WHITE PAPER

How LeanIX Helps with SAP S/4HANA Migration

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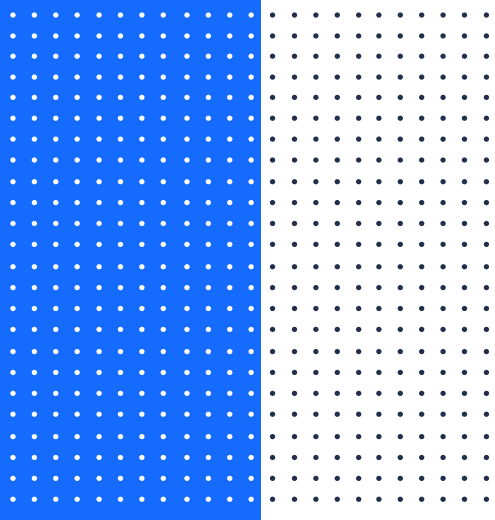

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Introduction

SAP S/4HANA is a critical piece of an enterprise's broader business and technology strategies and a key piece of its digital transformation strategy. However, although more organizations are making strides toward S/4HANA migrations, they may be greatly underestimating the complexity of the move. This leads to overly aggressive and unrealistic timelines, often resulting in a budget overspend.

That's where enterprise architecture (EA) tools come in. EA tools can help you successfully migrate your legacy ERP system to SAP S/4HANA. Professional enterprise architecture tools support the capturing of the as-is landscape, define the target architecture, and plan the transformation roadmap.

LeanIX offers a software-as-a-service (SaaS) platform for enterprise architecture that enables you to make better, faster, data-driven decisions and helps you develop your SAP S/4HANA migration roadmap.

This white paper will:

- **Explain the importance of migrating to SAP S/4HANA**
- **Describe the complexity involved with such an ERP transformation**
- **Review SAP S/4HANA migration approaches**
- **Explain how enterprise architecture management with LeanIX can help you successfully transition to SAP S/4HANA**

Importance of Migrating to SAP S/4HANA

To succeed in today's increasingly competitive business world, it's critical to have an enterprise resourcing planning (ERP) system that works for your organization. To be a leader in your industry, enable employees to work as productively as possible, and achieve desired results, you have to implement an ERP system that can adapt to changing business needs, customer demands, and technology innovations.

The problem is that many companies are still running legacy ERP systems that are outdated and running on technologies that aren't being developed any longer and/or whose vendors are no longer supporting them. An obsolete system limits your ability to make sound business decisions.

Rather than having comprehensive and timely insight into operations, you're not able to gather and analyze the critical information you need to maximize business value and avoid costly pitfalls. Consequently, it's becoming more and more complex to maintain legacy ERP systems or integrate them with other necessary business systems. In addition, some vendors are ending support for their legacy ERP systems and that means you'll no longer receive any updates, security or otherwise.

Case in point: support for SAP ECC (ERP Central Component) is ending in 2027 for customers buying standard support, or until 2030 for customers that purchase extended support contracts. SAP ECC 6.0 is the latest version of the ERP.

Make the move sooner, rather than later

Since SAP will be ending support for SAP ECC, enterprises would do well to migrate to SAP S/4HANA sooner rather than later. Additionally, the need for enterprises to harmonize their IT environments can be a strong driver for migrating off of a legacy ERP system into future-proof solutions, such as SAP S/4HANA.

Based on its in-memory database technology, SAP S/4HANA provides customers with improved integration with edge applications in the cloud, increased access to real-time data, and new possibilities for incorporating the latest use cases in such areas as machine learning, analytics, and Internet of Things (IoT).

As well as improved analysis and reporting, different deployment options (on-premise, cloud, or hybrid model), and a high degree of integration, SAP S/4HANA enables the digital mapping of all end-to-end processes. This creates an important basis to help you optimize your business processes and further evolve your business model to capitalize on growth opportunities.

Key migration drivers

For a large number of organizations, the decision to migrate to SAP S/4HANA is a critical aspect of their broader business and technology efforts. This indicates that customers no longer view SAP as just a system of record, but as an integral piece of their overall digital transformation strategies.

The support of innovative business models is one of the key business drivers for migrating to SAP S/4HANA. This means that the ERP system is no longer merely playing a supportive role, but actively contributing to the organization's strategic direction and driving innovation. SAP S/4HANA can deliver such innovative technologies as predictive maintenance and advanced business analytics to help customers on their digital transformation journeys.

