

# GIS Solutions for Business Enterprises

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**SMARTER**DECISIONS



## Maximize Revenue

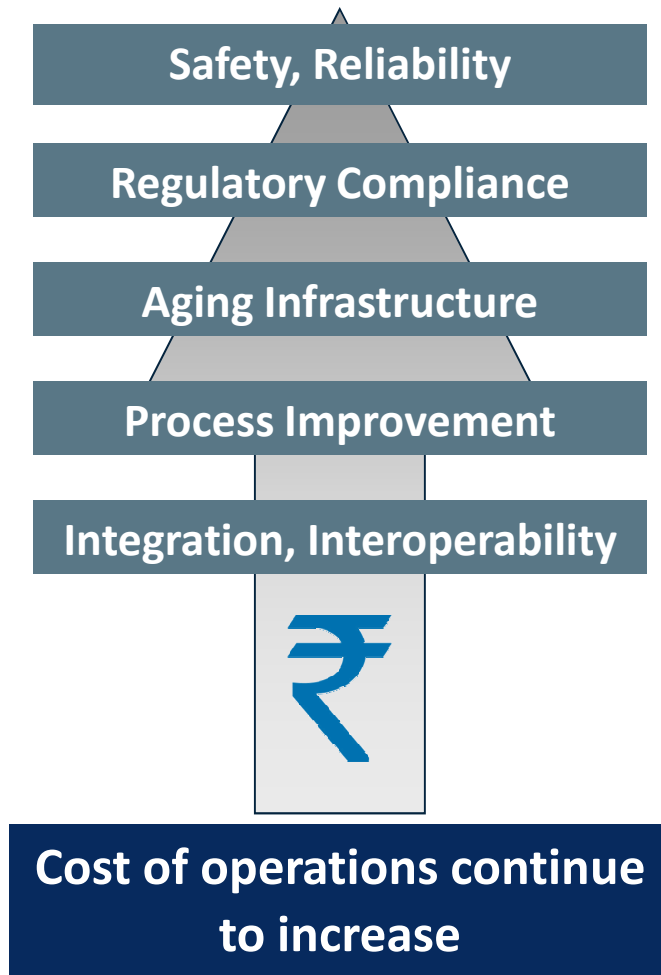
- **Locate** & profile customer base
- Understand Competitor **Coverage**
- **Geo specific insights** for effective campaigns



## Minimize Cost

- **Map** critical assets for efficient management
- **Pinpoint** problem areas
- Effectively deploy resources : When they are needed **Where**

**ALL OF THESE HAVE ONE COMMON THING: GEOGRAPHIC LOCATION**

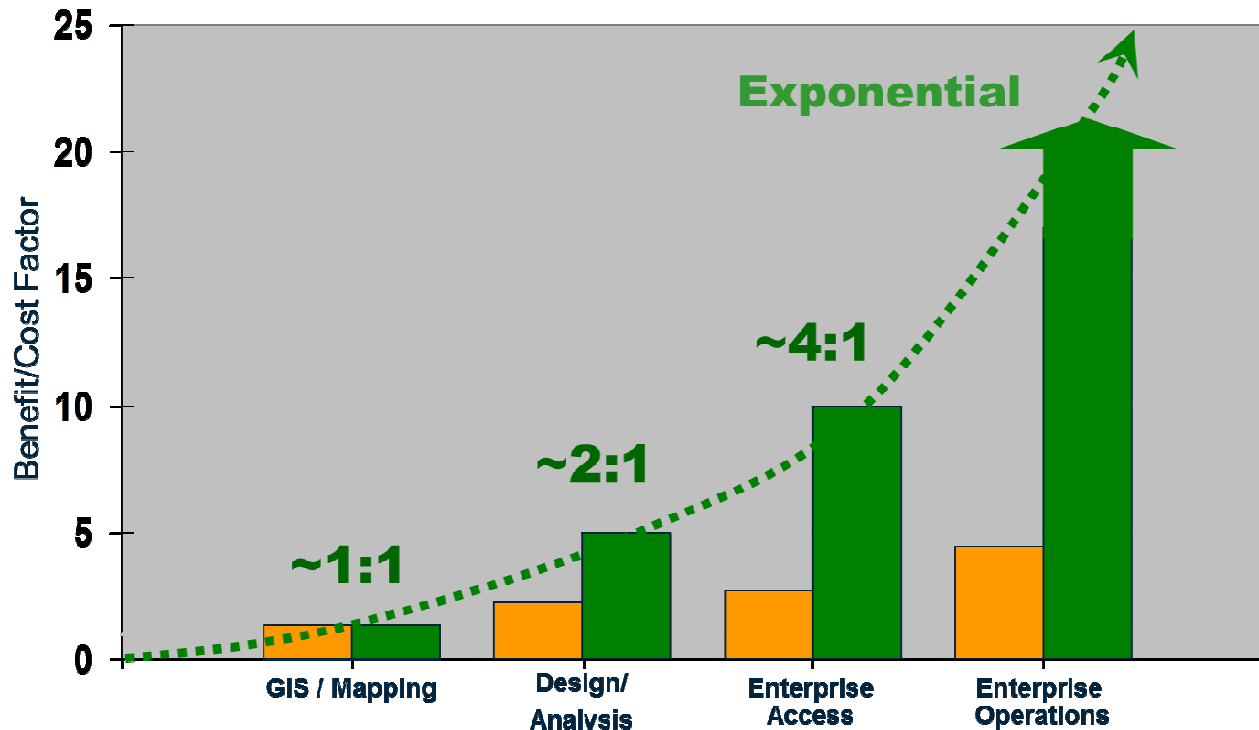


A GIS System Has Cost/Benefit Ratio of 1:1

If Used To Automate Planning & Engineering Cost/Benefit Doubles to 2:1

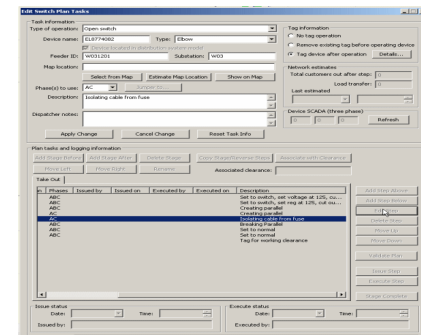
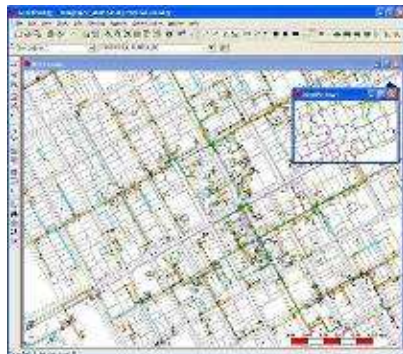
If Create Common Database, Integrate & Provide Data to Enterprise Cost/Benefit Goes To 4:1

If Expand Network Model To Network Operations Cost/Benefit Ratio Goes Beyond Known Studies

