



## Introduction to ERP and SAP

SAP  
**next-gen»**

Didier PETITJEAN – SAP Next Gen France & Maghreb Manager

# SAP Overview



# SAP is the world's largest provider of Enterprise Application Software

2019

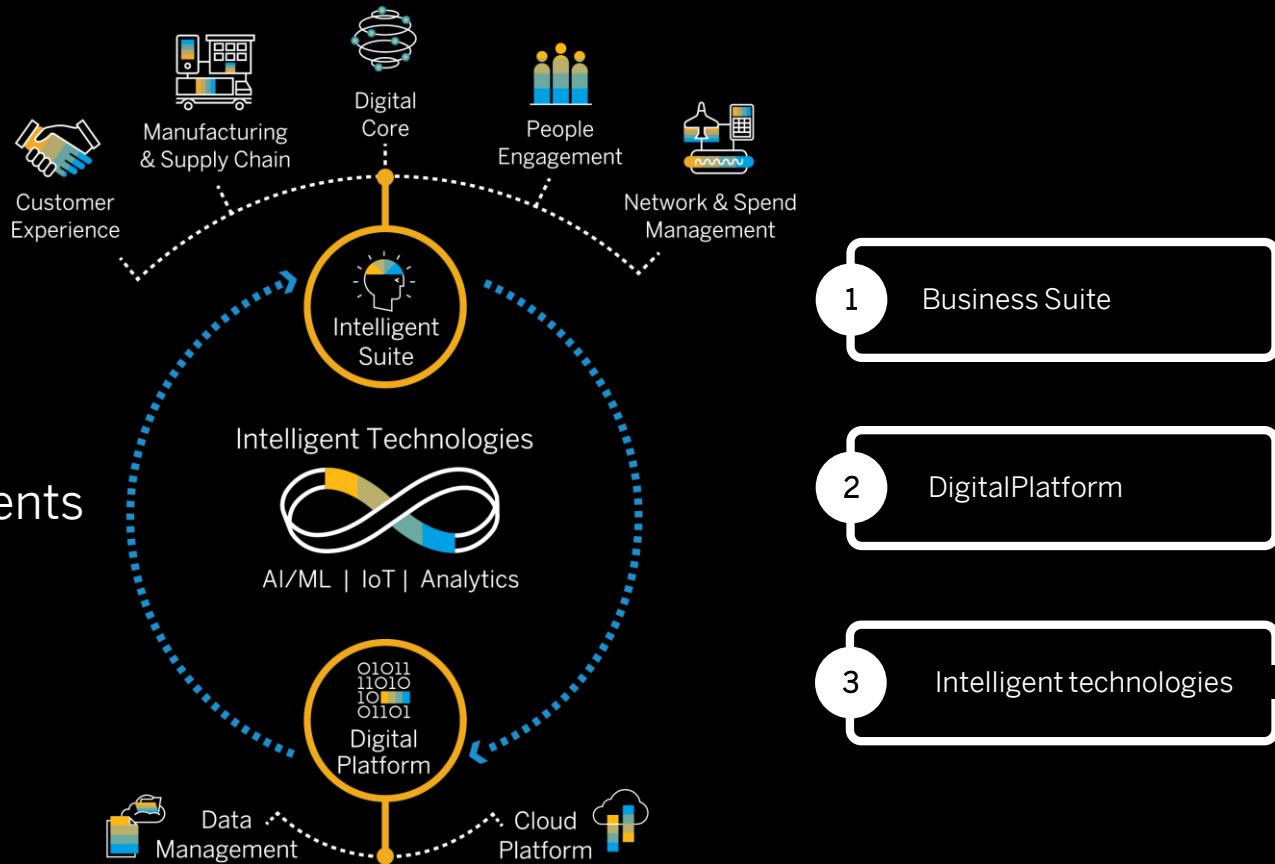


(\*) Including € 6.9 Billions on the cloud

**77 % of worldwide transactions pass through a SAP system**

# SAP Strategy around Intelligent Enterprise

Intelligent Enterprise  
reflects 3 key components



# SAP Strategy around Intelligent Enterprise

The Intelligent Enterprise leverages emerging technologies such as AI/ML, IoT, and Analytics to enable the workforce to focus on higher value outcomes.

**Intelligent Suite** – to enable our customers to automate their day-to-day business processes and better interact with their customers, suppliers, employees, etc., through applications that have intelligence embedded in them



**Digital Platform** - to facilitate the collection, connection, and orchestration of data as well as the integration and extension of processes in our Integrated Applications



**Intelligent Technologies** - to enable our customers to leverage their data to detect patterns, predict outcomes, and suggest actions



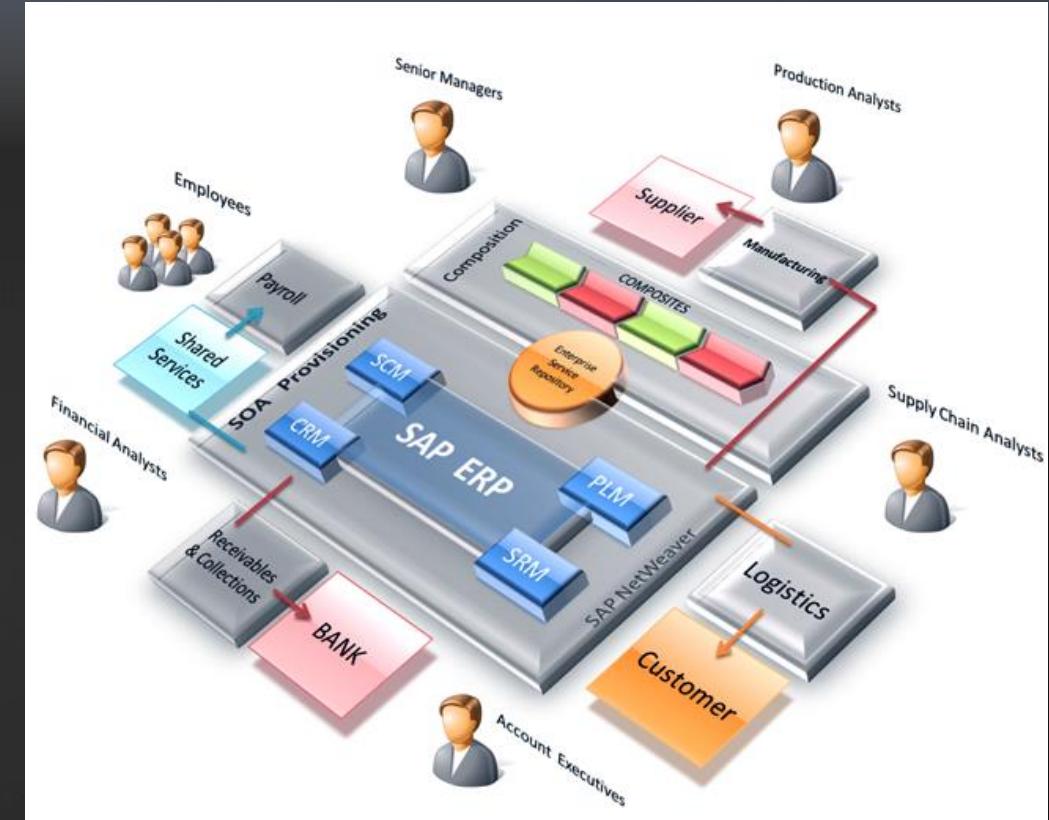
An ERP what's in ?



# What do you need as a Managing Director ?

You are the managing director of a company and you want

- **to be informed in real time** about order/sales/stocks (data available)
- to manage your suppliers
- to maintain a privileged relation with your customers
- to develop your employees
- Users to work on a computer screen, not with paper
- to respect the regulation



To summarize to manage effectively your business

**You better use a software, this software is called an ERP !**  
(Enterprise Resource Planning )

# What are the main functions of your company?

Marketing

Sales

Order taking

Purchasing

Stock in

Planning

Production

Delivery

Stock out

Invoicing

Cash in

Cash out

Data analysis

Resource management

Employee compensation

Accounting

Controlling

Forecast

# What are the main functions of your company?

<http://www.youtube.com/watch?v=IYCEQqSM08I>

*Public Video posted by Guru 99 on Youtube site*

# What is an Enterprise Resource Planning (ERP) System?

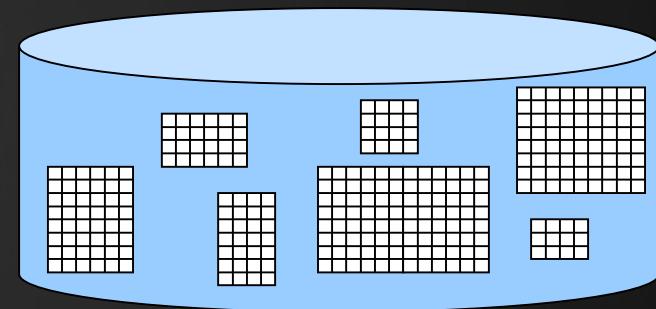
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It is a large, extensive software packages used to manage a firm's business processes.

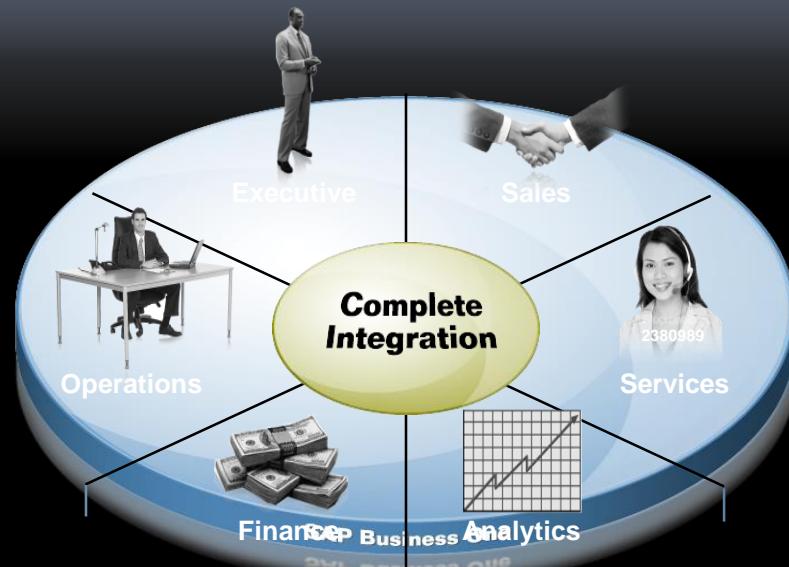
It is a standard software packages that must be configured to meet the needs of a company

It includes database programs with the following functions:

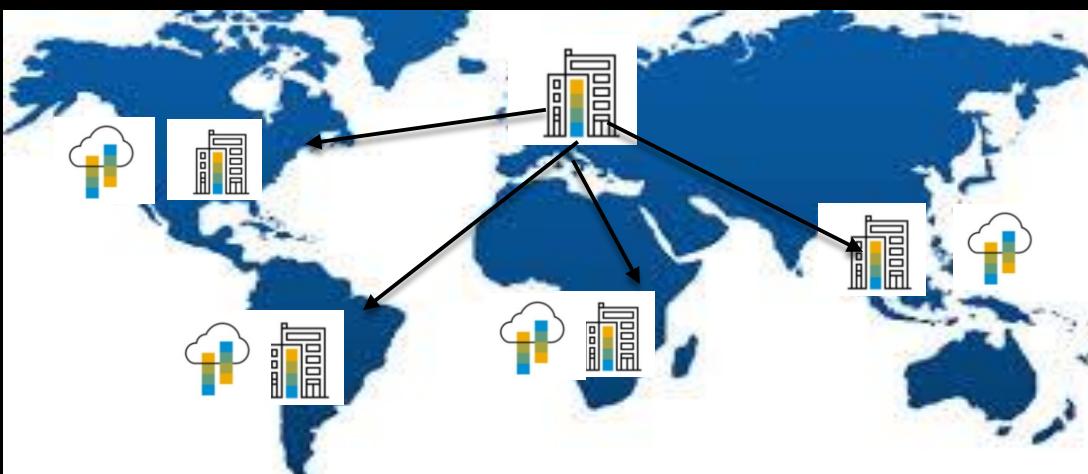
- Data Input (manual or Interface)
- Data Storage and Retrieval
- Data Manipulation
- Data Output (Interfaces)



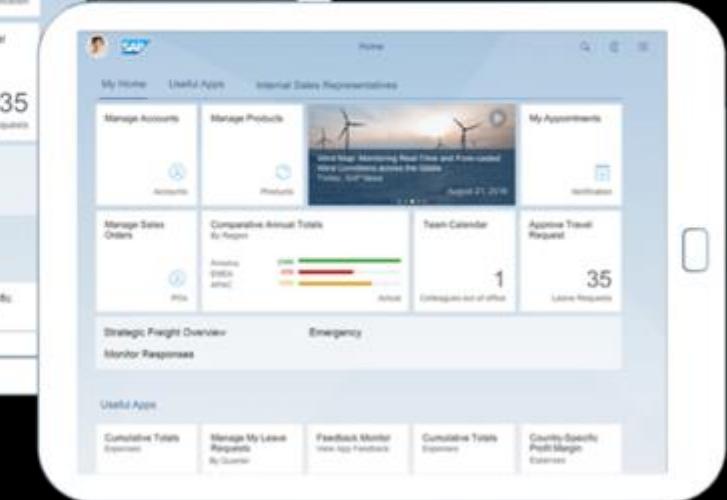
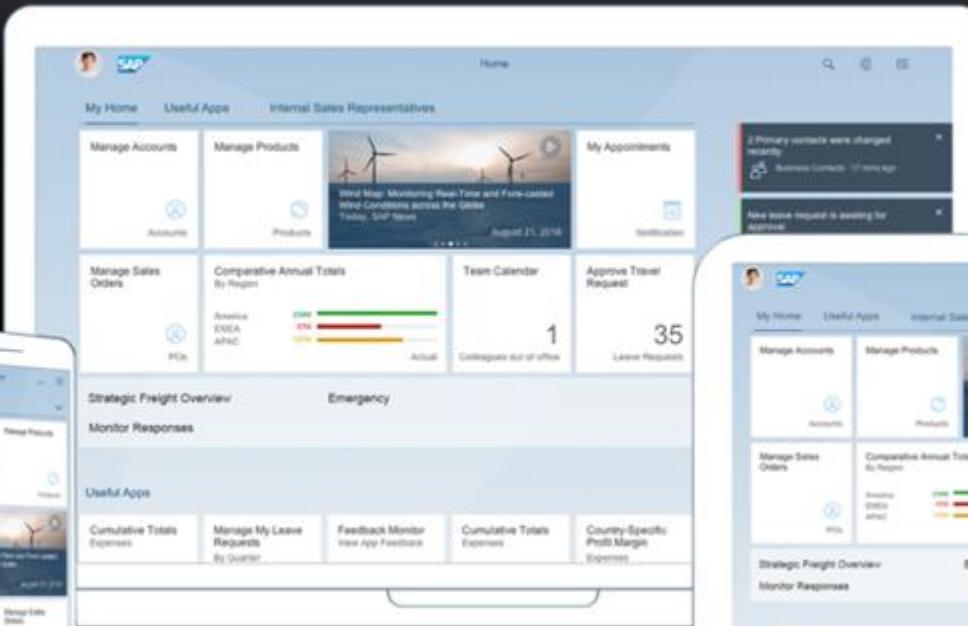
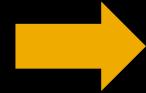
# How does an ERP System and satellite applications work ?