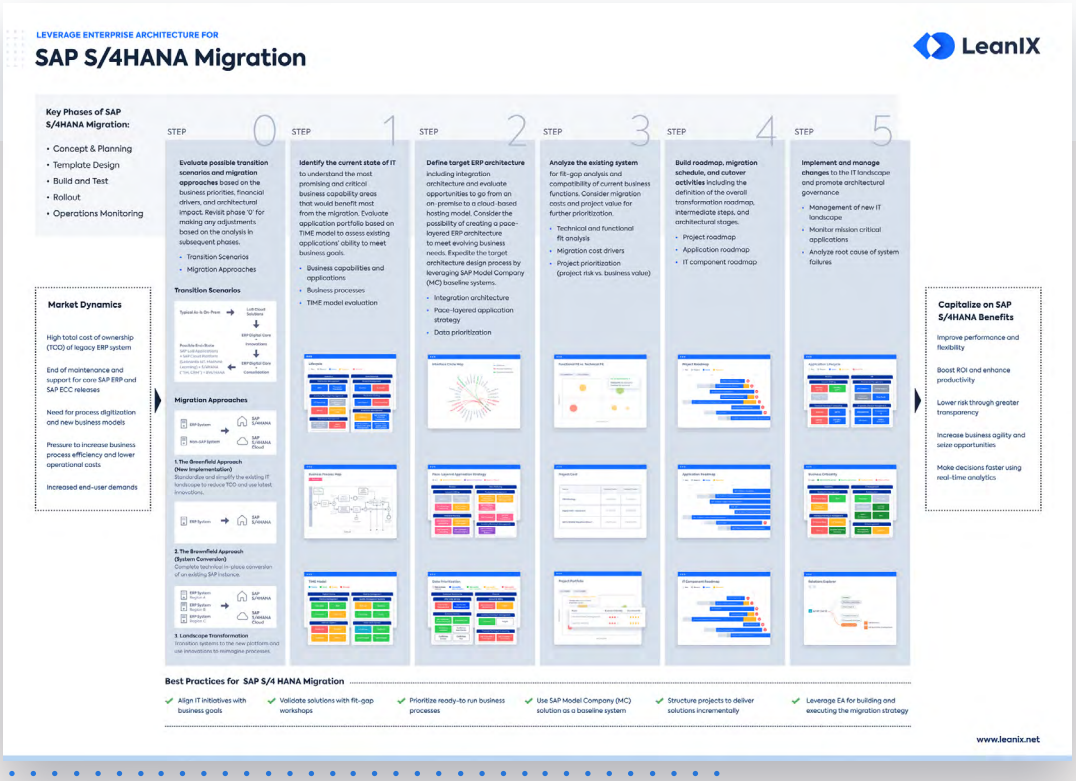
Building the transformation roadmap

To take advantage of the benefits of SAP S/4HANA, organizations have to develop well-prepared and well-thought-out migration plans, and pull in enterprise architects to help execute on them. Otherwise, the high complexity of such migrations causes difficulties in project planning and quickly results in excessively large project budgets.

LeanIX created a poster that shows how, by leveraging enterprise architecture, stakeholders can reduce risk, save time and money, and accelerate innovation. See Figure 1 and click the link to download your free copy.

Figure 1

Leverage EA for SAP S/4HANA Migration



Get your free poster.

At a high level, enterprise architects typically decide between the greenfield approach and the brownfield approach to migrating from their companies' versions of SAP ECC to SAP S/4HANA.

Greenfield Approach

Clean slate
Lower TCOs
Flexibility

—

Significant time
High risk

Brownfield Approach

Upgrade
Maintain customization
Shorter project runtime

—

Can stifle innovation
On-premise only

Hybrid Deployment

Select best of both options
Mitigate risk
Custom redesign

—

Third-party tool needed

Greenfield, Brownfield or Hybrid?

In general, there are two options to approach an SAP S/4HANA migration: the greenfield approach, which is starting from scratch, or upgrading SAP ECC 6.0 in a brownfield approach, which allows the migration without re-implementation and without disrupting existing business processes.

The main advantage of a greenfield migration is that the transformation starts with a new system, providing the flexibility to drive such topics as standardization and simplification in addition to the migration itself.

