ESRI ROADMAP

FOR UTILITIES AND TELECOMMUNICATIONS COMPANIES

Introduction

Over the last several years, the ArcGIS has emerged as a true IT platform. According to Phil Simon, the author of the acclaimed book, *Age of the Platform*, a platform allows people to connect and obtain information. This is true of all of the most popular platforms you use today, such as Facebook, iTunes and Amazon. Another aspect of a platform is the notion of identity. Platforms know who you are. Often once you have established identity on one platform, other platforms can identify you without having to log in. Twitter and Facebook work this way. Another aspect of a platform is that it attracts others to develop applications on the platform. In 2014, there were 1.3 million apps on Android Play, with Apple App Store a close second with 1.2 million apps. Partners have been building apps on Esri technology for decades. Today, the ArcGIS platform makes developing, deploying, and accessing apps that much easier. Esri Marketplace has emerged as the place to go to develop and get apps for the ArcGIS platform.

What does this mean for utilities and telecommunications companies?

The use of computing platforms has really changed the way society shares, communicates and collaborates. People move seamlessly between their desktop computers, over the web, their smart phones and the tablets. It doesn't seem to matter where they are. Not long ago, utilities and telecommunication companies were thinking of a mobile GIS strategy. They wondered how they could take advantage of the wonderful asset information they had collected in their GIS's. They also struggled how to collect and communicate network information to and from their field crews, their regulators and their customers. The ArcGIS platform makes this happen easily, just like the other platforms we are all used to using.

The ArcGIS platform consists of three parts as noted below.

1) The Portal – this is the foundation of the platform – it is either ArcGIS On-line, the cloud based infrastructure or Portal for ArcGIS, Esri's on premise implementation of ArcGIS Online. Many organizations have also made use of hybrid approach that utilizes a little of both. It provides the software and hardware to do what Phil Simon suggests a platform is supposed to do – allowing people to connect and obtain information – in this case based on geography.
2) Server and Online content and services – this is where the source of the information is stored. This is where network asset information is kept. This is also where utilities can obtain information from outside the company, such as vegetation wetlands overlays from the state, paving schedules from the city, fire hazards from a county or free base maps from Esri.
3) The clients – ArcGIS for Desktop for Professional GIS users, such as those in your mapping department. ArcGIS over the web and on mobile devices for everyone else.

ArcGIS is a platform that delivers one corporate view of the truth. ArcGIS is secure, provides actionable information on any device in three clicks or less, and does not limit the number or types of users who can access it. ArcGIS also makes it easy for you to capture the institutional knowledge of your staff and include it in asset records and configurable rules.

What Should I Do Today?

1) Implement the platform now.

Most utilities still view GIS as a traditional client server application. That means they implement ArcGIS for Desktop and ArcGIS for Server. Sharing is possible of course, but more difficult. They implement nearly all their specialized applications within ArcGIS for Desktop or as custom web apps using ArcGIS Server. They then build out their data model schema to be all inclusive. The data model becomes more and more complex and support becomes more difficult.

So first set up your portal. Create your organizations and groups. It's easy. Esri has done the hard work for you. We have built standard electric, gas, and telecom organizations. Give your folks access and permissions and the portal is ready to go.

Even if you have not deployed the latest technology, you can still publish your asset data (which you have worked so hard on building) to the portal. Then you are ready to share, collaborate and communicate that hard earned data to anyone on any device anywhere. This data is published on what Esri calls web maps – once a web map is created it is a snap to move wherever you want, including inserting them directly into your web site. Web maps point back to your authoritative data. Have you ever asked yourself the question – is my authoritative data getting to the right people in the company. With the ArcGIS platform, the answer is yes.

You can continue to edit your data just like you have been doing. It all just works with the platform. For a quick look at how easy implementing the platform can be, check out what Seneca Resources has done.

