How to Adapt the LeanIX EA Suite Data Model to Your Company Infrastructure

Kai Stettner

Webinar, April 2, 2020

Agenda

Modelling Fundamentals

Modelling Best Practices – Provider-specific real-life use cases

What’s next?

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Modelling Fundamentals

What’s modeling?

“[…] **the representation**, often mathematical, **of a process, concept, or operation of a system**, often implemented by a computer program.”

"[…] another type of systems modeling is **architectural modeling which uses the systems architecture to conceptually model the structure, behavior, and more views of a system.”**

Key question of LeanIX customers: How do I have to use / adapt the LeanIX data model to ideally map my company’s infrastructure?

Modeling is important. Why?

LeanIX customer onboarding

- Major question(s) of new customers in every onboarding
- Fast time-to-value for customers by providing easy-to-use best practices and templates
- LeanIX provides specific guidelines and best practices how to model real-life use cases

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LeanIX existing customers

- For existing customers modeling is also important if they add or change their LeanIX use cases
- It may happen that modeling was not focus in the onboarding. So, customers must change their data model while already be running LeanIX

Customers have asked for instance…

What is the difference between apps and IT components?

How do I add technical protocols and programming languages?

How to model LeanIX as SaaS and Salesforce as PaaS solution?

How many levels of business capabilities shall I create? What do you recommend?

How to model the migration from SAP ERP 6.0 to S4 / HANA?

I do have a hybrid on-premise and IaaS hosting. How can I model this?

To what technology stack do I assign my Oracle 12c database?

I need a sample technology stack for SAP, AWS and Salesforce. Can you provide this?

Do I have to model my middleware SAP PI as an app or an IT component? What are the pros and cons?

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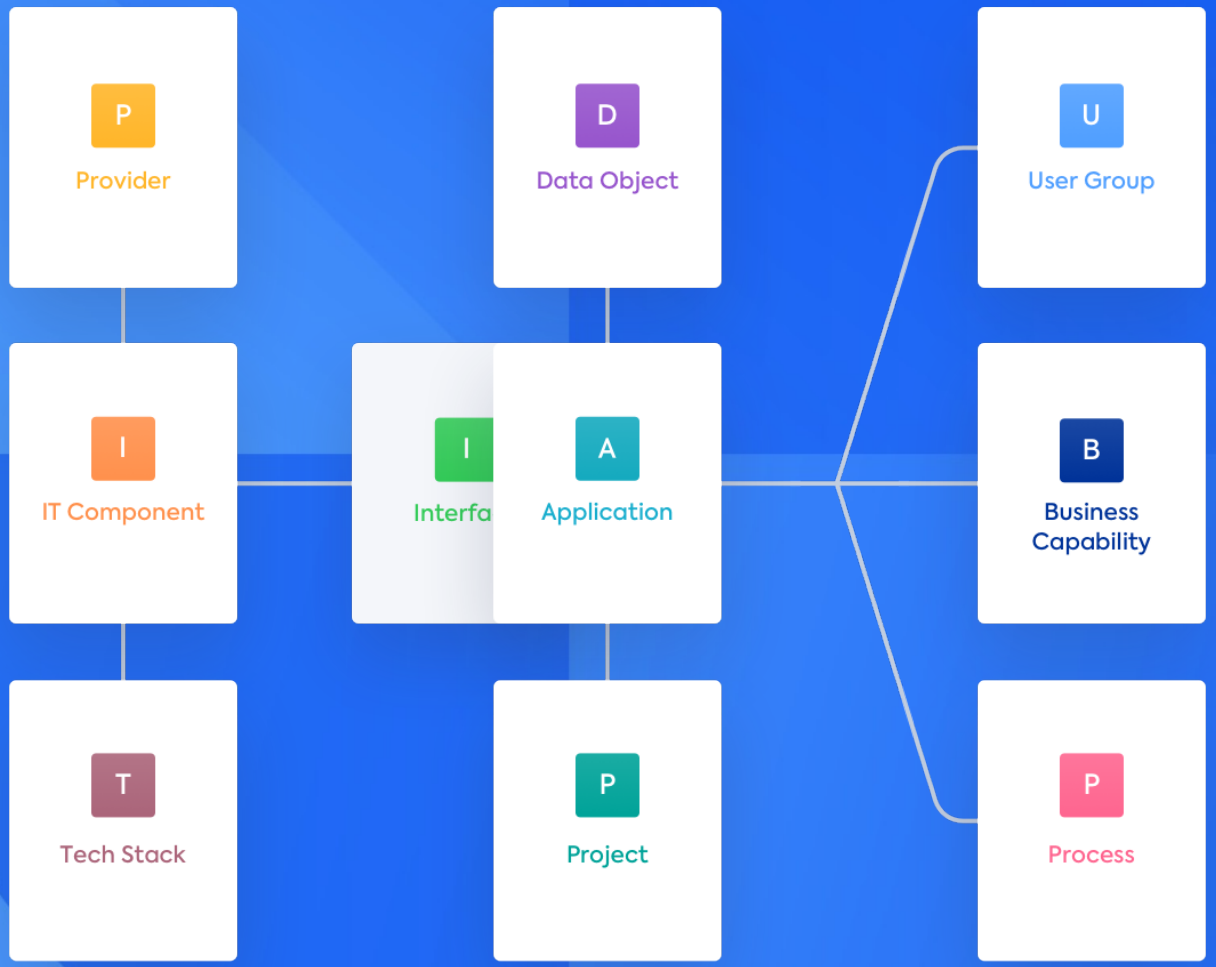
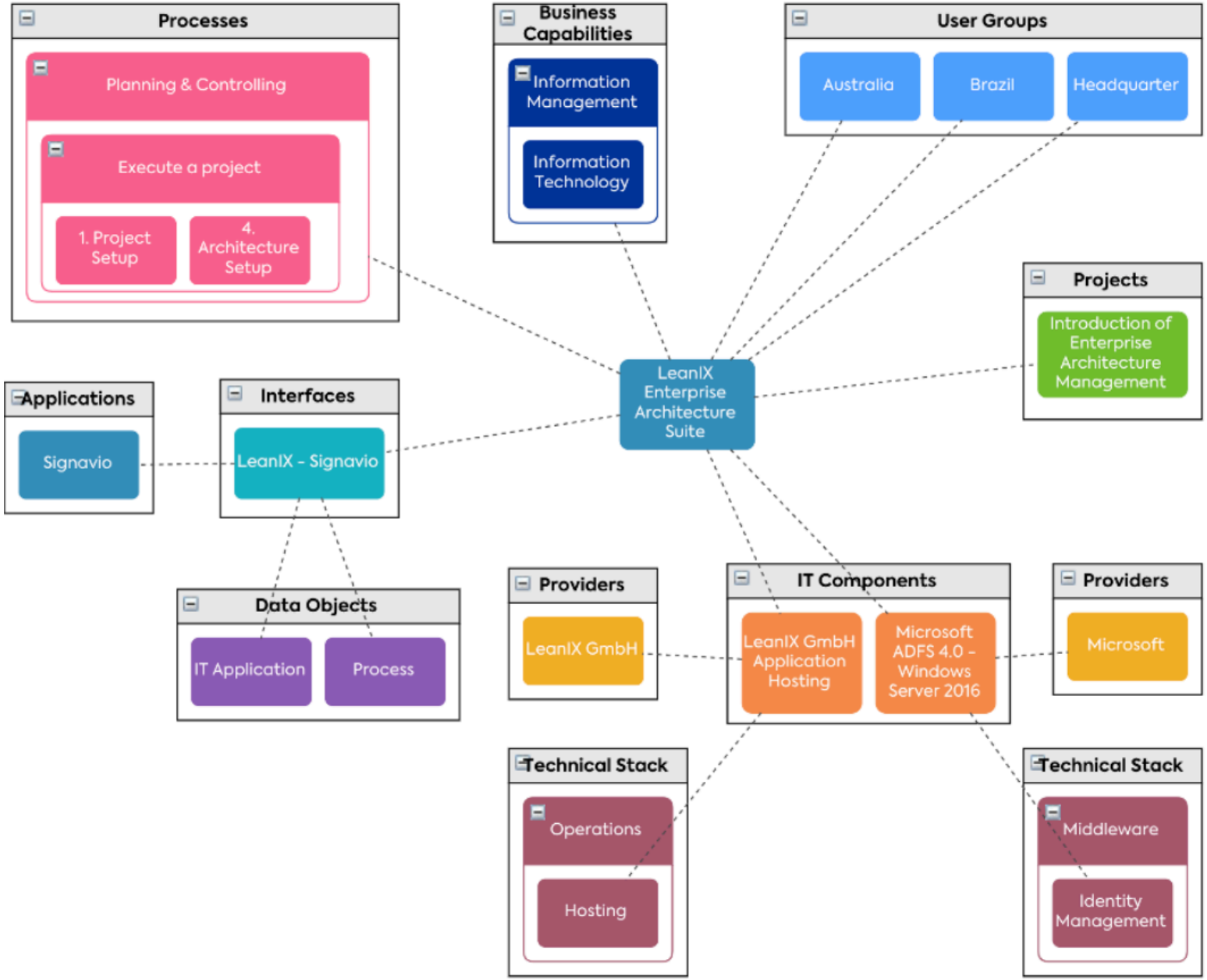


LeanIX Data Model

Showcase LeanIX implementation at customer side



Application vs. IT component / 1

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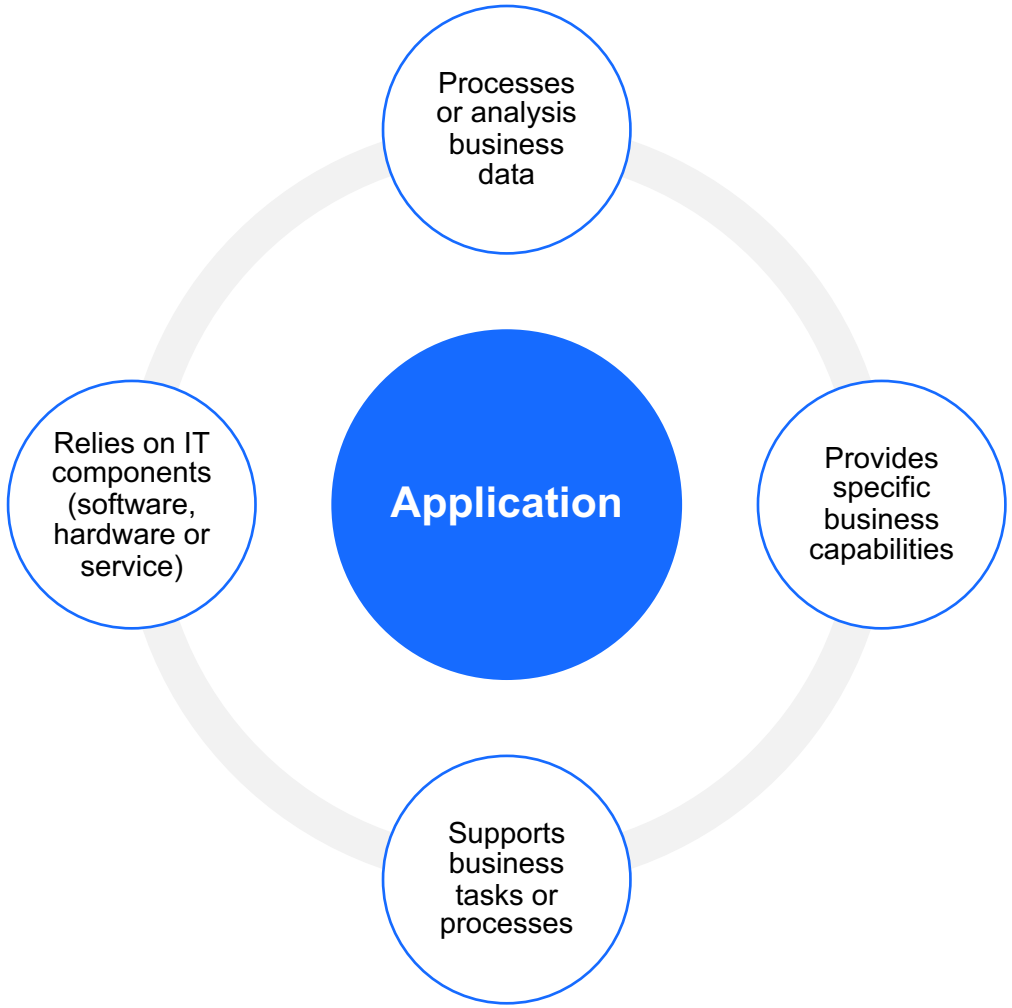
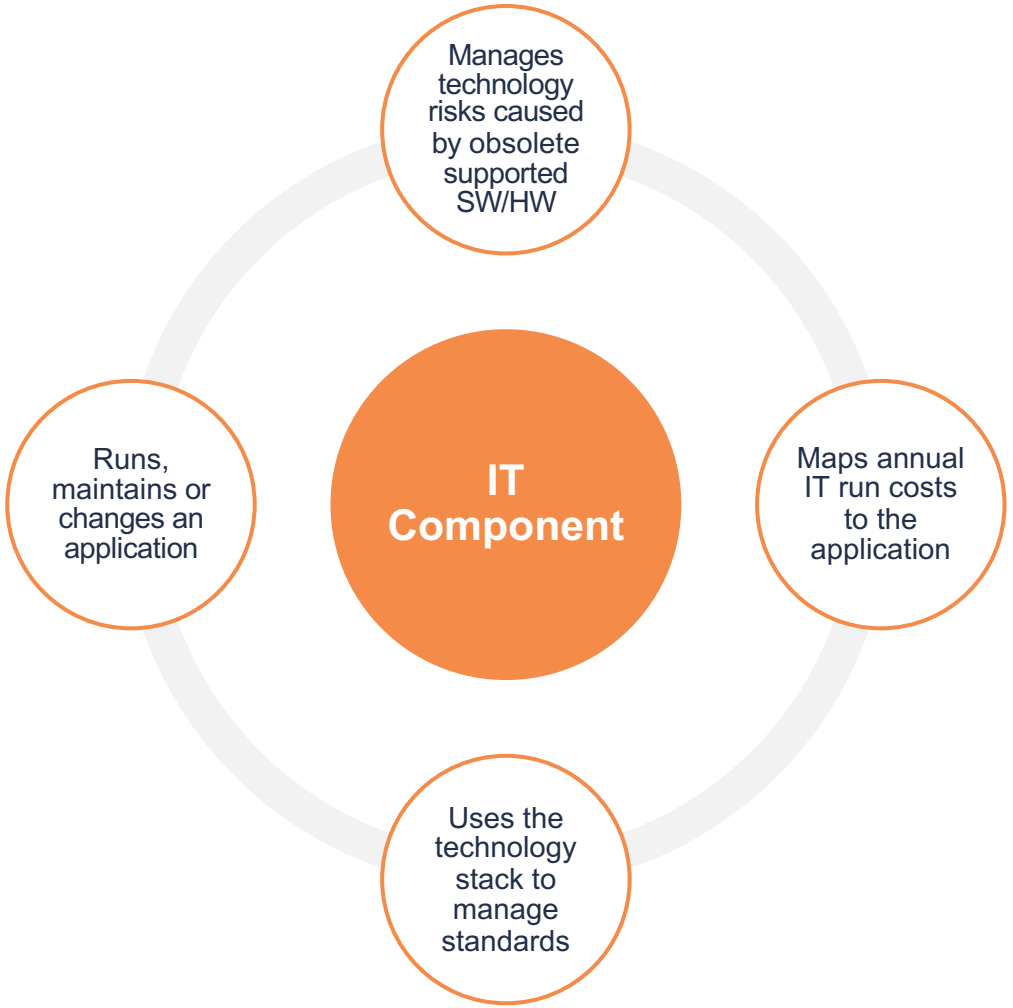
Software stack	Examples	Fact Sheet Type
Application	Enterprise suites, ERP systems, …	Application
Application platform / tool	Robotic process automation, Test automation, Business intelligence, …	Application / IT component
System software / Technology service	Operating systems, databases, run-time environments, virtual machines…	IT component
Hardware	Laptops, desktop computers, servers, mobile devices…	