Another possibility with a greenfield approach is called "selective greenfield," selectively starting with a blank slate in some areas so you can simplify processes, integrations, and custom code.

Some organizations opt for a hybrid approach, which lets you choose the best parts of greenfield and brownfield implementations. This approach is best for large enterprises with a lot of data and complex systems.

The majority of companies opt for either a brownfield approach or a selective greenfield approach as they are reluctant to rebuild their heavily customized SAP environments as required with a total greenfield approach.

The key advantage of brownfield is that project runtimes are typically shorter. That means less disruption to your business. With a brownfield approach, you can migrate to SAP S/4HANA without a new implementation and without disrupting your existing processes. You can build on the existing components of your SAP landscape, such as interfaces to suppliers and partners.

The brownfield approach allows you to complete the migration to SAP S/4HANA in stages, enabling you to secure your existing customization and ongoing improvements However, a brownfield migration is still

complex and as such requires good master data quality. Brownfield deployments can also be complicated because any new software architecture must take into consideration, and coexist with, systems already in place to enhance existing functionality or capability.

But no matter where you start, your SAP S/4HANA migration needs the right structure and methodology. SAP has fully aligned its vision for SAP S/4HANA with the concept of postmodern ERP, an approach where organizations integrate best-of-breed solutions (typically cloud-based) with their ERP systems rather than rely on one system and one vendor.

Regardless of the option you select, you have to involve your enterprise architects in decisions about your migration approach. Your enterprise architecture group can help the business answer questions, including: How good is the master data quality? How many interfaces need to be considered? How high is the level of customization? It's important to take a measured approach to ensure that the transformation is done in the best way possible for your business, so value is maximized.

Another key architectural decision many enterprise architects face in an SAP S/4HANA migration is whether to implement HANA Enterprise Cloud or continue to operate SAP in an on-premise environment.

From Monolithic Megasuite to Postmodern ERP

In the not-so-distant past, the world of enterprise resource planning was inhabited by the monolithic megasuite: one solution – typically heavily customized – from one vendor running in the customer's datacenter. And as such, the customer did not have to make any difficult architecture choices.

But times have changed and the monolithic ERP megasuite is going the way of the dinosaur, replaced by the postmodern approach, where an ERP system, such as SAP S/4HANA, acts as the digital core, complemented by cloud-based solutions from different vendors that enable new and innovative business models.

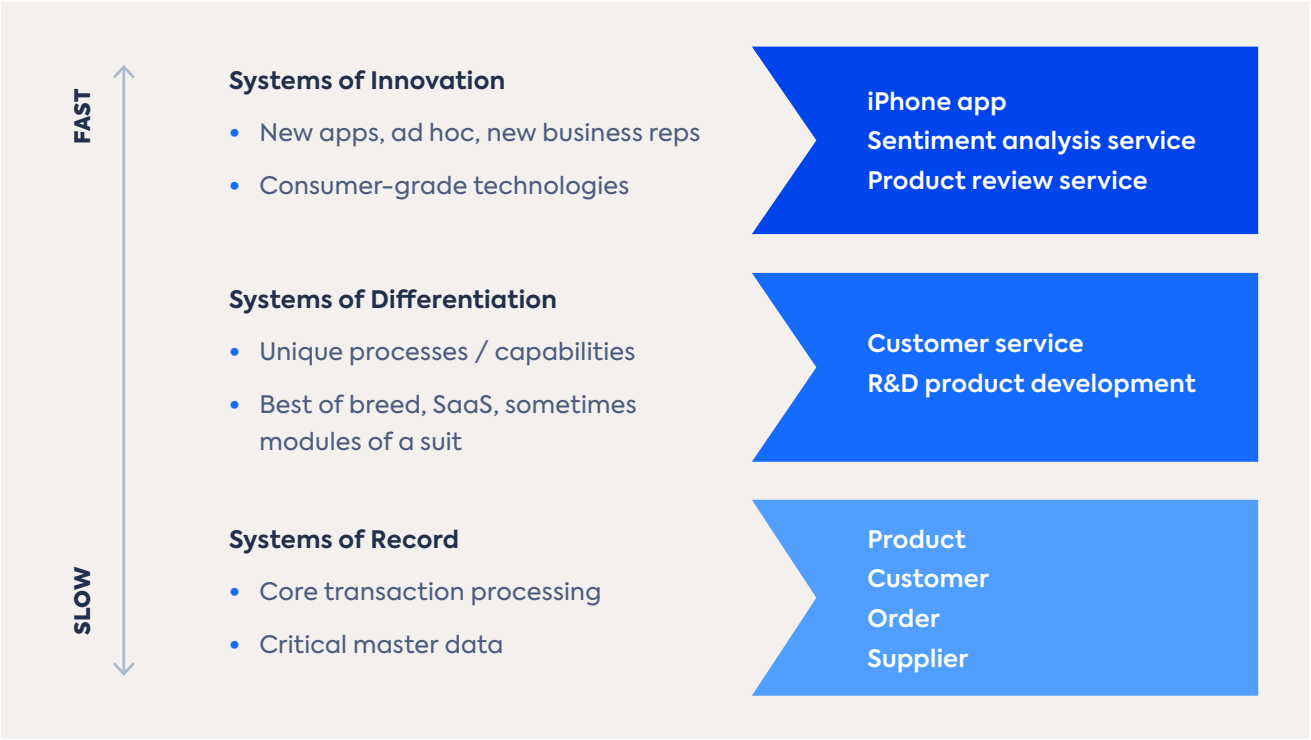
In this postmodern approach to ERP, each of the standalone systems does what it's good at (i.e., materials resource planning, human resources, customer relationship management) in the ERP system-of-record pace layer as well as the system-of-differentiation pace layer.