- Integrates several business functions end-to-end together (business process)
- Uses **common master data** to avoid duplication of data
- All operations are executed **on real time and logged**
- The system is **always available and secured**
- The system is **customizable to fit customer's business processes**
- **Consumable everywhere on premise / cloud**
- Authorizes address complex setup
- **Best practices** for each industry
- **Adapted languages and regulations (risk, compliance)**



# How does an ERP System and satellite applications work ?

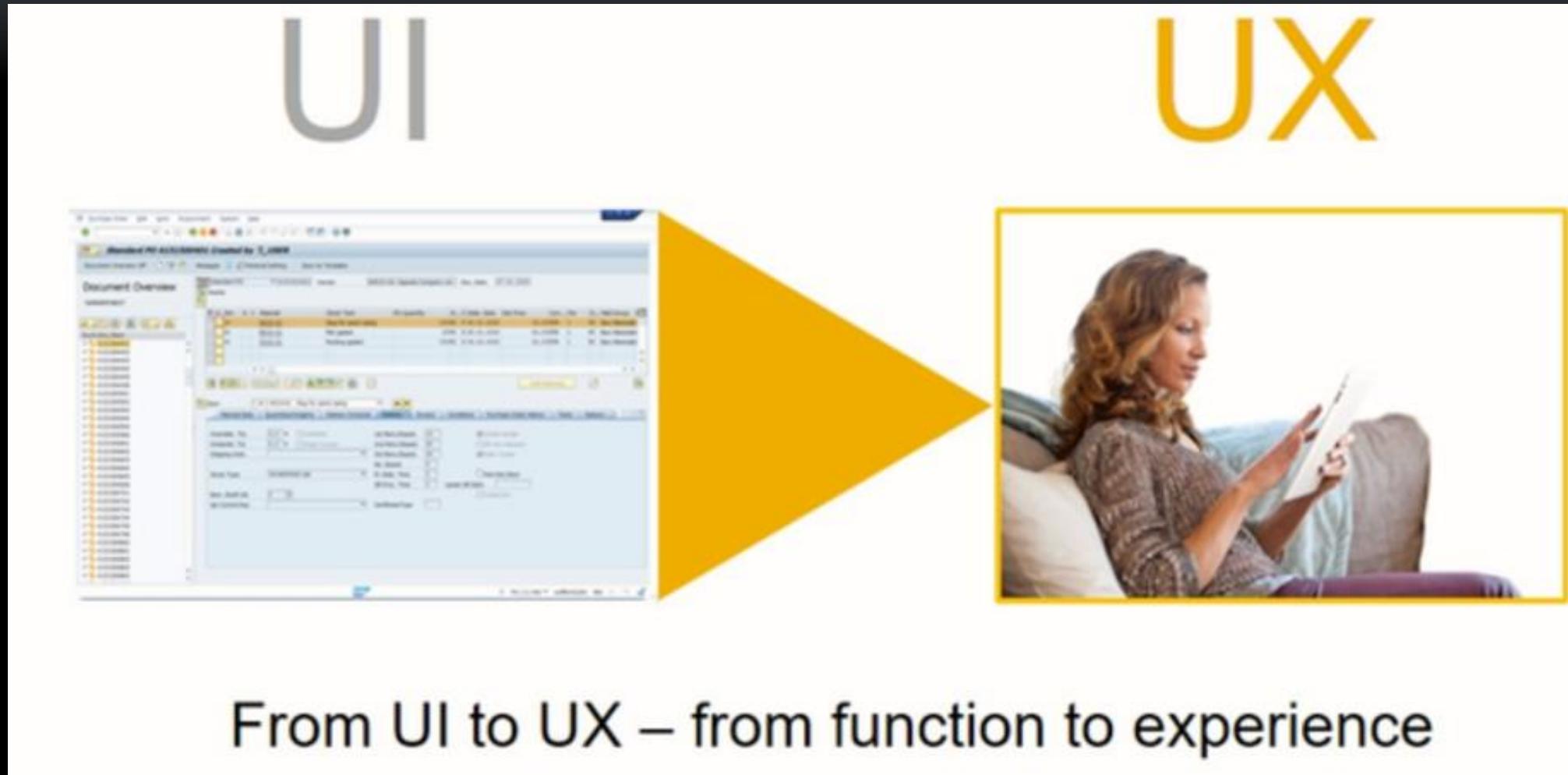


PAST

ACTUAL

From a transaction mode to a business role models, cockpits, KPI ....

# SAP User Experience : From User Interface to user Experience



# Transactions, analytics, dashboards

## Transactional

This section displays a transactional dashboard. On the left, there's a list of quotations with their numbers, amounts, and statuses. In the center, a detailed view of Quotation 3942 is shown, including its expiration date (02/04/2013), total amount (329.70), discount (38.80), and shipping information (Shipment to: 2345 Manhattan, 12345 New York, USA; Valid from: 01/04/2013 to 15/04/2013; Payment Terms: Net 30). Below this is a table for adding items to the quotation.

Name (2)	Description	Quantity	Price
J400001	Body Lotion	1 PCS	80.00
D400001	Conditioner	1 PCS	80.00

## Factsheets

This section shows factsheets for a cost center. It includes a general summary (4711 Marketing, 280 hours worked, 28 employees, 1200h processed time), contact information (John Bradford, partially involved), and a list of internal orders (Order 1: 100 Event, Order 2: 100 Event, Order 3: 100 Event, Order 4: 100 Event) along with their respective costs.

## Analytical

This analytical dashboard compares budget vs. costs for the quarter. It shows actual costs of 125.5M and 75.11M against target costs of 125.8M and 125.0M. A chart below illustrates the cost distribution by manager (John Smith, Adam Smith, John Pritchett) across different categories.

Category	John Smith	Adam Smith	John Pritchett
Category A	100	100	100
Category B	100	100	100
Category C	100	100	100

