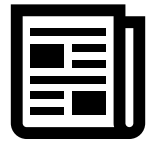# COSY - Cost Engineering application

Noordwijk, NL – SCEC 2022

Massimo Magazzu'

Introduction

- **Data** are a strong *asset* to perform the Cost Engineering activities;

- In order to exploit them, the data shall be **extracted**, **stored** and **visualized**.

Objectives

- **Overcome** the difficulties to extract financial data;

- **Merge** financial data with Technical and programmatic data;

- Having a **Data Model** which could be "extended";

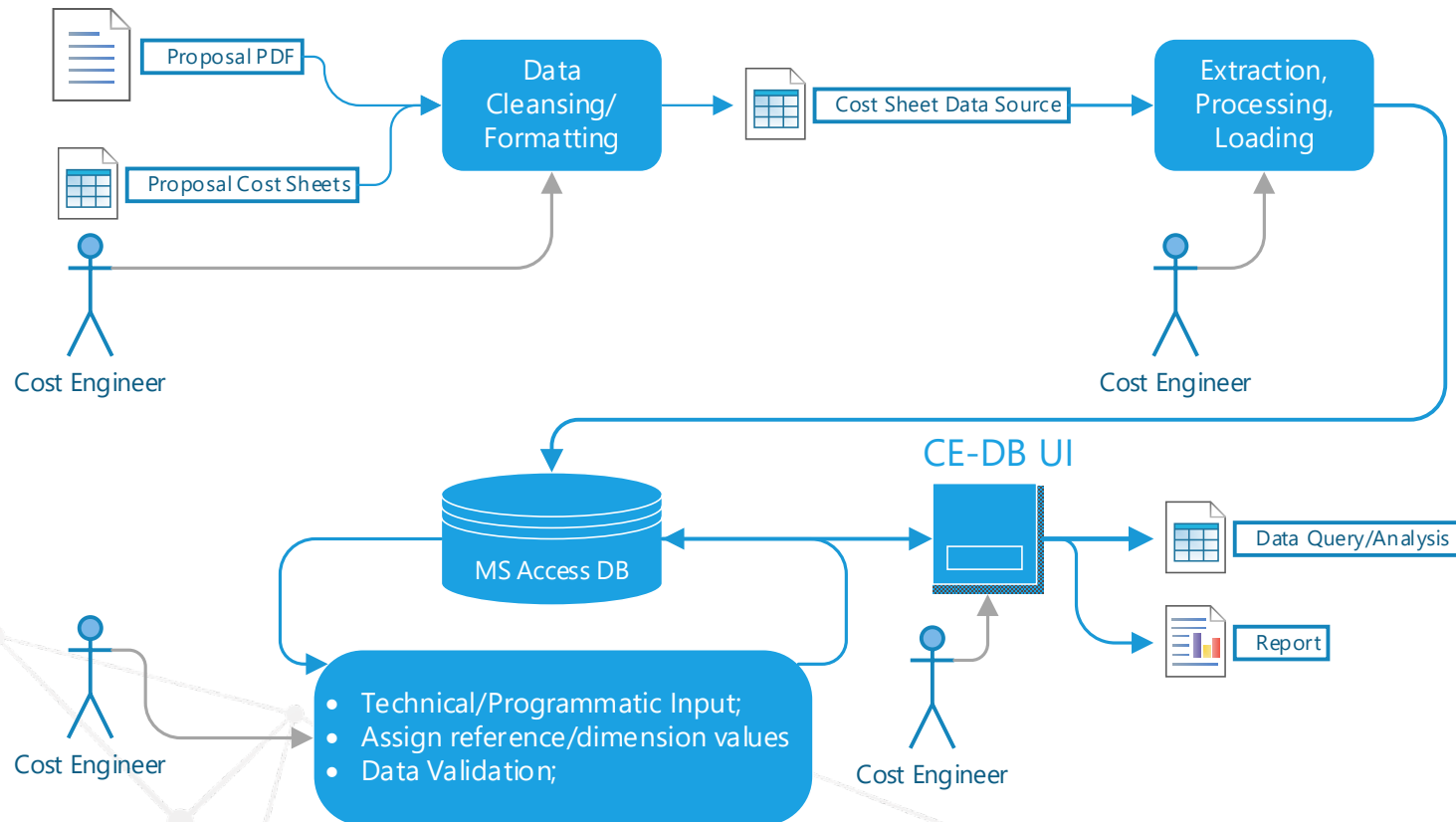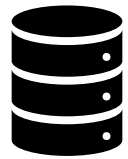- **Visualize** the data and possible results to the users.

