



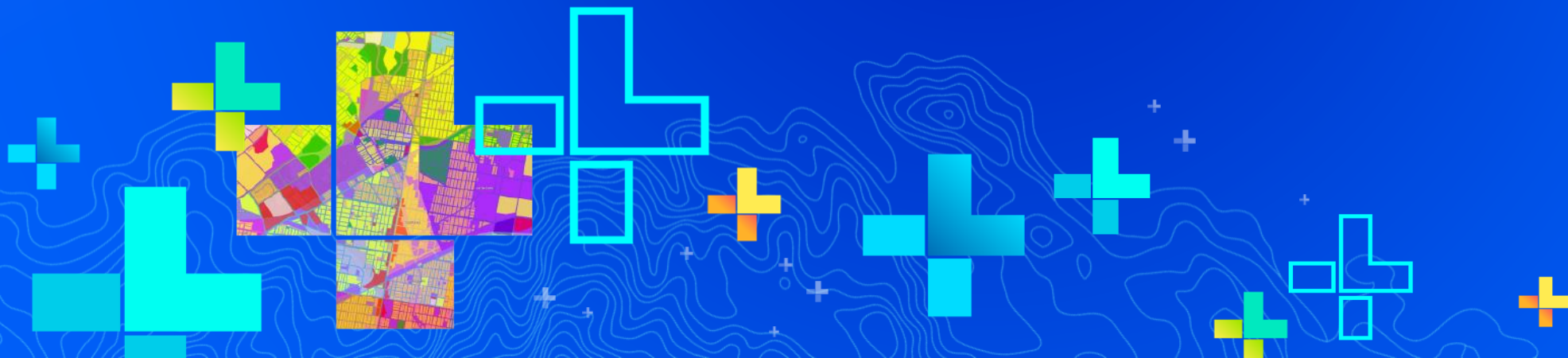
# Reduce Risk with IT Governance

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# IT Governance & ArcGIS

- A subset of the greater corporate governance framework focused specifically on IT systems, their performance, and risk management
- Ensures that solutions are built and managed properly within the IT landscape
- The concepts of IT Governance extend to the ArcGIS Platform



# IT Governance – Key Considerations for the ArcGIS Platform

- **Software Change Management**
- **Data Governance**
- **Technology Alignment**



# Imperative of Change

- **Common motivations for change include...**
  - **Leaders' assertions to achieve new outcomes**
    - Goals and intended outcomes
    - New value-bearing business capabilities
    - Improved efficiencies
  - **Demands expressed by organizational personnel, external partners, the public**
    - Cross-unit, integrated workflows
    - Digital collaboration with partners
    - Public information and feedback
  - **Retirement of systems at end-of-life**



# Software Change Management

- Making changes to enterprise systems will always introduce risk to business operations
- Include the ArcGIS Platform in planning and testing for enterprise system upgrades
- Ensure that operational and administrative staff have appropriate training
- Ensure computing environments are available for development, staging, and production
- As organizational dependence on ArcGIS grows, ensure appropriate backup and disaster recovery capabilities are in place

# Data Governance

- Exercise control over data quality, accessibility, usability, and security across your enterprise (including spatial content)
- Identify data stewards within business units
- Centralize critical content, establish durable data pipelines, and authoritative outlets
- Balance control with enablement



# Technology Alignment

- **Align investments in technology to mission or business needs**
- **Work with organizational leaders and decision makers to understand...**
  - Organization's mission, purpose
  - Leaders' goals and pain points
- **Reveal challenges that require changes in the function and behavior of the enterprise**
- **Compose solutions that resolve challenges**
  - Amplify the value of current and future investments in GIS (people, process, technology)



# Governance starts with people

- **Executive Sponsor**

- Goals to be fulfilled
- Resources to apply
- Little time

- **Champion**

- Vision of the future
- Trusted relationship with Executive Sponsor
- Has the time, but needs to ask for resources
- Communicates status of initiatives in progress

- **IT Leader**

- Responsible for guiding and operating/maintaining a portfolio of production solutions

- **Review Board / Steering Committee**

- Collaborative panel of key stakeholders
- Raise and vet governance challenges





# Example – Introducing a new solution

- **Technology Alignment**

- What are the goals of organizational leaders relative to the mission or purpose of the enterprise?
- Will business unit personnel need to work differently to overcome challenges?
- Do you know the technology you seek to prescribe well enough to make good recommendations?
- Are you prepared to balance control with empowerment?

