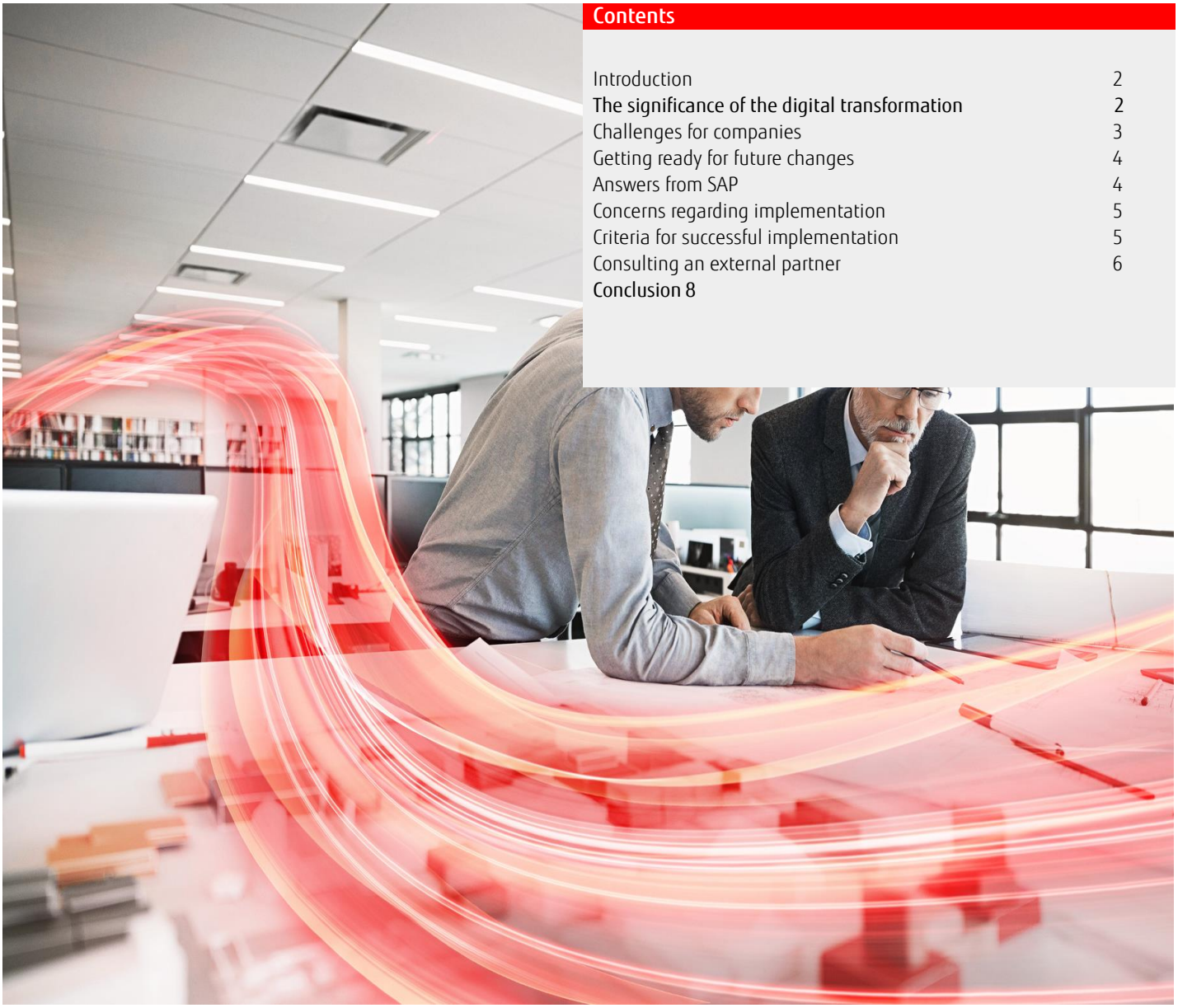
White paper
SAP HANA and SAP S/4HANA – The right steps towards a digital advantage

The digital transformation has created a number of new challenges for companies. How can these be successfully managed using SAP HANA and SAP S/4HANA? How can you benefit from an agile and process-spanning business platform? And how can this be accomplished?



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Introduction

Society, the economy and industry are undergoing a digital transformation. This digital transformation not only changes processes within companies at a rapid speed – sometimes with an uncertain outcome – but also entire business models. This has the effect of changing the requirements for the organization of the IT architecture, creating a need for solutions that can be flexible and quickly adapted to changing conditions.