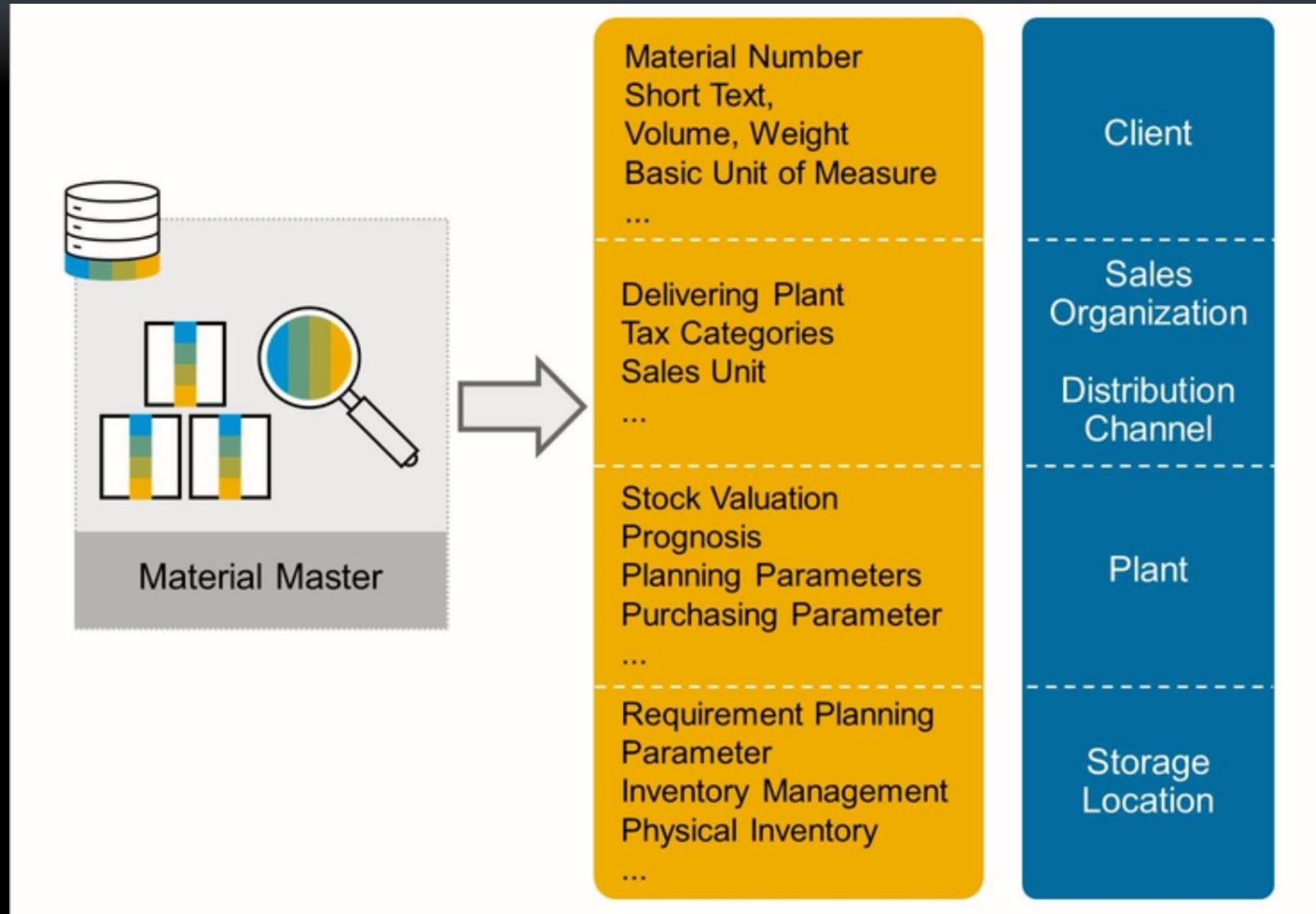
## Master data : business partner



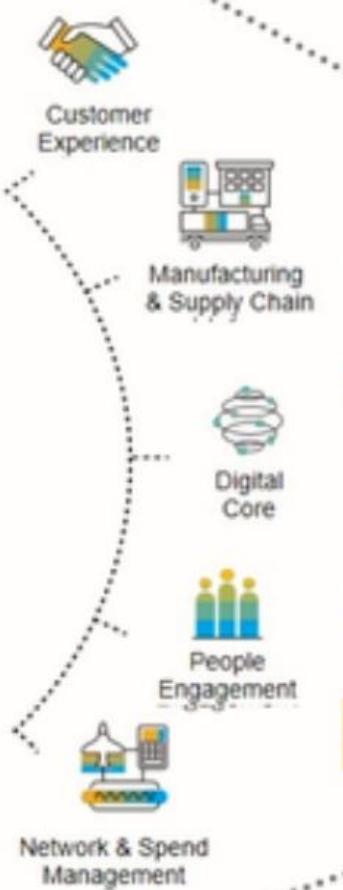
### Business Partner Category

- Person
- Organization
- Group

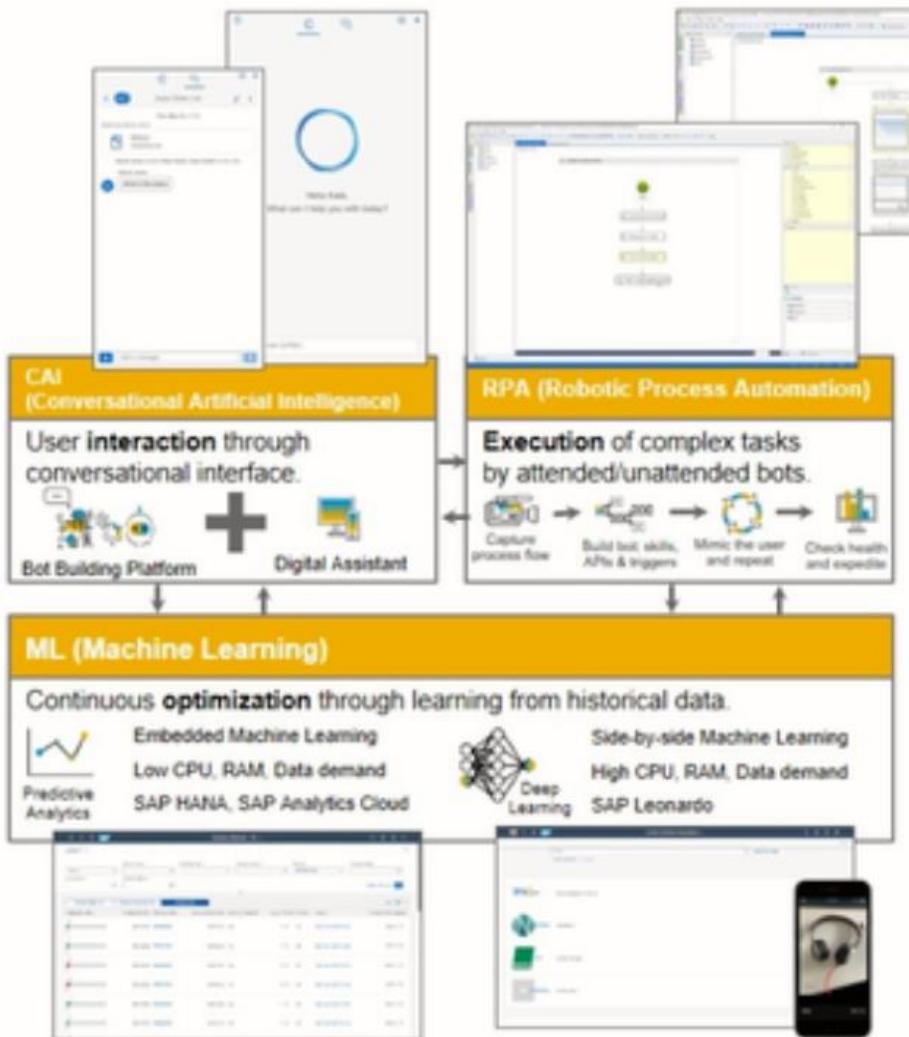
# Master data : article



## Intelligent Suite on a digital platform



## Intelligent Technologies

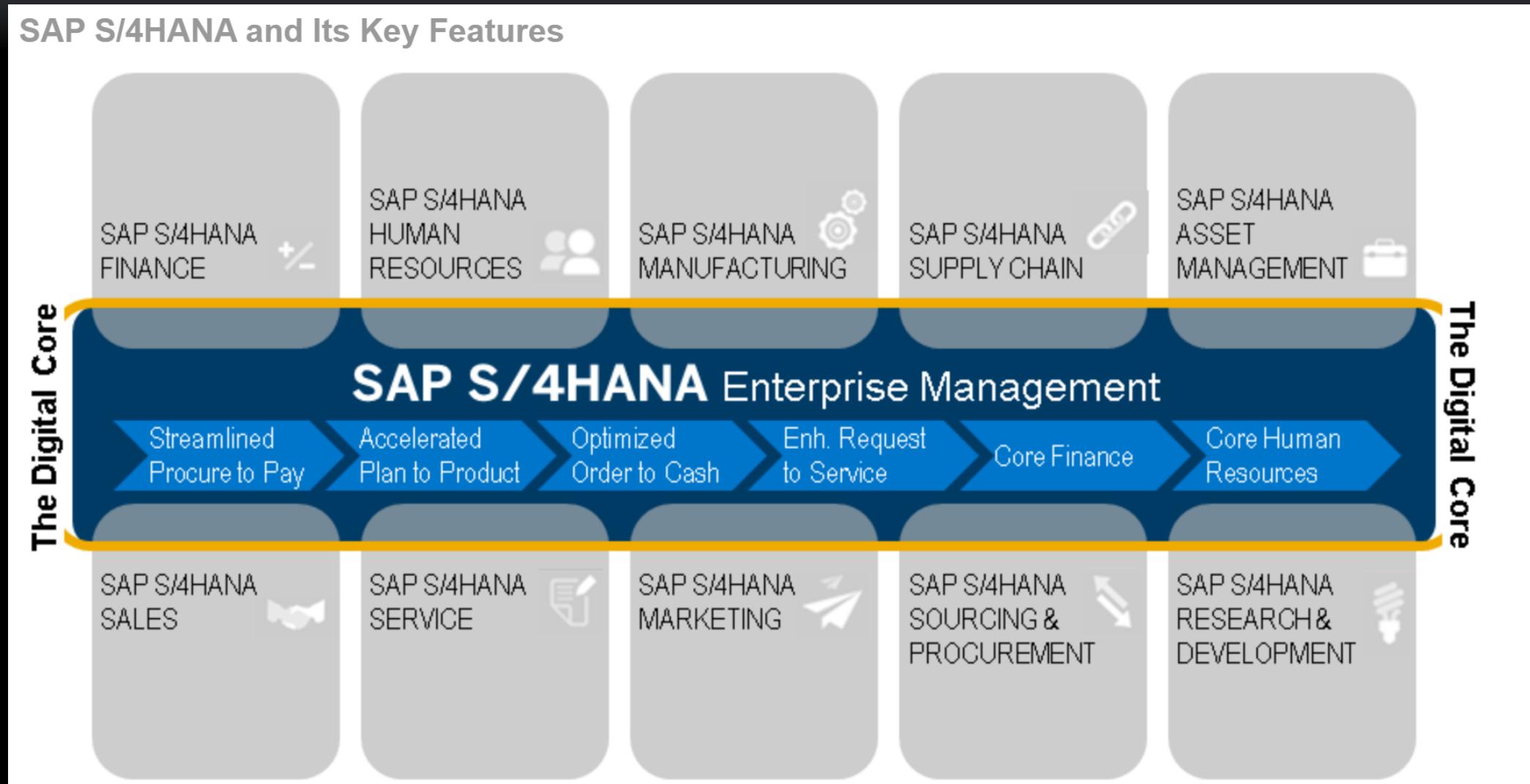


## Intelligent Enterprise



- Automation
- Decision Support
- Improved Insights

# Overview ERP where all modules are fully integrated



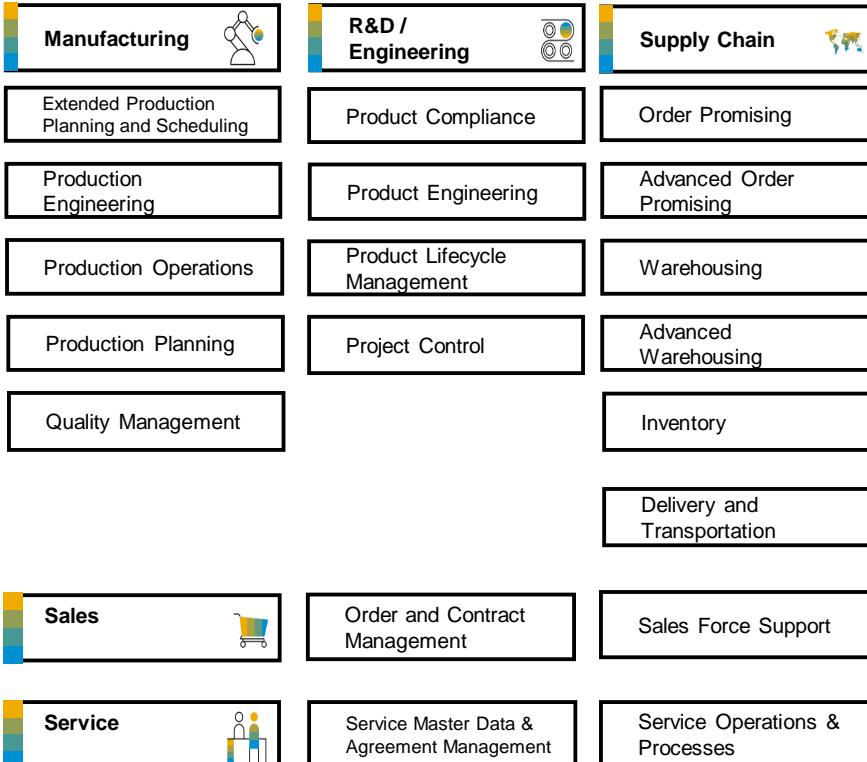
# ANALYTICS – PREDICTIVE



HANA PLATFORM INCL. MACHINE LEARNING / AI / IOT

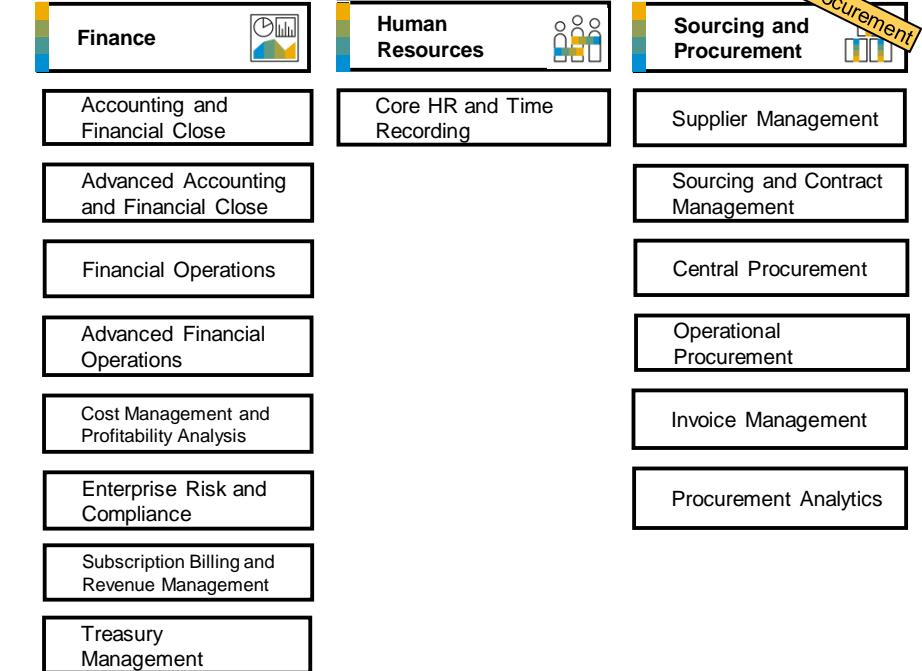
# SAP Best Practices for SAP S/4HANA (on premise)

## Operational ERP



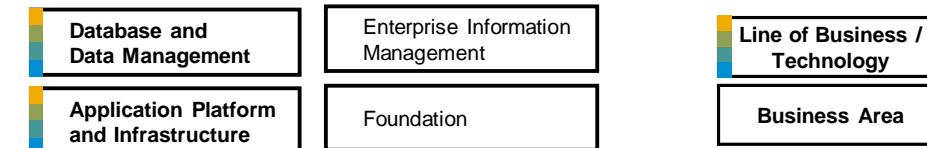
*Direct procurement*

## Finance-led ERP



*Indirect procurement*

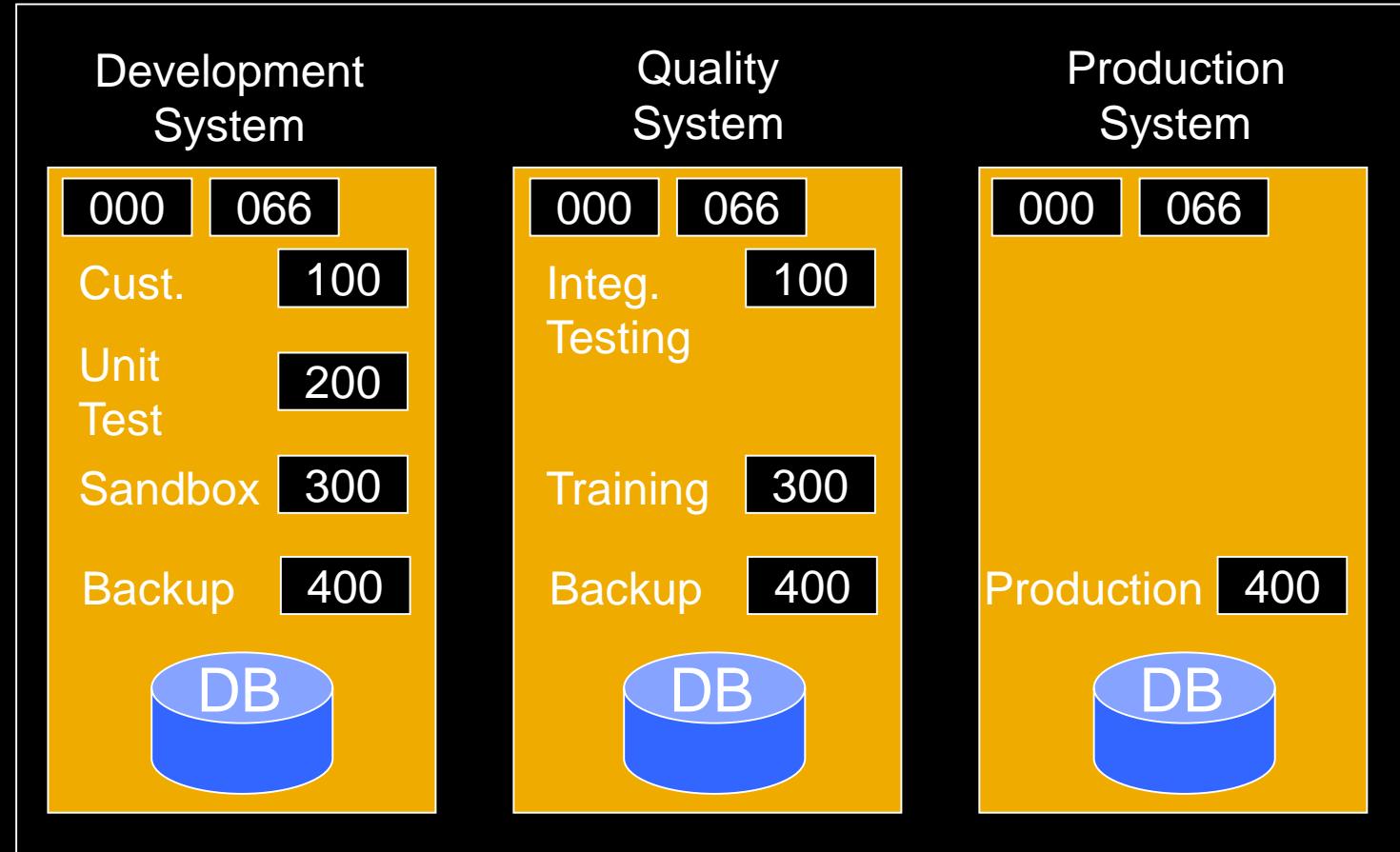
## Real-time foundation



Technically ?



# System Landscape



# Customizing

Create Group: Role FI Vendor

Business Partner: New BP PL1

Address:

Name	New BP PL1
Title	
Name 1	New BP PL1
Name 2	
Language	EN
Salutation	
Salutation	

Search Terms:

Search Term 1/2	<input checked="" type="checkbox"/>
-----------------	-------------------------------------

Special Customer:

<input type="checkbox"/> VIP	
<input type="checkbox"/> Undesirable Customer	
Reason Undes.	<input type="text"/>
Comment	<input type="text"/>

Standard Address:

Print Preview	
Street Address	
Street/House number	<input type="text"/>
Postal Code/City	<input type="text"/>
Country	<input type="text"/>
Region	<input type="text"/>

PO Box Address

SAP

New Entries: Details of Added Entries

Company: NSC1  
Company name: New SAP company 1  
Name of company 2: Company number 1

Detailed information

Street:	20 avenue du Moulin
PO Box:	
Postal code:	75000
City:	Paris
Country:	FR
Language Key:	EN
Currency:	EUR

Data was saved [View details](#)

Save Cancel

# Development

**Business process list ranked by total DB time**

Total DB Time	Total Time	DB T...	Tot. DB E	Total Records	DB Mn T	Sess...	Request Type	Request Entry Point	DB stmn...	DB Max T	DB Min T	DB Dvtn...	Max Rcrds	Min Rcrds	Mean R...	Dvtn Rc...
880.399.164,4...	1.507.934.919,...	58,38	148.713.640	1.018.292,1...	5,920	527	Batch Job	ZSQLM_TEST	149	9.870,1...	0,089	20,433	100,000	0	6,847	751,439
454.645.987,6...	530.479.364,2...	85,70	74.191.995	495.636.853	6,128	6,287	Remote Func...	ZSQLM_CALLBACK RFC	36	15.081,...	0,229	53,717	100,000	0	6,680	750,966
441.514.573,5...	447.770.339,2...	98,60	74.626.760	369.032.400	5,916	520	Batch Job	ZSQLM_TEST3	6	11.323,...	0,376	16,223	100,000	0	4,945	651,831
144.984.946,4...	156.231.746,6...	92,80	236.797.836	2.840.340,7...	0,612	3,156	Batch Job	ZSQLM_TEST11	9	214.15...	0,300	13,951	75,000	0	11,995	908,016
14.423.850,765	14.484.963,817	99,58	69.432	473.415.780	207,741	3,156	Batch Job	ZSQLM_TEST11_OPT	3	12.440,...	0,292	1.023,9...	75,000	0	6.818,4...	21,561,...
3.492.813,580	58.553.884,853	5,97	22.360	119.797.600	156,208	520	Batch Job	ZSQLM_TEST3_OPT	5	9.865,5...	10,521	729,088	100,000	0	5.357,6...	20,941,...
1.997.205,874	2.032.910,598	98,24	430.539	2.129.610	4,639	3	Submit Report	ZSQLM_TEST3	6	3.613,6...	0,393	8,855	100,000	0	4,946	651,934
1.785.592,073	3.065.212.992	58,25	287.938	1.955.274	6,201	284	Unknown	INITIAL ROOTID	225	7.015,5...	0,144	22,117	100,000	0	6,791	751,869
1.137.344,454	1.165.832,179	97,56	618.893	6.993.684	1,838	9	Submit Report	ZSQLM_TEST11	3	547.32...	0,340	748,489	75,000	0	11,300	889,157
715.917,334	899.285,486	79,61	262.216	969.077	2,730	22	Transaction	BC_TOOLS_USER	392	1.358,1...	0,050	15,274	6,948	0	3,696	121,438
601.603,538	1.231.812,011	48,84	601.094	355.779	1,001	42,7...	Batch Job	SAPMSSY2	94	4.638,6...	0,174	7,507	38	0	0,592	0,563
590.491,030	602.329,819	98,03	139.673	730.590	4,228	2	Transaction	ZTRIGGER_TEST	43	1.141,8...	0,306	5,786	100,000	0	5,231	660,846
348.633,241	1.373.833,686	25,38	345.576	2.135.053	1,009	10,5...	Remote Func...	SADT REST RFC_ENDPOINT	1.666	998,170	0,006	5,540	130,295	0	6,178	225,599
341.178,962	29.718.391,239	1,15	353.678	4.797.625	0,965	4,844	Submit Report	SAPMSSY8	184	1.061,1...	0,178	3,409	3,926	0	13,565	58,993
340.130,032	695.698,023	48,89	30.326	12.289.442	11,216	404	Batch Job	ZSQLM_UPDATE_DATA							15,244	1.124,2...
339.255,716	405.406,056	83,68	111.829	10.664.854	3,034	525	Batch Job	ZSQLM_TEST2							15,368	20,866
291.224,558	519.537,938	56,05	57.200	37.076.000	5,091	520	Batch Job	ZSQLM_TEST4							8,182	2.247,8...
197.292,681	343.344,709	57,46	106.665	1.204.334	1,850	38	Transaction	SEU_INT							1,291	195,367
193.693,937	224.064,019	86,45	83.002	271.595	2,334	526	Batch Job	ZSQLM_TEST1							3,272	1,251
173.430,426	302.778,616	57,28	158.909	2.414.562	1,091	236	Batch Job	SAPMS07A							15,195	269,917
133.813,181	990.688,638	13,51	71.728	2.538.910	1,866	238	Batch Job	SAPMSSYT							225	420,959
130.924,388	205.960,930	63,57	157.382	85.994	0,832	7.332	Batch Job	ZWNC_TCOLL STARTER							39	199,391
98.587,378																
92.503,767																
83.642,041																
80.660,881																
73.367,238																
67.243,636	438.268.499,380	99,26	97,88	74.620.000	99,99	5.137.600	1,39	5,873 ZSQLM_TEST_ORDER	SELECT (Open SQL) PROG ZSQLM_TEST3 ZSQLM_TEST3	59	SELECT SINGLE * FROM ZSQLM_TEST_ORDER INTO WA WHERE ORDER_ID = DETAILS					
64.734,503	2.668.066,669	0,60	0,60	520	0,00	52.000.000	14,09	5.130,897 ZSQLM_TEST_ORDER	INSERT (Open SQL) PROG ZSQLM_TEST3 ZSQLM_TEST3							
	402.158,996	0,09	0,09	2.600	0,00	233.997.400	63,41	154.677 ZSQLM_TEST_ORDER	SELECT (Open SQL) PROG ZSQLM_TEST3 ZSQLM_TEST3							
	76.519,161	0,02	0,02	520	0,00	51.900.000	14,06	147,152 ZSQLM_TEST_ORDER	DELETE (Open SQL) PROG ZSQLM_TEST3 ZSQLM_TEST3							
	72.053,510	0,02	0,02	2.600	0,00	25.997.400	7,04	27,713 ZSQLM_TEST_ORDER	SELECT (Open SQL) PROG ZSQLM_TEST3 ZSQLM_TEST3							
	27.275,880	0,01	0,01	520				Commit								

