

Intelligent Information Management System for Monitoring Concession Agreements

Έξυπνο Πληροφοριακό Σύστημα Παρακολούθησης Συμβάσεων Παραχώρησης
για την Λιμενική Βιομηχανία

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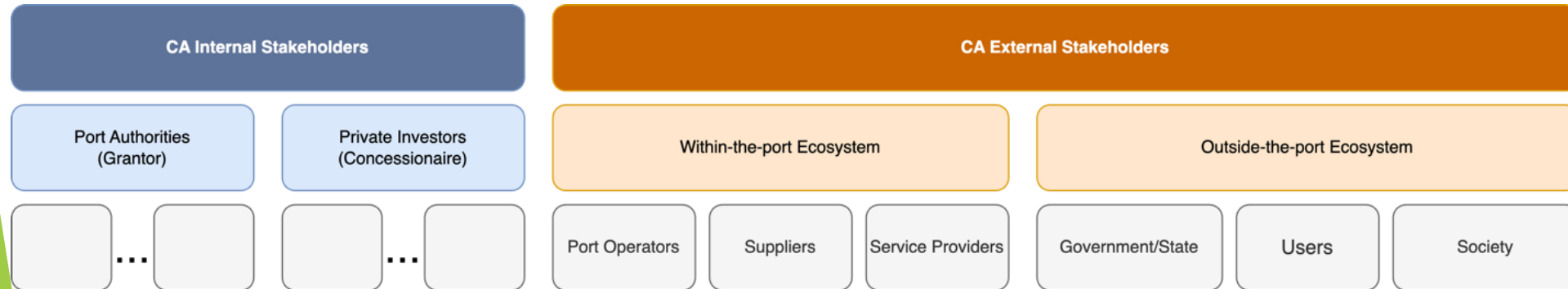
Purpose

- ▶ Data-driven approach for decision making and operations.
- ▶ Platform facilitating Information Governance in the context of Concession Agreements and beyond.
 - ▶ A centralized and intelligent platform to collect, process, and monitor key information across the lifecycle of concession agreements.
 - ▶ Designed to support **evidence-based decision making**, compliance, and continuous improvement.
 - ▶ Support economic and operational efficiency.
 - ▶ Focus on environmental and socioeconomic information.
- ▶ Deliverable D3.5 - Information Governance Framework



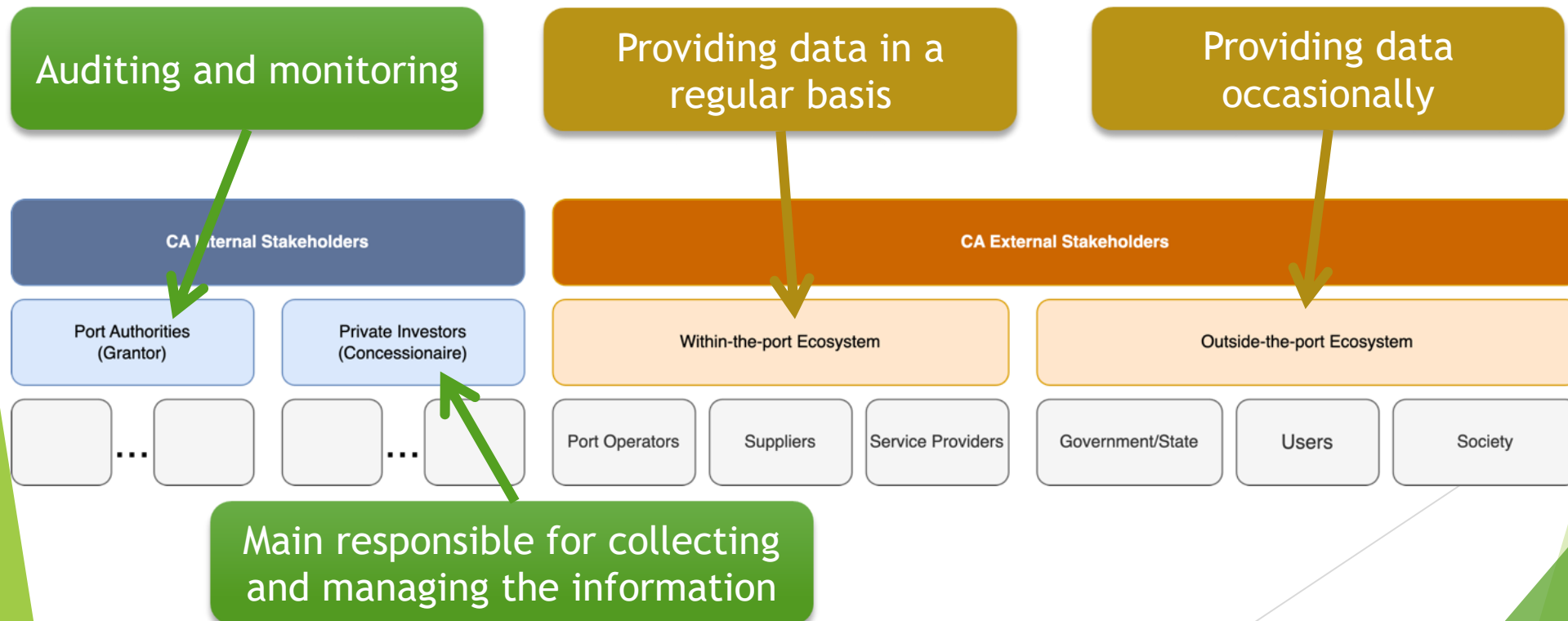
Context Overview

- Concession Agreements → Multiple stakeholders (e.g., Grantor, Concessionaire, third parties).