SAP HANA and SAP S/4HANA address exactly these challenges and pave the way towards a successful creation of value in the digital economy. Rapid database technologies the consolidation of data and processes on one platform considerably simplify business processes and depict them across systems. This provides companies with a new "look" at their data and processes.

A study conducted by analyst firm Pierre Audoin Consultants (PAC) in 2015 investigated the relevance of SAP S/4HANA for German companies, possible application scenarios and operating models and took a look at the main challenges and strategies. The results of the PAC study (see box) confirm both the high level of confidence and the high expectations that companies have with regards to SAP S/4HANA. At the same time, there is also uncertainty, particularly about the best way to introduce and use SAP HANA and SAP S/4HANA and how companies can derive the maximum added value out of these solutions.

This white paper offers helpful answers to the questions: How can SAP HANA and SAP S/4HANA be implemented successfully? Which strategies and approaches are useful in this context? What exactly will the new technology change – both with regards to individual users and the entire value chain?

PAC Studie

- Sixty-two percent of companies surveyed are convinced that every SAP customer will have to implement S/4HANA sooner or later.
- Forty-three percent believe that the solution offers concrete advantages compared to previous SAP applications.
- Ninety percent are observing improved performance in data analysis and SAP-supported processes.
- Fifty-five percent confirm the improved user friendliness of the SAP applications, and half of those surveyed believe that back-end processes are more efficient.

Source: Pierre Audoin Consultants

The significance of the digital transformation

The PAC study shows: the majority of those surveyed confirm the strategic importance of SAP HANA and SAP S/4HANA, against the background of the digital transformation. The changes taking place as a result of the digital transformation are enormous: the rapid increase in digital Internet-based technologies gives rise to entirely new opportunities. These also include the so-called SMACT applications – Social, Mobile, Analytics, Cloud and Internet of Things (IoT). They open up new opportunities for companies, but also new challenges. Both will be discussed briefly below.

New communication and sales channels

The growing importance of social media provides companies with new channels for communicating with target groups and distributing products or services. Customers are increasingly relying on mobile devices such as smartphones and tablets, which must display the entire range of products and services offered by the company. In addition, customers want to use these devices to interact with the company online. Many devices and hardware components exchange data, be connected to the Internet and to each other (Internet of Things). Companies therefore require a powerful IT system that allows them to leverage all of the associated potential benefits.

Creation of huge data volumes

All of the technologies and applications associated with the digitization process have one thing in common – their use results in enormous volumes of sometimes unstructured data (big data). For example, users on social media portals provide information about their person or create content through evaluations, reviews or comments (user-generated content). In addition, users, by merely visiting websites and clicking on items, leave traces that can be used to draw conclusions about their purchase patterns and product preferences. The application of IoT technologies also produces a large amount of data and information about users. For example, control modules for heating systems that are managed over the Internet collect the temperature values of the various residential units and store the information in the providers' databases. New opportunities result if these large and diversified data volumes can be analyzed and harnessed in real time.

Disruptive business models are penetrating the market

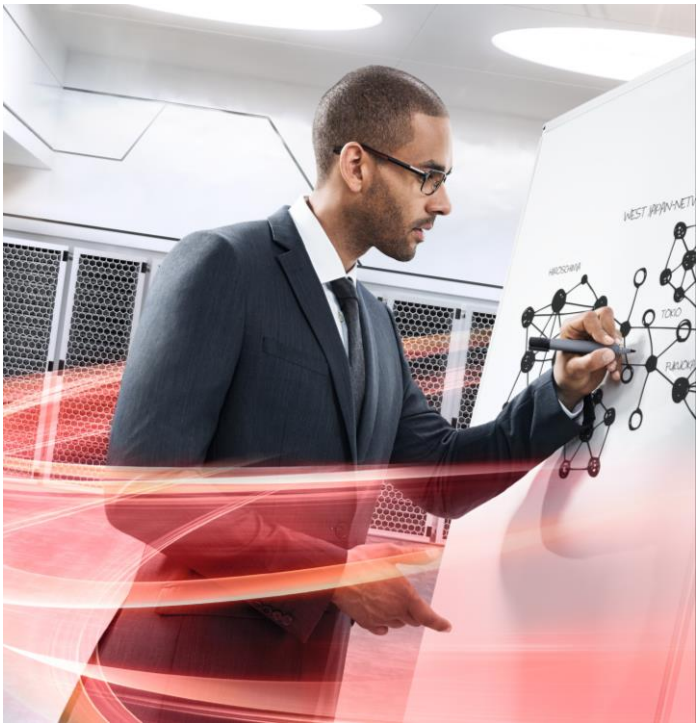
The digital transformation gives rise to a myriad of new opportunities that are changing or questioning the business of existing companies, as well as paving the way for entirely new business models. For example, the all-encompassing offerings of online mail order dealers are changing the buying behavior of many consumers. Store-based retailers must respond to this development by adjusting their services accordingly. In addition,