**Records for Request Batch Job ZSQLM\_TEST3**

Total DB Time	DBTime[%]	DB Tm/TT	DB Exctns	DB Exct[%]	Total Records	Records[%]	DB Mn T	Table Names	SQL Operation Type	Obj.	Object Name	Include Name	Include Li	ABAP Source Code Fragment
67.243,636	438.268.499,380	99,26	97,88	74.620.000	99,99	5.137.600	1,39	5,873 ZSQLM_TEST_ORDER	SELECT (Open SQL) PROG ZSQLM_TEST3 ZSQLM_TEST3	59	SELECT SINGLE * FROM ZSQLM_TEST_ORDER INTO WA WHERE ORDER_ID = DETAILS			
64.734,503	2.668.066,669	0,60	0,60	520	0,00	52.000.000	14,09	5.130,897 ZSQLM_TEST_ORDER	INSERT (Open SQL) PROG ZSQLM_TEST3 ZSQLM_TEST3					

**Drill down to the SQL profile of report ZSQLM\_TEST3 running as batch job (6 SQL statements)**

**Navigate to the code**

```

method get_details.
  data details type t_order_details.
  data wa type zsqlm_test_order.
  loop at important_order_details into details.
    select single * from zsqlm_test_order into wa
      where order_id = details-order_id and order_details_id = details-order_details_id and
        item_name like pattern. "check existence.
      if sy-subrc = 0.
    endloop.
  endmethod.

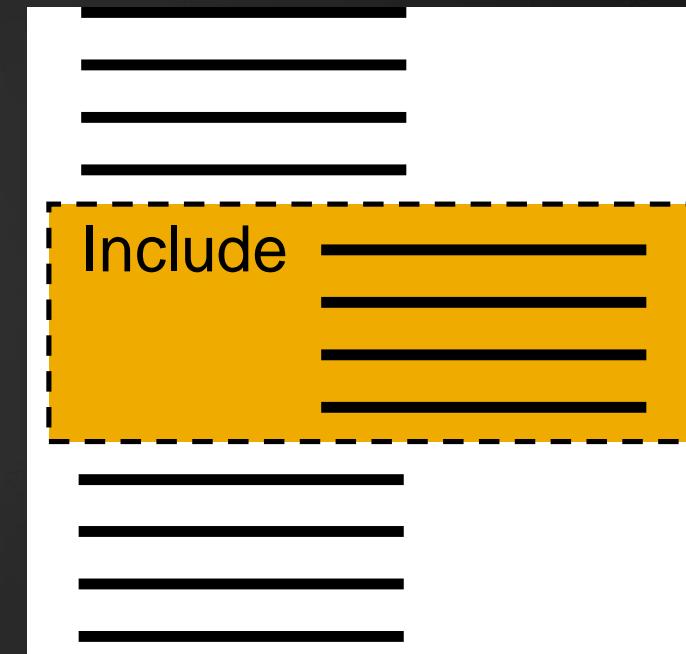
```

# Enhancements : how to handle it properly ?

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## User Exits

Defined places in ABAP code where SAP expects users may want to perform additional processing



# Enhancements : how to handle it properly ?

DEMO

SAP  
S/4HANA  
specific

Applies to  
SAP S/4HANA  
& SAP ERP

Optimize  
(SAP HANA,  
ABAP in general)

Housekeeping  
(cleanup, check, test)

Adapt your custom code to SAP S/4HANA.

- Supported via standard code check tools (ABAP Test Cockpit)

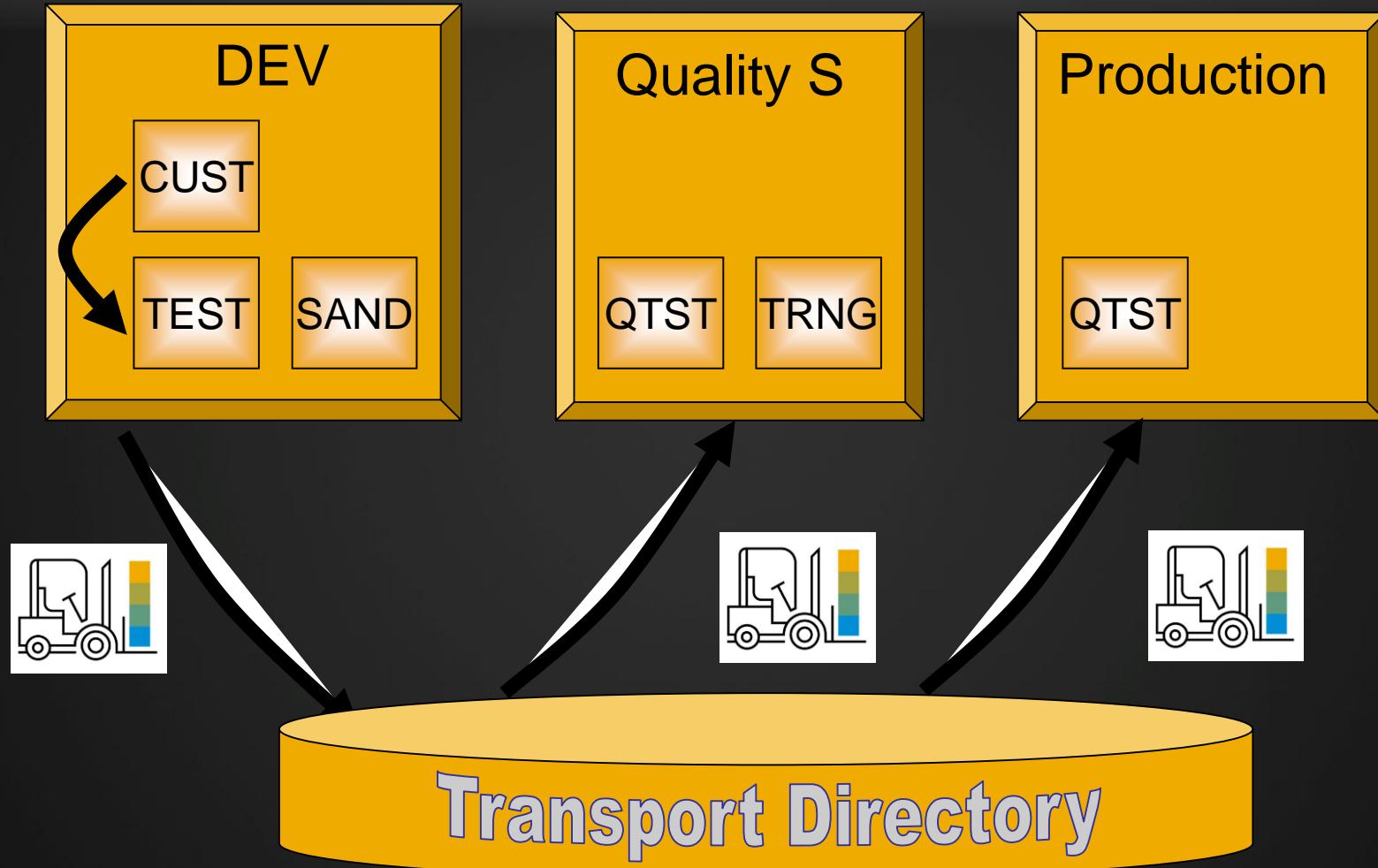
Like in SAP ERP, custom code activities include

- regularly remove obsolete custom code, unnecessary modification and clones.
- regularly run all code checks (e.g. functional correctness, performance, security...) provided by SAP (ABAP Test Cockpit) on your custom code.
- regularly do performance profiling and optimization of your custom code (general as well as SAP HANA specific).
- define suitable test concepts and test your custom code (including test automation).
- follow custom code best practices (ABAP, SQL in general and SAP HANA specific).
- do SPDD, SPAU, SPAU\_ENH adjustments during lifecycle events.

Like in SAP ERP, do custom code activities

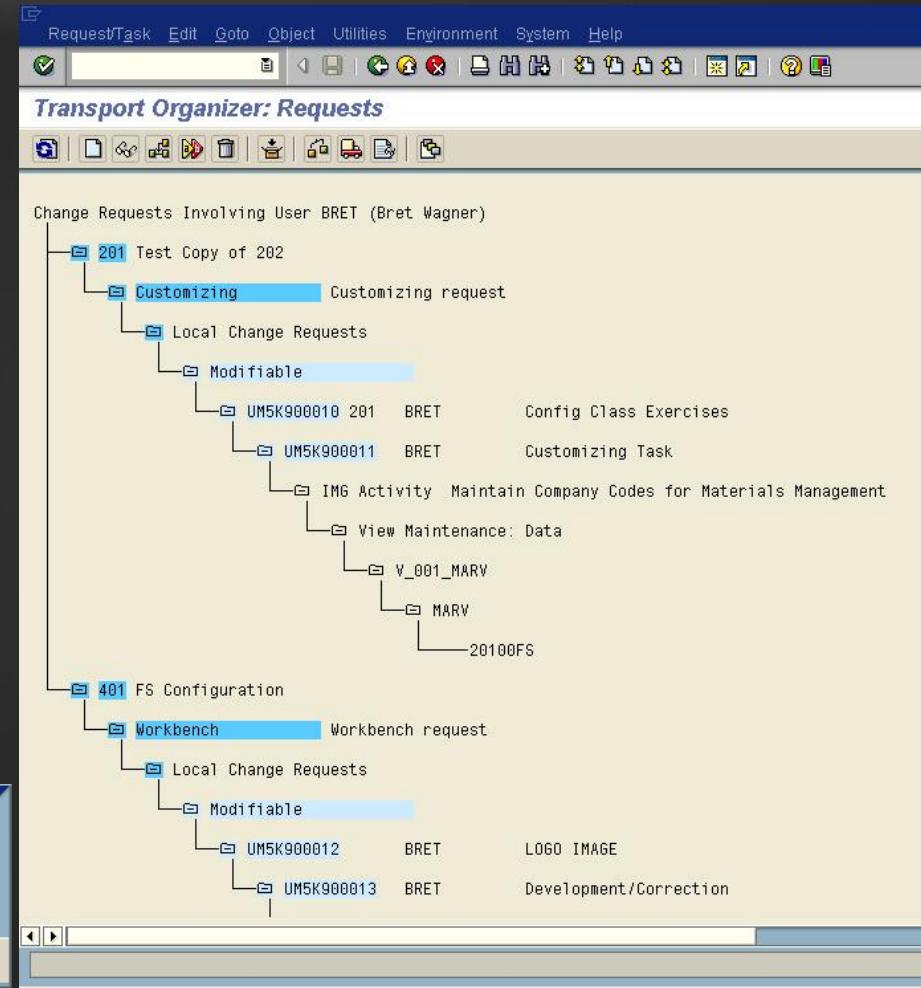
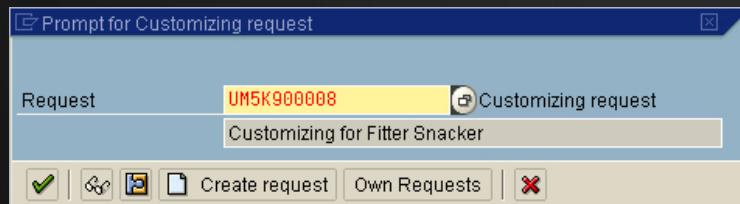
- on a regular basis, accompanying your development activities.
- with increased focus and intensity during major lifecycle events.
  - In case of SAP S/4HANA: before the conversion to SAP S/4HANA and before a release upgrade.

# Change Transport System



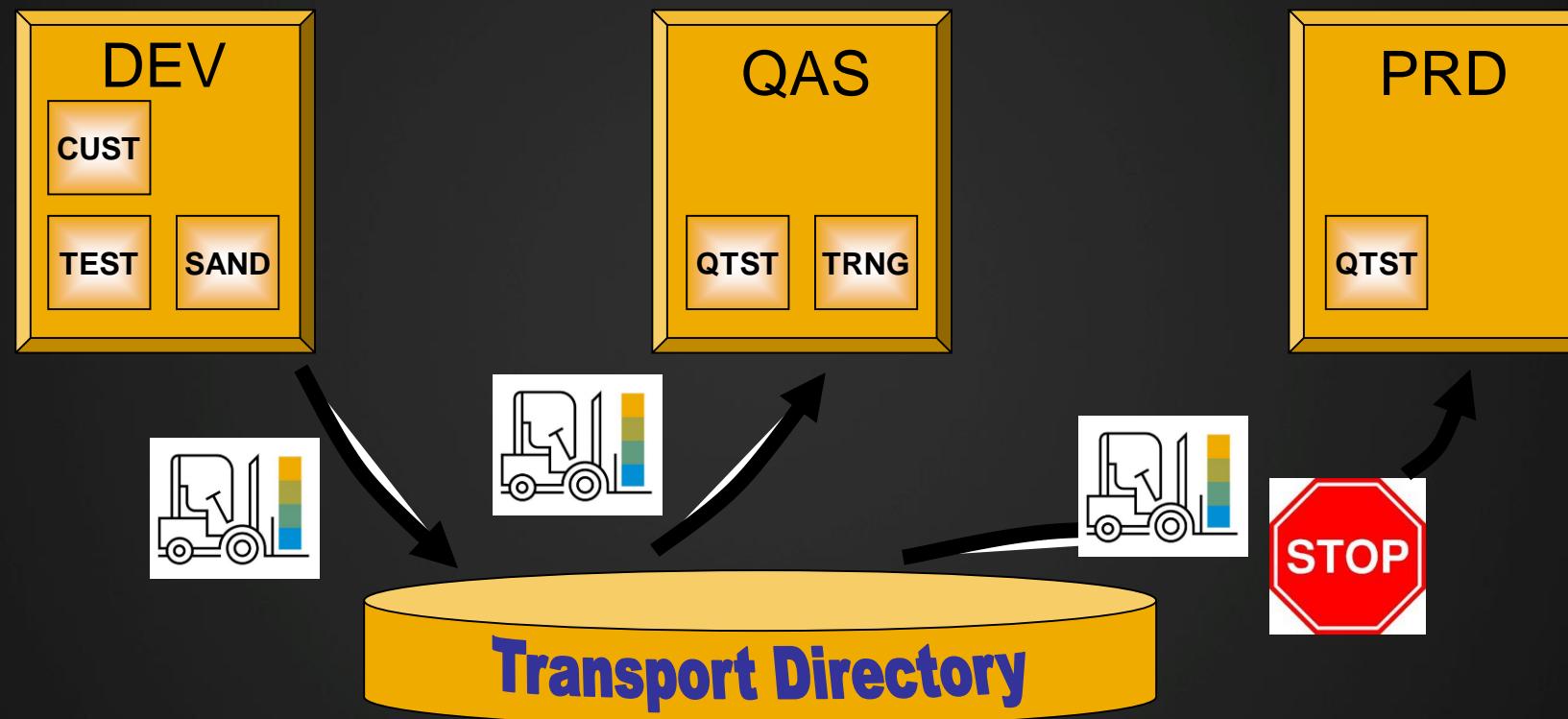
# Change Request

- ◆ Customizing changes are transported as change requests, which are key to managing system changes
- ◆ Change request can be created automatically during customization

