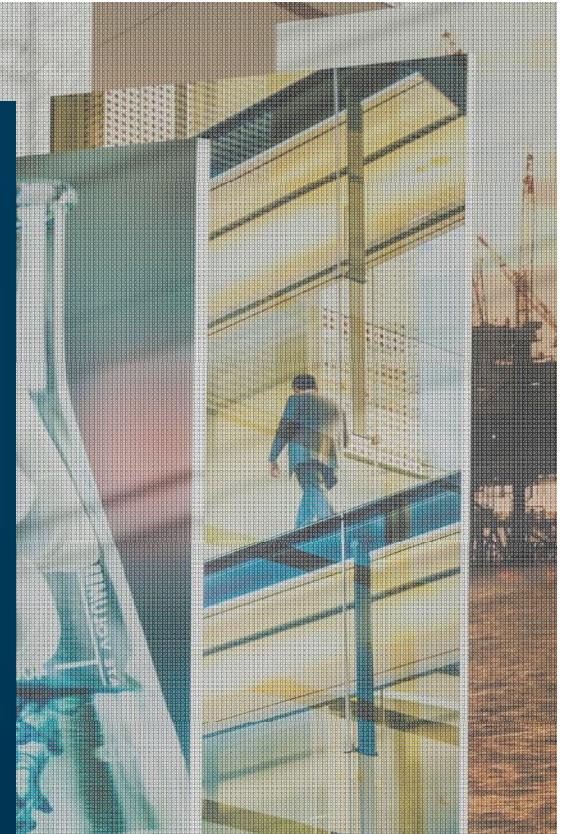


Integrated Asset Management System (IAMS)

Asier Martín Estébanez

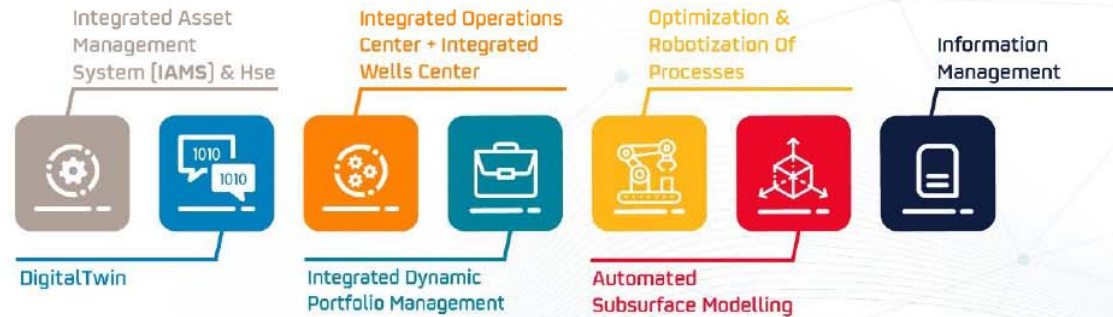
January 2020





Seven Strategic Priorities in E&P Digital Portfolio

The 7 Big Bets



Digital journey in Repsol E&P has **matured** towards **7 Big Bet** programs



WHY IAMS? IAMS pursues to face key challenges...



CENTRALIZE DATA AND BUILD USER-CENTRIC VISUALS



Existing reports and dashboards were 'silo focused' and provided consolidated information

IAMS solution:

- *Delivers integrated information*
- *Promotes interdisciplinary synergies*
- *Focuses on operations*
- *Retires traditional "processed" reports far from the original raw values*



Decision support data was mostly unavailable, fragmented and/or ineffective

IAMS solution:

- *Accesses and publishes most recent available data*

IMPROVE DECISION MAKING PROCESS



Lack of standard KPIs prevented asset and BU benchmarks

IAMS solution:

- *Identifies different operating models to better allocate efforts*
- *Enables benchmarks at different levels (Region, BU and Asset)*
- *Shares best practices and knowledge*



Performance of the different processes was sometimes not fully transparent

IAMS solution:

- *Democratizes different types of information not broadly shared till now within the organization*

IAMS

a management tool to review & analyze a relevant KPIS in real time for Repsol's asset management



Connected
to the data sources



Comprehensive
and integrated overview



Better
decision-making

Better and faster decision making through data driven operations

4 high level goals

- 1 Promote standardization
- 2 Meet the end user needs
- 3 Organizational and cultural transformation
- 4 First step in data-driven transformation