Application vs. IT component / 2





Application vs. IT component / 3

Hierarchies

- Use simple hierarchies to structure your application groups into applications and modules
- Please refer to our best practices for provider-specific examples

Instance vs Product

- Only model on instance-level if instances are different and if there is an added-value (e.g. different customization depending on hosting location or user group, hybrid solutions (cloud vs on-premise), technical configuration)
- Otherwise, aggregate on product level

Software architecture

- Also consider the software architecture (e.g. data, logic and presentation layer)
- Classic applications use all layers but there can be also application tools / platforms without a presentation layer e.g. middleware
- Software can be both, applications and IT components, e.g. MS Excel can be used as an calculation application but can be also used as an IT component being the platform for other applications

Iterate

- Don’t be too academic. For application tools / platforms there is no true or false.
- Start, refine and iterate!

Modelling of Business Capabilities

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Definition

A Business capability defines **what** your business is doing right now and what you have to do in the future. The process that is assigned to your business capability shows **how** you do it.

Best practice

- Use only 7 - 10 business capabilities on level 1. Otherwise, it gets too complex.
- Use hierarchies and assign the applications to the business capabilities on the lowest level
- Check that are no overlappings and define the capabilities cross-organizational
- Involve other business stakeholders when defining the capabilities and make sure that the business capabilities are accepted by all stakeholders
- Align the capabilities to your business strategy
- Please also check the LeanIX best practice poster and the ready-to-go Excel template in our online modeling guidelines for a fast time-to-value of the rollout of LeanIX.
- LeanIX also provides industry-specific business capability best practice posters (e.g. Finance, Manufacturing, Energy)

Modelling of Business Capabilities – Best Practice Poster

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BEST PRACTICES TO DEFINE

Business Capability Maps

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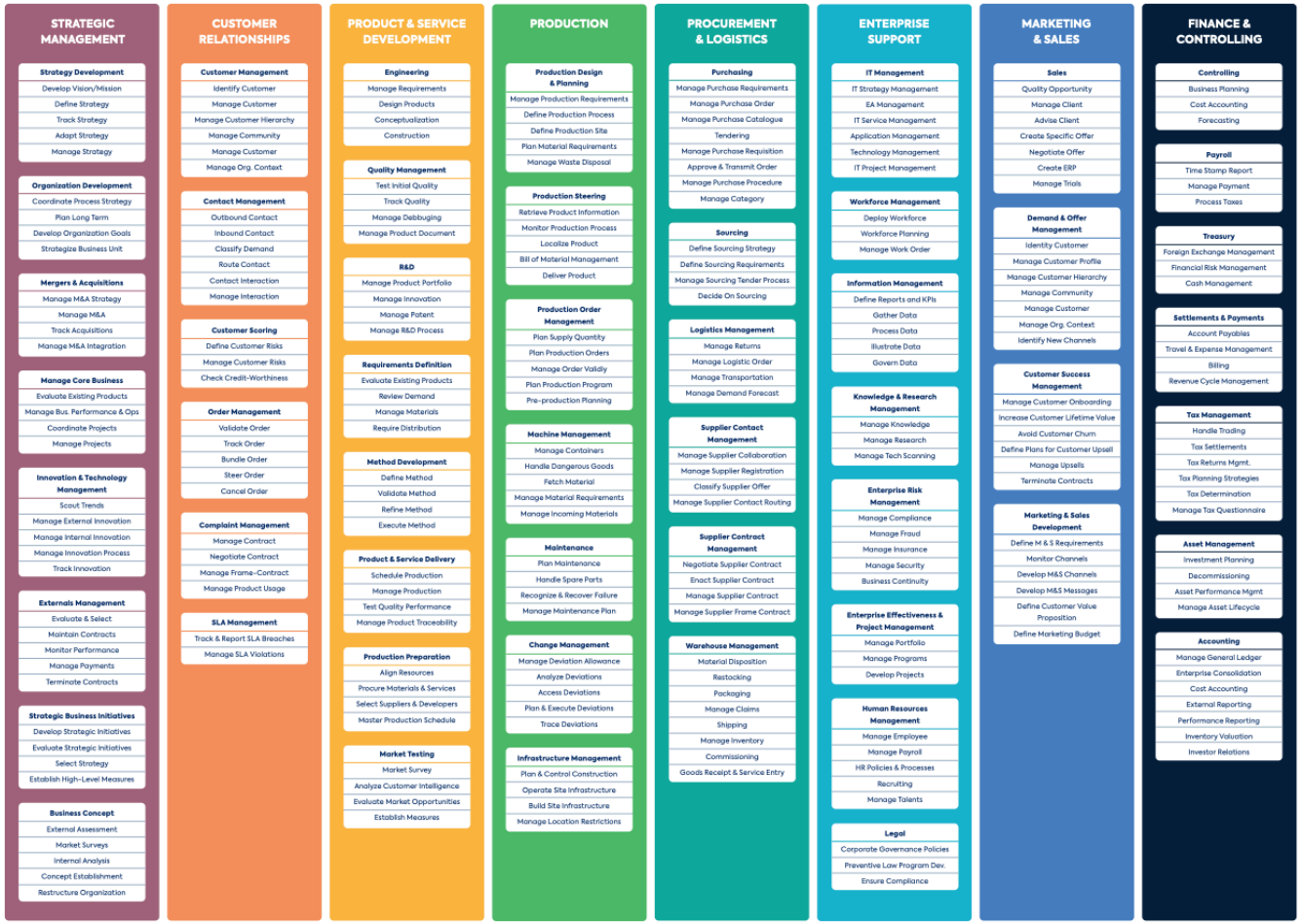

BEST PRACTICES

Business capability modeling is a technique for the representation of an organization's business anchor model, independent of the organization's structure, processes, people, or domains.

Don't overlap
Good capabilities do not overlap; they are mutually exclusive. A good test is to check whether you can assign Level 2 capabilities without ambiguity.

Define "What"; not "How"
Business capabilities encapsulate what a business is doing right now and what it must be doing to meet current and future challenges.

Long-term stability
Properly defined business capabilities are fairly stable over time, persisting throughout any organizational changes. Only major business model updates should affect them.

Cross-organizational
Don't focus too much on business units. Capabilities should remain the same and be independent of the current structure of the organization.

7 to 10 capabilities at the top level
The highest level capabilities should be a complete description of your business. Aim to make your categories reflect key aspects of what the business actually does.

Breadth rather than depth
Don't go too deep. Illustrate the breadth of your organization's business capabilities by going no more than three levels down. This will be enough to represent the IT landscape of your enterprise.

Accepted by all stakeholders
The goal of business capabilities is that they become a common basis for discussion and planning. Take every opportunity to anchor your organization's processes to the model.

Linking strategy and execution
Involve those who define the strategies when creating your map. Consider strategy as one input when defining your business capabilities on the highest level.

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Modelling of User Groups

Definition

User groups are intended to address who is using certain applications (e.g. regionally, organizationally, legal structures, user type structures)

Best practice

- Don’t use too many dimensions (maximum 2). Ask yourself what do you want to see in the application matrix.
- If you use more than one dimension, there are three options to model that:
    1. Use tag groups for every dimension
    2. Use a combination of both dimension and hierarchies
    3. Add another fact sheet type, e.g. OrgEntity, via configuration. But consider that this will also increase the complexity of your data model.
- Utilizing the field “usage type” on the relation "Application” <-> “Business Capability”, you can also define the user group as an owner of the application. So, the user group does not use but owns the application (it can, of course, also uses the application). The use case could be e.g. for an IT company that sells applications as products or an internal shared service center.

Modelling of Interfaces

Definition

Interfaces define what data objects - incl. the respective information classification - are exchanged and how applications are related.

Best practice

- Interfaces have one provider application but can have multiple consumer applications which does not refer to the direction of the data flow. It is used to define the ownership with regards to the change management of the interface.
- The technology of the interface can be modeled in two ways:
    1. Tag group
    2. IT component: Recommendation since then it can be visualized in the data flow report

Modelling of Data Objects

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Definition

Data objects provide an overview of the data that is exchanged by applications

Best practice

- Keep it easy. Only use two levels.
- Don’t add redundant data objects
- First define your business capability and then the data objects relying on the capabilities
- Data objects do not depend on the organization
- Use existing data models of large applications as SAP, Salesforce or Oracle
- Use surveys and involve different business groups to get a good overview of used data objects
- The best practice poster can be found here. Data objects are relatively stable over the time (if they aren’t any major changes of the business model)

