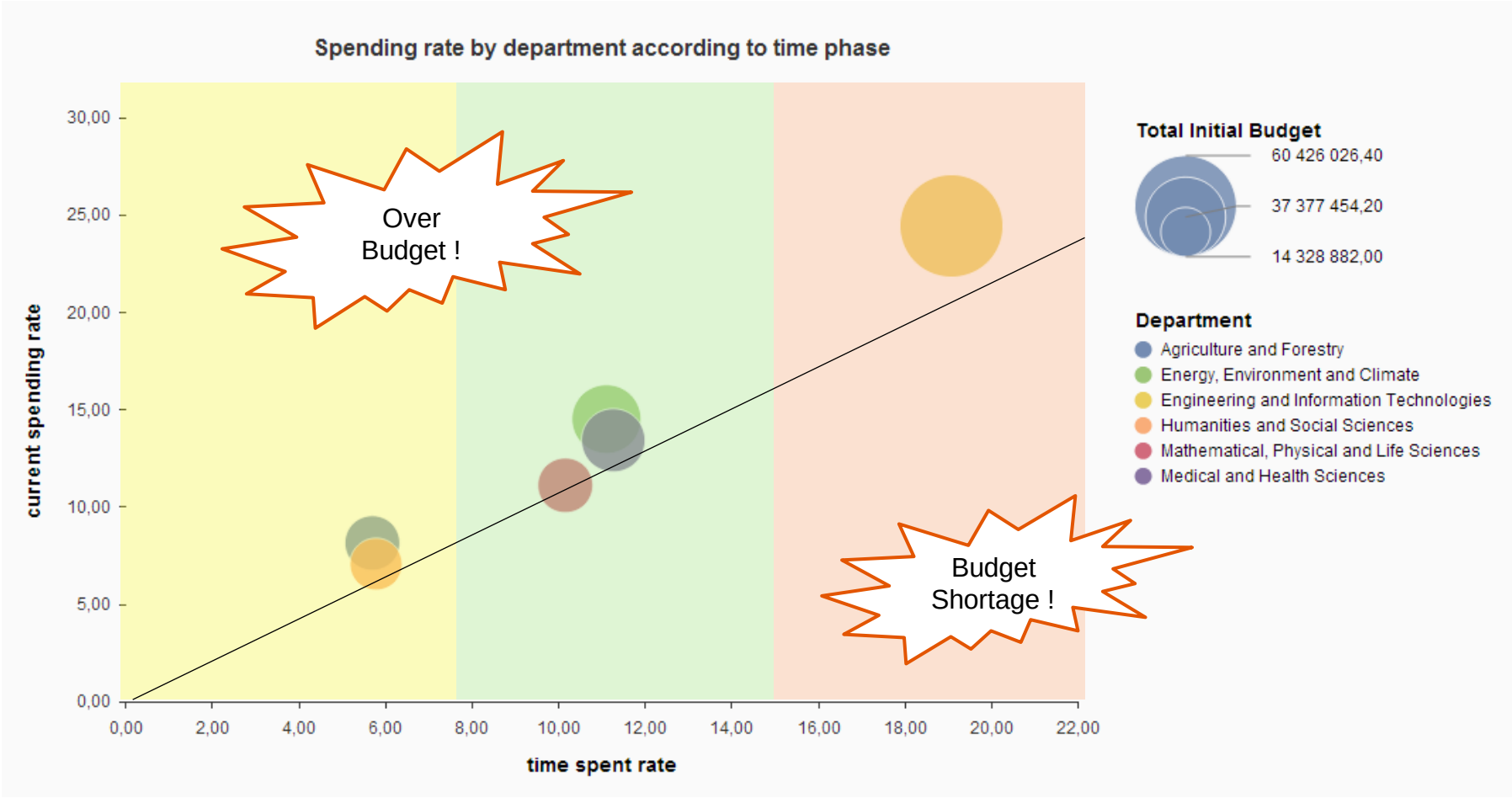
Example: Portfolio Analysis (Budget size and consumption, research phases)