- **Data Governance**

- Data represents the work of people and systems.
- Which data and processes need to be deliberately managed and controlled? Which data can be left unstructured?
- Are you prepared to delegate or share these responsibilities with designated staff?

- **Software Change Management**

- New and new version of software, upgrades, and patches need to be tested prior to production deployment!

What are the opportunities and constraints related to new or upgraded implementations?

# Applying IT Governance | Executive Operational Awareness Solution

## Mapping & Visualization



Understand locations and relationships with maps and visual representations

## Data Management



Collect, organize, and maintain accurate locations and details about assets and resources

## Field Mobility



Manage and enable a mobile workforce to collect and access information in the field

## Monitoring



Track, manage, and monitor assets and resources in real-time

## Analytics



Discover, quantify, and predict trends and patterns to improve outcomes

## Design & Planning



Evaluate alternative solutions and create optimal designs

## Decision Support



Gain situational awareness, and enable information-driven decision making

## Constituent Engagement



Communicate and collaborate with citizens and external communities of interest

## Sharing & Collaboration



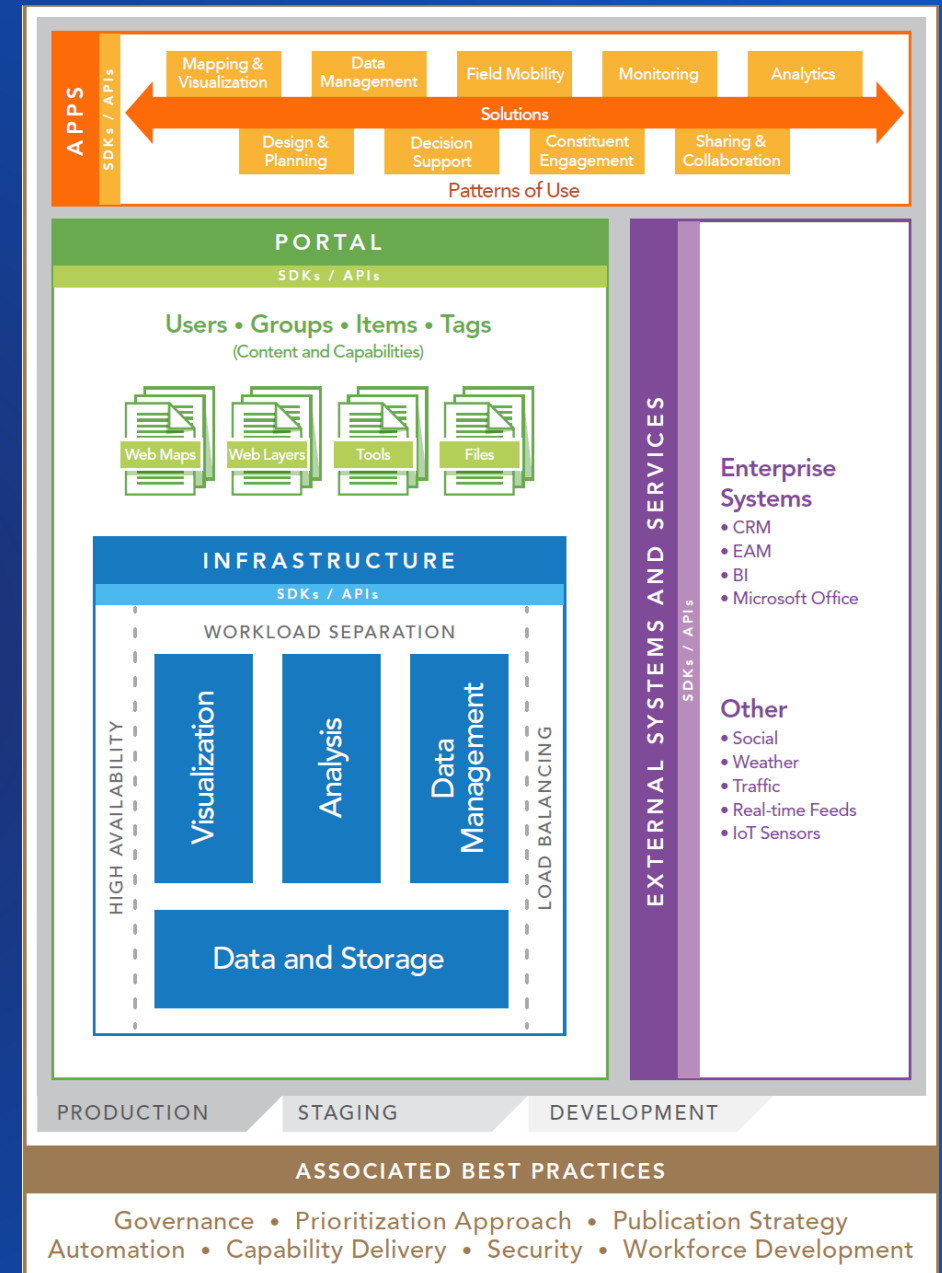
Empower everyone to easily discover, use, make, and share geographic information