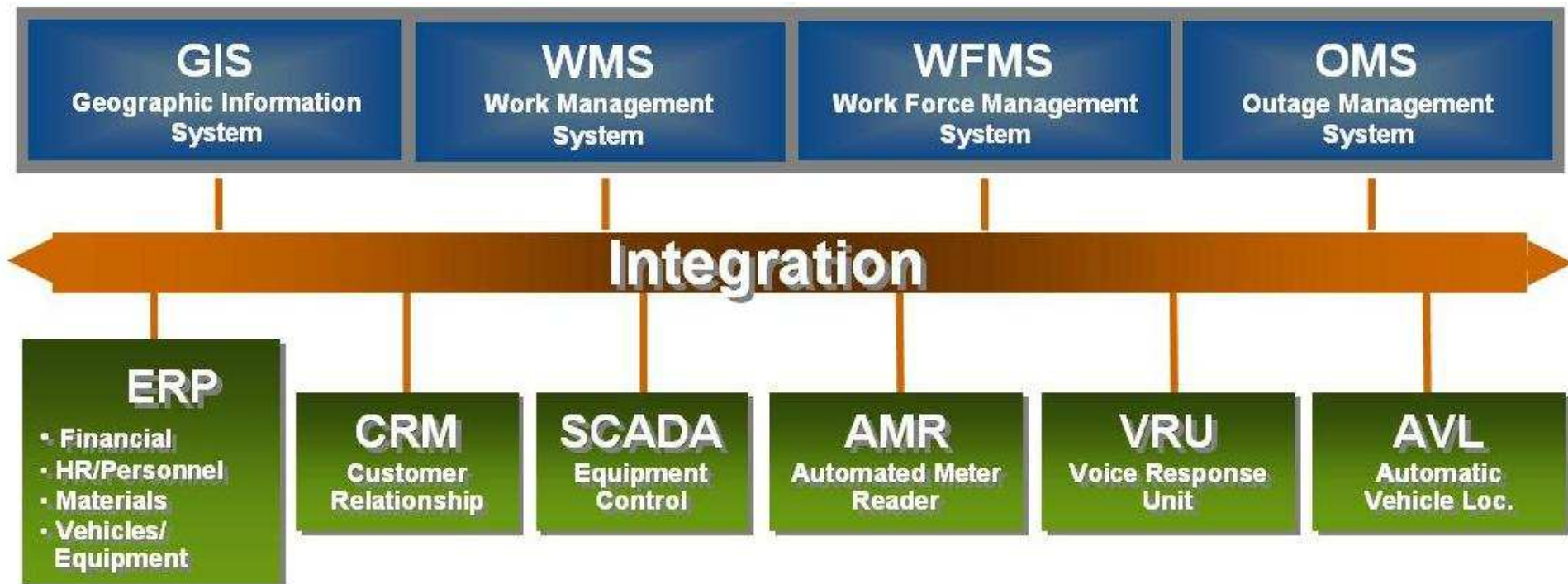


## End-to-end GIS lifecycle management for Business Enterprises needs:

- Job Management/Versioning
- Design & Change Management
- Design Analysis & Optimization
- Landbase Creation & Maintenance
- Service Analysis & Marketing
- Mobile Support for Operations & Maintenance
- Executive Analysis
- Report & Plot Generation
- Enterprise Integration



Integrating GIS with other delivery systems is essential to  
Staying competitive  
Providing significant benefits  
Maximizing your return on investment



### Improved productivity

- Enterprise system integration, improved work flows, improved user interfaces, data reliability, high performance, scalable

### Better data

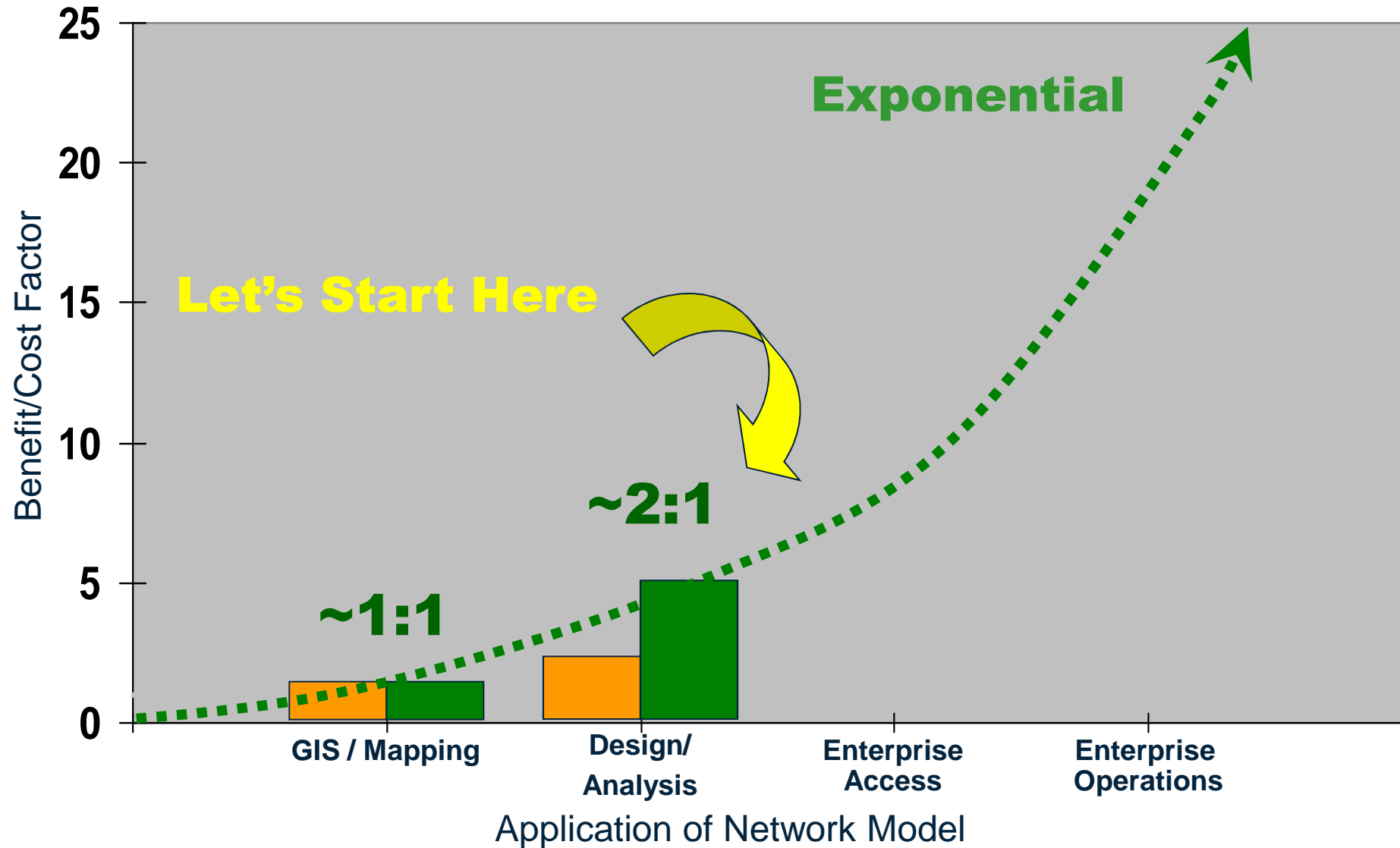
- Data reliability, improved validation tools, data integration, real time data, improved crew safety

### Improved data access

- Open data, enterprise data integration, web enabled, centralised data and rules, real-time data

### Reduced development & maintenance costs

- Industry applications, configuration complemented with robust APIs, integration platform, standard Microsoft development environment (Oracle and Microsoft), reduced reliance on GIS vendor





**GFrame - [MapWindow1]**  
 File Edit View Tools Jobs Plotting Analysis Administrative Window Help

**STORMS Work Management** Server: STORMS2 Datab...  
 File Edit Display Initiate Design Schedule Reporting Closing Application

Lon.Lat(d.m.s)

75kVA ABC  
 4 CU HD  
 45 75 25kVA A

50  
 P0000082  
 40/5  
 49  
 P0000081  
 40/5  
 48  
 P0000080  
 40/5  
 47  
 6466344 6466343 6466342

**Construction Order** 2/6/2003  
**Design**

Region: CE  
 Work Request: 1003423  
 Oper. Ctr: 75  
 Project Code:  
 Project Name:

Work Date: 02/25/2003 - None End Date: 02/25/2003  
 Job Address: INTERGRAPH WAY

Point: 47.00 To: 50.00 Span Length: 169

Notes:

CU Code	CU Description	Action On?	Qty	Equipment	Work Order
WC1	WIRE 10 AAAC AL ON 175 LB COIL	I N T		11275809	70620

Point: 48.00 To: 0 Span Length: 0

Notes:

CU Code	CU Description	Action On?	Qty	Equipment	Work Order
P40	POLE WOOD 40 CL 5	I N T		11275790	70620

Point: 49.00 To: 0 Span Length: 0

Notes:

CU Code	CU Description	Action On?	Qty	Equipment	Work Order
P40	POLE WOOD 40 CL 5	I N T		11275791	70620

Point: 50.00 To: 0 Span Length: 0

Notes:

CU Code	CU Description	Action On?	Qty	Equipment	Work Order
CT1025	CL C XFMR 120/240V 2 BU 25KVA	I N T		11275798	70620
P40	POLE WOOD 40 CL 5	I N T		11275792	70620

Completion Details  
 Crew ID: \_\_\_\_\_ On: \_\_\_\_\_ As Designed: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Name: \_\_\_\_\_

Page 1 of 1

DATE: 2/6/2003 JOB: MAINT601  
 USER: jmarquez DESCRIPTION: St. Peter

CU: POLE 40FT GALV STEEL Action: I Acct: C MU:

Ready

The screenshot displays the SynerGEE Electric 3.5 software interface, which is used for electrical design analysis and optimization. The interface is divided into several key components:

- MapWindow1:** Shows a network map with various components and a highlighted area.
- Map - 1:** Displays a color-coded map of the network, with a legend for 'Section Color By: Results' and 'Balanced Volts'.
- Chart - 8:** A pie chart titled 'SynerGEE Electric Losses by phase, New - Big Spring' showing the distribution of losses across three phases:
 

Phase	Losses (kW)
Ph. A Losses	36 kW
Ph. B Losses	43 kW
Ph. C Losses	32 kW
- Cable - 1:** A detailed view of a cable layout for 'Market Street'. It shows a grid of cables with dimensions ranging from 1.5 Ft to 5.5 Ft. A table below the grid provides details for three circuits:
 

Circuit / CableColor	Amps
Ckt 1 (Red)	228
15kV 350 Tape Shield	
Ckt 2 (Blue)	184
15kV 250 Tape Shield	
Ckt 3 (Green)	124
- Equipment List:** A vertical list of electrical components including Capacitors, Generators, Motors, Fuses, Breakers, Reclosers, Sectionalizers, Protective Devices, Regulators, Open Switches, Closed Switches, Tie Switches, Transformers, Feeders, and Substation Transformers.

A large purple arrow points from the 'Cable - 1' window towards the 'Chart - 8' window, indicating a relationship or data flow between the cable layout and the phase loss analysis.

One area of cost improvement with a fully-integrated graphical workorder design solution is in generalized capture costs per customer.

*keeping in mind that cost is dependent on source materials, density, and other unique factors.*

Benefits (in U.S. dollars)	Annual	Four Years
Elimination of Drafting Costs	\$1.2M	\$4.8M
Thematic Mapping	\$1.0M	\$4.0M
Reduction in Design Costs	\$1.0M	\$4.0M
Outage/Customer Notification	\$200K	\$800K
Model for Engineering Analysis	\$300K	\$ 1.2M
Engineering and O&M Functionality	\$1.2M	\$ 4.8M
Implementation in an Acquired Foreign Company (one time benefit)	\$5.0M	\$ 5.0M
<b>Four Year Total Benefits (in U.S. dollars)</b>		<b>\$24.6M</b>

“Geospatial system provided 50-60% increase in labor efficiency & savings.”

“Engineers save 10% of time finding correct information.”

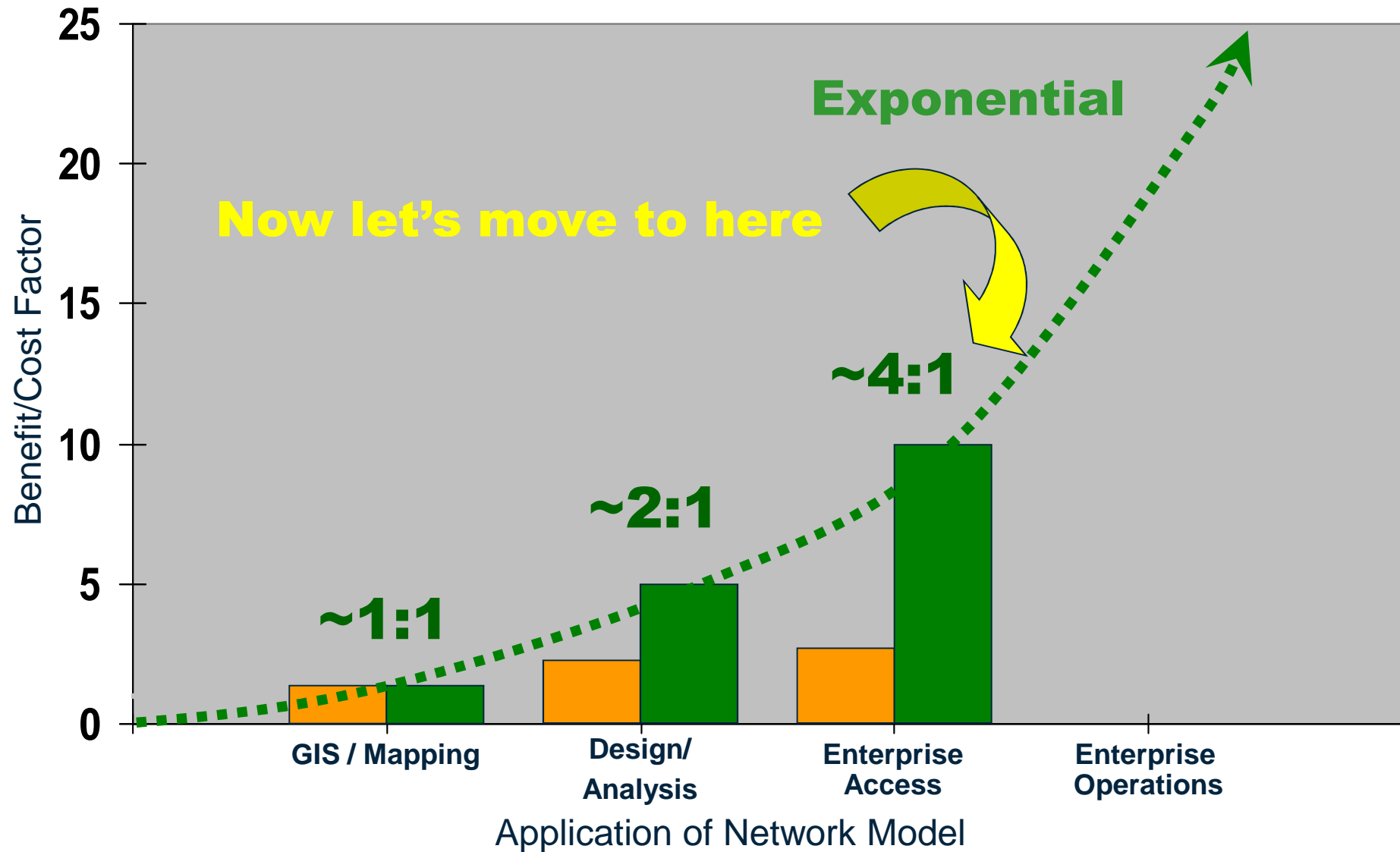
“Geospatial solution is no longer fashionable but a survival kit”

“Average project estimation time reduced from 24 hours to 24 minutes.”

“Reduced Average Job Design Times From 2-3 Weeks To 2-3 Days.”

“Calculated 75% Reduction In Overall Planning Work Effort.”

“Achieved ROI within 2 years (> 10 Mil. US\$)”



The screenshot displays the Intergraph software interface. At the top, a menu bar includes 'File', 'Edit', 'View', 'Tools', 'Jobs', 'Plotting', 'Analysis', 'Administrative', 'Window', and 'Help'. Below the menu is a toolbar with various icons. The main window is titled 'GTechnology - Intergraph Public Safety internal use only'. It features a map area on the left with colored lines representing utility routes. On the right, there are several panels: 'Feature Allocation' with 'Route Nodes' and 'Route' lists, and a 'MENU JOBS INBOX MAP' header. Below the map, a detailed data panel shows fields for 'Number: J0345001', 'Device #: J01', '# of Ops: 2', 'Phase: B', 'Category: Details', 'Off Date: 7', 'Restore Date: 7', 'Condition: Found OK', and 'ARRIVE BKFL'. At the bottom, a status bar shows 'Inbox: 17 Unread: 17', 'Jobs: 0 Unread: 0', 'Outbox: 0', 'Signed On - 3661', and 'ONLINE'.