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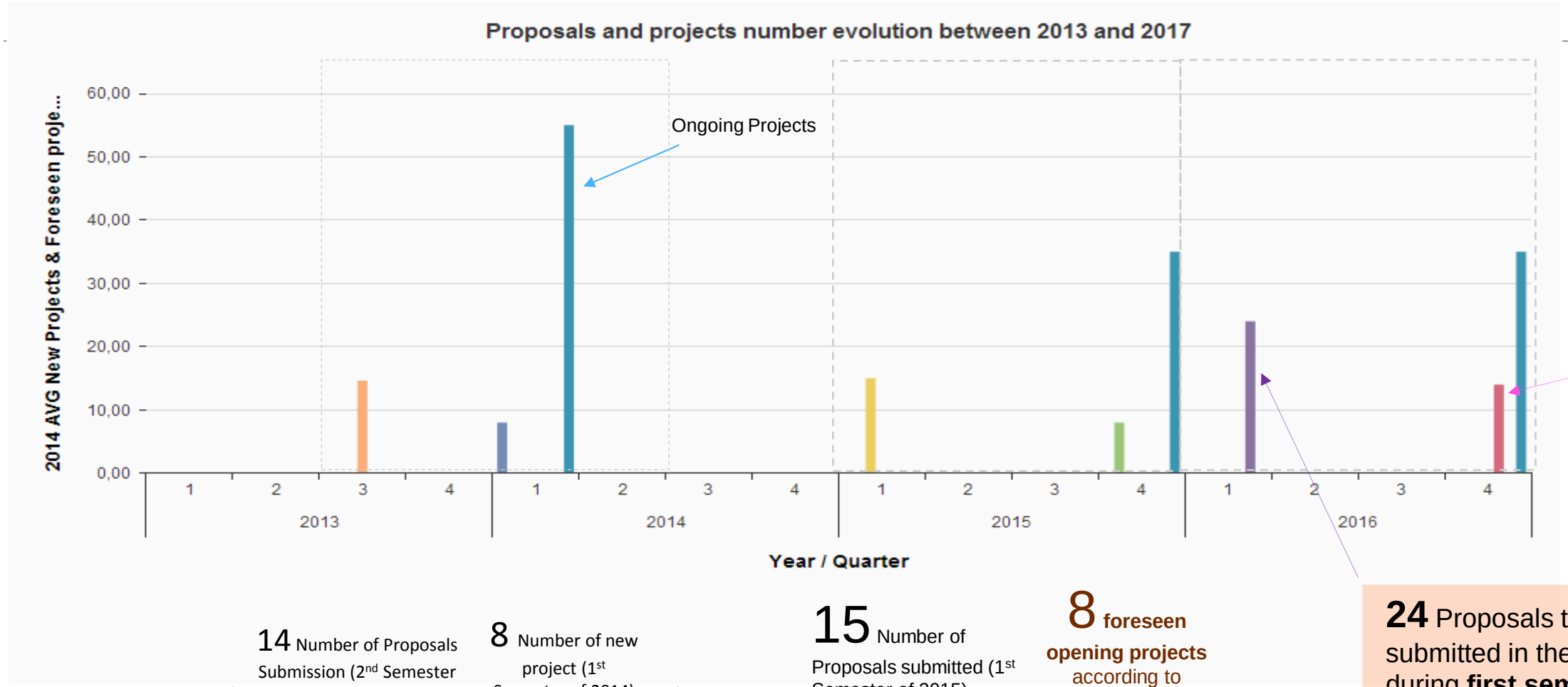
Example : Proposals Forecasting