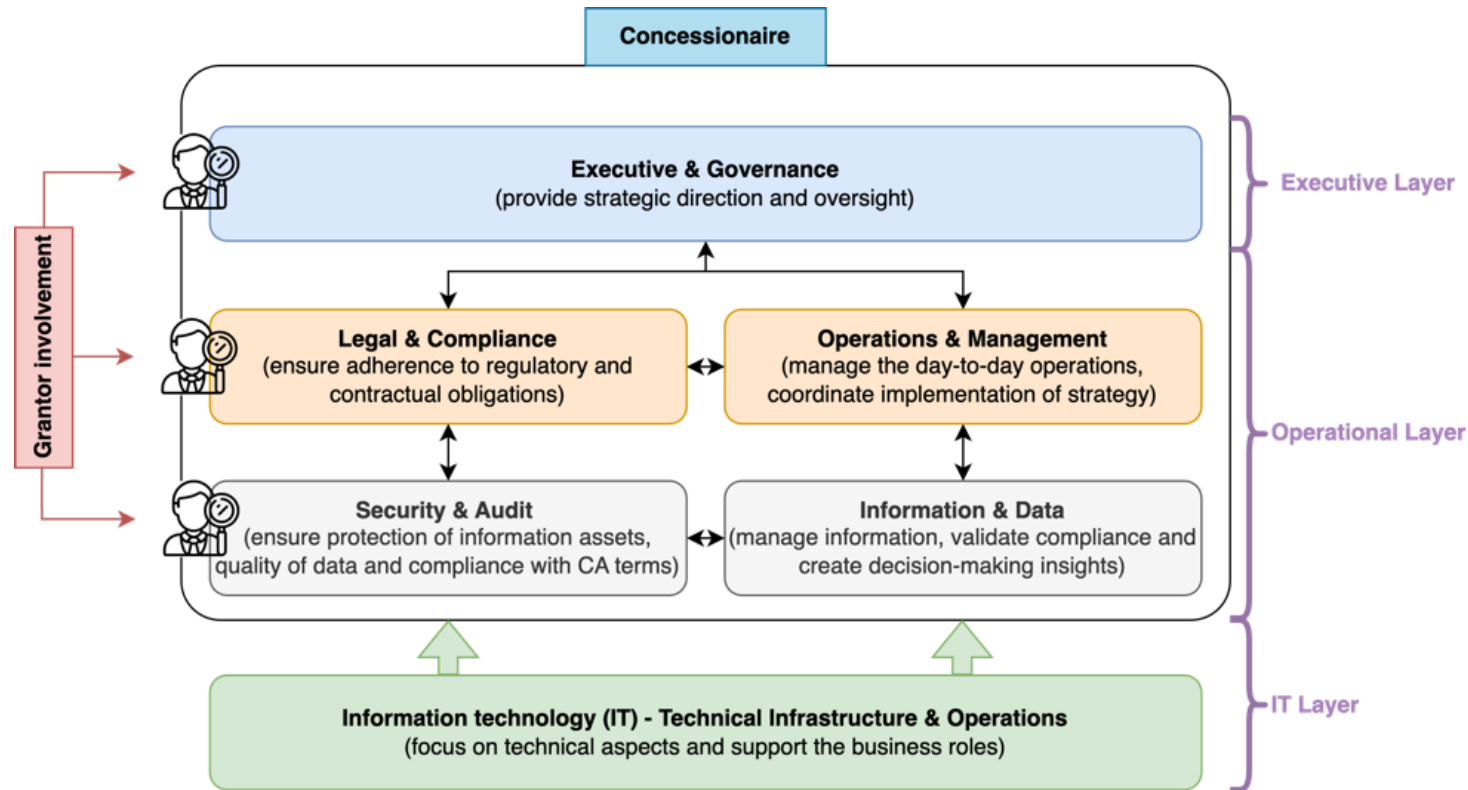


Context Overview

- Concession Agreements → Multiple stakeholders (e.g., Grantor, Concessionaire, third parties).



Context Overview



- ▶ Different Roles & Responsibilities interacting with each other.
- ▶ Multiple needs - focus on transparency, compliance, sustainability, and KPI monitoring.

