

estamos ahí.



energy | natural gas | water

GIS for Power Generation in Colombia



Who we are

About our company...

<<Insert corporate video>>



Power generation

Power generation



Actual net capacity of EPM:

> 3,257.6 MW, 22.6% of the national installed capacity (14,420).



Actual net capacity, hydraulic:

> 25 plants, 2,778.1 MW.



Actual net capacity, thermal:

> 1 plant, 460 MW.



Actual net capacity, wind:

> 1 wind farm, 19.5 MW.

Some facts:

- > 21.5% of the total sales of the Interconnected National System.
- > 23.2% average of actual generation for the system (EPM's total actual generation: 13,585 GWh/year).
- > 94.86% average hydraulic availability (Interconnected National System total, 86.62%).

Project generation stages and spatial information



Cartography

- Basic and thematic cartography, aerial photography, imagery

Cadastral and land records

- Parcel ownership, land records, right-of-ways, trespasses to land

Infrastructure

- Dam, reservoir, powerhouses, pressure tunnels, access roads

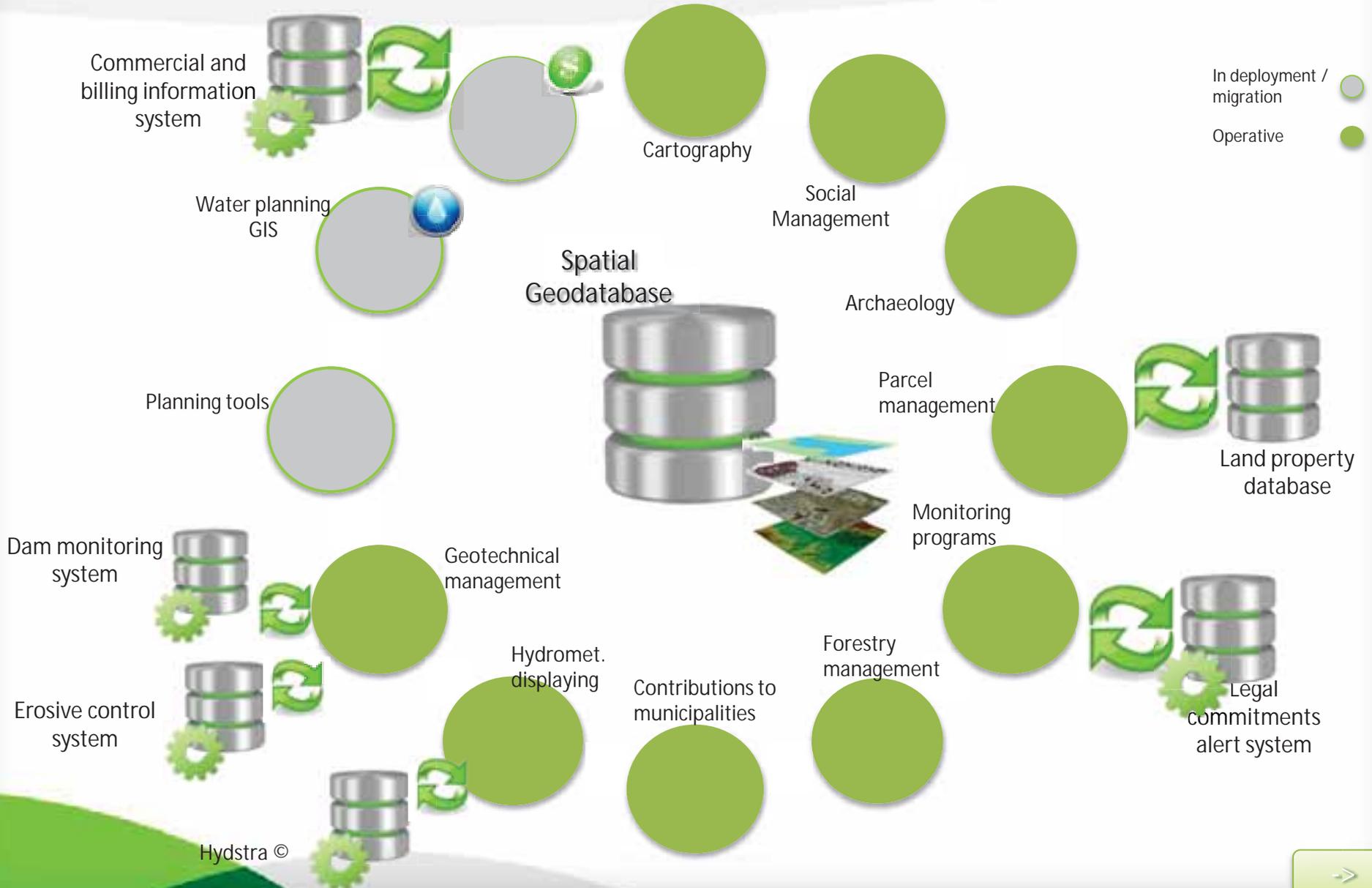
Environment

- Monitoring programs, forestry, land use, mining records

Community

- Archaeology, Institutional strengthening, legal obligations

Applications overview



Cartography

The challenge Centralize cartographic information in a single database. Successfully managing multiple scales.

The users 200+

The data Regional, country, Province and Project scales
Infrastructure
Web services
Satellite imagery
Aerial, and more

The app ArcGIS Server 9.3.1
Silverlight
Basic functionality
Queries ad-hoc
Landmarks
Sharepoint
predesigned maps

Next Mobile GIS
The cloud
National Spatial Data Infrastructure



Aerial imagery combined with hydro dataset . Dam location in Antioquia, Colombia