Modelling of Data Objects – Best Practice Poster

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BEST PRACTICES TO DEFINE

Data Objects

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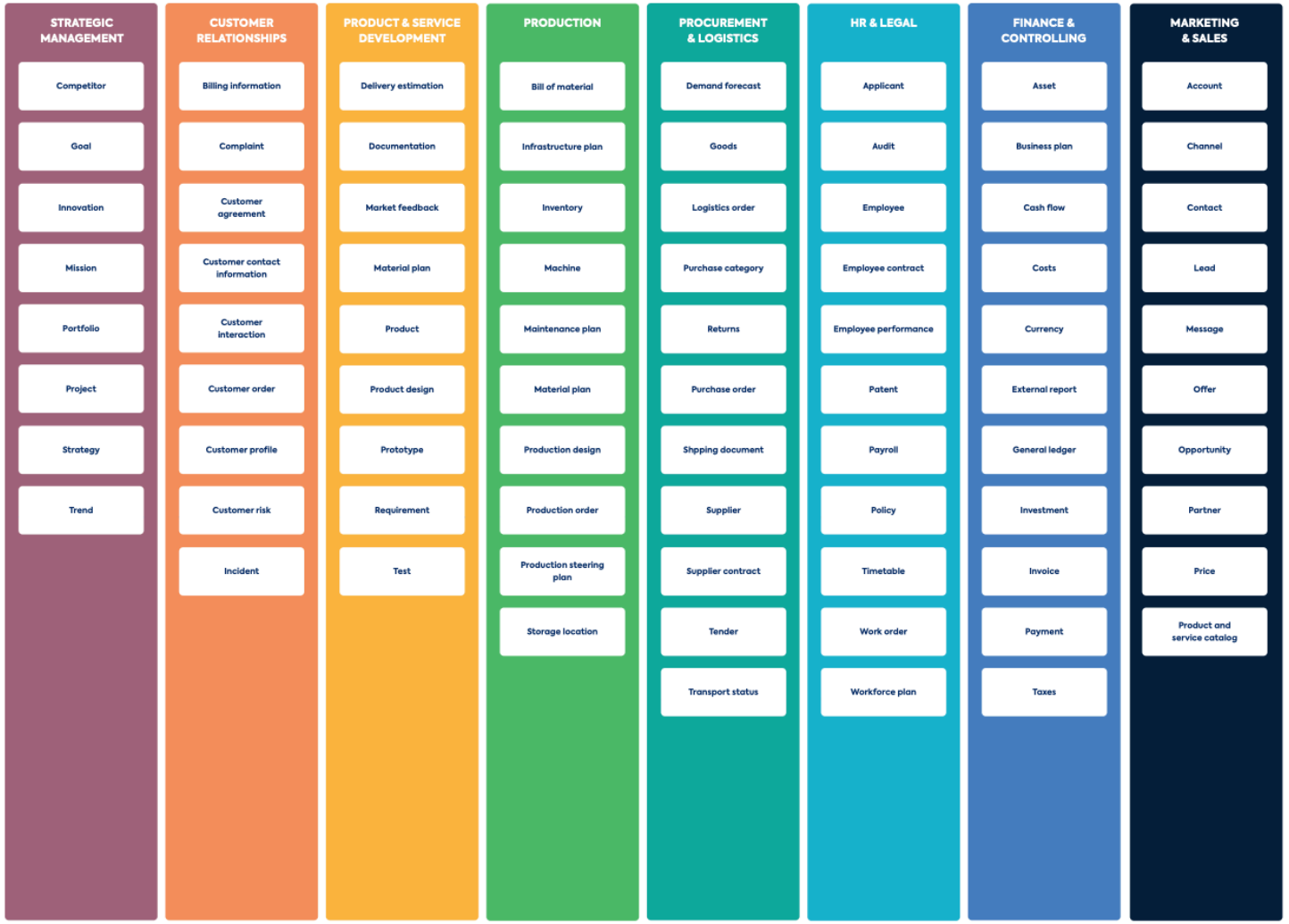

BEST PRACTICES

Data object modeling is a technique for the representation of an organization's data objects, independent of the organization's structure, processes, people, or domains.

Don't create redundancies
Good data objects do not overlap; they are mutually exclusive. A good test is to check whether you can assign Level 2 data objects without any ambiguity.

Rely on business capabilities
It is very easy to find which data objects exist once you have mapped your business capabilities. This is why we recommend first creating a business capability map.

Long-term stability
Properly defined data objects are fairly stable over time, persisting throughout any organizational changes. Only major business changes should affect them.

Cross-organizational
Don't get too specific. Data objects should remain the same, independent of any changes that might happen to the organizational structure.

Use existing data models
Many applications (e.g., SAP) will already have an existing data object models. Familiarize yourself with these when creating your own map.

Breadth rather than depth
While more levels can help to get a better structure, it comes at the cost of increased complexity. Go for breadth and build your map with no more than three levels.

Involve relevant parties
Leverage insights from representatives throughout the business. Those responsible for different parts of the business are likely to have the best overviews of data objects. Consider using surveys to collect information.

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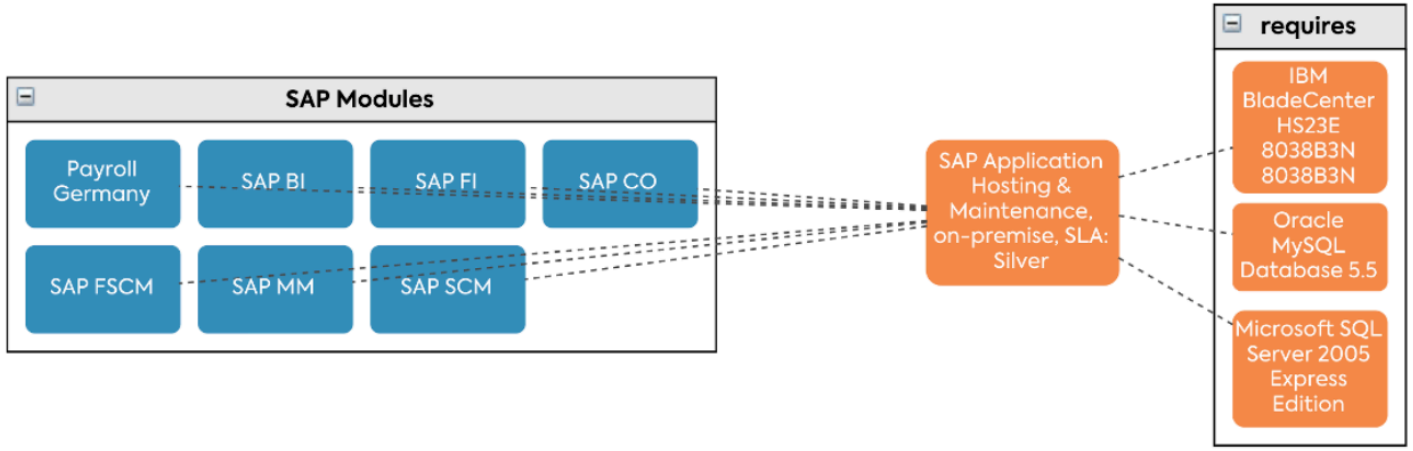
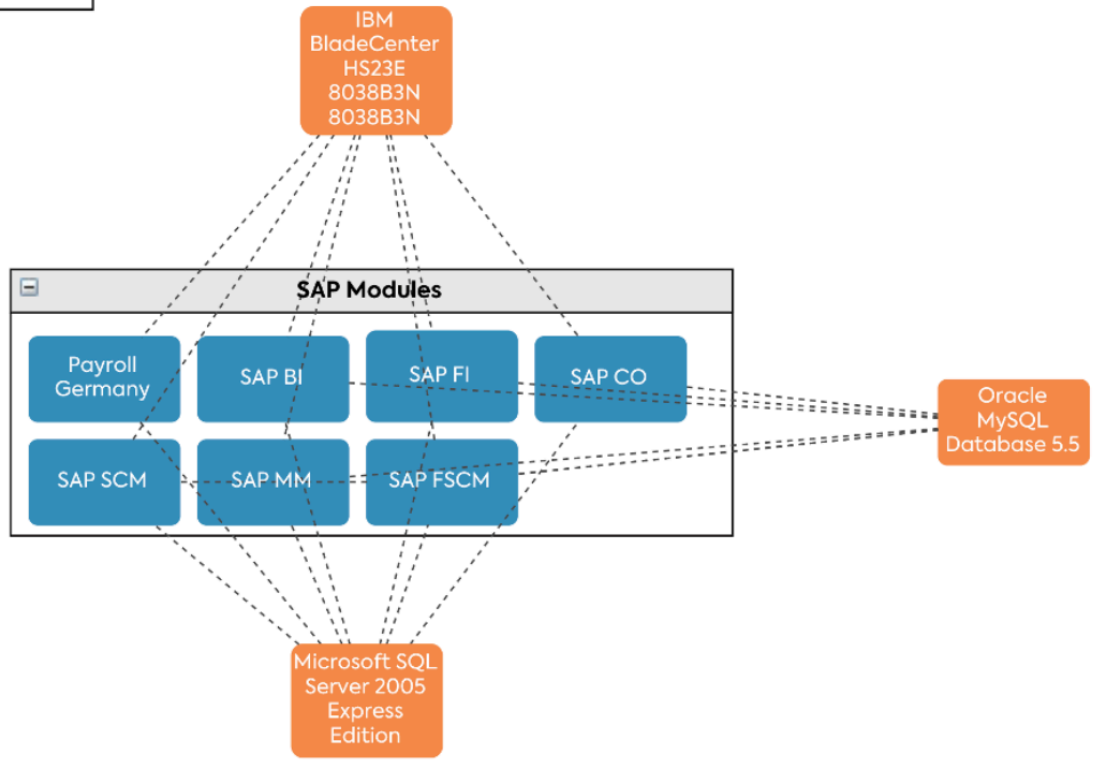
Full-fledged way: Option 1



Full-fledged way: Option 2



Modelling of Middleware

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Definition

- Is used to bridge the gap between applications and other tools or databases
- Sits between an operating system and the applications that run on it
- Provides a method of communication and data management between applications that would otherwise not have any way to exchange data

Best practice

Modelling middleware as an application

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- Provides visibility on most LeanIX reports (e.g. data flow)
- Enables application rationalization modelling through Interfaces
- Enables view for Business Capability and User group relations in reporting

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- Middleware needs to be **double-modelled** as an IT component in order to enable Technology Matrix and Landscape reporting

Modelling middleware as an IT component (**LeanIX recommendation**)

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- Allows for a direct link to the applications connected to the middleware without having to double-model it as an Application which provides a cleaner IT landscape.
- Enables Free Draw and Data Flow modelling & IT landscape, Roadmap and Matrix reports

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- There is no way to model connections between separate middleware instances.

Modelling of Technology Stacks

Definition

Technology stacks are used to group IT Components based on the used technology

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Best practice

The best practice poster can be found here. The technology stack is relatively stable over the time.

Modelling of Technology Stack - Best Practice Poster

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BEST PRACTICES TO DEFINE

Technology Stacks

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BUSINESS INTELLIGENCE	COLLABORATION	COMPUTERS	CONFIGURATION MANAGEMENT	DATA MANAGEMENT	IT MANAGEMENT	MIDDLEWARE	MULTIMEDIA & GRAPHICS
Analytics	Blogs and wikis	Desktops	Computer hardware configuration management	Enterprise	Alerts and monitoring tools	Application servers	CD and DVD recording
Business intelligence (BI) suites	Collaboration platforms	Handhelds	Configuration management database (CMDB)	Personal	Fault management	Enterprise integration	Desktop publishing (DTP)
Business metrics and reporting tools	Conferencing	Mainframes	Software configuration management		IT asset maintenance and support	Mail servers	Graphics and image editing
Data mining and warehousing	Instant messaging	Notebooks			IT asset management	Unclassified middleware	Multimedia players
	Presence	Servers			License management	Web servers	Video and audio editing
	Social networking				Network performance management		Web design

NETWORK EQUIPMENT	OPERATING SYSTEMS	PRODUCTIVITY	SECURITY	STORAGE	TECHNOLOGY EQUIPMENT	UTILITIES	VIRTUALIZATION
Bridges	Hypervisor	PIM and contact managers	Anti-virus and malware	Cloud storage	Telephone exchanges	Connectivity tools	Hardware virtualization
Firewalls and security appliances	Mac OS	Presentation	Data security and encryption	Direct-attached storage (DAS)	Voice and multimedia communication systems	Desktop enhancements	Software virtualization
Gateways	Mainframe	Productivity suites	Firewall and intrusion prevention	Network-attached storage (NAS)		Drivers	Storage virtualization
Hub/Switches	UNIX	Spreadsheets	Identity and access management	Storage area networks (SAN)		File managers	Virtualization management software
Load balancer	Windows	Web browsers	Security suites	Tape systems		Synchronization tools	
Routers		Word processors	Vulnerability management				

BEST PRACTICES

Technology stacks or IT capabilities represent the organization's IT anchor model, independent of the organization's structure, processes, people, or domains. They help to organize IT components (e.g., a service, software or hardware).

Don't overlap
Good tech stacks do not overlap; they are mutually exclusive. If you are able to assign your level 2 stacks without any ambiguity, you are on the right track.

Breadth over depth
While more levels can help to get a better structure, it comes at the cost of increased complexity. We recommend keeping the business capabilities to no more than three levels down.

Long-term stability
Properly defined business capabilities are fairly stable over time, persisting throughout any organizational changes. Only major business model updates should affect them.

USE CASES:

Technology Lifecycle Management
An overview of your IT landscape, showing the lifecycle stages of your IT components.

Roadmap Planning
See your entire IT component roadmap at once. Decide which components should replace obsolete ones.

Technology Harmonization
Save costs by harmonizing and rationalizing technologies instead of accumulating technical debt.

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Modelling Best Practices – Provider-specific real-life use cases

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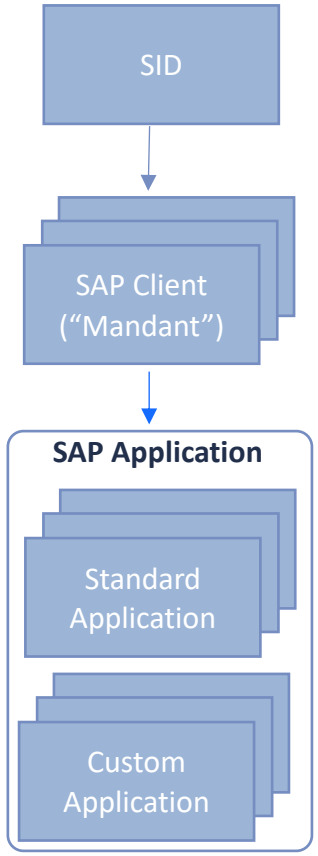
SAP

Overview on SAP terms

SAP application structure



An SAP system identified by an **SID (SAP System ID)** captures typically a database and different application servers

A SAP client is a dedicated part of a SAP system, addressing a defined user group and holding its own data. An SID can contain multiple clients.

