The Value of an integrated Enterprise Architecture as a steering instrument in the petroleum business

OMV Group

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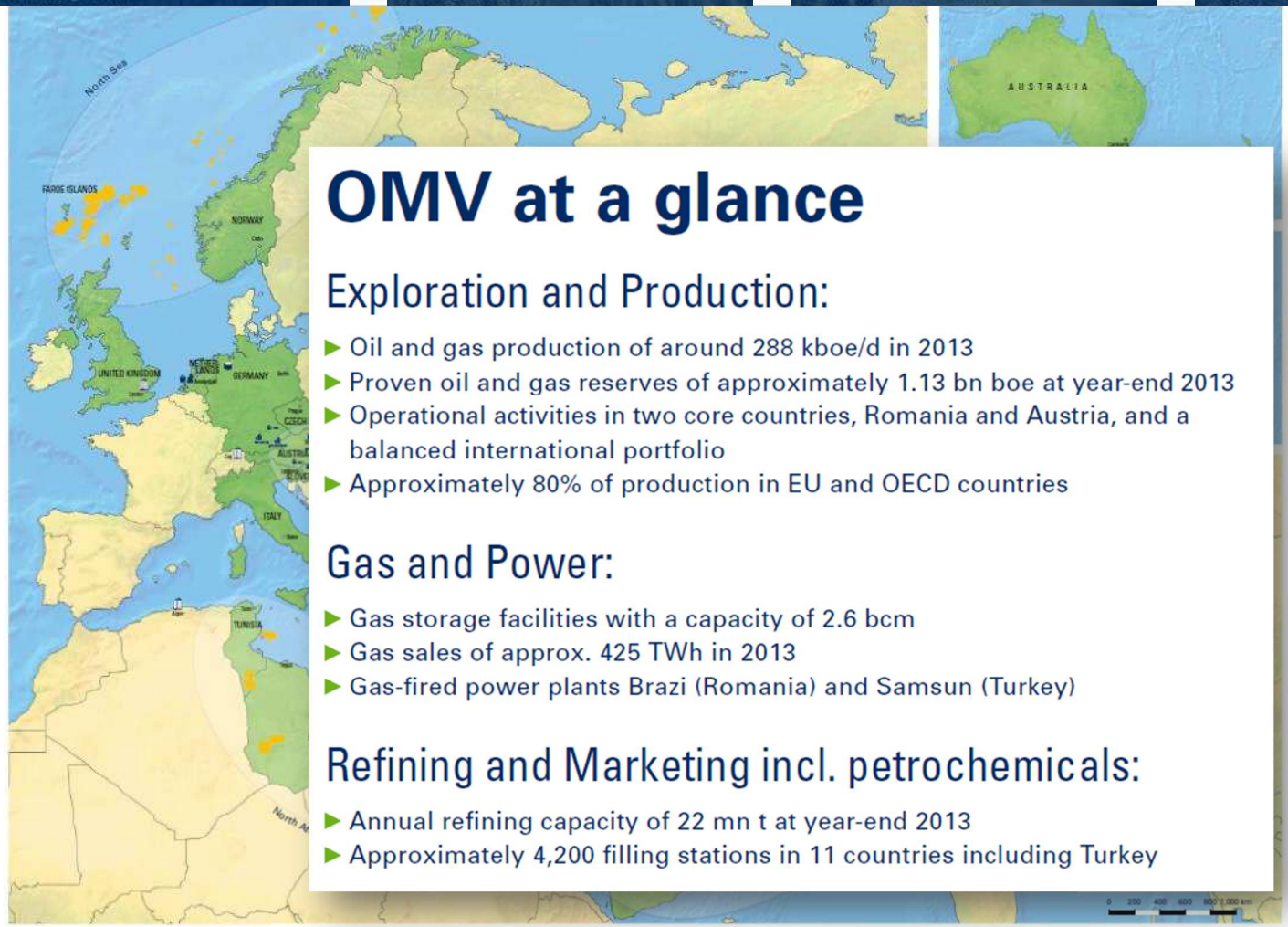


OMV at a glance

Exploration and Production:

- Oil and gas production of around 288 kboe/d in 2013
- Proven oil and gas reserves of approximately 1.13 bn boe at year-end 2013
- Operational activities in two core countries, Romania and Austria, and a balanced international portfolio
- Approximately 80% of production in EU and OECD countries

Gas and Power:

- Gas storage facilities with a capacity of 2.6 bcm
- Gas sales of approx. 425 TWh in 2013
- Gas-fired power plants Brazi (Romania) and Samsun (Turkey)

Refining and Marketing incl. petrochemicals:

- Annual refining capacity of 22 mn t at year-end 2013
- Approximately 4,200 filling stations in 11 countries including Turkey

Context to
OMV Business and OMV Group IT Strategy

Living integration
in a smarter organization.

Enterprise Architecture

Moving towards the architected enterprise

Process Management

Connecting the dots

Information Management

Professional care for key company assets. Discard the rest.

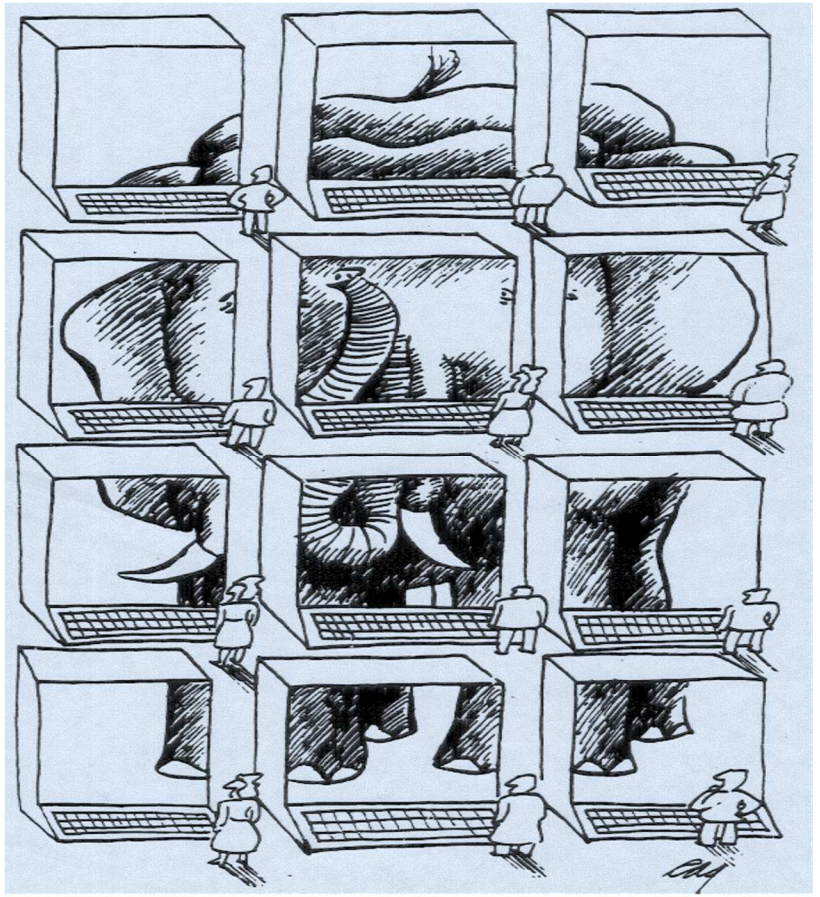
PETROM OMV

Enterprise Architecture
Framework

Taming the Enterprise Architecture

How to slice the EA elephant?

- Create EA understanding and define an EA Framework based on best practice
- Ensure business context and address stakeholder concerns
- Select the EA supporting tools
- Show the benefits of EA for both business and IT
- Define the EA building blocks with layers, levels and artifacts
- Apply the Architecture Management Processes (AMP) in (IT-)Projects



Enterprise Architecture
TOGAF considers the Enterprise as a System

The Architecture of an Enterprise

Architecture

A formal description of a system, or a detailed plan of the system at component level, to guide its implementation

(ISO/IEC 42010:2007).

The structure of components, their inter-relationships, and the principles and guidelines governing their design and evolution over time.

Enterprise

The highest level (typically) of description of an organization and typically covers all missions and functions.

An enterprise will often span multiple organizations.

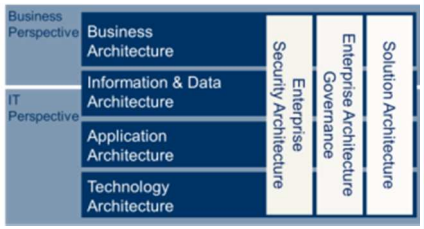
Enterprise Architecture
A definition

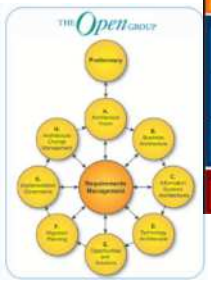
- **Enterprise Architecture (EA)** is the **process** of translating the **business strategy** and **architecting the enterprise** to ensure **planning reliability, transparency and sustainability** of IT investments to enable business success.

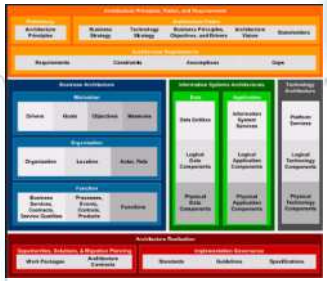
- It includes **both** the **process** and the **result**.

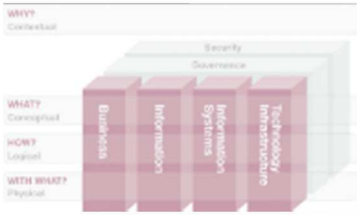
Enterprise Architecture Framework
Selection of a Framework

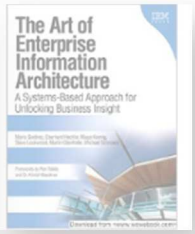
- Numerous frameworks and supporting concepts exists, to provide a structure for Enterprise Architecture
  (e.g. Zachmann,TOGAF, Rational Architecture, ArchiMate, IAF Gartner, DAMA, IBM,
- COBIT, ITIL)





