

Building and Using GIS in the City of Des Moines, Iowa

Management Challenges in GIS Implementation



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Management Strategy

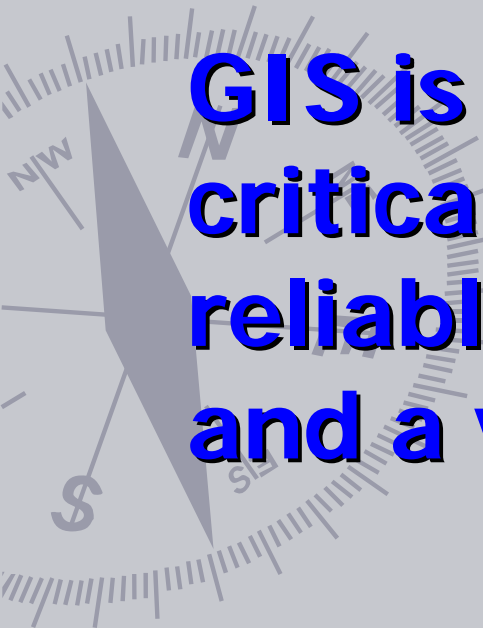
1. Service Improvement is our **ONLY** business!
2. Drive Improvement to the front line – that's where our business is!
3. Maintain clear, sustained direction
Strategic
Organizational
Managerial
Technical



Why GIS?

GIS provides integrated context for the wide range of human activity that occurs in a city.