A SAP client contains one or multiple **SAP applications** which are typically known to the business. These applications can be

- SAP Standard Application, e.g. FI, HR
- Custom Application, e.g. a web application based on FI

Map SAP SIDs, clients and applications to LeanIX Application Fact Sheet

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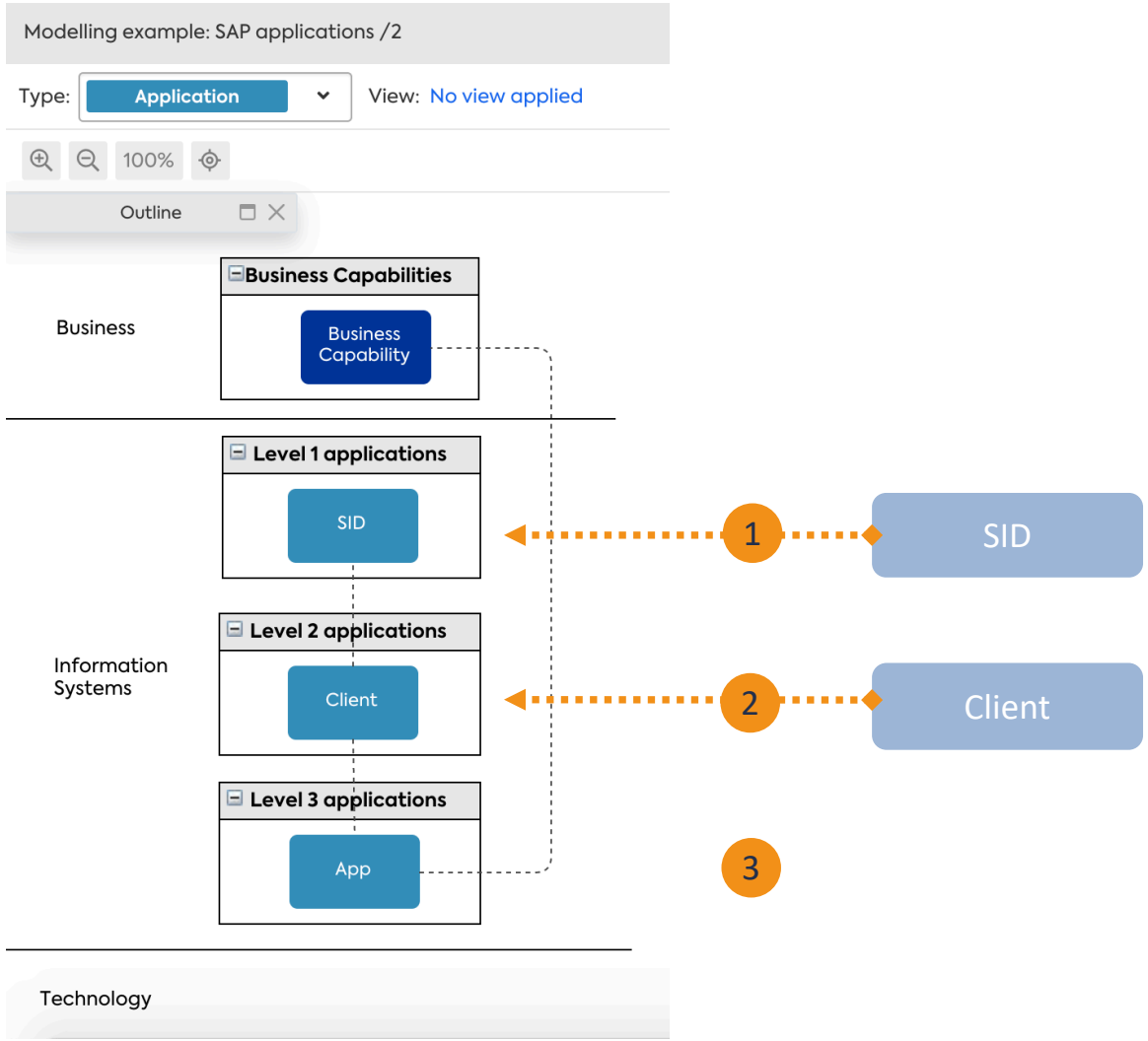
Option 1: Technical perspective

LeanIX SAP



LeanIX – SAP Mapping

1. **SAP SIDs** are Level 1 applications in LeanIX. Their purpose is to structure clients and apps consistently. They can be extracted from SAP Solution Manager.
2. **SAP clients** are Level 2 applications in LeanIX. Their purpose is to structure apps consistently. They can be extracted from SAP Solution Manager.
3. **SAP apps** are Level 3 applications in LeanIX. They refer to multiple applications typically know to the business user that could run in one SAP client.

Example: Map SAP SIDs, clients and applications to LeanIX Application Fact Sheet

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Option 1: Technical perspective

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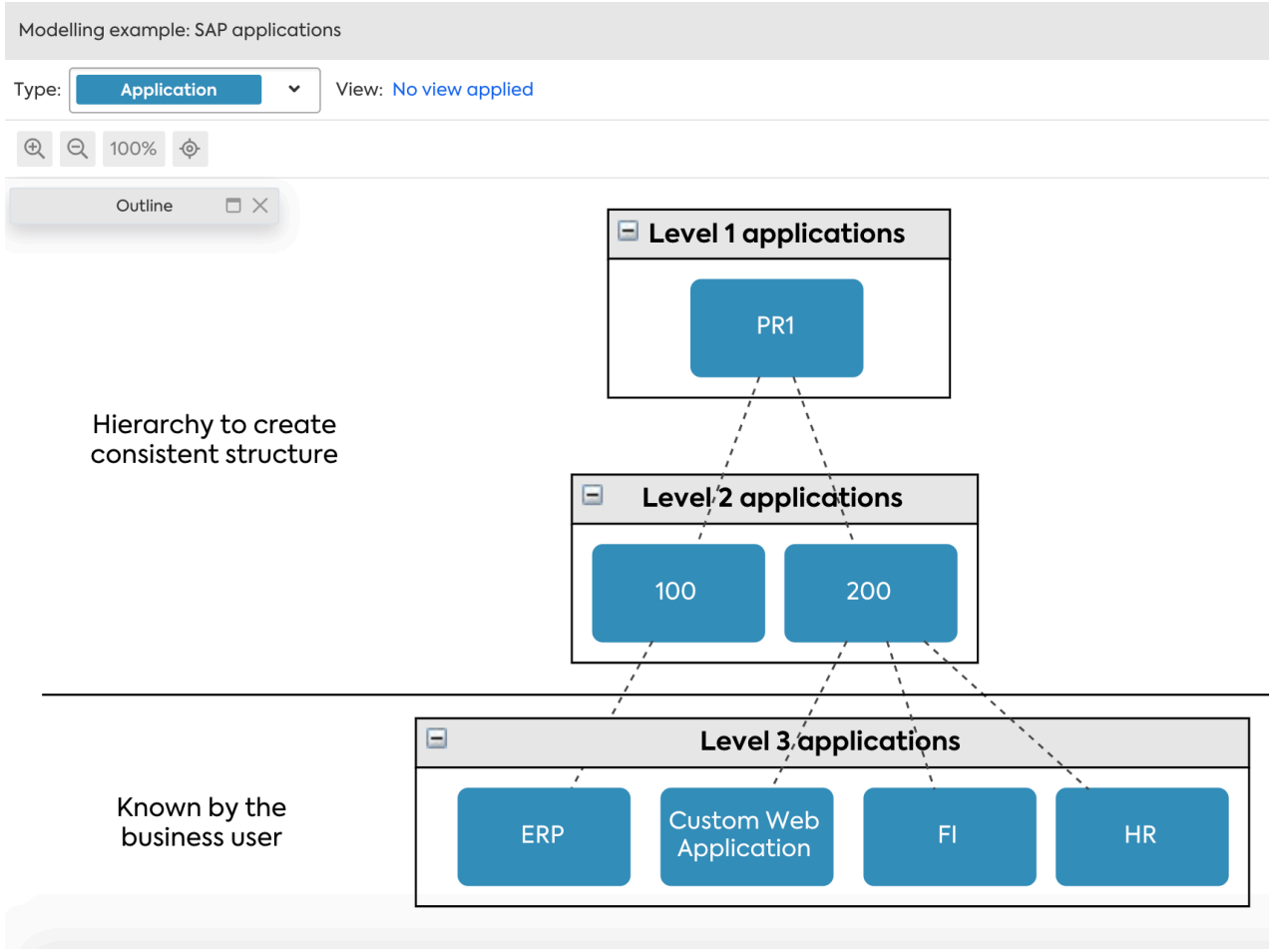
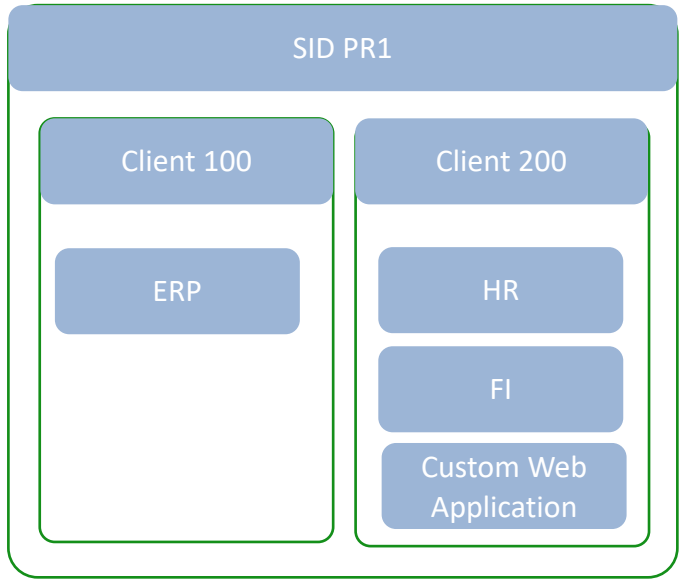


SAP



Map SAP SIDs, clients and applications to LeanIX Application Fact Sheet

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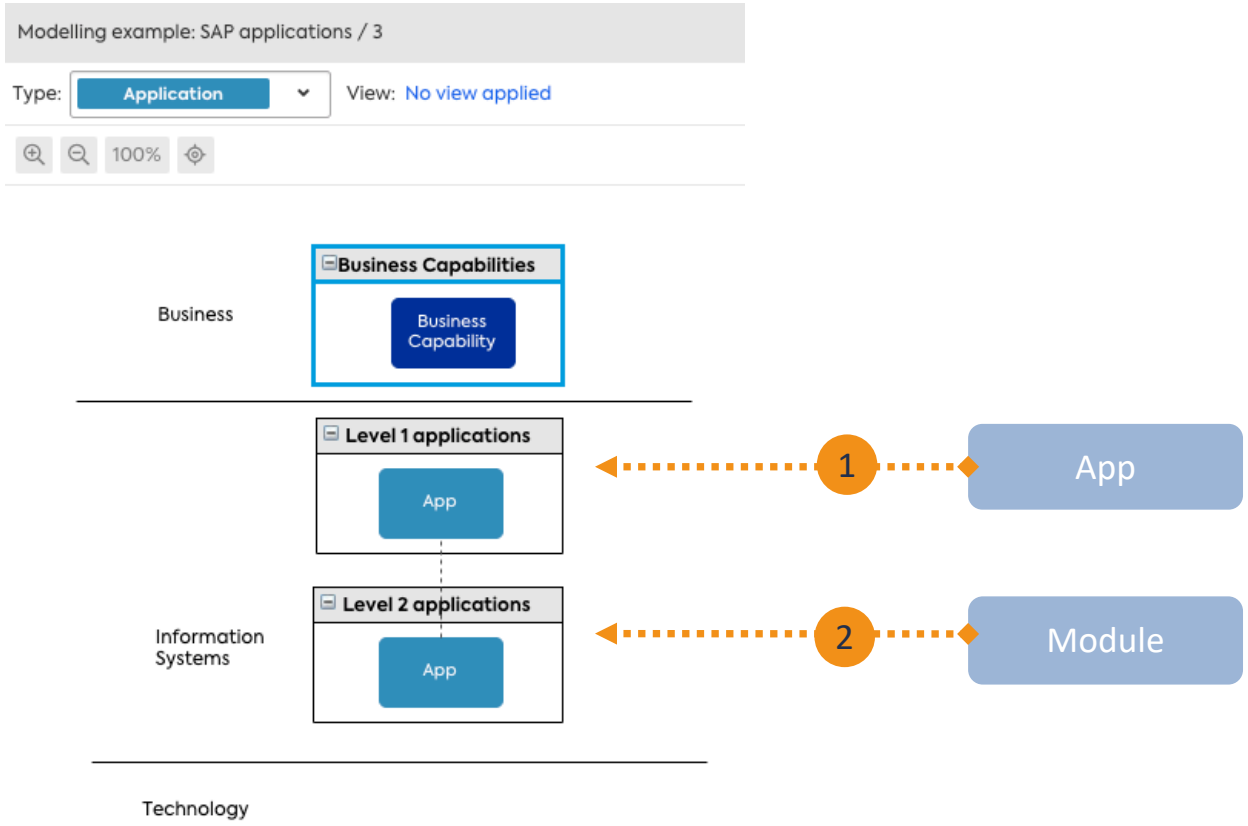
Option 2: Business perspective

