

SAP Customer Success Story Public Sector – Urban Infrastructure Maintenance



“We no longer have to enter data twice, which dramatically reduces the error rate.”

Frank Peter, Acting Regional Manager, Civil Engineering Department,
City of Dortmund

AT A GLANCE

Organization

- Name: City of Dortmund, Germany (civil engineering department)
- Location: Dortmund, Germany
- Industry: Public sector
- Products and services: Urban infrastructure maintenance
- Employees: 8,893 (city)
- Web site: www.dortmund.de
- Implementation partner: Dortmunder Systemhaus

Challenges and Opportunities

- Reduction in process lead and response times
- More legally watertight documentation
- A more flexible organizational structure
- Minimization of error rate
- Greater time savings to improve the service offerings

Objectives

- Optimize the road-repair process
- Ensure cost transparency to avoid “make-or-buy” decisions
- Integrate people, information, and processes

SAP® Solution and Services

SAP NetWeaver® Mobile component

Implementation Highlights

- Embedding of online maps in SAP NetWeaver Mobile
- Integration of information about street dimensions and manhole covers in the electronic maps
- Implementation of mobile data entry using PDAs

Why SAP

- State-of-the-art functionality
- Easy integration with SAP® and non-SAP applications

Benefits

- Elimination of time-consuming, duplicate data entry
- Time savings, enabling more frequent damage checks
- Cost savings
- Option of adding photographs and comments to damage reports
- Map-based support, enabling accurate reporting
- Greater process security, thanks to electronic data transmission
- Legally watertight documentation of road damage and repairs

Existing Environment

SAP business software

CITY OF DORTMUND

Keeping Track of Potholes: Civil Engineering Department Combines PDAs and SAP NetWeaver® Mobile for More Effective Planning

As part of a drive to simplify processes and reduce costs, more and more government institutions are moving toward e-management. Dortmund, Germany’s municipal civil engineering department is no exception. In fact, managers work hard to ensure that the department’s various business units always have the very latest information technology for quick and easy collaboration. And everyone benefits: smooth operations in the office and out in the field means a better urban environment for the city’s inhabitants. Frank Peter, acting regional manager of Dortmund’s civil engineering department, comments, “Our mandate is to provide outstanding service quality – as quickly and cost-effectively as possible.”

A new solution developed by VAR Dortmunder Systemhaus – and which is based on the SAP NetWeaver® Mobile component – is helping Dortmund’s civil engineering department do just that.

Showing the Way with Electronic Maps

The German city’s civil engineering department has the job of managing and maintaining some 1,550 miles of roads and bike paths, 1,118 miles of drainage networks, 800 athletic fields and playgrounds, as well as extensive woodlands and parks across the city. Although public funding is sometimes limited, the needs of the city’s citizens must be taken into account. In addition, the civil engineering department is legally required to ensure driver and pedestrian safety at all times.

The city's traffic safety inspectors play a vital role in this task. They regularly check Dortmund's roads and paths for signs of wear and tear, drawing up detailed damage reports and repair requirements using their PDAs. These digital mobile devices contain electronic maps that give the inspectors all the information they need to find their way around the city quickly and easily. Until recently, however, the inspectors took to the streets with their arms full of maps, pens and paper, and a portable dictation machine.

“Because workers can generate more accurate damage reports, we've also been able to achieve significant reductions in the cost of performing vital repairs.”

Frank Peter, Acting Regional Manager, Civil Engineering Department, City of Dortmund

Peter recalls, “Even in the wind and pouring rain, our employees had to pull out their paper maps to pinpoint incidents of damage and then manually report information.” This involved sifting through a variety of forms and other materials to ensure that damage was documented as fully and accurately as possible.

This time-consuming process is now a thing of the past. Armed with their PDAs, the inspectors simply click to specify the exact location of the damage and enter the necessary information in an electronic report. They can also use their PDAs to take photographs and record comments. This function is vital in cases where information can only be reported from inside a vehicle.

Extending SAP® Functionality to the Field

Application developer Frank Brackmann from Dortmund Systemhaus describes one of the key challenges in building the new solution: “Our mission was to extend the civil engineering department's existing SAP functionality onto mobile devices. What proved particularly tricky was making the data available on the pocket PCs and dovetailing it with the geographical components. The finished solution, however, offers perfect interaction between a large number of SAP applications.”