http://video.esri.com/watch/3784/seneca-resources-corporation

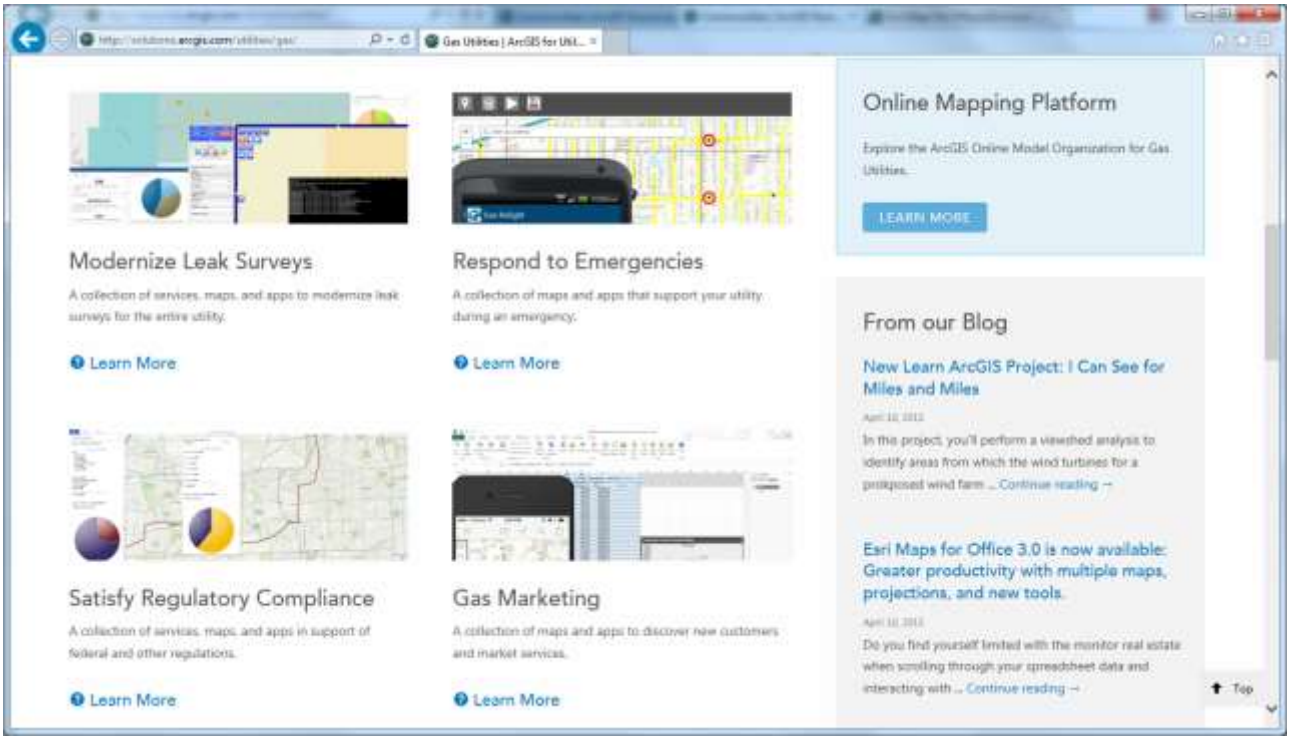
2) Upgrade to ArcGIS for Desktop version 10.2.1

The most important thing for utility and telco users is to get current with the ArcGIS for Desktop release focused on your workflows. This release, of course, is ArcGIS for Desktop 10.2.1. Esri spent a great deal of time and resources talking to users and business partners to understand what more they needed out of the ArcGIS desktop software. What was learned went into the 10.2.1 release in the form of updates for reconcile/conflict management, the geometric network, and replication.

The recommendation for all utility and telecom users continues to be to move to ArcGIS for Desktop 10.2.1 and stay there as we will continue to provide patches on that release for the foreseeable future. It is also recommended that organizations continue to move forward with the newer releases of other Esri products such as ArcGIS for Server.

3) Take advantage of the ArcGIS template apps and maps

Once you have implemented the portal, the next most important thing to do is to make use of the Maps and Apps available through the various community pages for Electric, Gas, Telco and Water. Take a look at our Solutions site: http://solutions.arcgis.com/utilities/. The solutions available on these pages offer best practices for solving many common issues facing organizations today. A quick review of the ArcGIS for Gas Utilities site shows solutions for responding to emergencies, satisfying regulatory compliance, and modernizing leak surveys. Esri continues to add to these valuable work flows each month. See below for a quick view of the site.



The solutions are also about making the platform relevant to utilities and telecoms as they demonstrate how organizations can being to make use of portal. The best place to start with the platform and portal is to download the organizations model from the resource site and begin to understand how you can take advantage of all the solution site and portal has to offer.

4) Take a look at ArcGIS Pro

Once you have implemented the platform, start using ArcGIS Pro, Esri newest addition to ArcGIS for Desktop. At the current release, users cannot edit network data, but you can use it for a variety of useful applications. You will be able to do 2D and 3D mapping. You can create projects and tasks, perform spatial analysis with simple wizards and generate your web maps.

Learn more about ArcGIS Pro at http://pro.arcgis.com/en/pro-app/

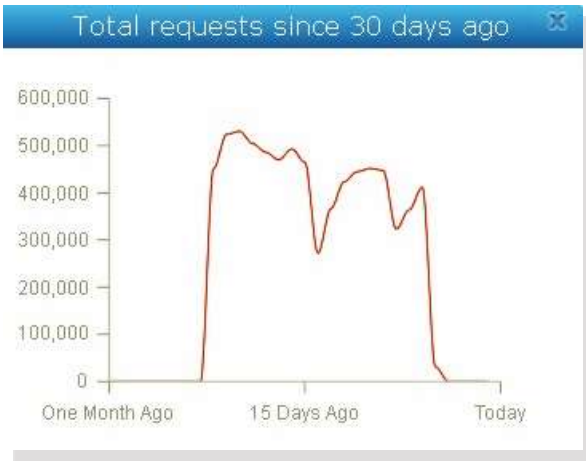
5) Spatially enable your real time data

The number of sensors and sensor network is increasing rapidly, all enabled over the internet. What better way to understand your network than to bring all your real time data to your map using the ArcGIS platform. With ArcGIS GeoEvent Extension for Server you can show your real time crew locations, your AMI (Advanced Metering Infrastructure) data from your customers, SCADA and DMS all on your map. And with the platform, you can have access to that data anywhere and on any device.