Key Functionalities



Manage User access & Setup User Roles



Collaborate with other stakeholders



Collect and Integrate Heterogeneous Information Sources



Manage Documents and Records

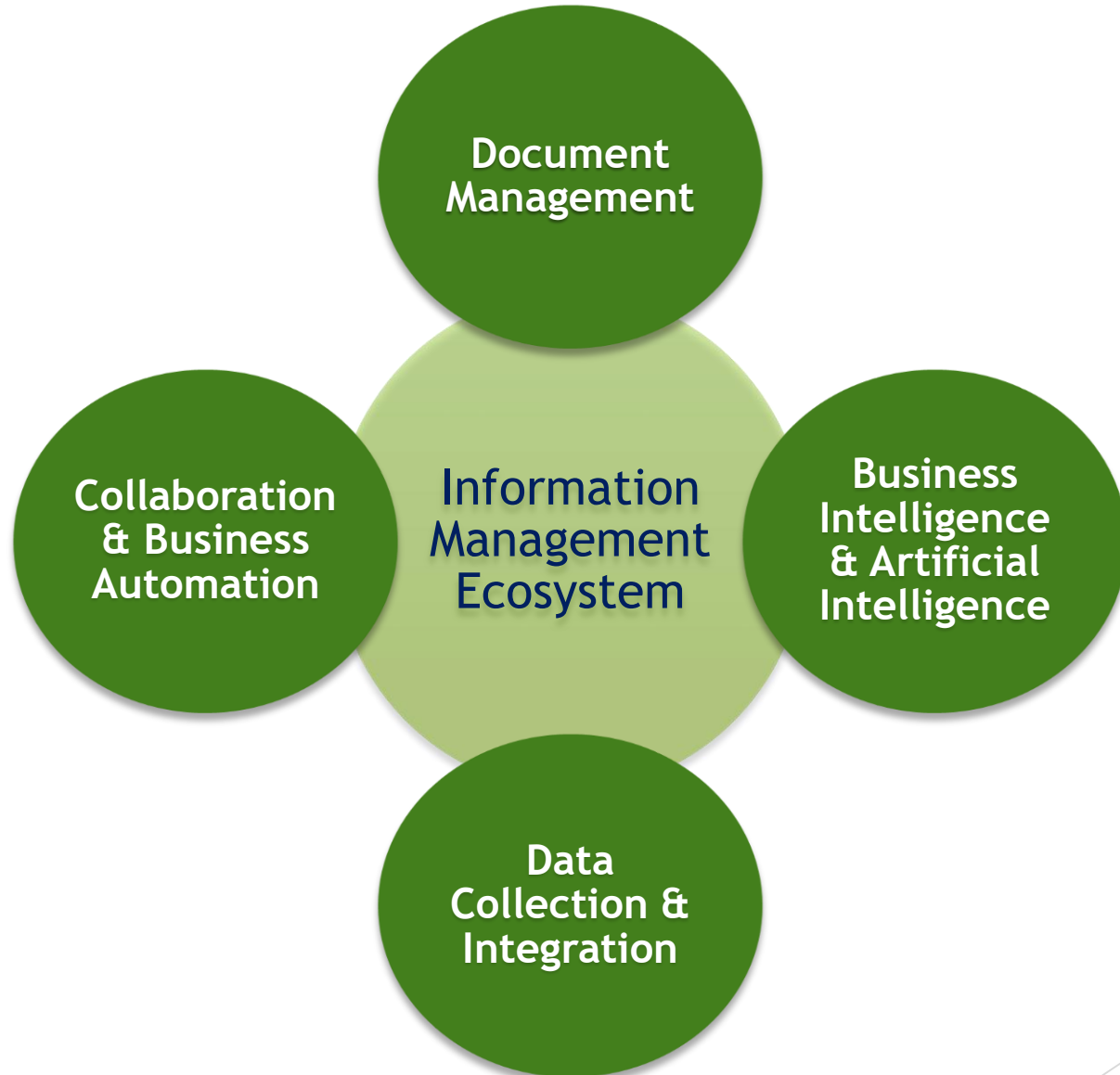


Visualize and Analyse Information through Dashboards for KPI monitoring across social, environmental, and financial axes

