

OMV



Flavors of Enterprise GIS

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Simplification

Cloud based platform with the right data available for everybody within organization and on any device

GIS Center of Excellence Workshop

November 2018

Targets

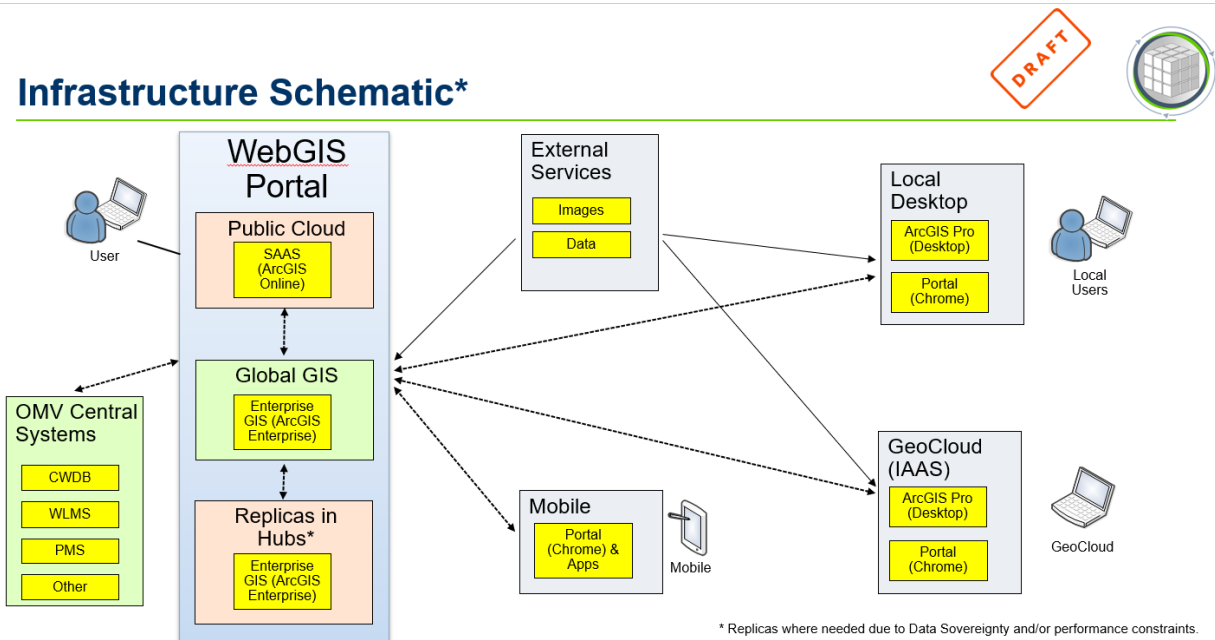
- One virtual Center of Excellence at OMV E&P level
- One global GIS environment in Cloud
- GIS as central visualization tool for E&P Data
- Implement available Esri and third-party technology
- Make full use of GIS capabilities & resources in BOs

To-Be Architectural Layout

Recommendation

Integrated Enterprise GIS solution that is Cloud-ready. All OMV Group users have view access over web browsers & mobiles, core users have edit access via browser and desktop applications.