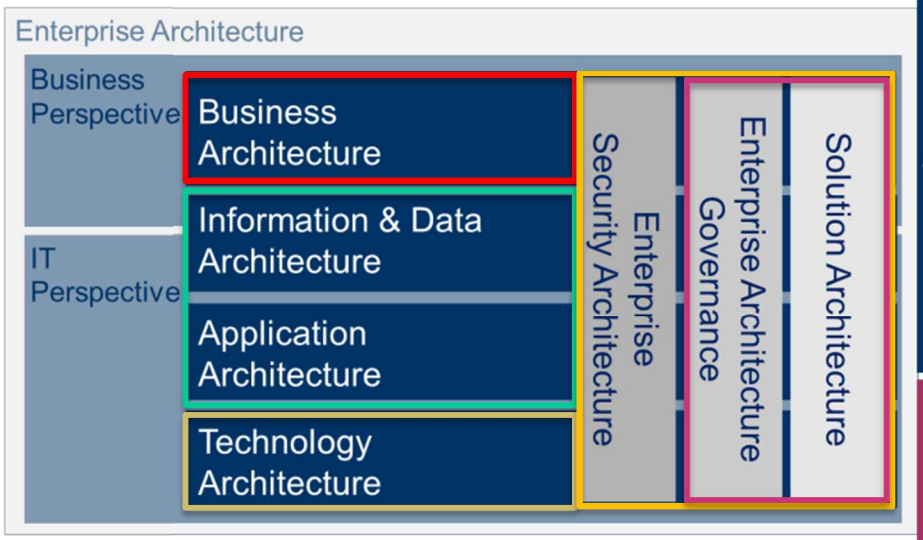


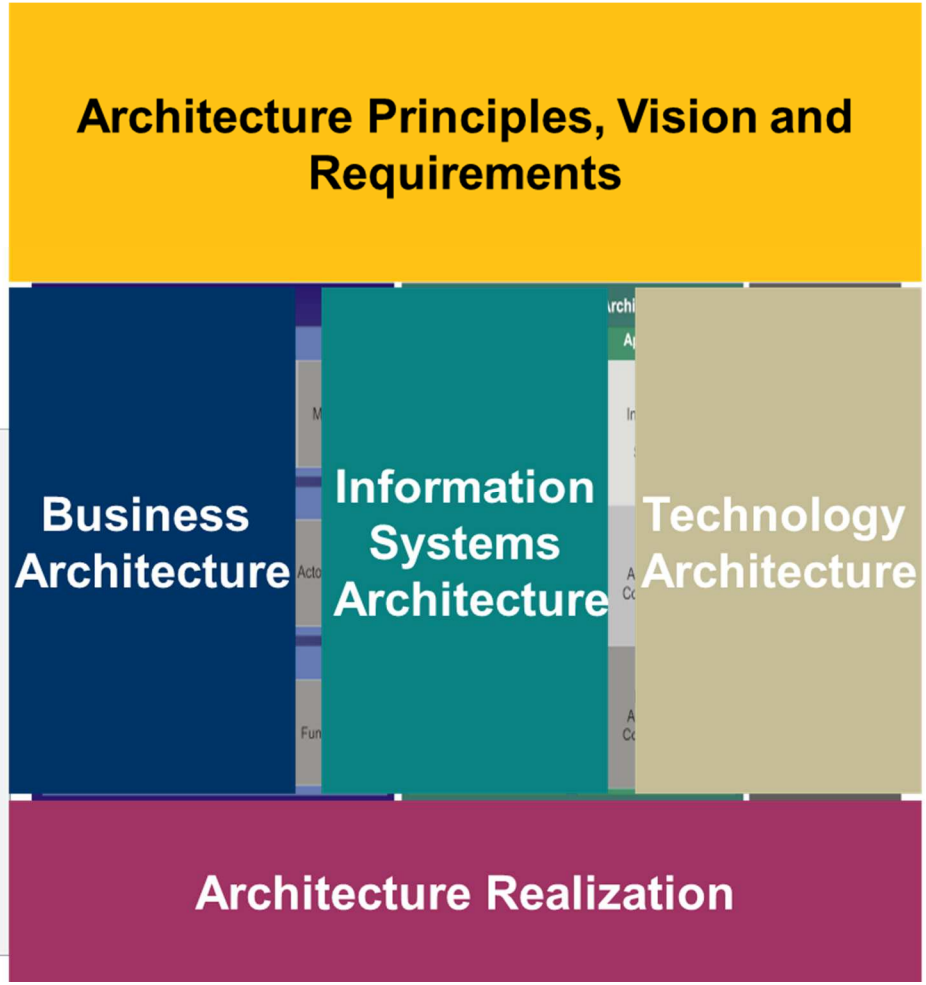




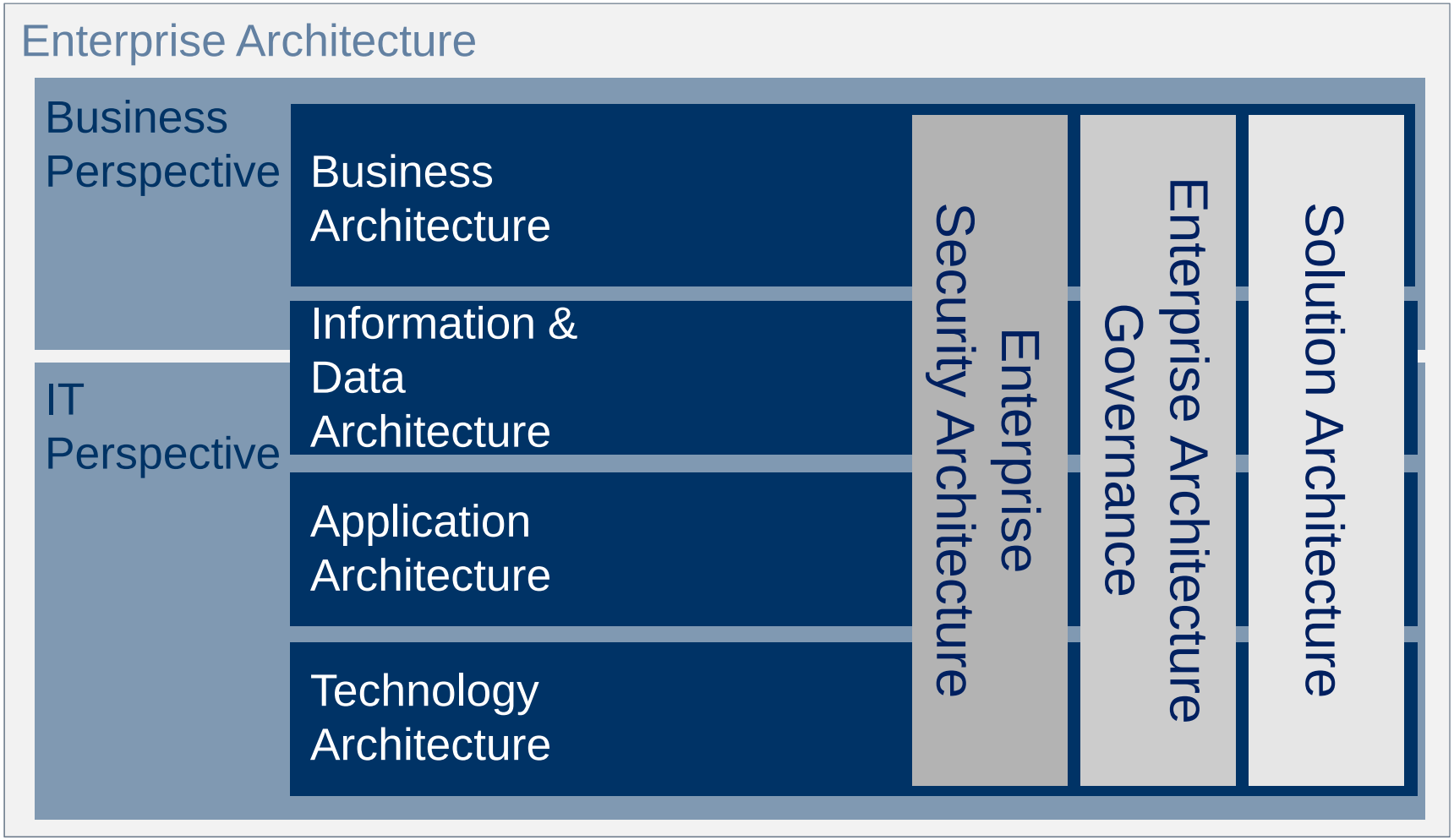
Enterprise Architecture Framework
Ensure that the Framework…

… is based on the best practice like TOGAF©
The Open Group Architecture Framework and Architecture Development Methodology (ADM)

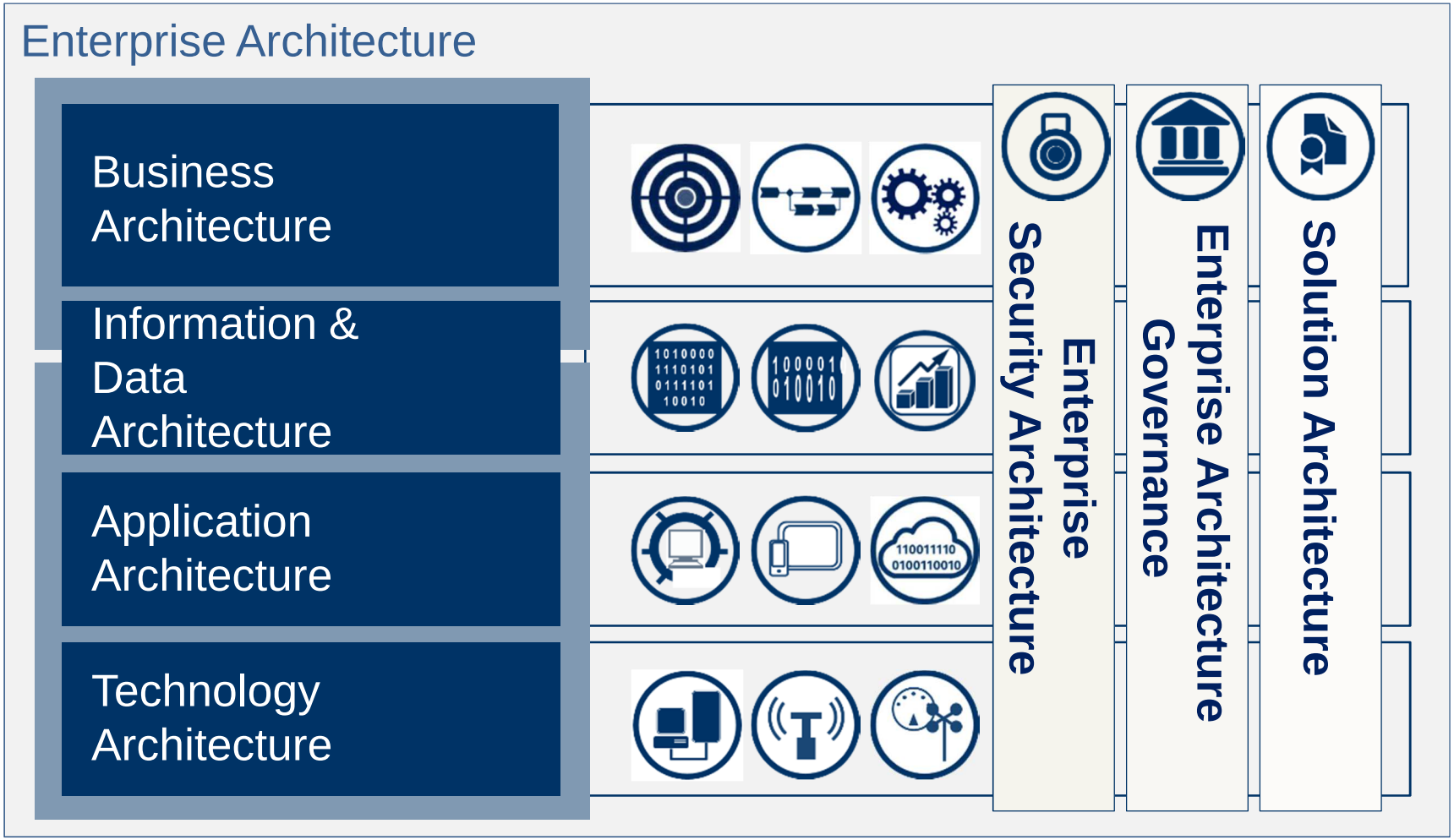




Enterprise Architecture Framework
Architectural Layers



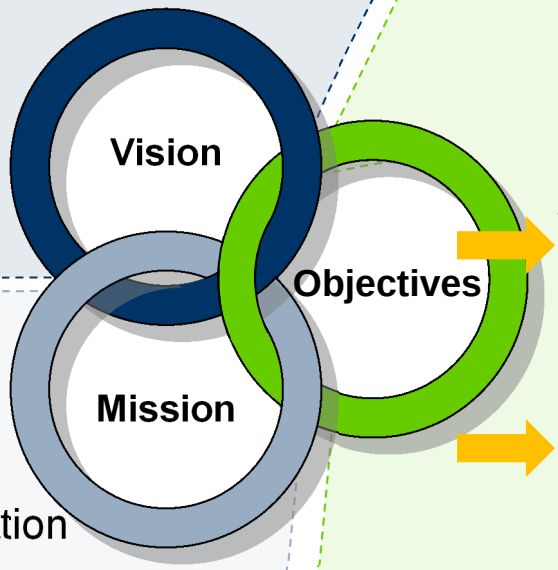
Enterprise Architecture Framework
Architectural Layers



Enterprise Architecture
Business Context

Establish business context: Vision and Mission defines the framework for business success

We provide an integrated architectural framework and processes which ensure that the IT investments enable successful execution of business strategies



We enable the successful implementation of IT solutions and their integration into sustainable IT Roadmaps by applying EA methodology, IT Governance, Information Security and Solution Architecture

Increase Speed
- Take advantage of new technology trends
- Quickly react to market and industry changes.
- Be a smart follower

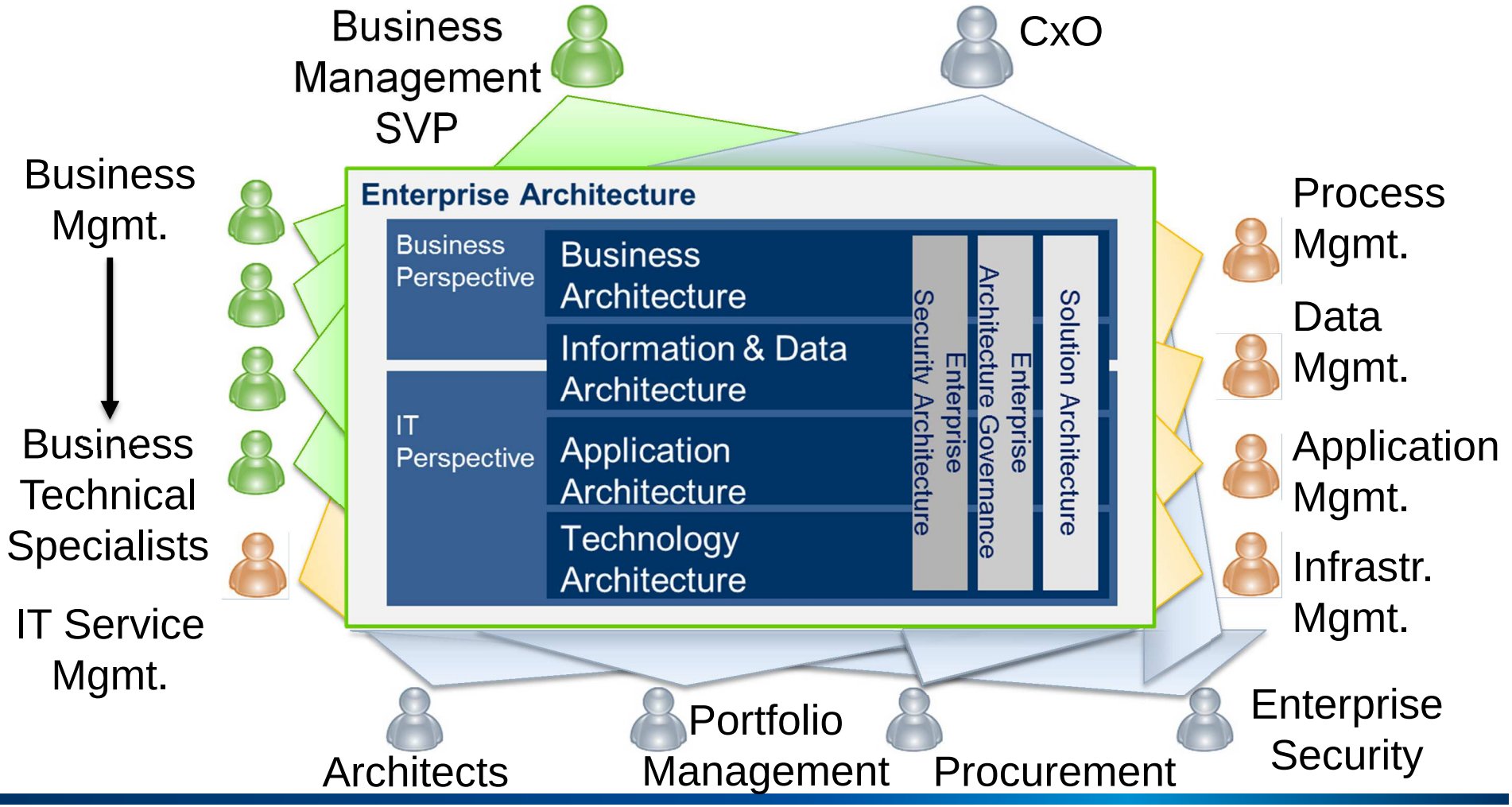
Strengthen Reliability
- Ensure transparency, sustainability and reduced risk of investments
- Ensure better return on investments
- Drive better cross-divisional alignment and knowledge sharing
- Reduce complexity
- Ensure more stable, secure and efficient IT operations

Enable Flexibility
- Re-use of standard solutions from the technology catalogue
- Ensure provision of customized solutions in accordance with corporate regulations

Enterprise Architecture
Benefits & Value Proposition

"Effective management of the enterprise's architecture is key to business success and competitive advantage"

Various Stakeholders look at Enterprise Architecture from different Perspectives



Enterprise Architecture Benefits
Why do we need Enterprise Architecture?

Benefits for CxOs:

- Enterprise Architecture is an “option” on future (stock exchange)
  - …the more speculative or random an option is, the higher the risk
  - …the more reliable the option is, the higher the investment security and business success
- Support to make the right IT investments inside the right business projects
- Enterprise Architecture ensures planning reliability, transparency and sustainability

Source Gartner,Inc.

Enterprise Architecture Benefits
Why do we need Enterprise Architecture?

Benefits for the business users and IT organization:

Need for improvement

- Stability issues
- Overly complex IT landscape
- Inflexible to respond to technology development
- Not transparent IT landscape and too high IT-cost

- Ensure continued stability of running business
- Increase simplicity of the IT landscape
- Reduce cost of non-quality
- Improve time-to-market