# Applying IT Governance to a Portfolio of Solutions

Solutions	Mapping & Visualization	Data Management	Field Mobility	Monitoring	Analytics	Design and Planning	Decision Support	Constituent Engagement	Sharing & Collaboration
Executive Operational Awareness	X	X	X	X	X		X		X
Business Intelligence	X	X		X	X		X		X
Facility Planning	X	X			X	X	X		X
Work Management	X	X	X	X	X		X		X
Safety and Security	X	X	X	X	X		X	X	X

# ArcGIS Platform Conceptual Reference Architecture

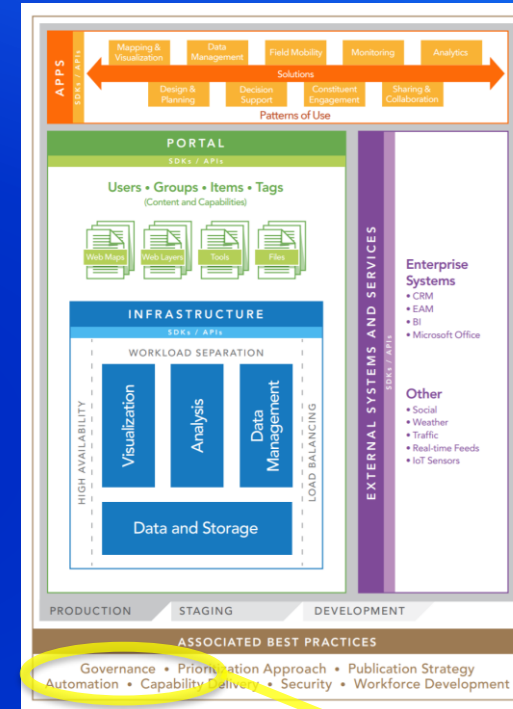
- ArcGIS is a Platform Solution
- Supports a range of workflows
- Portfolios of applications
- Integrated identity management
- A variety of workloads and content
- Integration with external systems
- Built to enable the collaborative work of an enterprise
- IT Governance of the ArcGIS Platform is essential to success