## Requirement

Provide Field Crews with Current Accurate information

Provide new searching, tracing and field update capabilities

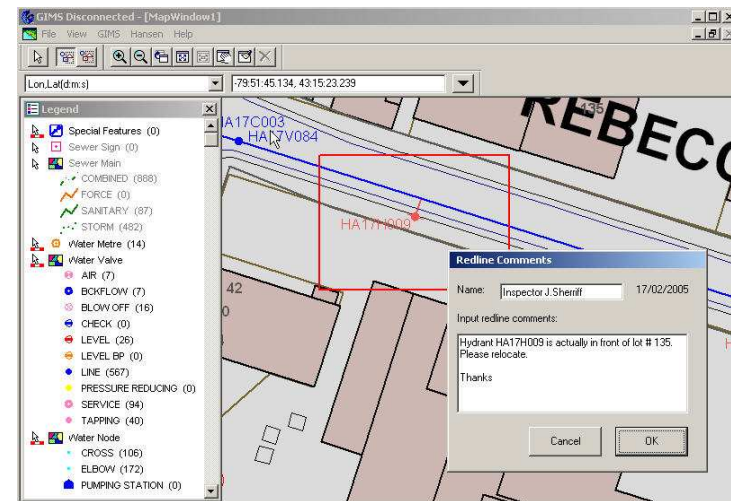
Replace map books with digital information

## Benefits

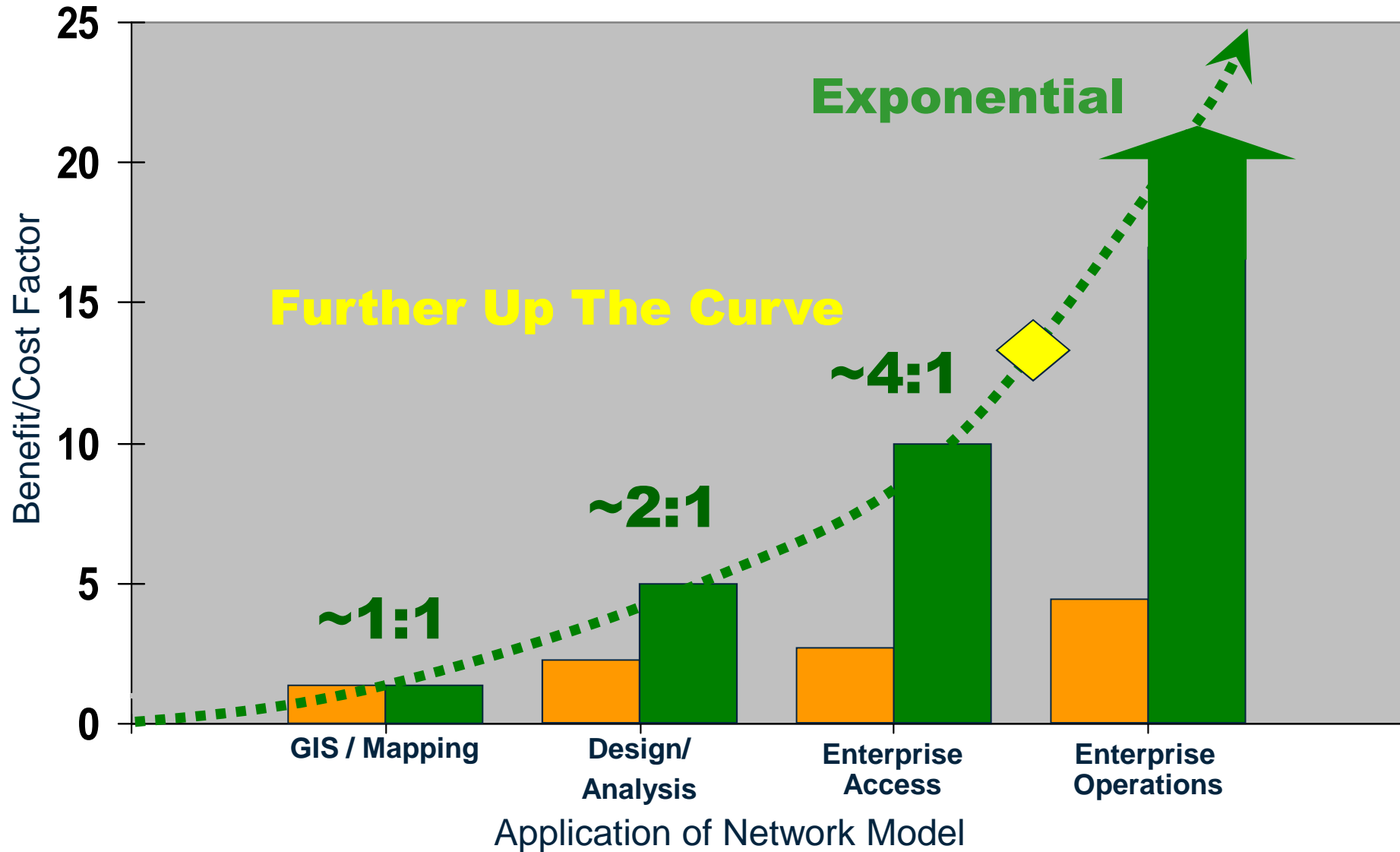
Elimination of Map Book production costs

Crews now have access to current data

Crews can collect redlines and asset information for update of corporate database







# Critical Infrastructure Protection



Maui Electric Company, Ltd. Giving you the power

- Resource Management
- Group Management
- Class Management
- Job Management
- User Management
- Alarm Management
- Attribute Management
- Reports
- Alarm Viewer
- Job Viewer
- Map Viewer
- Replay

Microsoft Internet Explorer

Transformer search by serial number

Serial Number: 802001

Find Zoom

Premise id	State	Scale	Premise id val	Xfmrnumber	Serialnumber	Code	Purchase	Status	Installed	Stk	Kva	Address
1933	Energized	100	1933	38013	802001092	R	03/01/80	V	05/02/80	00060	00030	1200 CENTER KAI ST F
14807	Energized	100	14807	38090	802001093	R	03/01/80	V	05/01/80	00060	00030	425 KULIYOUU RD P2
			1935	380								
1935	Energized	100		380								
14750	Energized	100		380								
1935	Energized	100		380								
14748	Energized	100		380								
14745	Energized	100		380								
14751	Energized	100		380								
14756	Energized	100		380								
3001	Energized	100	100	380								
14759	Energized	100	14759	380								
14758	Energized	100	14758	380								

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- Resource Management
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- Alarm Management
- Attribute Management
- Reports
- Alarm Viewer
- Job Viewer
- Map Viewer
- Replay
- Logout
- Open Control Center
- Preferences
- Help
- About