Enterprise Architecture
Tool Support

Select and Enterprise Architecture Repository / Supporting Environment

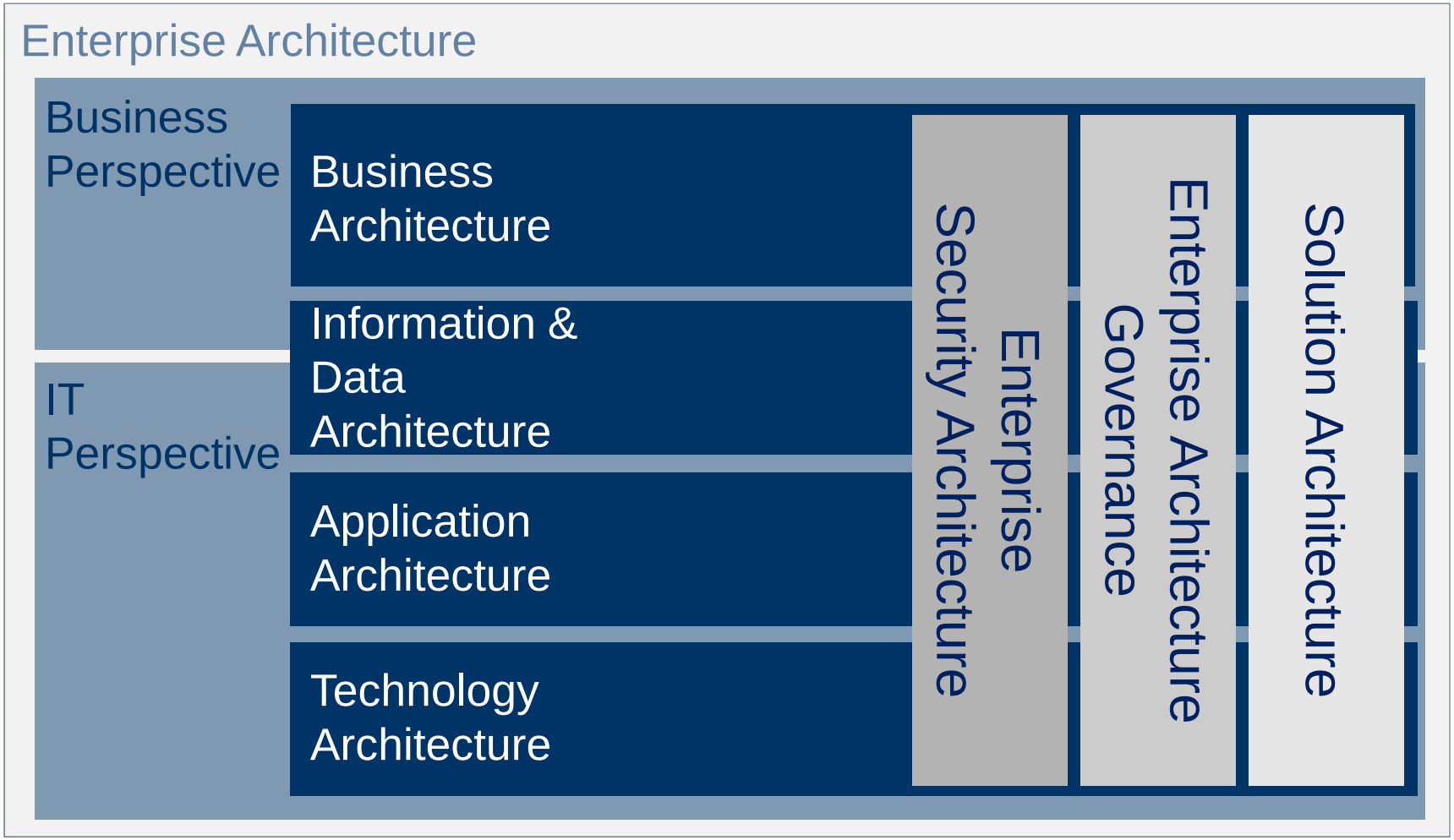
Requirements document

Market Scan

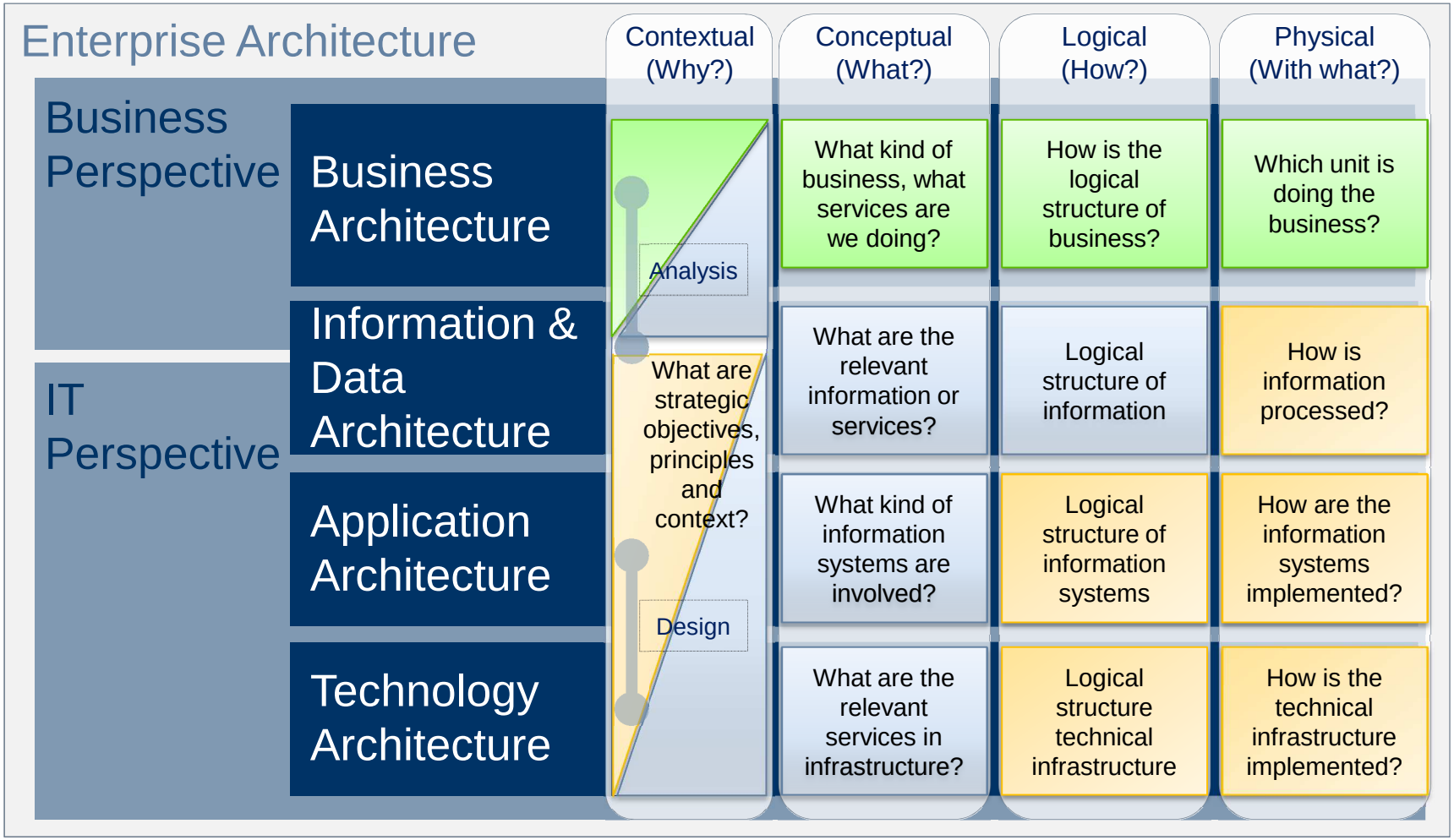
- Support for all Enterprise Architecture Layers
- Should have repository/database behind the models including versioning / revision control
- TOGAF / Extended Enterprise Architecture Framework support
- Collaboration support (check-in/check-out/locking)
- Document/report generation support – documents should be generated automatically from models

Enterprise Architecture
Architecture Building Blocks

Defining Architecture Building blocks
EA Governance – Roles and Responsibilities



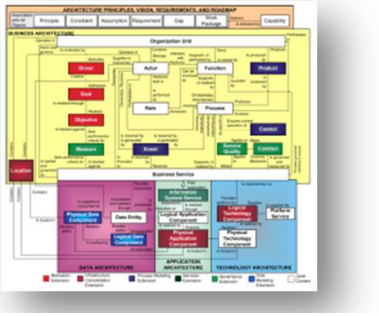
Defining Architecture Building blocks
EA Governance – Roles and Responsibilities

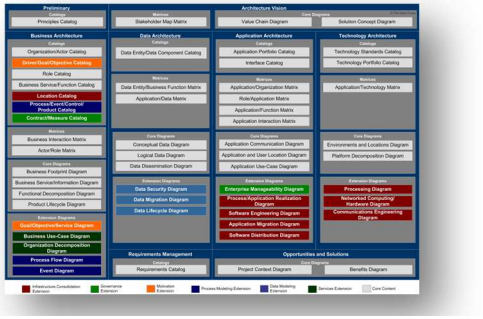


Business Architects IT (SM)

Select the Architecture Building blocks

- Review the meta model and architecture artifacts





Implementation of EA

QLM Achievements@OMV

Broadening the scope, connecting the artifacts

Continuous evolvement of the EA scope and the management system demands **increasing alignment and integration** across all layers of the framework.

2009

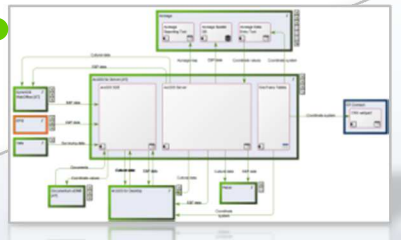
E&P Process Management

Norway and Vienna Head Office: compliance and process architecture

2011

EA System Landscape

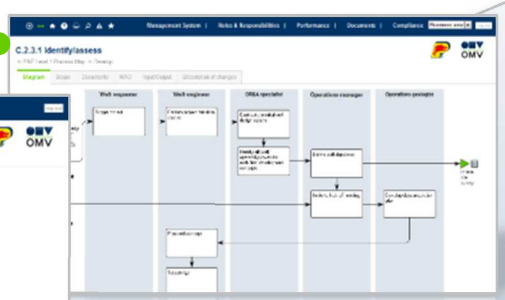
All business divisions, links to processes, information and technology

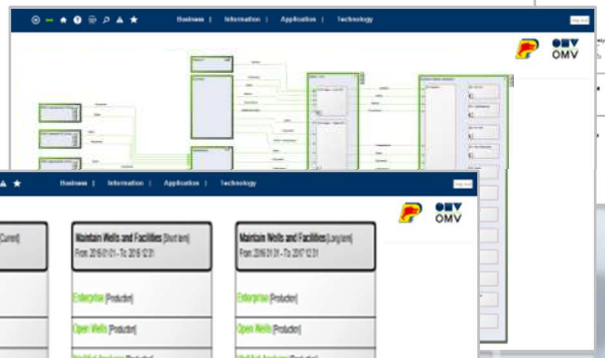


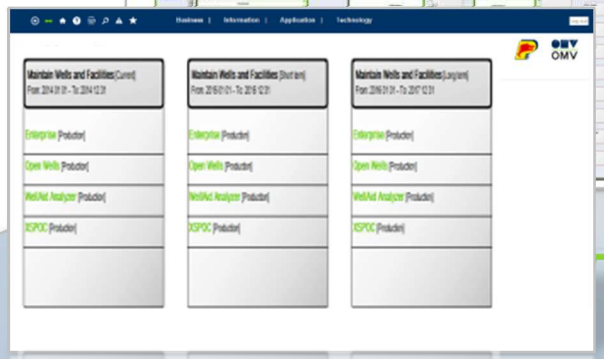
Corporate Process Map

Globally aligned Corporate processes and internal controls

2013





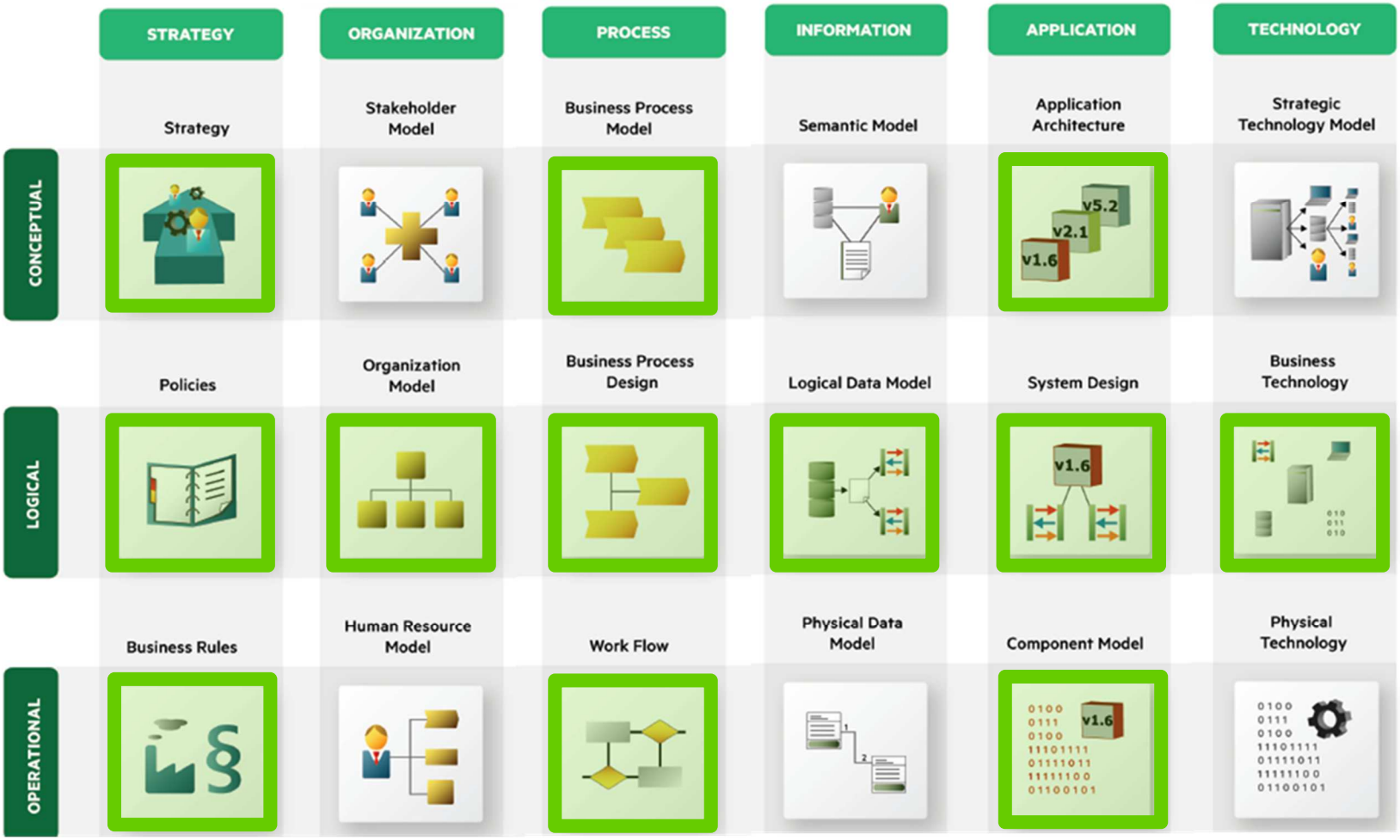


– 2014 - 2015 cont'd:

Roadmaps & Integrated Planning

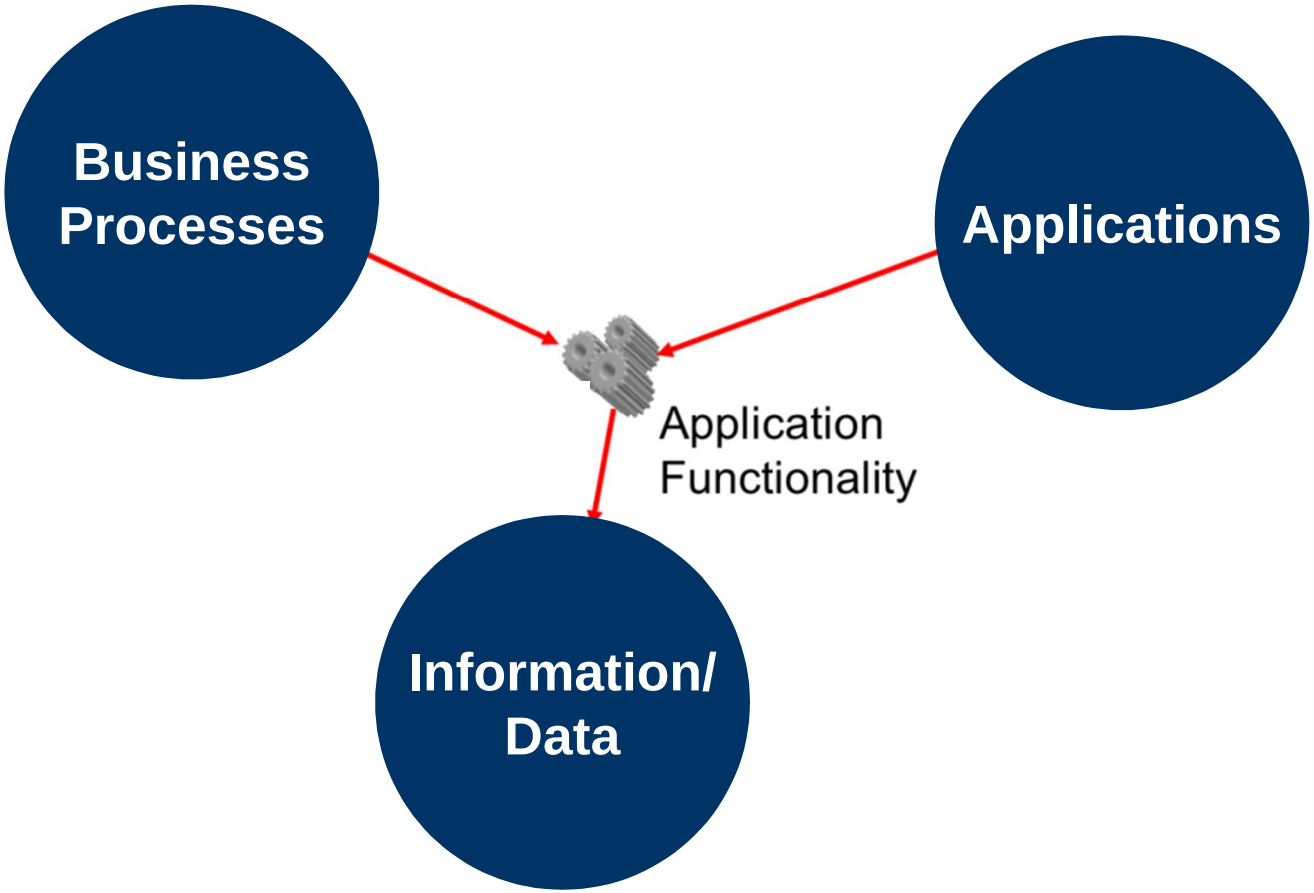
Embedded project management process, business/IT alignment and service portfolio management

