Distributed Collaboration with ArcGIS Enterprise

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Objectives:

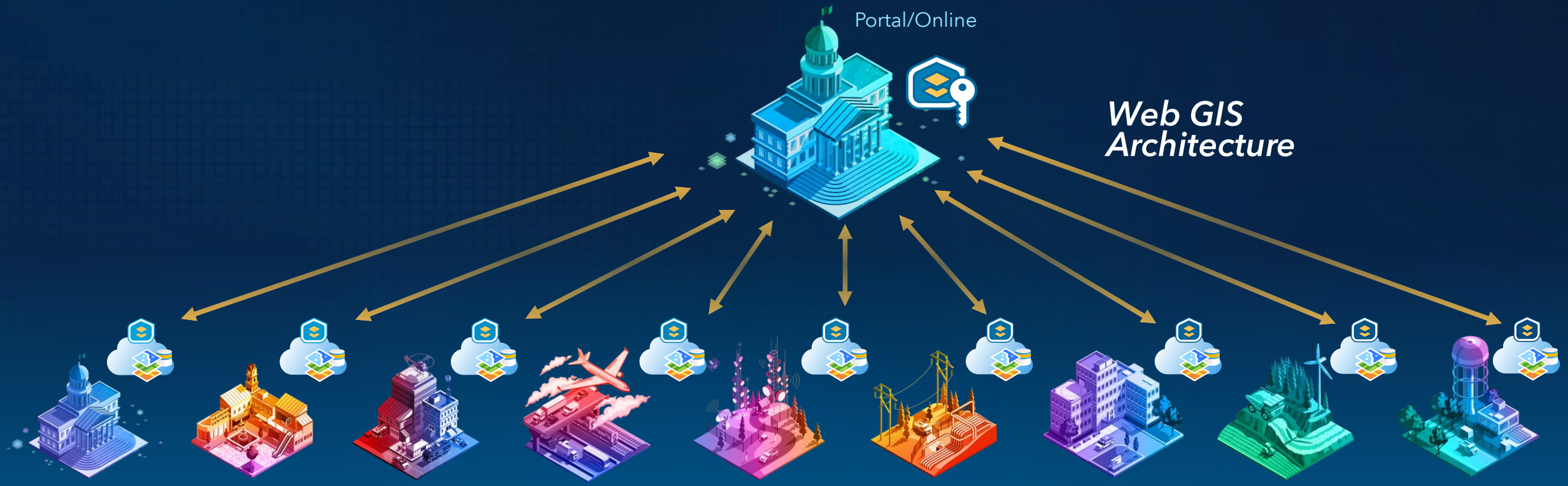
- Web GIS, what is it and why its important
- Modern GIS Architecture
- What is distributed collaboration?
- Common patterns
- Resources

Web GIS

- In its simple form, web GIS can be defined as any GIS that uses web technology to communicate between a server and a client

- Type of distributed information system, comprising at least a server and a client, where the server is a *GIS* server and the client is a *web* browser, desktop application, or mobile application.

Web GIS – Connects & Integrates Systems



The Importance of Web GIS:

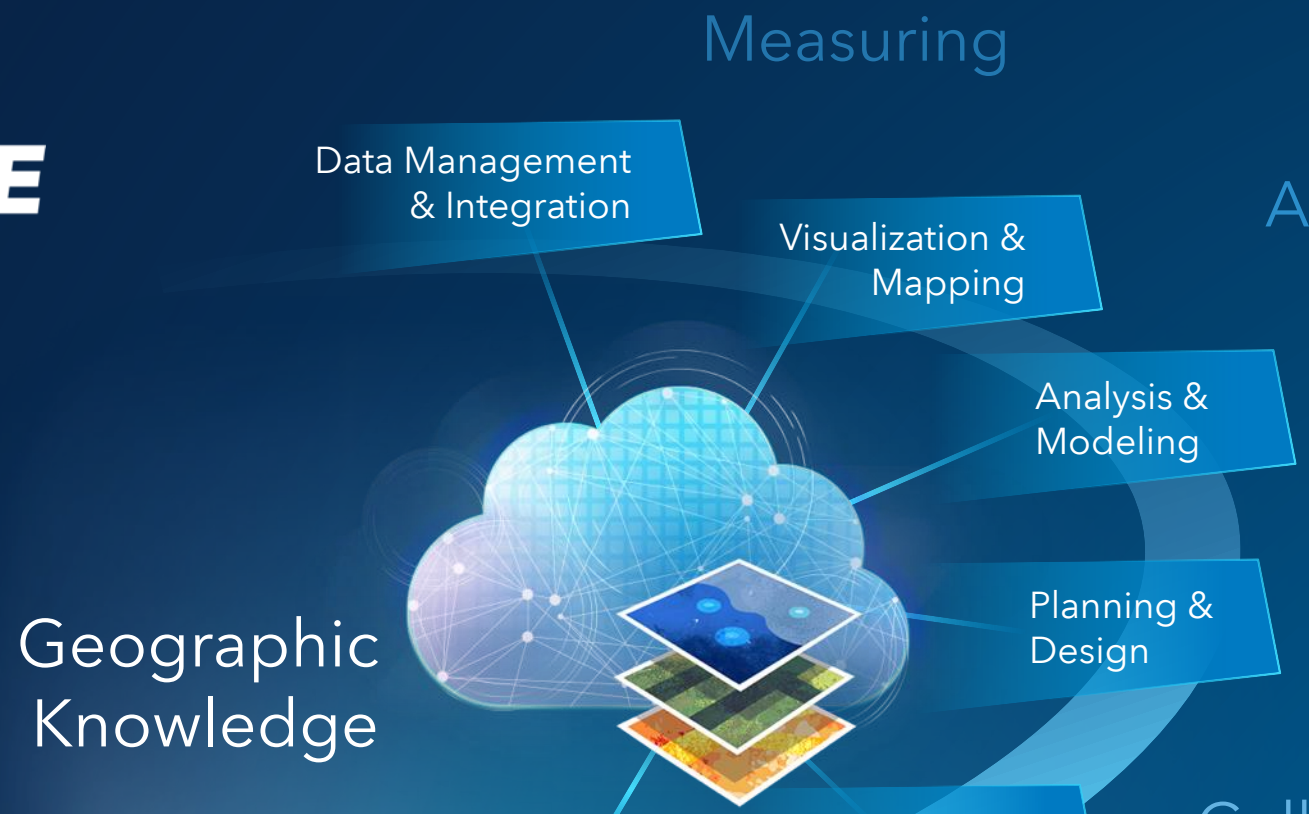
- Access to data (server to client)
- Real time data & interaction
- Web services for consumption
- Transform how you do business and use the data
- **Sharing live data across departments and organizations with your enterprise system**