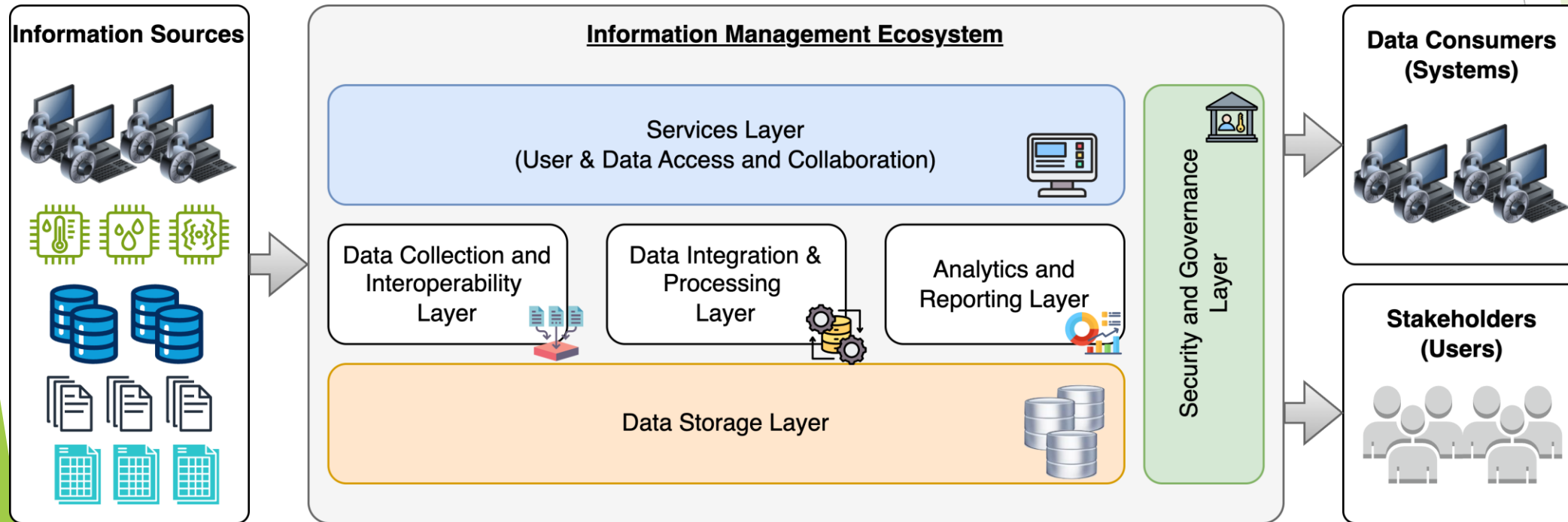


Manage Business Processes defined in Executive and Operational Layer

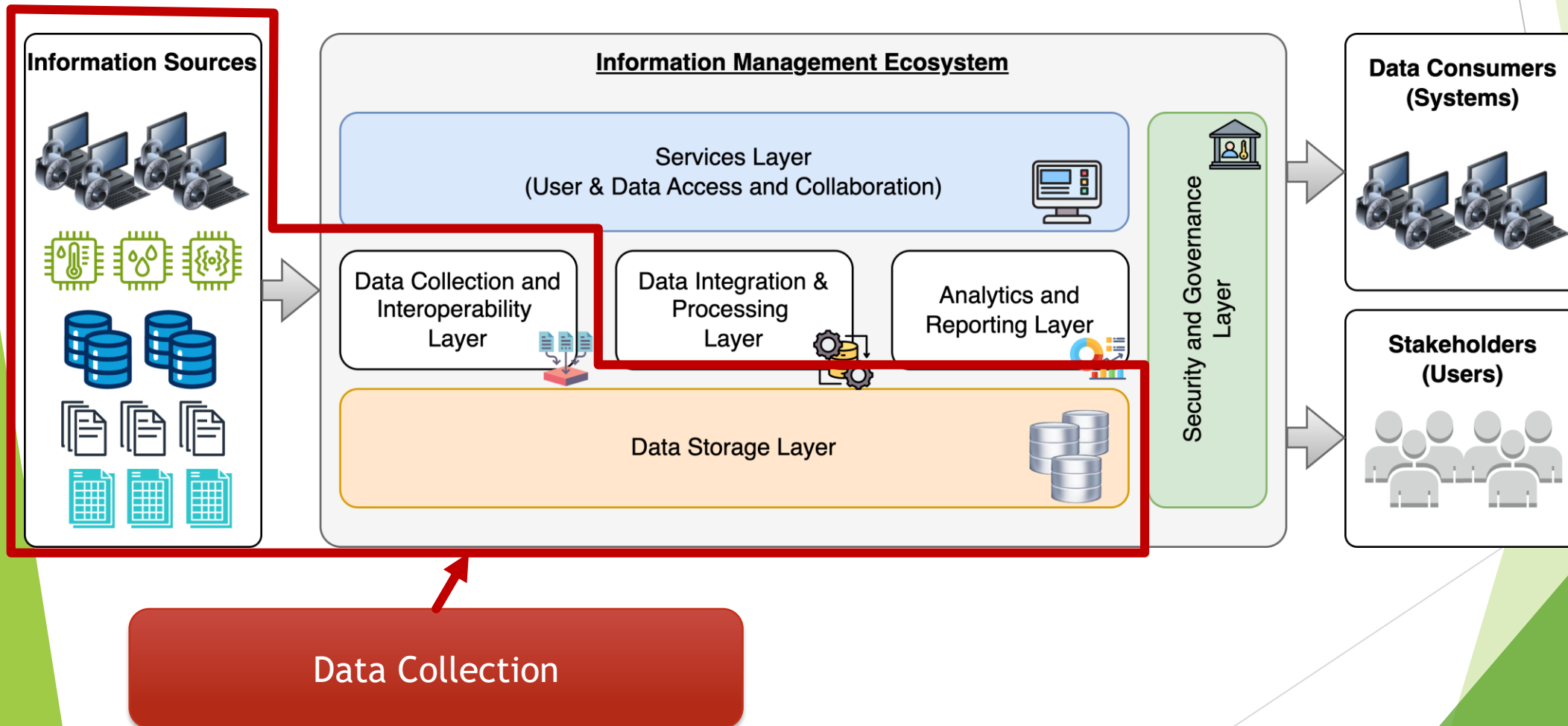
Information Management Ecosystem



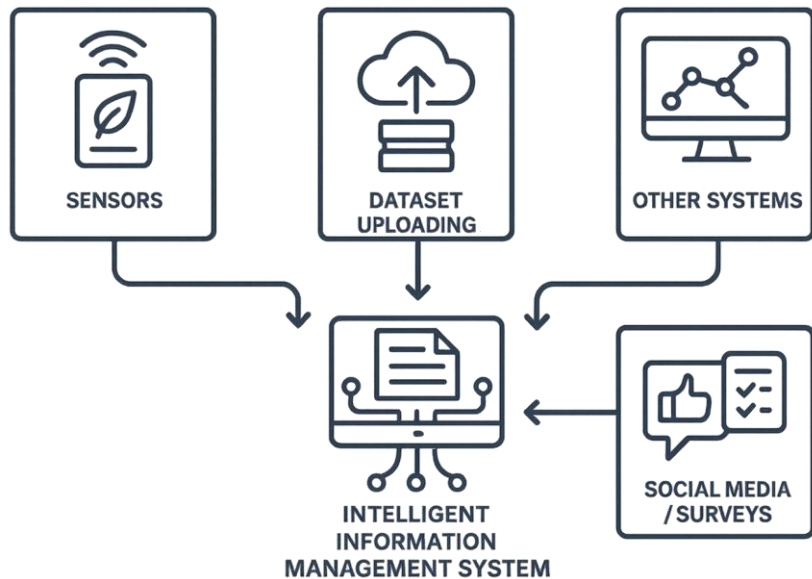
Information Management Ecosystem



Data Collection



Data Collection



- ▶ Heterogeneous data sources
 - ▶ Sensor data
 - ▶ Databases (internal or external systems)
 - ▶ Public data (e.g., social media posts)
 - ▶ Custom datasets
- ▶ How getting the data
 - ▶ Connect to external or internal Systems/Databases
 - ▶ Upload datasets
 - ▶ Scraping information from Web

Data Collection

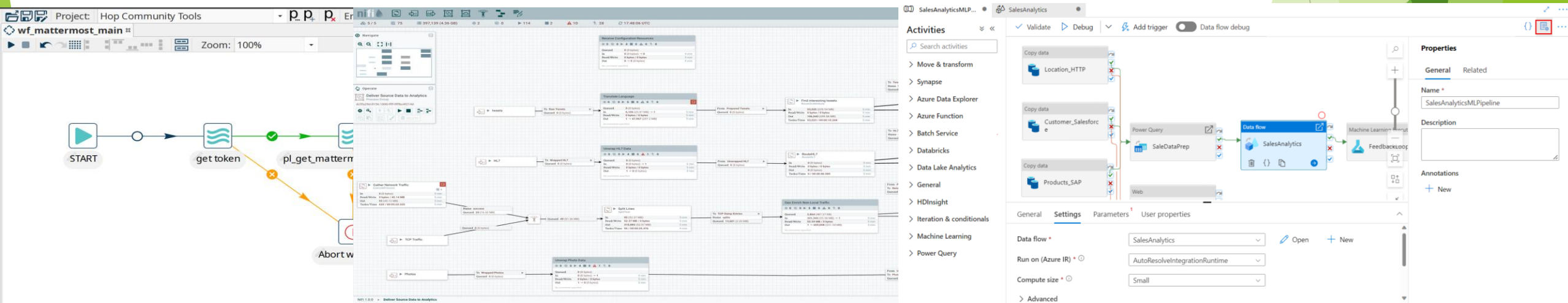
Main types of solutions:

► Extract-Transform-Load (ETL) Tools:

- e.g., Apache Hop, Apache NiFi, Azure Data Factory, Informatica Intelligent Cloud Services
- Metadata standards (e.g., DCAT-AP, SDMX, schema.org, Data Cube Vocabulary) can be used to standardize the acceptable input format and automate the acquisition process.

Technical Resources are required

Can handle any type of sources



Data Collection

Main types of solutions:

► Data transfer tools:

- e.g., Airbyte, Hevo Data, Integrate.io, RudderStack (former Blendo), Kestra

Limited source types

Friendly UI, even for
no-technical
resources

The collage displays four different data integration tool interfaces:

- Airbyte:** A screenshot of the Airbyte web interface showing a 'Connections' page where users can link sources to destinations. It features a central 'Connections' button and a sidebar with options like 'Sources', 'Destinations', 'Builder', and 'Settings'.
- kestra:** A screenshot of the Kestra web interface showing a 'Flows' page. It includes a sidebar with navigation options like 'Home', 'Flows', 'Templates', 'Executions', 'Logs', 'Documentation', and 'Settings'. The main area shows a flow diagram with stages like 'IngestionStage', 'DatastoreConnectiv...', 'TravelActivitiesPredi...', and 'SanityTestStage'.
- Integrate.io:** A screenshot of the Integrate.io web interface showing a 'Workflow' page. It features a sidebar with navigation options like 'Workflow', 'Transformations', 'Schema Mapper', 'Load Status', and 'Activity Log'. The main area shows a workflow diagram with tasks like 'run_package_1', 'SQL', 'run_package_2', 'run_package_3', and 'file_mover_1'.
- Hevo Data:** A screenshot of the Hevo Data web interface showing a 'Pipeline Activity' page. It includes a sidebar with navigation options like 'Overview', 'Transformations', 'Schema Mapper', 'Load Status', and 'Activity Log'. The main area shows a pipeline activity dashboard with metrics like 'Ingestion', 'Transformations', 'Schema Mapper', and 'Load', along with a list of objects and their status.

