

Applying 'GIS Services Bus GSB in the Enterprise

Prepared By:

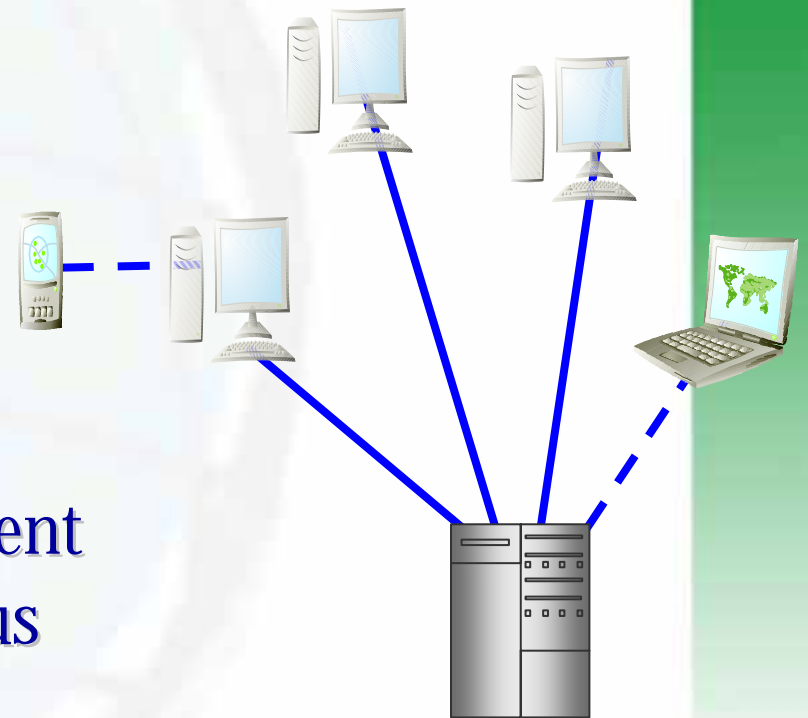
Eng.Sohail ElAbd / Solutions Development General Manager – ESRI NEA

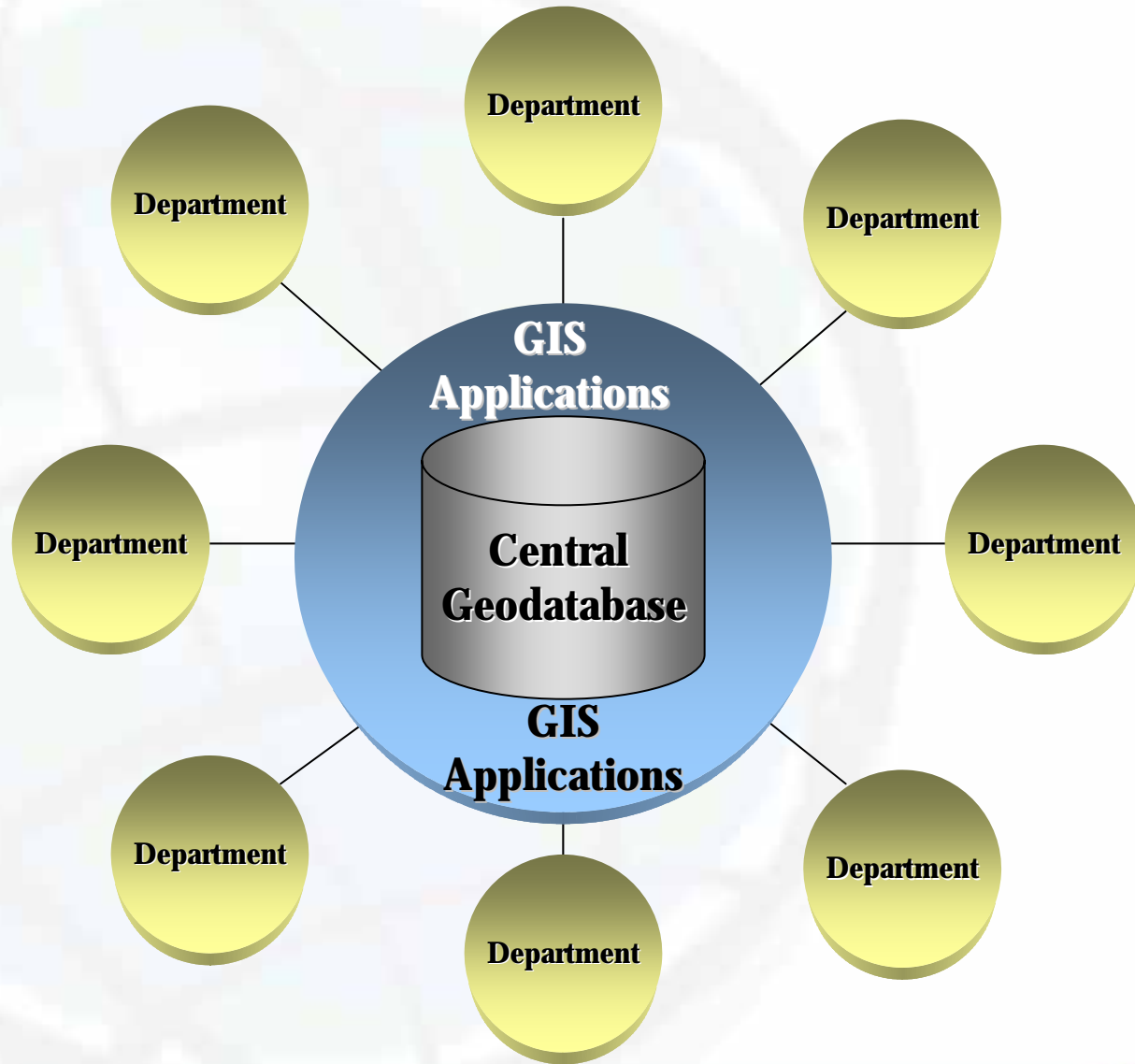
Agenda

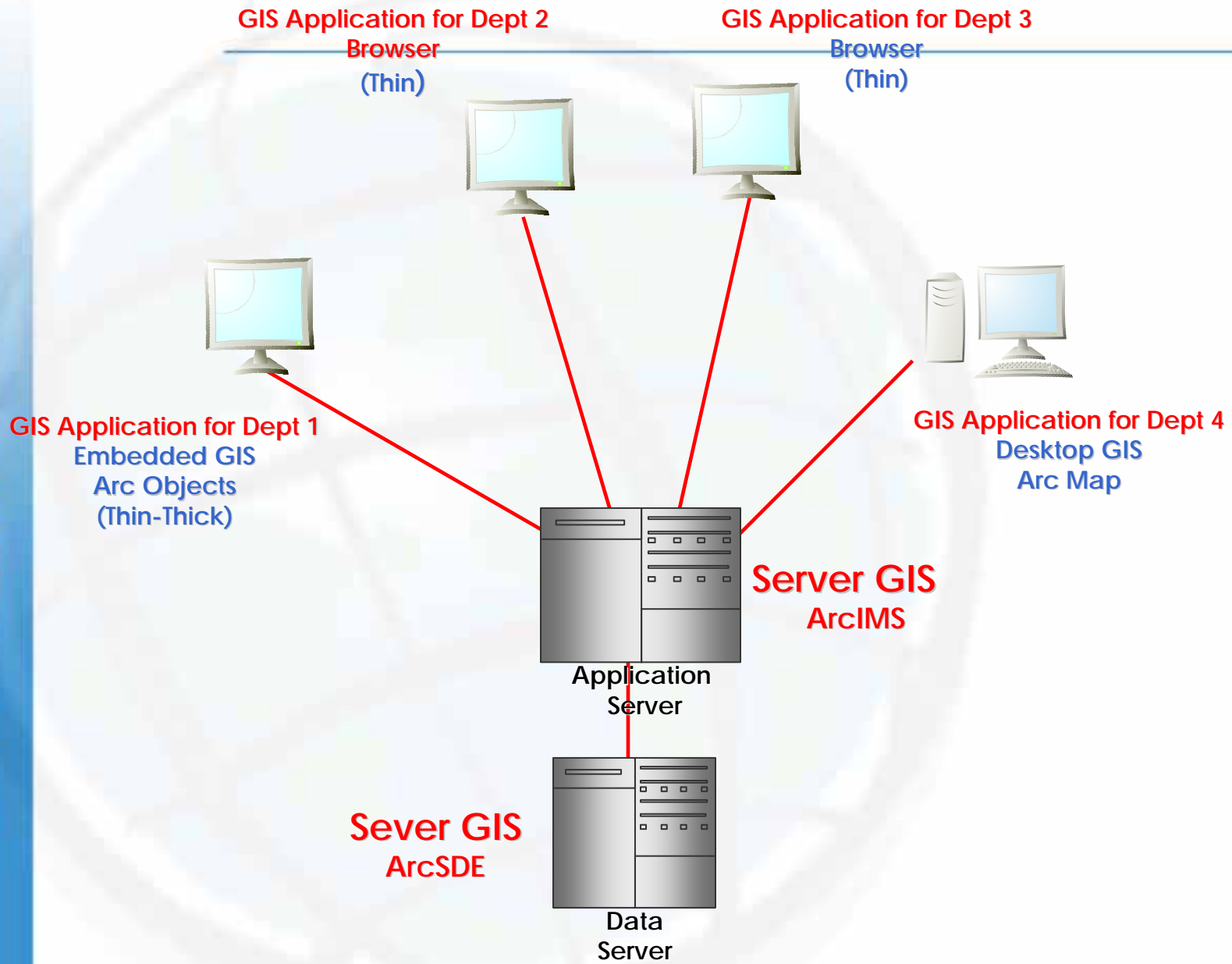
- **Traditional Approach**
- **Business Needs**
- **Concept**
- **System Architecture**
- **Methodology**
- **Examples**