Advancing Rapidly

Driven by Exponential Technological Advancements

THE SCIENCE OF WHERE

A Framework and Process



Leveraging the Power of Geography . . .
to Make Better Decisions

Web GIS Is a Modern GIS Architecture

Helping Everyone Do Their Work Better

Distributed
. . . and
Interconnected

End Users
and Developers

Communities

Organizations

Departments

Teams

Individuals

Engaging
Everyone

Leveraging
Web Services

Sharing and
Collaboration

What is Distributed Collaboration?

- A way to establish trust with other deployments to share data quickly, easily and repeatedly
- Uses existing, familiar group sharing model to send content
- Can be established between ArcGIS Enterprise portals and with ArcGIS Online
- Makes your data discoverable across disparate systems

From Individuals

To Organizations

To Networks of Organizations

Benefits

- No scripting required
- Automatic synchronization
- Familiar group sharing model
- Common formats across ArcGIS
- Common operational picture of data and make data visible and usable across organizations
- Establishes a trusted connection with other ArcGIS enterprise deployments and Online
- Allows you to easily share data and info from applications to layers and maps
- Keeps data updates in Synch automatically, no more scripting ETL process
- **System of systems**

Common use cases

"I have multiple Enterprise deployments in different geographic regions or for different departments and I want each of them to contribute their data to a central portal as a repository."

"I want to manage my data in a central portal and share the authoritative source with other deployments."

"I want to maintain my data in ArcGIS Enterprise and share it to Online for visibility and scalability with the public."

"I am working with other deployments on projects and I want to be able to share my content with them without having to script or manually export/import."