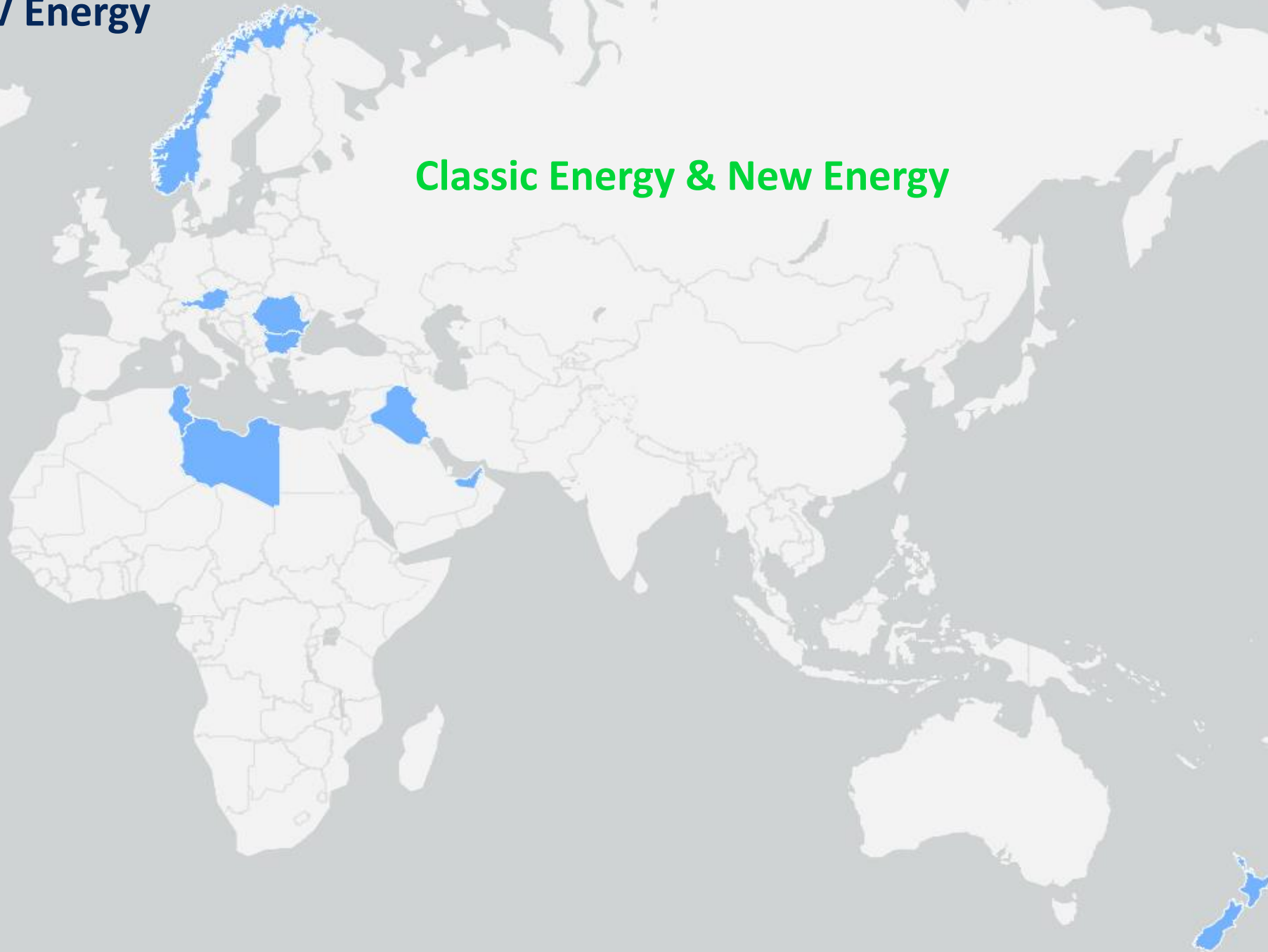
Infrastructure Schematic*



* Replicas where needed due to Data Sovereignty and/or performance constraints.



Classic Energy & New Energy



People / Governance



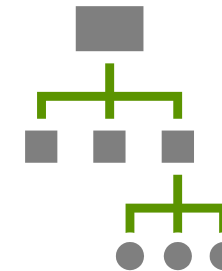
Infrastructure



Data



Web Services, Web Maps, Web Apps, Mobile, Processes



Governance - the Foundation of Enterprise GIS

Critical for organizations wanting to maximize the value of their GIS investment, setting the direction



- Strategy**
- Vision
 - Plan
 - Stakeholder Management
 - Organizational structure
 - Innovation

- People**
- Training and Development Plan
 - Communication
 - Responsibilities
 - Organizational structure