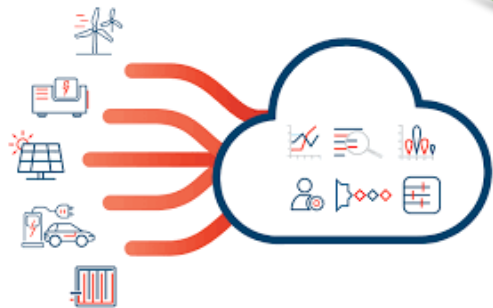
Data Collection

Main types of solutions:

- ▶ **Extract-Transform-Load (ETL) Tools**
- ▶ Data transfer tools
- ▶ **Application Programming Interface (API)**

Suggested

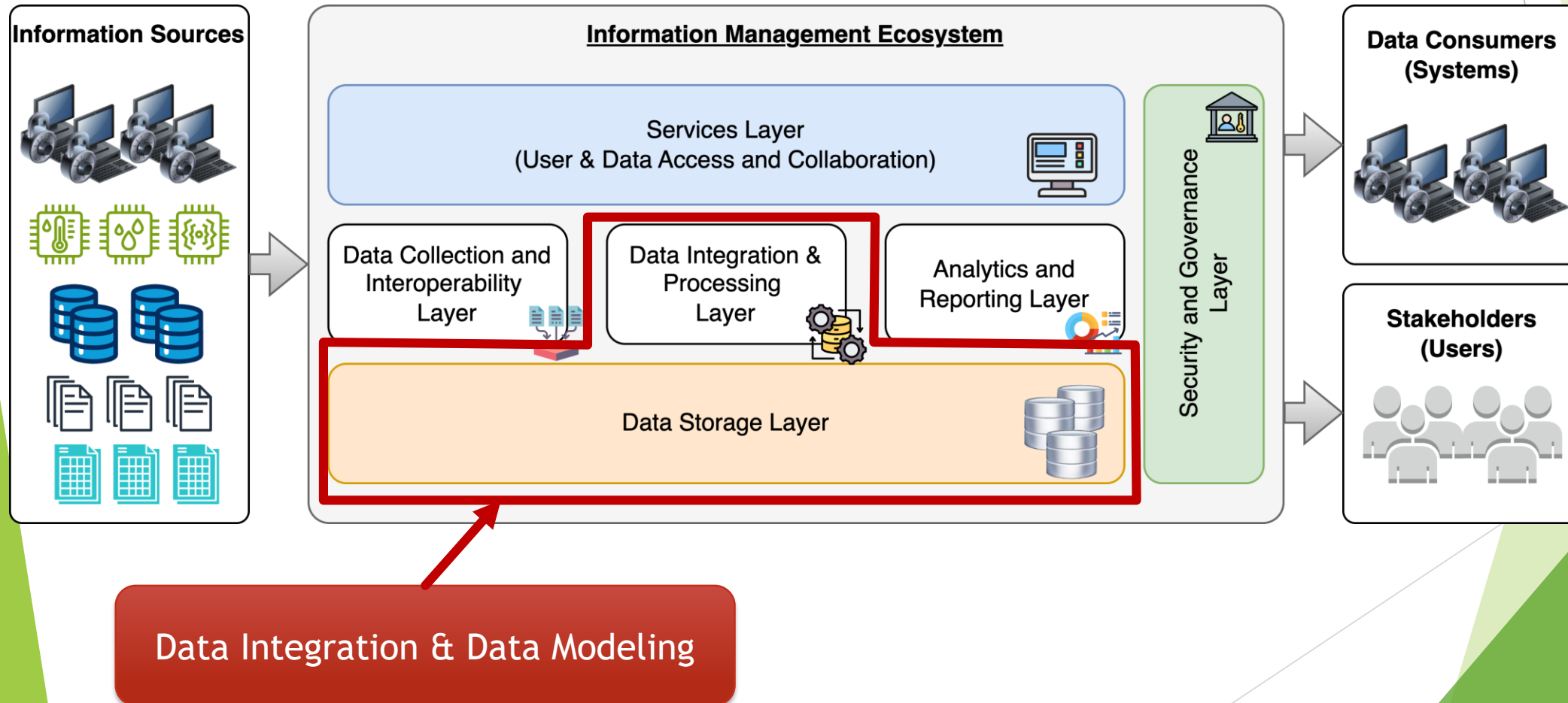
Suggested



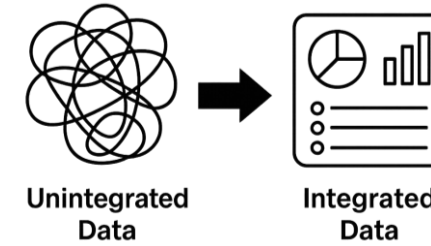
Enabling Data Interoperability:
External systems can provide
their data using an API

Data	Uploading	Connect to external systems
Social	Manually-gathered data	Surveys to gather data, and acquire using ETL processes
Financial		Using API or ETL processes
Environmental		