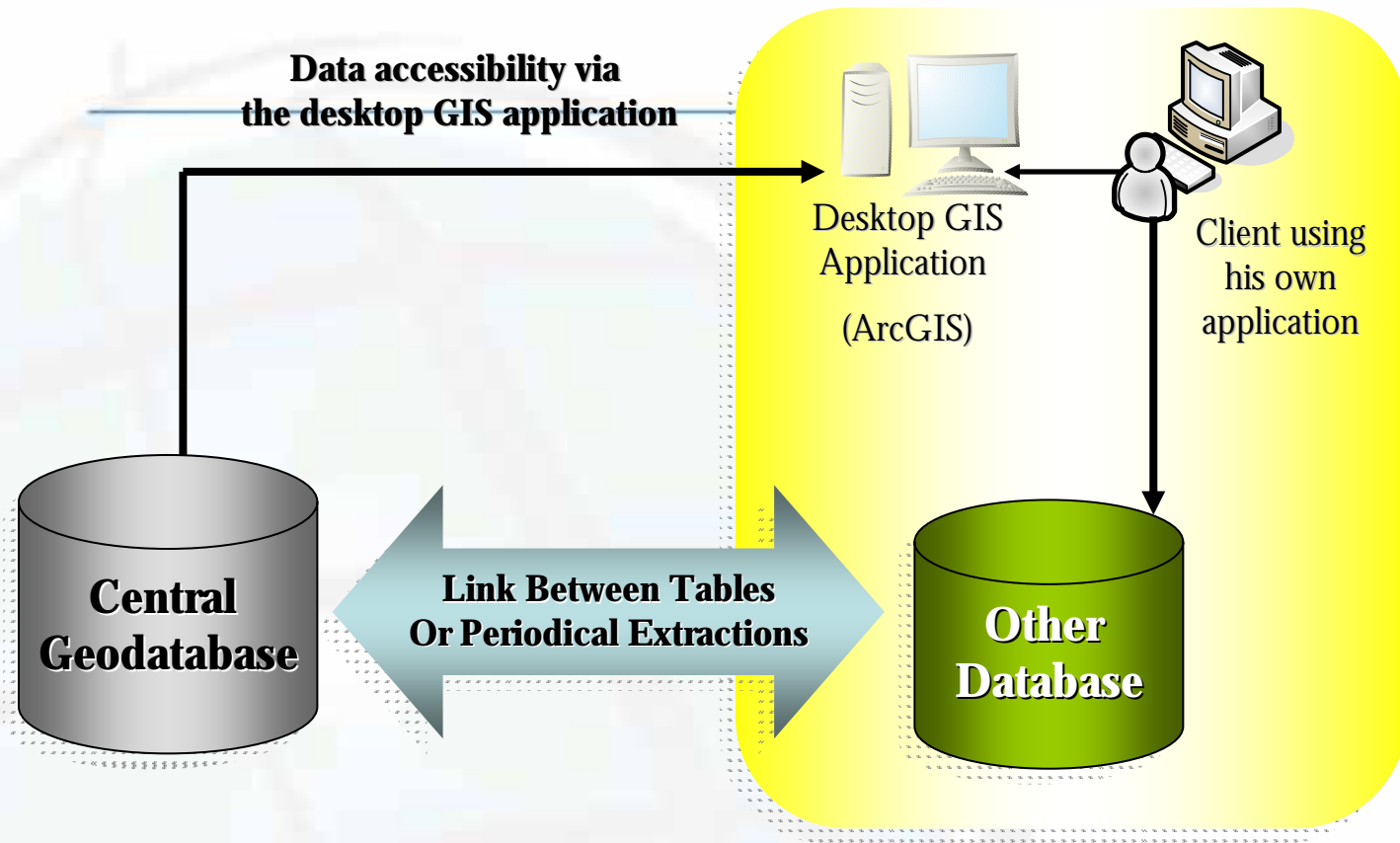
Central Consolidated Approach

- Spatially Enabled Centralized Information Systems.
- Centrally managed and maintained using relational DBMS technology
- Migrating datasets from different departments to a homogeneous GIS environment