Social management

The challenge Organize and consolidate EPM's contributions (economic, social, environment) for improve communities quality of life.

The users 15 +

The data Communities, social infrastructure, annual investments, programs and more

The app ArcGIS Server 9.3.1
ADF
Editing enabled
Customized reports

Next Migration to 10.x
Interface with company's ERP



TICIA MUNICIPAL

Génesis

REPORTE INVERSIÓN SOCIAL Y AMBIENTAL
GERENCIA GENERACIÓN ENERGÍA
AMALFI
CONSOLIDADO HISTÓRICO

PROYECTOS/CENTRALES UBICADOS EN EL MUNICIPIO

Área en predios de EPM: 154 Ha

Proyecto o Central	Etapas
Porta II	Operación
Porta III	Diseño y Construcción

Operación	Operación	Operación	Operación	Operación	Operación
1,204	20,520	11,34	46,20	112	2

Líneas de Inversión	Periodo de Datos	Acumulada Histórica Valores Cuilientos	Acumulada Histórica Valores Constantes a Dic. 2011
1. GESTIÓN SOCIAL			
Educación Educativa	1977-2011	\$ 55 420 214 240,00	\$ 47 889 110 743,04
Pro Linea Productiva	1980-2011	\$ 31 776 694 370,00	\$ 28 076 082 000,00
OP Linea Infraestructura	1982-2007	\$ 222 000 879 094,02	\$ 202 222 799 746,00
Maj Linea Mejoramiento ambiental	1982-2011	\$ 287 682 086 393,00	\$ 268 480 890 323,00
Sub Total			
1.2. Fortalecimiento Institucional y Comunitario			
Fort Fortalecimiento institucional			
Fort Fortalecimiento comunitario			

Parcel management

The challenge To develop a information system for managing the property lifecycle from purchase to administration and maintenance.

The users 40 +

The data Parcels, constructions, historical negotiation, legal documents, land trespassing points, photographic registry.

The app ArcGIS Server 9.3.1
Parcel editing, file associations, SharePoint integration, Archibus© integration