Platform of Platforms

E&P Performance Management

IAMS

- Global Production
- Production Efficiency
- SCM Dashboard
- Spend Cube
- GIRO Inventory management

Data from 30 source systems



1.100
parameters



46
pages
dashboards



20 M€
FCF impact pre-tax in 2022 (expected)

Its dimensions:

ASSETS

Production Maintenance
WO/WI Well Integrity

Economics Safety Environment
Supply Chain Management Reserves People & Organization

PROJECTS

WHAT IS IAMS? IAMS ambition is to become a cornerstone of the Repsol Asset Management...



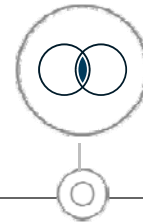
End user customized

A decision support system based on an **IT architecture**, with an **end user customized** and **flexible** front-end



Integrated overview

Comprehensive and **integrated overview** per region/country, per asset/project, and per function, **for all users** (management & technical)



Common parameters

Identifies a **common business** agreed core of **parameters**, promoting methodologies or business criteria implementation



Data sources

Connected to the **data sources** (one single point of truth)



High data frequency

Analytics displayed at the **highest available frequency**, so freshly updated availability

... Enabling a performance-driven culture

.... Taking efficiency to the next level



Increase revenues



Reduce OPEX



Reduce CAPEX

IAMS Front-End | Current IAMS includes different granularity and navigation depth amongst dimensions



Easy access to user friendly and interactive dashboards

Landing page

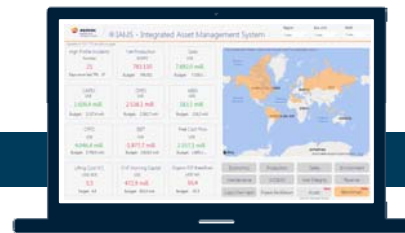
Maintenance	Safety	Environment	Well Integrity	WO & WI	Production	Economics	Reserves	SCM	Projects Dev&Decom	Assets	Benchmark
Maintenance Overview	Safety	Overview	Well Integrity	WO&WI Overview	Fluid Breakdown	Economics Overview	Reserves	SCM Overview	Consolidated	Production Performance	Assets
Work Mgmt 1	Process Safety	Spills		WO&WI Details	Prod. Details	OCM Report		Category Rankings	Details by Projects (1)	Operational Performance	Production
Work Mgmt 2	Safety Norway	Emissions			Well Tests	OPEX JOA		Inventory Management	Details by Projects (2)	Economic Results	Prod. Efficiency
Backlog Details	Non-Op (I)	Water			Wells						OPEX
Schedule Details	Non-Op (II)	Waste			Prod. Efficiency						Maintenance
		Env. Situations			Deferments						Safety
											Environment

1.100 parameters

46 pages dashboards

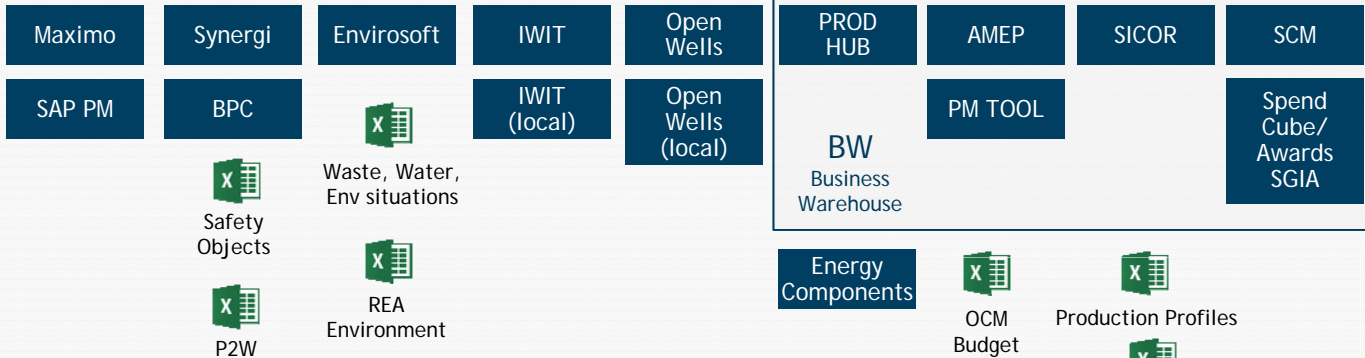


IAMS Back-End | Current IAMS requires the connection to >30 new data source systems with potential trade-offs to be made



Landing page

Maintenance Safety Environment Well Integrity WO & WI Production Economics Reserves SCM Projects Dev&Decom Assets Benchmark



Updated data with automatic refreshes

Data integration across various sources

Data from 30 source systems



What about IAMS organizational deployment in figures?