Distinguishing application layers and types

Research firm Gartner, Inc. defines a pace-layered application strategy as a methodology for categorizing, selecting, managing, and governing applications to support business change, differentiation, and innovation. Applying pace layering to an ERP strategy helps application strategists support differentiation and innovation, instead of constraining innovation.

Gartner describes three application categories, or "layers," to distinguish application types and help organizations develop more appropriate strategies for each of these layers (see Figure 2).

Figure 2
Gartner's Pace-Layered Application Strategy



Source: Gartner, Inc.

- Systems of record: Established packaged applications or legacy homegrown systems supporting core transaction processing and managing a company's critical master data. The rate of change is low since the processes are well-established, common to most enterprises, and often subject to regulatory requirements.
- Systems of differentiation: Applications that enable unique enterprise processes or industry-specific capabilities. Systems of differentiation have a medium lifecycle, i.e., one to three years. However, they must be reconfigured often to accommodate business practices or customer requirements that are constantly changing.

Figure 3

Setting the Stage for SAP S/4HANA with Enterprise Architecture

- Systems of innovation: New applications built on an ad hoc basis to address new business requirements or opportunities. These are typically short lifecycle projects, i.e., zero to 12 months, that use departmental or outside resources and consumer-grade technologies. Although it has become a common strategy to enhance core SAP ERP with best-of-breed solutions, this has introduced a new set of challenges, including integrating multiple cloud applications with the SAP core.

Succeeding in the world of postmodern ERP

This postmodern ERP strategy means an organization has to make a number of choices in the application landscape and define a roadmap to come from the past into the present. That's where enterprise architecture comes into play. As organizations push their ERP systems into the cloud – public cloud, private cloud, hybrid cloud – solutions must be joined together to form a comprehensive picture.

Organizations want their ERP systems delivered as software as a service (SaaS) and they want their vendors to continuously improve those systems. They also want intelligent ERP, which is enriched with intelligent technologies, such as artificial intelligence, machine learning, predictive analytics, and next-generation user interfaces.

In this world of postmodern ERP, enterprises have to make a lot of architecture choices, every day, to create and maintain the best application landscape based on a variety of criteria, including business requirements, corporate architecture principles, and market capabilities.

To help you get from the monolithic ERP suite to a postmodern ERP system, you need a roadmap. And enterprise architects are great at choosing the underlying ERP architecture to create them (see Figure 3).

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LeanIX Offers Solutions to SAP S/4HANA Migration Challenges

The goal of enterprise architecture is to offer a holistic overview of an enterprise, one with every business capability mapped alongside its underlying technologies, to lead rather than just guide an organization's strategic transformation.

LeanIX is a SaaS-based enterprise architecture tool that maps a company's business processes to its applications and connects this to the underlying architecture landscape. The tool can be used to find out who is responsible for applications and what dependencies exist across the technology ecosystem.