Slicing the architecture, defining building blocks
Start small and take one step at a time

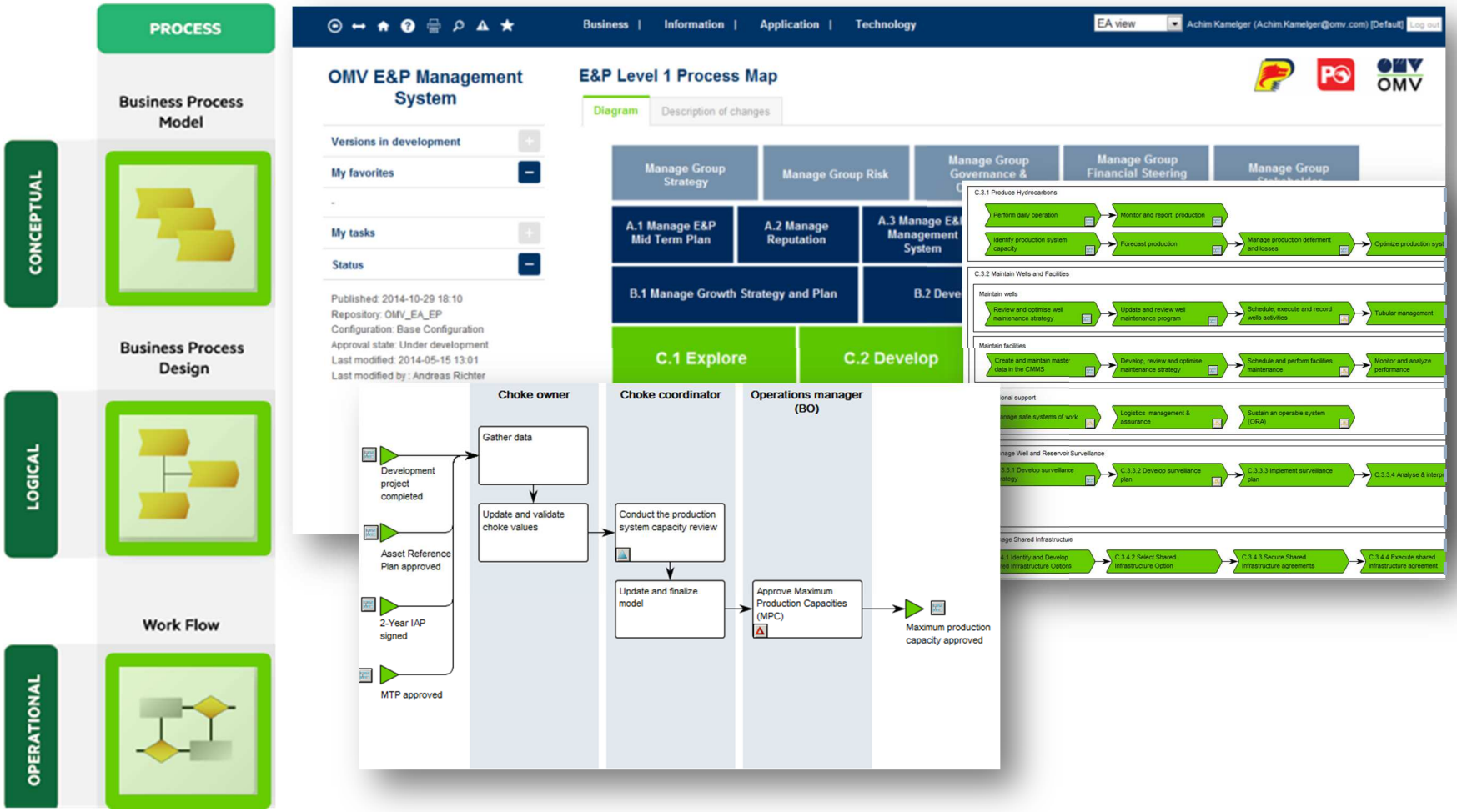


Source: QualiWare Enterprise Architecture Framework

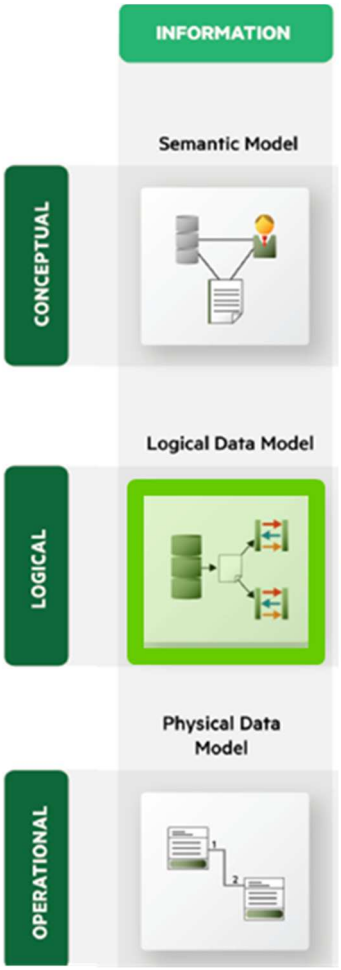
Enterprise Architecture Framework
Orchestration of all Enterprise Architecture Aspects



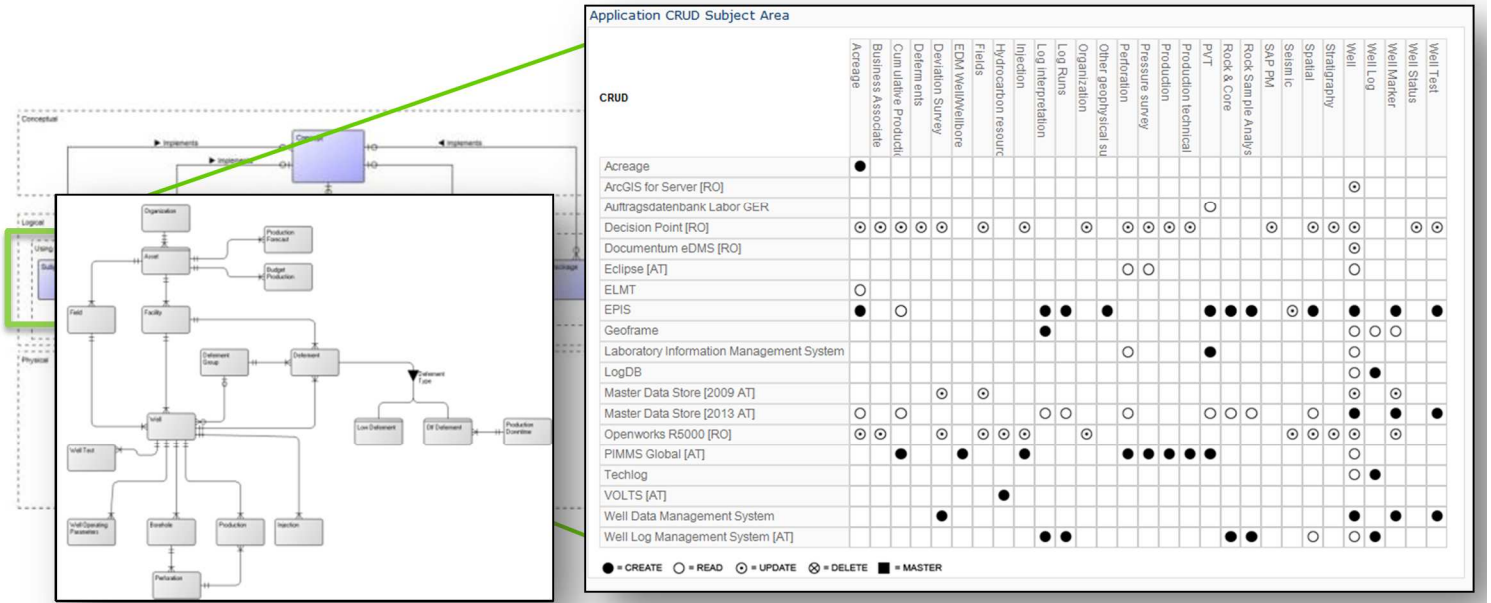
Business Architecture
(E&P)Management System



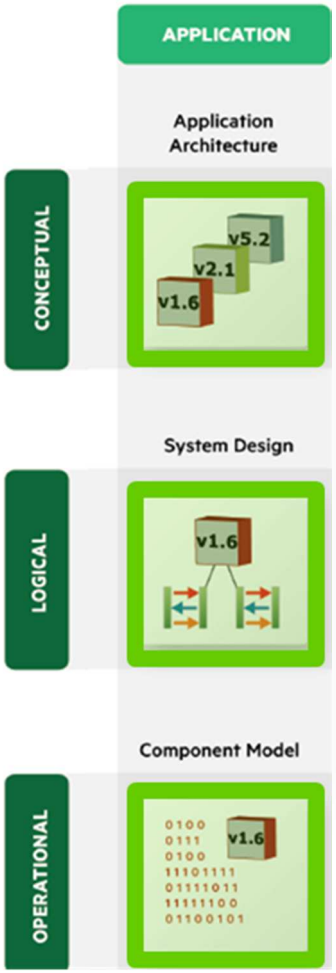
Information Architecture
Information Flow



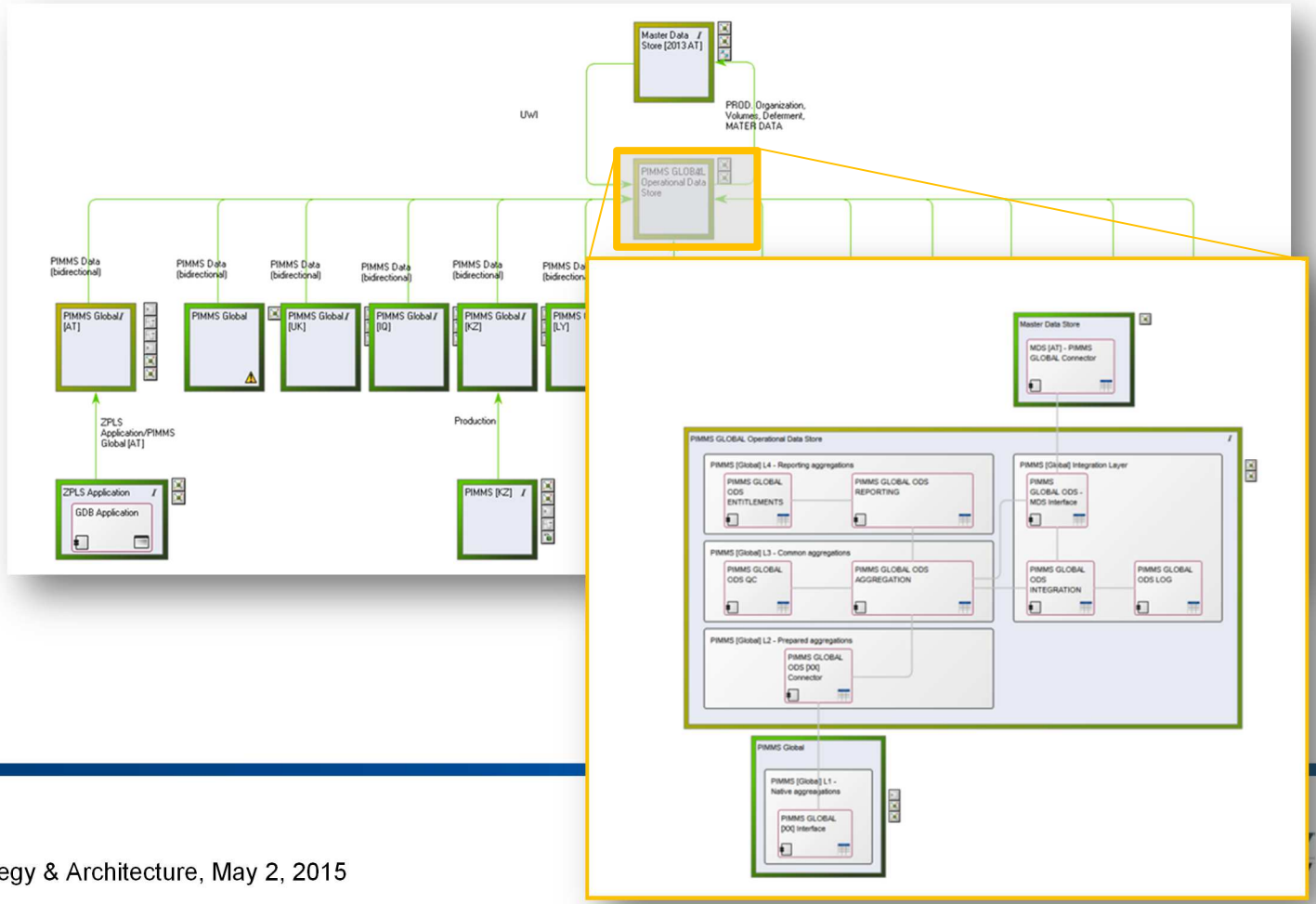
- Define the data (meta) model, data domains and data entities
- Define for data domains the data governance aspects with roles (i.e. data owners, custodians)



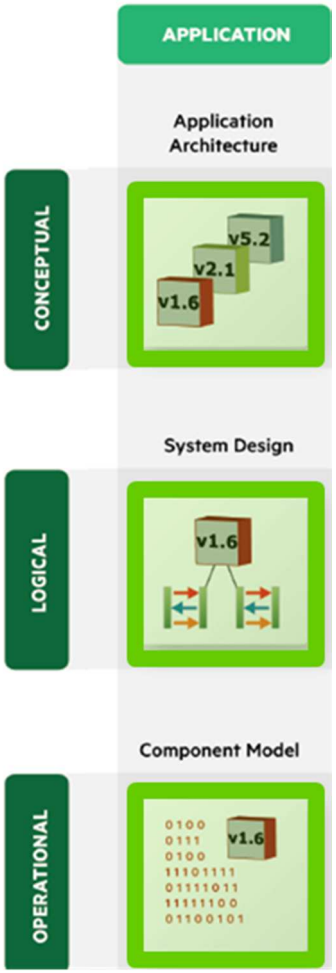
Application Architecture
Content View(points) – Instances & Components