## Requirements

Efficient Critical Infrastructure Protection

Geo-Location & Identification of Infrastructure

- Electric
- Environmental
- Public
- Businesses, banks, hospitals,

Related Location Information and spatial filters

Real-time access to information

Location awareness for Response units

Leverage spatial and location data in one CIP environment

## Benefits

Speed of decision making greatly enhanced

Response strategy identified quickly

Real-time adjustment of response resources

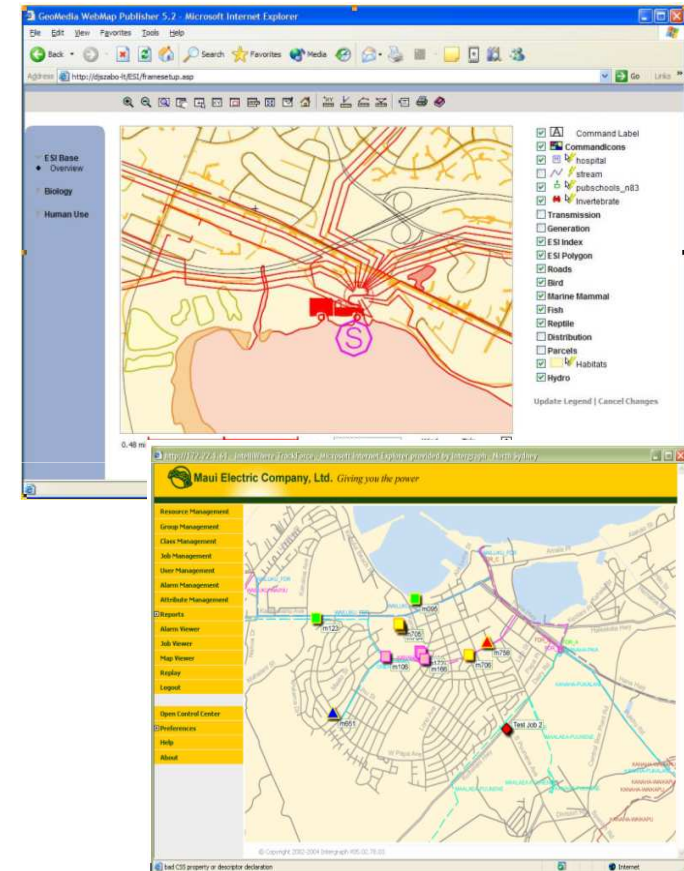
Integration disparate data types quickly and efficiently

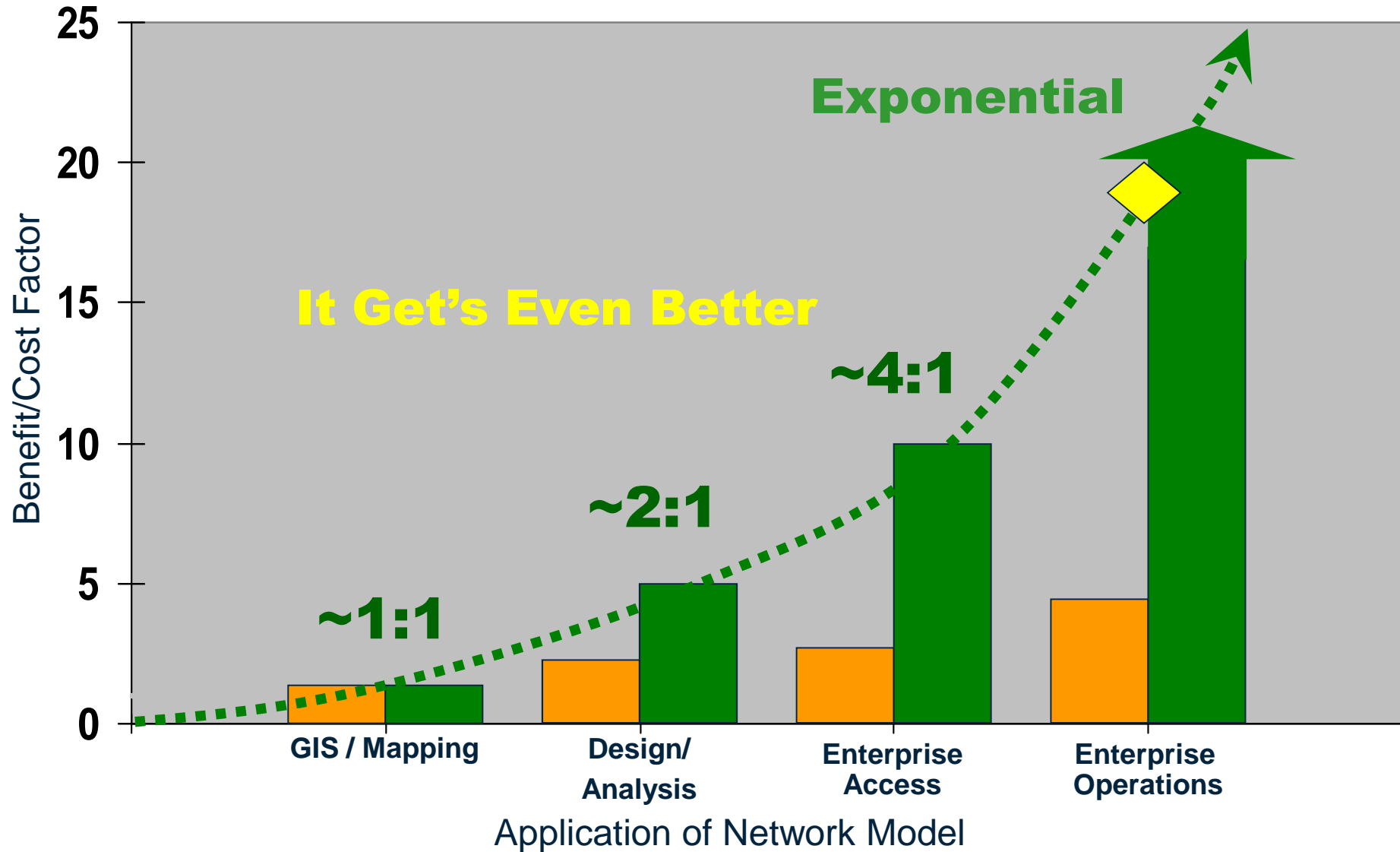
Situation update is instant

Damage Assessment For Reimbursement

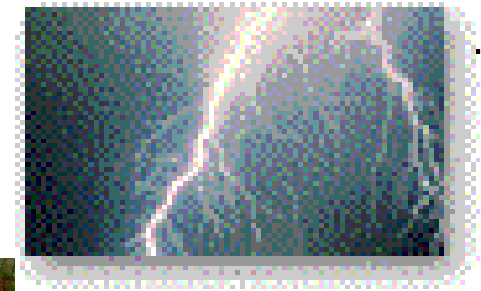
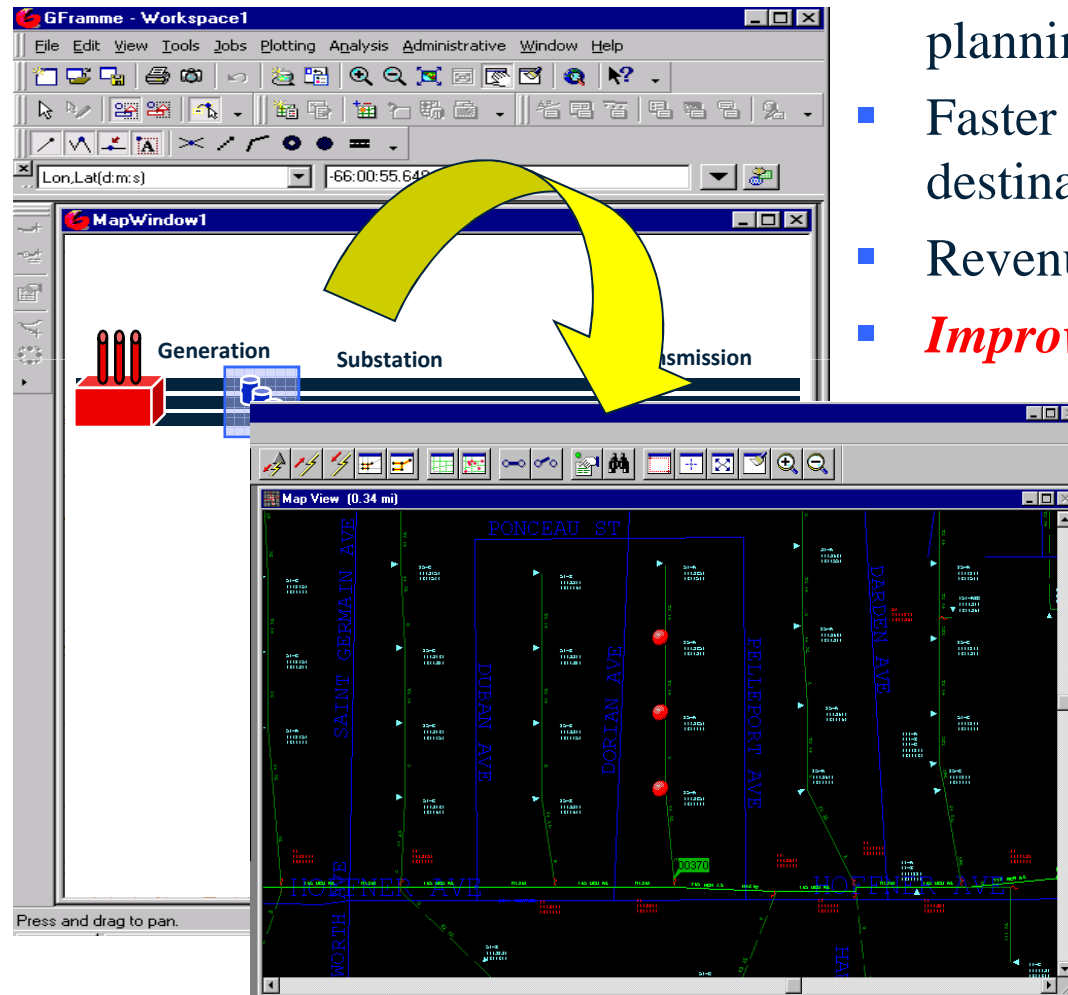
What Are The Key & Most Critical Infrastructure?