Next Real estate negotiation workflow system

Génesis epm

Identificación Parcela

Parcela ID	Parcela	Propiedad	Identificación Parcela
Parcela 01	Parcela 01	Parcela	440000000001
Parcela 02	Parcela 02	Parcela	440000000002
Parcela 03	Parcela 03	Parcela	440000000003
Parcela 04	Parcela 04	Parcela	440000000004
Parcela 05	Parcela 05	Parcela	440000000005
Parcela 06	Parcela 06	Parcela	440000000006
Parcela 07	Parcela 07	Parcela	440000000007
Parcela 08	Parcela 08	Parcela	440000000008
Parcela 09	Parcela 09	Parcela	440000000009
Parcela 10	Parcela 10	Parcela	440000000010
Parcela 11	Parcela 11	Parcela	440000000011
Parcela 12	Parcela 12	Parcela	440000000012
Parcela 13	Parcela 13	Parcela	440000000013
Parcela 14	Parcela 14	Parcela	440000000014
Parcela 15	Parcela 15	Parcela	440000000015
Parcela 16	Parcela 16	Parcela	440000000016
Parcela 17	Parcela 17	Parcela	440000000017
Parcela 18	Parcela 18	Parcela	440000000018
Parcela 19	Parcela 19	Parcela	440000000019
Parcela 20	Parcela 20	Parcela	440000000020

2754

AA 17915180

VENTA 12439

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NIT. 890.904.996-1

\$46.619.522

2.632

ESCRITURA PUBLICA NUMERO: (2.632)

DOS MIL SEISCIENTOS TREINTA Y DOS

En la Ciudad de Medellín, Departamento de Antioquia, República de Colombia, a los ocho (08) días del

Monitoring programs

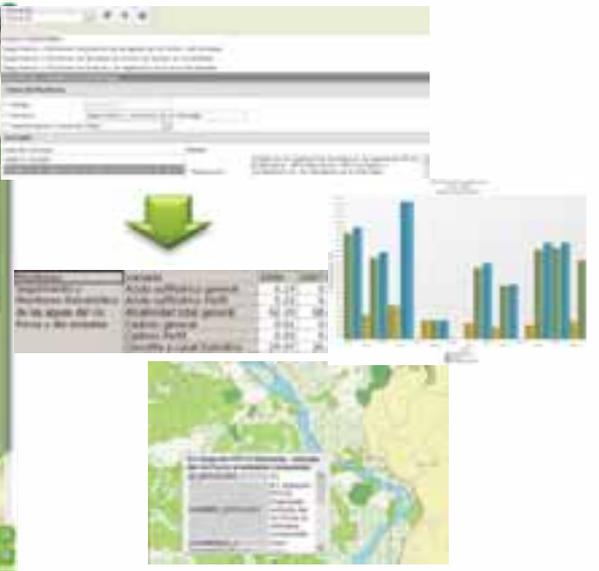
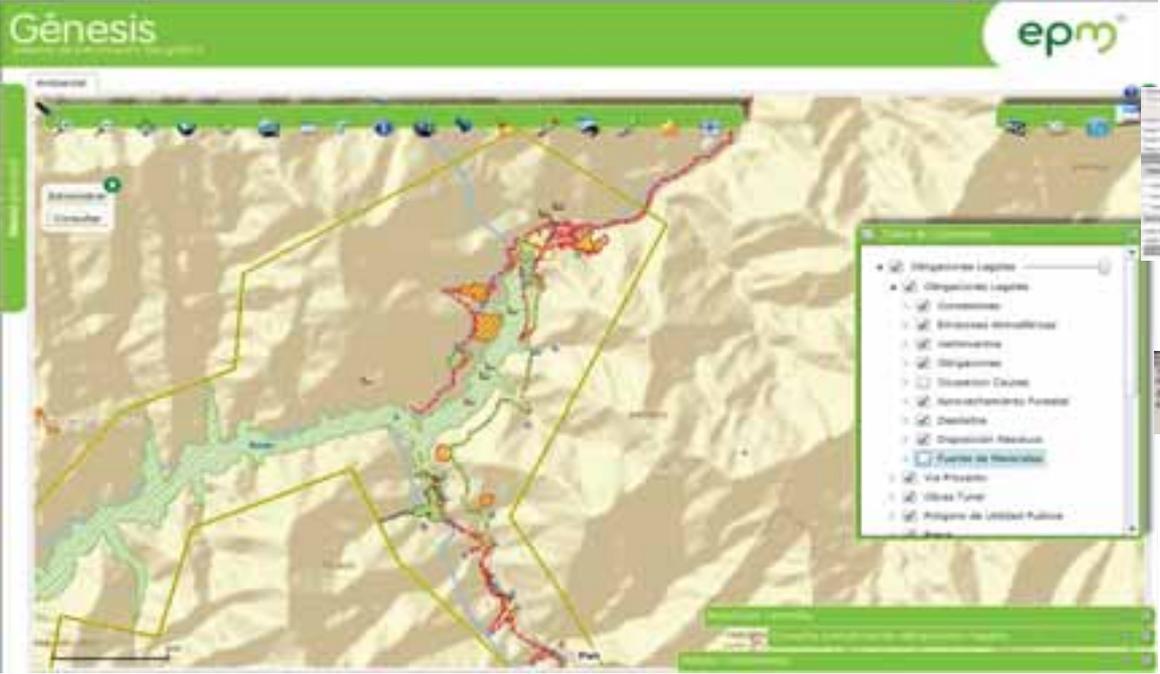
The challenge Quick response to environmental authorities requirements associated with the location of concessions, permits and obligations.