Enterprise architecture management is a democratized re-imagining of EA where the responsibilities of data mapping is dispersed throughout an organization, enabling collaboration among a wide group of stakeholders from both business and IT via accessible portals and automated visualizations and reports. This big picture view helps to address some of the key challenges associated with SAP S/4HANA migration challenges (see Table 1).

Table 1

Common Challenges of Migrating to SAP S/4HANA

Complex legacy IT landscape

- Legacy landscape contains a myriad of ERP systems with country-specific configurations, custom modules, interface dependencies, and manual workflows, which hampers visibility into business capabilities, processes, and IT assets.
- It is expensive to maintain and difficult to integrate with modern, API-based systems.

Ownership and accountability

- The ERP transformation involves many concurrently running analyses, assessments, migrations, and other crossover activities with different stakeholders.
- Lack of understanding for stakeholders' responsibilities hinders streamlining project management.

Stakeholders buy-in

- Insufficient data means an inability to build a proper business case, failing to get stakeholders on board and secure required investment.
- IT risks such as resistance to change, application dependencies, and data migration concerns dissuade stakeholders from committing to extensive transformation exercises required for an SAP S/4HANA migration success.

Poor project implementation

- ERP migration project failures are caused by the lack of proper preparation with regard to conceptualization and definition of business objectives, migration roadmaps, and monitoring of project interdependencies, risks, and costs.
- Inadequate documentation, tracking, and competing priorities push managers to make uninformed decisions.

Insufficient change adoption and management

- The state of IT is always in flux as application and component lifecycles change.
- Introducing new ERP systems without properly tracking dependencies and monitoring data flows can lead to serious consequences.

Increased security and compliance threats

- In S/4HANA, the database layer is extended with an application functionality, which means more data interfaces will provide real-time access to sensitive information than in SAP ECC.
- Special attention must be paid to information security and compliance to avoid unauthorized data access.

Source: LeanIX GmbH

LeanIX solutions

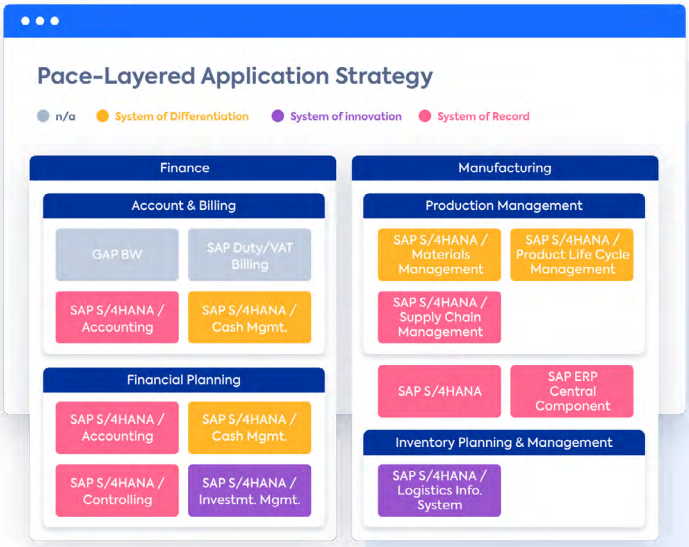
The LeanIX Enterprise Architecture Suite integrates with SAP Solution Manager, which is then mapped to the enterprise architecture model to provide a consistent view and ensure understanding across IT and business stakeholders. Such a view is necessary to further develop the target landscape and define the roadmap needed to achieve it.

Classifying applications by pace-layer

Application rationalization is an essential part of any SAP S/4HANA transformation project. However, to further define the target ERP architecture, adopting a pace-layered application strategy can help in prioritization of efforts. LeanIX EA data can be leveraged to classify your applications and easily visualize where they fall in your desired future state (see Figure 4).

