

## Legacy Systems

# Shutdowns are Part of the Strategy

Heterogeneous system landscapes lead to greater complexity and less transparency. Standardization and centralization are the strategic answer. In case of the Deutsche Telekom, that also includes the shutdown of legacy systems.

**G**lobal corporations are operating in an extremely dynamic market environment that is undergoing dramatic changes as a result of digitization. They are facing a difficult problem: their own IT landscape is both a curse and a blessing. A blessing, because corporate IT is becoming the central component of the company's own value chain and business model. A curse in turn, because in many cases, corporate IT is too heterogeneous to really be able to fulfill the strategic role imposed on it. This heterogeneity is not the result of past mistakes however. Rather, heterogeneity almost inevitably arises, especially when companies grow and operate internationally. New locations or acquisitions have long been synonymous with location-specific IT solutions and systems. In addition, local regulations have been and still are in place that require certain information, whether data or documents, to be stored within national borders. What applies to almost all international companies, particularly applies to Deutsche Telekom. With around 165 million mobile customers, 28.5 million fixed-network and 18.5 million broadband connections, the German-based group is one of the leading integrated telecommunications providers worldwide and operates in more than 50 countries around the globe. More than 218,000 employees outside Germany generated around two thirds of the Group's sales of 73.1 billion Euros in 2016.

## Complexity: The Gordian knot of the digital era

The complexity of global corporate structures is reflected in the corresponding complexity of the IT landscape – unless of course, IT takes a more strategic approach. The word “strategic” cannot be overemphasized in this context. Hav-

ing a strategy means you are planning for the long term and because strategy requires financial commitments. For both, the IT organization needs the full and active support of the Executive Board.

“Many companies are reluctant to tackle the historical and business-related overgrowth of IT. And for good reason: After all, this task is like solving the Gordian knot,” says Tibor Kosche, Vice President International Cloud Sales at T-Systems Data Migration Consulting (DMC), who is responsible for Deutsche Telekom's legacy systems shutdown project at DMC. “If you however want to conquer new lands in the age of digitization, you have to accept this challenge and change and simplify the IT landscape from scratch. To stick with the initial analogy: Alexander the Great, too, could not have gone on his triumphant campaign in Asia, if he had tried to loosen the Gordian knot slowly. Instead, he cut it in half with a single blow of his sword.”

Deutsche Telekom's IT organization took on this Herculean task in 2012 and won the full approval of the Group Board of Management for the project. In a multi-year project, which was given the meaningful name “One.ERP”, the three-digit number of ERP inventory systems was to be reduced to a single, central ERP solution.

Every ERP specialist knows that a simplification project like that is highly complicated. One of the trickiest tasks is finding an answer to the question of what should happen to the legacy systems once the data has been transferred to the new central system. “There are three basic answers to this question. First of all, the legacy systems can continue to be operated and maintained as long as information stored in them must be retained because of legal requirements. Secondly, the legacy systems can

be frozen in a kind of ‘time capsule’ as an app in a virtual environment, stored on a DVD or another data carrier and started up as required – also until the end of the obligation to retain the information in the system. Alternatively, separating the stored information from the original application with subsequently operating the extracted data and documents on a centralized platform is the third option,” explains Tibor Kosche.

## Centralization through historicization

Each of the three options comes with specific advantages and disadvantages. The simple continuation of operation is certainly the most costly, but programming errors and security gaps can be corrected and closed. When the old applications are put into a time capsule, the operating costs are practically zero, but programming errors and gaps are also frozen in time. Another risk is that any necessary system adjustments can also no longer be made. This problem must not be underestimated because legal requirements change over time or new ones are added – as was the case with the General Data Protection Regulation (GDPR) recently for example. Finally, in the third scenario, operating costs become a factor again. Although, these are considerably lower than the operating costs for the legacy systems. Everything depends on the functional scope of an information platform like that, in particular, the ability to extract all information from the legacy systems and connected document archives. That means: not only the data needs to be extracted, but also the documents that are stored in an SAP system, for example. This is the basic prerequisite for decommissioning the legacy systems. A second is to preserve the logic of transferred data and documents. Therefore, it makes more

sense in this context to speak of historicization – in contrast to classic archiving solutions, in which access to the archive still takes place via the original application.