Common Patterns: One to One

ArcGIS Online

ArcGIS Enterprise

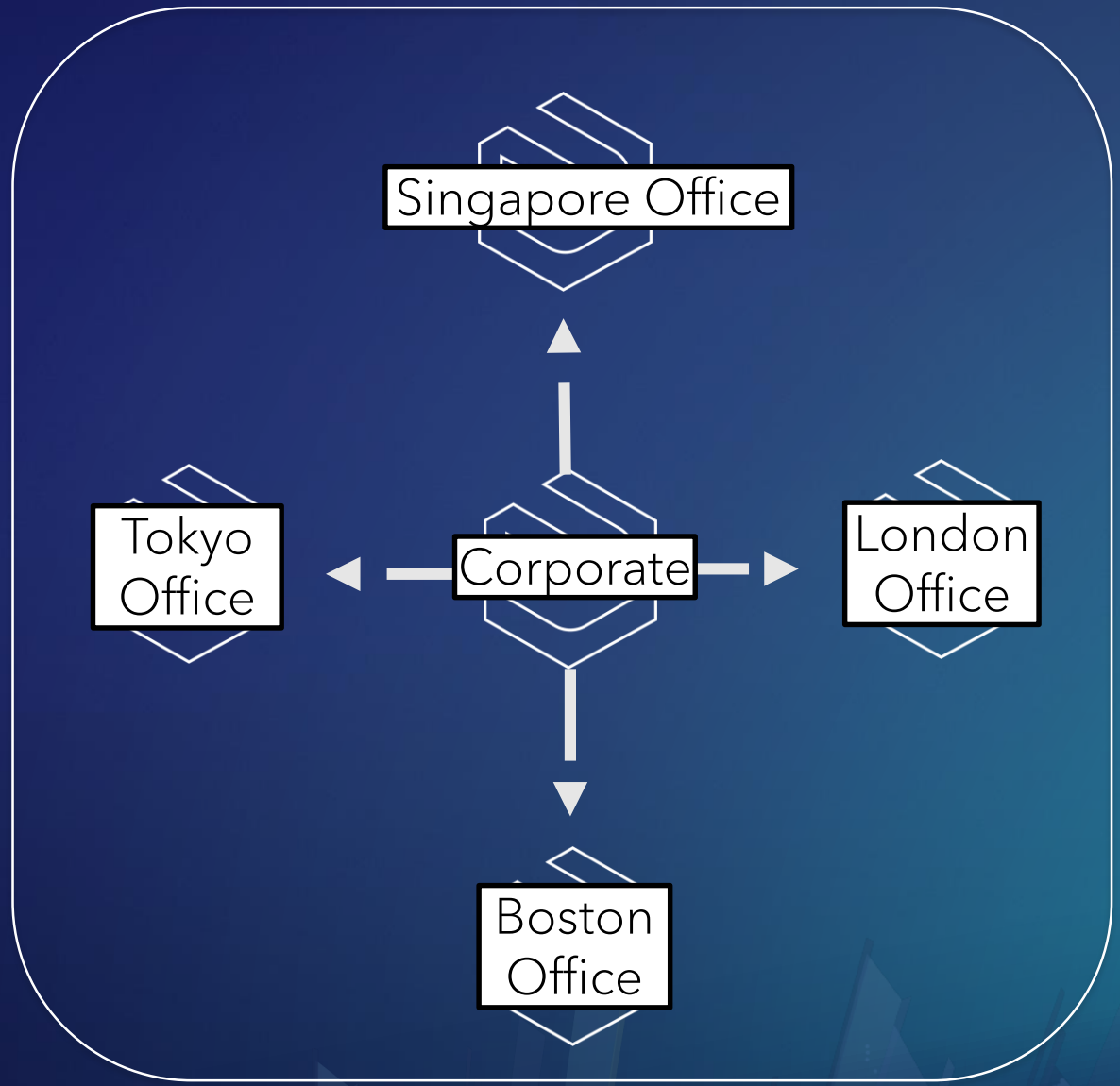
"I want to maintain my data in ArcGIS Enterprise and share it to Online for visibility and scalability with the public."

ArcGIS Enterprise

ArcGIS Enterprise

"I am working with another deployment on a project and I want to be able to share my content with them without having to script or manually export/import."