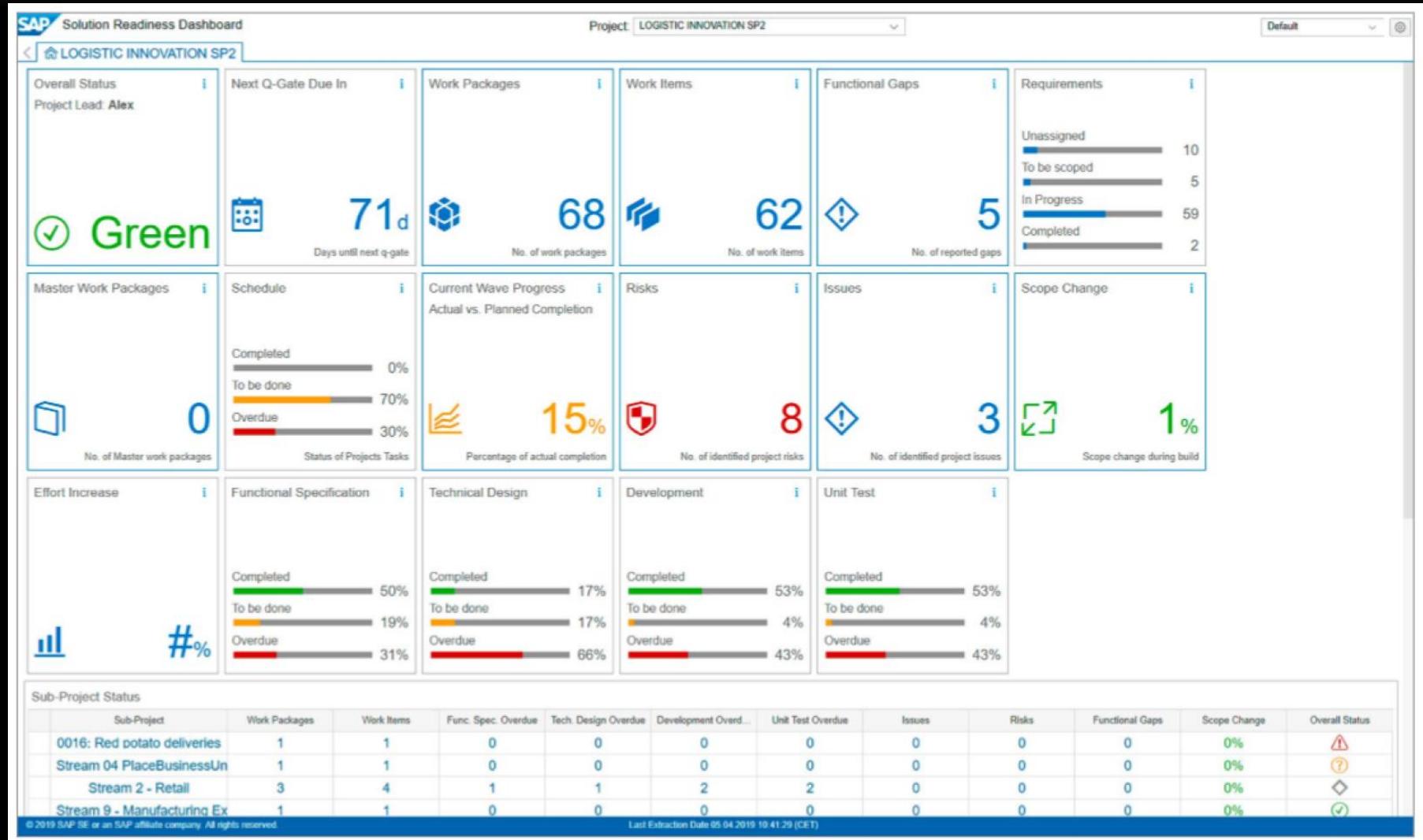


# Controlling Change Requests

QA Approval Process



# SAP Solution Manager : What is it for ?



# SAP Solution Manager : What is it for ?

- SAP Solution Manager has been designed to support the entire lifecycle of SAP solutions.
- SAP Solution Manager offers a number of tools to support individual project tasks, such as business process documentation, test management, and software deployment.
- It also helps to manage the BUILD phase of the project including business demand and requirements management, integrated risk management, and collaboration features that help business and IT work together more closely while also helping manage global development teams.

## Focus on tests

- **Unit (UT) and Configuration Tests (CT)**
- **Single Functional Tests (SFT)**
- **Functional Integration Tests (FIT)**
- **User Acceptance Tests (UAT)**
- **Regression Tests (RT)**

What is a business process ?



# What is a business process ?

- It is an end to end process including all detailed steps for actions like :

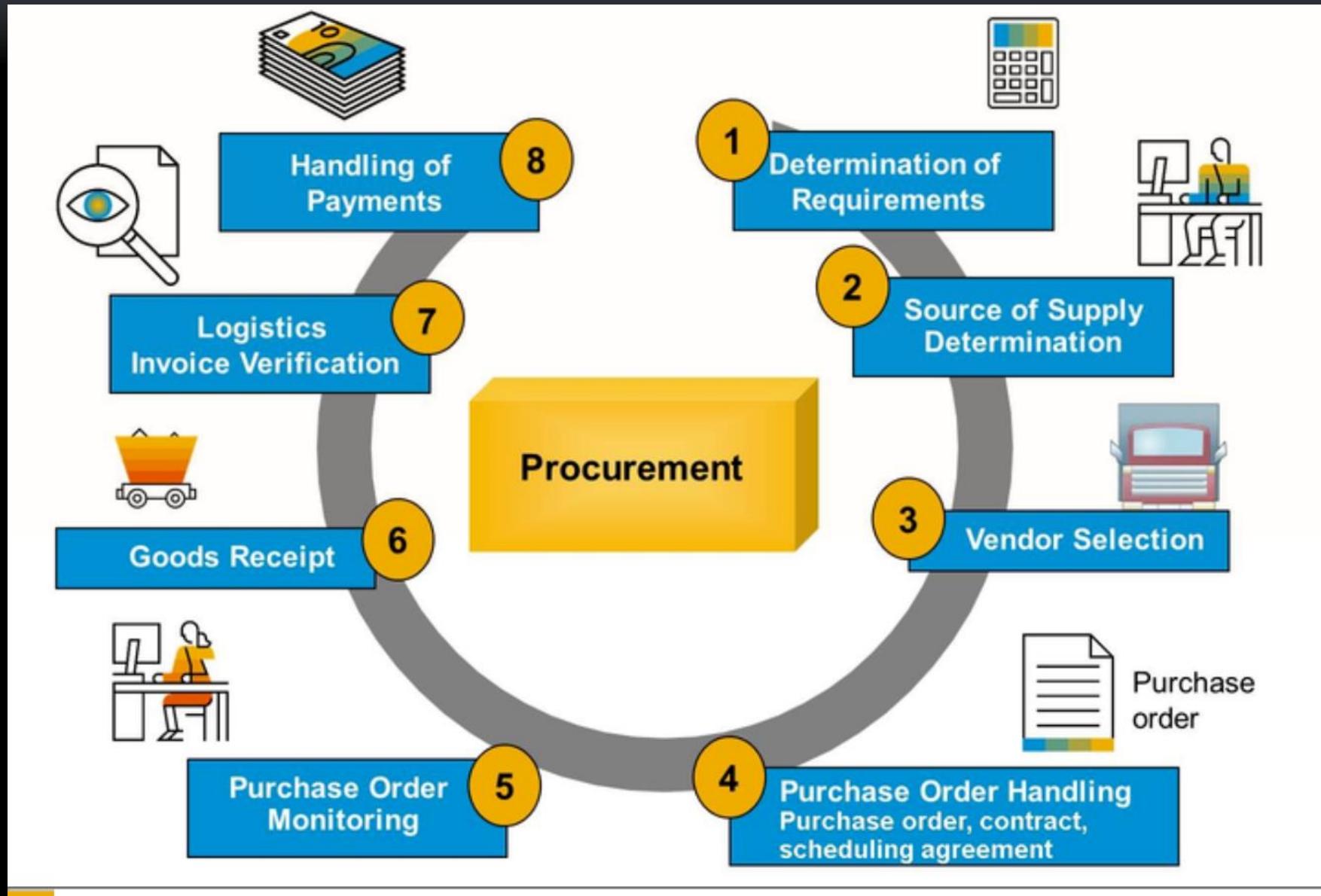
- Procure to pay
- Order to cash

As an example :



- Your company purchases items from external vendors.
- Normally you use the full procurement process (exception are possible – but out of scope)

# Procurement Process Overview : Procure to pay



# Procurement Process Overview : Procure to pay



Before running the production, essentials steps are needed

1. Ensure that required materials will be there when and where you need them
2. Captures information at each step
  - Check up-to-date inventory (internal / supplier)
  - Check up-to-the-minute financial state (internal / supplier)
3. Identify potential shortages (before they happen) (internal / supplier)
4. Check delivery time (precise historical information about suppliers)

# Procurement Process Overview : Procure to pay

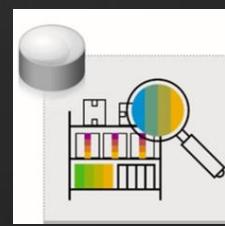


A purchase order is sent to the supplier.  
A purchase order (PO) is a commitment to the supplier to purchase some items

Required  
Master Data

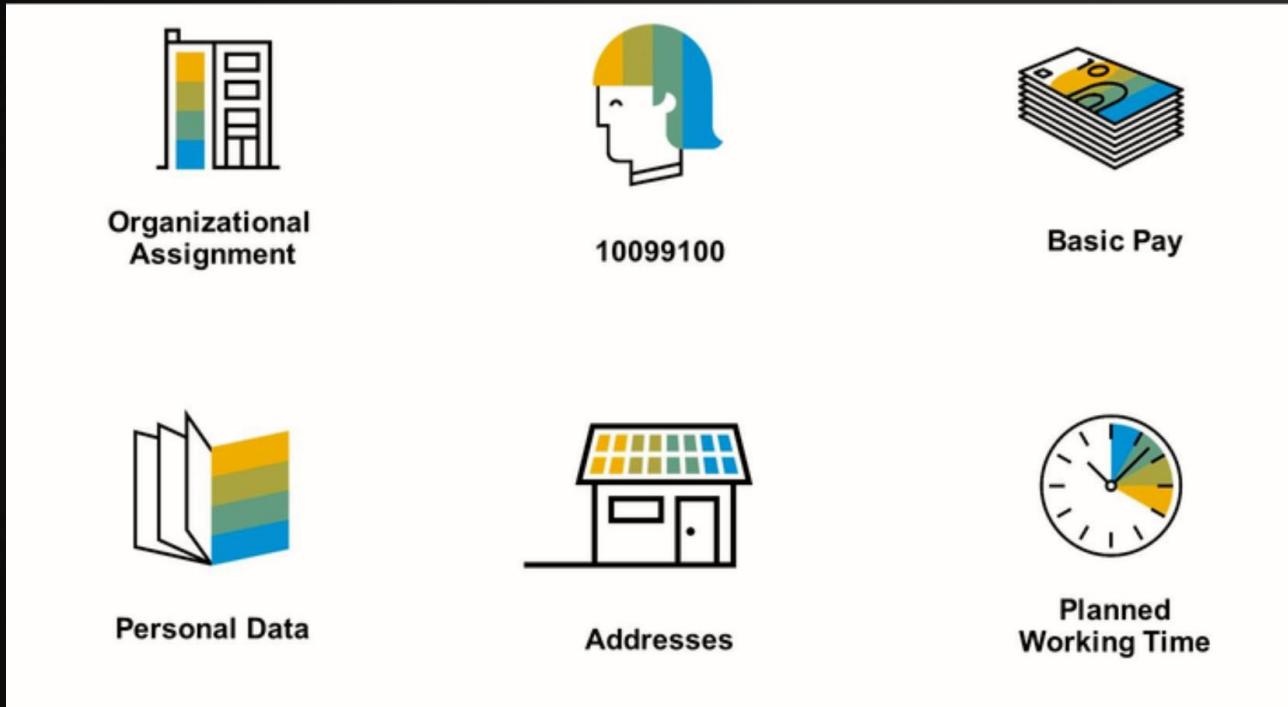


Supplier  
(business Partner)

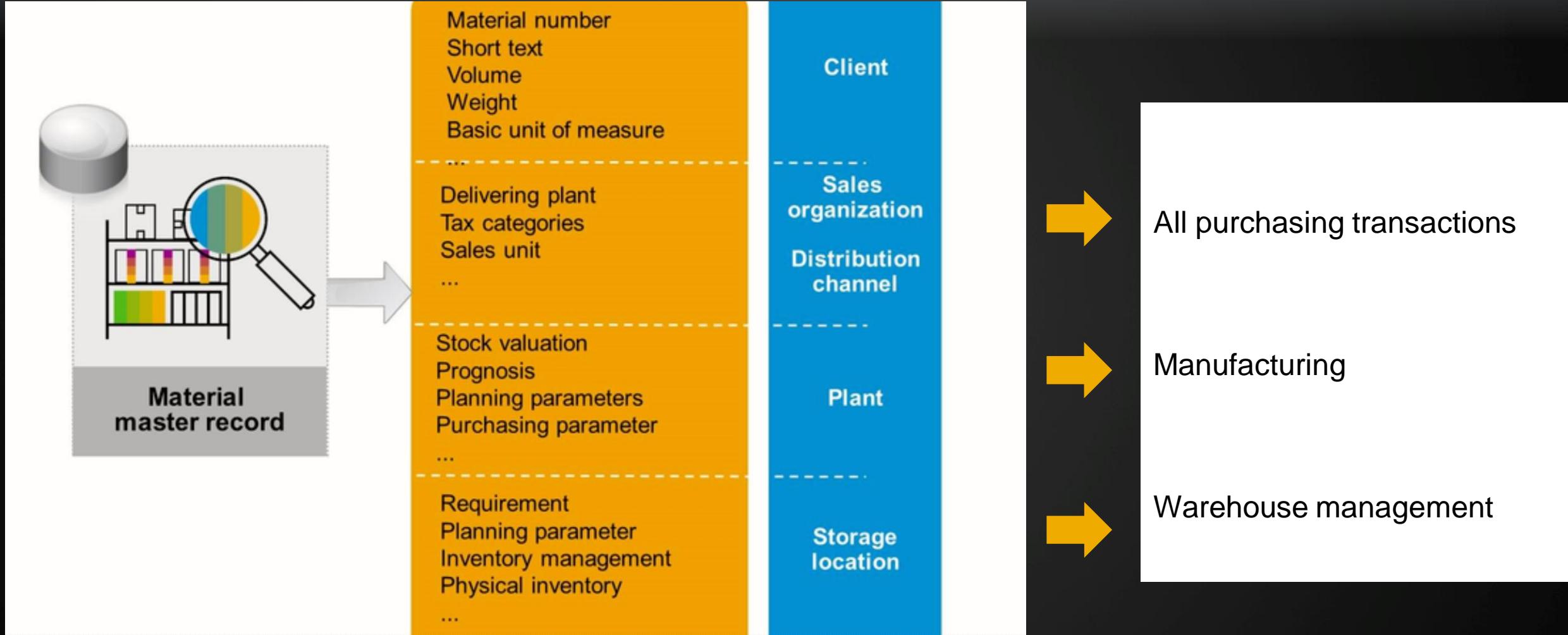


Article / Material

# Procurement Process Overview : Key Master data - Supplier



# Procurement Process Overview : Key Master data – Article - Material



# Procurement Process Overview : Procure to pay



Purchase  
Order

Goods  
Receipt

Invoice  
verification

Outgoing  
Payment

Stock Acc.	Stock variation
100	100

The goods are received from the supplier.