new disruptive business models are penetrating the market. They include online-based platforms for booking rooms or taxi services. These new business models offer customers more cost-effective, convenient and time-saving solutions than established competitors. To survive in such a an environment, companies must review their existing processes and structures.

Digital transformation

The digital transformation is the driver behind the fundamental changes that are taking place in society, the economy and industry. Typical factors are:

- New Internet-based technologies and applications
- SMACT – Social, Mobile, Analytics, Cloud, Internet of Things
- New communication and sales channels
- Changing customer behavior, "always on"
- Shorter product cycles
- Availability of real-time data
- Disruptive business models
- Creation of large volumes of unstructured data
- Advantages from the comprehensive analysis and evaluation of the data



Challenges for companies

The processes in companies will undergo a fundamental shift as a result of digitization, and data flows will become more agile. Companies therefore need more flexible processes that can be quickly adapted to new requirements. But at this time, many companies, departments and employees still have not created the foundation for this new environment. They manage processes and information in separate silos, which hinders the consistency of processes and the ability to obtain a total overview of the company. Moreover, numerous "shadow processes" have often been established in practice. This means that originally defined processes have been changed – usually extended – for example to bypass bottlenecks. Frequently there is a lack of integration and transparency of processes and data in the entire company.

Added to this is the increasing level of complexity, particularly at the reporting level. New regulations also increase the legal requirements for reporting. As a result of the exponential growth in data volumes, companies are finding it difficult to analyze and evaluate this data, which makes the preparation of reports even more difficult.

Requirements for IT

IT departments must provide a suitable response to the new challenges and offer well-thought-out solutions. For example, it is important that license management is optimized and internal system environments are simplified, thereby making it easier to free up resources for innovations. Those in charge of IT must also ensure the consistency of systems and processes to avoid breaks.

Another challenge: both internal and external customers expect a full user experience when it comes to IT applications. But the reality often looks very different because front ends and user interfaces are not up to date. The underlying processes are not flexible enough to generate a proper and rapid response to user requirements.

Moreover, many IT teams have the difficult task of supporting and quickly implementing new and sometimes disruptive business models. This is often impossible using the software systems currently installed at the company, and a comprehensive reorganization of the entire software architecture is required.

A new implementation is always accompanied by the question of how customized in-house developments and legacy applications should be handled. Can they be seamlessly integrated into the existing system environment? How can conventional standards be used in this respect? These are the types of questions frequently encountered by external implementation partners.

The challenges at a glance

The classic digitization challenges faced by companies and their IT staff are as follows:

- Rigid processes that prevent a fast response to changing requirements
- IT support and rapid implementation of new business models
- Complexity of reporting
- Problems during the analysis and evaluation of data
- Lack of integration and transparency of processes and data in the entire company
- Optimization of license management
- Simplification of system environments
- Consistency of systems and processes
- Avoidance of breaks
- Considerable demands on user experience by users and customers
- Outdated front ends and user interfaces
- Handling of customized developments and legacy applications
- Adequate use of conventional standards

Getting ready for future changes

The digital transformation will require more fundamental innovations of structures and processes in organizations in the coming years. These changes cannot even be foreseen at this point. However to remain competitive, it is extremely important to be prepared for that day. Therefore many companies are asking themselves:

- How can we make business processes and the required IT systems ready for the digital transformation?
- What does the move toward a performing system architecture look like?

Most companies are overwhelmed with questions such as these. They either have not thought about them at all or are satisfied with selected insular solutions. Some of them have not developed a viable concept or consistent road map for managing the challenges.

Answers from SAP

SAP delivers the right answers and solutions to these questions. SAP HANA and SAP S/4HANA are virtually predestined for addressing the challenges posed by the digital transformation.

SAP HANA

With the introduction of HANA (**H**igh Performance **An**alytic **A**ppliance) in 2010, SAP was the first provider to offer a development platform for software applications with databases based on in-memory technology. In contrast to conventional databases, the platform uses the computer's RAM – and not the hard drive – to store data. The CPU can access this memory much faster than the hard drive, resulting in the enormous speed of in-memory technology. It means that compared to relational database applications, these solutions can be used to search through, analyze and evaluate very large volumes of unstructured data (big data) with better performance and virtually in real time. Another factor is that all internal and external data is now contained in one single database.