Common Patterns: Between Many



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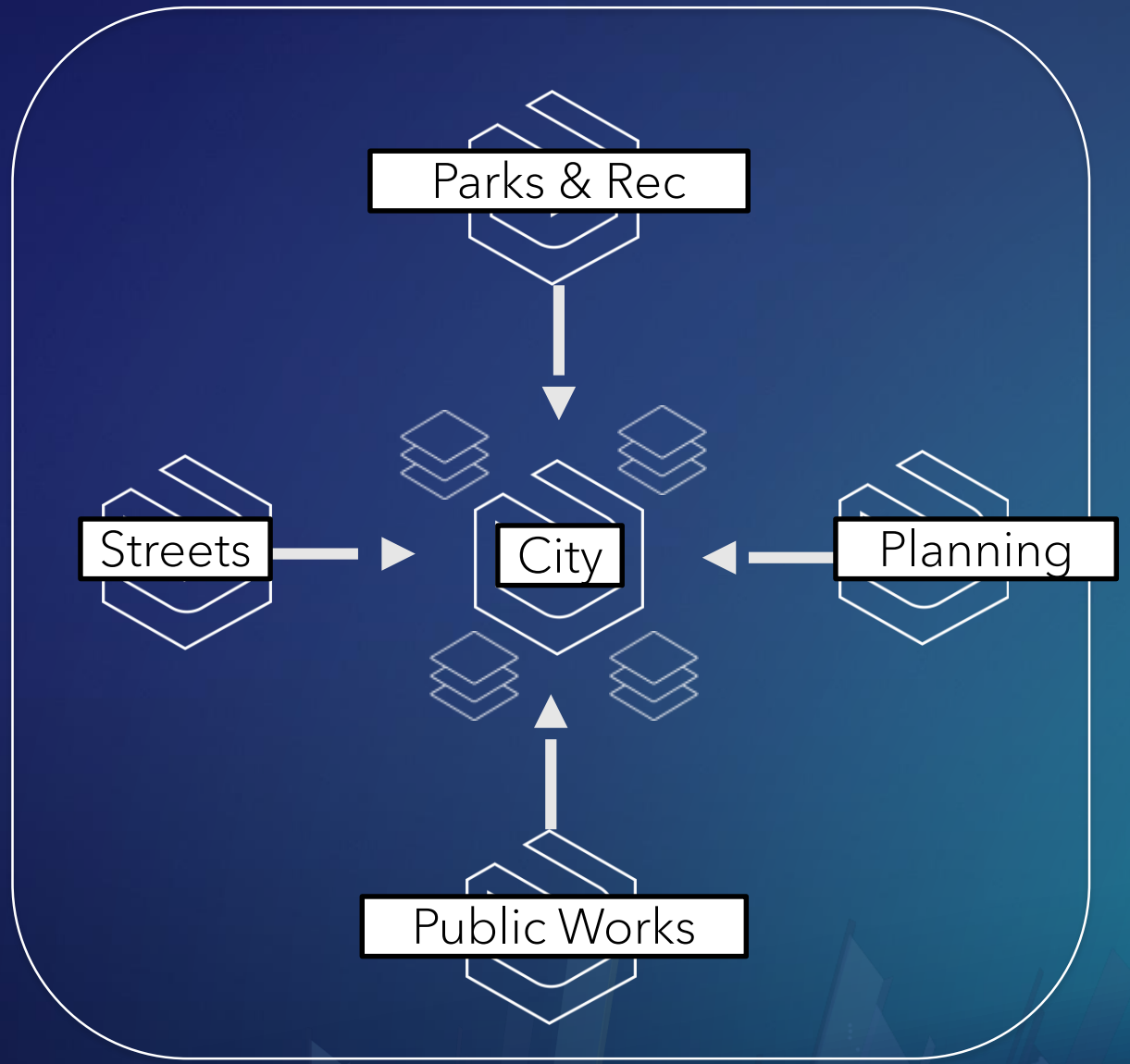
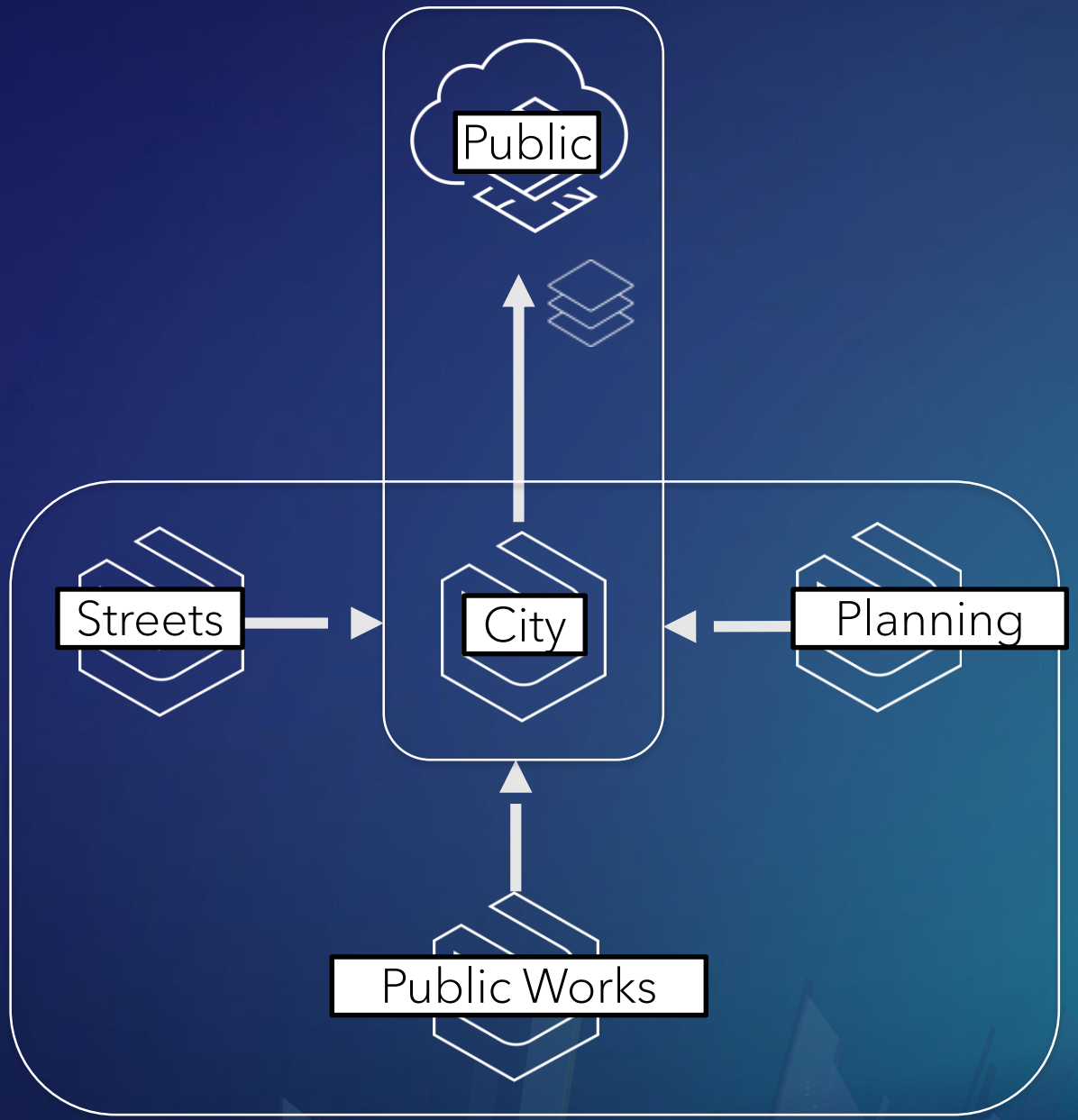
Common Patterns: Between Many



"I have multiple Enterprise deployments and I want each of them to contribute their data to a central portal."