GIS is a basic tool for our employees, a critical resource for our managers, a reliable asset for our policy makers, and a valuable service for our citizens.



GIS Strategy

GIS must become both pervasive and transparent.



History

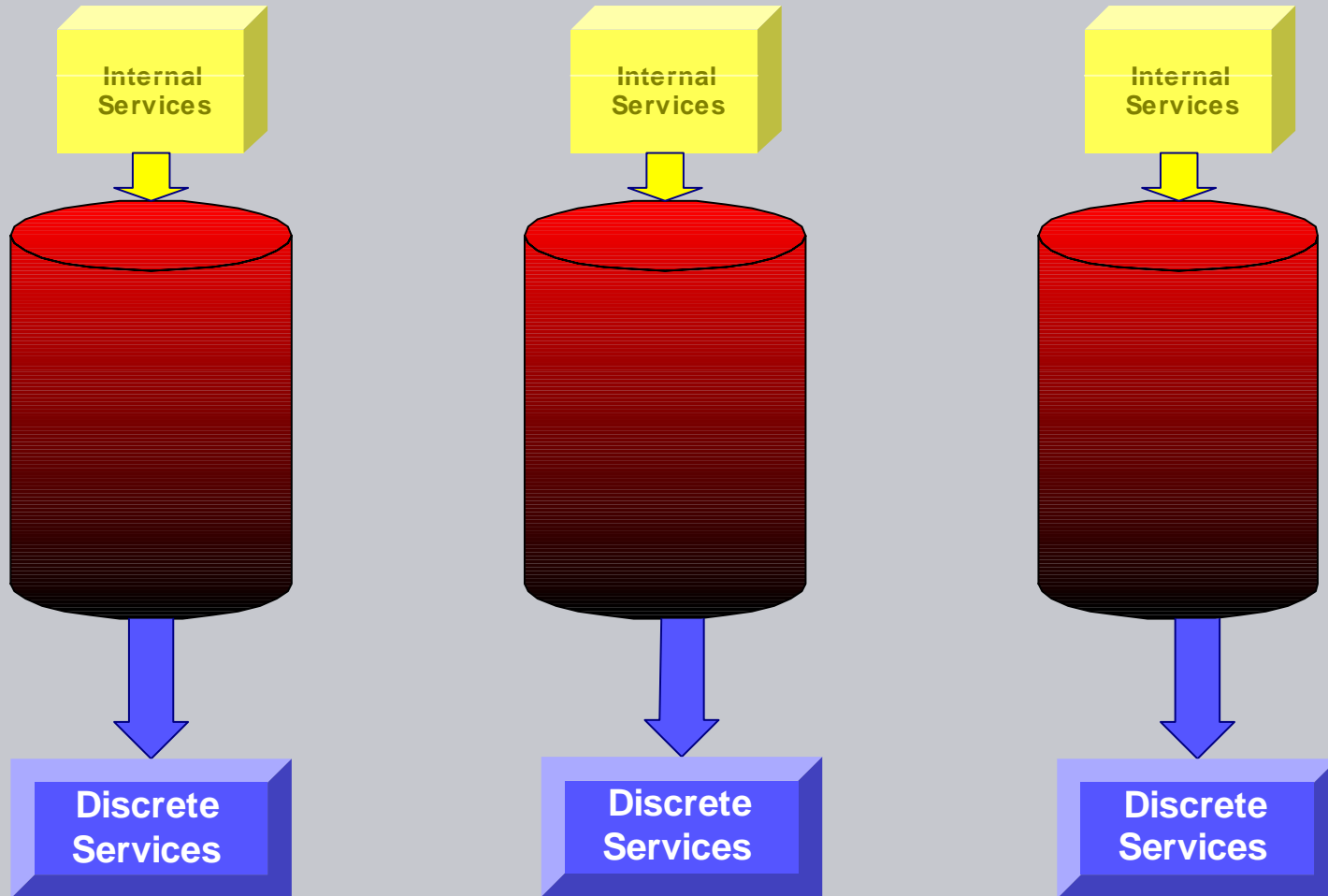
- ▶ **GIS Partnership with Polk County – 1990**
 - **County Interest – collecting taxes**
 - **City Interest – building infrastructure**
- ▶ **First IT Strategic Plan – 1997**
- ▶ **IT Department - 1997**
- ▶ **GIS Division – 1999**
- ▶ **Second IT Strategic Plan - 2002**
- ▶ **Partnership with IDOT – 2002**
- ▶ **Initiation of Regional GIS Effort - 2003**



