

CASE STUDY

Gothenburg needed a simple and efficient way to locate and manage their expansive public safety and utilities systems.



“MapInfo’s SpatialWare® database and mapping tools revolutionized our planning decisions, services, and security while saving us millions of dollars.”

Per-Åke Roupé, IT Manager, City Planning Authority, City of Gothenburg

Challenge

Gothenburg relied on a complex Computer-Aided Design (CAD) system that precluded all but highly trained engineers from using it for GIS purposes. To better serve citizens, businesses, and lower its costs, the city needed a simpler, more extensible GIS solution.

Solution

Gothenburg deployed a centralized GIS solution based on MapInfo’s SpatialWare technology. Augmented by MapInfo intranet and Internet mapping software, the solution is used citywide by departments, authorities, residents, and companies, and expedites planning and services while bolstering safety and lowering costs.

Summary

Company: A Tradition of Innovation and Commerce

Sweden’s largest trading gateway, Gothenburg has been a robust center of commerce since its founding in 1621. With its spacious harbor and strategic West Coast location, Gothenburg cultivated an entrepreneurial spirit that distinguished it among Swedish cities. Shipbuilders, engineers, and industrialists who flocked to the area all found a fertile environment to prosper and raise their families.

Today, Gothenburg remains a magnet for citizens and businesses alike. With close to 500,000 residents, the city is Sweden’s preeminent port, its second-largest municipality, and, according to a recent poll, one of the nation’s most desirable places to live. Swedish industrial giants such as Volvo, SAAB, and bearing manufacturer SKF all reside in Gothenburg, as well as prominent technology companies, including Ericsson, Hasselblad and Astra Hässle.

Challenge: Extending Entrepreneurial Excellence with E-Government

In true Gothenburg fashion, the city takes a highly entrepreneurial approach to government service. Gothenburg is the only shareholder in a handful of utility companies, such as Göteborg Energi AB, which provides electricity, heating and cooling to residents and businesses. The city also believes in using advanced technology to streamline the delivery of services and planning decisions, accelerate the resolution of day-to-day operational issues, and provide more effective public safety.

To achieve these goals, Gothenburg’s City Planning Authority was an early adopter of GIS technology. Using a computer-aided-design (CAD) system and aerial photos, the city built a library of three-dimensional

(3-D) spatial databases for its largest agencies, including Göteborg Energi AB, the Water and Sewage Department and its Street Cleaning Department. Although the system expedited officials’ ability to pinpoint locations of roads, buildings, and pipes, it was so complex only highly skilled engineers could use it. Training on the system often took months. Integrating alphanumerical databases—such as property data—was an arduous task, and the system was far too cumbersome to expand.

Instead, Gothenburg sought a centralized GIS system it could extend to every city department, company and authority, as well as citizens and area businesses. After surveying the marketplace, the city built a massive 3-D spatial data warehouse based on MapInfo SpatialWare and an Oracle7. The scalable solution features MapInfo’s powerful desktop mapping tool, MapInfo® Professional®, which lets the city combine data from myriad sources, formats, and projections in a single map window. It also relies on MapInfo® Discovery®, which gives intranet and Internet users access to MapInfo maps, and MapInfo technologies that support both desktop and mobile users.

Result

Groundbreaking Services + Safeguards

Driven by MapInfo SpatialWare, Gothenburg’s GIS solution is a model of efficiency that provides citywide users with a richer, more productive experience. Trained in just two days, engineers, planners, managers, and field workers in more than 30 departments use PCs, laptops, and Pocket PCs and MapInfo’s intranet and Internet mapping technologies to instantly visualize and analyze geographical data. Using aerial photos, alpha numerical databases, digital maps, and physical plans,

The MapInfo Advantage



Web Cameras + Maps Deliver

Gothenburg's MapInfo solution provides citizens with a number of remarkable web-based services. Using MapInfo Discovery, Internet users can simply visit <http://www.gis.goteborg.se/midiscovery/> to view maps with continuously updated information. The site lets them choose and view the latest information on when the next bus or tram will arrive at the stop closest to their homes or offices. It delivers views of public parking lots. It even provides a web camera enabling commuters to look by street at live pictures of city traffic.

"MapInfo allows us to do amazing things," concluded Roupé. "Things that make life easier and safer for our constituents and ultimately make Gothenburg a wonderful place to live and work."