The users 30 +

The data Monitoring points, monitoring areas, specimens tables, historical data.

The app ArcGIS Server 9.3.1.
Customized reports.
Tools to import and edit data.

Next Redesign of application to accomplish new country regulations



Contribution to municipalities

The challenge Quick reference for executive officers related with EPM's contribution to territorial development.

The users 40 +

The data Municipalities, regions, economic investments, service coverage

The app Quick export to flash presentations. Predefined reports

Next Association with corporate reports

The screenshot displays the 'Génesis' software interface. On the left is a navigation menu with categories like 'Información General', 'Energía', 'Iniciativa', 'Proyectos', 'Información Estadística', and 'Mapa'. The main area features a data table with columns for 'MUNICIPIO', 'ENERGIA ELECTRICA ANUAL', 'SERVICIO', 'INVEST', 'SERVICIO', 'SERVICIO', and 'SERVICIO'. The table lists various municipalities such as 'SAN CARLOS DE LA VIEJA' and 'SAN CARLOS DE LA VIEJA' with their respective energy and service data. To the right of the table is a map of the region with a legend for 'Municipios' and 'Energía'. Below the map is a bar chart showing 'Energía Electrónica' for the years 2010, 2011, and 2012, with values of 10,000, 10,000, and 10,000 respectively.

Hydrometrology displaying

The challenge To provide geographical capabilities for hydrometeorological information systems in EPM. Develop a system interface for Hydstra © system.

The users 20 +

The data Weather stations and registries, data from the hydrometrology Information System

The app ArcGIS Server 9.3.1.
Silverlight API
Geographic interface to Hydstra ©.