Solution proposed

- Creation of a **Process** – Items, Phases and Actors

- Defining a **Star Schema** data model

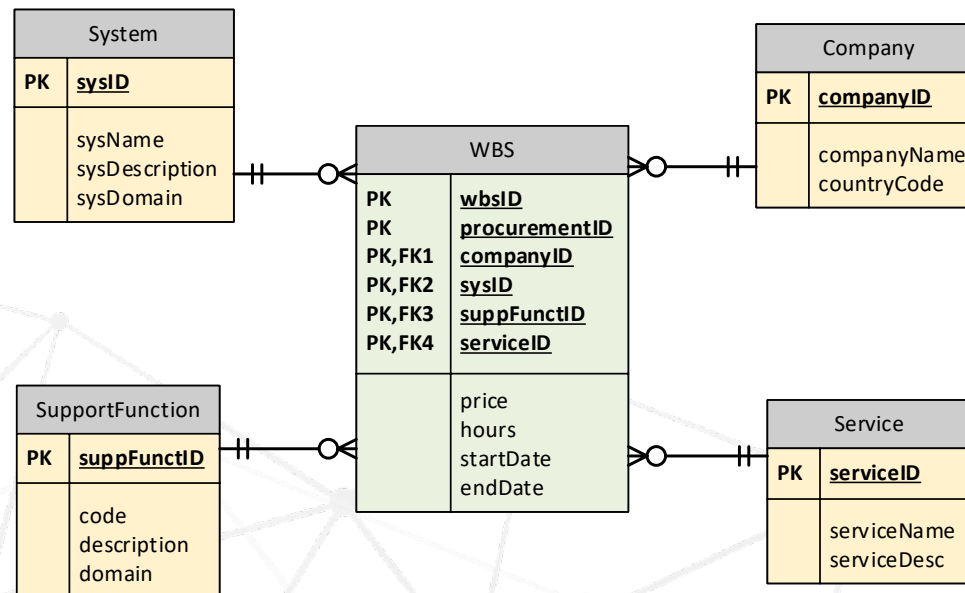- Development of a **Software** application and few software tools

Process - workflow

Proposal PDF

Proposal Cost Sheets

Data Cleansing/Formatting

Cost Sheet Data Source

Extraction, Processing, Loading

Cost Engineer

Cost Engineer

MS Access DB

CE-DB UI

Data Query/Analysis

Report

- Technical/Programmatic Input;
- Assign reference/dimension values
- Data Validation;
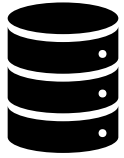
Cost Engineer

Cost Engineer

Data Model (1 of 2)

- What are the prices of a **System** produced by a **company**?

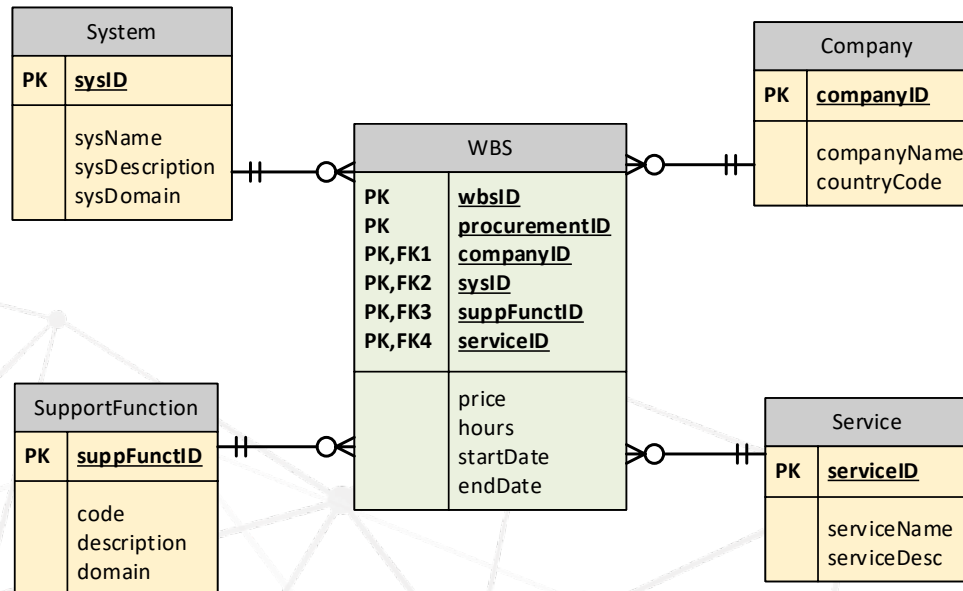- What are the costs for **Operations** for a **Science** project?