Immeasurable\$\$\$





- Effective, customer focused restoration planning
- Faster determination of dispatch destinations
- Revenue increase
- *Improved customer satisfaction*

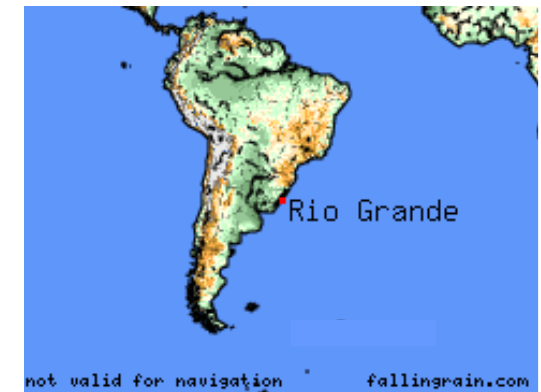


## Requirement

Provide reliable electricity to 1 million customers in 6 regions & 243 municipalities

Address new **Reliability Index** regulations

Implement AM/FM/GIS, Outage Analysis, Dispatch



## Benefits

Met & exceeded regulatory goals

Lowered maintenance costs

Improved network performance

Reduced outage durations

**Six operations centers reduced to one**

DEC + FEC por Conjunto

PERÍODO: 01/01/2009 A 31/09/2009

DEC E FEC POR CONJUNTO - R.G.E.

Desde em: 26/01/2010 Hora: 14:15 Página: 1 de 2

	NO PERÍODO				ACUMULADO NO ANO			
	DEC	FEC	DEC	FEC	DEC	FEC	DEC	FEC
Transmissão Prog. RGE	0,0000	0,00	0,0000	0,00	0,0000	0,00	0,0000	0,00
Transmissão Prog. Ext.	0,0000	0,00	0,0000	0,00	0,0000	0,00	0,0000	0,00
Transmissão A Prog. RGE	0,0000	0,00	0,0000	0,00	0,0000	0,00	0,0000	0,00
Transmissão A Prog. Ext.	0,0000	0,00	0,0000	0,00	0,0000	0,00	0,0000	0,00
Sub-Total Transmissão	0,0000	0,00	0,0000	0,00	0,0000	0,00	0,0000	0,00
Distribuição Prog.	0,0000	0,00	0,0000	0,00	0,0000	0,00	0,0000	0,00
Distribuição não Prog.	0,0000	0,00	0,0000	0,00	0,0000	0,00	0,0000	0,00
Sub-Total Distribuição	0,0000	0,00	0,0000	0,00	0,0000	0,00	0,0000	0,00
Total Geral	0,0000	0,00	0,0000	0,00	0,0000	0,00	0,0000	0,00

Entrada de Dados de Interrupção

Cronologia | Equipamentos | Características

Código de Causa: 303 - DESCARGA ATMOSFERICA

Código de Serviço: 401 - REAFIRMAR CHAVE FUSIVEL

Código de Clima: 5 - CHUVA

Responsável: RGE

Inicio: 04/01/2010 Fim: 04/01/2010 Total: 15

Equip RGE: 12

Com falta de energia

Linha geradora energia durante o período

Interrupção Programada

Aplicar Limpar Cancelar

Rule Base Operations LV-5-WT-01C-SOL\_CD-01P-KeyPt

Element Selection (1) FRAMME (1)

Reset/Reject

Status

26/01/2010 15:56 PM

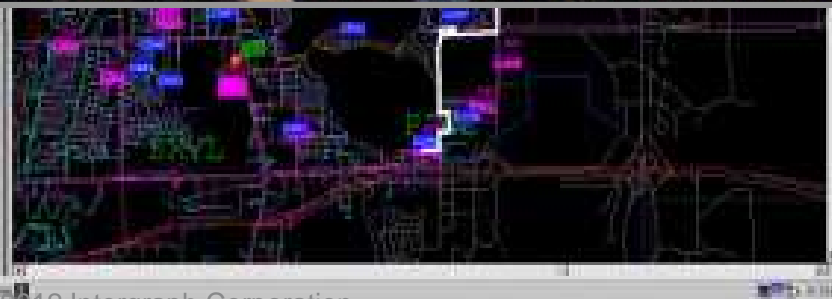
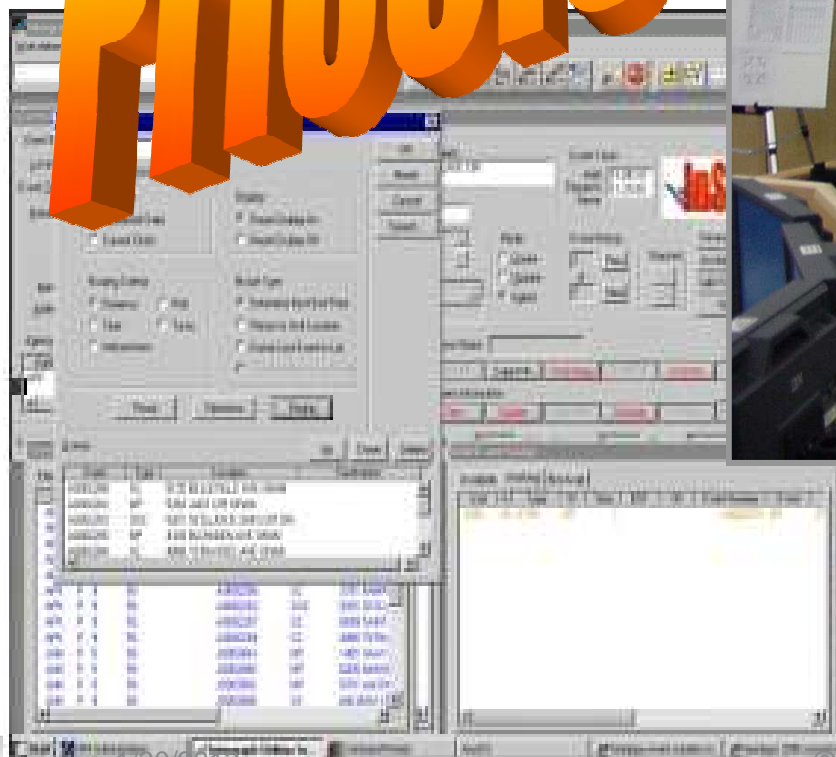
- **Before...**