## Best Practice: Apply IT Governance

- **Critical for long-term organizational success with geospatial capabilities**
- **Enables the ArcGIS platform to truly grow within the enterprise with managed risk**
- **Software change management, data governance, and technology alignment are some key elements of an IT governance strategy**
- **The scope of IT governance can extend to other elements such as roles, responsibilities, etc.**





# Architecting ArcGIS: Best Practices

<https://go.esri.com/bp>

## Governance: Leverage the IT Framework

Information technology (IT) governance is a subset of corporate governance, focused on maintaining IT systems, maximizing their positive impact, and managing risk to business operations. IT governance helps organizations effectively build and manage IT solutions. By applying IT governance to the ArcGIS platform, you can deliver clear benefits and achieve long-term success with your ArcGIS solutions.

### Key Components of Effective IT Governance

IT governance is a framework, culture, and set of shared responsibilities that ensure the integrity and effectiveness of an organization's use of IT. Organizations implement IT governance by monitoring, managing, and steering their IT landscape to achieve required business outcomes. Since GIS is part of the IT landscape, IT governance should also be applied to GIS. Doing so lets you maximize the benefits of deploying and using the ArcGIS platform.

Key areas where IT governance can improve your use of GIS include:

- Software change management.** A software change management plan lets you mitigate operational risk when implementing new software. An effective plan covers both software testing and the upgrade process. As part of your plan, you should run functional, performance, and user acceptance tests in a staging environment. This helps maintain business continuity for production workflows. Once testing shows that the software works as expected, schedule an upgrade to the production system in advance. This lets you ensure that essential staff are available and have the privileges needed to perform the upgrade. In addition, document the upgrade process and establish a rollback strategy, so you can recover more easily if issues occur.
- Data governance.** A data governance approach involves exercising control over data quality, accessibility, usability, and security. You can integrate spatial data in your broader data governance approach, rather than treating spatial data as a separate concern. With an integrated data governance approach, spatial data is maintained by data stewards within your business units and delivered to end users through centrally-managed web services (for example, through distributed web GIS). Data stewards are responsible for data quality and usability, while IT staff manage data accessibility and security. By managing and serving spatial data in this way, you can provide useful, high-quality data resources to anyone that needs them. This helps people more easily access, use, and share maps and data that support their work.
- Technology alignment.** By aligning technology to your business needs, you can help the organization overcome challenges that impede its mission and goals. To identify these challenges, speak with business leaders and decision-makers to get a clear picture of their organizational initiatives, goals, and pain points. Explore ways that GIS can help them complete their objectives and alleviate their challenges. By providing GIS solutions that support key organizational goals, you can amplify the value your GIS and your team provide to the enterprise.

By extending IT governance across the GIS domain, you can implement new GIS software more effectively, access and share useful GIS data across the organization, and increase the value of your GIS program. This improved governance helps you increase your long-term success with ArcGIS.

### Recommendations

To effectively apply IT governance to ArcGIS within your organization:

- Implement a software change management plan to mitigate the risk associated with upgrading your GIS.
- Incorporate GIS data in your broader data governance approach, so anyone can access useful, high-quality maps and data in their work.
- Align technology to overcome business challenges and amplify the value of your GIS.

[Back to Reference Architecture](#)

# Reduce Risk with IT Governance:

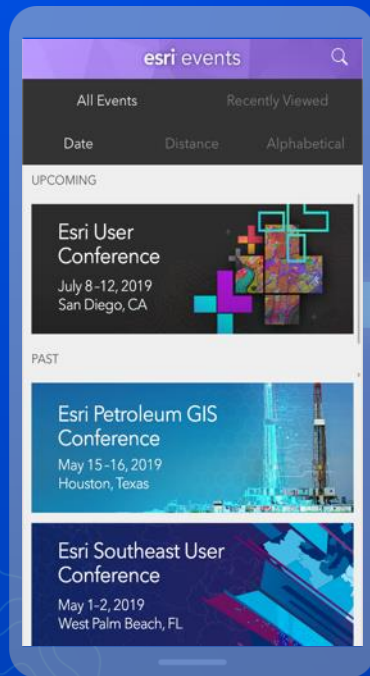
## Summary Recommendations

- **Implement a software change management plan to mitigate the risk associated with upgrading your GIS.**
- **Incorporate GIS data in your broader data governance approach, so anyone can access useful, high-quality maps and data in their work.**
- **Align technology to overcome business challenges and amplify the value of your GIS.**