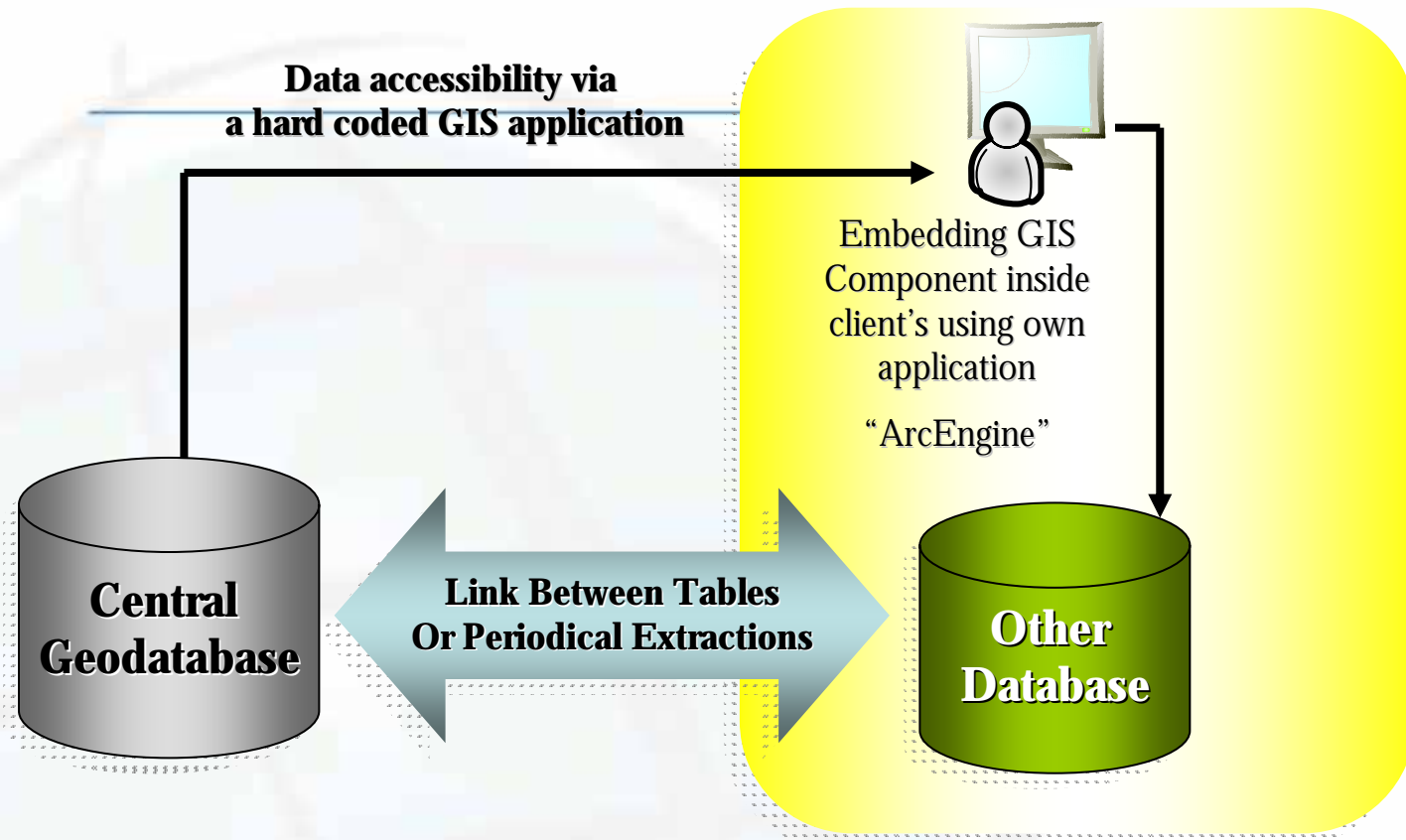




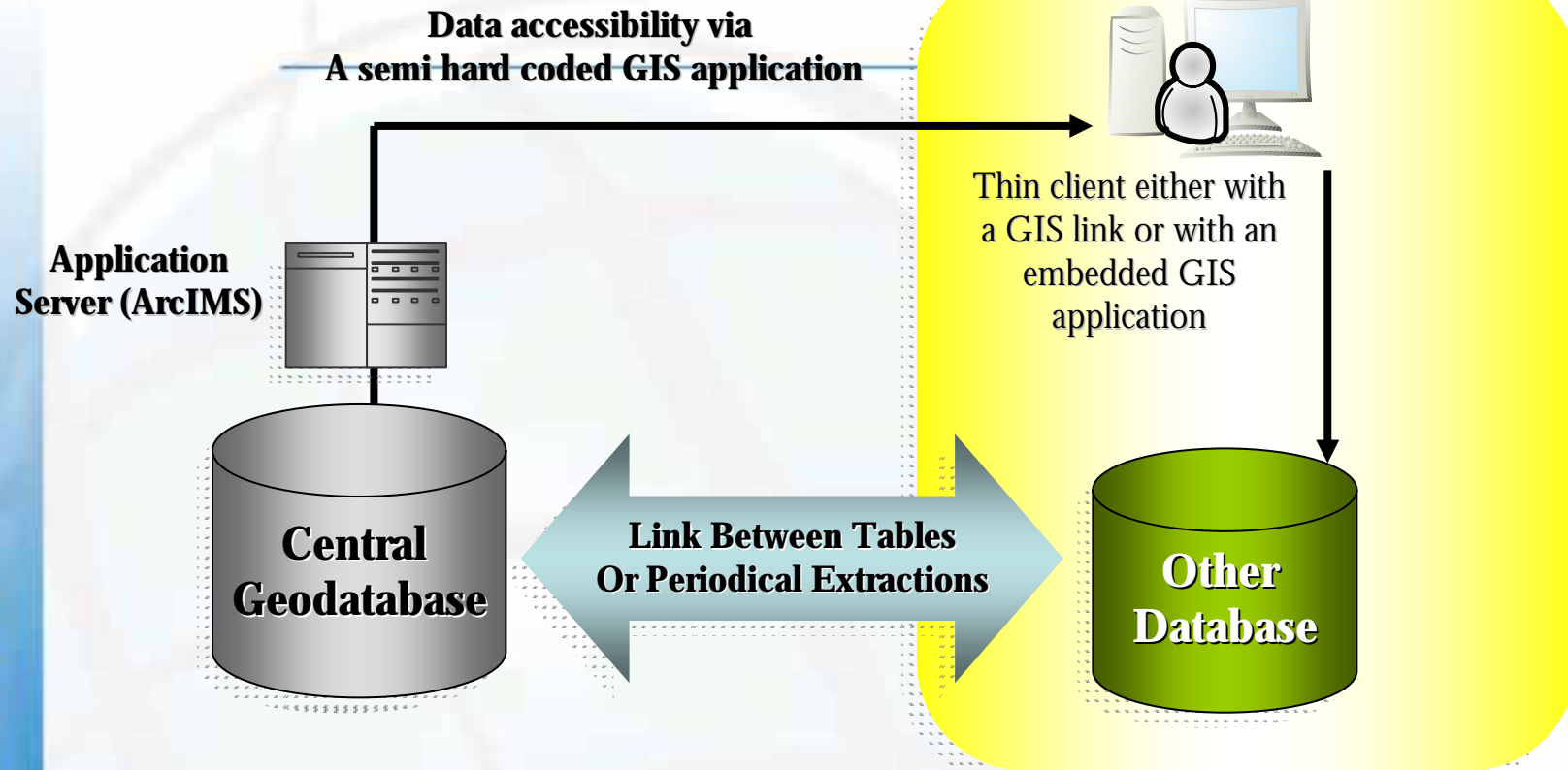




- Spatial data & other database accessibility via ArcGIS desktop application.
- Applications Duplication.



- Spatial data & other database accessibility via embedded GIS application "MapObjects or ArcEngine"
- Hard Coded
- Any change in the system, database, or user needs requires re-development



- Spatial data & other database accessibility via GIS link or embedded GIS application
- Semi-hard Coded
- Any change in the system, database, user needs requires re-development

Properties

- Migrating whole departments datasets to GIS central repository
- Information is centrally managed and maintained
- GIS in the main focal point.
- GIS is the most important component in the organization

Most Appropriate in organizations where GIS is the core business (e.g Map Production)

Disadvantages

- GIS isn't mission critical in most enterprises
- GIS is needed as a complementary aided technology not as a core business leader.
- Full power to GIS Center
- Employees' offensive attitude
- No system loyalty
- Complex integration with legacy systems (sometimes requires hard coding)

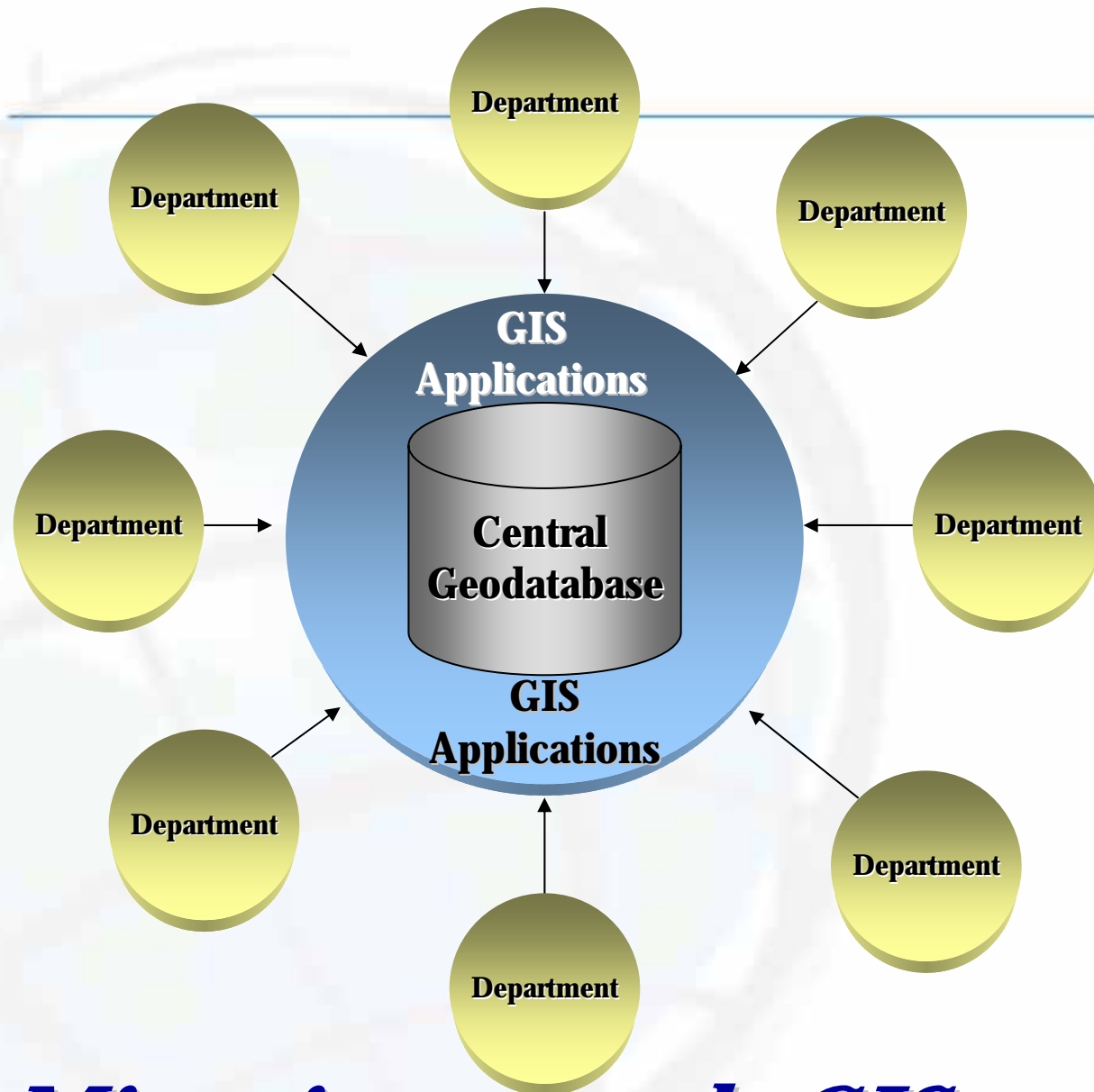
Orienting business towards GIS
Not
Orienting GIS towards business

Organizations mostly have...

