



New workplace strategy ensures best connections for WAGO worldwide

Mobile workstyle wherever you are, faster availability of new applications and improved performance in international branches: WAGO, a global vendor of electrical connection and automation technology, has taken digitization of the workplace to the next level with Citrix technologies.

In the beginning there's always an idea. When WAGO was founded in 1951, the aim was to find a secure alternative to the screw connection that had been used in connection technology up until then. As a result, the company developed the spring pressure clamping technology, which has subsequently become the industry standard. Whether in control cabinets or junction boxes, on mounting rails or in wiring ducts, it is impossible to imagine electrical engineering without WAGO's clamping and connection systems. In the 1990s the company set up a second successful arm with its Automation business area, which is today one of the leading international vendors of I/O systems, interface modules and power supplies to internationally leading vendors. WAGO employs a global workforce of more than 7,000 employees, approximately 2,000 of whom work in the head office in Minden, Westphalia, Germany. Around 1,000 employees develop, produce and test products at the second German logistics and production location in Sondershausen, Thuringia. In addition, today the company has subsidiaries and agencies on all the continents of the globe, as well as international production sites in Switzerland, Poland, the USA, China and India.

While WAGO continues to expand its global presence ever further, the IT services of the company continue to be controlled centrally from Minden. "The majority of our IT systems – from CRM solutions through ERP software to logistics applications – are operated from two datacenters here at our head office," says David Kreft, Head of Systems Management, Service Desk and Windows Development at WAGO. All major client applications are also provided centrally. WAGO has been using Citrix technology for many years to make business applications, such as Microsoft Office and SAP GUI, accessible to employees distributed world-wide in as simple a manner as possible. In addition, the company has installed Citrix XenApp farms in Germany, the USA and Japan and migrated around 80 standard and business line apps to the central server. Today up to around 4,800 employees in all areas of the company simultaneously access the applications in the Citrix environment.

Customer benefits

- Central delivery of applications and desktops for 7,000 users worldwide
- Secure access to IT resources with every device
- High reliability for the central services
- Efficient management of mobile devices, apps and data
- Improved performance and reduced bandwidth requirement in WAN

Citrix products

- Citrix Workspace Suite
- Citrix CloudBridge
- Citrix NetScaler

Desktop and application delivery 2.0

Around two years ago, WAGO developed a plan to strategically advance the concept for centralized application delivery. "The basic idea behind the initiative was to centralize more complex applications and to make more complete desktops available to our users via the datacenter," David Kreft says. "At the same time we wanted to optimize management of the infrastructure and the performance in branches. And finally, we also wanted to focus on the topic of mobility. Today we have to provide our employees with seamless access to all the necessary data and applications via smartphones and tablets as well."

It was quickly clear to the IT officers at WAGO that the new strategy had to be implemented using Citrix technologies. Citrix's Workspace Suite offers an integrated solution for creating more mobile workspaces for IT users. In addition to the tried-and-tested technologies for desktop and application virtualization, XenMobile offers a complete solution for Enterprise Mobility Management. Citrix's networking solutions were also of interest to WAGO. With CloudBridge and NetScaler, Citrix covers topics such as WAN optimization, load balancing and secure remote access.

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David Kreft, Head of Systems Management, Service Desk and Windows Development, WAGO Kontakttechnik



The IT consultancy and implementation specialist Makro Factory supported WAGO in planning and realizing this major project. According to David Kreft, the deciding factor in the choice of IT partner was Citrix's comprehensive competence in the areas of virtualization, mobility and networking, for one; for another, he says: “We were looking specifically for a partner that already had experience in connecting branches in China. Makro Factory was able to demonstrate several successful projects here.”

New strategies free up administrators

The first step for the project partners was to update the Citrix environment that was currently in use. The existing XenApp server farms were replaced by a new infrastructure based on the FlexCast architecture of XenApp/XenDesktop 7.6. This means that WAGO is now able to manage virtual desktops and virtual applications via a standardized environment. During the migration, the whole server infrastructure was virtualized with Microsoft Hyper-V, and the interaction with Microsoft System Center Configuration Manager (SCCM) was optimized.

In practice, this has made managing the infrastructure significantly easier for the system administrators. The provisioning technology from Citrix played a key role in this. All the virtual machines in the XenApp/XenDesktop environment currently boot from standardized images that are streamed through Citrix Provisioning Services to the server. Therefore, new applications and application updates only need to be installed in these master images. “Previously we'd often spend a whole weekend carrying out a release change on the XenApp server farm,” David Kreft recalls. “Now all we need is a reboot to update all the virtual machines to a unified, new level. This means we're also

able to provide current software releases considerably more frequently and at shorter notice for the company.”

Thanks to the technological advances in the environment, WAGO can now also provide multimedia applications and increasing numbers of complete user desktops via the datacenter. Therefore, fat client PCs are no longer needed at many workplaces, both in administration and production. Instead, WAGO has been able to replace them with low maintenance and energy efficient thin clients.