This speed gives rise to the many advantages offered by SAP HANA. Thanks to the considerable analysis performance, relevant information and insights can be quickly extracted from big data, which the company can use to its advantage. Thus SAP HANA is the ideal technology for successfully managing the enormous data volumes resulting from the digitization process. Now reporting can be accelerated, and the quality of the results is also significantly improved. In this way, management is able to make the right strategic business decisions on the basis of sound insights.

Predictive analytics

Another advantage: SAP HANA allows for predictive analyses. Now reliable forecasts may be made about future events based on the analysis of large data volumes in real time. This results in many possible applications for marketing and sales purposes. One example: when visiting a website, users leave information about their interests and product preferences. This data offers a lot of potential. If it is comprehensively analyzed, companies can calculate probabilities about which products users will buy in the future. Now the provider can not only keep certain items in stock, but also design products according to the specific requests of their client base in the future.

Overview of SAP HANA advantages

- Use of high-performance in-memory technology
- High-speed analysis and evaluation of very large volumes of unstructured data
- Ability to manage the exponentially growing data volumes resulting from the digitization process
- Acceleration of reporting and qualitative improvements in results
- Strategic business decisions based on sound insights
- Predictive analyses and reliable forecasts about future events
- Uniform view of information, doing away with data silos

SAP S/4HANA

SAP S/4HANA may be viewed as the consistent enhancement of SAP HANA. Based on the superior in-memory database technology, SAP introduced S/4HANA in 2015, a comprehensive next-generation real-time ERP suite. The product suite paves the way to immediate digital creation of value in all business divisions and at companies of all industries and sizes. SAP S/4HANA is designed in such a way that it can be operated on an on-premise basis at the company or through the Cloud. Using the apps from the SAP Fiori product line, users can personalize their user interface and flexibly access applications through a variety of devices such as smartphones and tablets.

The great advantage of SAP S/4HANA is the process-spanning platform which channels, consolidates and simplifies all of the processes in the company. While traditional ERP systems often file redundant documents and other data, SAP S/4HANA uses a centralized storage system. This prevents breaks and provides users with an overview of the entire process, enabling them to work in a process-oriented rather than transaction-related manner – as is the case with conventional ERP solutions.

Reducing coordination requirements in financial accounting

One example: in financial accounting and controlling, the use of centrally stored documents can significantly reduce coordination requirements, resulting in cost savings. Direct access to source documents also offers considerable flexibility for the preparation of queries, which means that, for example new business ideas can now be analyzed more quickly. In addition, users benefit from the flexible and customizable graphical user interface (GUI). They can now use a conventional Internet browser to access all applications, independent of device and location. In this way, SAP S/4HANA can be used to implement agile business processes for managing the digital transformation.

Overview of SAP S/4HANA advantages

- Implementation of agile business processes to manage the digital transformation
- Process-spanning platform for consolidating and simplifying all processes in the company
- Consolidation of all relevant data and processes in one system
- Prevention of system breaks
- Opportunity for process-oriented work
- Reduction in coordination requirements, resulting in cost savings
- Flexible, customizable user interface
- Mobile, browser-based access to all applications, using a variety of devices
- Optional on-premise operation or flexible access through the cloud

Concerns regarding implementation

Many companies have long recognized the numerous advantages offered by SAP HANA and SAP S/4HANA and have put the implementation of such systems on their to-do lists. This is also confirmed by the results from the previously mentioned study conducted by Pierre Audoin Consultants in 2015. Nevertheless, IT managers and decision-makers still have concerns regarding the implementation of SAP HANA or SAP S/4HANA. In the PAC study, 78 percent of companies surveyed indicated that the requirements for migrating to SAP S/4HANA are difficult to estimate. A similar percentage of study participants complained about the lack of business cases needed to justify the required investments. And 76 percent of those surveyed believe that the costs for new software licenses are simply too high.