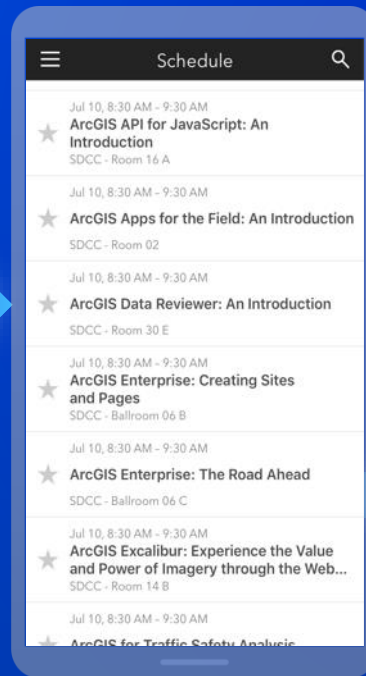


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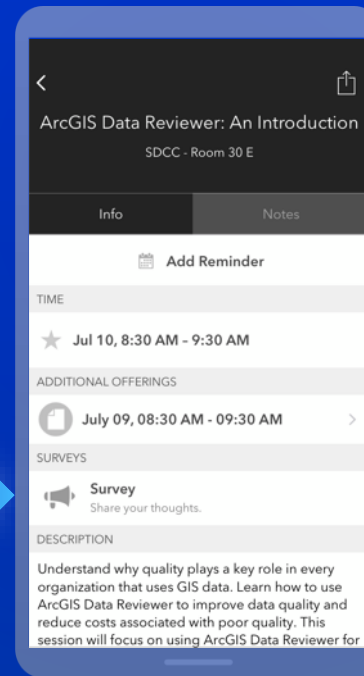
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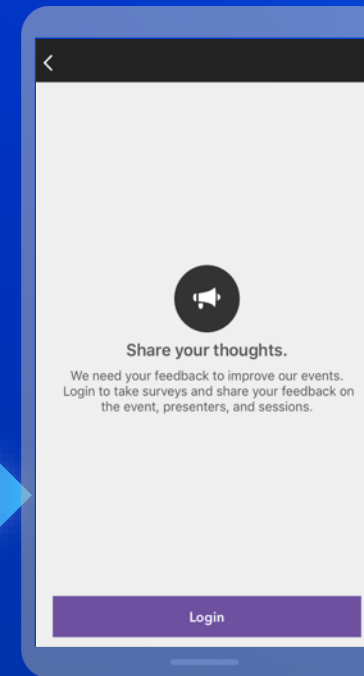
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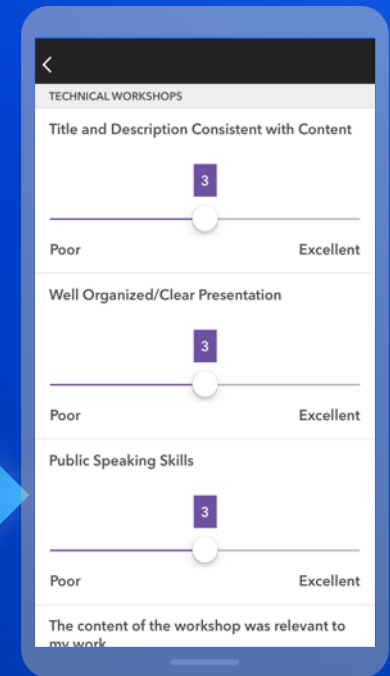
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