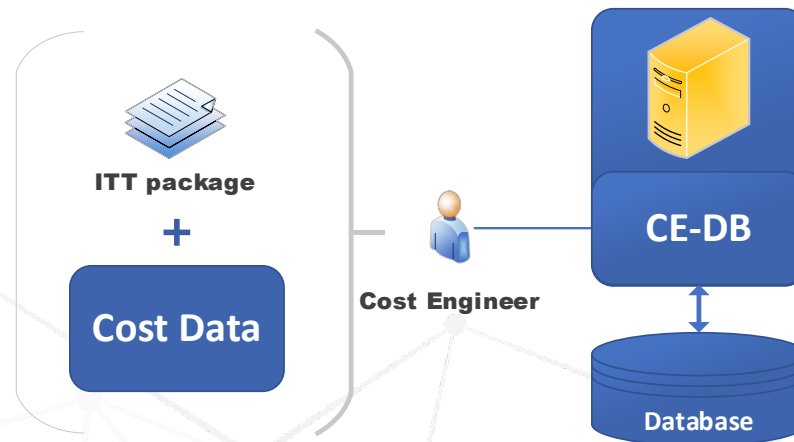Answering to those questions using a **Star Schema**:

- **Facts**: measurable, quantitative data – Hours/Prices
- **Dimension**: descriptive attributes – products, parameters, contracts, companies
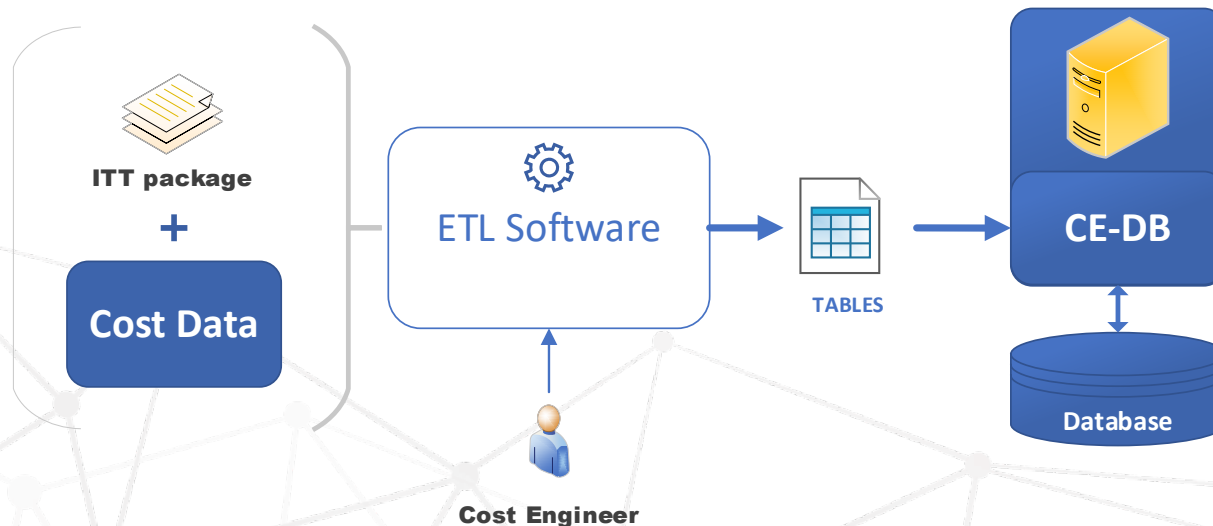
Extraction and Loading

- **Data Source**: Financial Proposals – Cost Sheets;

- **Extraction**: Parsing the Cost Sheets to extract the data;

- **Loading**: Creation of a set of Tables to be imported.

ETL software tool

- An **ETL software** tool which:
  - Read an parse the Cost Sheets;
  - Create data tables (same columns of the data model) to be imported in to COSY