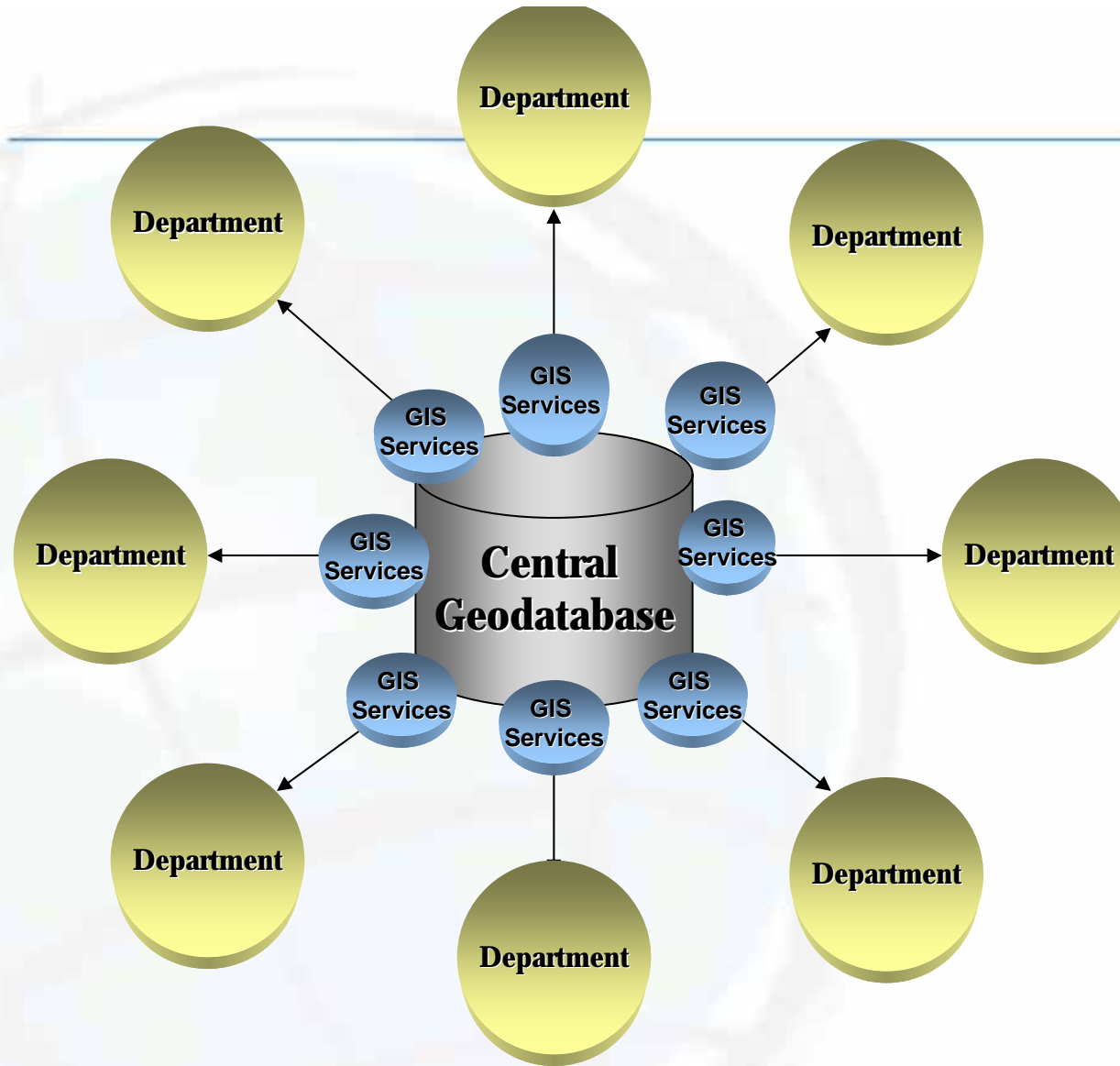
- Systems evolved over a number of years.
- A number of utilized different technologies and platforms.
- A well defined way of work.
- A familiar interface.

To achieve the most appropriate GIS, it should provide the following..

- Easy & direct accessibility to Geographic knowledge.
- Flexible integration with the organization used applications.
- Maintaining same Feel & Look of the organization's familiar interfaces.
- Easily performing the required GIS business services (functionalities) on the required data.
- No need to specific tools.
- No need to heavy training.
- Independency on GIS Specialists.
- Independency of GIS on the existing systems.
- Scalability & Interoperability.



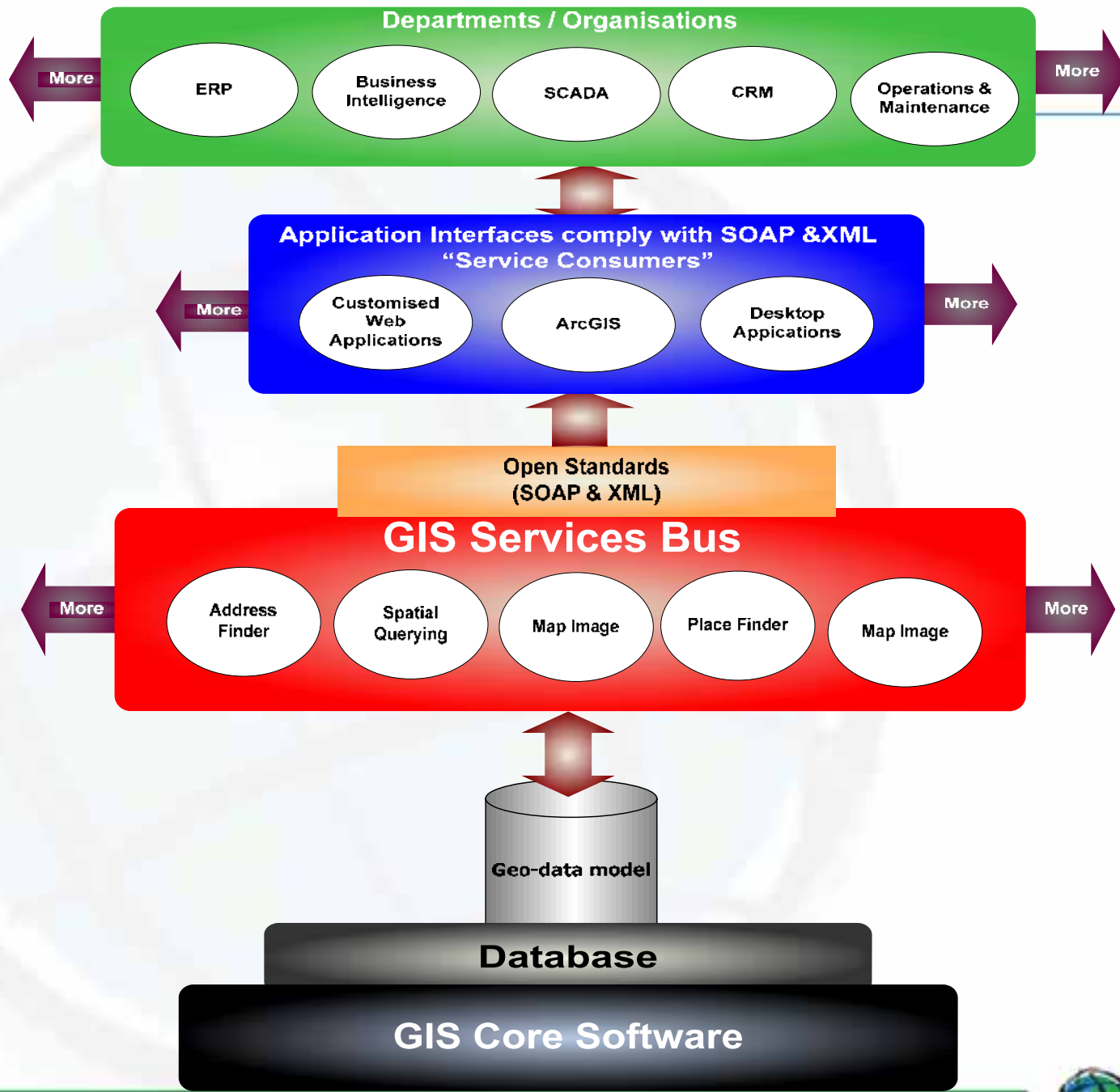
Migrating towards GIS...



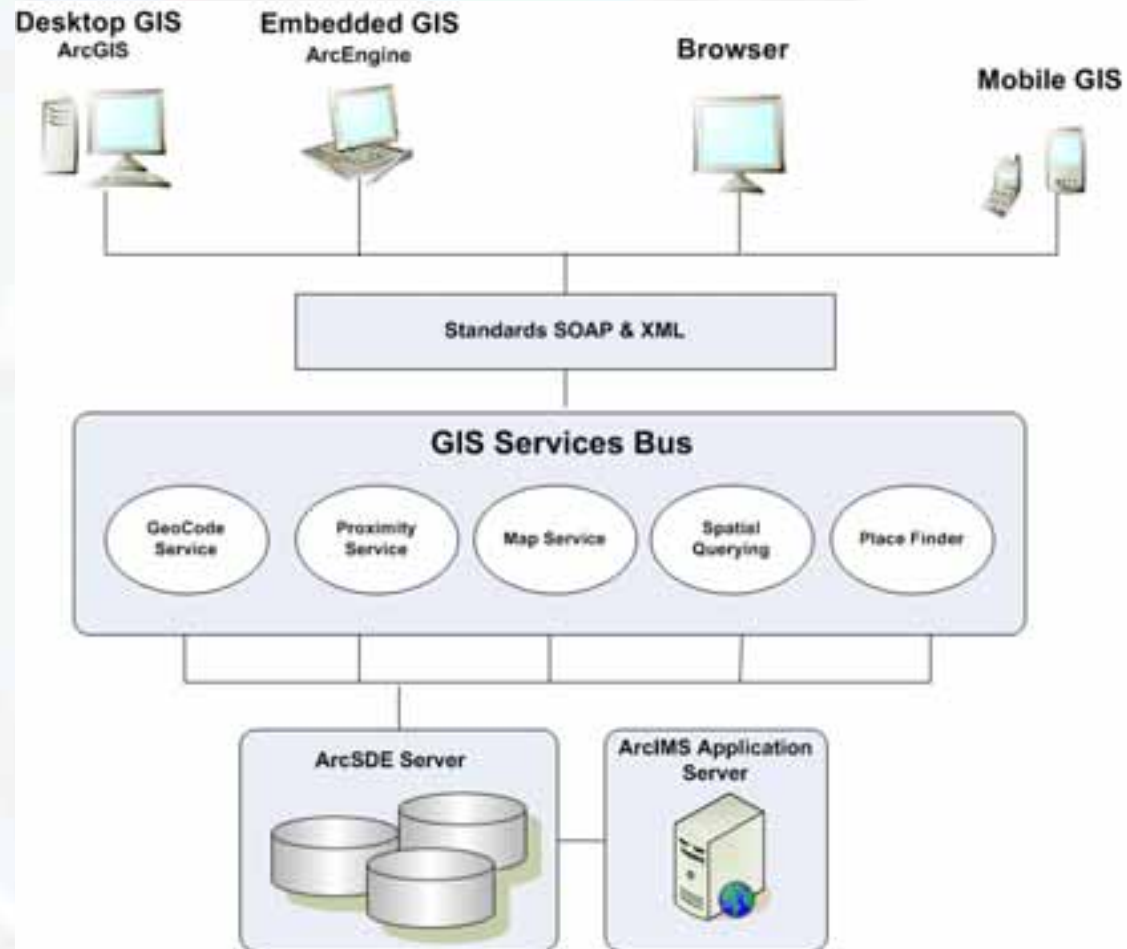
Geographic Knowledge Delivery...