Figure 4

Pace-Layered Application Strategy



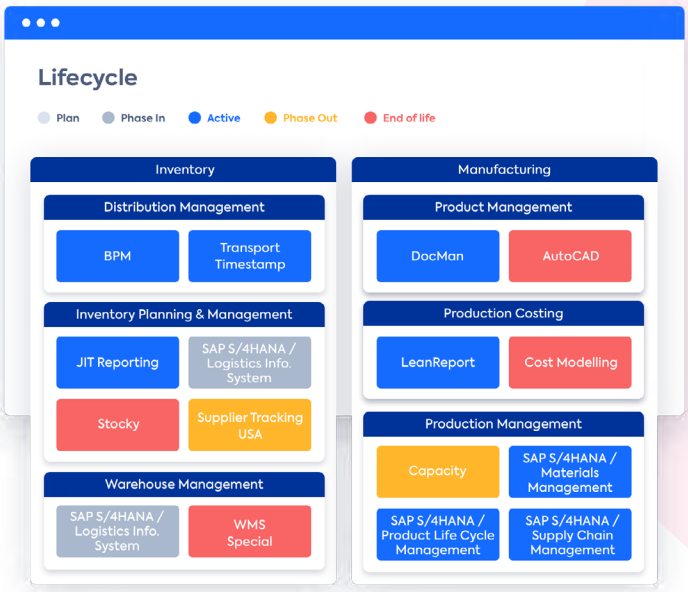
Source: LeanIX GmbH

Business capability maturity

Many companies use business capability mapping to plan their transformation efforts. LeanIX helps by identifying the current state of IT and revealing the most promising and critical business capability areas that would most benefit from a migration and innovations. It also provides visibility into where legacy or obsolete technologies lie (see Figure 5).

Figure 5

Evaluate Application Lifecycle Maturity by Business Capability



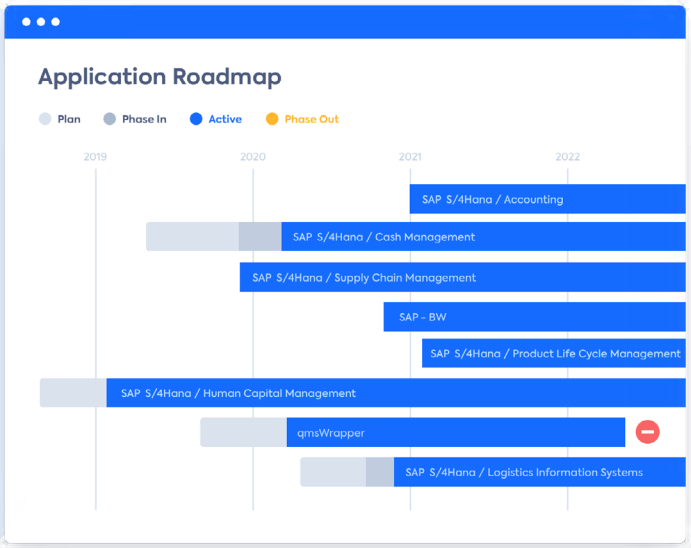
Source: LeanIX GmbH

Application landscape roadmap

Once business capabilities are mapped and pace-layering activities are completed, businesses must plan the roadmap for application portfolio management. LeanIX's out-of-the-box application landscape reports help the move to SAP S/4HANA by enabling architects to understand and design the transformation roadmap from an application perspective (see Figure 6).