In a further project step, WAGO and Makro Factory realized a solution for secure remote access to applications and desktops. “Increasing numbers of users need access to business applications, even outside of the business premises, from salespeople to external engineers who work with us on software products,” explains David Kreft. “Using the Unified Gateway components from Citrix NetScaler, we can connect these users more simply and securely.” The login to the network is carried out via a web address that is protected by two-factor authentication. NetScaler then allocates the user with their applications and corresponding user rights and encrypts the entire communication with the datacenter. “The remote access also functions without the installation of client software via HTML5 and can, therefore, be used in every environment,” Jörn Günther, Senior Sales Manager at Makro Factory, explains.

The NetScaler appliances take on other tasks in the WAGO datacenter beyond remote access. The application delivery controller takes care of the load balancing for central services such as exchange servers and XenApp-/XenDesktop components. Thanks to intelligent load balancing of the application traffic, it is possible to guarantee that these applications will

remain available, even if one of the servers goes down, which is extremely important for a manufacturing company that operates on a 24/7 basis and, therefore, depends on fail-safe systems.

More freedom for users

Users at WAGO reap enormous benefits from the new technologies for a mobile digital workplace in their daily work. For example, with Citrix ShareFile, the IT organization has introduced a solution for exchanging and synchronizing documents between different endpoint devices. "This means that our salespeople always have a virtual briefcase with them when they meet clients, which means they can access current catalogues and product information using a tablet, for example," says David Kreft. "The integration of Outlook into ShareFile makes it possible for them to send the customer the documents they require even during the meeting and in the relevant language. Instead of producing mountains of paper we now manage all content digitally in a central library."

In future, WAGO will be using Citrix's enterprise mobility management system XenMobile for managing its roughly 700 company-owned tablets and 500 smartphones. The IT organization has opted for a holistic approach here that was worked out with the specialists from Makro Factory. Previously, the company used Blackberries as smartphones and equipped some employees with Apple iPads. The tablet servers were operated using SAP Afaria and various additional products. In future, WAGO will make only iOS devices available and will process the whole management of its mobile devices, apps and data via the Citrix solution.

In the past, testing applications that were used on the iPads was particularly time

consuming for the IT organization.

In collaboration with the TRUST IT TÜV (German Technical Inspection Association), the IT organization tested every individual mobile app for possible security risks before they were released for installation. Overall, more than 400 different applications were screened on around 70 criteria.

This enormous volume of testing becomes redundant with XenMobile. "In future, all business apps will run in protected containers on the end device and will connect with the datacenter via micro VPNs," David Kreft explains. "This means that there's no longer a risk for our network if the users install independent apps on their end device. Business and private data are strictly segregated from each other by XenMobile."

Implement business requirements more quickly

The WAN optimization solution Citrix CloudBridge is a key component in advanced workplace infrastructure. It ensures that employees who are in far-flung WAGO subsidiaries can still work efficiently with applications provided centrally. This solution, among others, was implemented in collaboration with Makro Factory for 300 users in China. CloudBridge's caching and compression technologies resulted in a considerable improvement in application performance there. Despite a network latency of 270 milliseconds, all the necessary applications now run without any delays. At the same time, it was possible to reduce the bandwidth requirement by 30 to 40 percent (depending on the application).

"Using these Citrix solutions, not only have we created the conditions for secure and productive work at all of our locations, but we can now react considerably more quickly to new business requirements," sums up David

Kreft. “Connecting new locations, rolling out software updates companywide or providing new IT applications for production – everything can now be realized in far less time than previously. Therefore, in the future we want to introduce further innovations for the digital workplace using Citrix technologies, such as virtualization of our CAD applications.”



The company

WAGO Kontakttechnik GmbH & Co KG is a third-generation family company operating independently in the marketplace with its headquarters in Minden, Westphalia, Germany. It is one of the leading international pioneers of electrical connection and automation technology. WAGO is the market leader in spring pressure clamping technology. WAGO employs a workforce of more than 7,000 worldwide, of which around 3,000 employees are in Germany. Recent sales amounted to 661 million Euro.

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Makro Factory is one of the leading IT strategy consultancies in Germany and also offers the requisite implementation expertise. Together with its customers, the company plans, realizes and manages complex IT projects in the areas of infrastructure, business solutions and service management. It was founded in 1995 by Peter Dittmar. Today, Makro Factory advises banks and insurance companies, datacenters and medium-sized companies as well as customers in industry and public administration. As an owner-managed company, Makro Factory takes particular pride in the quality of the solutions it develops for its customers as well as the high qualifications of its employees. This expertise can be seen in its status as a Citrix Platinum Solution Advisor, which Makro Factory has held since 2015. This traditional company has its central registered office in Karlsruhe, Germany as well as branches in Freiburg and Nuremberg.

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About Citrix

Citrix (NASDAQ:CTXS) is leading the transition to software-defining the workplace, uniting virtualization, mobility management, networking and SaaS solutions to enable new ways for businesses and people to work better. Citrix solutions power business mobility through secure, mobile workspaces that provide people with instant access to apps, desktops, data and communications on any device, over any network and cloud. With annual revenue in 2015 of \$3.28 billion, Citrix solutions are in use at more than 330,000 organizations and by over 100 million users globally. Learn more at www.citrix.com.

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