The New Approach is based on

- Service Oriented Architecture (SOA).
- Generalizing Global GIS Services to broaden usability
- Creating independent Global GIS Services (Serving required data along with the appropriate customized interface)
- GIS Services Delivery (On Call)
- Services can be called in defined sequences to form business processes
- Sequences can be easily changed
- Services are independent
- Reusable
- Standards Compliant

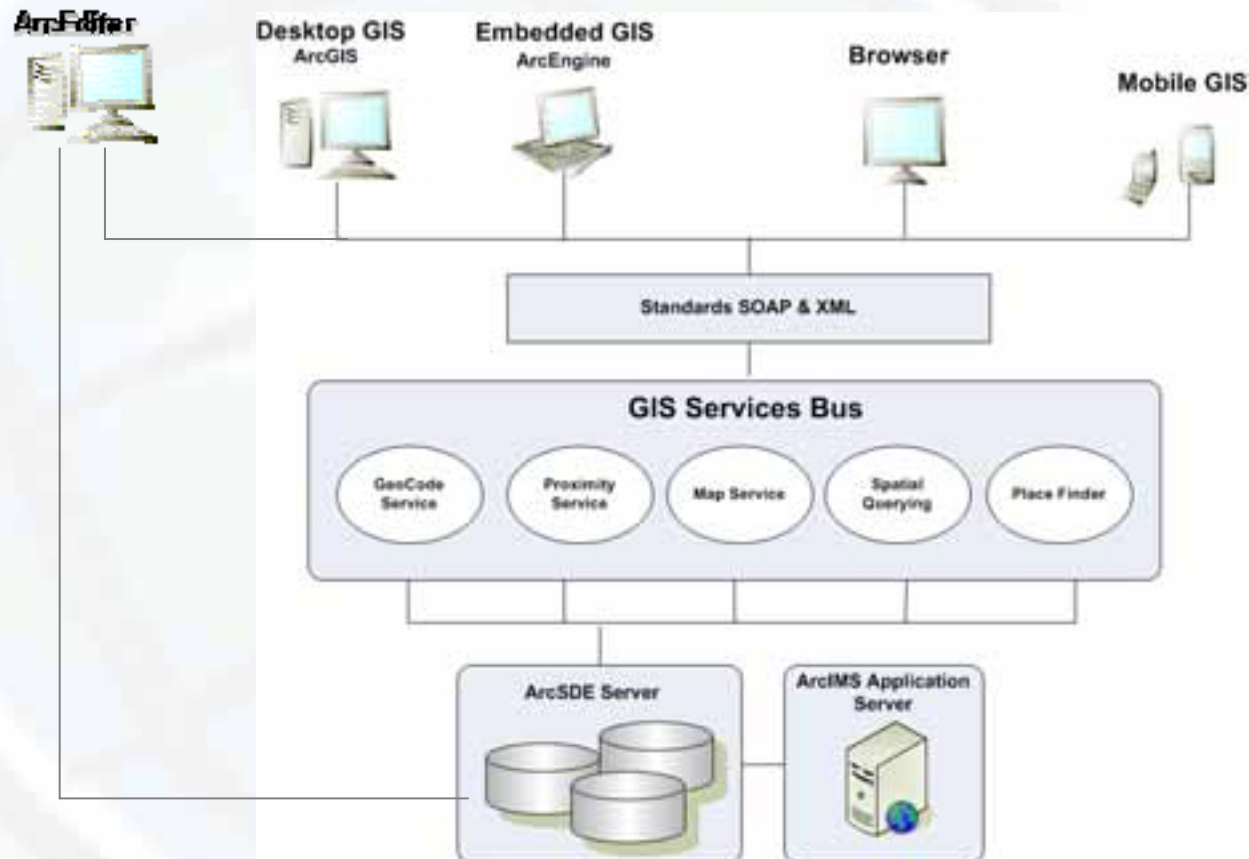


System Architecture



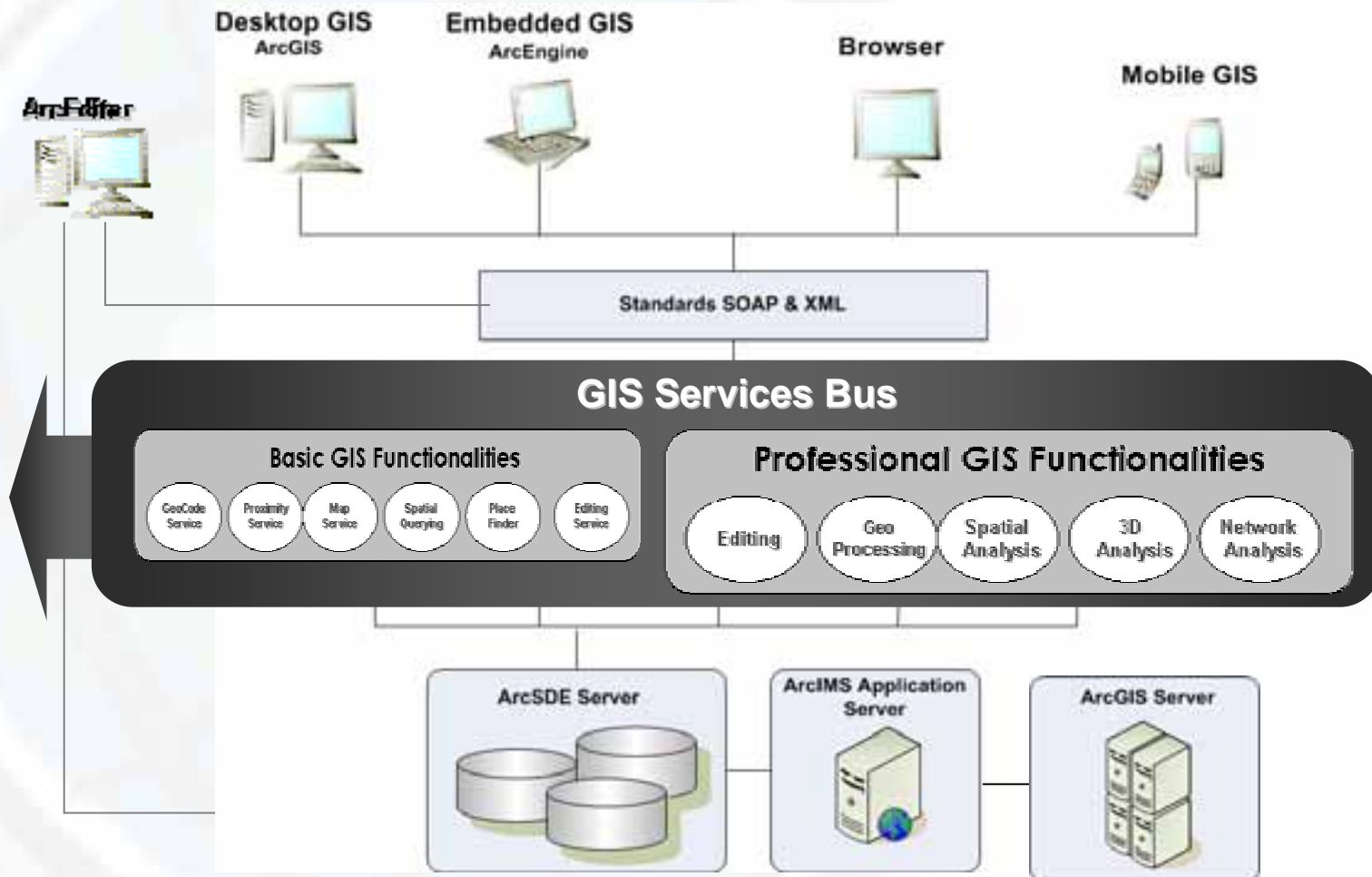
System Architecture

"In Case of the need of individual heavy GIS functionalities"