At the same time, there is an automatic accounting data entry : (stocks : debit, stock variation credit)

# Procurement Process Overview : Procure to pay



Purchase	Supplier
100	100

The invoice is received from the supplier.

At the same time, there is an automatic accounting data entry : (suppliers debt : credit, purchase : debit )

# Procurement Process Overview : Procure to pay



Bank	Supplier
100	100

The Payment is sent to the supplier.

At the same time, there is an automatic accounting data entry : (suppliers debt : debit, bank : credit )

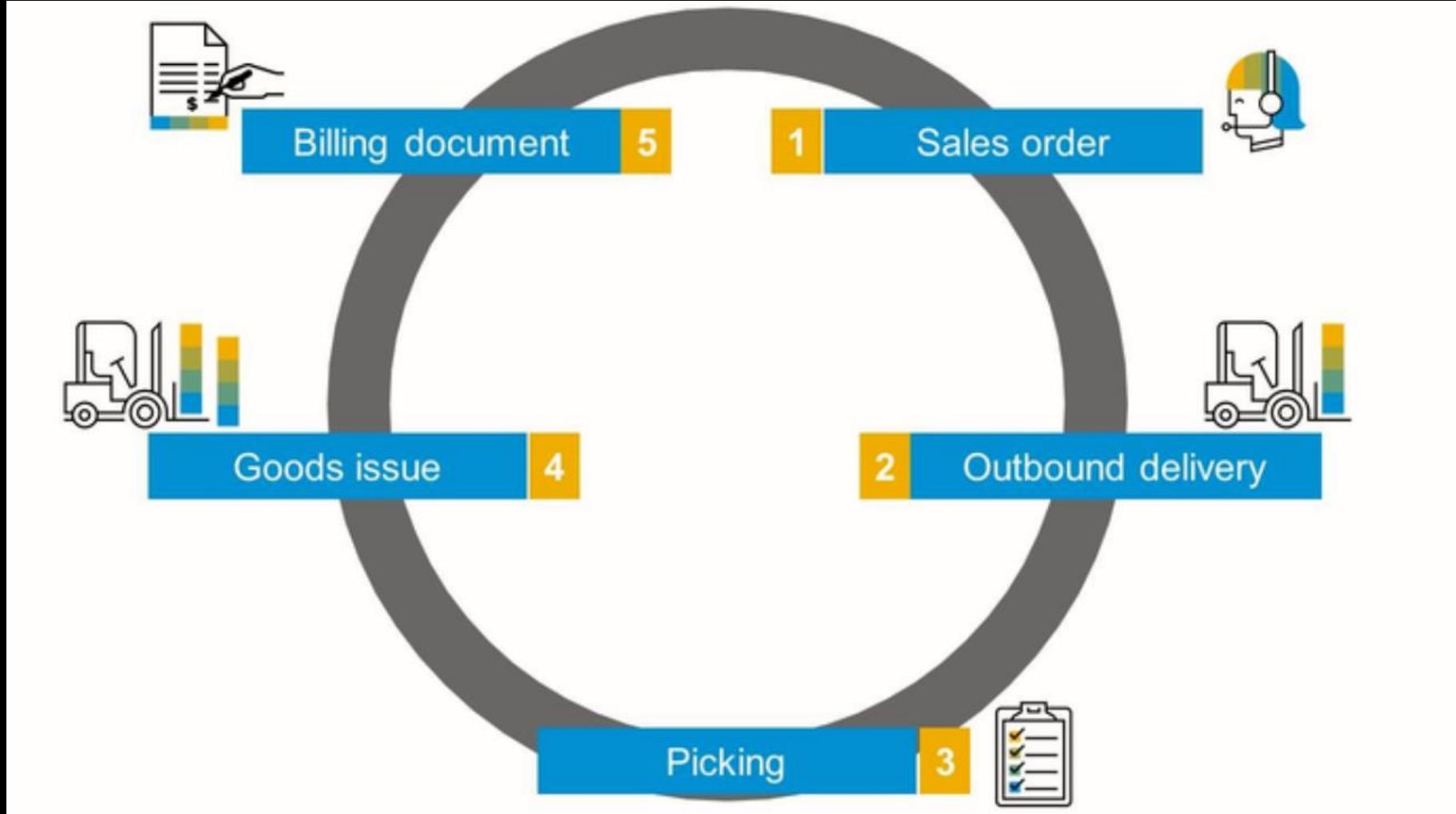
# Summary



Here are some key points to take away:

- The four basic steps of the procurement process are:
  - the purchase order sent to the supplier,
  - the goods receipt ,
  - the invoice sent from the supplier
  - the outgoing payment to the supplier .
- Two key types of master data in purchasing are Supplier master data and Article / material master data.
- These are used in every steps and different modules of the complete business process.

# Procurement Process Overview : Order to cash



# Procurement Process Overview : Order to cash



The order is created after the Purchase order is sent by the customer with the right Information : product – customer (Business Partner) – place of delivery

# Procurement Process Overview : Order to cash



The goods is delivered and there is an automatic accounting data entry for stock decrement

Stock Acc.	Stock variation
100	100

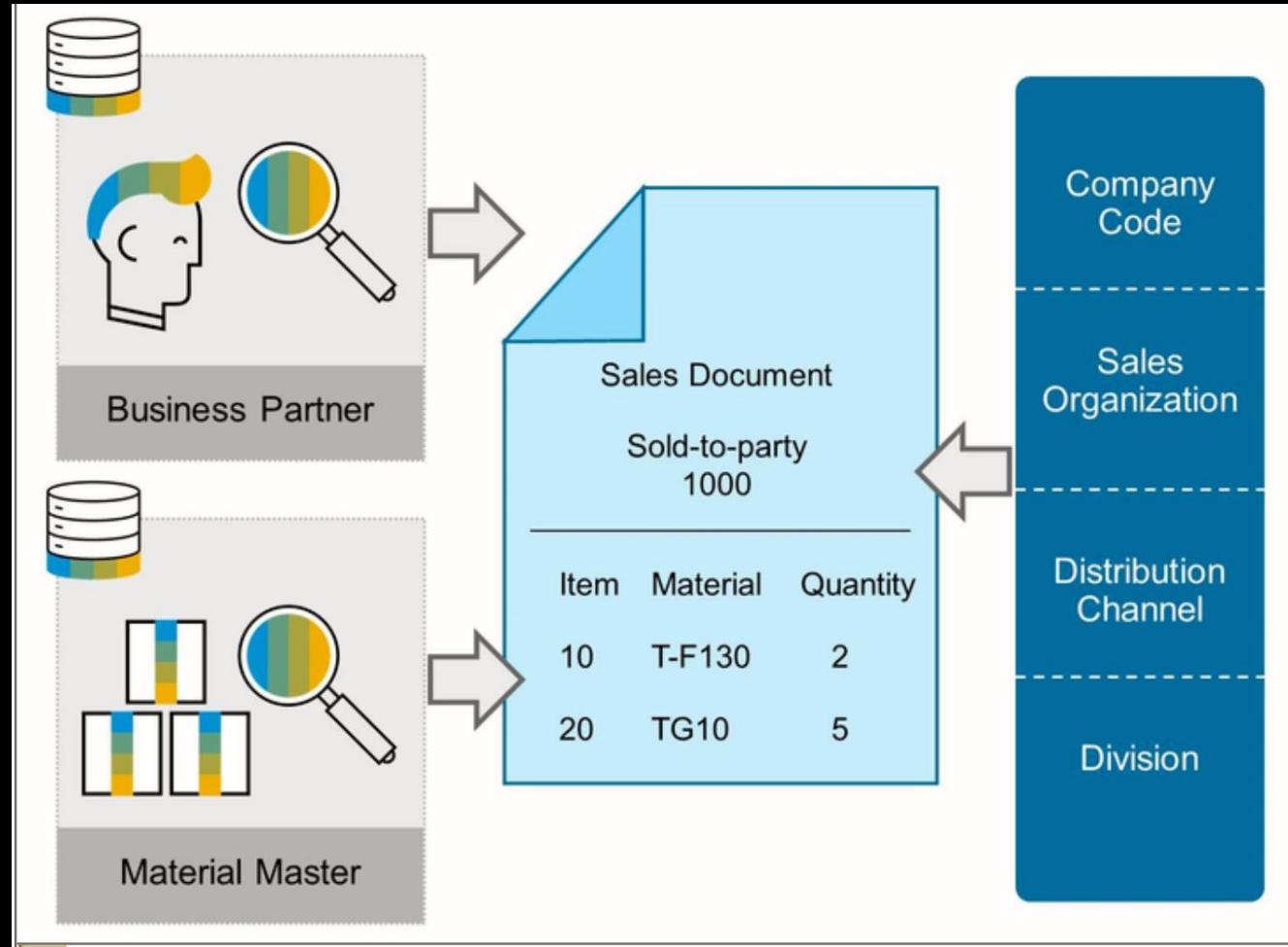
# Procurement Process Overview : Order to cash



The invoice is sent to the customer and there is an automatic accounting data entry for revenue.



# Procurement Process Overview : Order to cash



# Procurement Process Overview : Order to cash



The payment is sent by the customer and there is an automatic accounting data entry for cash entry.



# Summary

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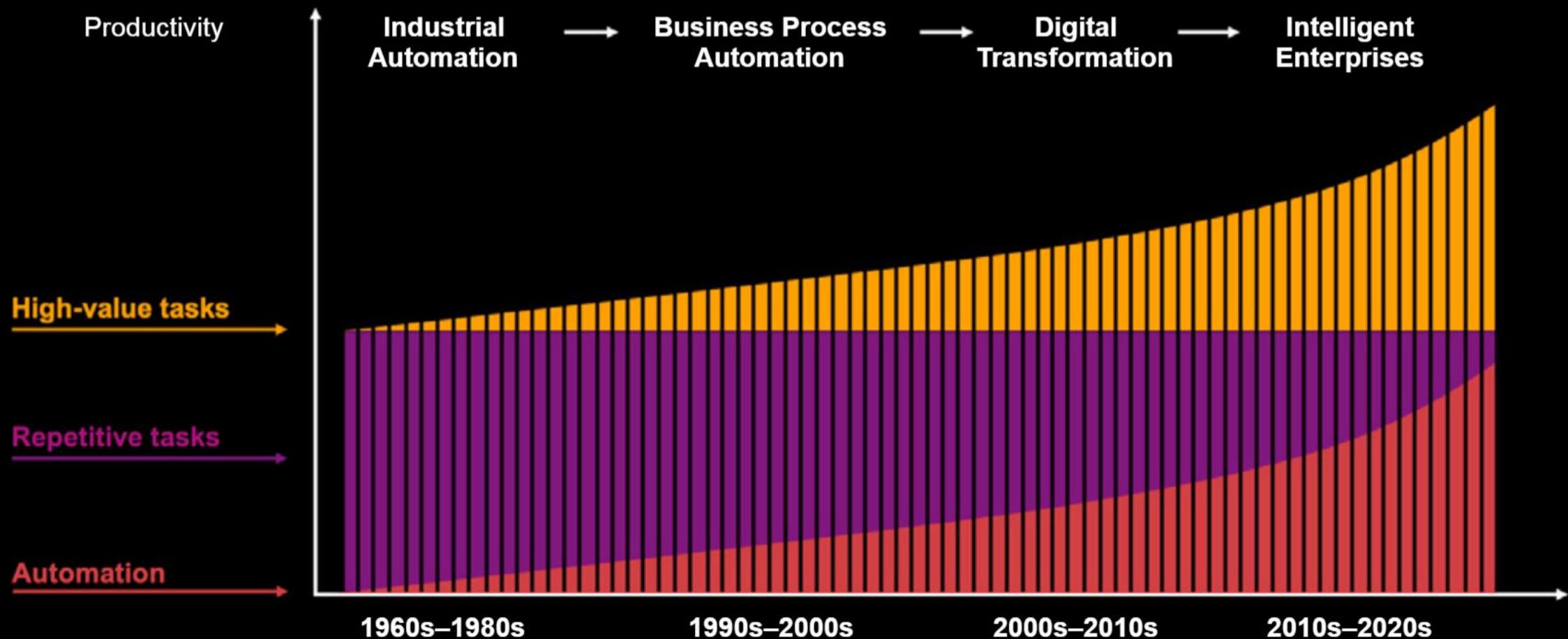


Here are some key points to take away:

- The four basic steps of the order to cash process are:
  - the purchase order sent by the customer,
  - The order is created
  - the goods delivery ,
  - the invoice sent to the customer
  - the payment is sent by the customer .
- Two key types of master data in selling are Customer master data and Article / material master data.
- These are used in every steps and different modules of the complete business process.

FOCUS ON RPA (ROBOTIC PROCESS AUTOMATION)

# RPA is a trend to elevate Employees to focus on Higher - Value tasks



# Different types of RPA robots are available to help with a variety of tasks

## DIGITAL ASSISTANT – ATTENDED BOT



Deployed on user  
workstation



Automate a  
part process



Trigger by  
user

## DIGITAL WORKER – UNATTENDED BOT



Deployed on  
server



Automate a  
whole process



Schedule based  
or trigger based

# Different types of RPA robots are available to help with a variety of tasks

## Attended RPA

Attended RPA runs on the desktop. The robot acts as a software assistant for the human user and interacts with a desktop application while respecting applicable business logic.

Deployment of attended RPA is very fast. It has no impact on existing information systems and requires no modifications to applications, which continue to function unchanged.

ROI is rapid

## Unattended RPA

Some processes can be automated end to end by using robots installed in server clusters. Unattended RPA, autonomous software robots, work on their own at the heart of the information system or in the cloud.

As they are installed on servers, they require an infrastructure.

Unattended RPA projects are likely to be more complex and take a little longer.

# Concrete examples of RPA

## Objective n01 : Eliminate / automate repetitive tasks for the users

**Telecommunications:** An RPA bot automates repetitive processes for telecom employees to help them discover if a customer is eligible for a specific promotion. It helps them onboard new customers, sending them a personalized contract in minutes instead of hours

**Finance:** An RPA bot automatically extracts account payables-related e-mail messages from an accountant's mailbox. It analyzes the PDF in the attachment using machine learning and injects the relevant extracted data into an ERP system.

## References

<https://www.sap.com/france/assetdetail/2019/10/2474842d-6a7d-0010-87a3-c30de2ffd8ff.html>

<https://www.sap.com/france/products/robotic-process-automation.html?pdf-asset=5ab165e8-697d-0010-87a3-c30de2ffd8ff&page=1>

FOCUS ON CHATBOT :  
CONVERSATIONAL AI



## Why chatbots are the future of business ?

- Business Insider found that 67% of consumers worldwide used a conversational interface for customer support in the last year.
- 31% of organizations have AI on the agenda for the next 12 months
- Some persons might have more conversations with bots than with their spouse.....