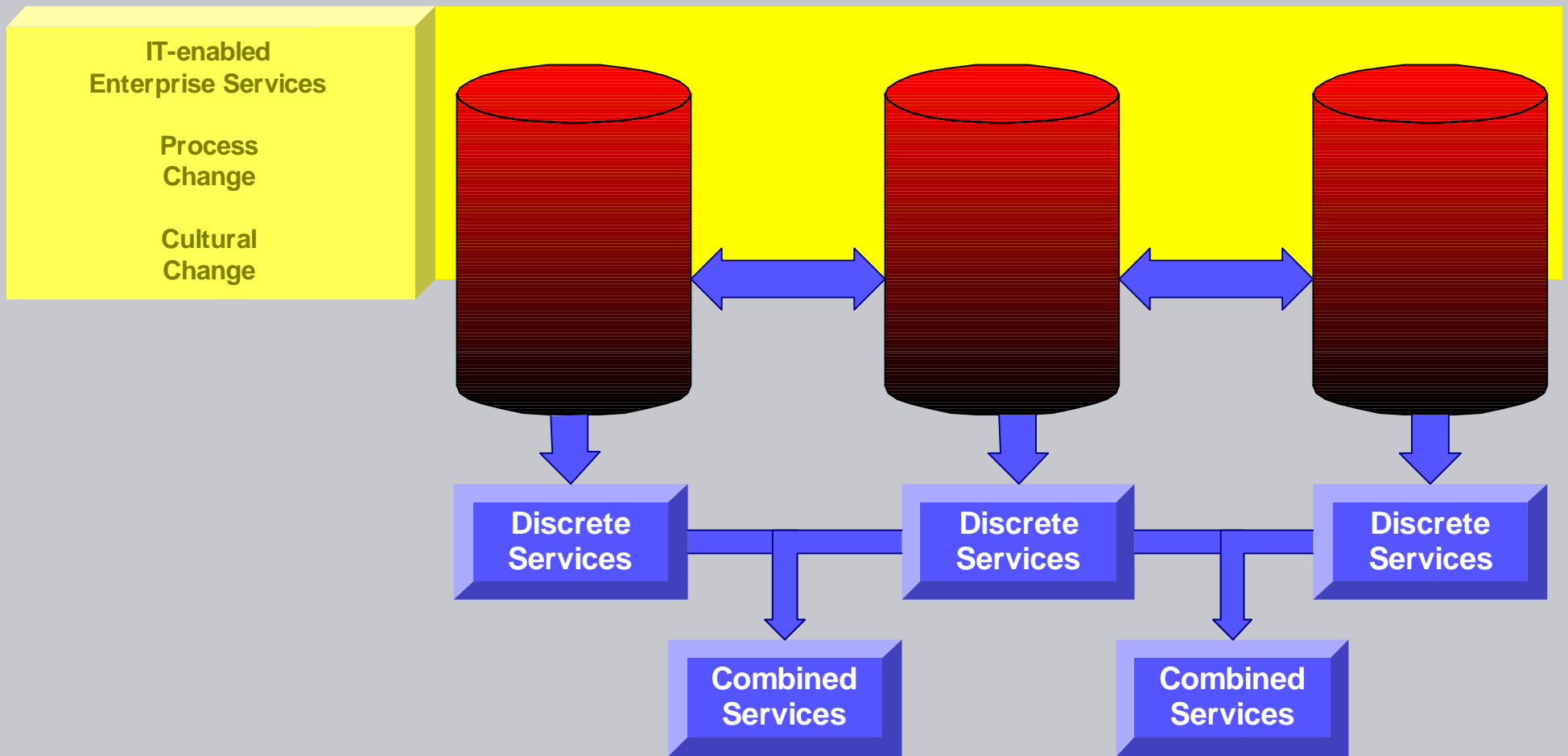
Des Moines Stats and Facts: 1996

- ▶ **City Population: 193,333**
- ▶ **MSA population: 426,791**
- ▶ **Land Area: 77 Sq. Miles**
- ▶ **Two rivers**
- ▶ **17 bridges**
- ▶ **800 miles of streets**
- ▶ **PC Manufacturers: 18**
- ▶ **Server Manufacturers: 3**
- ▶ **Office Suite: 3**
- ▶ **Desktop O/S: 4**
- ▶ **Server O/S: 2**
- ▶ **Database: many**
- ▶ **Network Manufacturers: 8**
- ▶ **ERP Systems: 0**
- ▶ **CRM Systems: 0**
- ▶ **GIS Systems: 1**
- ▶ **Mail Systems: 0**
- ▶ **PC's/Laptops: 150**
- ▶ **Servers: 3**
- ▶ **GIS Layers: 25**
- ▶ **GIS Software Platforms: 0**
- ▶ **GIS Trained Users: 2**
- ▶ **Council/Manager government**
- ▶ **Seven Council members**
- ▶ **2000 employees**
- ▶ **FY95 Budget: \$253m (operating)**
- ▶ **DP Staff: 35**