Check out what you can do with ArcGIS GeoEvent Extension for Server at
http://www.esri.com/software/arcgis/arcgisserver/extensions/geoevent-extension

What Should I Do Next?

Your organization has moved to ArcGIS for Desktop 10.2.1 (or has the upgrade planned), and you know all about the capabilities of ArcGIS for Utilities having downloaded and worked with a couple of solutions from that site, so what should you do next? Though we strongly suggest that you stay with ArcGIS for Desktop 10.2.1, that doesn't mean you can't continue to take advantage of the continued advancements of other areas of the platform. ArcGIS for Server 10.3 has many excited new improvements including the inclusion of portal, new services for real time data and 3D, and a set of monitoring tools.



Mobile is an area of growing importance to utilities and telecoms as more organizations are moving away from performing updates and analysis only on desktops. To address mobile workflows Esri continues to iterate on the out of the box mobile applications of Collector, Explorer, and Dashboard (with new ones on the way), and the runtime SDK that partners and some organizations use to create their own mobile applications. In addition, much work is going into supporting the specific workflows of utilities and telecoms such as the ability to support entire coverage areas on a mobile device with regular updates to support emergency response situations. Look for more capabilities to come on line with the next few releases.

The Solutions team is also hard at work determining the maps and apps they should build next and make available on the ArcGIS for Utilities pages. Plans are underway to continue building on the foundational offerings as well as to provide additional solutions in areas such as customer care and emergency response. Continue to monitor the web sites and blogs around the solutions.

Keep in mind that the solutions are an excellent place to start your understanding of the platform, portal, and the capabilities that online brings you. These patterns are important as we move forward with new capabilities to make functionality available to everyone within your organization.

What is the Road Ahead?

Let's talk about the platform again. One of the main advantage of using portal to support your platform is it allows your organization to make all the data and capabilities of the GIS available to your whole organization through the centralized sharing of maps and applications. There is a lot of functionality organizations can and are making use of now. That being said, there are additional ways we can extend the platform to provide even more functionality. One example would be to make the network available everywhere users want access for update and analysis, including online and on mobile devices.

Esri is redesigning its Network Management core infrastructure from the ground up. ArcGIS Pro will the first out of the box client for the new network model.

This work continues to expand the capabilities and reach of the platform to allow utilities and telecoms to complete their work regardless of the platform or type of device they prefer to work on. To accomplish this, we are rethinking some of the core components with the following main goals in mind:

1. Improve overall performance and scalability
2. Reduce cost of ownership
3. Improve efficiency and productivity
4. Improve data quality
5. Improve enterprise interoperability

There are many business drivers for utility and telecom organizations. The platform helps provide the data and capabilities to address more of the business drivers than the typical data/asset management we have traditionally focused on. The network management project while expand the functionality that can be brought to bear on many of the key business drivers including:

- Data/Asset Management
    - Performance and scalability – optimize the data and transactional models to reduce the number of queries that have to be performed and the administrative overhead, while adding capabilities such as parallel and partial posting.
    - Data quality – Editing tools that understand the utility and telecom data models and enhanced QA/QC capabilities as part of the core model.
- Planning and Analysis
    - Expanded information model to include things such as phase, lifecycle, and source management.
    - Integration functionality to allow more seamless extraction of data and connectivity information for subsequent loading into external modeling and analysis packages such as OMS/DMS, etc.
- Field Mobility
    - Provide the ability to take the network out in the field for editing and tracing capabilities while offline.
    - Mobile applications and SDKs to allow managing of transactions in the field, including taking transactions offline.
- Operational Awareness
    - Alternative views of the network to support both geographic and schematic representations of the data.
    - Ability to override device status and run analysis in “normal” and “operational” modes depending on requirements.

In order to prepare well for this new network management capability, utilities must migrate to ArcGIS for Desktop version 10.2.1.

These are just some of the high points of the work being done for network management. Much more information will be made available as we get closer to the actual release. At this point, Esri is expecting to have an initial release of the utility network coinciding with the ArcGIS 10.4 and ArcGIS Pro 1.2 releases towards the end of 2015 or possibly in early 2016. The initial release will have a complete information model, but may have limitations on the transaction side that won’t be address till subsequent releases.

Summary

Here are the things you should do now:

- Deploy AGOL/Portal
    - Make use of patterns now: created named users, work with web maps, deploy applications, etc.
    - Download applications available through ArcGIS for Electric and Gas
    - Use the ArcGIS for Utilities maps and apps as a guide to your implementation
- Get to ArcGIS for Desktop 10.2.1 and keep up with patches
- Deploy the solutions available on solutions.arcgis.com

- Check out ArcGIS Pro
- Looks to integrate real time data
- Follow advancements across the platform
- Keep up to date with the announcements on the network management project.