Common Patterns: Between Many

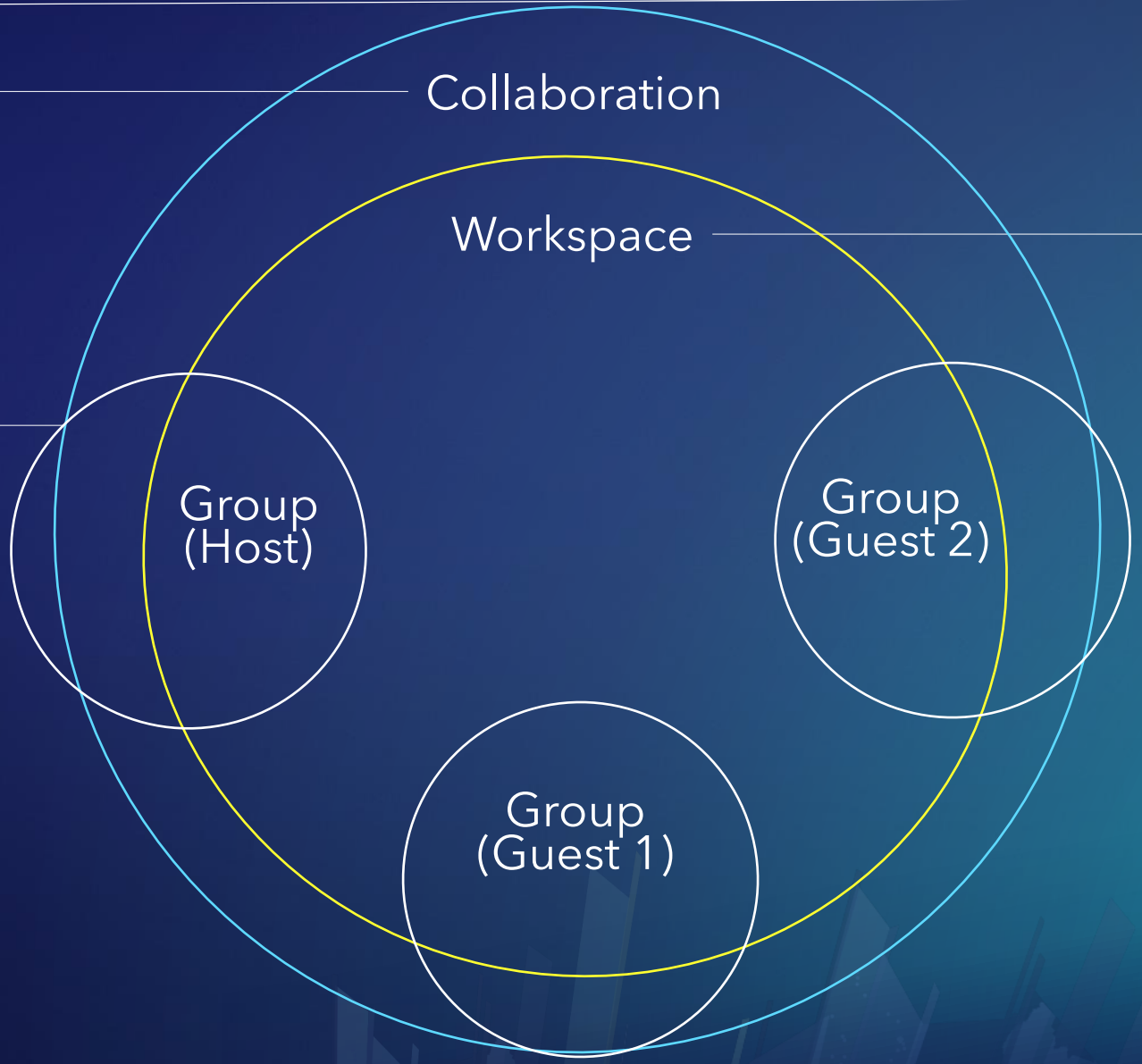


"I have multiple Enterprise deployments and I want each of them to contribute their data to a central portal."

"Then I want to create web maps and applications in the central portal to share that data to ArcGIS Online."

Key technical concepts: collaboration architecture

Overarching framework for collaboration; initiated by the host



A conceptual space (or multiple spaces) associated with a project, topic, or other organizing principle

The host and each guest link Groups to the workspace as a means to share content

What types of items can be shared in a collaboration?