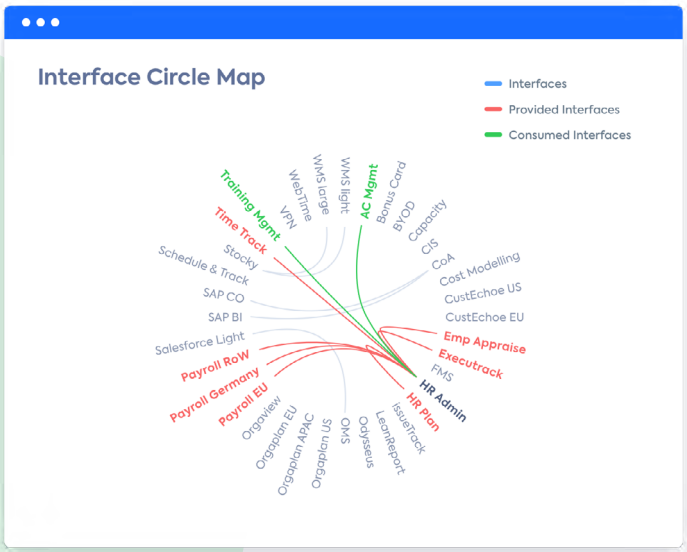
Figure 6

Application Roadmap



Source: LeanIX GmbH

Figure 7
Interface Circle Map



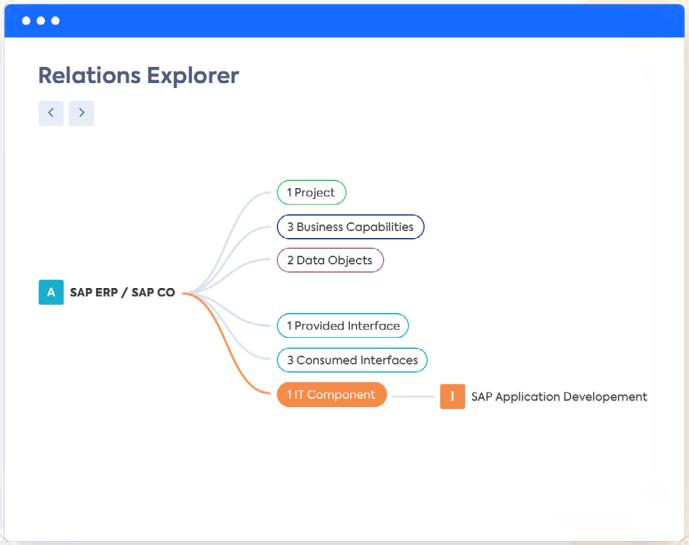
Source: LeanIX GmbH

Integration architecture

Another way LeanIX simplifies SAP S/4HANA migrations is by collecting application and interface data to support the development of transformation roadmaps. Without an understanding of dependencies between IT assets, the proper business case for a migration cannot be presented, and decisions will be made in the dark. Additionally, in S/4HANA, more data interfaces will provide real-time access to sensitive information than in SAP ECC. This can lead to security and compliance issues if not addressed up front.

LeanIX helps to solve this challenge by automating interface dependencies with enterprise architecture data (see Figures 7 and 8).

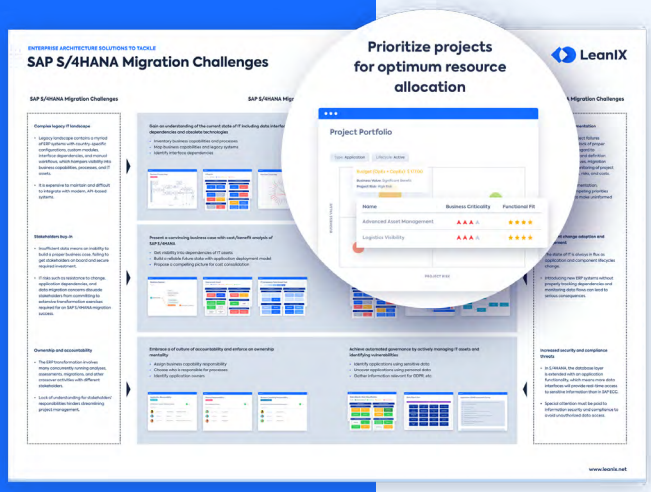
Figure 8
Relations Explorer



Source: LeanIX GmbH

LeanIX can play an essential part of SAP S/4HANA migration in a number of other ways, too.

If you'd like to drill down deeper, download our free poster.



Summary

EA is key to digital transformation because it provides a common language for you to support your employees through your migration to SAP S/4HANA, as well as through workflow changes. Without EA, you'll be stuck in a web of complexity that will weaken productivity because you lack a common framework documenting your infrastructure and how it connects throughout your business.

SAP S/4HANA migration has revealed a key insight: the migration is a key pillar of many companies' current digital transformation planning. Seeing this as much more than a pure technical update, companies are taking advantage of the opportunity to combine the system conversion with business process improvement and the overall modernization of their solution architectures.

A lack of enterprise architecture leads to unmanageable IT complexity. And that means you can face such issues as increased costs because of duplication of resources to develop, operate, and maintain systems, as well as decreased flexibility because you're not benefiting from economies of scale. Not only that but delays in delivering changes can also have a negative effect on your business because delays promote further complexity and uncertainty.

SAP S/4HANA is widely perceived as a critical driver of the digital business of the future; however, many companies are still falling short in the planning phase. Without the proper visibility into the as-is landscape that enterprise architecture provides, the complexities of the SAP environment, such as instances, clients, add-ons, and enhancement packs, will get the best of IT, delaying delivery times and impacting the ability of your business to seize the digital opportunity.

FREE DEMO

Are you looking to leverage enterprise architecture in your ERP migration?

Let LeanIX show you the way.

Schedule a Demo! →

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