ITT package

+

Cost Data
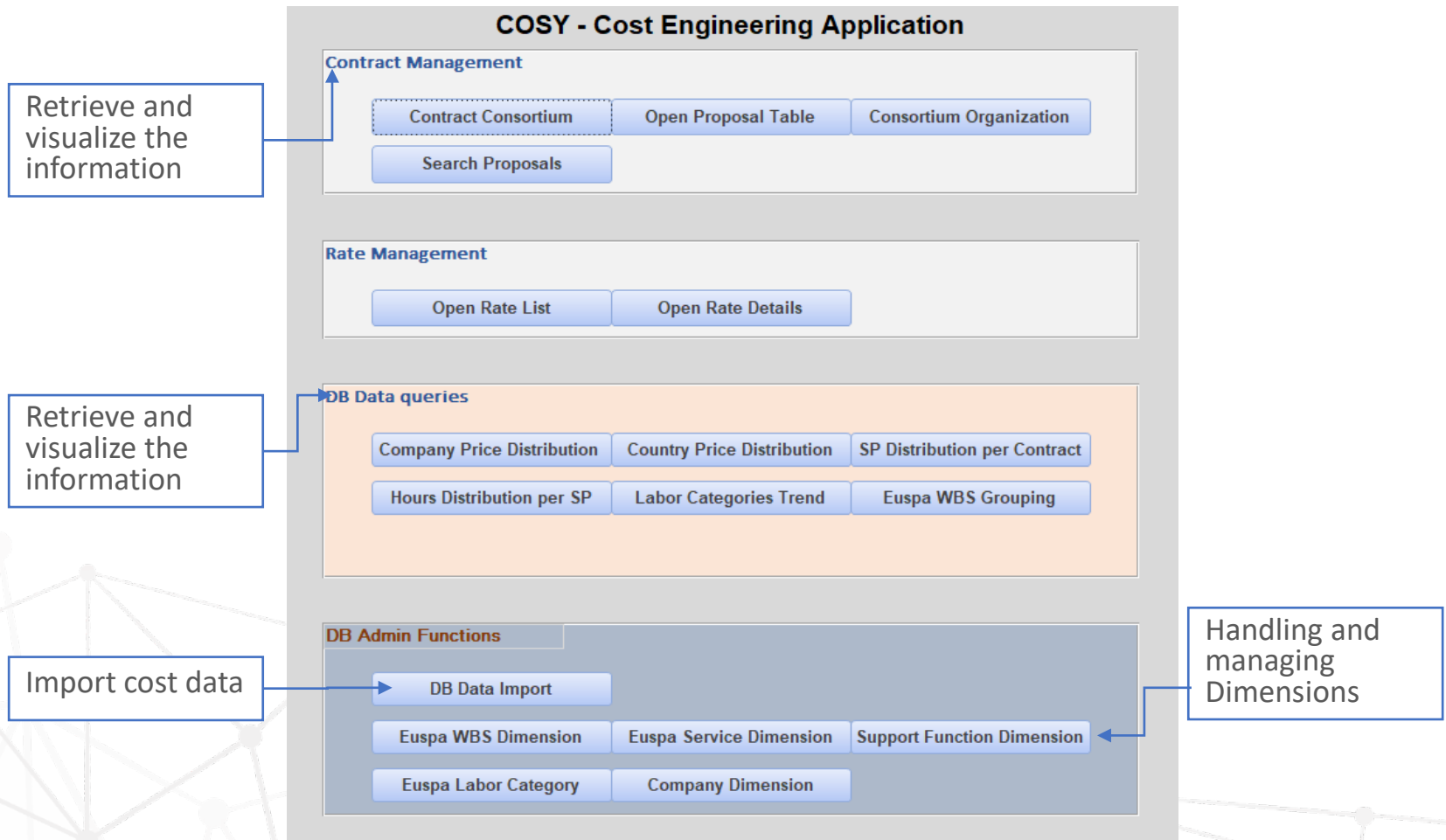
ETL Software

TABLES

CE-DB

Database

Cost Engineer

COSY software (1 of 3)

A software application where the User shall:

- **Import** cost data (tables from ETL)
- **Adding** technical and/or programmatic information (Update/Insert through UI)
- **Storing** the data in compliance with the data model
- Handling and **managing** Dimensions (e.g. a new Company to be added)
- **Retrieve** and **visualize** the information (through UI)
- **Export** some stored information for further analysis

COSY software (2 of 3)

COSY - Cost Engineering Application

Contract Management

| Contract Consortium | Open Proposal Table | Consortium Organization |

Search Proposals

Retrieve and visualize the information

Rate Management

Open Rate List | Open Rate Details

DB Data queries

| Company Price Distribution | Country Price Distribution | SP Distribution per Contract |
| Hours Distribution per SP | Labor Categories Trend | Euspa WBS Grouping |

Retrieve and visualize the information

DB Admin Functions

DB Data Import

| Euspa WBS Dimension | Euspa Service Dimension | Support Function Dimension |
| Euspa Labor Category | Company Dimension |

Import cost data

Handling and managing Dimensions

🖥️ COSY software (3 of 3)

Adding technical and/or programmatic information

WBS NODE Details

Proposal ID	GSA-NP-02-19 GEO4 Baseline
Company ID	Eutelsat S.A.
EUSPA WBS Code	111
WBS Parent Code	root
Service Code	Provision
Support Function	ADA
Econ.Condition(year)	2020
Contractual Phase	Baseline
Bidder WP code	1.1.1
WP Starting Date	14/01/2021
WP Ending Date	01/12/2022
Work package Title	Payload Development & Satellite Integration

? Questions

Linking space to user needs

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