Lithuania

ArcGIS Server Provides Foundation for National Spatial Data Infrastructure

CASE STUDY

CHALLENGE

- Connect major Lithuanian data providers into a united national spatial information infrastructure.

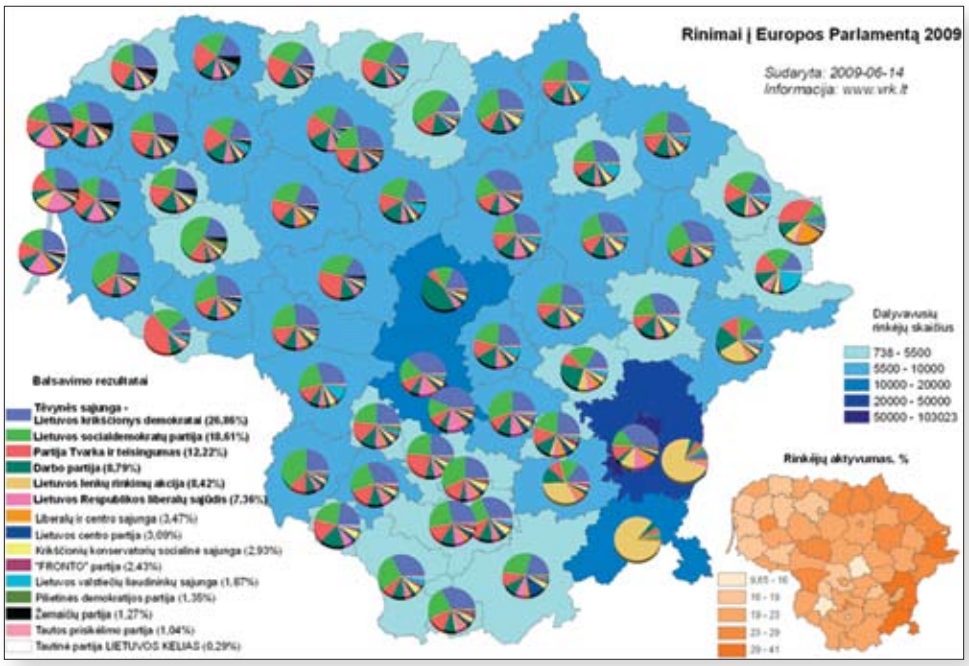
RESULTS

- Cost savings of €5 million from decreased data duplication and improved efficiency
- Time to search and collect data reduced by 40 percent
- Organizations ability to use national data easily for their own specific needs

Lithuania is the southernmost of the three Baltic States in northern Europe. The country boasts a well-developed modern infrastructure and a knowledge-based economy that specializes in fields such as biotechnology and information technology.

Challenge

Like many national governments, Lithuania's public organizations tend to collect geospatial information in isolation rather than with coordinated, open-data strategies. While Lithuanian agencies have amassed a wealth of spatial information, each agency creates and maintains its own data. This has created an environment of ad hoc data access and use. Administrators realized a harmonized data infrastructure for sharing and exchanging spatial data was necessary.



Solution

The Lithuanian Geographic Information Infrastructure (LGII) was created to connect major national spatial information providers into a spatial information infrastructure. LGII is an open, shared national spatial data infrastructure (SDI) for accessing and distributing geographic information products and services online. The solution connects major public-sector information sources through a single Internet portal (www.geoportal.lt) that was launched in 2009.

HNIT-BALTIC, UAB, Esri's Lithuanian distributor, worked with German firm con terra GmbH to create a system to effectively manage, integrate, and manipulate the multitude of diverse data layers and create a user-friendly front-end Web portal to view and distribute the data. The system is based on IBM's WebSphere® and ArcGIS® Server including the ArcGIS Server Geoportal extension. FME—a spatial extract, transform, and load (ETL) solution from Safe

SOFTWARE

- IBM® WebSphere
- Esri ArcGIS Server
- Esri ArcGIS Server Geoportal extension
- Safe Software ETL server (FME)
- con terra Security Manager and WPOS
- Microsoft Dynamics® NAV
- Microsoft Office Project Server
- Microsoft® Windows® Small Business Server and Customer Relationship Management (CRM)
- Oracle® RDBMS

Software Inc., based in Vancouver, British Columbia—provides the ability to translate, transform, integrate, and distribute spatial data so users can continue to work in their native GIS formats.

Data providers include 10 Lithuanian government institutions and enterprises that are connected by a centralized national metadata system and the federal geographic data system, which are based on a uniform reference data model and standards. Both systems conform to the Infrastructure for Spatial Information in Europe (INSPIRE) initiative.

Available anytime, users can access the LGII portal to discover data offerings and acquire whatever specific dataset they may need for their business tasks. Once in the system, the user simply selects the desired area from a map view, chooses the data layers required, and specifies the particular GIS output parameters by selecting from 18 different data formats and 10 coordinate systems. The selected data layers are compiled and exported in the requested format. The system then automatically sends an e-mail with a link to the data so it can be securely downloaded at the user's convenience.

Results

LGII has made geospatial information as mainstream and common as desktop business application software. Arranged in a distributed environment, the LGII's central spatial node now seamlessly connects the project partners' remote GIS nodes, opening up a two-way data pipe of spatial information to a host of users.

As intended, organizations across Lithuania are benefiting from the system, including academic institutions that access the portal to incorporate a variety of spatial data into their curriculum planning. Others include the fire service, which can now integrate data from LGII into its own geodatabase to better plan dispatch and response efforts. The forestry service uses LGII data as a backdrop to its forest cover maps and inventories. The State Service for Protected Areas is using LGII data to proactively plan protection strategies for future development. The Environmental Protection Agency is using the data for territorial planning and environmental projects.

"Before the LGII, GIS staff could spend 70 percent of their time just searching for or acquiring needed data that another agency often already had," explains Mindaugas Pazemys, deputy director, GIS-Centras. "By unifying the available data, we estimate that LGII reduces this search and collection time by 40 percent. That decreased duplication and improved efficiency equal a cost savings of nearly €5 million."

More streamlined and accurate data storage is also enabling GIS-Centras and other project partners to open their data holdings to the many private-sector organizations in Lithuania and, eventually, across Europe, creating a wealth of value-added data services opportunities.

"People in Lithuania have newfound knowledge now, and that knowledge is power," says Pazemys. "Rather than being consumed by trying to find data, public and private users can now focus on how to capitalize on that data and develop revenue-generating applications or services. That's working smarter and ultimately leads to economic growth."

FOR MORE INFORMATION

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