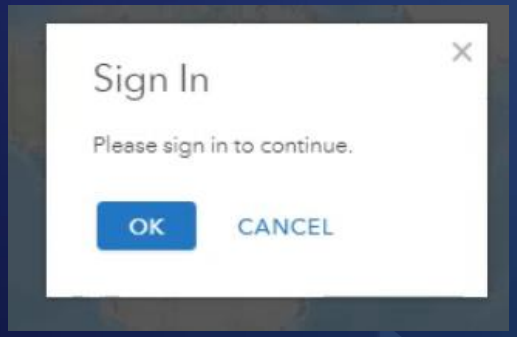
- Hosted feature layers
- Hosted feature layer views (by reference)
- Federated feature layers
- CSVs, Word documents, Excel files
- Shapefiles
- Tile package, vector tile packages
- Web maps
- Web scenes
- Map and feature services (URLs)
- Web AppBuilder apps (at 10.6.1)
- Apps created from configurable app templates (at 10.6.1)
- …..

One way of sharing feature layers - by reference

Portal 1

Portal 2

- The data doesn't move; the feature layer will be a reference to the source who shared it
- The layer is accessed live, showing changes near immediately
- Recipients will need access to view the source layer (credentials)
  - Or the item can be shared with 'Everyone'



Another way of sharing feature layers - as copies

Portal 1

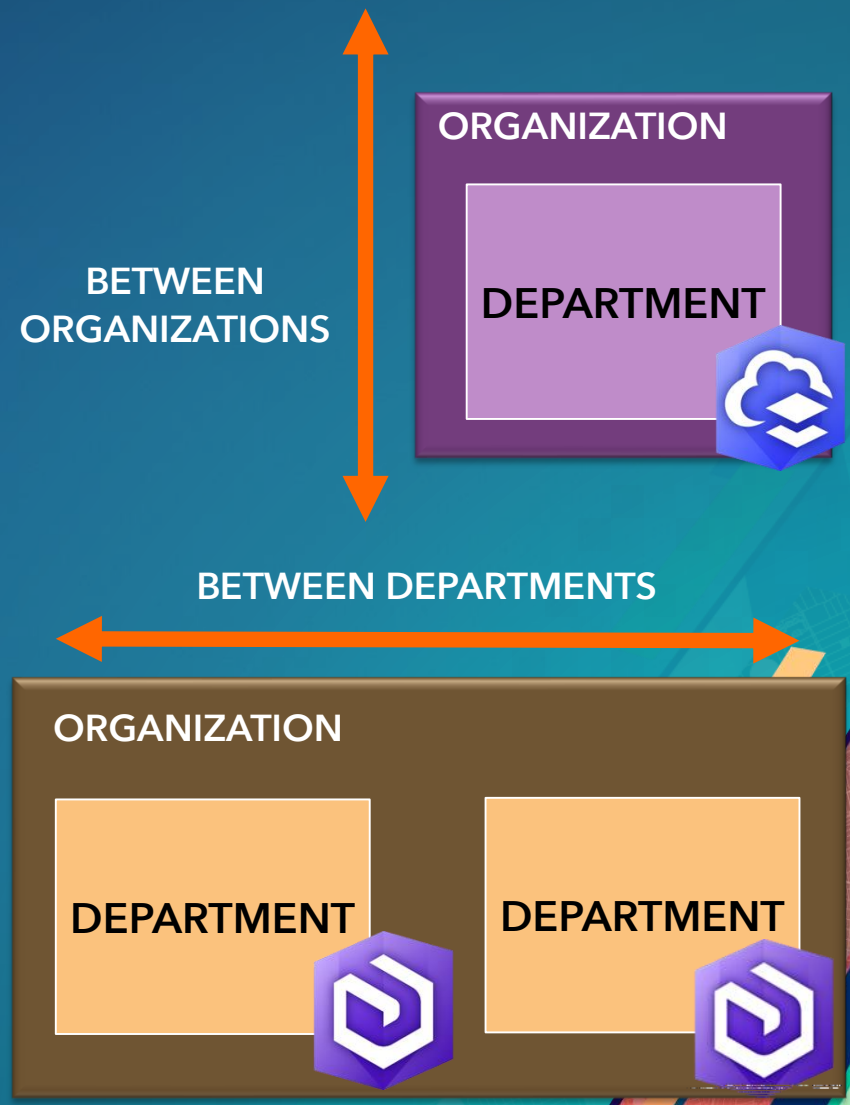
Portal 2

- Packages the data and creates a new hosted feature layer for your recipient
- New layers and deltas are synchronized from the owner to recipient at scheduled intervals, configured by the guest:
  - Between every 1 and 24 hours
  - For example, every day at 5pm

- *Configure your layer to send as copies:*
  - *Hosted feature layers: enable sync*
  - *Federated feature layers: Global IDs must be present on enterprise geodatabase-backed layers*