4 Continents

Strategy focused on scaling up to all Repsol

8 Operated countries

3 Joint ventures



10 Non- Ops



+800 Users

+200



People consulted in BUs

10 Business Disciplines



Expected

20M€ in 2020

+60

People consulted in Madrid



+ 80 UAT process

By Country & Discipline

Change Management

... Data driven
... Benchmarking
... Standard metrics
Reports to be replaced

What has been the IAMS roadmap for Change Management activities over all targeted countries and disciplines?



Early adoption

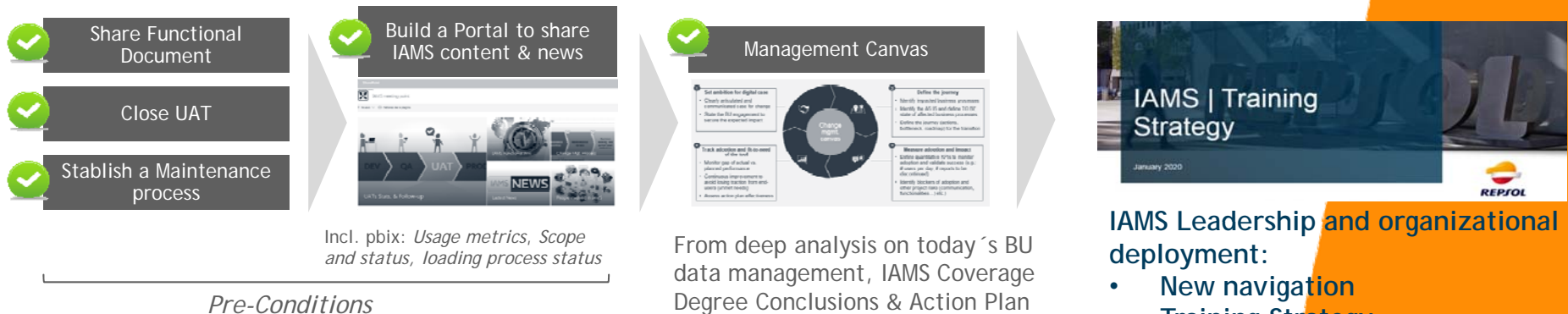
... from the development: UATs and in site visits

Reports & meetings analysis

Organizational approach and IAMS daily use adoption through reports and meeting analysis

Communication key pieces

... to support IAMS self understanding and product evolution awareness from users