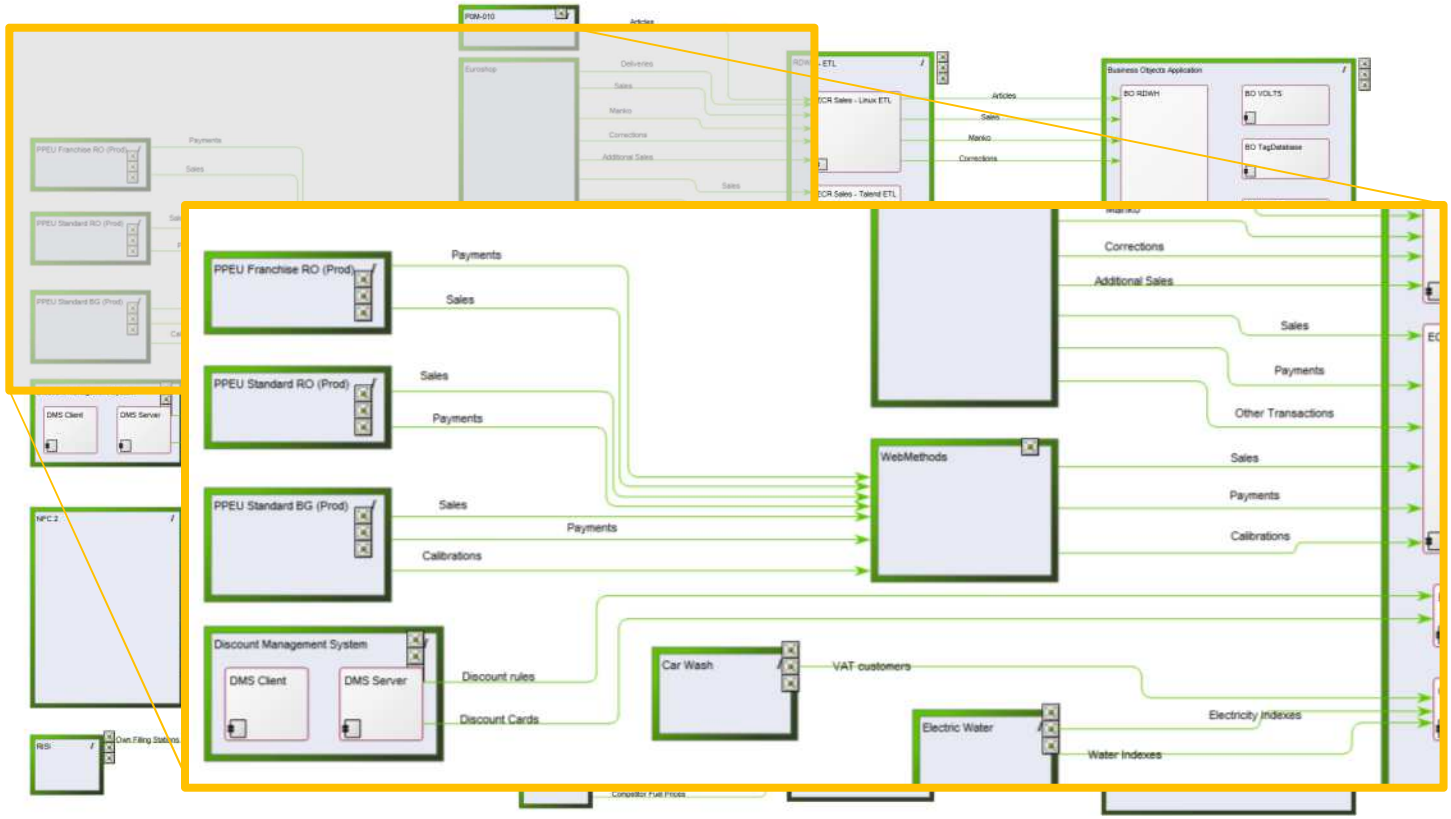
- Model physical/logical application dependencies
- Example: PIMMS



Application Architecture
Information Flow – Integration View

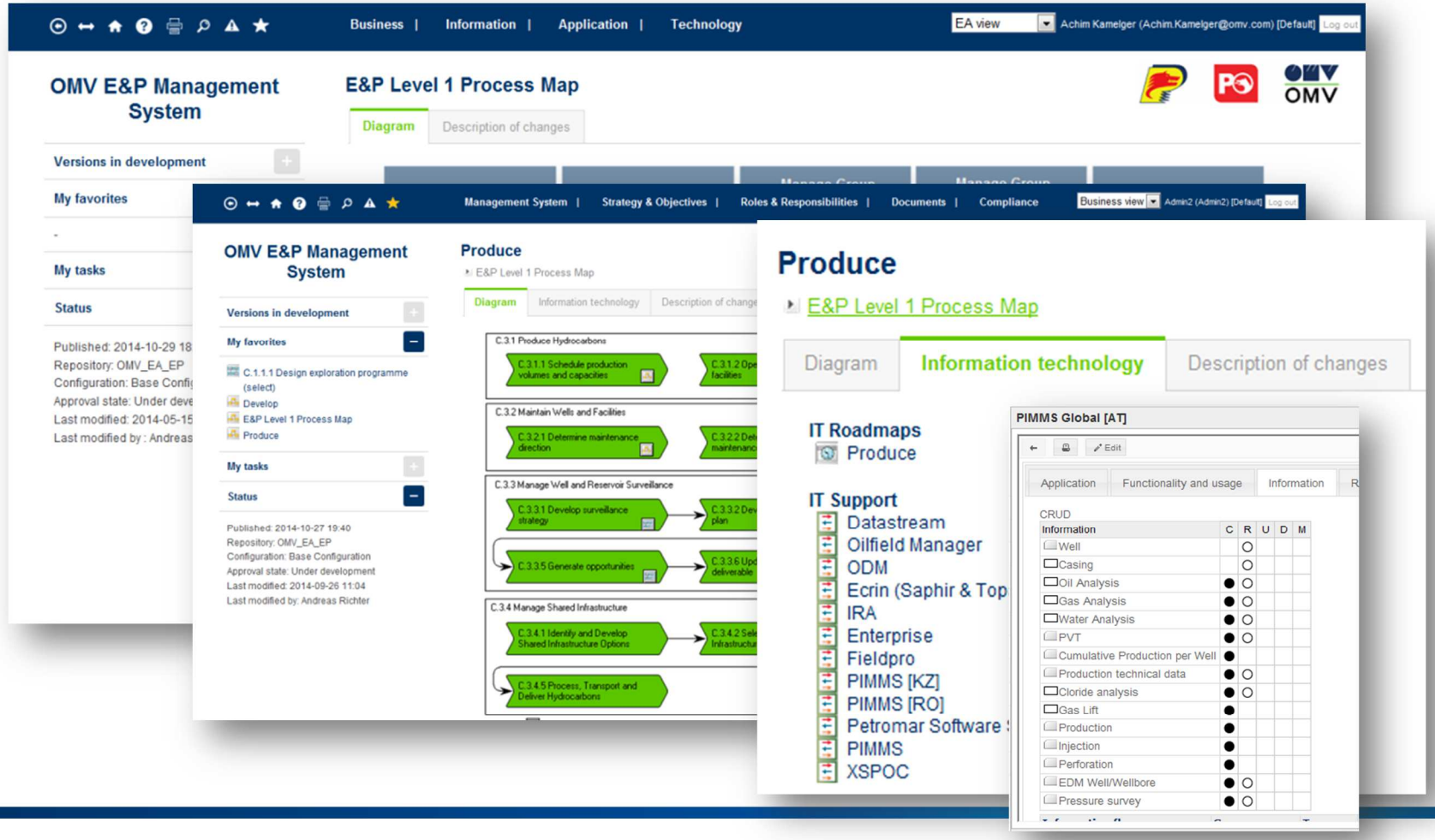


- Data flow between applications and interfaces

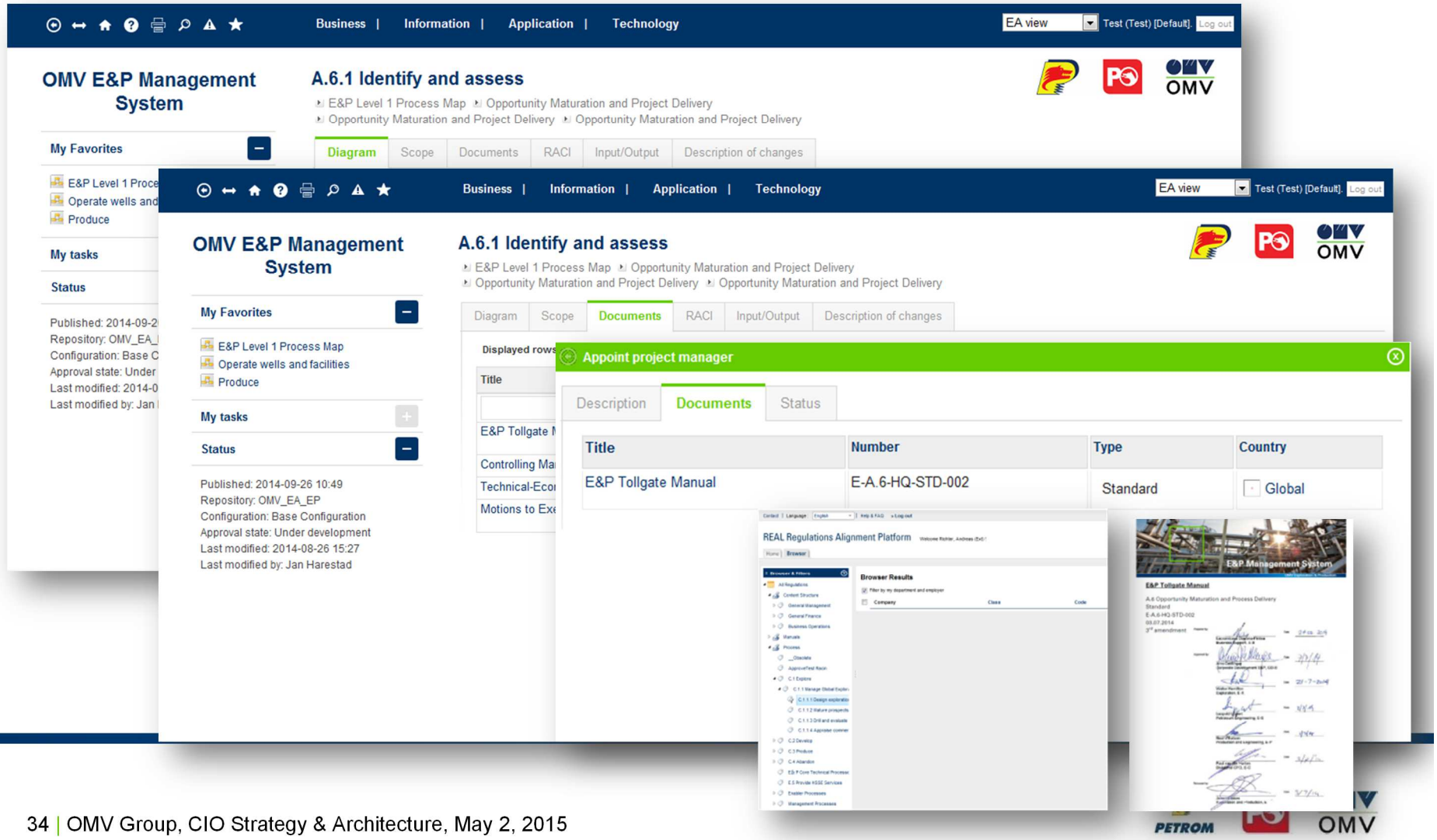


Benefit of Architecting the Enterprise:

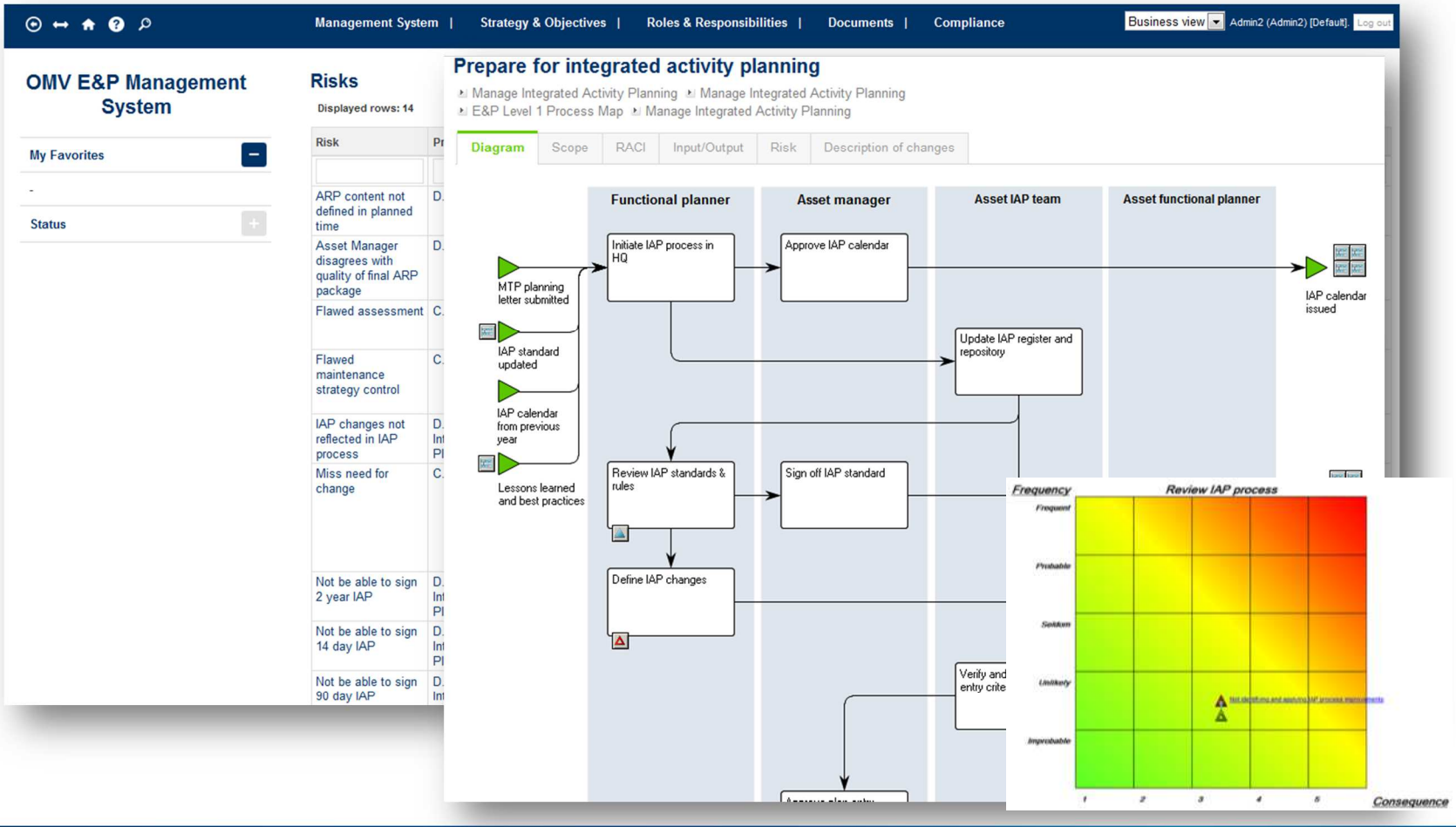
The Integrated View Business Perspectives and IT Perspectives