Next Migration to 10.x



Geotechnical management

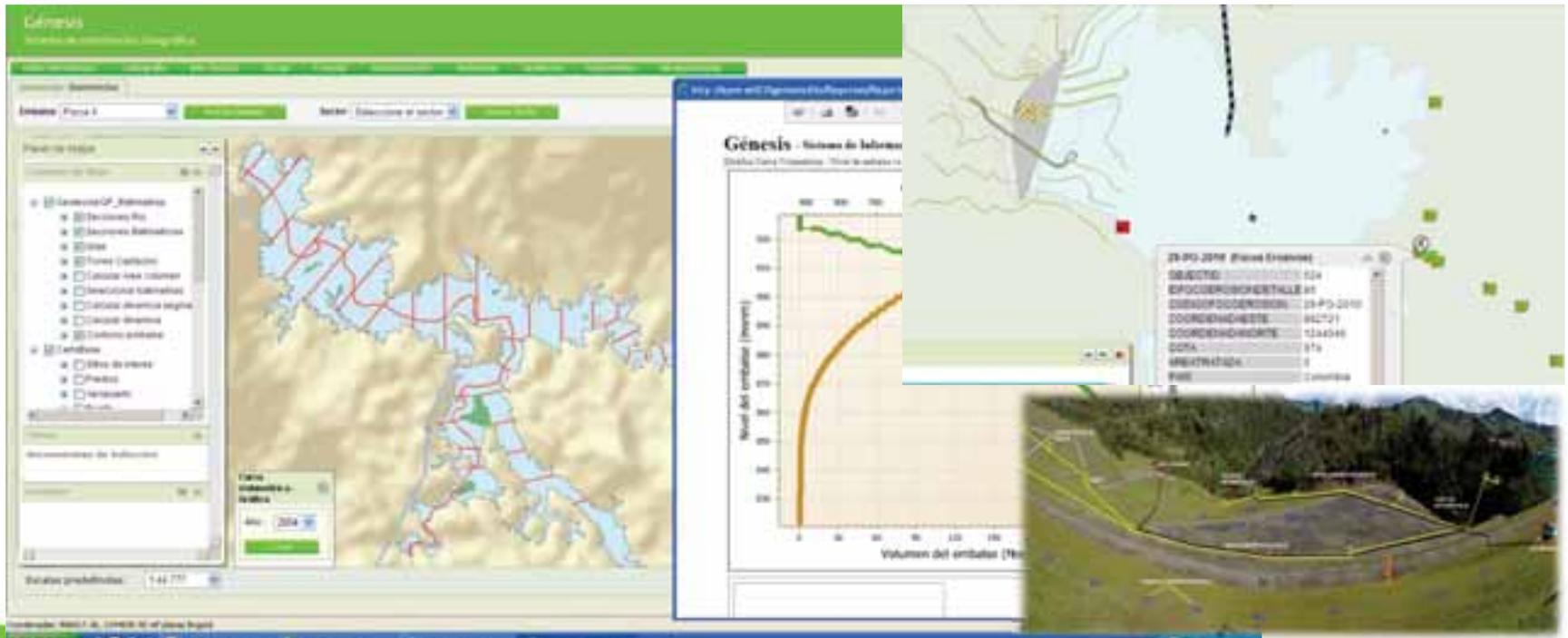
The challenge Geographical monitoring of dam dynamics. Support emergency plans of dam failures. Locate and monitoring erosive foci. Database of Bathymetry.

The users 15+

The data Infrastructure data, dams, nearby communities, pressure tunnels, emergency response data, erosive foci, bathymetric data

The app ArcGIS Server 9.3.1 Silverlight API Interface to several information systems

Next Migration to 10.x



Water and wastewater planning GIS

The challenge Analysis tools for defining the Latin-American target market of EPM's water company

The users 14

The data Regional statistics for water use and demand

The app In analysis phase

Next GIS in operation



Commercial and billing system GIS interface

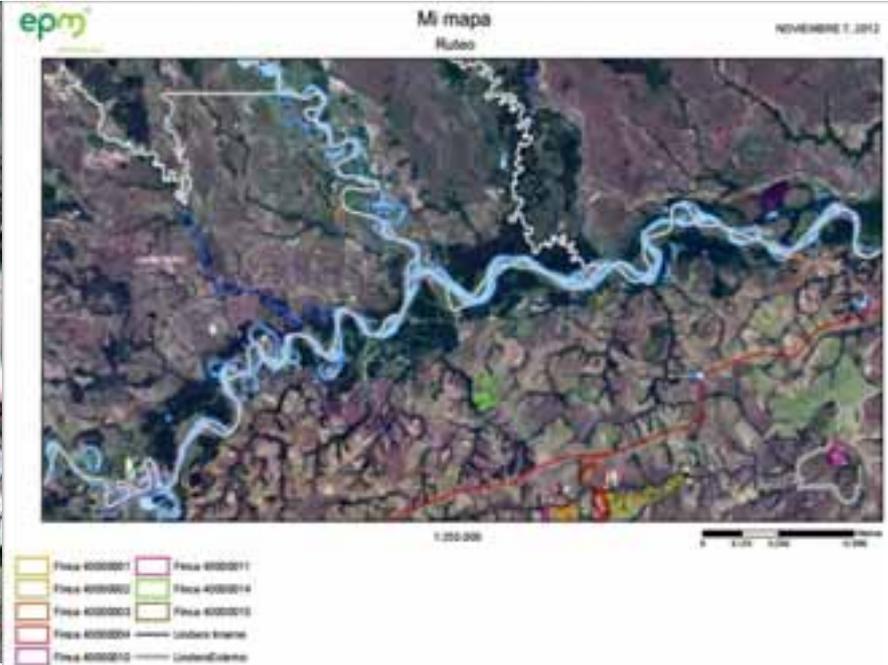
The challenge Add geographic analysis capabilities for the billing information system of EPM

The users 50 +

The data Road networks, addresses, billing zones, municipal boundaries, etc.