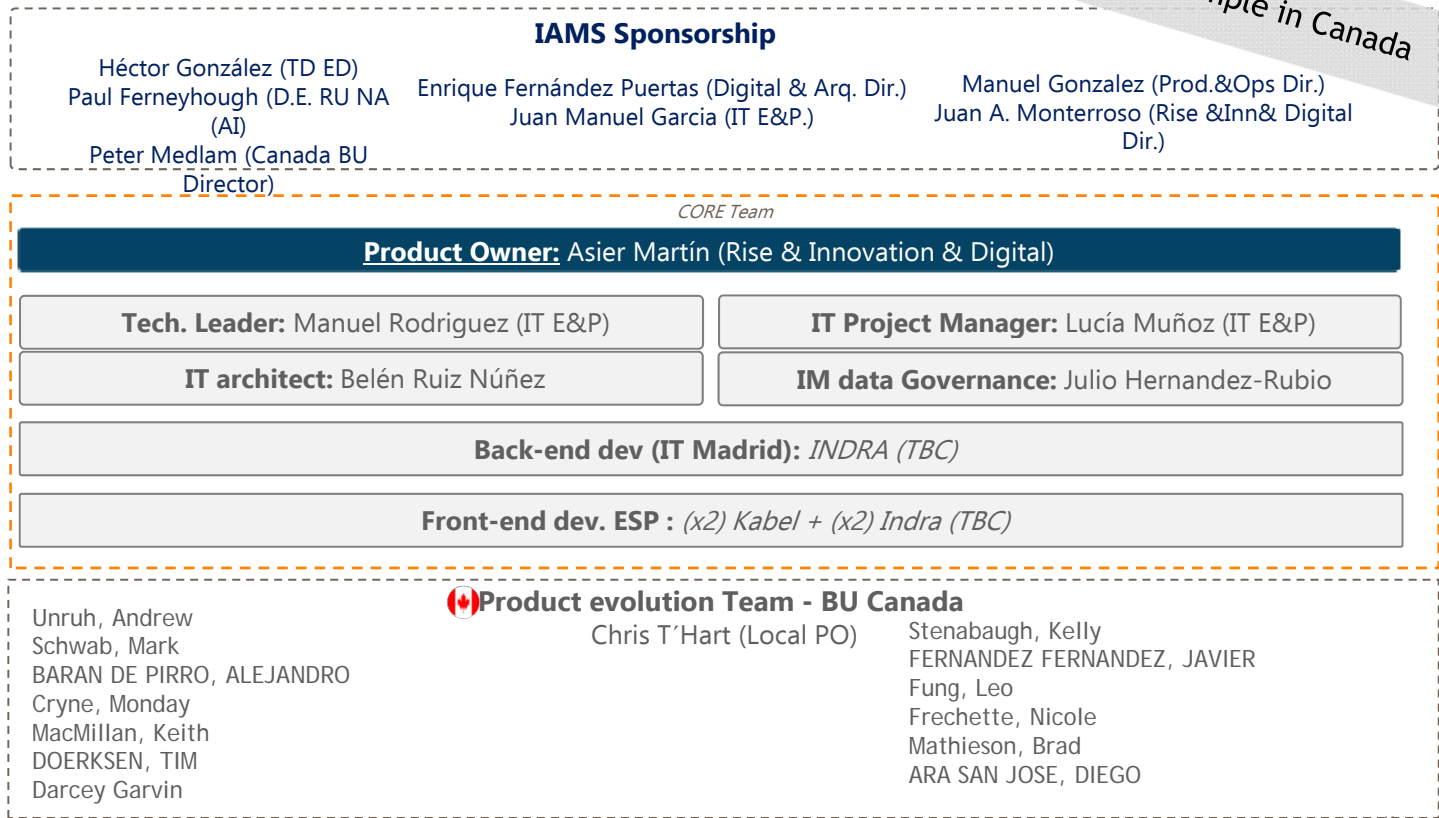


Project organization to deliver the roll out of E&P IAMS



Example in Canada

- Business Resources
- Digital/IT Resources



Extended team, provides guidance to IAMS roll out

Repsol Digital – E&P
Jose Luis Lombardo

Data Hub
Belén Ruiz

Napo Villalba (TEP leader)

Discipline experts

TEP Wells (*Renata M*)
 TEP P&M. OCM (*V. Sancho*)
 TEP Safety (*A. YouTEP Projects (A. Alvarez)*)
sefi)

TEP Environment (*A. Yousefi*)
 TEP – *Thais Moreno*
 And supporting:

TEP O&M (*F. Eguiguren*)
 TEP PE (*R. De Mella, L.Sánchez*)
 TEP WOWI (*Angel Vivas*)

* Executive Regional Director as well as BU Director person will role as sponsor when the IAMS deployment applies to their Region and/or country

Following key points have been learnt after deploying IAMS all over the world...



Organizational empowerment

Organizational Empowerment required from the Business Unit as this is a **transformational initiative** from both cultural & operating perspective



Dedicated resources

Dedicated resources from the business and IT. Local Product owners are key to move the organization and make the tool of their own



Non-standard back-end systems

Identification, understanding and first approach of IAMS potential pain points regarding to **different non-standard back-end systems**



Backlog management

Efficient time and backlog management



Understanding IAMS principles

Fast understanding of principles, targeted users, and data sources will enable end users an early adoption of the tool. **“Not waiting till the release happens”**

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REPSOL