LeanIX

SAP



LeanIX – SAP Mapping

1. **SAP apps** are Level 1 applications in LeanIX (e.g. SAP ERP 6.0 or S4 / HANA)

2. **SAP modules** are Level 2 applications in LeanIX (e.g. SD, CI, CO and FI for ERP 6.0 or SAP Finance and Material Management for S4 / HANA)

Example: Map SAP SIDs, clients and applications to LeanIX Application Fact Sheet

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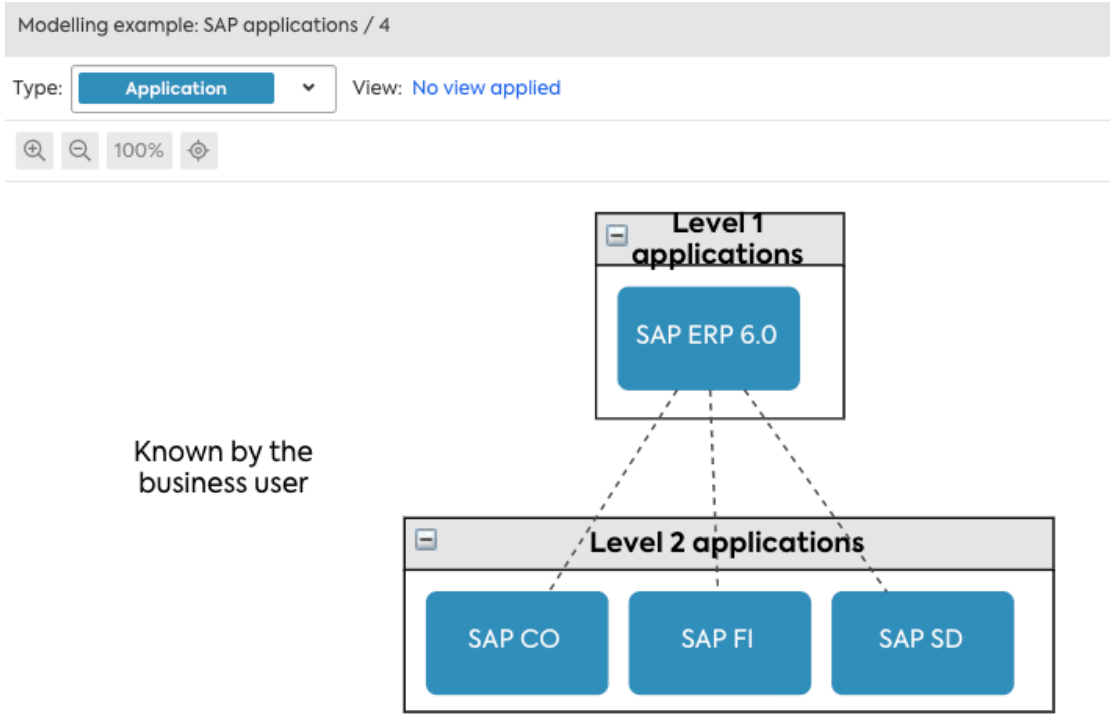
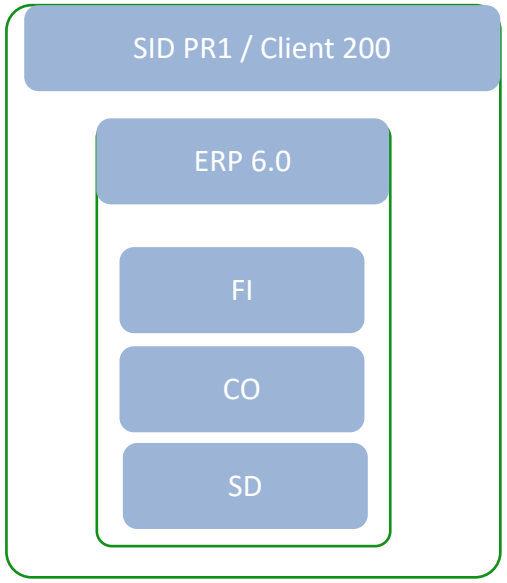
Option 2: Business perspective

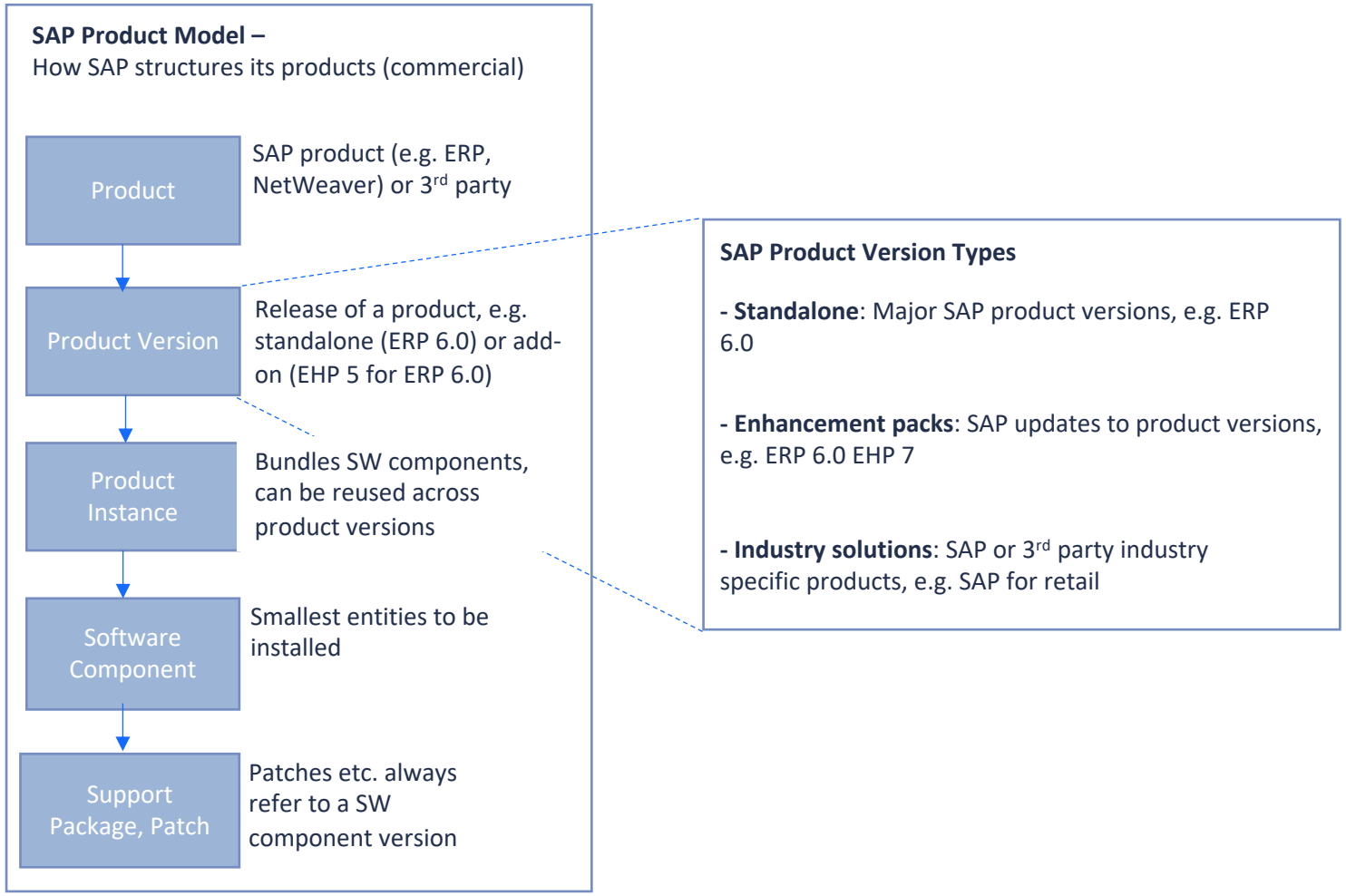
LeanIX

SAP





Overview on SAP terms



Map SAP product versions to LeanIX IT Components and Tech. Stack

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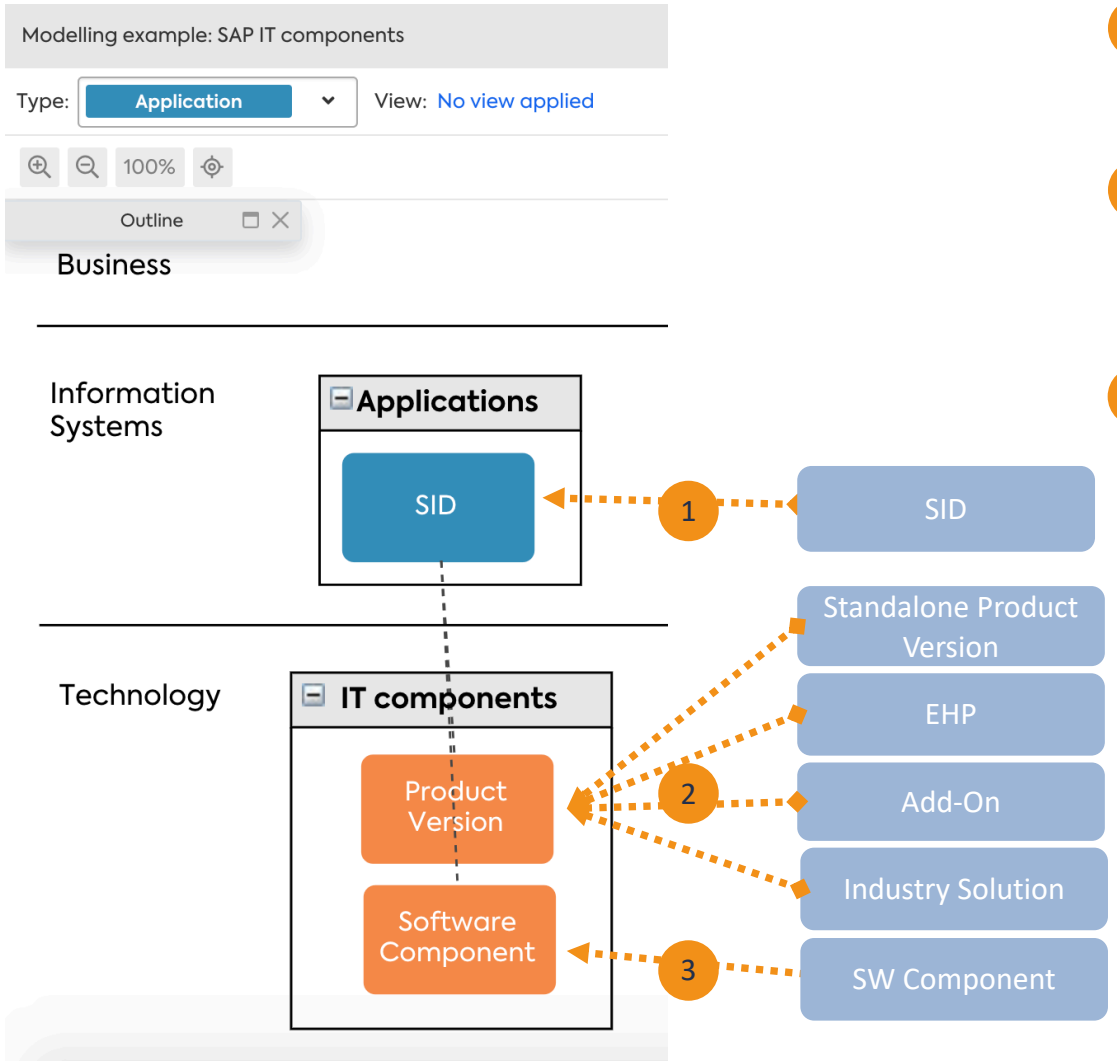
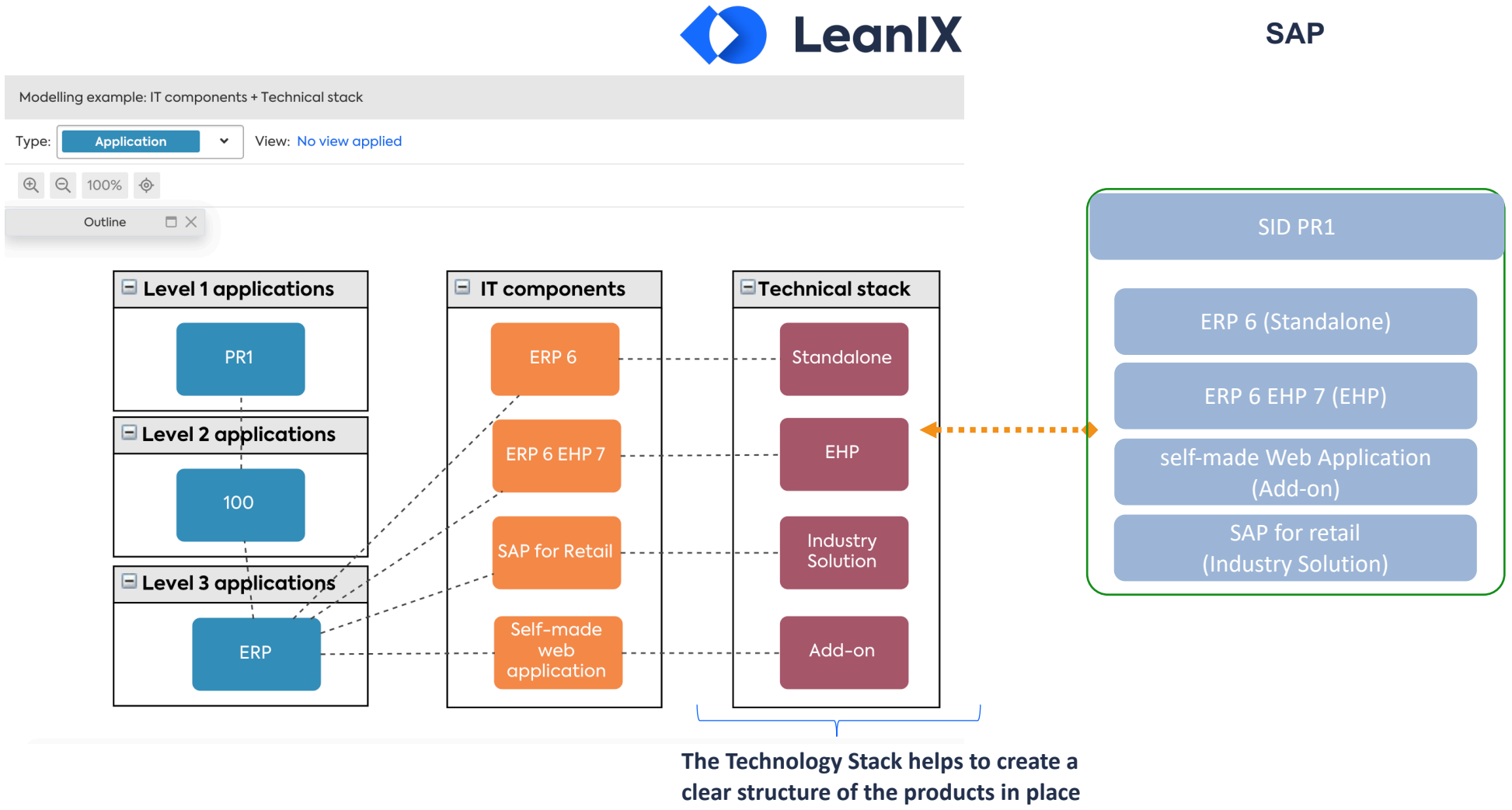