Where We Started

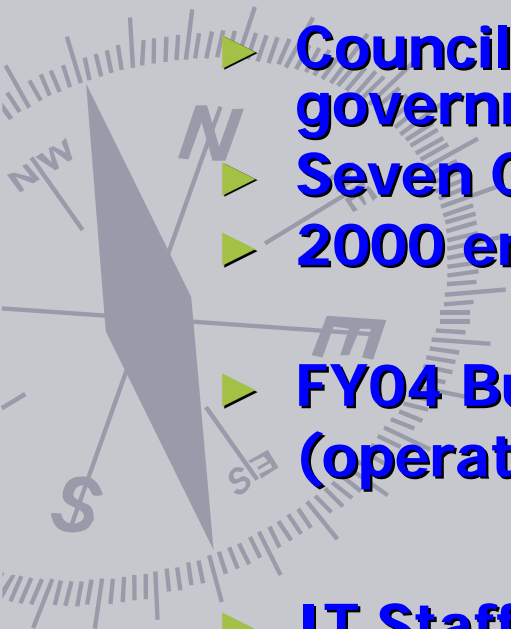


Where We Are

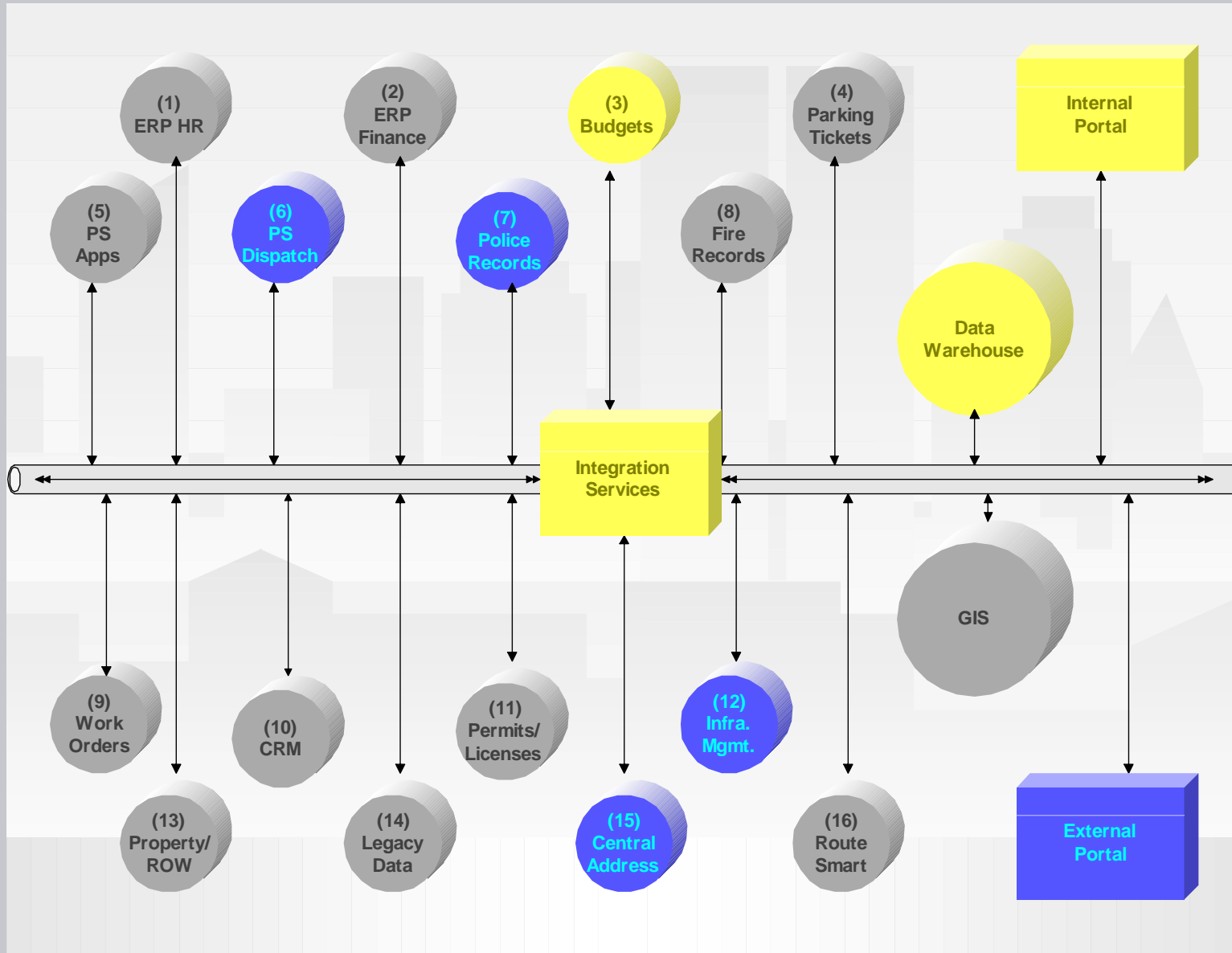


Des Moines Stats and Facts: Today

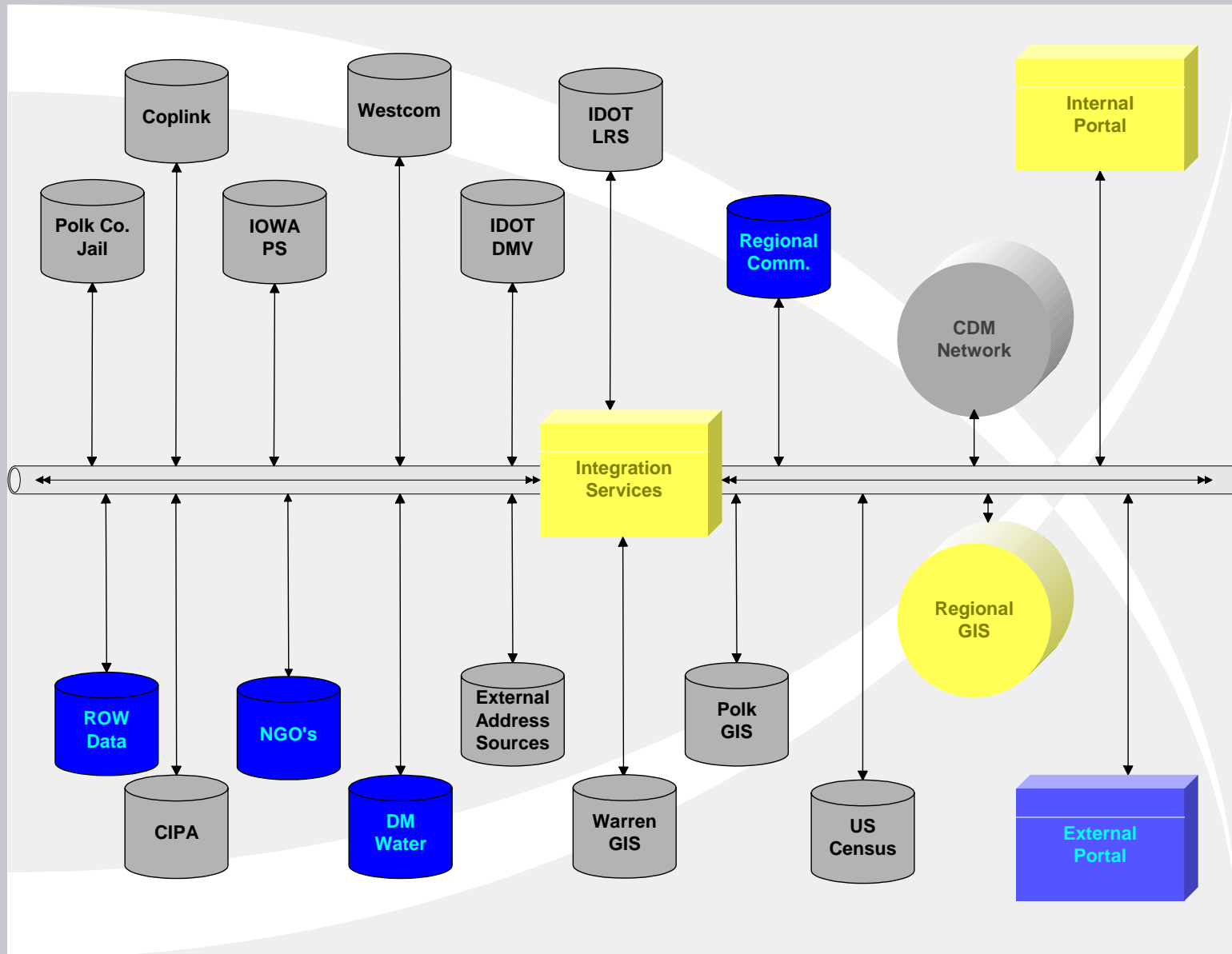
- ▶ City Population: 199, 682
- ▶ MSA population: 456,000
- ▶ Land Area: 77 Sq. Miles
- ▶ Two rivers
- ▶ 17 bridges
- ▶ 800 miles of streets
- ▶ Council/Manager government
- ▶ Seven Council members
- ▶ 2000 employees
- ▶ FY04 Budget: \$322M (operating)
- ▶ IT Staff: 23
- ▶ PC Manufacturers: 1
- ▶ Server Manufacturers: 1
- ▶ Office Suite: 1
- ▶ Desktop O/S: 1
- ▶ Server O/S: 1
- ▶ Database: 1
- ▶ Network Manufacturers: 1
- ▶ ERP Systems: 1
- ▶ CRM Systems: 1
- ▶ GIS Systems: 1
- ▶ Mail Systems: 1
- ▶ PC's/Laptops: 1200
- ▶ Servers: 155
- ▶ GIS Layers: 100+
- ▶ GIS Software Platforms: 2
- ▶ GIS Trained Users: 60