System Architecture

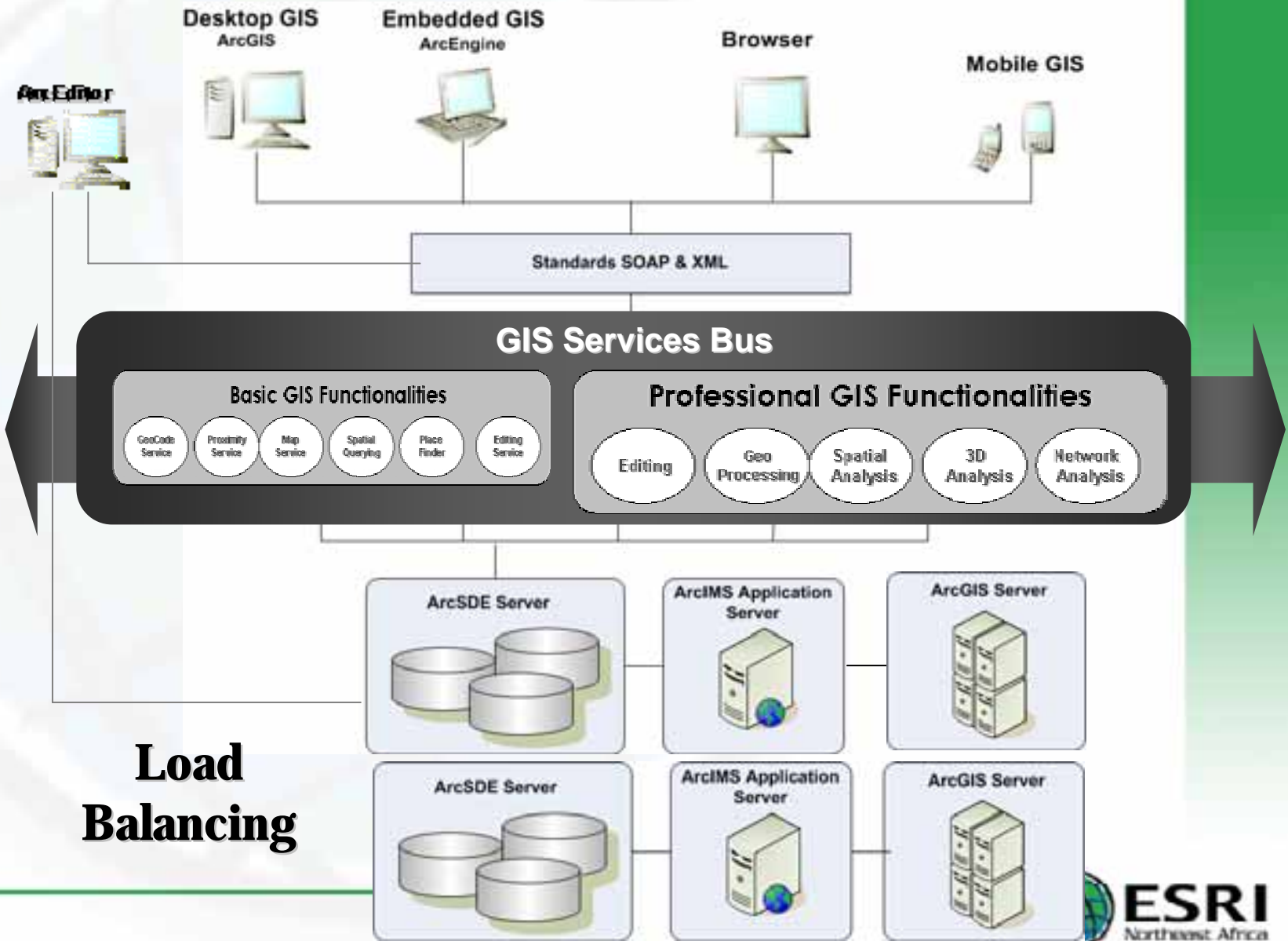
"In Case of the need of Global heavy GIS functionalities"



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System Architecture

“ In Case of the need of increasing performance ”

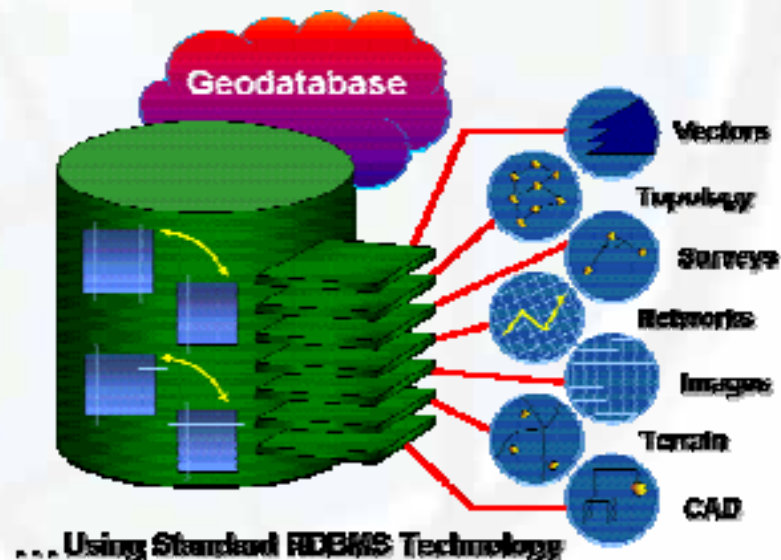


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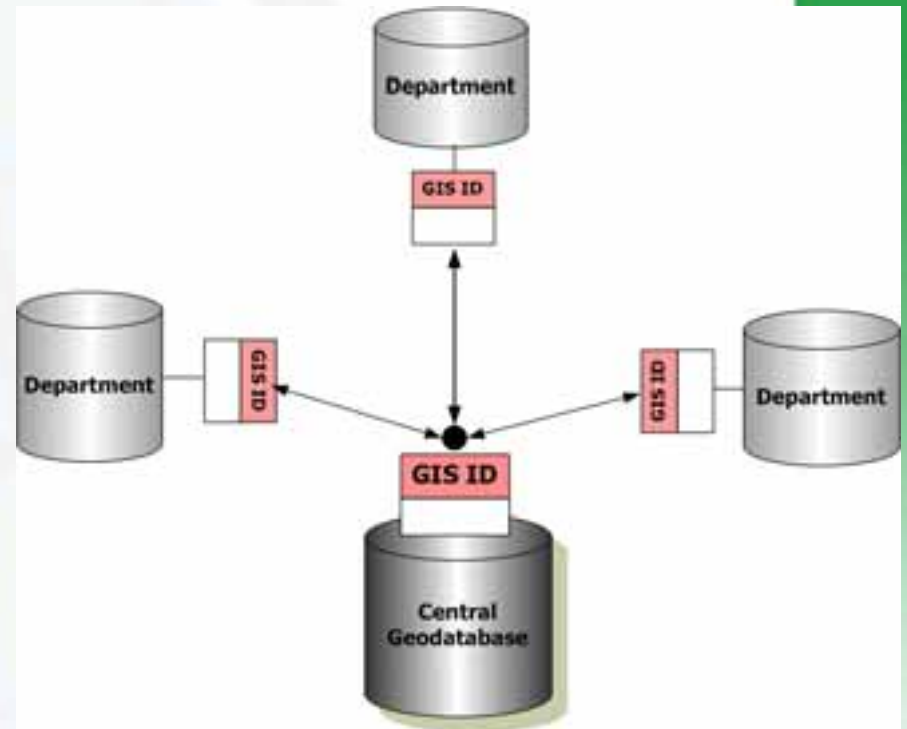
Methodology

- Organization Needs Assessment.
- Requirements Generalization, to defining Global functions which will be Global GIS Services within the Enterprise
- Building unified Geodatabase including all spatial entities, database structure, cardinality relationships, and connectivity rules.



Methodology

- Building unified coding scheme (Geographic Unique Identifier)
- Linking the Geodatabase with the departmental datasets via the Geographic Unique Identifier.



Methodology

- Providing departments with easy, efficient, and valuable accessibility for GIS services including data and interface

~~Building GIS
Application
for
Department A~~

Delivering
on Call GIS Service
for Department A

Examples

GIS Service (Nearest Store)



Where is the Nearest Store?

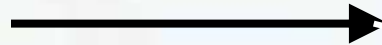


Client

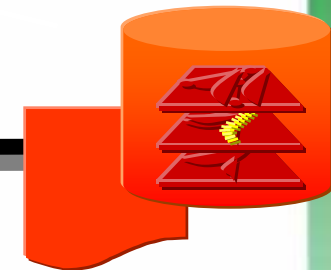


Map of Nearest Store

Request



Where is the Nearest Store?



GIS Server



Map of Nearest Store

Respond



Examples

GIS Service (Meters Location)

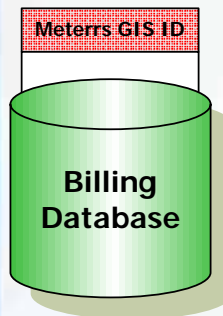


Where are the locations of non paid customers in a water company?