SAP

LeanIX – SAP Mapping

1. SAP SIDs are Level 1 applications in LeanIX. All product versions refers directly to the SID. They can be extracted from SAP Solution Manager.
2. A SAP SID typically uses multiple product versions. Use a LeanIX Technology Stack to structure the different types. They can be extracted from SAP Solution Manager.
3. SW components do not have be maintained manually if the automatic import from SAP Solution Manager is in place.

Example: Map SAP product versions to LeanIX IT Components and Tech. Stack



Map SAP technical systems to LeanIX IT Components and Tech. Stack

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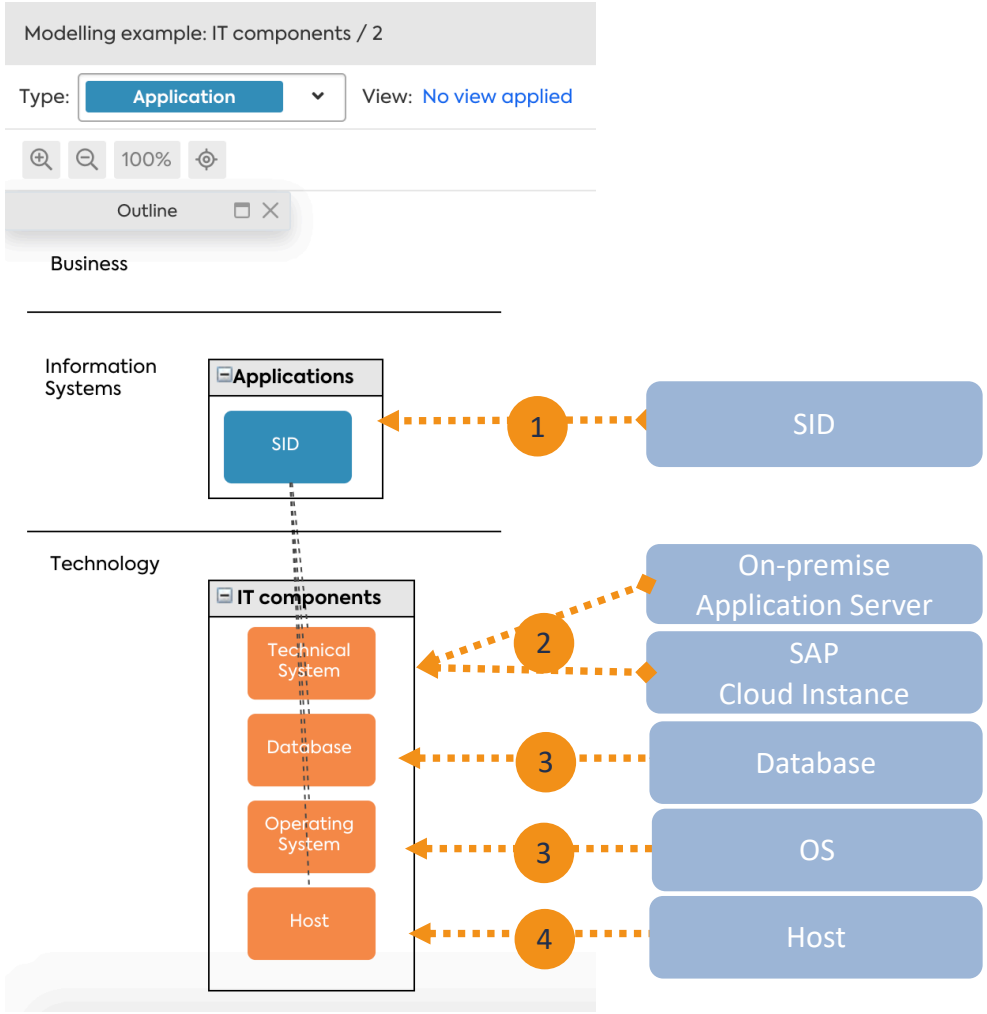
LeanIX SAP



LeanIX – SAP Mapping

1. SAP SIDs are Level 1 applications in LeanIX. All product versions refers directly to the SID. They can be extracted from SAP Solution Manager.

2. SAP SIDs are composed of different instances which run on different technical systems, e.g.
   - ABAP Application Server
   - Java Application Server
   - SAP Cloud offerings

   They can be extracted from SAP Solution Manager.

3. SAP instances use further IT components like databases (e.g. Oracle or HANA) or operating systems. They can be extracted from SAP Solution Manager.

4. Hardware and host information does not to have be maintained manually if the automatic import from SAP Solution Manager is in place.

Example: Map SAP technical systems to LeanIX IT Components and Tech. Stack

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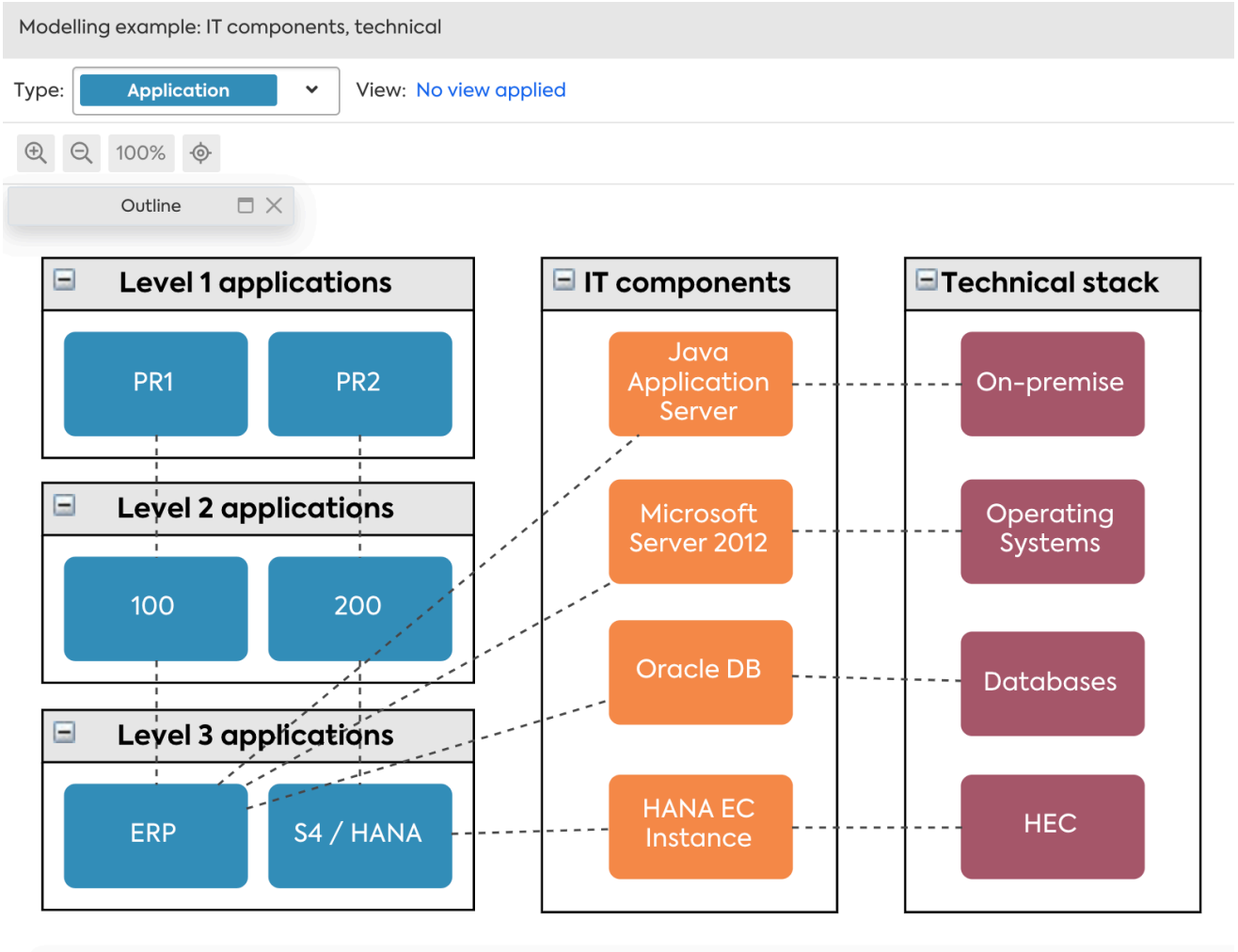
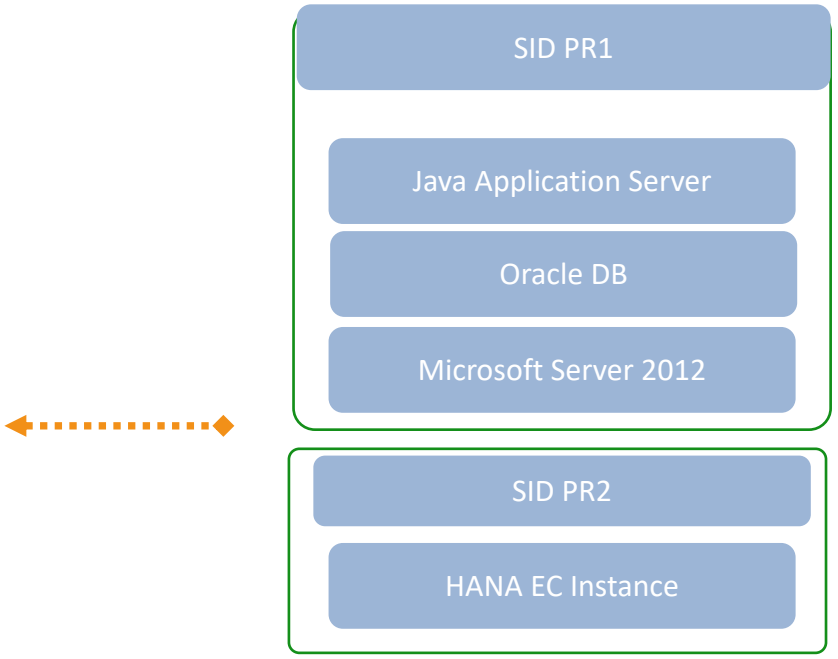
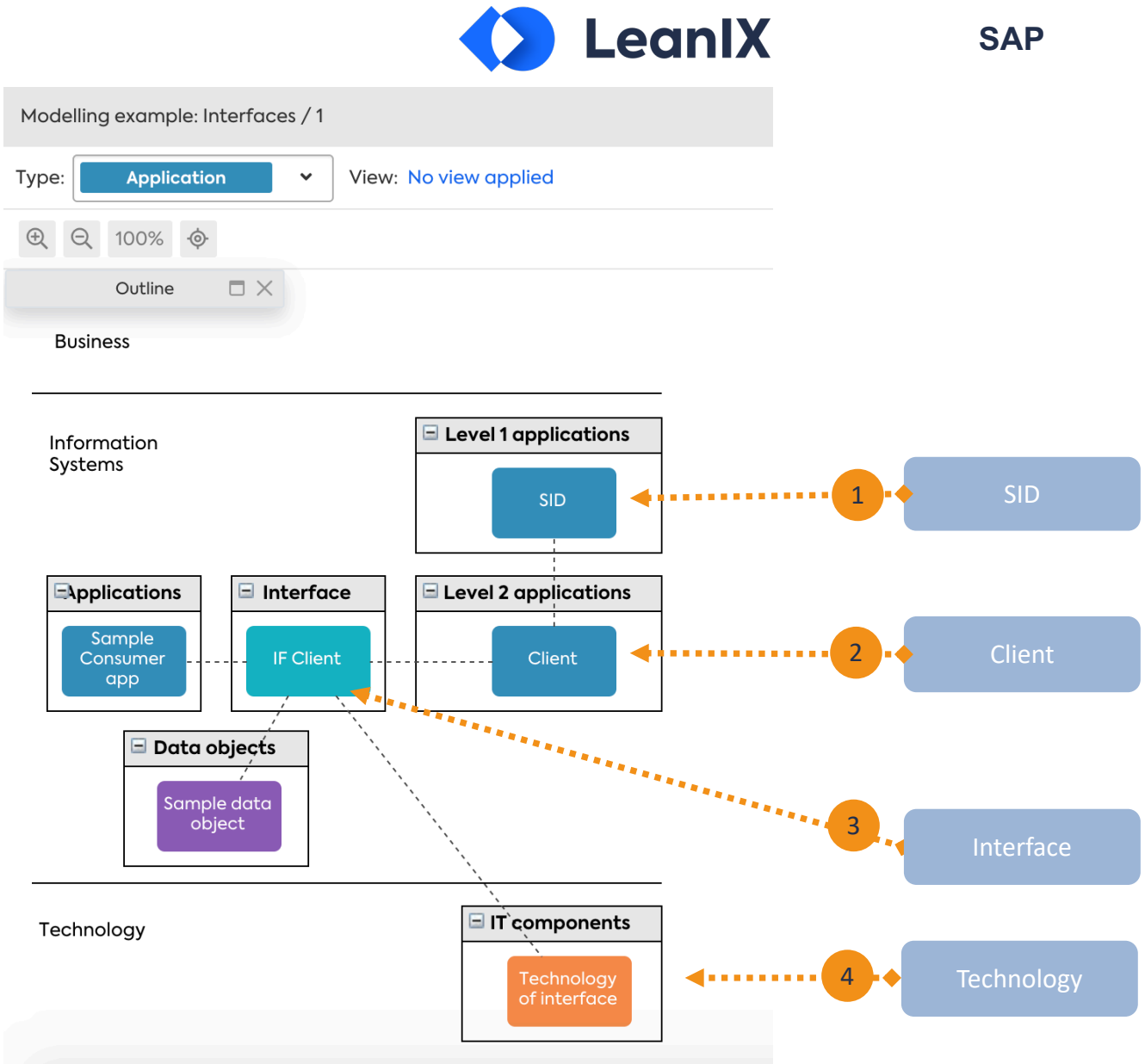
SAP