"We believe we have created the most comprehensive spatial warehouse in Europe," said Per-Åke Roupé, IT Manager, Gothenburg City Planning Authority. "Our MapInfo solution drives virtually every planning and management decision and lets us provide a level of service and safety that rivals any city in the world."

MapInfo delivers lifelike 3-D views of the city to the smallest detail, including buildings, streets, zoning, pipes, cables, and more.

With all this location intelligence at its fingertips, the city is providing groundbreaking services, while making better, faster decisions at the right time that are saving millions of dollars, noted Roupé. Facilities planning for schools is a prime example. By mapping students per classroom, classroom capacities, and student populations per school district, Gothenburg can quickly forecast when students will exceed maximum values for any school and whether to construct new classrooms, build a new school, or realign the school district. The city employs similar methodologies to plan elder care housing, shopping malls, housing developments, and highways. It even uses MapInfo SpatialWare to pinpoint areas where Volvo and other companies can expand over five-to-10 year time frames.

The spatial database and MapInfo's mapping tools also permit Gothenburg to more cost-effectively maintain its water and sewage lines. Previously, the Water and Sewage Department had to comb through outdated paper maps to isolate a leak. Now, managers and maintenance staff use MapInfo Professional to quickly pinpoint trouble spots within decimetres. Buoyed by this success, many other departments and authorities are using MapInfo Professional on climate resistant laptops with LEICA-GPS. Field workers, for example, are able to identify and locate their designated work areas within centimetres, minimizing both the duration and costs of myriad projects.

Similarly, Göteborg Energi AB uses electronic maps of its power cables to streamline its maintenance, planning, and costs. Should a power outage occur, the agency turns to MapInfo Professional and MapXtreme® to quickly determine its source, impact, and length. It then swiftly informs affected residents and businesses. The agency also maps usage histories to more effectively support its network. The MapInfo solution even integrates the energy provider's CRM system, enabling it to view its district heating customer concentrations, identify its most highly valued prospects, and launch more strategic marketing campaigns to win new business.

Gothenburg's service to citizens and businesses is also much faster with MapInfo. The City Planning Authority, for instance, now provides feedback on building permit inquiries in two minutes compared to a half-hour when using manual processes. City employees using MapInfo Discovery for intranet access to zoning data can zoom and pan around maps to let constituents know if the purpose and dimensions of their proposed facilities conform to zoning regulations. "It even tells us when to cut the grass in the parks!" said Roupé.

The city also uses desktop mapping to more effectively fight crime. Working closely with Sweden's State Police, Gothenburg analyzes drug offenses, car thefts, assaults, and even zeroes-in on points of entry such as basements and attics in buildings where burglaries have been committed. Police leverage this information to assign patrols where they are needed most. Mapping crime histories in specific areas within a designated time frame enables detectives to view crime patterns that help them more rapidly apprehend offenders.

The city also uses MapInfo technology for web-based in combination with digital photos with voice messages for real time location of cars and personnel. Using GPS and pocket PCs, staff transfer data with GPRS to the central GIS and web server. The system is used for fleet management, maintenance of buildings, parks and streets, and for patrol duty.

"MapInfo offers us a universe of ways to better serve our community, and we shall continue to develop new applications," said Roupé. "The millions of dollars we're saving every year gives us an outstanding ROI that enhances what is already an invaluable investment in technology."

Offering/Solution: A Comprehensive Enterprise Solution

The City of Gothenburg relies on the following MapInfo products to serve its constituents:

MapInfo SpatialWare is a secure, relational 3-D database that lets Gothenburg integrate above and below-ground geographical information, such as sewage pipes, electrical cables, buildings, street details, zoning information, and more.

MapInfo Professional lets Gothenburg map SpatialWare data for city users. The system creates and maintains mapping data for city users, using street boundaries, aerial photography, and other geographical information.

MapInfo Discovery and MapXtreme enables Gothenburg to give thousands of users access to MapInfo Professional maps via the city's intranet and the Internet. The software also provides countless numbers of residents, businesses, and web surfers worldwide views of published maps city parking areas, traffic via the Internet, as well as live photographs of city streets.

MapInfo MapX® ensures that the PC users in the city's departments have full access to mapped spatial data.

MapInfo MapX® Mobile allows mobile users with Pocket PCs to view MapInfo maps. Field workers use the software to more rapidly locate objects for maintenance and damages.

"MapInfo's solution couldn't be more versatile and has performed flawlessly on our Windows desktops and mobile computers," said Roupé. "As a company, they always listen carefully to our needs and have always succeeded in meeting them."