Sending request for Customers Meters Locations extracting Meters GIS IDs stored in Billing Database



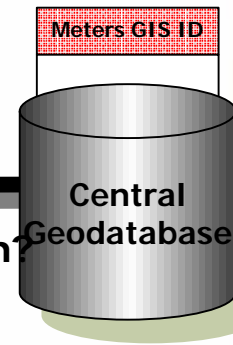
Linking Meters GIS IDs in both Geodatabase & Billing database



Client



Meters Location



Respond



Map of Meters Locations

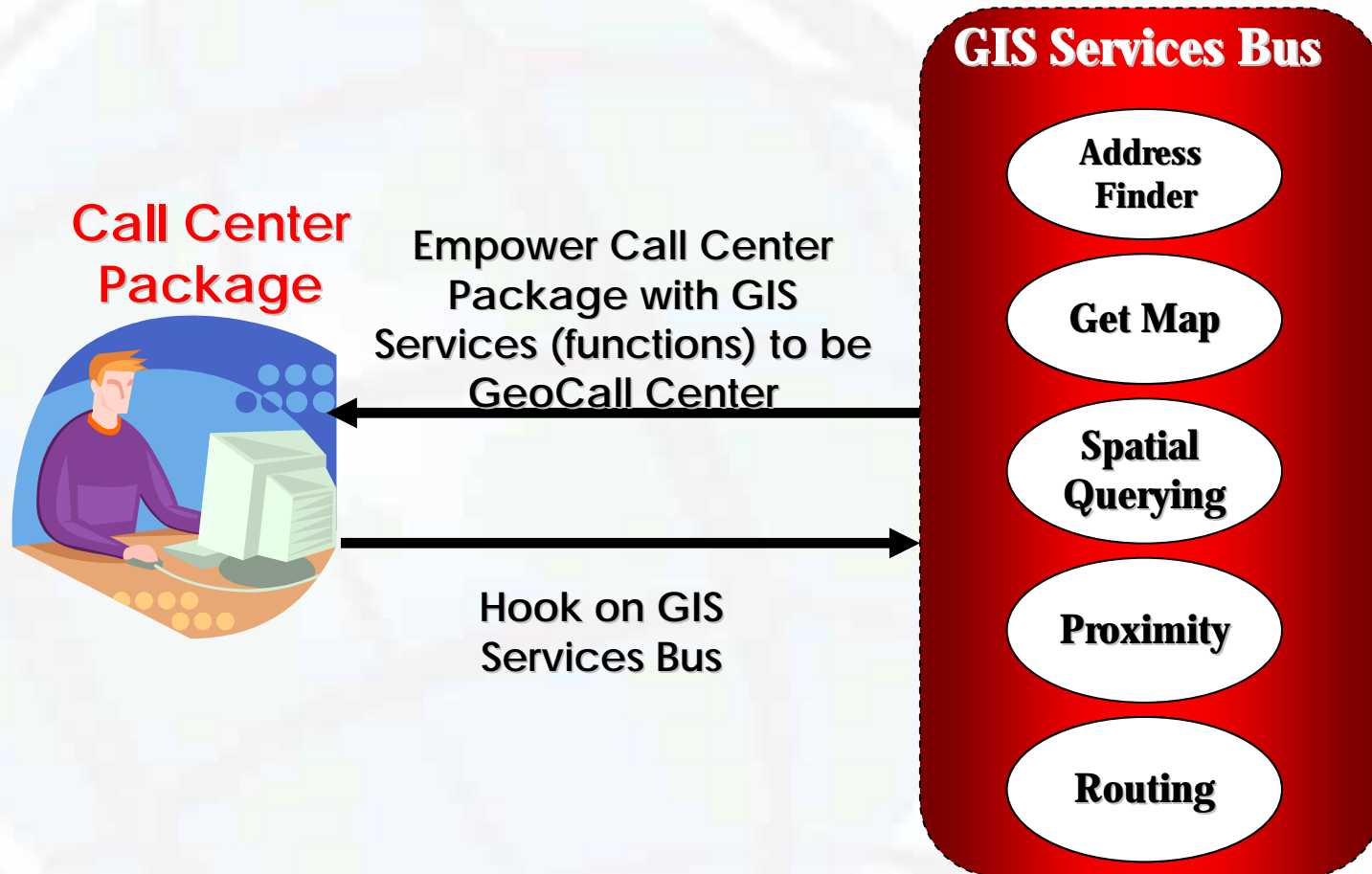


Map of Meters Locations

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Examples for GIS Services

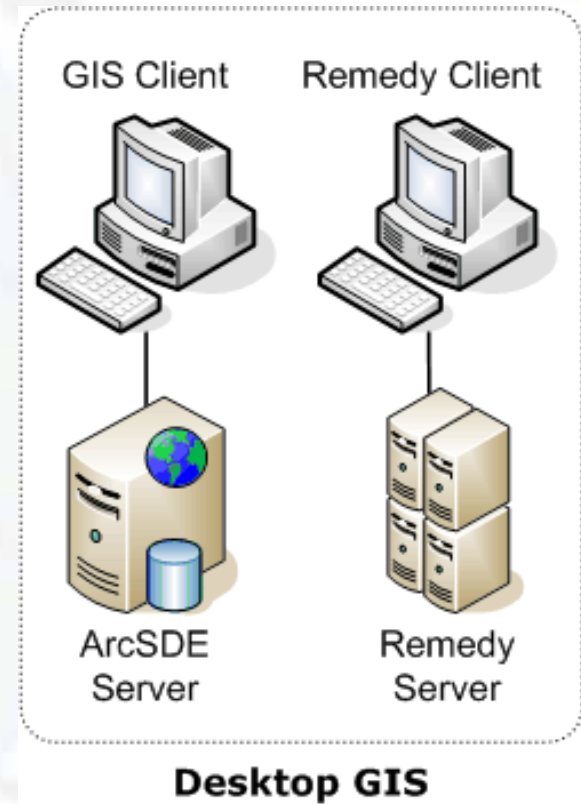
GIS Services for GeoCall Center



In case of changing Call Center Package, Independent GIS Services remains alive, to be reused...

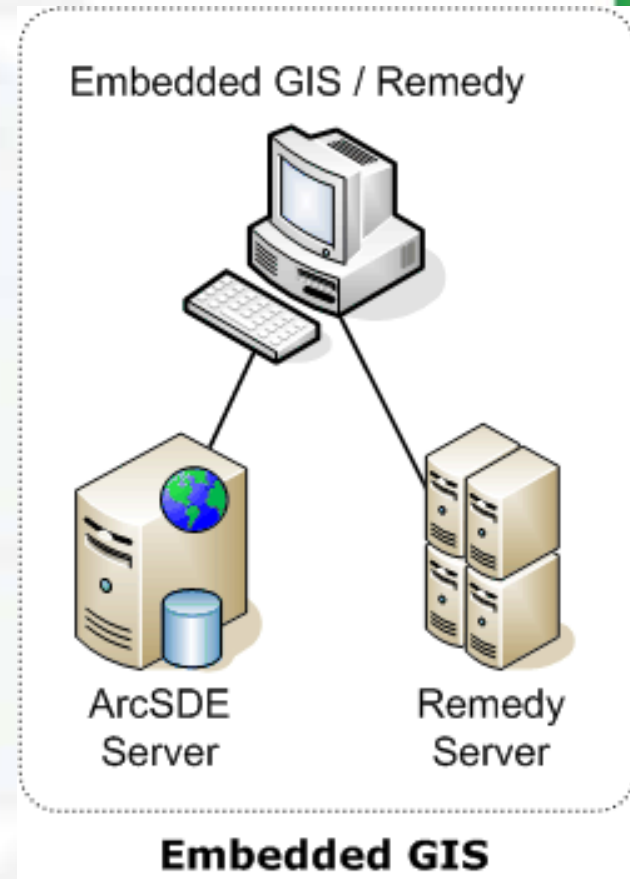
Case Study (Vodafone Egypt)

- Phase 1
- Integration with Remedy is required
- GIS was in separate interface
- Duplication for users
- Unsatisfactory solution



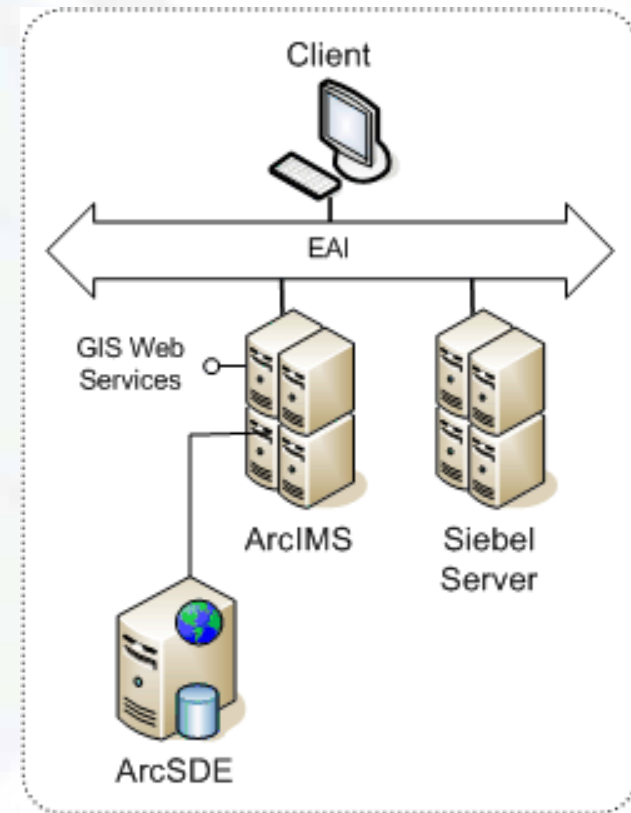
Case Study (Vodafone Egypt)