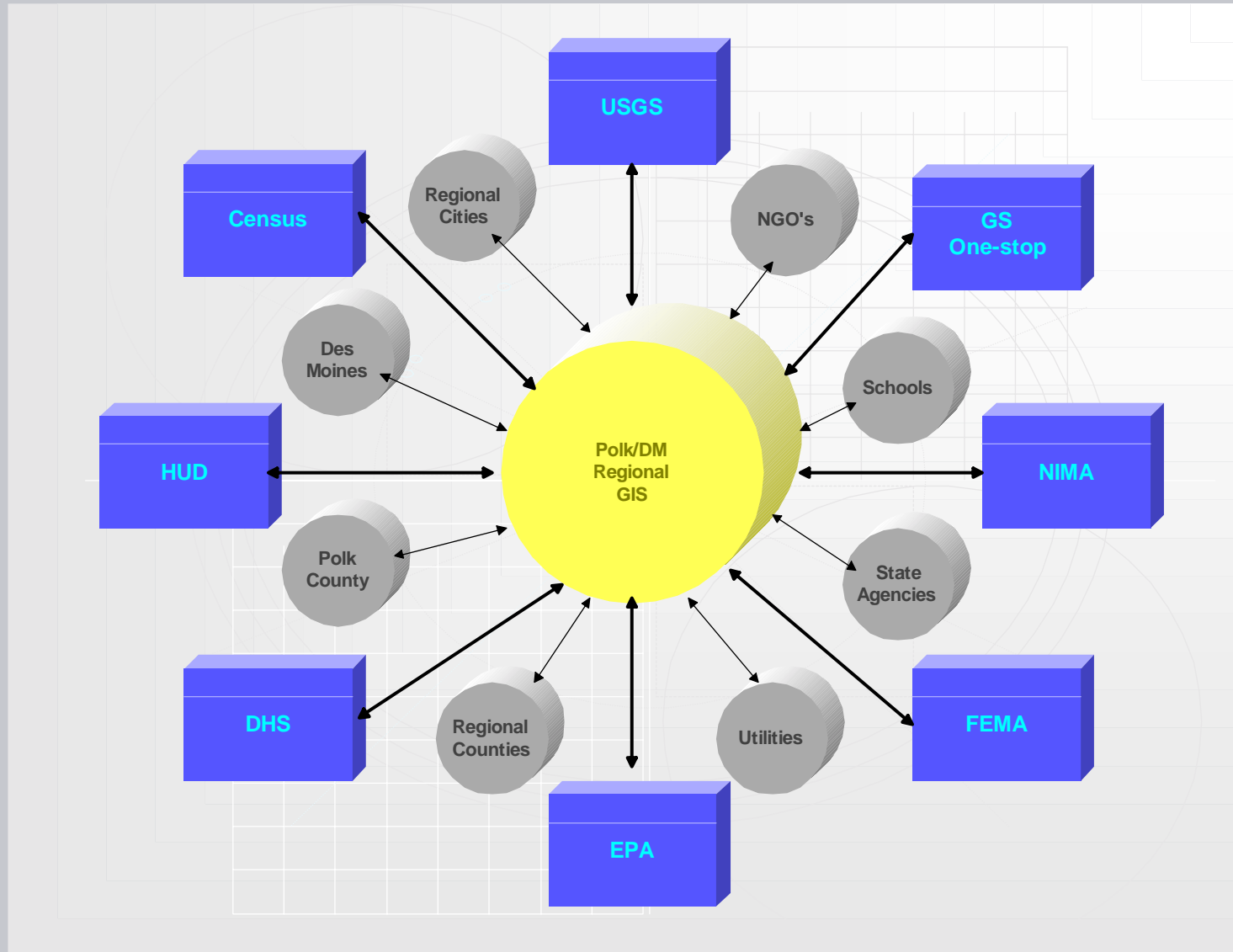
Internal Data Stores



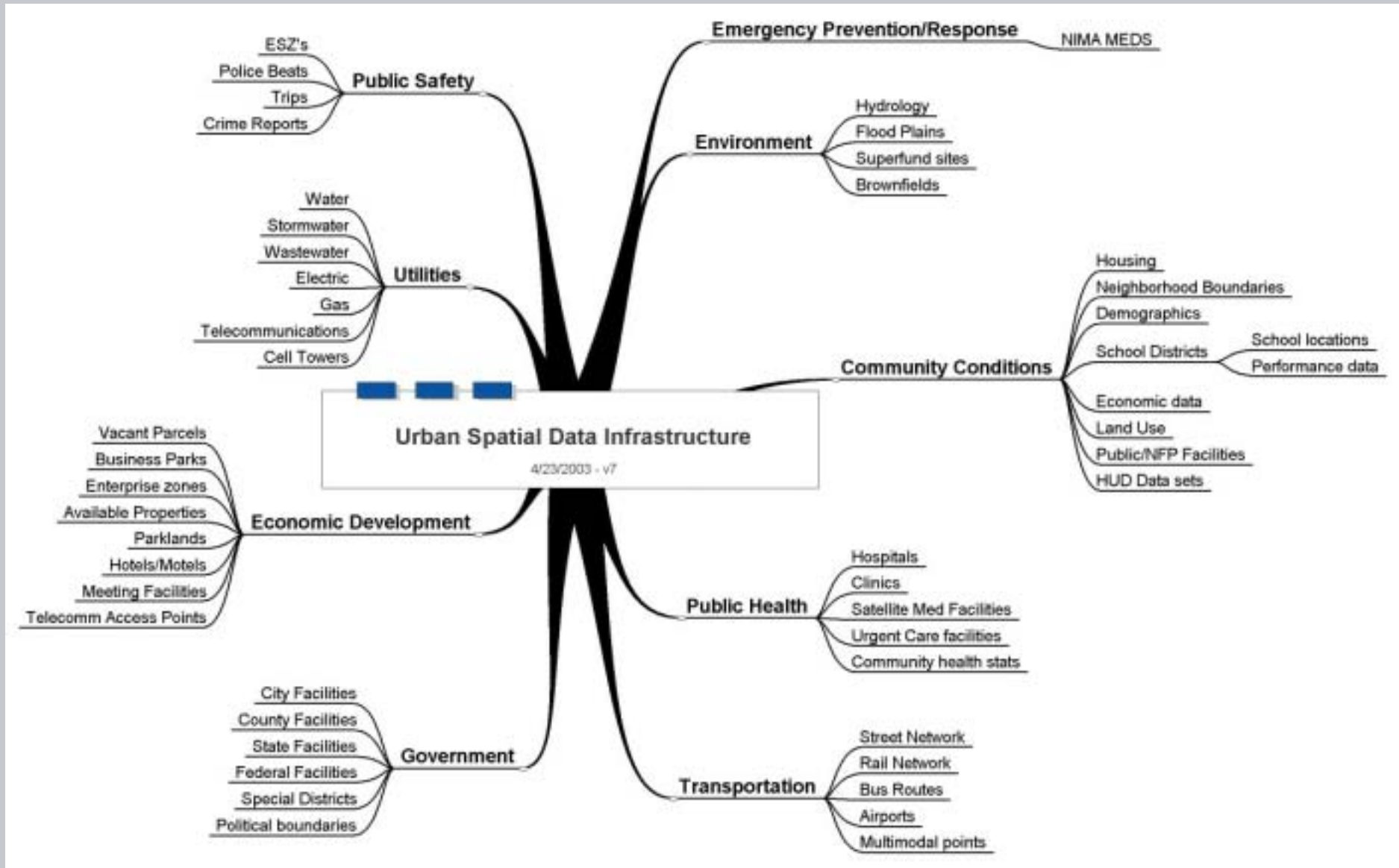
External Data Sources



The Initiated Regional Portal



Toward an Urban Spatial Data Infrastructure



GIS: Management Challenges

▶ Leadership

- Lack of Leadership
- Lack of Vision

▶ Resources

- \$\$\$\$\$\$
- People
- Time

▶ Demonstration of Value

- Organizational
- Policy

▶ Ignorance

- Technological
- Business
- Organization & its Environment
- Managerial

▶ Fear

- Loss of turf
- Complexity

▶ Loss of Control

▶ Confidence



Challenge: Leadership

▶ Lack of Leadership

▶ Cultivation of Leaders

- Grow them
- Hire them
- Leadership from the street-outside the organization

▶ Lack of Vision

▶ Enable Creation of the Vision

- Establish the idea of the future

▶ Link GIS with that Vision



Challenge: Resources

Basis of Value: The Success of our Endeavor

Demonstration of Value

- **Business definition of metrics of success**
- **Apply and refine business processes**
- **Business applications of technology**

Success defines use: Use defines success

- **Critical demonstrations of applications**
- **Linkage of use with mission success**

Challenge: Fear

Fear is a reasonable response to the threat that GIS presents to the old way of doing things.