14 Number of Proposals Submission (2nd Semester of 2013)

8 Number of new project (1st Semester of 2014)

Success Rate of 0,54

15 Number of Proposals submitted (1st Semester of 2015)

8 **foreseen opening projects** according to previous Success Rate

14 **desired opening projects to keep 2015 number of ongoing projects**

24 Proposals to be submitted in the institute during **first semester of 2016 (due to end of several projects)**

Today

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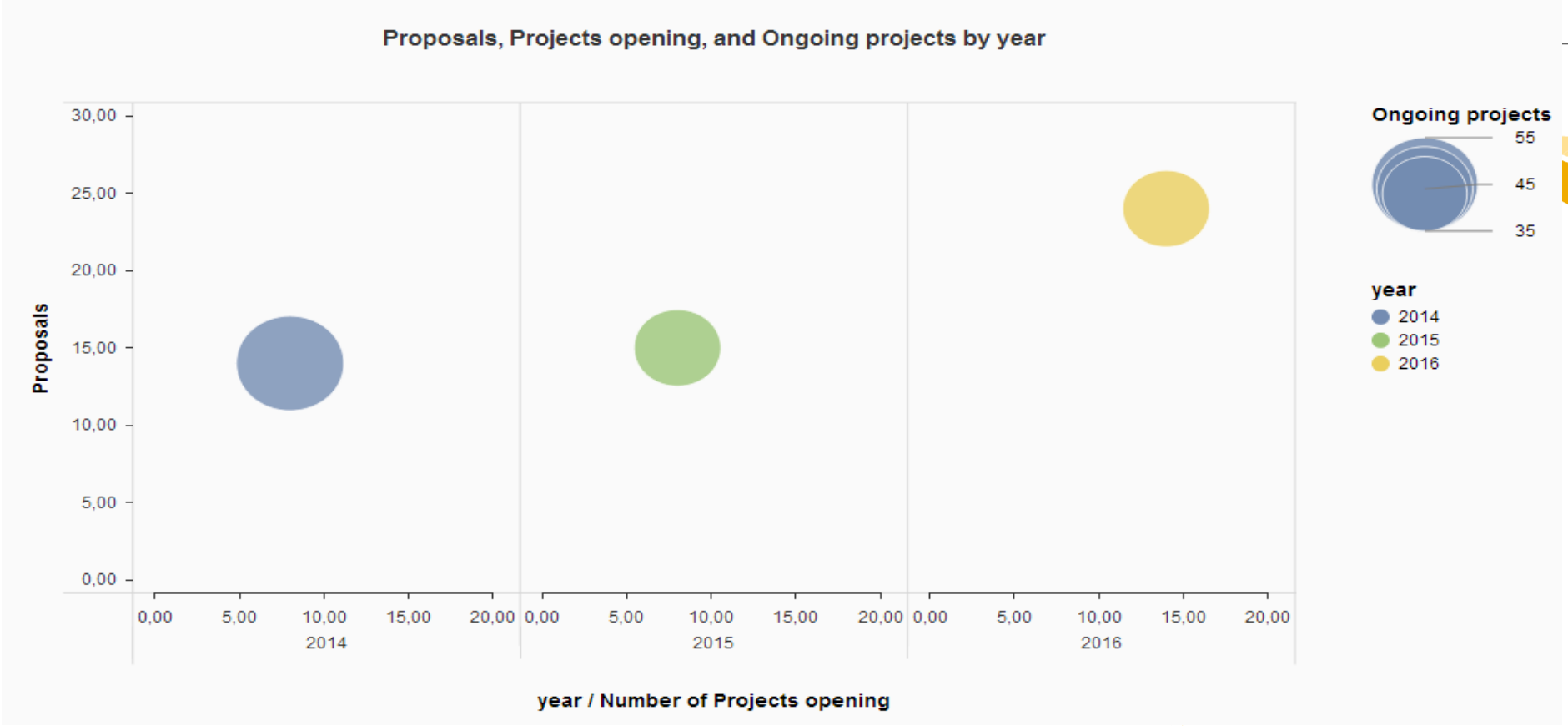
Example : Proposals Forecasting (In a nutshell)



We should **increase by third** our proposals submission in 2016 to hope to keep at least 2015 Number of Ongoing Projects (considering similar success rate)

Keeping the same number of proposals and new projects opening between 2014 and 2015, we couldn't overcome the reduction by third of ongoing projects

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Thank you

Contact information:

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