Benefit of Architecting the Enterprise:
Linkage of Process and Regulations

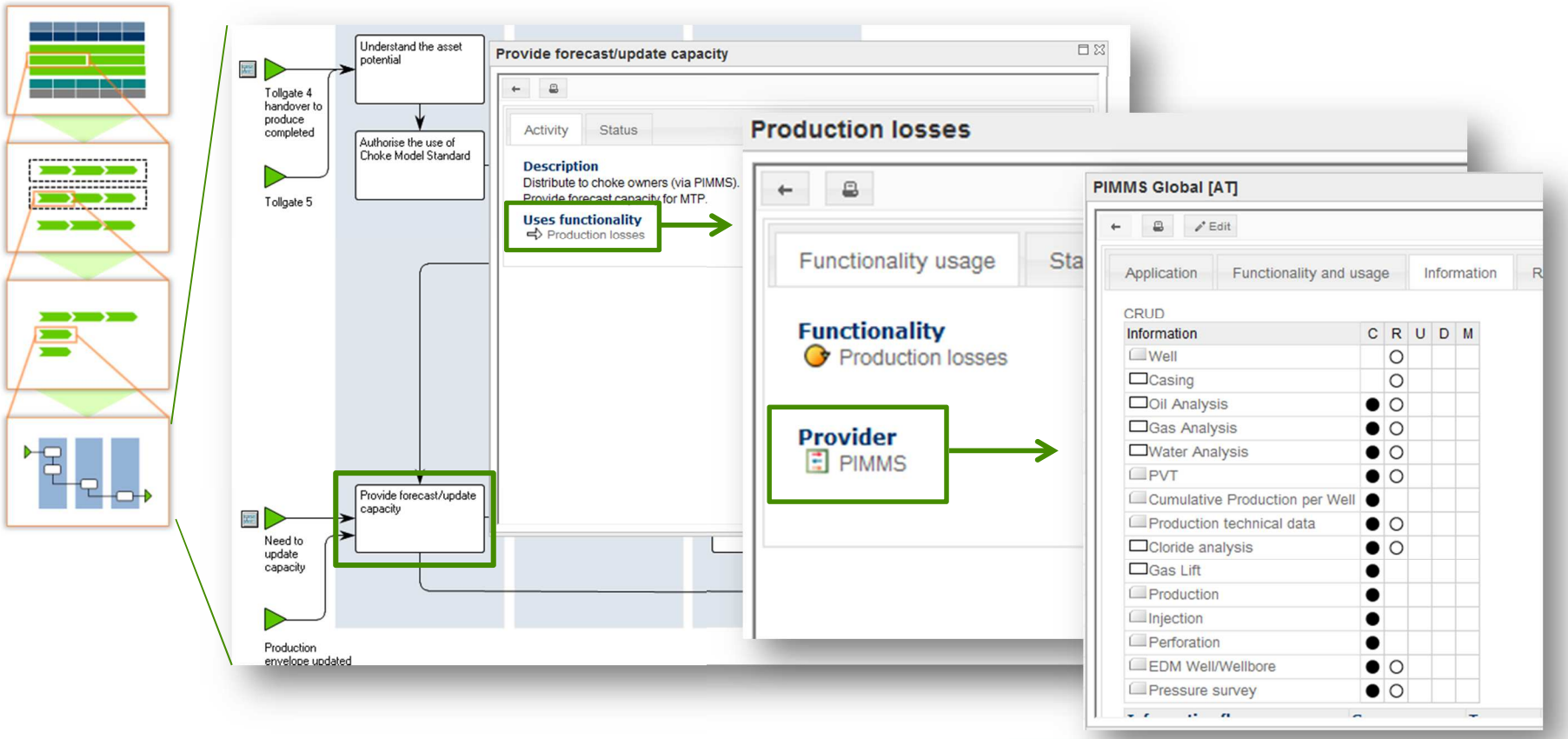


Benefit of Architecting the Enterprise:
Embedded, cross-process Risk/Controls



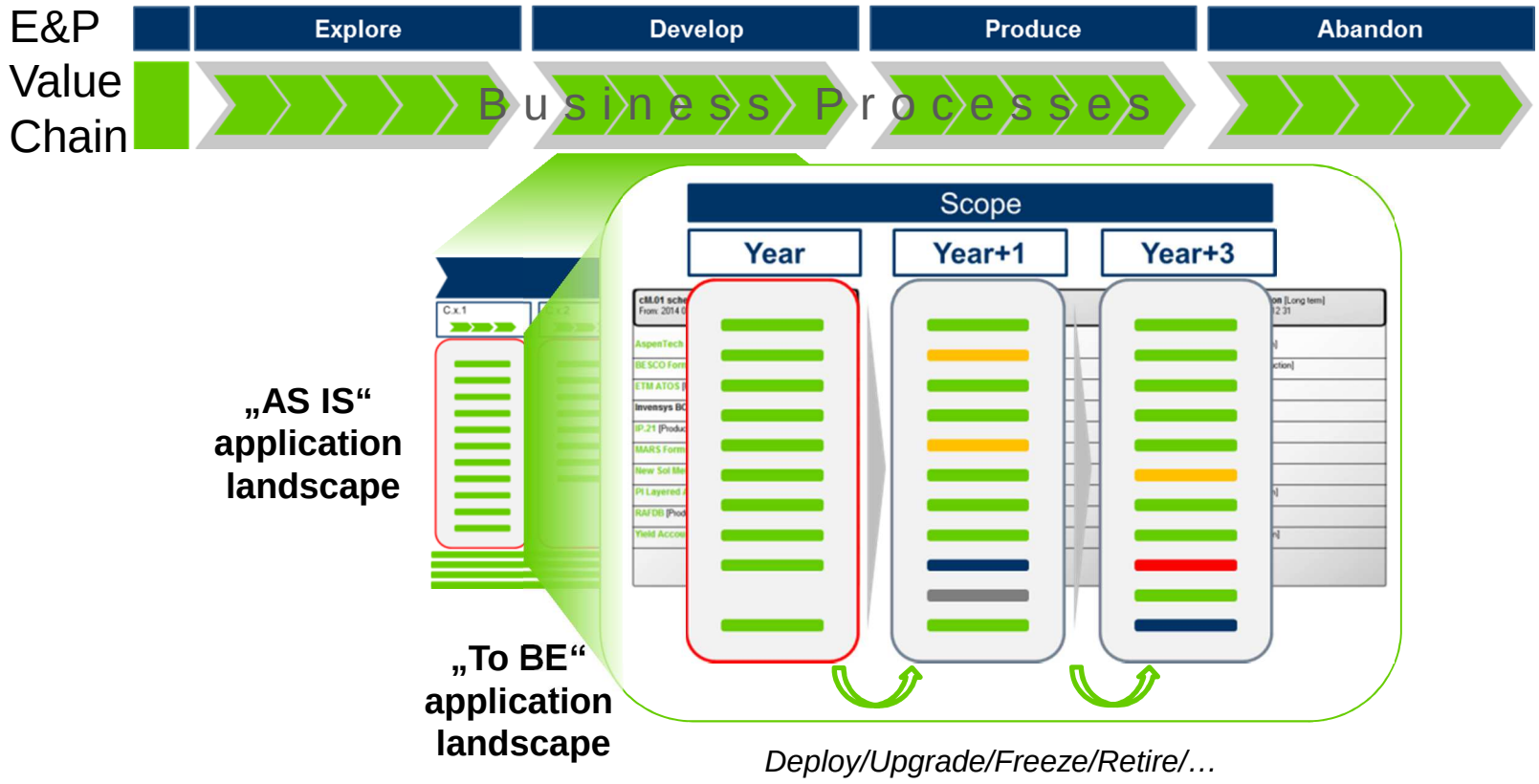
Benefit of Architecting the enterprise:
The integrated view business and IT

Processes | **Workflows** | **Information/Data** | **Application Functionality** | **Application** | **Technology**



Planning the Future IT Landscape
An IT Roadmap…

… schematically visualizes the planned evolution of the information systems (application) landscape over time in accordance with business- and IT strategies.

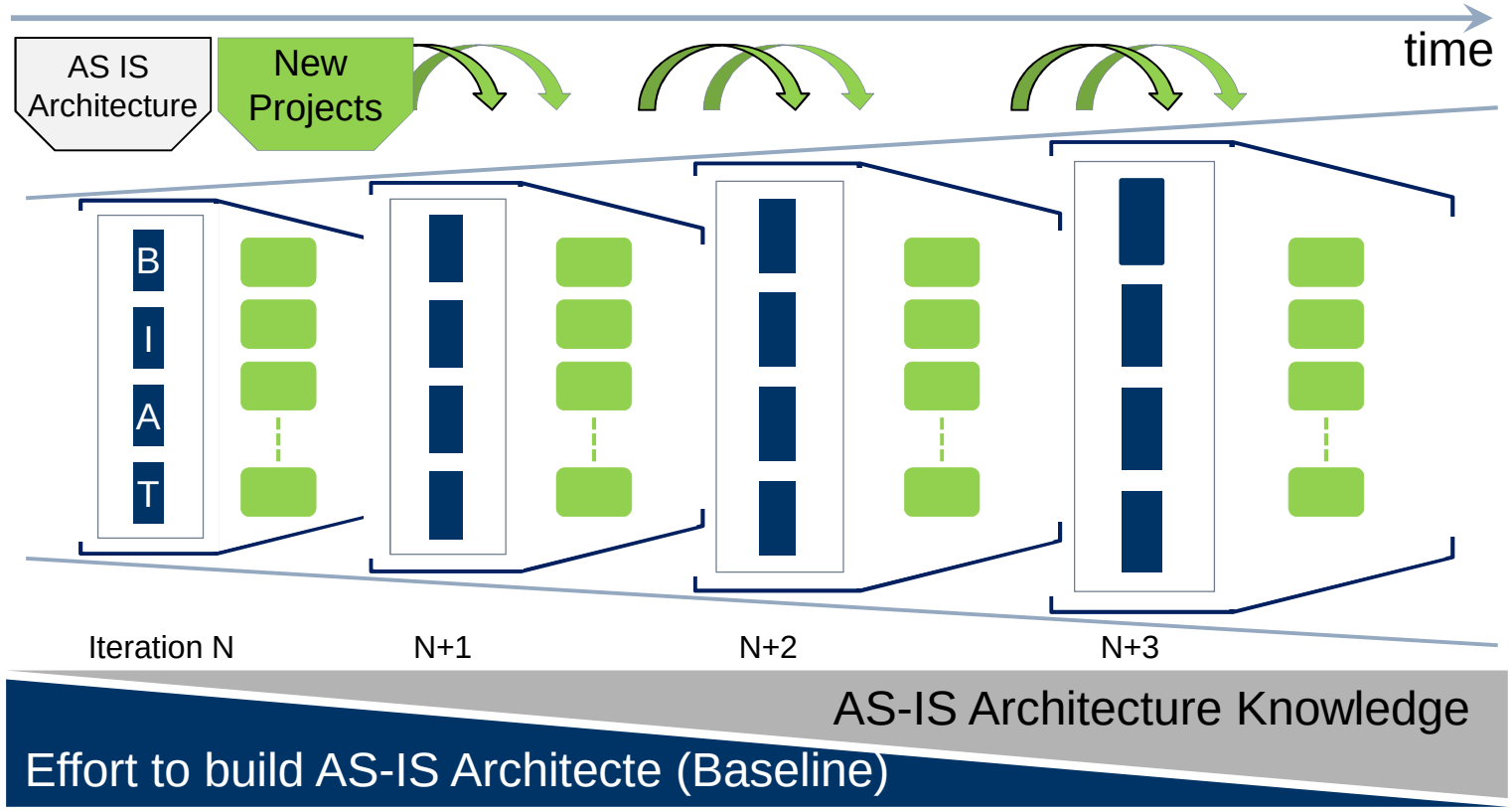


Enterprise Architecture
Applied inside Projects

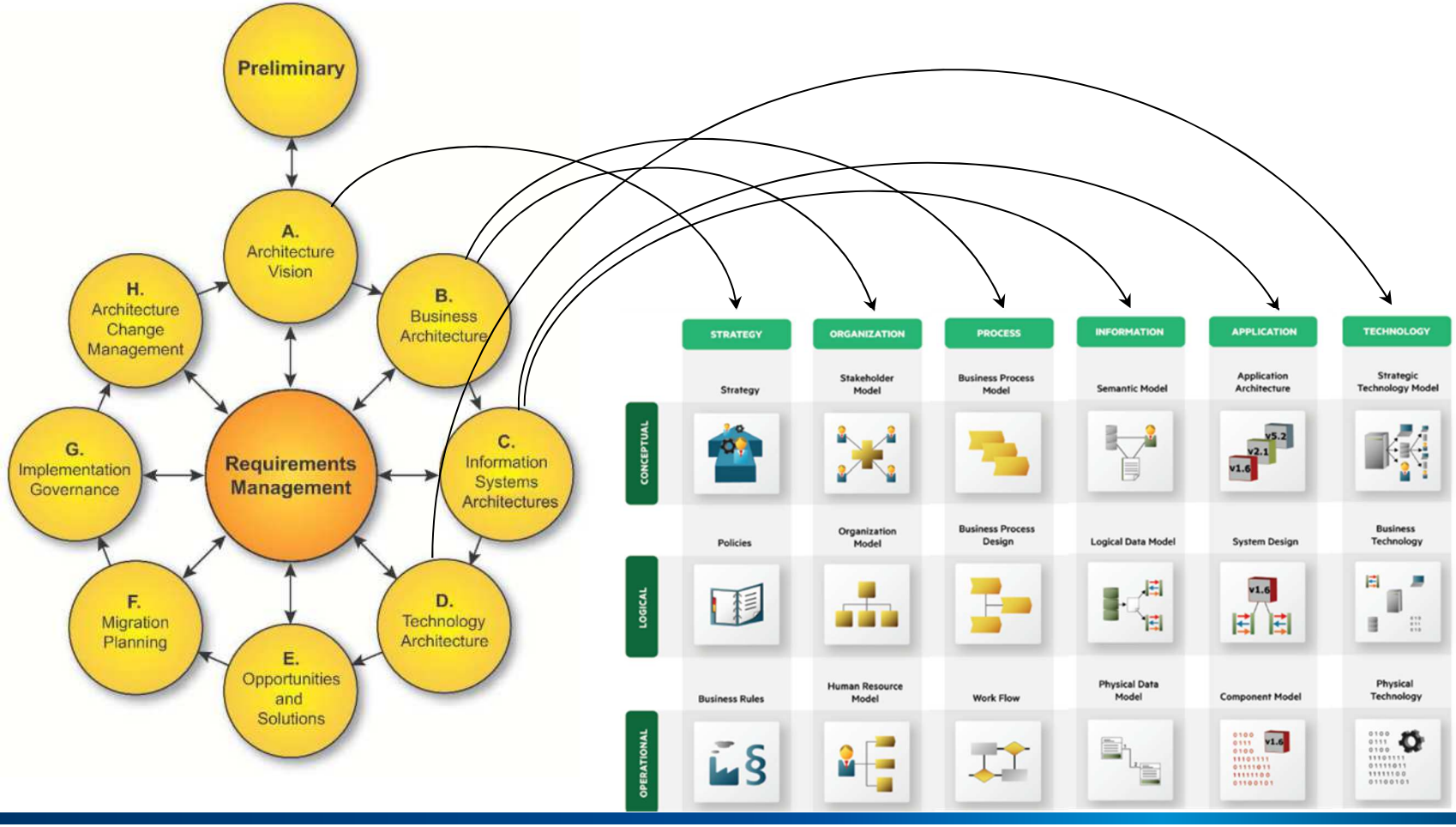
Enterprise Architecture

Iterative Knowledge Collection Gathering Process

Each iteration with new projects(-architecture) will increase the AS IS architecture and develop the (future) TO BE application landscape