- Technology**
- Architecture
 - Access
 - Performance
 - Use cases

- Delivery**
- Service Management
 - Change Management
 - Service Review

- Data**
- Structure
 - Usage inventory
 - Quality

- Financial**
- Budget
 - Prioritization

Governance - the Foundation of Enterprise GIS

Examples of topics - diving into the smallest details

Standards & Conventions

Consistency enables scalability

- Defining naming conventions (e.g. datasets, services, Portal items)
- Standardized tags and metadata

Access & Security Governance

Right data, right people, right way

- Role based access integrated with Azure AD
- Clear publishing and sharing rules
- Regular review of permissions and public content

Content Lifecycle Management

Keep it current, keep it clean

- Policies for versioning and retirement
- Planned audits of datasets, service, maps and apps

Compliance & Cost Governance

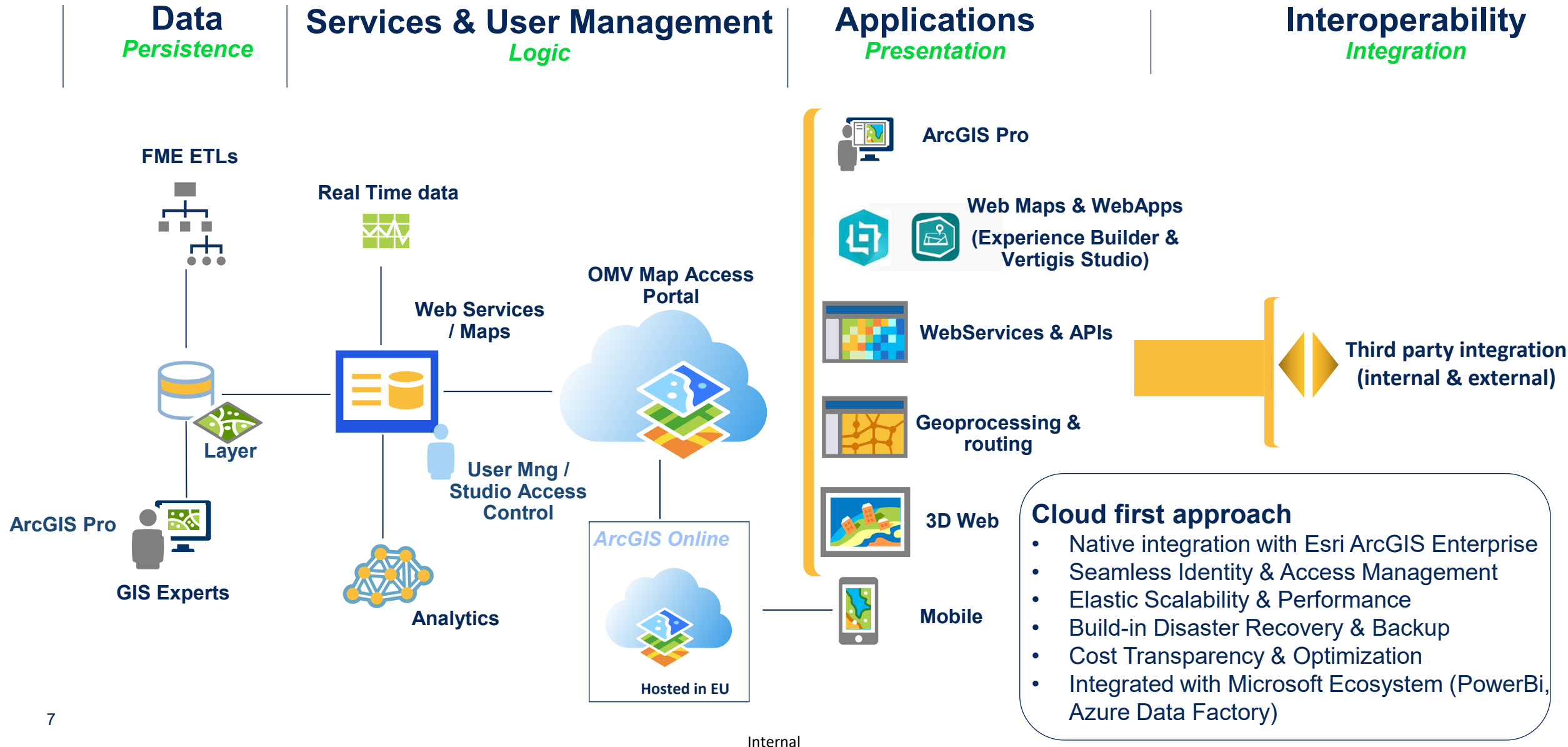
Transparency and trust at every level

- Alignment with GDPR and IT Security policies
- Cost management for licenses and Azure resources

High Level Design for OMV Energy Enterprise GIS



Based on Microsoft Azure following the *ArcGIS Architecture Center* recommendation



Data - the Core of Our Enterprise GIS

Harmonized, service-oriented and domain-driven

Data Ownership

- Branch Offices maintain their own datasets (vector and raster)
- Datasets structured per domain (e.g. Geological, Petrotechnical Infrastructure, Environmental)
- Data is maintained via ArcGIS Pro, WebApps, Mobile or FME ETLs covering integration with third-party apps

>1000
Layers

Global Harmonization (ETL Layer)

- Data synchronization through scheduled ETLs ensuring a harmonized OMV Energy global geospatial model
- Validation and transformation ensure consistent schemas and naming
- Allows global analysis while preserving local autonomy

>100
ETLs

Service Oriented Architecture (SOA)

- All data exposed and consumed via web services (Feature, Map, Image)
- Enables scalable access for desktop, web and mobile users

>400
Web Services

Web Services, Maps & Apps

Consistent, secure and connected across enterprise

Web Services – the Foundation

- Everything starts with standardized services
- Followed naming conventions and tagging
- Centralized monitoring and versioning ensure reliability

**OMV MapAccess
sites**



Mobile Access – Connected Field Work

- Cloud native access, anywhere
- Integrated with Azure AD and 2fA for secure authentication and secure access
- Enables seamless updates between field, web, and desktop users