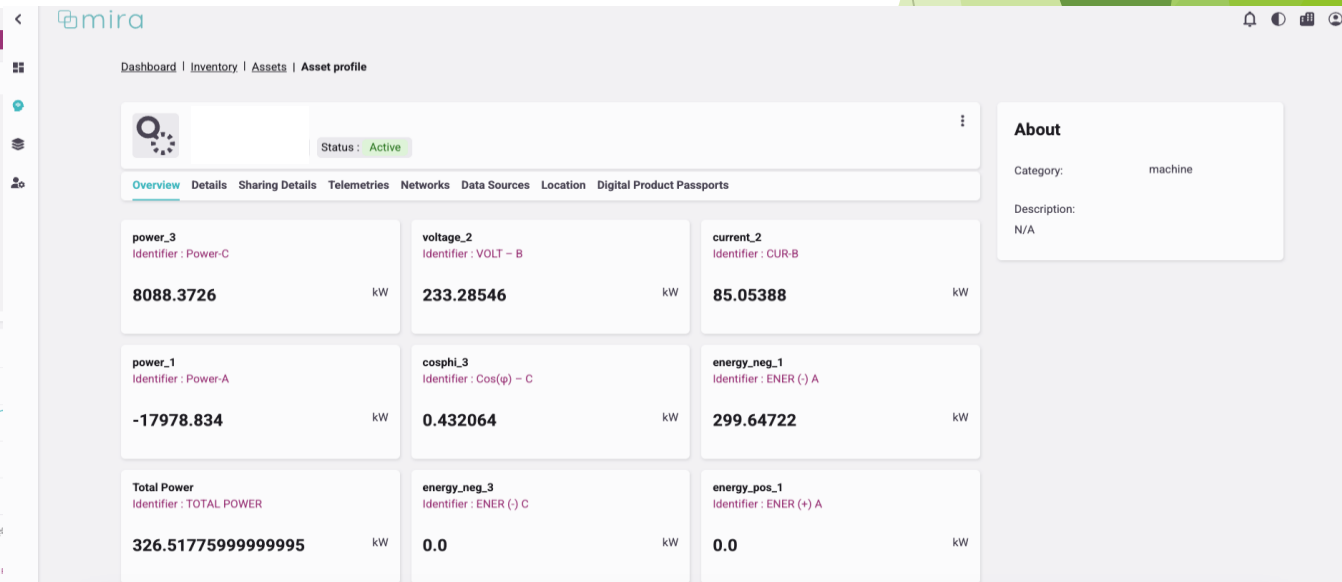
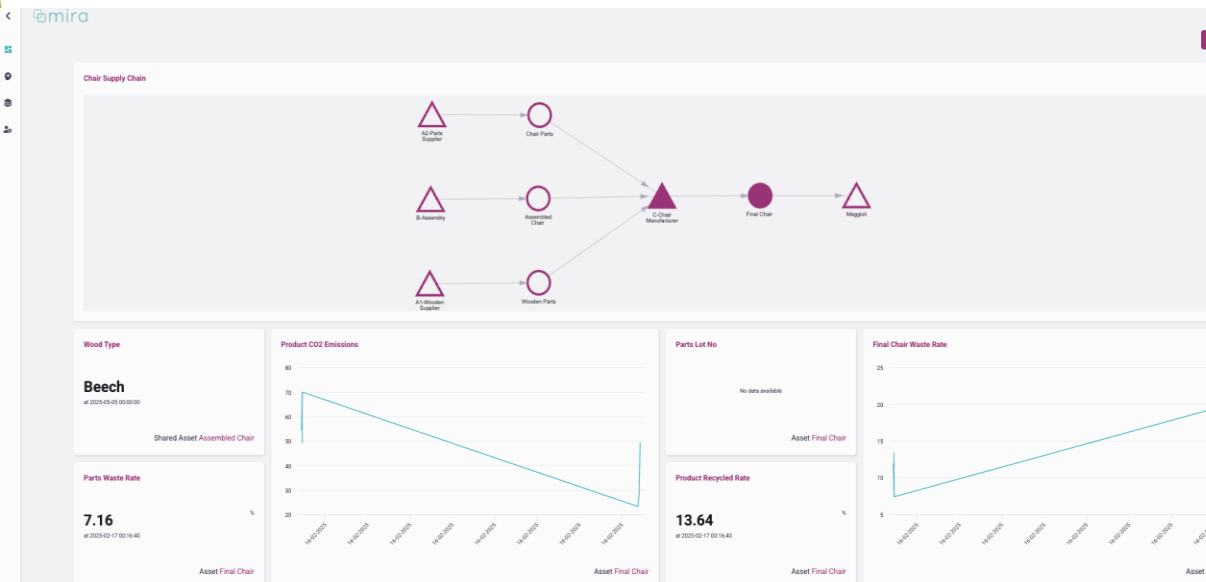
Data Integration & Modelling