He explains that maintenance data is managed in the SAP® ERP application and in the SAP plant maintenance and controlling software. While a Web-based interface and the SAP NetWeaver Portal component provide the appropriate data for the inspectors' office-based jobs, activities in the field are supported by the SAP NetWeaver Mobile component.

Direct Transmission to the Back-End Software

Data entered in the PDAs is transferred automatically to the central SAP ERP-based IT infrastructure using SAP NetWeaver Mobile. All the traffic safety inspectors have to do is synchronize their mobile devices with their office PCs. With the new technology, no vital information is lost and reports get to the appropriate parties – eliminating the possibility of errors that often occur with manual-based reporting. “We no longer have to enter data twice, which dramatically reduces the error rate,” comments Peter.

High-Quality Data

The city inspectors' PDAs are equipped with a digital map of the city, a global positioning system (GPS), and SAP NetWeaver Mobile. The digital map and associated software is integrated in the form of a service, so changes can be made easily. And, because the road network appears on the PDA display as a vector graph, inspectors can pinpoint any spot down to the nearest five meters. In addition, the PDAs also display street data. This is stored in a central database and includes information such as the width, length, and structure of roads and pathways. The system even shows the locations of manholes – all of which helps to ensure accuracy.



Streamlined Administrative Processes

Electronic forms stored in SAP NetWeaver Mobile ensure that the input data is standardized and can be transmitted smoothly to the back-end system. So, even as the inspectors are entering data in the field, the city's administrative staff can begin processing the information and alerting road-repair teams. Here's how it works: The inspectors enter the precise location of the damage, with all the necessary geographical details. They describe the type of damage and its scope and then prioritize the repair work. Finally, they specify the materials and services needed for making the repairs.

Administrative personnel then draw up work schedules for the repair teams. Precise geographic information helps the employees determine optimal repair routes. Administrative personnel can also easily calculate the time needed for each individual job and can call up each location with a single mouse click.

High-quality data is not only important for maintaining roads and pathways, it is critical if any legal disputes arise as a result of road damage; the City of Dortmund must be able to provide precise details of all repairs, including the exact time the work was completed. With SAP NetWeaver Mobile, city officials can ensure all information is watertight.

Once the work is done, inspectors return to the site in question and document the repair work.

A Significant Reduction in Workload

By combining SAP NetWeaver and digital technology, Dortmund's municipal civil engineering department has been able to reduce its workload significantly and improve its services – thanks to rapid data exchange and accurate information. “This was one of the key factors in choosing the new solution,” says Peter.

The regional manager goes on to explain that each inspector enters damage reports for about 20 to 40 cases per day. The process of manually entering data used to take between 30 minutes to one hour per incident. That's no longer true – the process has become far more efficient. In fact, the same number of inspectors can now monitor an additional 300 playgrounds in the same amount of time as before. Peter then adds, “Because workers can generate more accurate damage reports, we've also been able to achieve significant reductions in the cost of performing vital repairs.”

Looking to the Future

With SAP NetWeaver Mobile, the civil engineering department has taken a significant step toward meeting its business objectives. And, the benefits are clearly tangible: Time-savings and fewer errors mean more economical use of resources. In the near future, the department plans to make further enhancements. For example, workers will be able to transmit data from the site to the central IT infrastructure via universal mobile telecommunications system (UMTS) or wireless local area network (WLAN) technology in real time. Also on the list: introducing security features such as virtual private networks – or VPNs. Equipped with such an adaptable IT landscape, the City of Dortmund will have no trouble integrating new technologies. Peter comments, “We want to extend the use of the mobile solution to our road-repair teams so they can process repair orders remotely.” Dortmund also wants to provide PDAs to the unit that maintains the city's green areas – particularly the tree inspectors.

Dortmunder Systemhaus intends to offer its mobile SAP application to other municipal branches that require enterprise resource planning functions in the field. These include the finance department (for inventorying fixed assets) and the structural engineering department (for maintaining technical installations).

www.sap.com/contactsap

THE BEST-RUN BUSINESSES RUN SAP™



50 084 700 (07/05)

© 2007 by SAP AG. All rights reserved. SAP, R/3, mySAP, mySAP.com, xApps, xApp, SAP NetWeaver, Duet, PartnerEdge, and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and in several other countries all over the world. All other product and service names mentioned are the trademarks of their respective companies. Data contained in this document serves informational purposes only. National product specifications may vary.

These materials are subject to change without notice. These materials are provided by SAP AG and its affiliated companies ("SAP Group") for informational purposes only, without representation or warranty of any kind, and SAP Group shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP Group products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.