Criteria for successful implementation

How can companies do away with these concerns and benefit from SAP HANA or SAP S/4HANA without restrictions? First of all, they must consider whether a complete migration to SAP HANA or SAP S/4HANA is even required at this time. It is possible that it would make more sense, given the current conditions, to gradually get the departments involved ready for the digital transformation, for example by outsourcing certain processes or migrating an existing business management system to SAP HANA. This can be followed by additional measures in the direction of digital process optimization.
It is only at the next step that companies must ask themselves how the systems can be introduced professionally, with a high probability of success and reasonable efforts and costs. IT managers are well advised to use an approach consisting of

careful planning, well-thought-out strategies and gradual implementation:

Step 1: Performing a process analysis

A sound analysis of the existing business processes at the company should be the starting point of any SAP HANA or SAP S/4HANA implementation project. Therefore the status quo must be determined on the basis of the following questions:

- What exactly are the internal processes in the business?
- How are they implemented in practice?
- What bottlenecks/difficulties arise?
- Do the employees even recognize them as such? Or have temporary solutions already become routine?
- Which types of risks arise daily due to process errors?

It is important that the stock-taking process is honest and comprehensive, for example in the form of audits with managing employees and supported by process mining tools. In this way, the status quo can not only be analyzed but also visualized. Additional factors must also be considered:

- Release status of the SAP systems
- Code structure of existing database systems
- Status of the operating systems and applications, e.g. MS Windows
- What types of in-house developments are there?
- Does the company work with an old or new general ledger?

Step 2: Defining objectives

The second step defines the destination of the journey: using the problems identified in the first step, it must now be discussed where the potential for improvement lies and what the ideal target state that is to be achieved with the introduction of SAP HANA or SAP S/4HANA, looks like. Which key performance indicators can be used to measure the desired successful outcomes? The definition of targets also requires precise deadlines: by what date should the introduction of SAP HANA or SAP S/4HANA be completed? And by when should the corresponding process improvements take effect?

Step 3: Defining a strategy

Once the objectives are clear, the company must develop a strategy to realize the intended outcomes. To this end, it is important to discuss how SAP HANA or SAP S/4HANA can contribute to improving processes and consistently aligning them to the defined objectives. This must include an investigation as to the concrete integration and optimum use of SAP HANA and SAP S/4HANA and the required preparations.

Step 4: Developing a road map

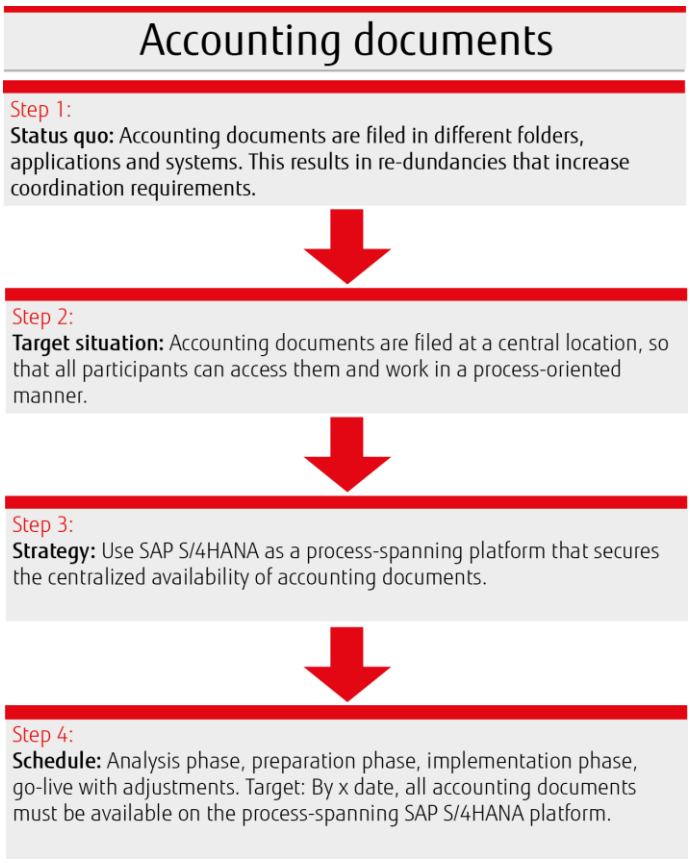
Once the strategic deliberations have been completed, it is possible to develop a concrete road map that describes the various implementation steps. This requires the definition of clear deadlines, hence a chronology of the intended progress of the project, such as specific information as to when e.g. the analysis phase must be completed, which preparatory activities are required (e.g. data migrations), when can the implementation begin and by what date are the improved processes supposed to take effect.

Consulting an external partner

Many companies are not able to implement the recommended processes on their own. They do not have the internal resources that are required for a successful implementation process. Frequently they lack the know-how or the time – or both. And often it is not worth acquiring the complete know-how for a one-time migration. Therefore companies are well advised to consult a professional external partner when implementing SAP HANA or SAP S/4HANA.