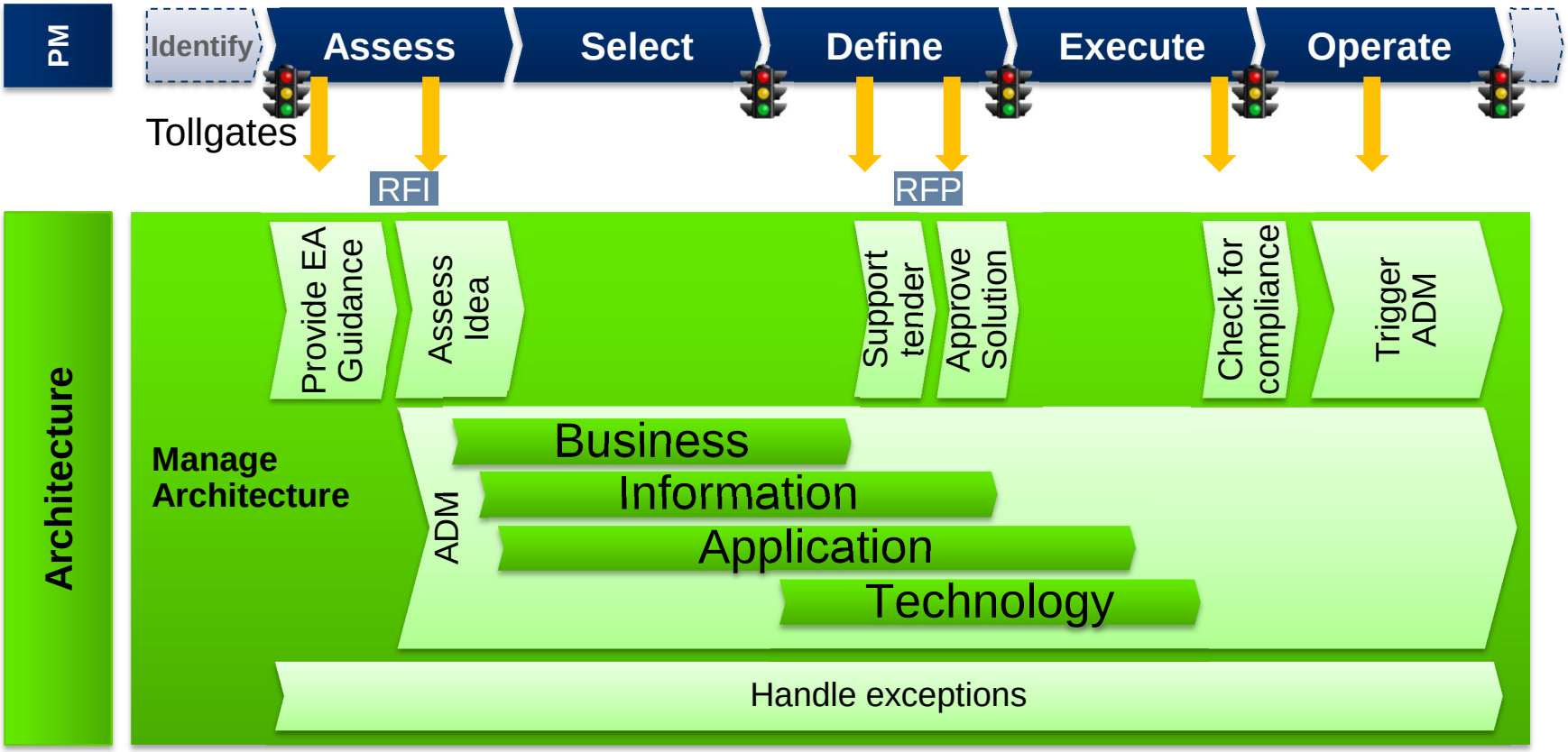


Mapping of TOGAF Architecture Develepment Methodology with QualiWare Lifecycle Manager (QLM)



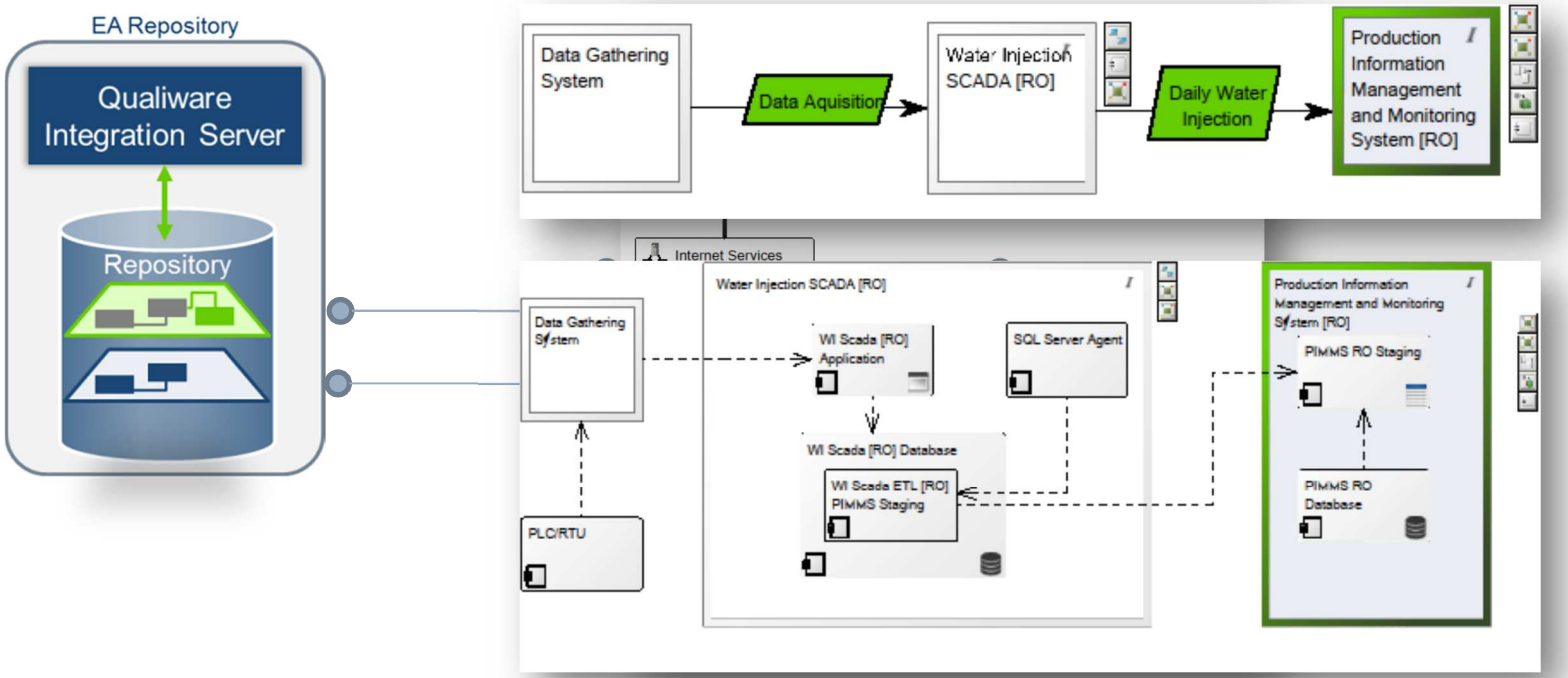
Enterprise Architecture Activities are included in the Project Management Process…

…and are based on the best practice TOGAF© ADM methodology



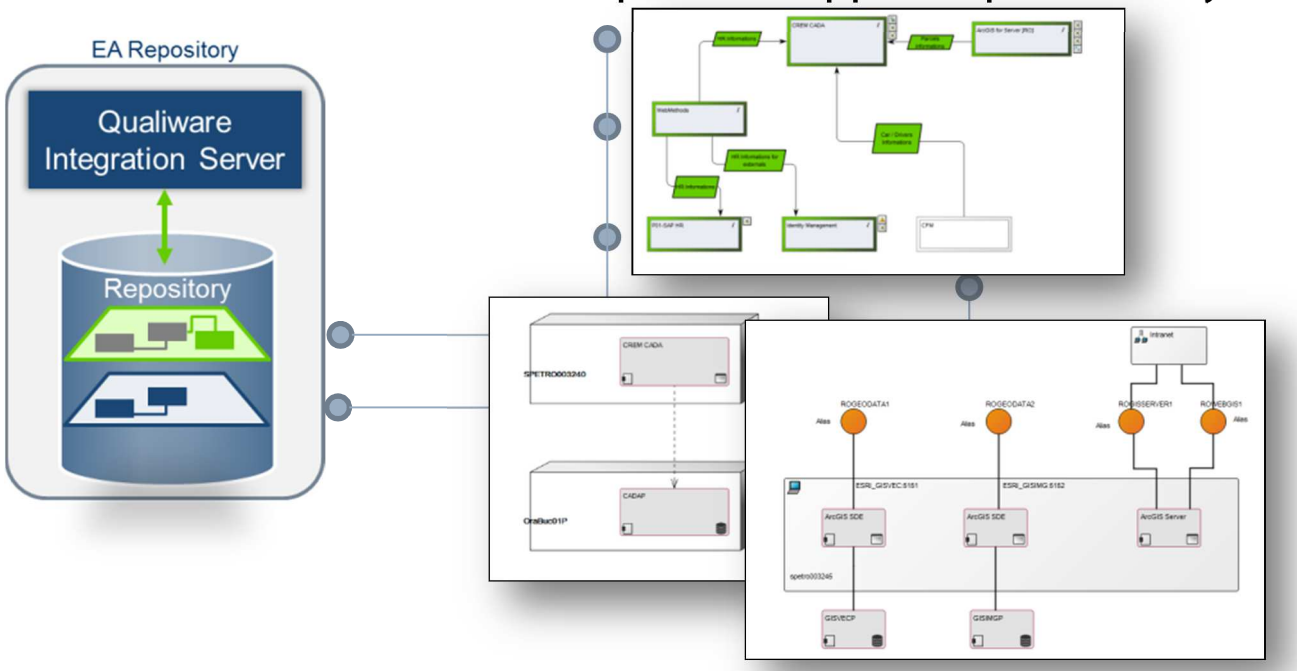
Example 1
Water Injection Project

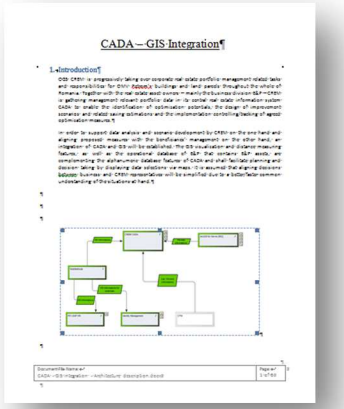
- Currently we are working to roll out the Water Injection Project which has as scope to retrieve automatically data from Water Injection Wells into XSPOC and then transfer the data into PIMMS.



Example 2
CADA GIS Project

- OGS CREM is progressively taking over corporate real estate portfolio management related tasks and responsibilities for OMV Petrom's buildings and land parcels throughout the whole of Romania. Scope of the Project is to visualize assets on maps and support spatial analysis

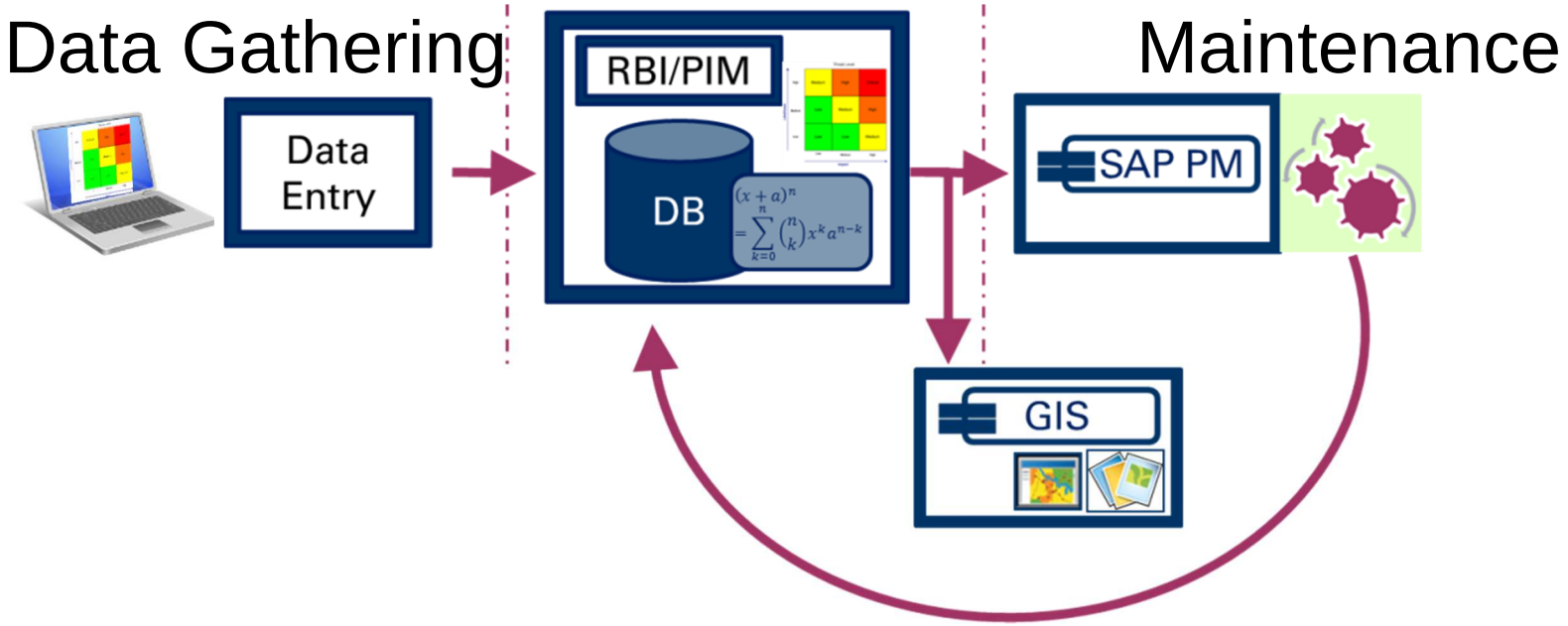




Example 3:
Risk Based Inspection / Pipeline Integrity Management

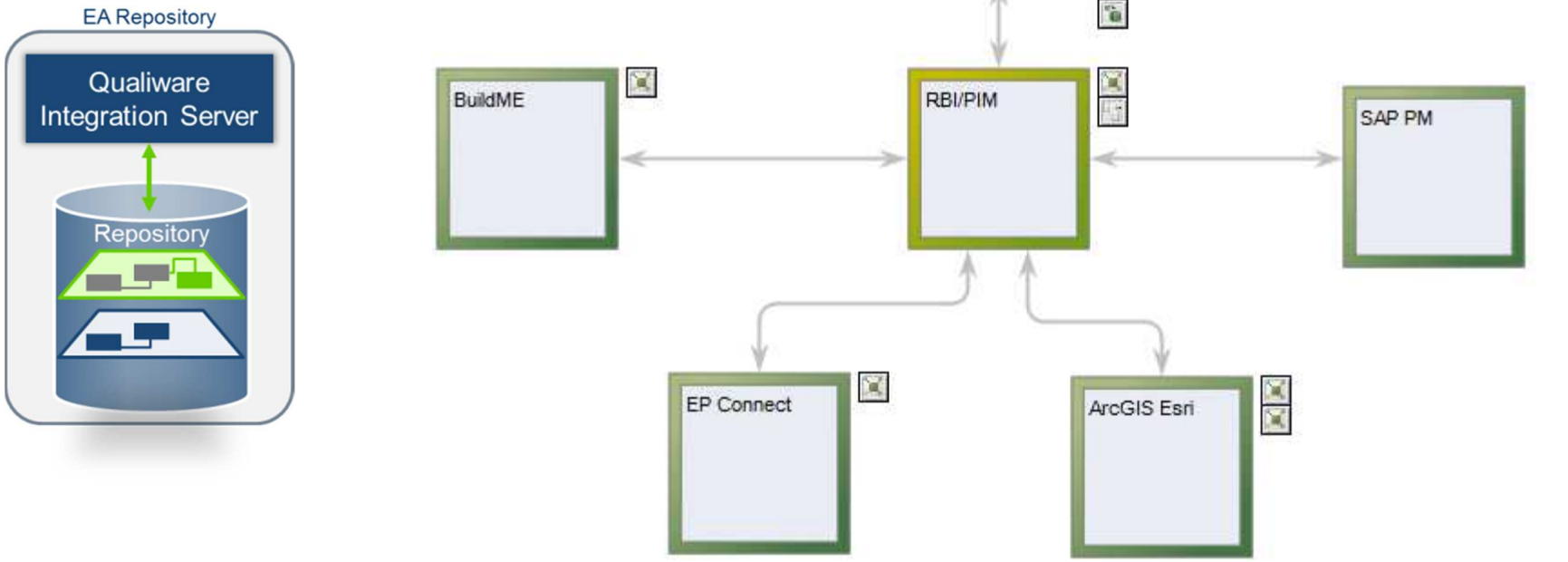
Solution Concept

- Agreed processes and workflows
- Fully integrated applications and defined information-flows