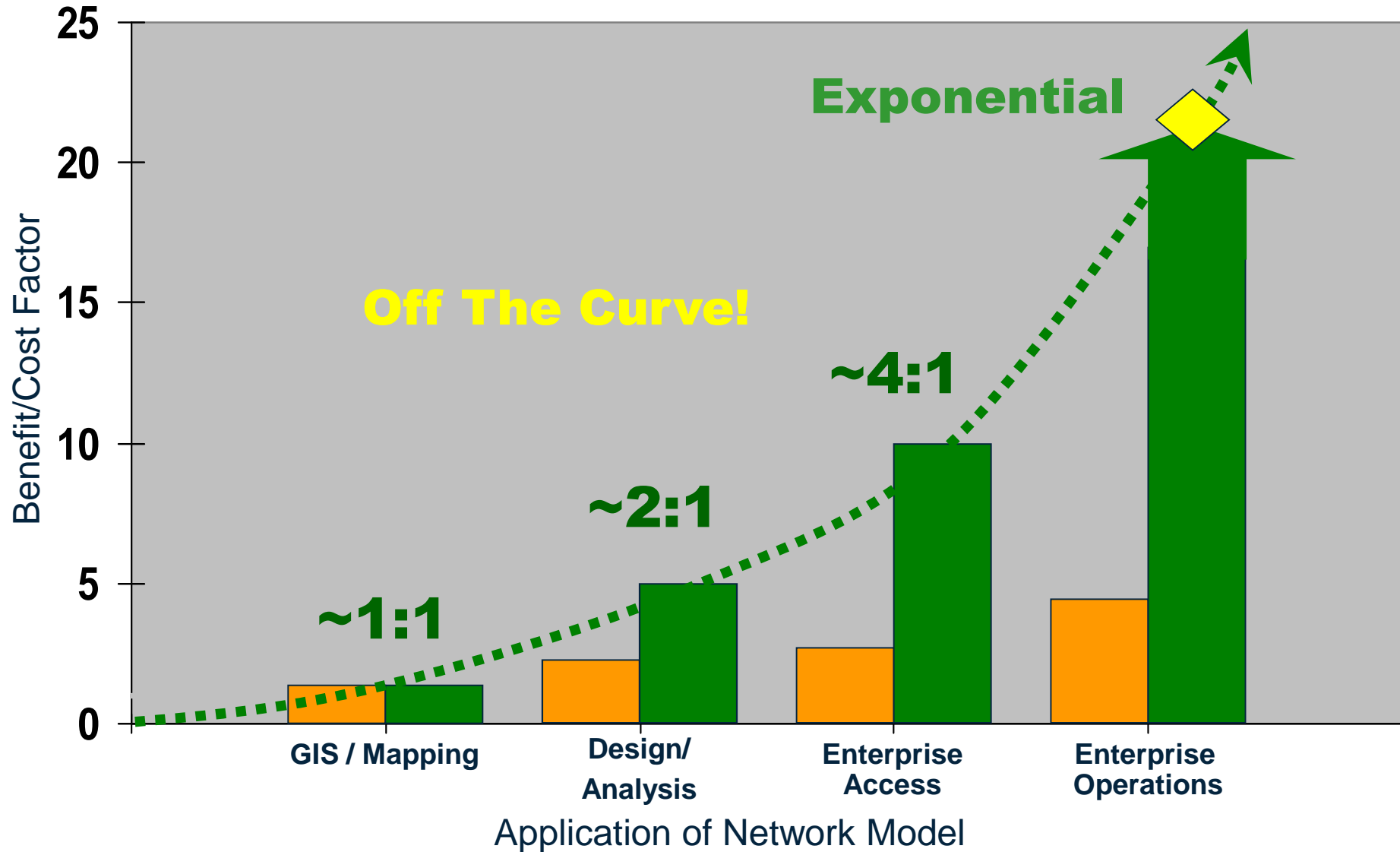


- After...

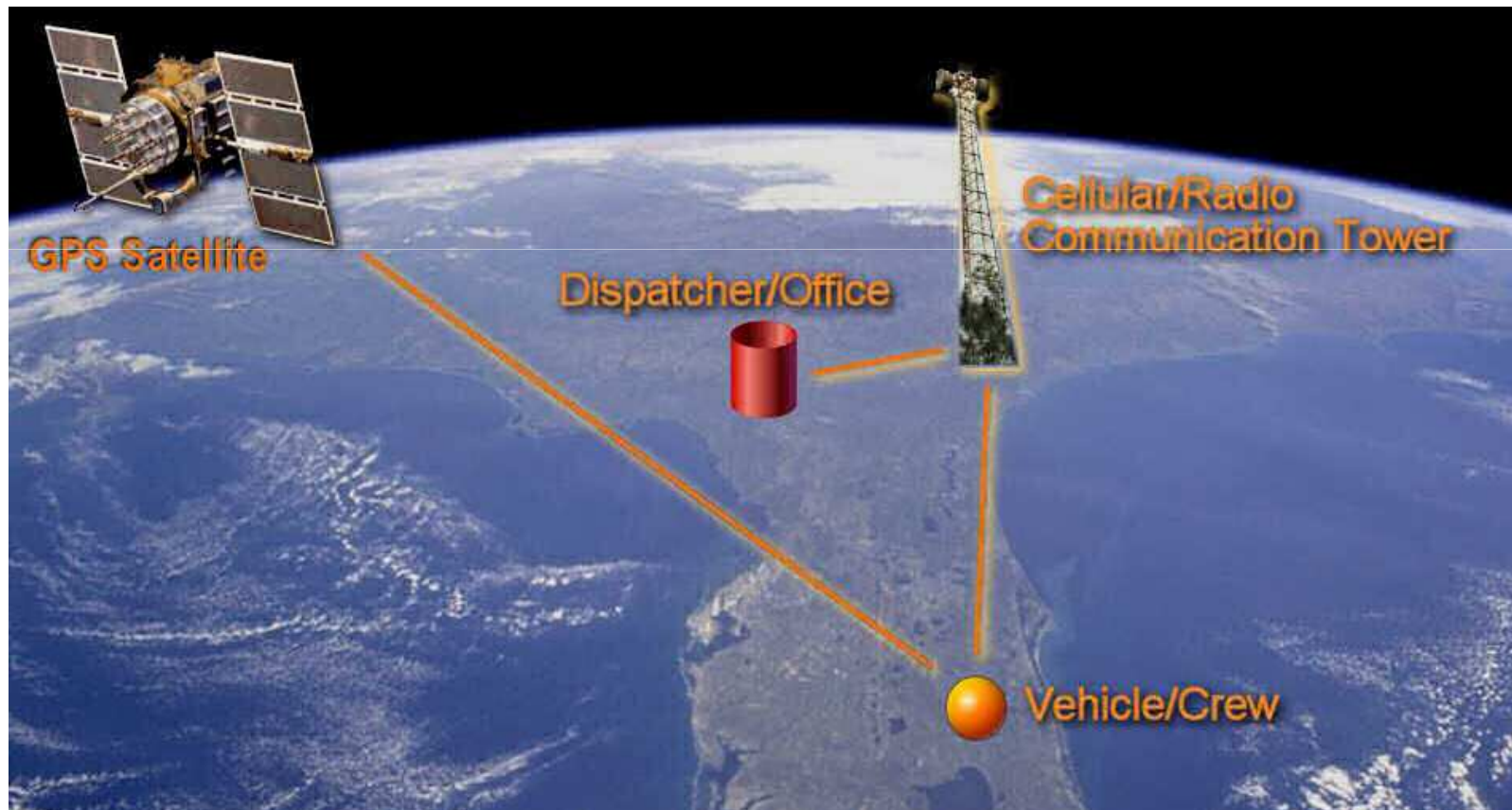
Priceless!