The app In analysis phase
Geocoding, routing, balancing

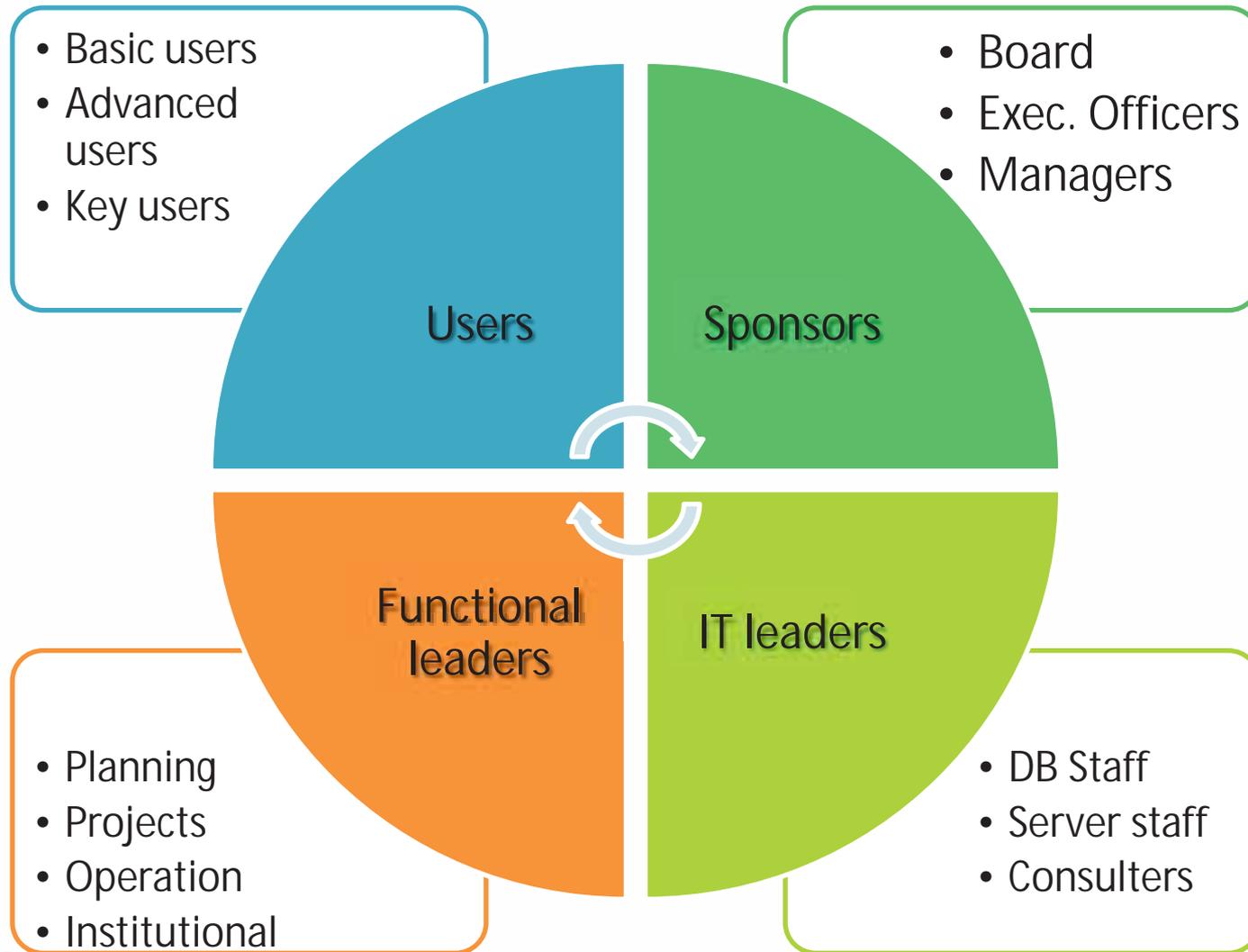
Next Operative interface





Our people

Our team





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Thank you



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