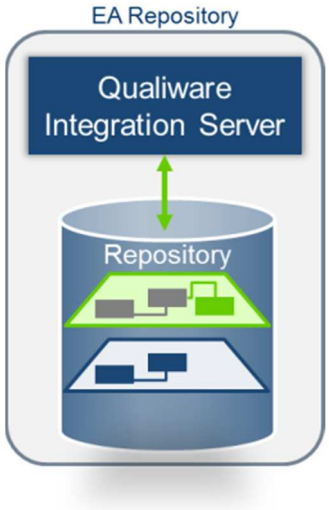
Example 3:
Designing System Dependencies

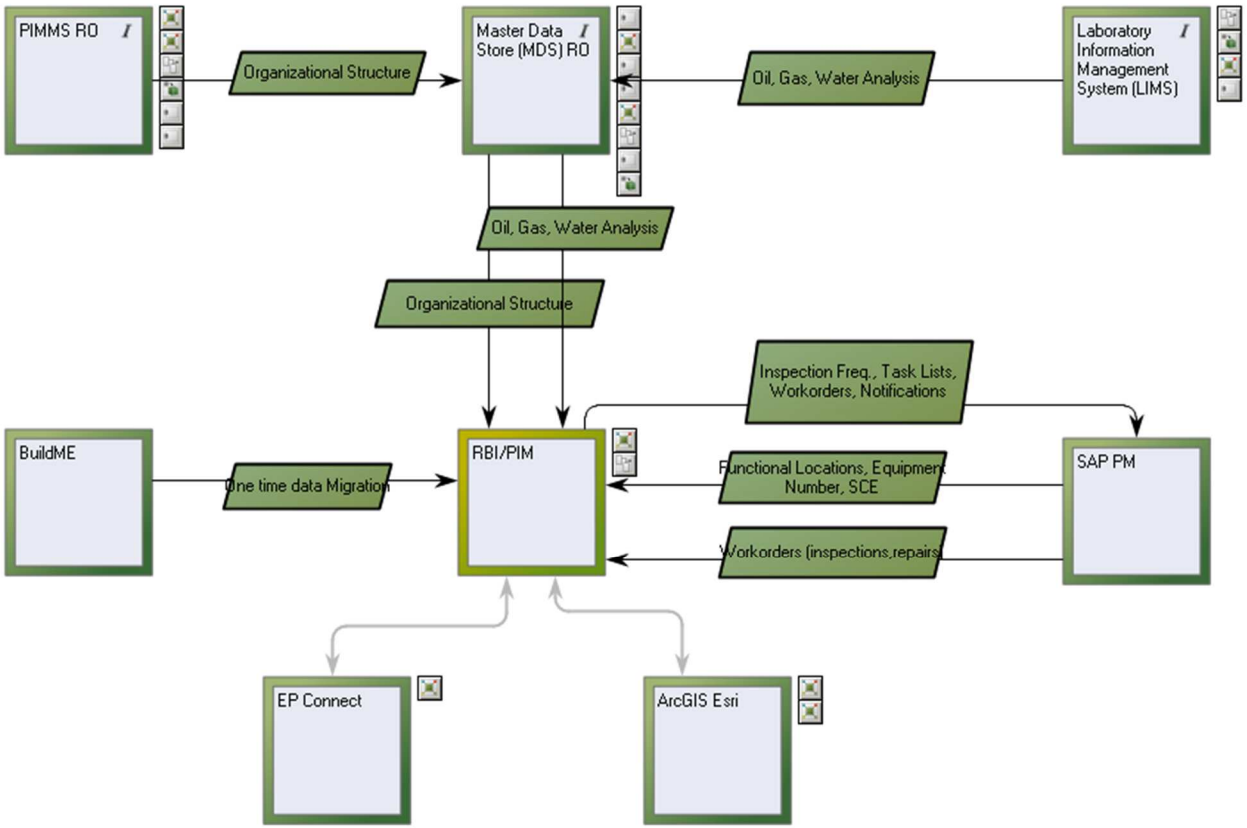
- Bringing AS-IS



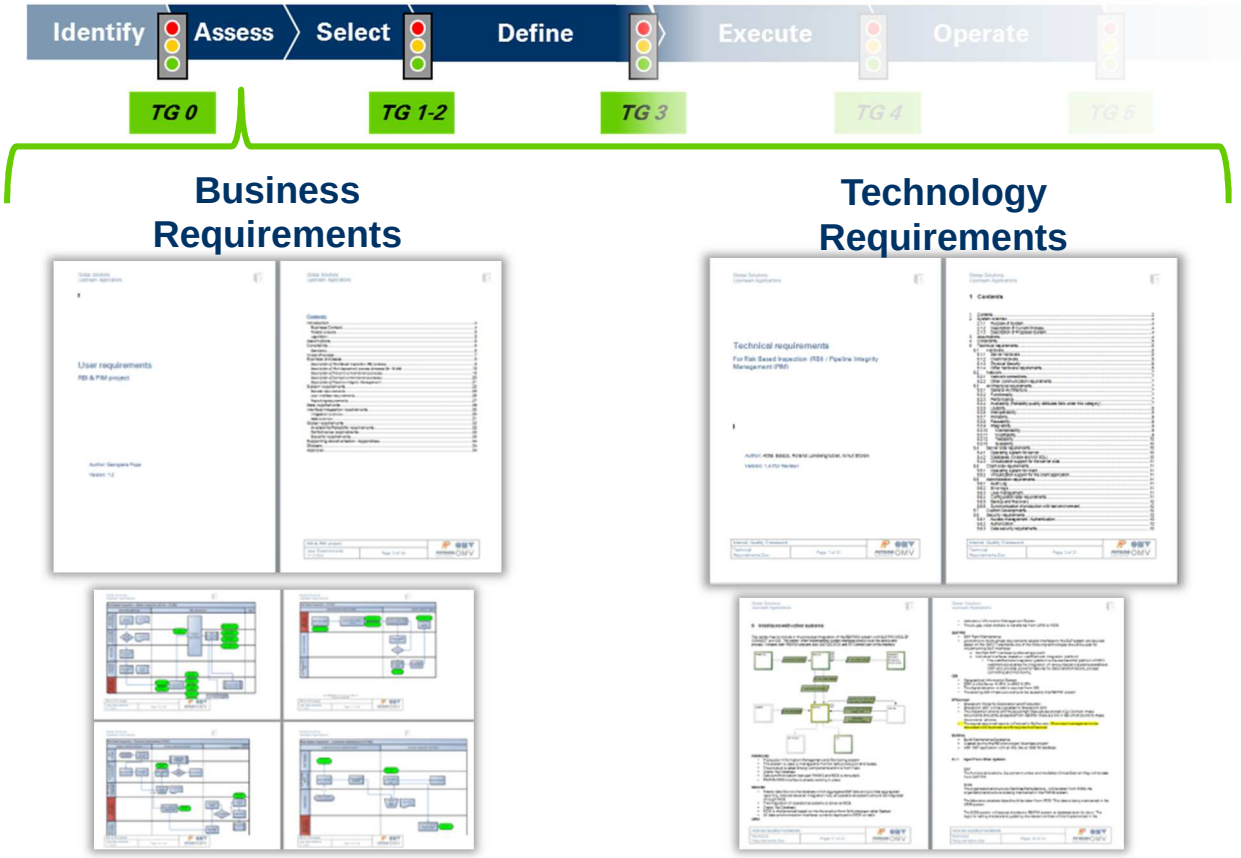
Example 3:
Designing Information Flow and Interfaces

- Define required informationflows





Example 3:
As input for the RFI/RFP Process (Tender)

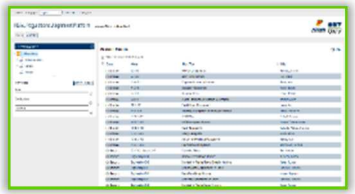


Summary: OMV Initiatives in Business and IT

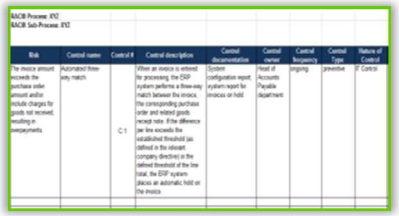
Building an integrated EA “one stop shop”

IT Roadmaps / Strategic Planning

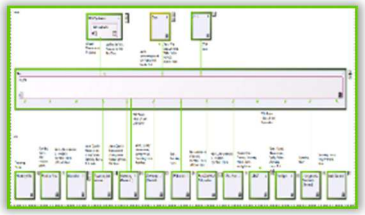
Service Profolio Mgmnt



Regulations

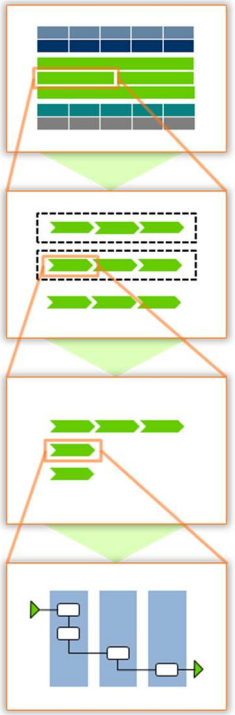


Internal Control Mgmt. System

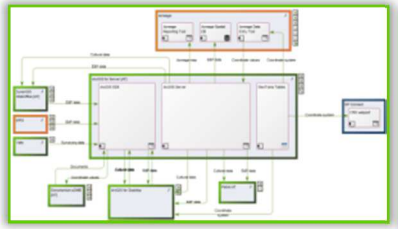


Operational (Field) Technology

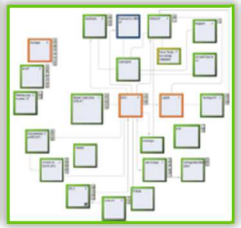
OMV Process Map



ITIL based Processes & Service Management



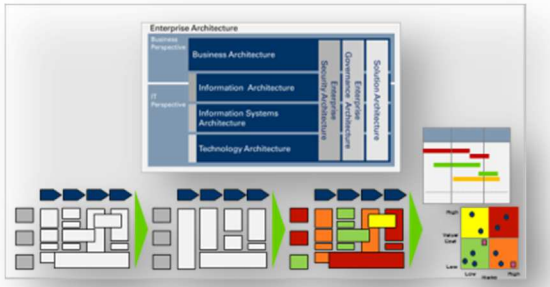
Information Flow

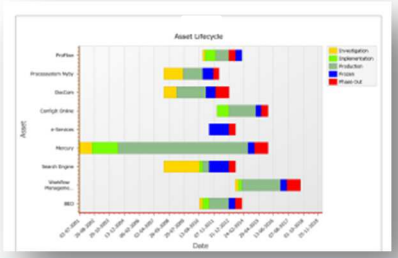


Appl. Portfolio Mgmt.

Summary

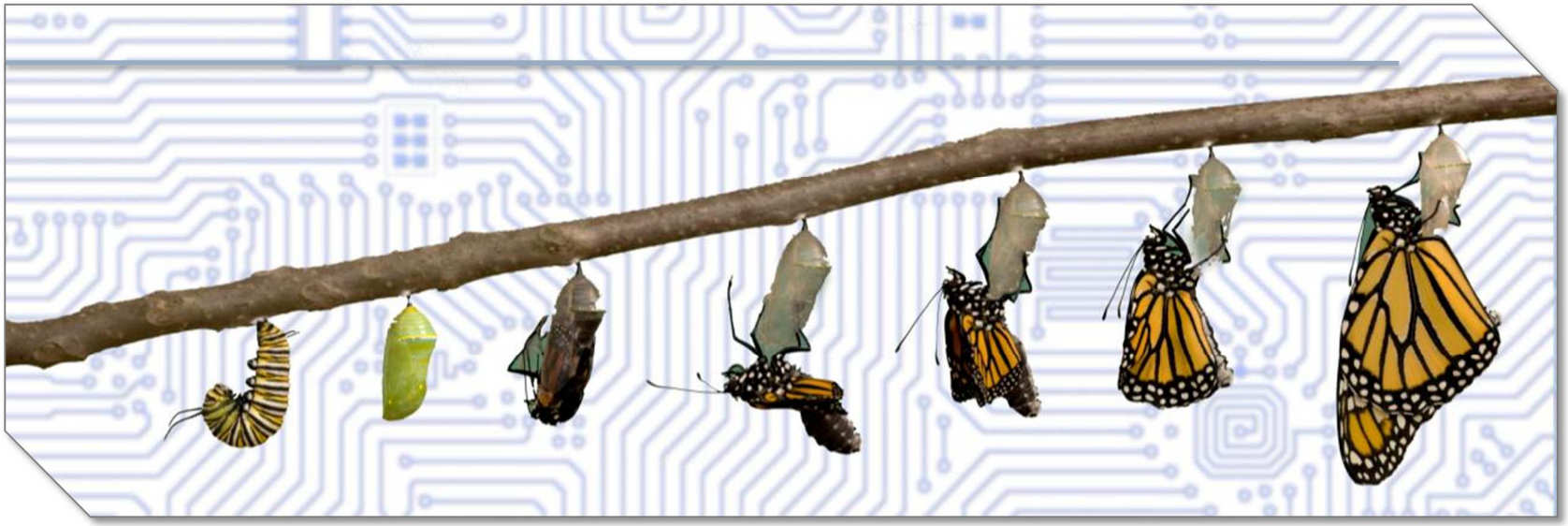
- EA allows cooperative overview of business and technology for common understanding
- Framework of various levels supports quick integrated decisions for changing business needs
- Establishes reliable information and data throughout the OMV Group
- Re-usable innovations and solutions can be uncovered and leveraged
- Supports IT cost reduction and financial transparency
- Next steps are: optimizing application portfolio, roadmaps, analytics





Thank you

EA Development - One step a time



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