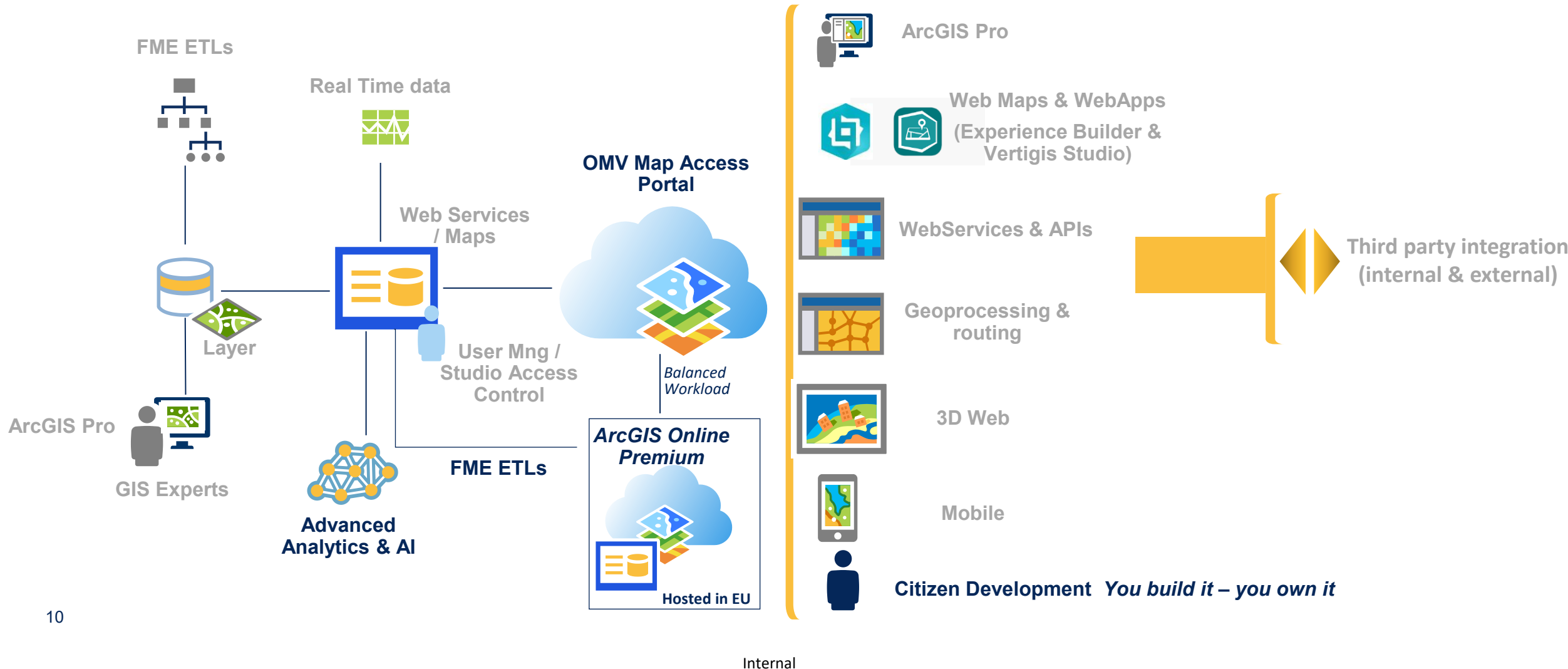


Next Steps – Balanced workload between managed infrastructure and SaaS

Closing the circle from 2018 Workshop



Illusion of Simplicity

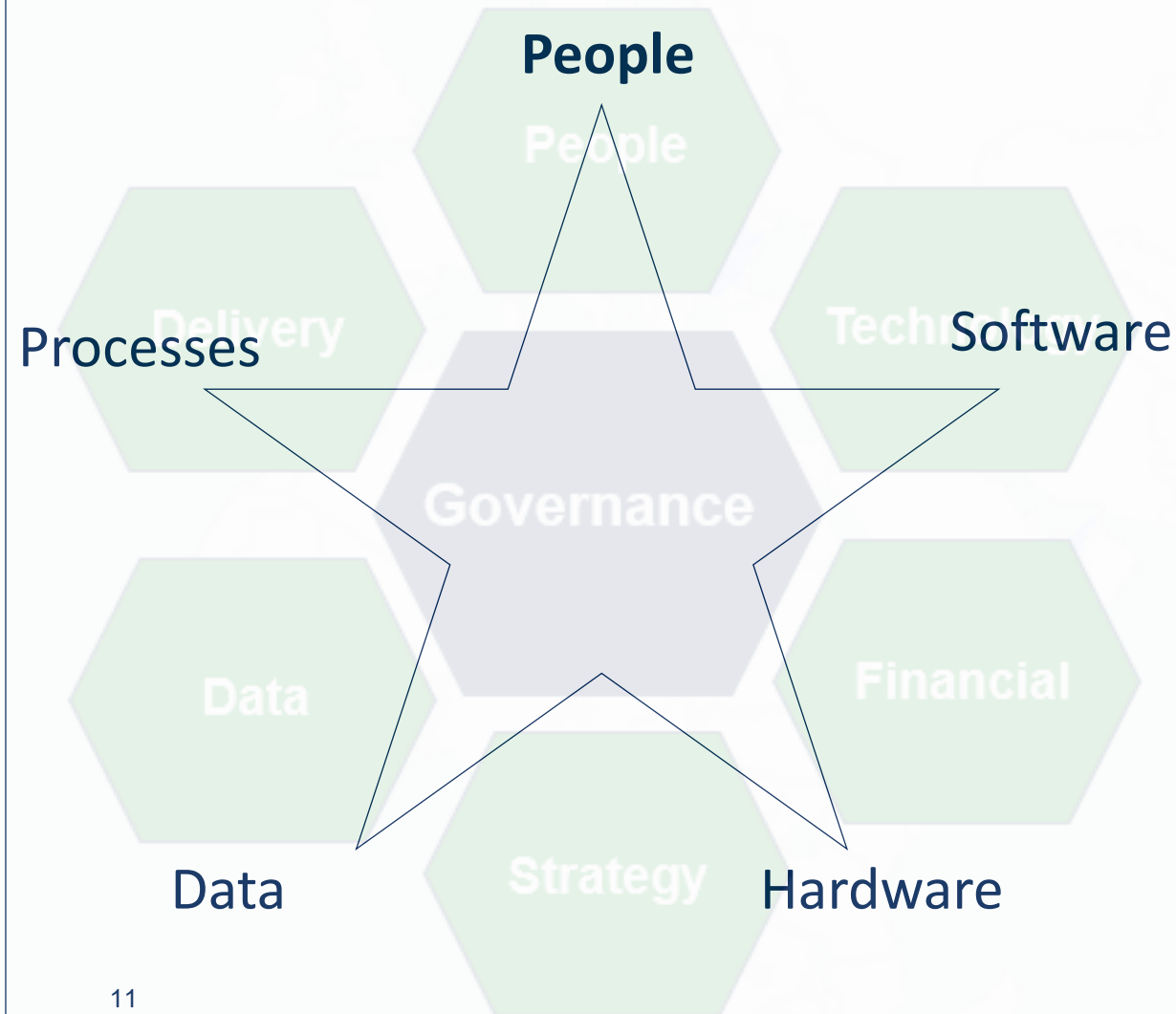


People – the Heart of our Enterprise GIS

Skills, collaboration, and dedication behind the system



2003 – What is GIS?



A Small Team with Big Impact

- 10 people, multiple locations, managing a large enterprise ecosystem
- Responsible end-to-end for the entire ecosystem (including operations and projects support)
- Technical expertise grown organically over years
- Learning by doing, improving by sharing
- Continuous learning on ArcGIS Enterprise, Azure, FME, Vertigis Studio, AI, Real-time data, Digital Twin, ...
- Supporting daily +900 users

**Our team didn't just learn GIS –
they transformed the way it is done**



Insights from Our Journey

With our own words

Governance

- Governance comes first
- Assess where you are vs where you want to be over 3 years
- Executive sponsorship is critical
- Follow naming conventions on data, web services, web maps, portal items, user AAD groups
- Technology – not everything is Web, don't sub-estimate ArcGIS Pro

Data

- Feature Datasets are not folders – search for a meaning “why” grouping data (e.g. topology)
- Domains – text coded domains worked better for us
- Enable Editor tracking
- Indexing is crucial for the Feature Classes involved in web apps queries and search
- Cached data – for static data
- Use ETLs for data management
- Attribute Rules is an option vs db triggers – depending on the use case
- Maintain metadata
- Expose data via web GIS services vs sde db connection

Web Services

- Minimize number of services
- Dedicated instances for critical & VIP services
- Publish web services with as much as possible relevant layers and with no symbology – deal with it later in the maps
- Retire unused services
- Web Services with editing capabilities published individual

Web Maps

- Predefined web maps organizational structure/working domains
- Control data display and labels based on scale
- Setup which attributes are relevant for the use case (pop-up relevant)
- Avoid clutter and keep maps purposeful

Web Apps

- Don't overload web apps with widgets – “purpose over features”
- Implement group-based sharing using Azure Active Directory (AAD) groups
- Get feedback on usability

Portal

- Apply description, metadata, tags
- Review items and keep it clean
- Define your own roles

Documentation

- Maintain the documentation on dependencies (which apps/maps use which service which Feature Class/Tables)
- Interdependencies with third party databases/apps
- Which Azure AD groups are mapped to apps and with which role

People

- Emphasize skills, experience gained through doing,
- People inside the team have different skills and cross-functional collaboration is key
- Rely also on external expertise

There is no one-size-fits-all approach

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Thank you!