Most companies use external services

This recommendation is also confirmed by the results of the previously mentioned PAC study: accordingly, 72 percent of companies surveyed use external IT consulting or migration services when implementing SAP S/4HANA. In this vein, 62 percent prefer the so-called "Brownfield" approach, hence the gradual migration of existing SAP systems. A large majority of those surveyed put a lot of stock in one skill in particular: 89 percent indicated that the SAP partner must be able to communicate innovations in SAP S/4HANA to the IT department and also to the business.



Process/4 – the secure way to SAP HANA and SAP S/4HANA

With Process/4, Fujitsu offers valuable support for the introduction of SAP HANA or SAP S/4HANA. In line with a consistent all-in-one package, the IT partner supplies all services required for a successful project from one source. This process begins with a fact-based process analysis, the so-called process mining, and ends with the hardware. Fujitsu thus offers one-stop end-to-end services made in Germany.

The most important criteria for a successful implementation process are developed together with the customer in several analysis workshops on issues such as the added value of SAP S/4HANA, starting processes and code assessment. The experts from Fujitsu also provide advice for the conceptualization of a high-end IT architecture as the basis for the stable operation of SAP HANA or SAP S/4HANA and neighboring systems. Important: not just SAP processes but also processes outside of SAP are captured and evaluated.

In addition, Fujitsu provides support services for preparatory activities, for example with Unicode migration and customer-specific adjustments. The implementation of Fiori apps provides user-friendly and flexible customization and mobile, browser-based access to all applications in SAP S/4HANA. Finally, Fujitsu also supports the entire change management process with intensive coaching.

Transparent visualization of processes

Key performance indicators for the implementation of processes can be visualized in a transparent fashion using the Process Value Discovery Dashboard developed by Fujitsu. It depicts currently running processes, process errors, expected costs due to process errors, compliance with processes in a 12-month overview, current compliance with processes in percent and a monetary comparison of process risks. Thus companies always have access to all important process indicators at a glance.

Extensive SAP experience

Fujitsu has the experience of several hundred successful SAP HANA projects. During the implementation of SAP HANA or SAP S/4HANA, the service provider displays flexibility when it comes to assisting companies with the services that they actually need. This means that solutions are always tailored to the company's individual starting situation. A distinction is made between the following different constellations:

- The company does not currently operate a SAP solution.
- The company has been using a traditional SAP ERP system (without HANA technology).
- The customer already has some experience with SAP HANA, e.g. has already migrated the SAP business management system to SAP HANA.

Addition to SAP Activate

With Process/4, Fujitsu has added valuable functions for process analysis to SAP Activate, the project acceleration tool for implementing SAP S/4HANA, with a focus on the entire system environment. Process/4 is an integrated methodology for introducing SAP HANA and SAP S/4HANA.

Fujitsu services at a glance

Fujitsu offers its customers an integrated service package for the introduction of SAP HANA or SAP S/4HANA. It consists of:

- Process mining
- Analysis workshops
- Development of a high-level IT architecture
- Implementation of the Process Value Discovery Dashboard
- Preparatory activities (e.g. Unicode migration)
- Customer-specific adjustments
- Migration to HANA
- Implementation of Fiori apps
- Migration to S/4HANA
- Support of the change management process with coaching
- Addition to SAP Activate

Conclusion

Fundamental changes occurring in the economy and society, such as the digital transformation, are forcing companies to act. They must create a flexible IT architecture and adapt it to the new requirements. SAP HANA and SAP S/4HANA are virtually predestined for this purpose. The solutions simplify processes and depict them across systems. At the same time, the introduction of SAP HANA and SAP S/4HANA is also characterized by pitfalls that can overwhelm companies that do not have much experience with the technology, creating a situation in which the implementation project quickly falters.

Therefore, companies should adopt a strategic approach and carefully plan and carry out the various implementation steps with purpose. It is recommended to first analyze processes, define objectives and strategies and develop a detailed road map. In that context, it may be helpful to consult an experienced external partner, who initially takes on an advisory role and analyzes whether a complete migration to SAP HANA or SAP S/4HANA is even required at this time.

If the answer to that question is yes, the partner can provide concrete support during the implementation process and contribute his know-how to a successful project. With Process/4, Fujitsu offers an integrated approach that companies can use to establish a high-performance infrastructure and application environment on the basis of SAP HANA and SAP S/4HANA.

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