# Why chatbots are the future of business ?

**1 Customer service is more easily accessible**

**2 Responses are faster**

**3 The experience is seamless**

# Why chatbots are the future of business ?

**1 Improved customer retention**

**2 Increased profit and revenue**

**3 Improved productivity**

# Main components

## **Bot training**

Analyze text inputs and enrich key data in any language with our world-class natural language processing (NLP) technology.

## **Bot building**

Build adaptable conversational flows and skills through our powerful bot builder.

## **Bot connector**

Connect chatbots to any solution, external communication channel, or back-end system.

## **Bot analytics**

Understand how customers and employees talk to your chatbot and improve the user experience based on usage and training data.

# Concrete examples of applications

## **Goods receipt and invoice receipt**

Speed up reconciliation of mismatches on invoices and goods receipts

## **SAP Cash Application**

Machine learning proposals for receivables to automatically match payments with open receivables and clear payments

## **Service Ticket Intelligence**

Automated processes to better answer customers and users request and speed up service response times (classification, similar tickets recommandations..)

## **Automate master data tasks (creation, maintenance)**

Reduce errors and manual efforts when maintaining master data

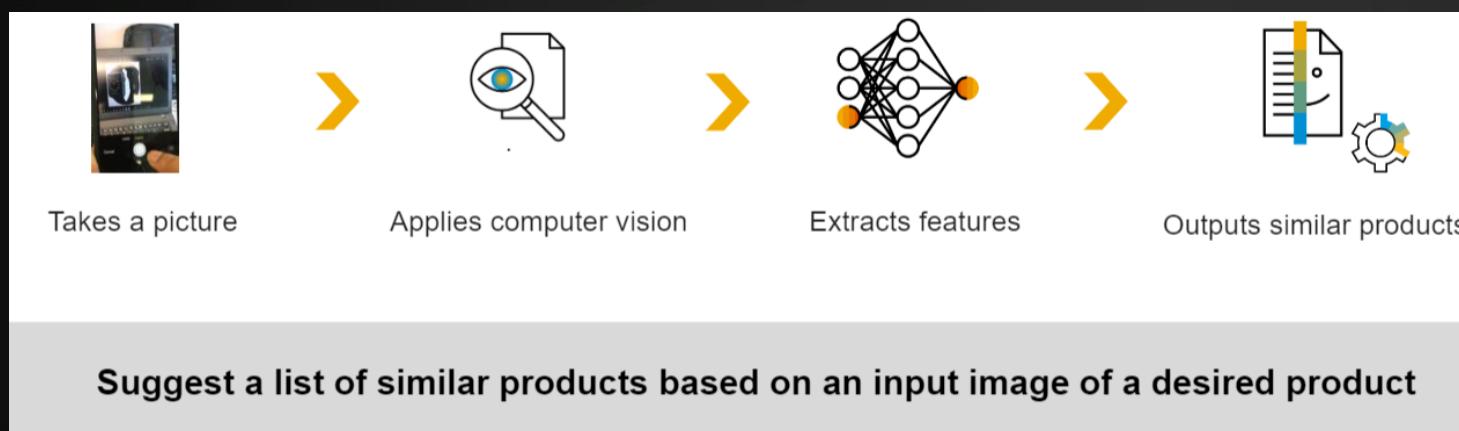
# Concrete examples of applications

## Intelligent approval

Improved mass approvals for purchase requisition workflow by classifying purchase requisition approvals into important and unimportant tasks.

## Image-based purchasing

Image-based search of supplier catalog



## Catalog item proposal

Reduce the workload by analyzing bulk requests, free text automatically

## Concrete objectives

**The main advantages of adopting a chatbot are :**

- Increase customer satisfaction by reducing time to answer the request
- Reduce costs on entering requests
- Minimize entering contacts to focus on high value demands
- Develop brand image
- Linkable with RPA to optimize a company processes

# References

<https://www.sap.com/products/roadmaps/finder-all.html?pdf-asset=223b68c7-c37c-0010-82c7-eda71af511fa&page=34>

<https://www.lemagit.fr/definition/Chatbot>

<https://www.lemagit.fr/actualites/252472111/Conversational-AI-la-vision-du-chatbot-par-SAP>

<https://cai.tools.sap/>

## Official Web site :

For updates and more information, check out our official Web site: <https://www.sap.com/products/intelligent-technologies/artificial-intelligence.html>

## Education :

Participate in the openSAP course

- Enterprise Machine Learning in a Nutshell (overview course)
- Enterprise Deep Learning with TensorFlow

## FOCUS ON BLOCKCHAIN : NATAIS



# What is blockchain ?

In its simplest form, it is a reliable record of who owns what, and who transacts what. It is effectively a digital modern version of a traditional ledger run by a bank or accountancy.

Data regarding transactions, files, or information is shared across a peer-to-peer network. Every participant can see the data and verify or reject it using consensus algorithms. Approved data is entered into the ledger as a collection of 'blocks', stored in a chronological 'chain', which is secured through cryptography.

Potential applications are in :

- payments,
- supply chain deliveries,
- trade reconciliations on the financial markets....
- Documents / contracts

## What is blockchain ?

Technology to store and transfer informations, transparent, secured, and working without central control by a central organisation.

# Concrete example of application

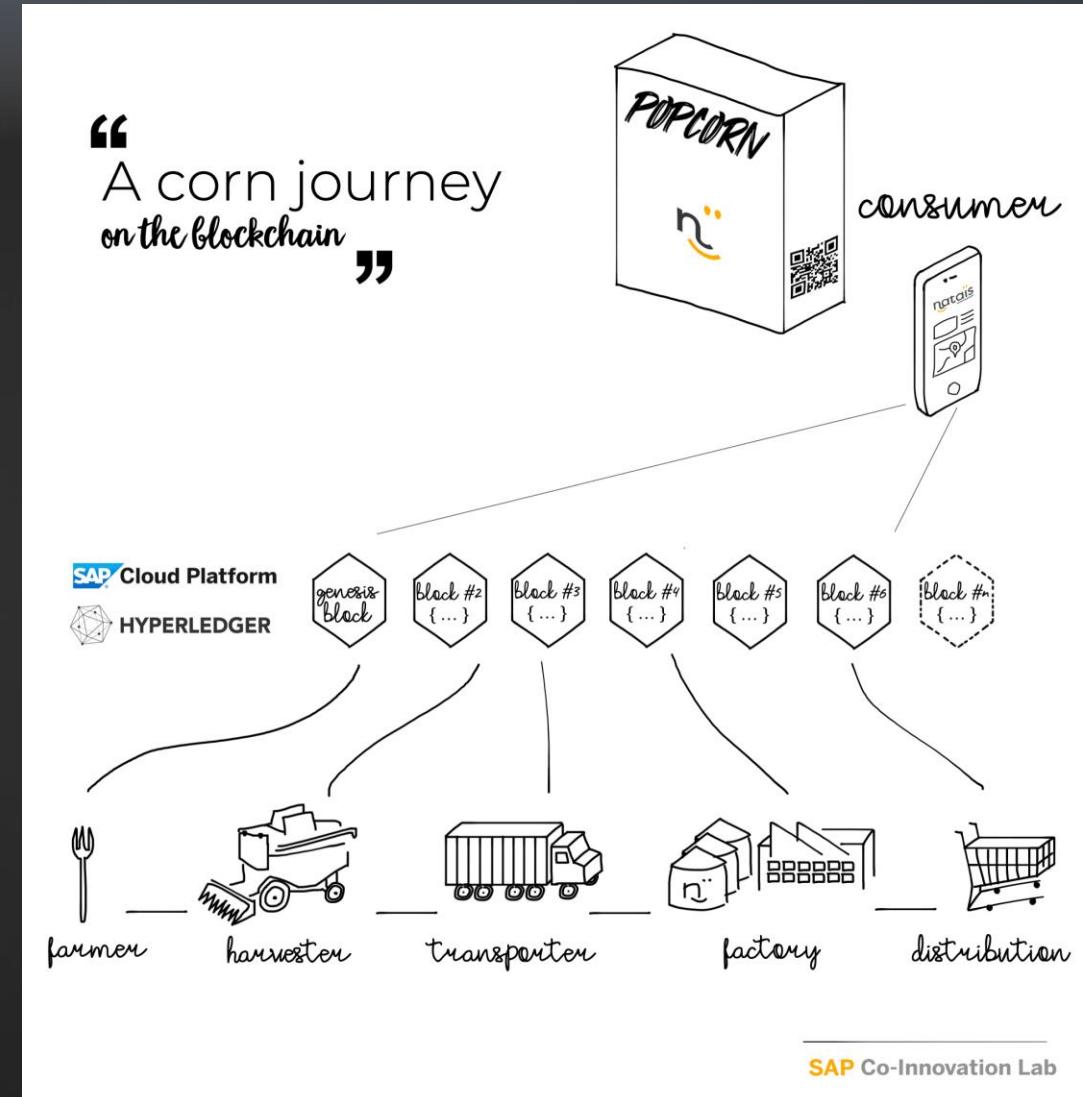
One of the main challenges for industrials is traceability.

Thanks to SAP technology, Natais will allow customers to follow pop corns during all the supply chain process (from the field to the cinema).

The farmers will receive all relevant information to identify the corn lots through a **QR code**

- Quality
- Variety
- Weight charged
- Original field of the corn

The consumers will also access this information easier.



# References

<https://www.youtube.com/watch?v=cL1PWRaZq4g>

<https://news.sap.com/france/2019/05/blockchain-natais/>

<https://journalducoin.com/blockchain/supply-chain-coca-cola-blockchain-sap/>

<https://aymax.fr/quel-potentiel-pour-la-blockchain-as-a-service-baas-de-sap-leonardo/>

<https://www.cms-connected.com/PromoNews/SAP-Debuts-New-Leonardo-Blockchain-as-a-Service>

<https://www.youtube.com/watch?v=f5YPC1UEsCQ>

THE FUTURE IS NOW....

WE HAVE ENTERED A NEW ERA....





Disruptive technologies are **transforming business models everywhere**

**ARTIFICIAL INTELLIGENCE**

**IN MEMORY**

**CLOUD**

**MOBILE**

**IoT**

**BIG DATA**

**BLOCKCHAIN**

**SOCIAL**

**CHATBOT**

**MACHINE LEARNING**

**CUSTOMER EXPERIENCE**

# Big Data and Internet of Things are changing the business

---

## TECH TRENDS

*Transforming  
the way we work,  
live and  
communicate*

## BLOCK CHAIN

## SMARTER WORLD

## HYPERCONNECTIVITY

## SUPERCOMPUTING DATA SCIENCE

## CLOUD CLOUD





By 2025 there will be **50 to 80 billion connected devices** on the Internet of Things.

Source: Statista



Today there are **4 billion connected people** on the internet.  
In 2021, there will be **3,02 billion connected people on** social networks.

Source: E marketer statista



**Data doubling every 18 months create opportunities and risk  
for value creation**

Source: Intel, A Guide to the Internet of Things Infographic

# Major Trends you need to consider



---

**DELIVER  
PERSONALIZED  
EXPERIENCES  
IN CONTEXT**

---

**ORCHESTRATE  
PROCESSES AND  
DATA TO **SIMPLIFY**  
YOUR FRONT OFFICE**

---

**TRANSFORM AGAIN  
AND AGAIN AND BE  
AS AGILE AS YOUR  
CUSTOMERS**

**Big Data and Internet of Things are changing the business**

**Personalized  
experience**



**Real time**



**NEW BUSINESS CAPABILITIES**

**Optimized  
value chain**



**Predictive**



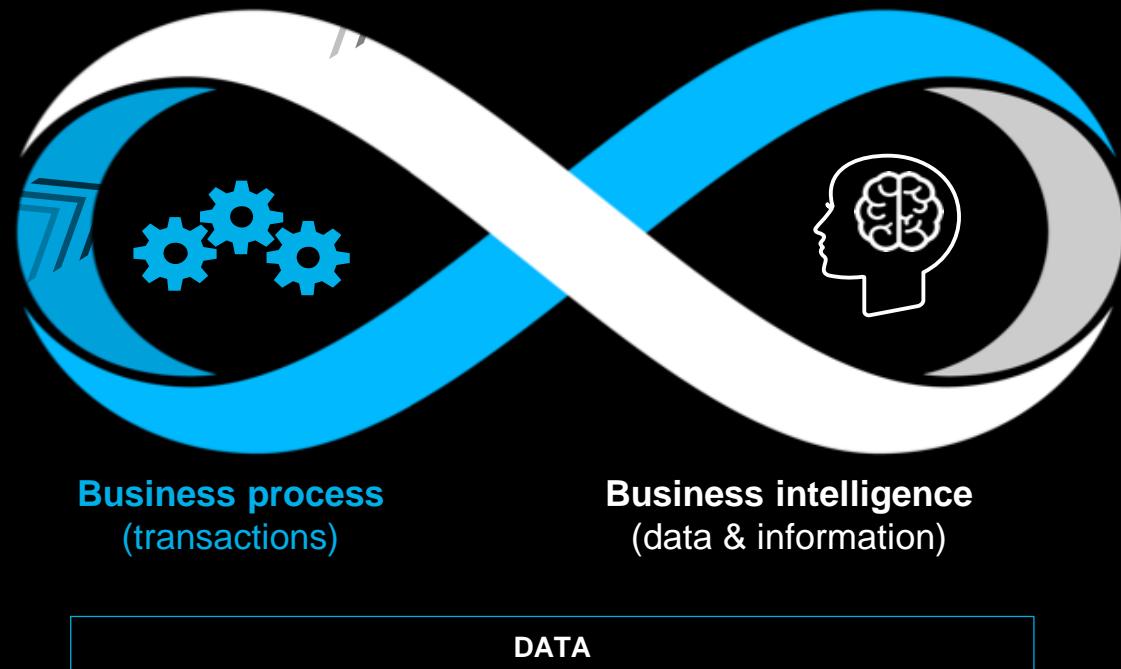
**Big Data and Internet of Things are changing the business**