Acknowledge it and remove its power to control through:

Leading

Building the Team

Supporting

... and expect all involved do the same.

Challenge: Ignorance

Ignorance is a reasonable condition to in when you are beginning a significant new endeavor. Recognize that you share the ignorance.

Explore, Pathfinder, Learn, Clarify, Teach, & Support ... and be expect that all involved do the same.

Challenge: Loss of Control

- ▶ **Loss of Control = Vulnerability, Risk, Failure**
- ▶ **Encourage each of these. Tolerating them is a measure of success, if environment is supportive. Make it supportive.**
- ▶ **Reward failure when it is experienced as a result of risking to create success.**

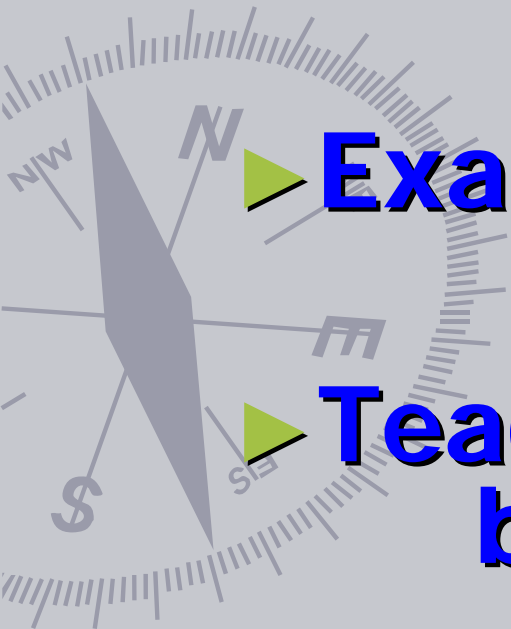
Challenge: Confidence

Success Builds Confidence

▶ **Success is a great example**

▶ **Example is a great teacher**

▶ **Teaching success by example
builds confidence**



The Deliberate Application of Technology

- ▶ 13 years of sustained GIS development
- ▶ 8 years of sustained organizational development
- ▶ 6 years of sustained IT development
- ▶ All development is business-driven



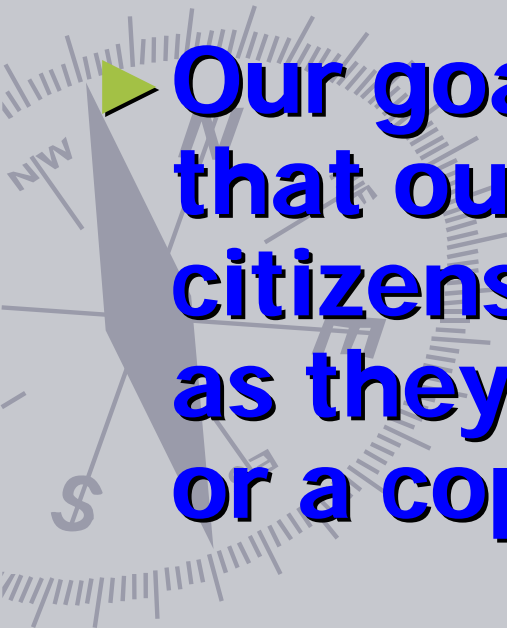
Strategic Changes

- ▶ **Clear Direction:
Improvement**
- ▶ **High Expectations/High
Support**
- ▶ **Lead/Teach**
- ▶ **Team-building**
- ▶ **Demonstrating Value**
- ▶ **Marketing**
- ▶ **Persistent Use**



Parting Shot

- ▶ **Unless we drive GIS deeply into the organization, unless we make the “Wow” factor disappear, we will fail.**
- ▶ **Our goal is to make GIS so pervasive, that our employees, officials and citizens will use those tools as easily as they use a computer, a telephone, or a copy machine.**



Thank You



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