- Phase 2
- Integration with Remedy is required
- GIS was embedded in the Remedy interface
- Hard Coded Application
- Non flexibility
- Vodafone took decision to replace Remedy
- GIS investment gone by the way
- Unsatisfactory solution



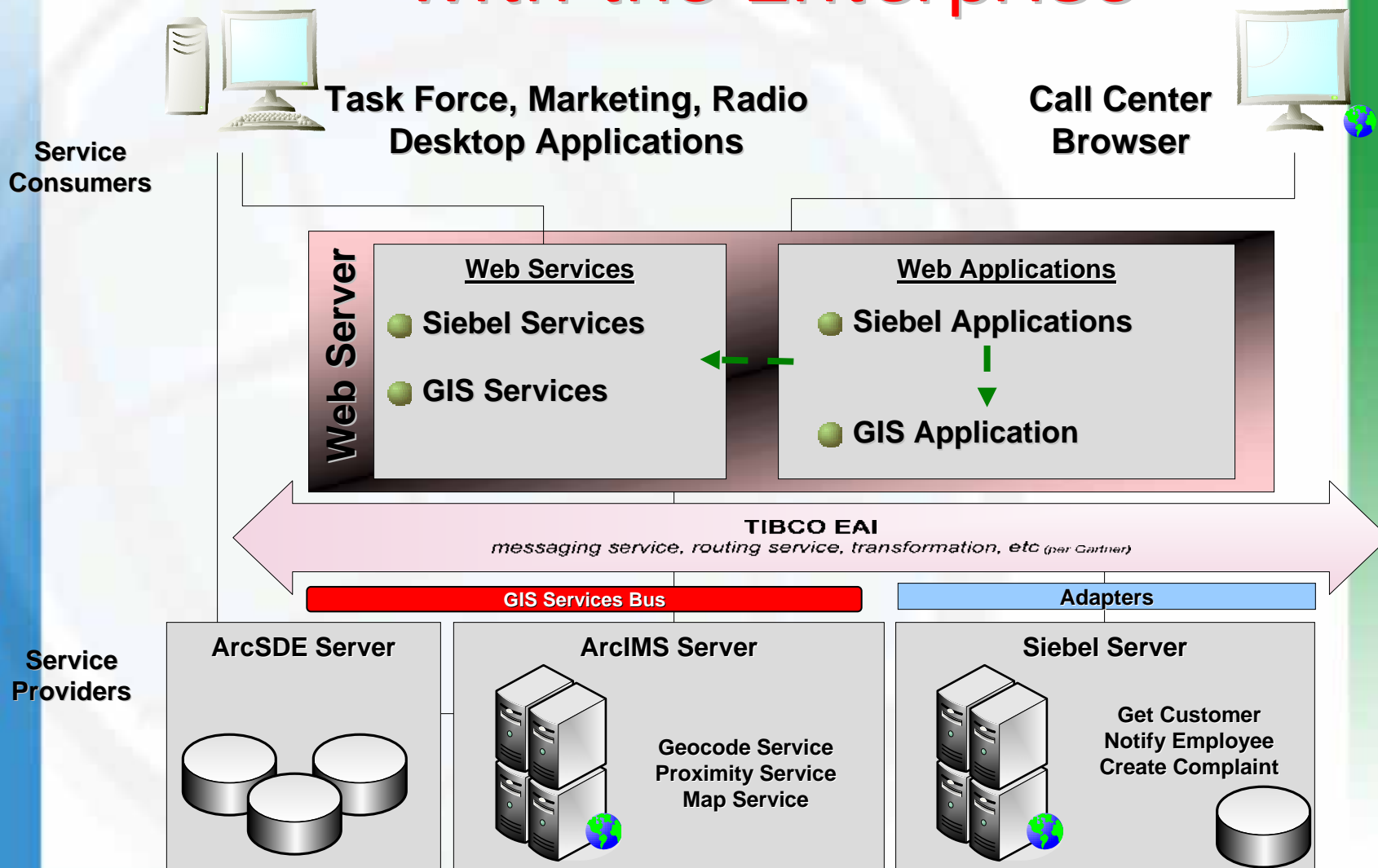
Case Study (Vodafone Egypt)

- Phase 3
- Service Oriented Architecture
- Integrating the whole organization via Enterprise Service Bus
- Loose coupling
- Independent Global GIS Services
- Flexibility of deployment (n-tier)
- Performance and scalability
- Achieve application interoperability with web services



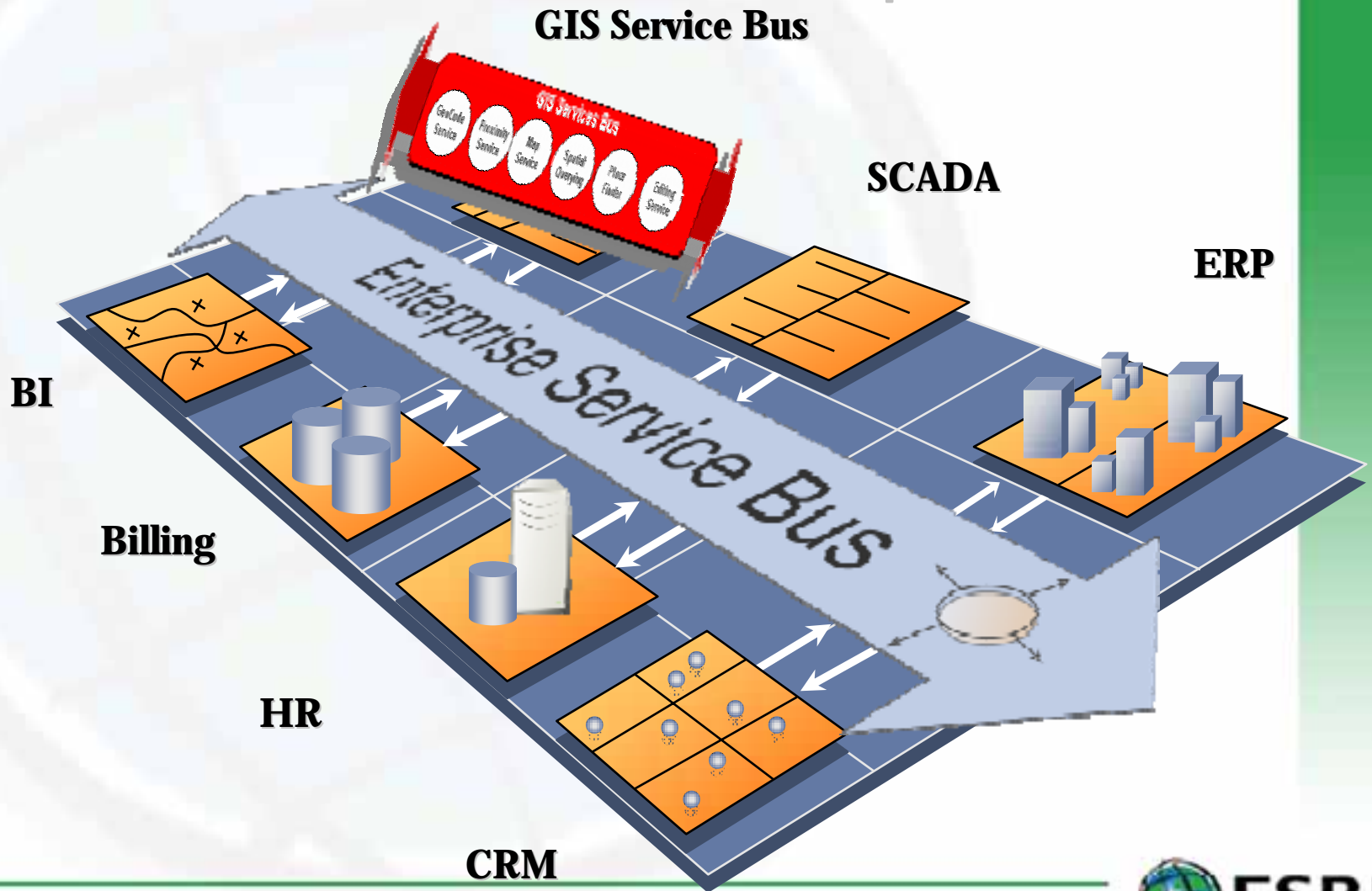
Service Oriented GIS

GIS Services Bus integration with the Enterprise



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GIS Services Bus integration with the Enterprise



Finally

" Traditional Approach "

- Client Server Based
- Most Appropriate for Map Production Organizations
- Suitable for Middle Level Organizations.
- Widely spread.
- Building specific local GIS applications for each department
- Requires heavy training and specific tools.
- Orienting business towards GIS (GIS Focused)

Finally

" GIS Services Bus Approach "

- Service Oriented Architecture Based
- Most Appropriate for Organizations where GIS isn't mission critical
- Suitable for High Level Organizations with many different business sectors.
- Future Trend.
- Delivering on call GIS business services
- No need for training and specific tools.
- Orienting GIS towards business (Business Focus)

Questions

Thanks for Attending...
Enjoy the conference