Deutsche Telekom, more precisely: the Telekom IT - GHS/ERP Solutions division, examined all three variants in a comprehensive analysis. Costs only made up a part of the decision criteria because avoiding legal risks was just as important. Tibor Kosche sums up some additional considerations at the time: “Even though the shutdown of legacy systems and the implementation of a central information platform were conceptually best suited to the ‘One.ERP’ strategy, further questions still had to be answered: How is a central platform compatible with legal regulations on data location? Can data that requires special protection be stored in a highly encrypted form? Lastly, the German government is also one of the group’s customers, how does the concept of secrecy of telecommunications apply?” Difficulties were compounded by the fact that only a handful of providers can offer a solution for separating information and source systems. If a decision made in favor of one supplier should prove to be a mistake during the project, only a few alternatives would be available, while doubts existed if these alternatives were of equal value at all. The existing offers therefore had to be examined particularly thoroughly.

### Litmus test: acceptance

Ultimately, user acceptance is crucial for every IT project. It is not only about the agreement of those who work with the system-to-be-replaced on a daily basis, but also about those who only access it occasionally, for example internal or external auditors. The less hands-on practice you get, the more difficult it is to remember and relearn how a system works. Therefore, it is not only the technical, but above all the specialist know-how of the implementation partner that counts. “Only those who speak the language of the business users and can prove in support that they actually understand what they are talking about, can win over the experts from the business departments,” knows Tibor Kosche. “This ability is certainly one of the reasons why the initial and at the same time typical reluctance of users has given way to great satisfaction.”

Telekom IT - GHS/ERP Solutions, Detcon and T-Systems Data Migration Consulting have developed a standard procedure for deactivating IT applications

using the JiVS platform to transfer data and documents from legacy systems. An important part of this process is the definition of views for the display of historical information and data. These views need to reflect and retain the original business logic. In the standard system, SAP provides numerous standard views, of which only the read-only mode variants can be used for this purpose. After all, information that has been historicized must not be changed again afterwards. These SAP-specific views are also available in JiVS, so that only a few views developed in-house needed to be implemented within the project, which significantly reduced the project effort.

“To give you a general idea, we can use the standard views in JiVS to map 95 percent of the views that were pre-defined with the specialist departments. While a project for the retirement of a large IT application usually takes more than twelve months, we manage, with the help of largely automated data transfer, to complete the historicization of a legacy system’s data at Deutsche Telekom in six to eight weeks on average,” Tibor Kosche says confidently. The advantage of JiVS is that not only SAP ERP systems and applications can be shut down, but also those of other manufacturers and in-house developments. Deutsche Telekom has already made positive experiences with this functionality and has switched off individual solutions and IBM Optim.

To this day, Telekom IT has shut down well over 100 legacy systems. If the historicization of data was required, it was usually performed on the JiVS platform. The system retirement process model covers the complete shutdown procedure and is so successful, that it has been certified by the auditing and consulting company PWC. However, the project also passed the external litmus test in an audit by the local tax authority. It is important to note in this context, that some of the information that was requested by the auditors is not even stored at the implementation site of the central JiVS platform, but in local databases on site – wherever national laws require it to be.

These successes have also been positively received by the Group Management Board. The standard procedure for decommissioning legacy systems now has the fitting name “Retirement” and is part of the Telekom IT strategy. This enables the German-based com-

pany to reduce IT complexity and save operating costs that go into the tens of millions Euros each year. The volume of historicized data and documents is now in the upper two-digit terabyte range. “We expect to reach 100 TB by 2019,” adds Tibor Kosche. Nevertheless, the number of JiVS users is manageable with currently around 100 employees. Because access to the historicized information is rarely necessary, only a few users are granted corresponding rights for each department.

### Foundation for innovations and compliance

However, the business benefits of a centralized IT landscape go far beyond cost savings. Centralization, for example, allows processes to be largely standardized across departments and national borders. This not only increases transparency for the respective decision-makers, but also ensures and increases the quality of the individual processes.

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