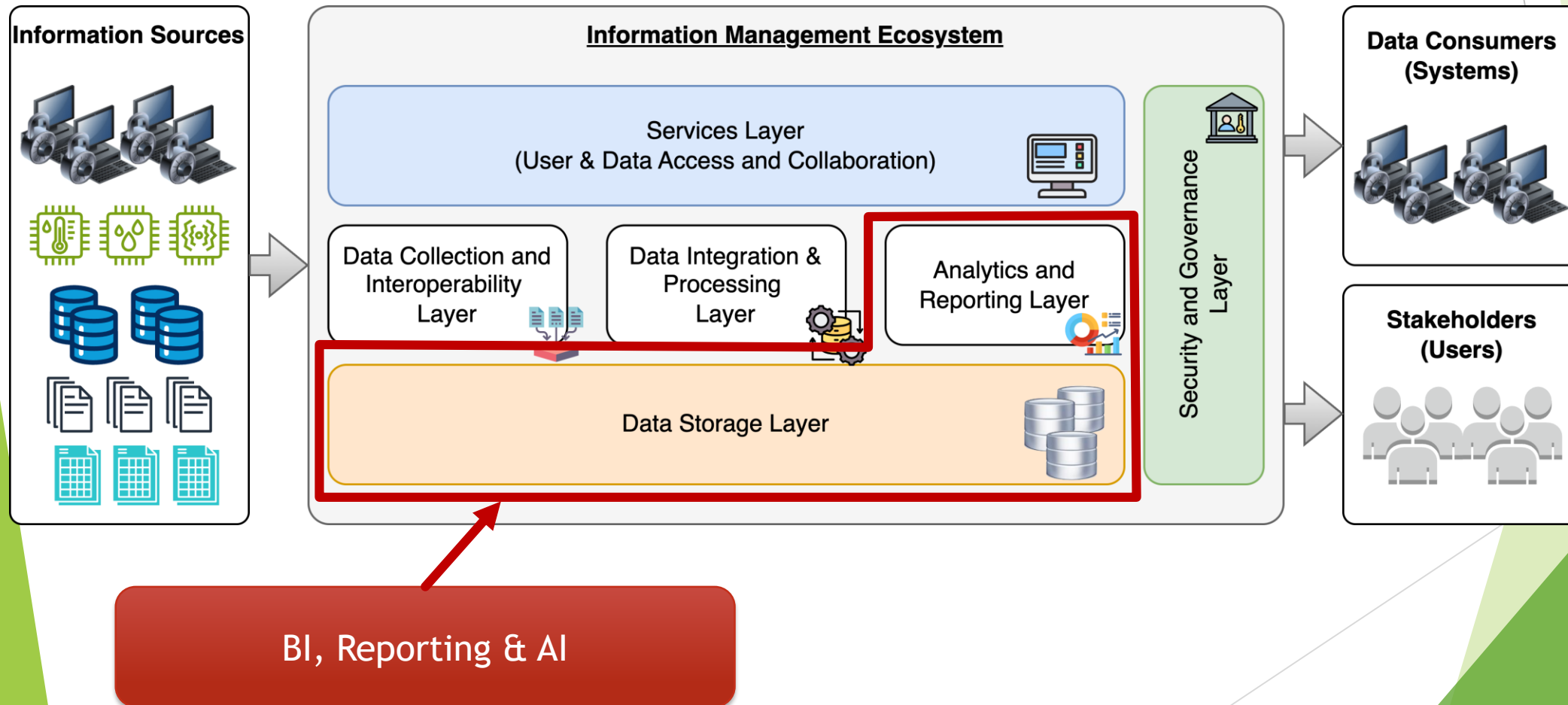
Data Integration & Modelling



- ▶ Combining information into a unified view for smarter decisions
- ▶ Custom Integration vs. Specific Solutions
 - ▶ e.g., Data Modelling through Microsoft PowerBI, Maggioli MIRA
- ▶ Modelling the data → Information
- ▶ Providing a business view of the acquired information
- ▶ Dedicated resources could be assigned by concessionaire to maintain this activity.

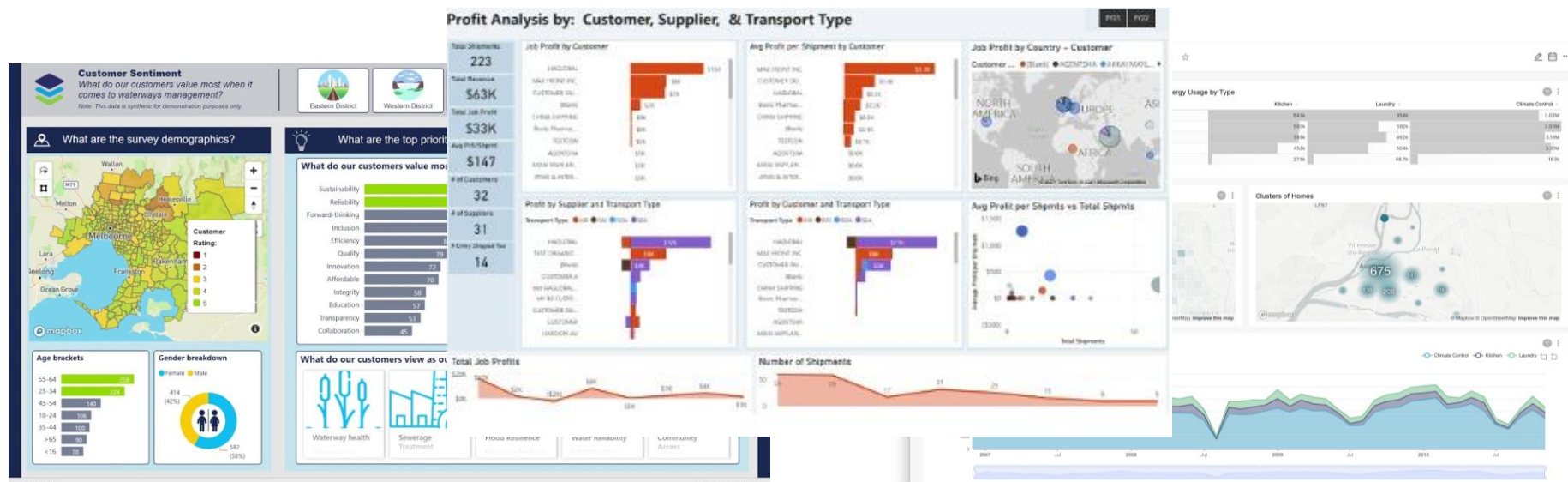


Business Intelligence & Artificial Intelligence



Business Intelligence & Artificial Intelligence

- ▶ Turn Information into Insights
 - ▶ Business Intelligence and Reporting tools for visualizing the acquired information
 - ▶ AI processes and tools can be used for further analysis; e.g., prediction, pattern detection
 - ▶ Technological options:
 - ▶ E.g., Microsoft PowerBI, Apache Superset, Metabase, Google Looker (formerly Google Data Studio)
- ▶ Why BI and AI tools:
 - ▶ KPI Monitoring & Benchmarking
 - ▶ Anomaly & Risk Detection
 - ▶ Intelligent Alerting
 - ▶ Audit Trails & Governance Reports.
 - ▶ Alerting tools (e.g., Drools) can be used to setup certain patterns according to policies, targets and strategy



Document Management

- ▶ Centralized storage of critical documents/records; e.g. concession contracts, annexes, amendments, operational reports
- ▶ Ensure historical traceability of documents and revisions over time
- ▶ Define who can view, edit, approve, or archive each record
- ▶ Retention policy enforcement
- ▶ Metadata tagging and classification; Facilitate fast retrieval, filtering, and semantic search
- ▶ Support for ESG (Environmental, Social, and Governance) and sustainability reporting; Archive environmental/social reports for CSRD (Corporate Sustainability Reporting Directive) and related audits
- ▶ Technologies that can be used:
 - ▶ E.g., Alfresco Content Management, Microsoft Sharepoint

The screenshot displays the Alfresco Share user interface. At the top, the 'Alfresco Share' logo is visible alongside navigation links for 'My Dashboard', 'Sites', 'People', 'Repository', and 'More...'. The user is logged in as 'Administrator'. The main area is titled 'Repository Browser' and shows a hierarchical tree structure on the left under 'Documents' > 'Repository'. The tree includes folders like 'Data Dictionary', 'Guest Home', 'Sites', 'wqs', 'dataLists', 'documentLibrary', 'Alfresco Quick Start', 'Quick Start Editorial', 'Quick Start Live', 'e0cfd74b-5e00-4065-8e0d-as', 'links', 'null', 'User Home', 'Web Depl', and 'Web Proj'. The right pane shows details for the selected folder 'Alfresco Quick Start', including a list of items: 'Quick Start Editorial' and 'Quick Start Live'. Below this, a 'Sales Team' group conversation is visible, showing a list of documents with columns for Name, Document type, Owner, Audience, Modified by, and Last modified. The document list includes items like 'Contracts', 'Invoices', 'Legal documents', 'Sales statistics', 'Event 8/16', 'Meeting agenda', 'Pricing', and 'Riddle Systems LLC'.