Distributed Collaboration Scenario

- **Departmental & Orgs**
  - two separate departments within an organization can use collaboration to share data
  - two separate organizations can use collaboration to share data
  - collaboration can occur between two ArcGIS Enterprise sites
  - collaboration can occur between an ArcGIS Enterprise site and an ArcGIS Online organization

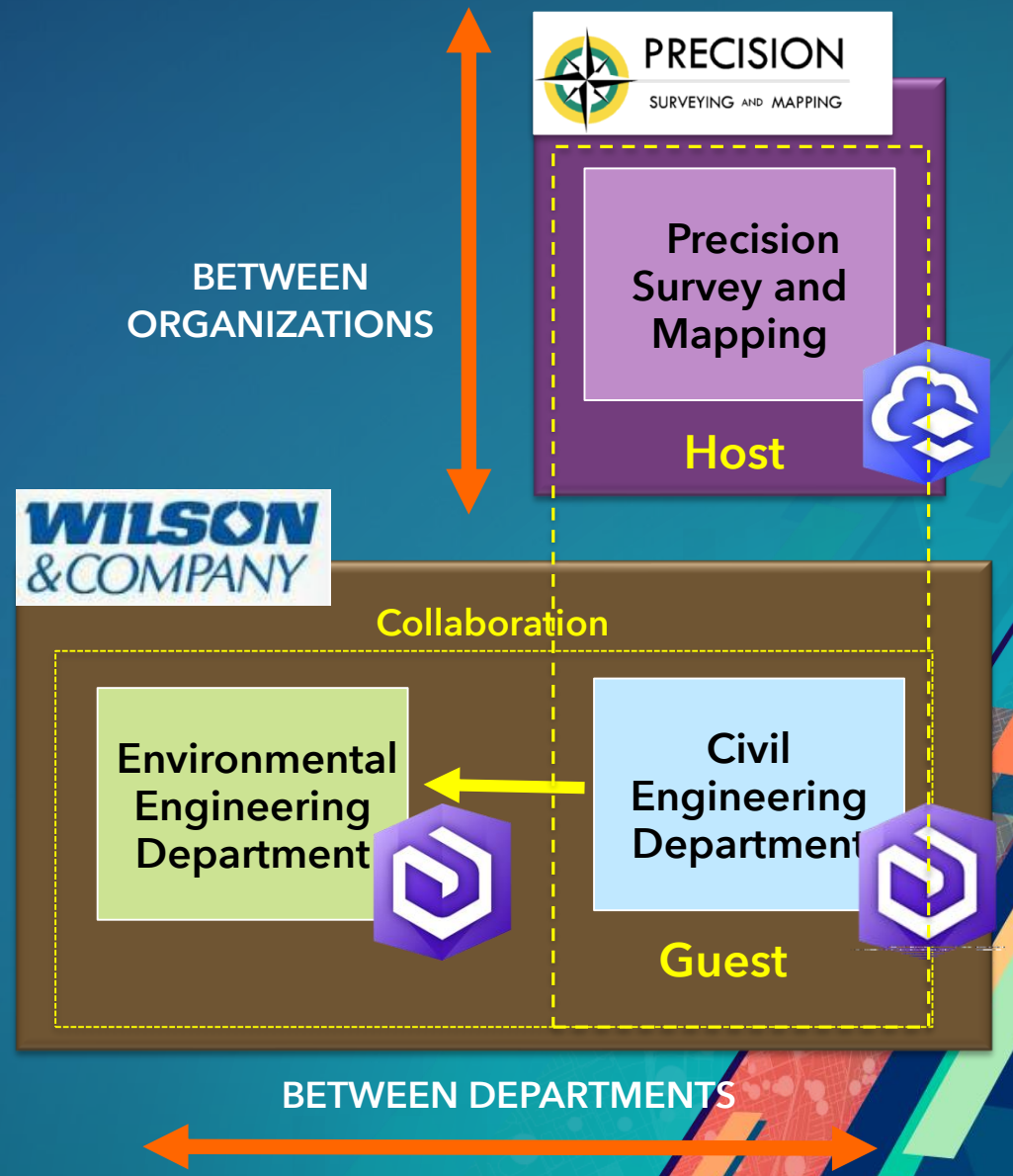


Distributed Collaboration Scenario

- **City to County and vise versa….**
  - **Cities and Counties can share their data to each other**
  - **Shared boundary assets**
  - **Updated data in real time for roads, water, sewer, utilities, etc.**
  - **Projects, road maintenance data, events, emergency management, situational awareness, etc.**