How to add SAP interfaces and data management?



LeanIX – SAP Data Flows

1. SAP SIDs are Level 1 applications in LeanIX. For interfaces, their purpose is to structure clients and apps consistently. They can be extracted from SAP Solution Manager.

2. SAP clients are Level 2 applications in LeanIX. SAP interfaces are always related to the client. They can be extracted from SAP Solution Manager.

3. This includes both internal SAP and non-SAP interfaces. In LeanIX, data objects are maintained. Interfaces map to them. They can partially be extracted from SAP PI.

4. Technology of interfaces technology can be extracted from SAP PI.

Example: How to add SAP interfaces and data management?

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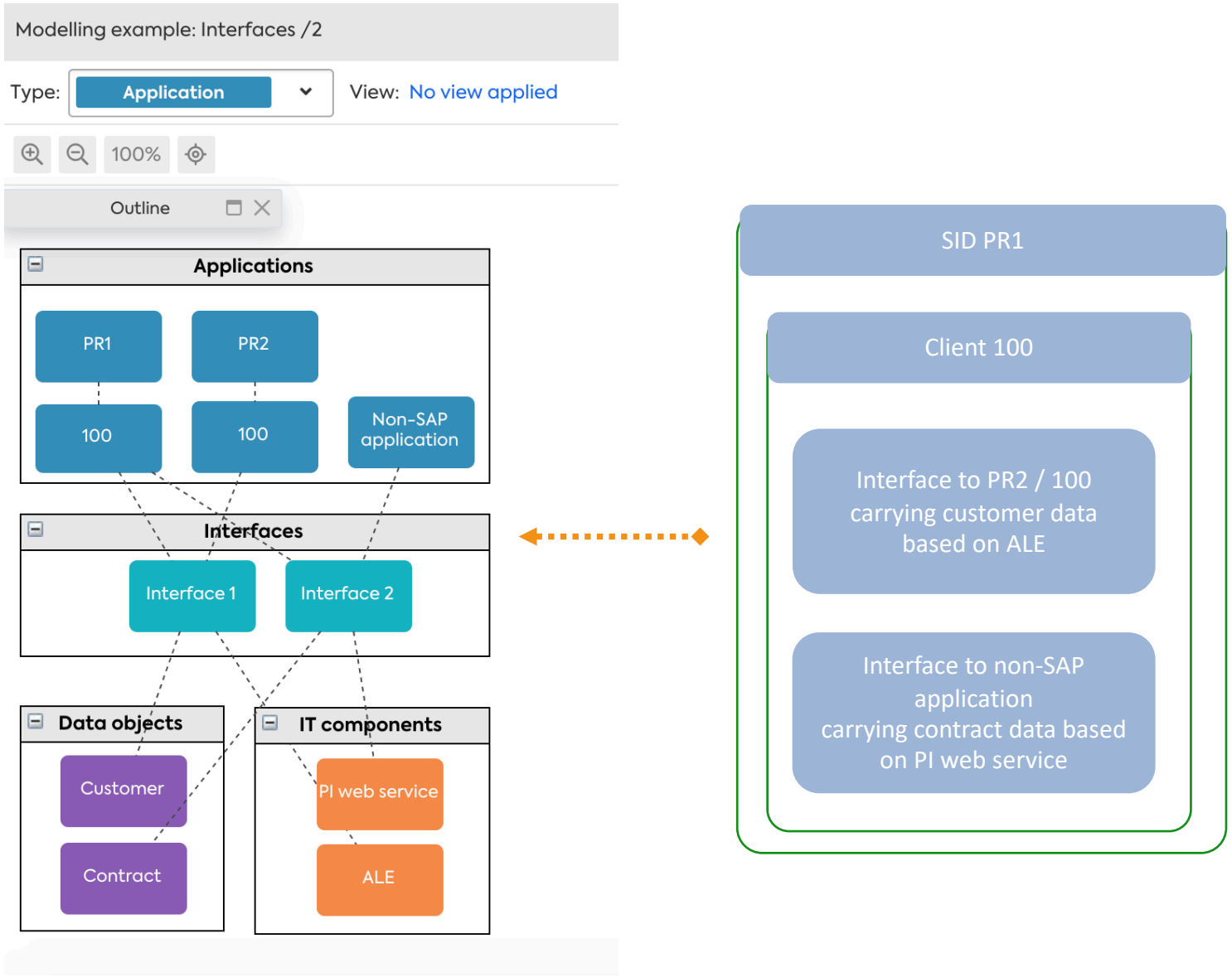
SAP



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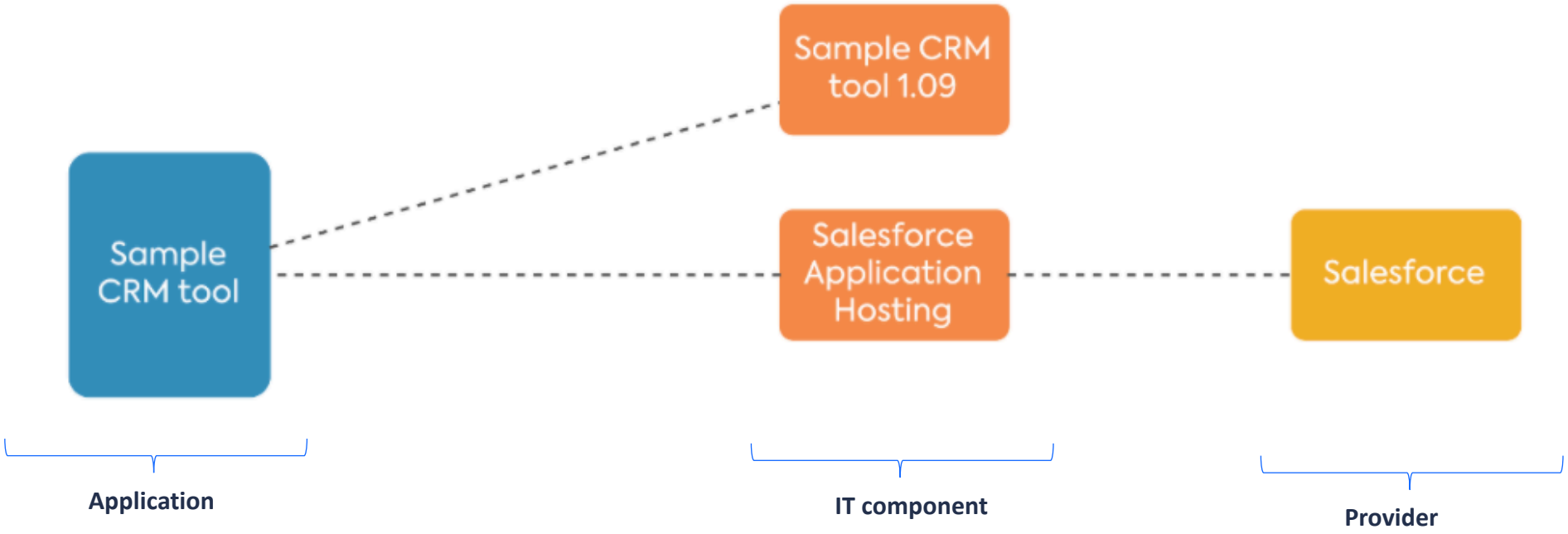
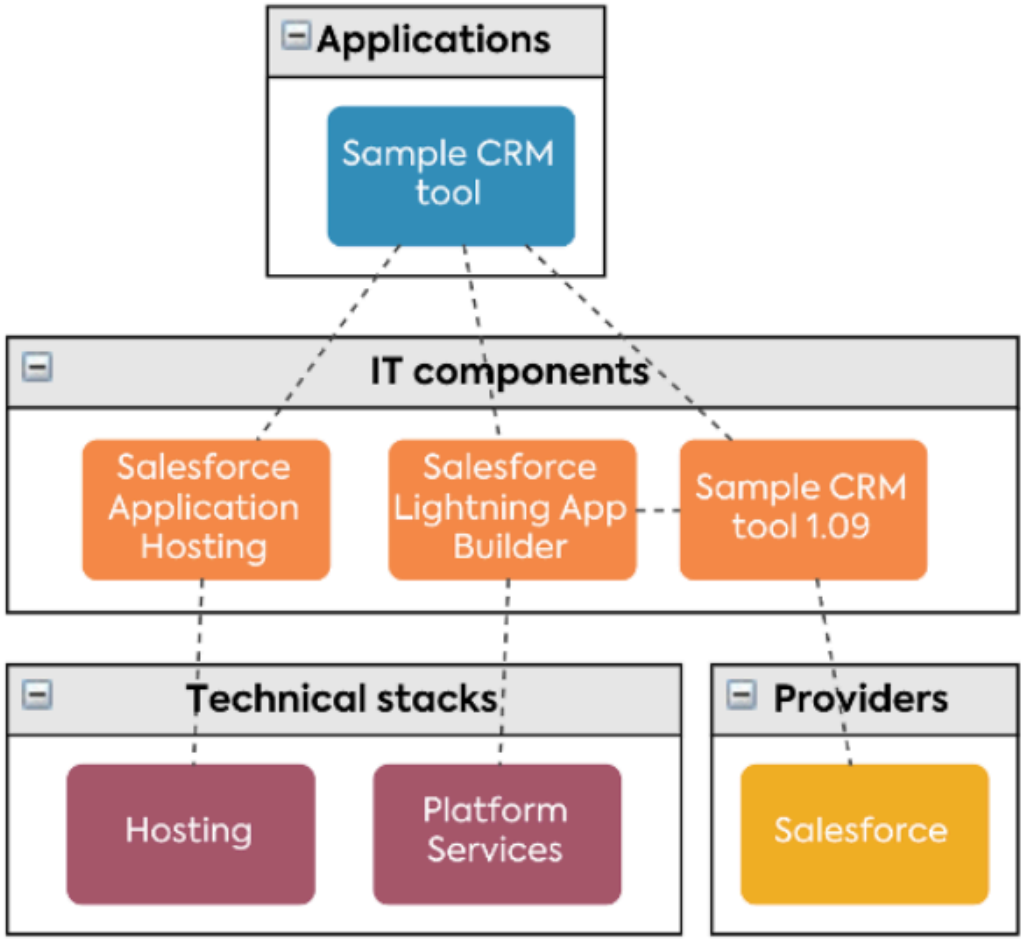
SaaS, PaaS & IaaS