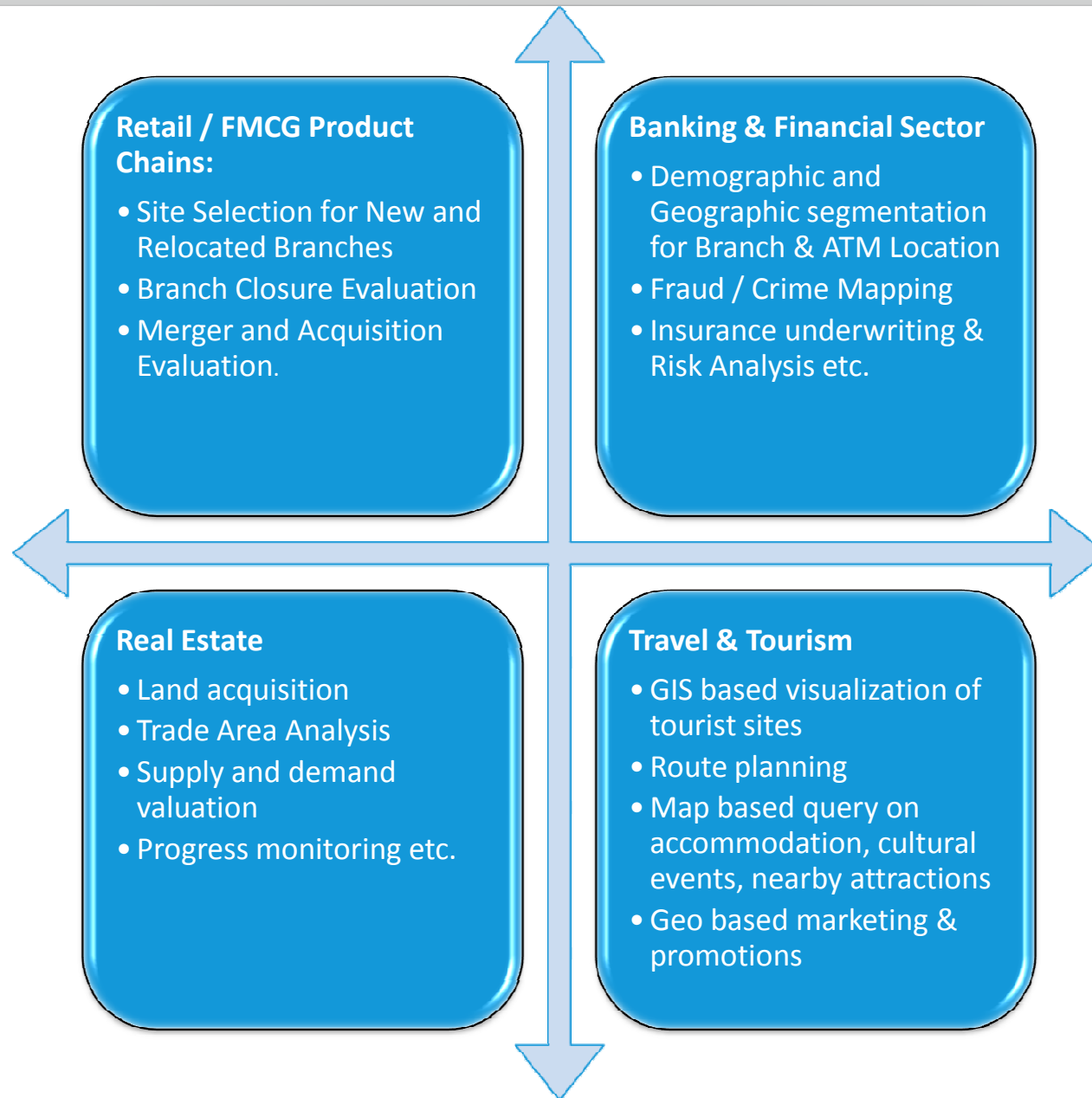






## *We're Way Beyond GIS!*





GIS is an enabling technology, not an end in itself

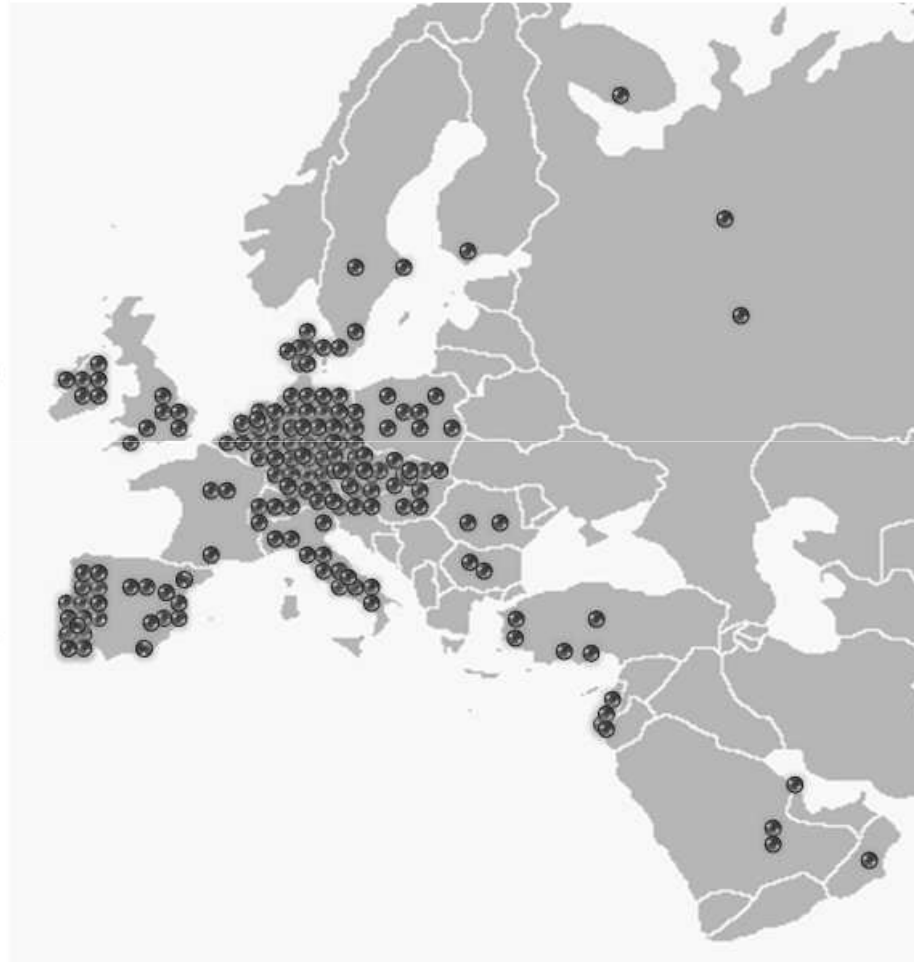
We must stop being GIS-centric, and extend ourselves to become Utility GIS application and enterprise-centric

Geospatial projects must prove ROI in fight for funds

Benefits increase as we expose data to enterprise

The broader the solution, the greater the benefits

# Business Enterprises Across the World Rely on Intergraph



Leading global provider of engineering and geospatial software that enables our customers to build and operate more efficient plants and ships, create intelligent maps, and protect critical infrastructure.

Technology innovator since 1969; more than 4,000 employees worldwide.

Businesses and governments in 80 percent of the world's largest countries rely on our industry-specific software.

**Process, Power & Marine (PP&M)**  
*Enterprise Engineering Software*

**DESIGN | CONSTRUCT | OPERATE**



**Security, Government & Infrastructure (SG&I)**  
*Geospatially Powered Software Solutions*

**COLLECT | ANALYZE | VISUALIZE**



Intergraph's SG&I division delivers geospatial and incident software solutions that help you manage, enhance, and protect life, infrastructure, and property.

ERDAS, Leica Photogrammetry and GeoMedia desktop and enterprise solutions are now part of Intergraph's SG&I geospatial business unit.

SG&I takes geospatial and incident management information, and the context it provides, and creates:

A firm foundation for cooperation and interoperability.

Modern, comprehensive, well-integrated set of geospatial capabilities.

Analytics that help you see the information hidden within your data.

### SG&I's solutions benefit the following industry sectors:



**Thank You**

**SMARTER**DECISIONS