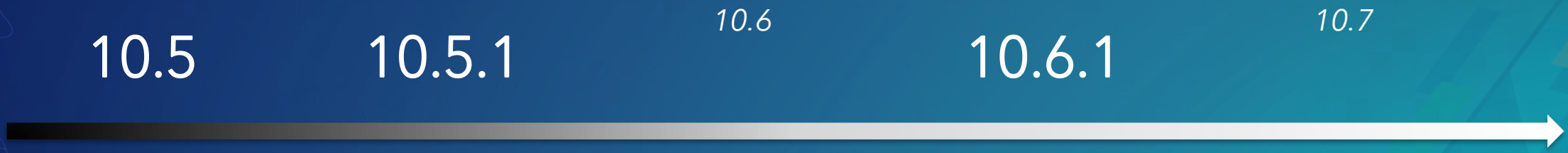
Distributed Collaboration Scenario

- **Sharing data with utility companies or eng. firms**
  - The Civil Engineering department will subcontract the field surveys to another company, Precision Survey and Mapping
  - The subcontractor will also need access to project datasets
  - Precision Survey and Mapping has an ArcGIS Online organization
  - Collaboration will be used for dissemination of data between organizations



Release highlights

Now available to all organizations in ArcGIS Online



Enterprise with Enterprise

(first release)

Enterprise with Online

Share feature layers as copies (Enterprise)

Content delete policy

Sync reporting

Share web apps

Sync on demand

Share Insights items

Copy views

Pause + resume sync

Badge more prominent

Summary

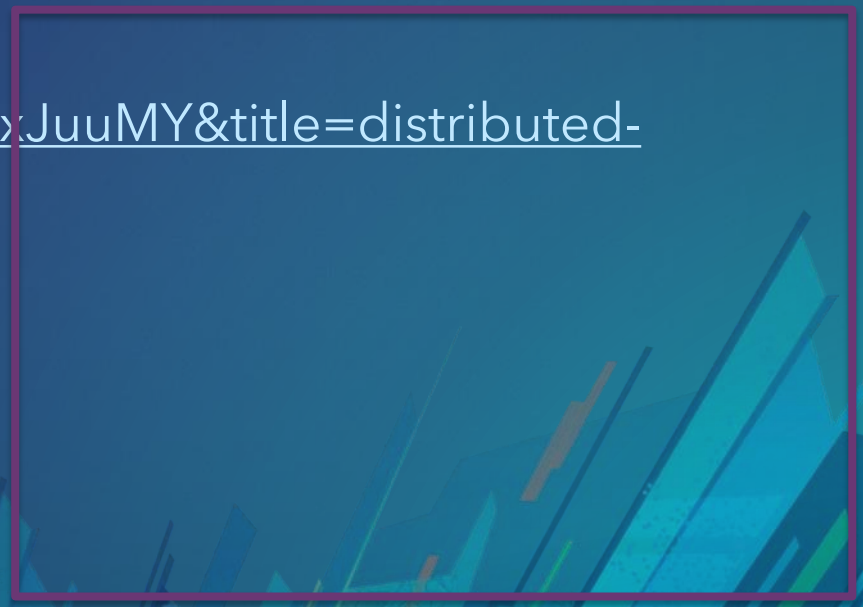
- Collaboration is a way to make data and information available to other Enterprise deployments and/or ArcGIS Online
- Available at 10.5 between Enterprise; 10.5.1 with Online
- All individual settings are maintained for each deployment; collaboration simply shares content
- Can be a one to one pattern or with many participants
- Communication is KEY!
- Ask for help from the community or Esri

Resources

- Esri ArcGIS Blogs: https://www.esri.com/arcgis-blog/?s=#collaboration

- Technical documentation: http://enterprise.arcgis.com/en/portal/latest/administer/windows/about-distributed-collaboration.htm

- Videos:
- https://www.esri.com/videos/watch?videoid=-E4ztxJuuMY&title=distributed-collaboration-interconnecting-systems
- https://www.youtube.com/watch?v=irkv4zKkPpA
- https://www.youtube.com/watch?v=-ZyeXcrpPrU



Thank you!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THE
SCIENCE
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WHERE


frequently
asked
QUESTIONS

FAQ

- Is this a supported workflow for dev / staging / production?
  - Collaboration isn't the intended use, however, we are looking into using this technology/framework to develop a specific dev / staging / production workflow.
- Is there a file size limit?
  - We have established a good default as 1 GB.
  - For ArcGIS Online, requests to increase this size can be submitted in the EAC.
  - For ArcGIS Enterprise at 10.6, we added an INFO log entry indicating the size of the shared feature layer data. If the size exceeds 1 GB the item will be shared as a reference.

FAQ

- Can I copy data from ArcGIS Online into my enterprise geodatabase?
  - No. Destination layers within a collaboration must be hosted layers from ArcGIS Online or ArcGIS Enterprise.
- Can I copy data from an enterprise geodatabase to ArcGIS Online?
  - Yes. If the enterprise database is registered to a federated server in ArcGIS Enterprise, its data can be used as a source layer in collaboration between ArcGIS Enterprise and ArcGIS Online.
- Do ArcGIS Enterprise collaboration guests need to be using the same version?
  - No. An ArcGIS Enterprise guest could be 10.5, 10.5.1 or 10.6. However, the guest will only have access to feature capabilities that were available at that release.

Quick Tips

- Make a draft of your patterns:
  - Who (participants)
  - What (item types)
  - How (as reference or copies)
  - When (synchronization interval)
- Take care in naming your collaborations, workspaces and groups
- Communicate!