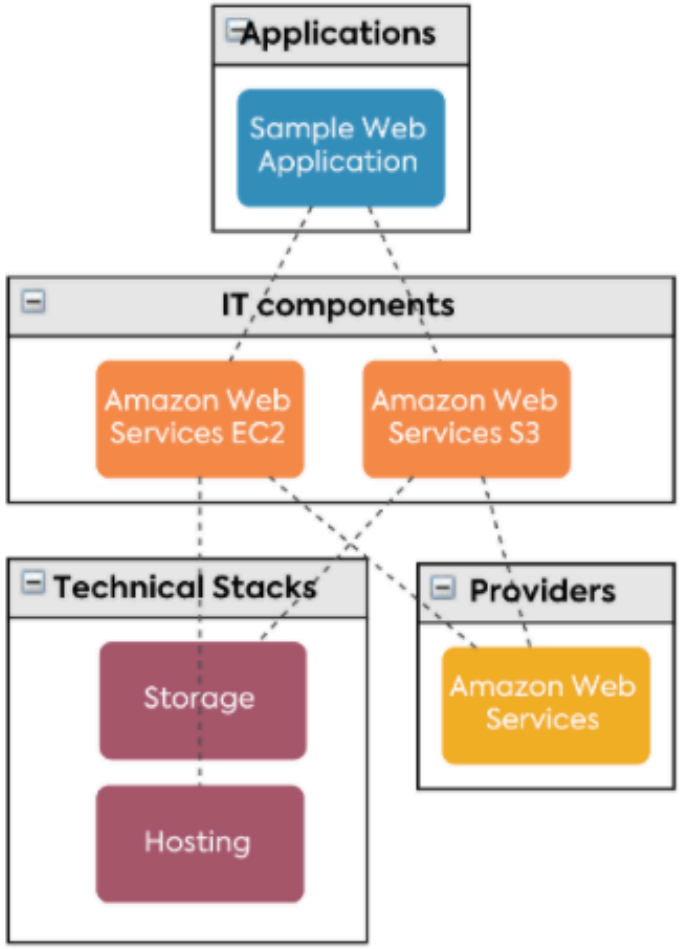
Sample Salesforce SaaS implementation



Sample Salesforce PaaS implementation



Sample Amazon Web Services IaaS implementation



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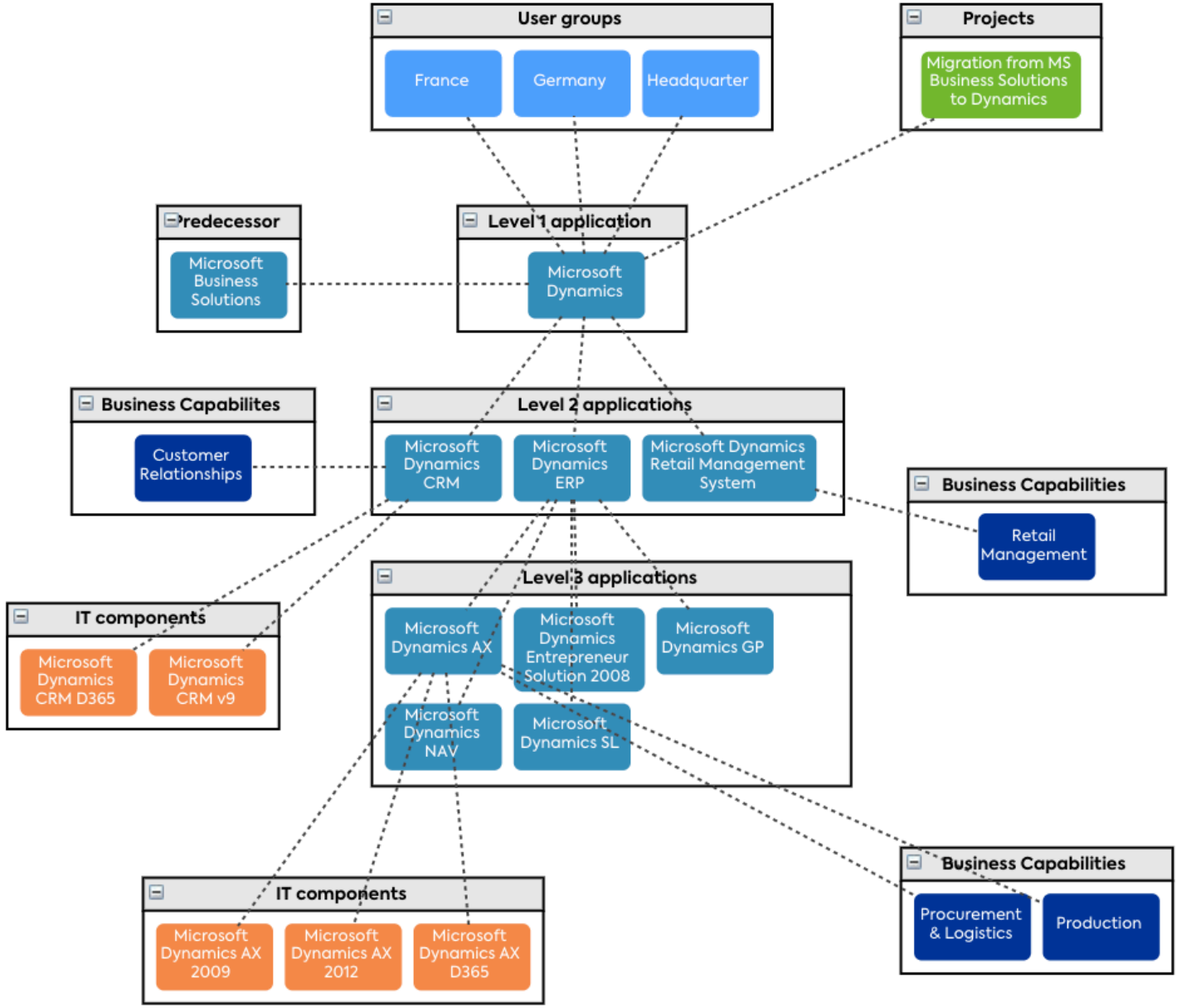
Microsoft Dynamics

Sample Enterprise Suite (Example: Microsoft Dynamics)



What are we going to do next?

What’s next?

Feedback

- Collect your feedback (please send it to kai.stettner@leanix.net)
- Incorporate your feedback

Interviews

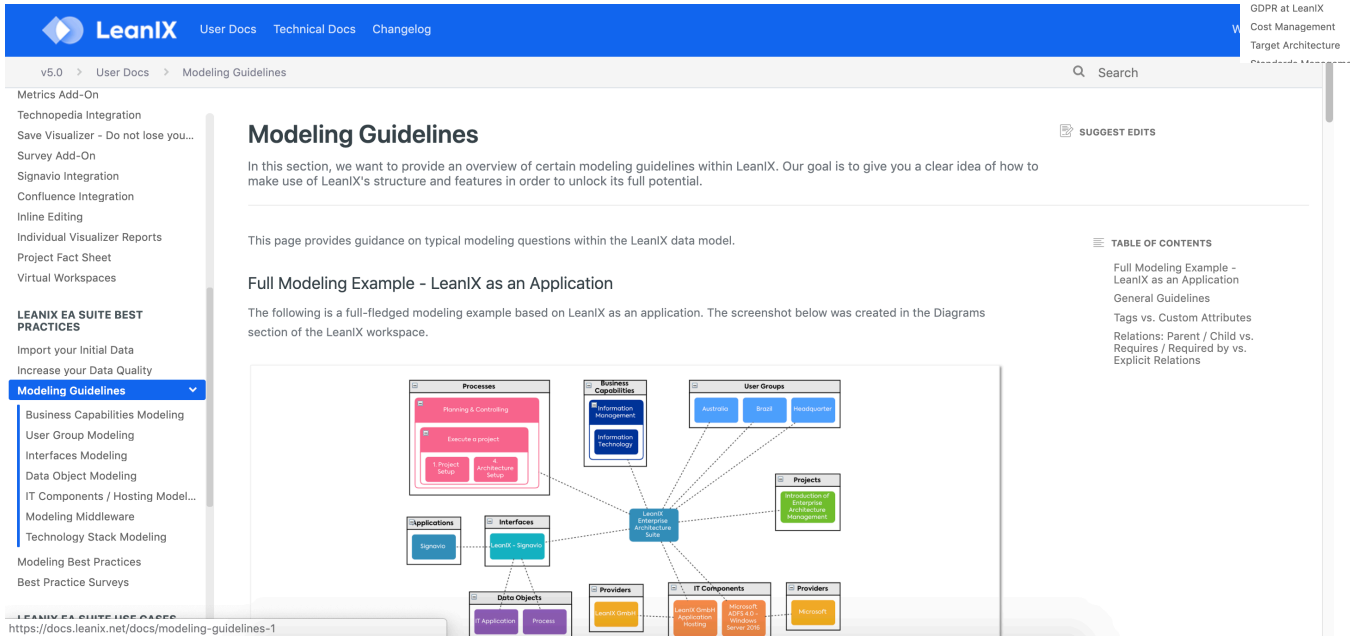
- Provide expert interviews for more ”visual” customers

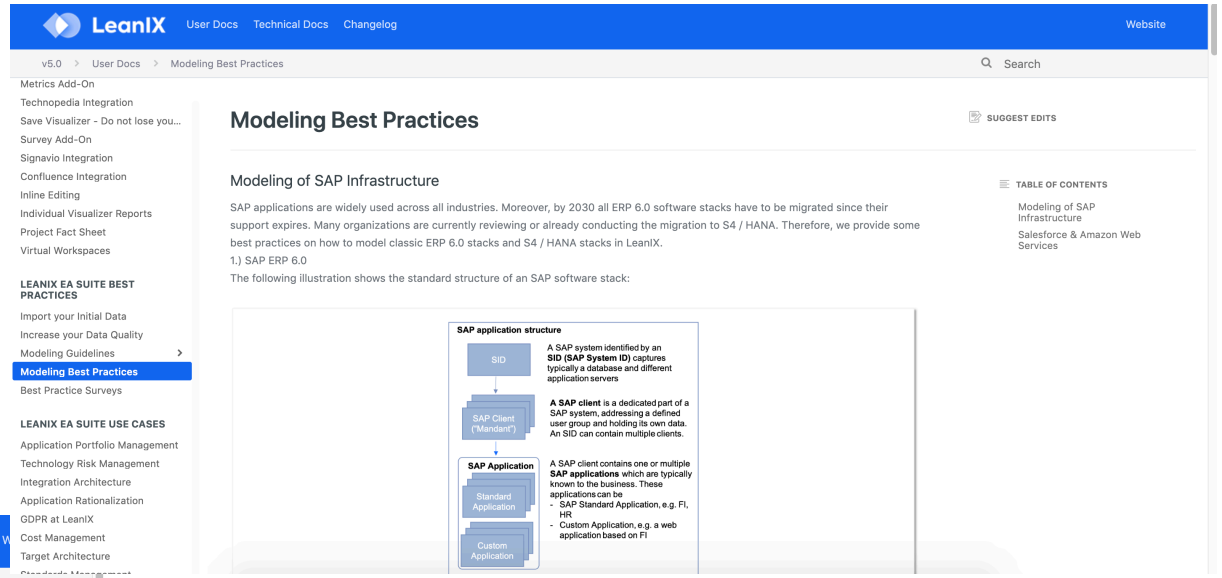
Best Practices

- Add more best practices (Office 365 ongoing, Reference architecture technology stack planned, protocols, programming languages, …) Please provide feedback if you have ideas.
- Automation of best practices: In so doing, customers can download best practices, adapt them to their needs and import them directly to their workspaces via Excel or API script.

Please check out the user documentation. Get back to me if you have questions or you want to provide feedback

https://docs.leanix.net/docs/modeling-guidelines-1





https://docs.leanix.net/docs/modeling-best-practices

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Thanks for your attention! Let me try to answer your questions...

Kai Stettner
Customer Success Manager, LeanIX
kai.stettner@leanix.net