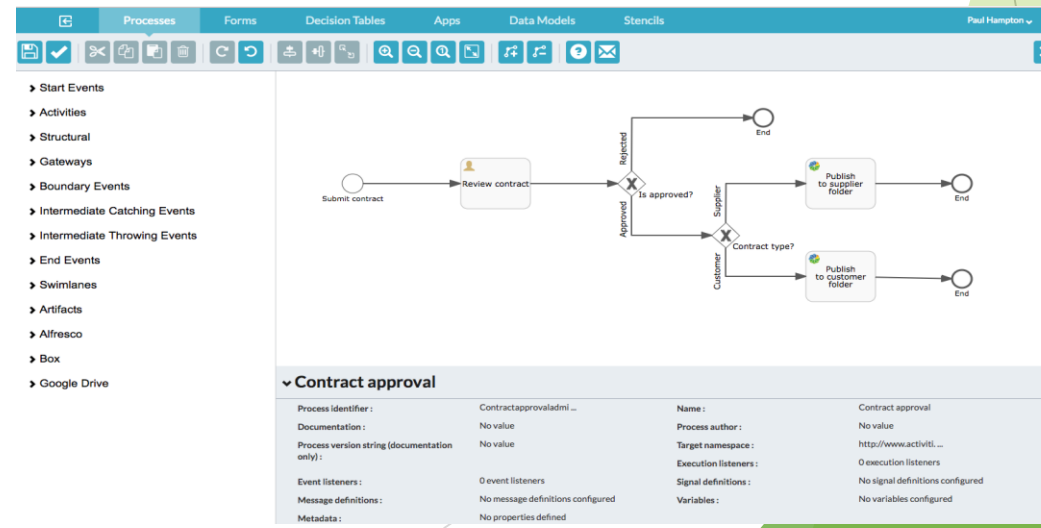
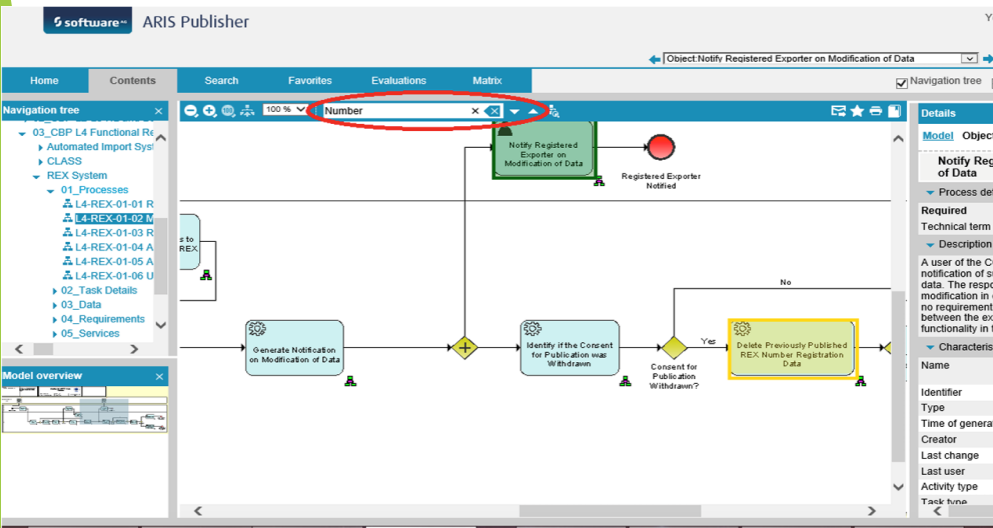
Name	Document type	Owner	Audience	Modified by	Last modified
Contracts	Folder	Thomas Norman	NDA approved	Thomas Norman	Wed at 11:32 AM
Invoices	Folder	Leroy Melton	NDA approved	Edward Lane	Tue at 2:05 PM
Legal documents	Folder	Linda Willis	Internal only	Leroy Melton	Thu at 3:15 PM
Sales statistics	Folder	Leroy Melton	Internal only	Laura Hill	Wed at 5:56 PM
Event 8/16	Presentation	Ramon Reed	Internal only	Ramon Reed	5 hours ago
Meeting agenda	Form	Paul Allen	Internal only	Paul Allen	Thu at 2:34 PM
Pricing	Policy	Jonathan Riggs	Internal only	Joseph Redmond	Wed at 10:23 AM
Riddle Systems LLC	Document set	Laura Hill	NDA approved	Laura Hill	Fri at 3:56 PM

Collaboration & Business Automation

- ▶ Automate and standardize Business Process
 - ▶ Efficiency, Smooth monitoring of processes, Transparency and Auditability, Improved Collaboration, Compliance and Risk Reduction.
- ▶ Available technologies:
 - ▶ e.g., Activiti App (integrated into alfresco), Kogito

▶ Example:

- ▶ EU is using EU ARIS to automate their processes



Conclusion

- ✓ An intelligent, centralized platform is essential for managing the complexity of concession agreements.
- ✓ Supports data collection, integration, analysis, and governance across diverse environmental, social, and financial domains.
- ✓ Combines technologies such as ETL pipelines, BI/AI tools, document management, and business automation for scalable, transparent, and compliant operations.
- ✓ Enables evidence-based decision making, KPI monitoring, and continuous improvement aligned with sustainability and ESG requirements.
- ✓ Acts as a digital backbone for collaboration among stakeholders (grantor, concessionaire, third parties).
- **Challenges:** Information gathering, Large amount of data, Proper resources and skills, Training and education.

Thank You!

Questions?