Digital  
Value  
Creation      =      Business  
Model  
Innovation

# Big Data and Internet of Things are changing the business

**21<sup>st</sup> century Digital  
Platform will  
enable Infinite  
Opportunities**

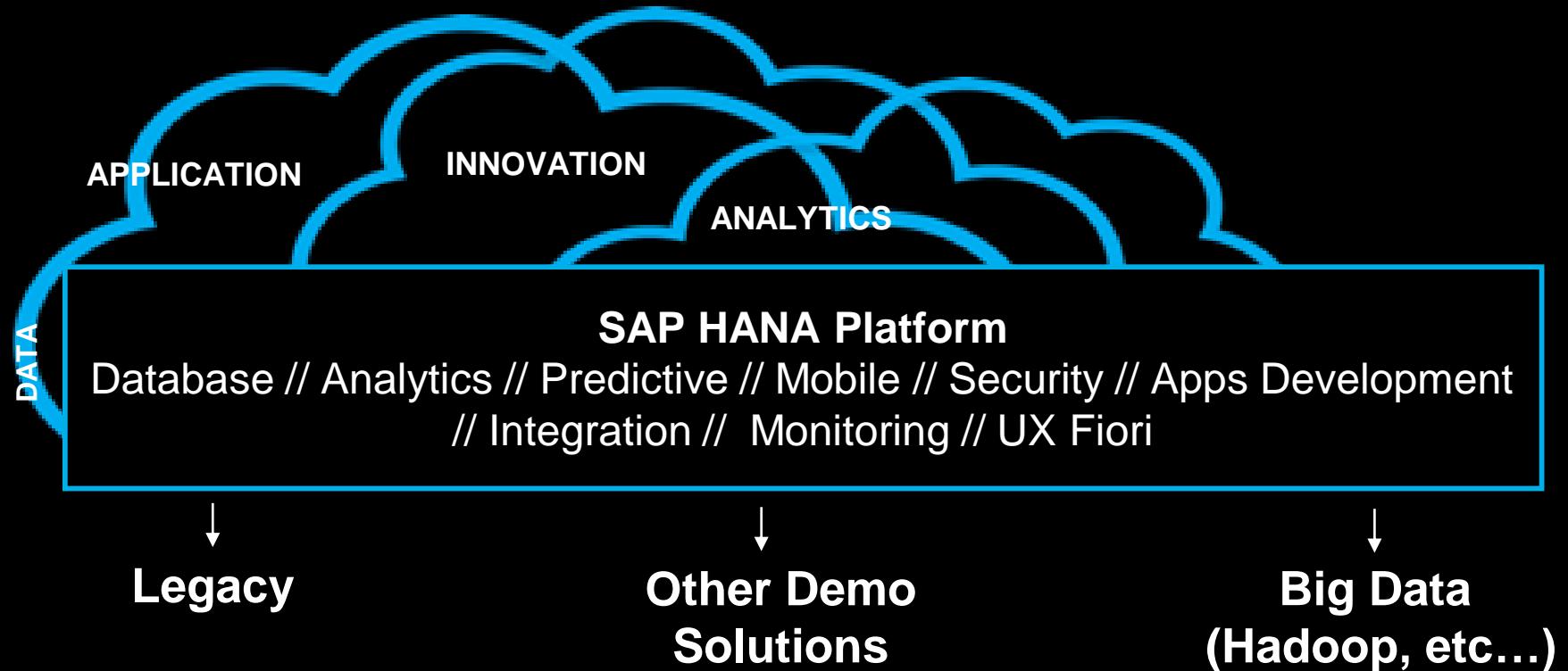
*Smarter Decisions    Smarter Transactions*  
***Smarter Business***



# SAP HANA is at the heart of our innovation

## SAP HANA IN MEMORY PLATFORM

*Modern platform designed for the 21<sup>st</sup> century digital economy*



# SAP HANA is at the heart of our innovation

**Faster:** 10,000x helps you process massive amounts of data, and deliver information at unprecedented speeds

**Smarter:** Entirely New Possibilities enables you to create previously unimaginable applications, and to rethink and envision new ways to run your business

**Simpler:** Dramatically Simplified IT Deployable as an on-premise appliance or in the cloud, SAP HANA dramatically simplifies complex and expensive IT architectures

**Real time :** Business Platform exploiting across structured and unstructured data sources.

# KEY ELEMENTS OF SAP TRANSFORMATION

Today, SAP is **much more than an ERP company**

- SAP today operates in 5 categories :
  - Applications (including ERP)
  - Analytics
  - Cloud
  - Mobile
  - Database and technology (incl SAP HANA)
- **SAP HANA** is at the heart of our innovation
- HANA is not only a data base. It is a complete platform for building real time applications. It is the foundation of all our products.

# KEY ELEMENTS OF SAP TRANSFORMATION

- SAP is also now a cloud company : **All solutions are deployed in the cloud ..... SAP offers broad choice to the customer (premise & cloud)**
- **Customers “consume” SAP in the way they want**, probably according to the type and importance of application

# KEY ELEMENTS OF SAP TRANSFORMATION

- **Because of technological evolutions, Business is moving from B2B to B2C :**
  - We propose to our customers not only standard solutions but also innovative solutions that is, **friendly solutions for their customers**
- **Approach is different :**
  - Really good understanding of customers 'customers needs -> design thinking and empathy
  - Great business knowledge : with business cases and deep knowledge of 25 industries .
  - Great technologies to make sure that desires are technically feasible

THE FUTURE IS NOW....  
FOCUS ON CLOUD



# Definition of Cloud – Aspects of Cloud

Everyone Has a Slightly Different View on Cloud



## Definition of Cloud – The Analysts View

### Service Characteristics of Clouds According to Forrester

“ A form of standardized IT-based capability – such as Internet-based services, software, or IT infrastructure – offered by a service provider that is accessible **via Internet** protocols from any computer, is always available and scales automatically to adjust to demand, is either pay-per-use or advertising-based, has Web- or programmatic-based control interfaces, and enables full customer self-service.“

FORRESTER®

# Definition of Cloud – The Analysts View

Layer Model which consists of 3 Levels



- While “Cloud” was initially used for scalable computing resources offered on demand, it is now used to describe a new model: running, developing, providing
- Cloud consists out-of the three layers: IaaS, PaaS and SaaS

## SaaS

### Software-as-a-Service

- Operated by the software vendor
- Customer subscribes software usage contract,

## PaaS

### Platform-as-a-service

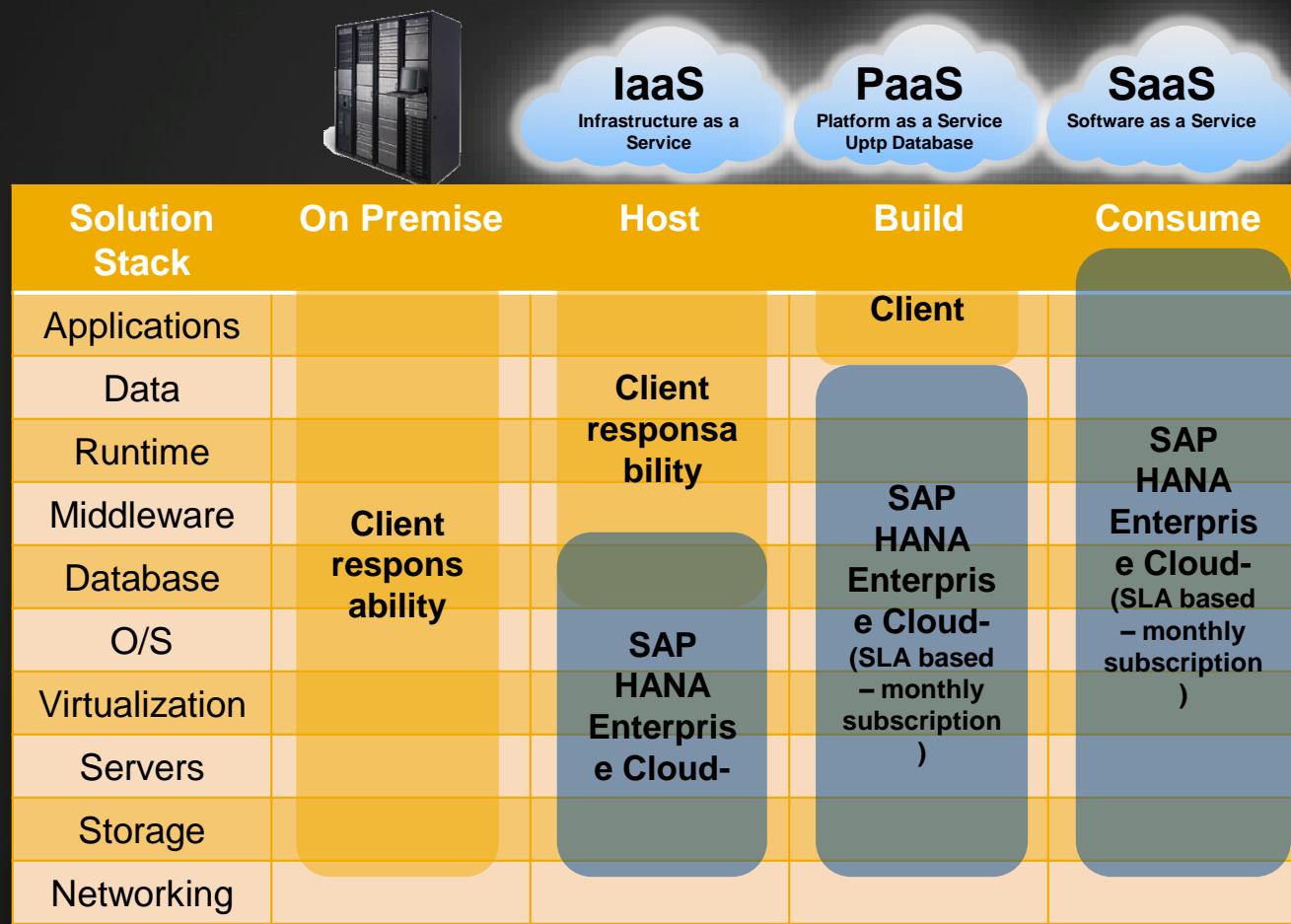
- Development environment offered “as-a-service” building applications in a scalable way with low TCD

## IaaS

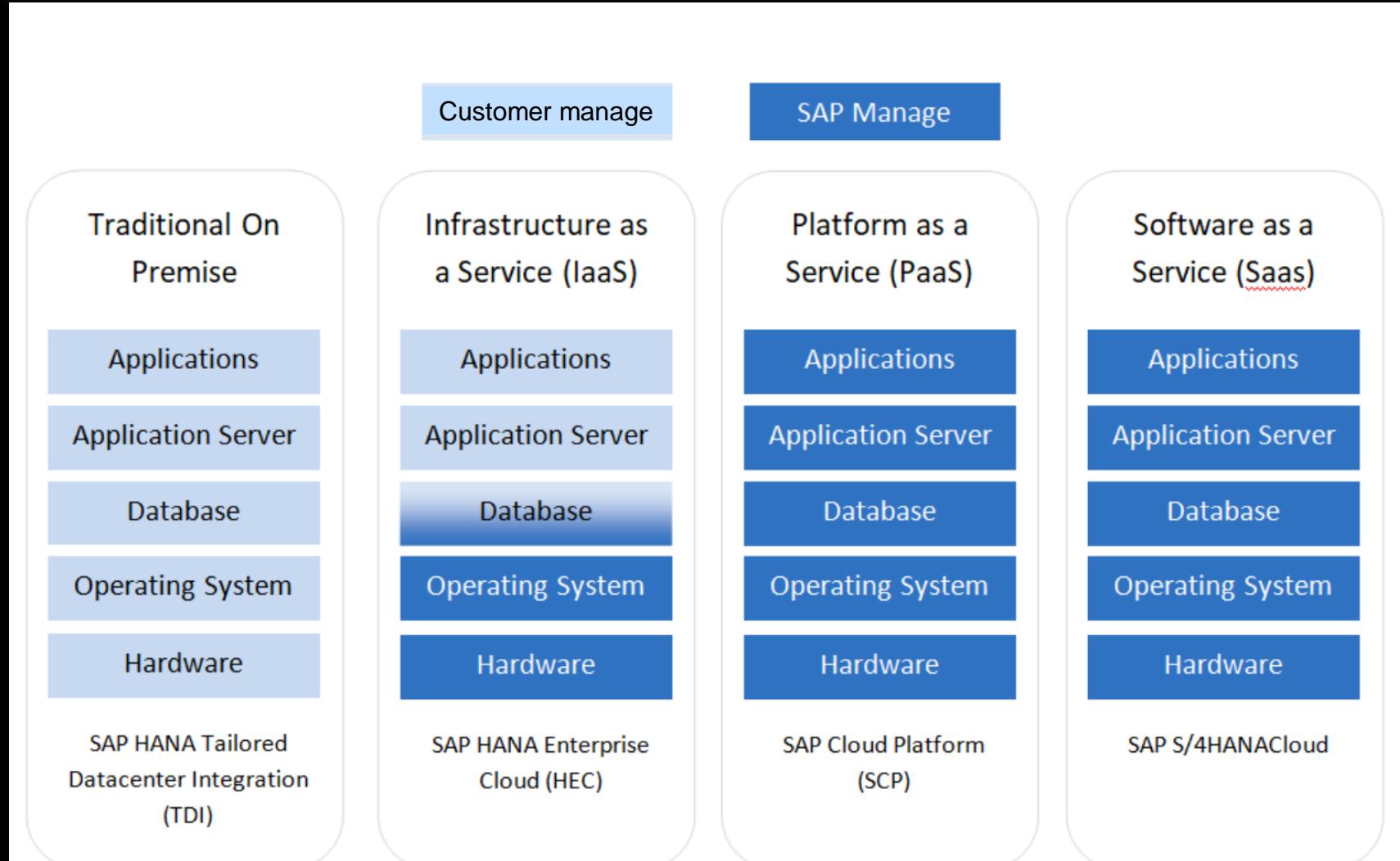
### Infrastructure as a Service

- Computer infrastructure “as-a-service”, billed on a utility basis and consumption
- Typically a virtualized environment

# SAP HANA Enterprise Cloud and Cloud Services



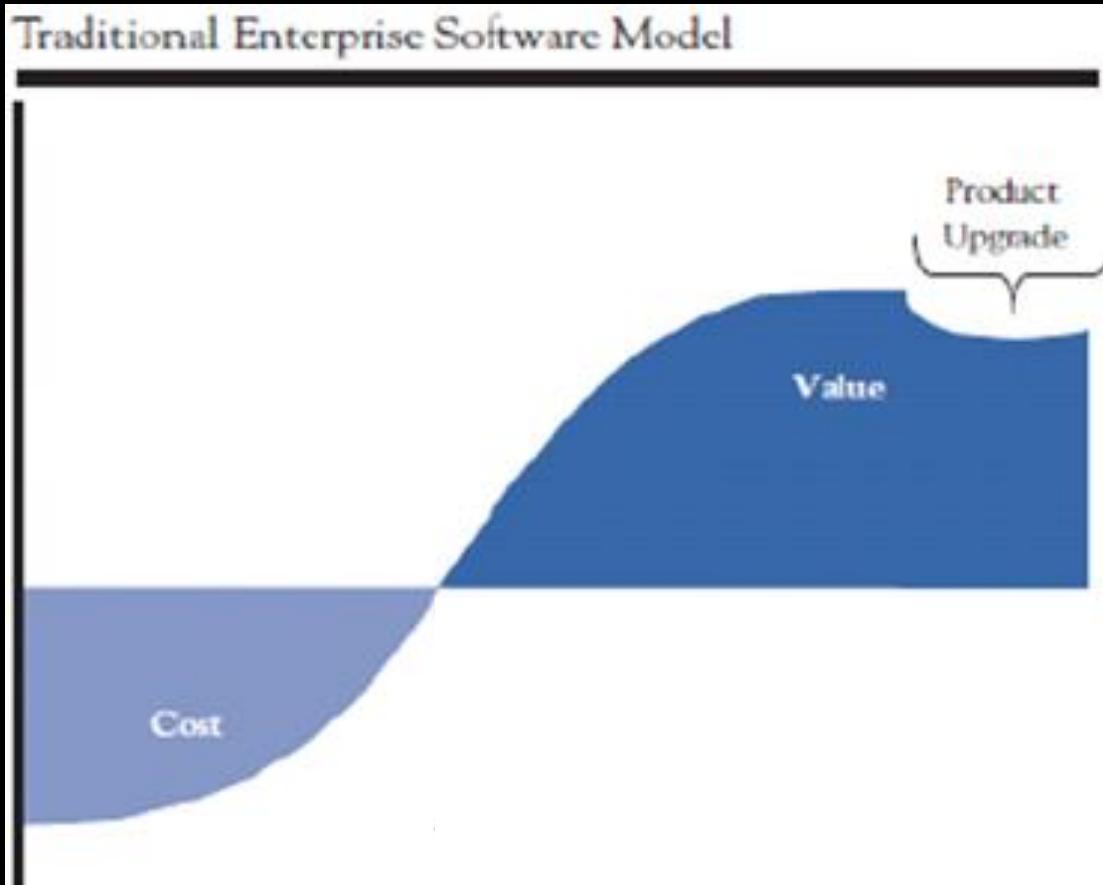
# Theory applied to S4HANA (Cloud / premise)



# Traditional Enterprise Software Model

Client return on investment

Initial investment



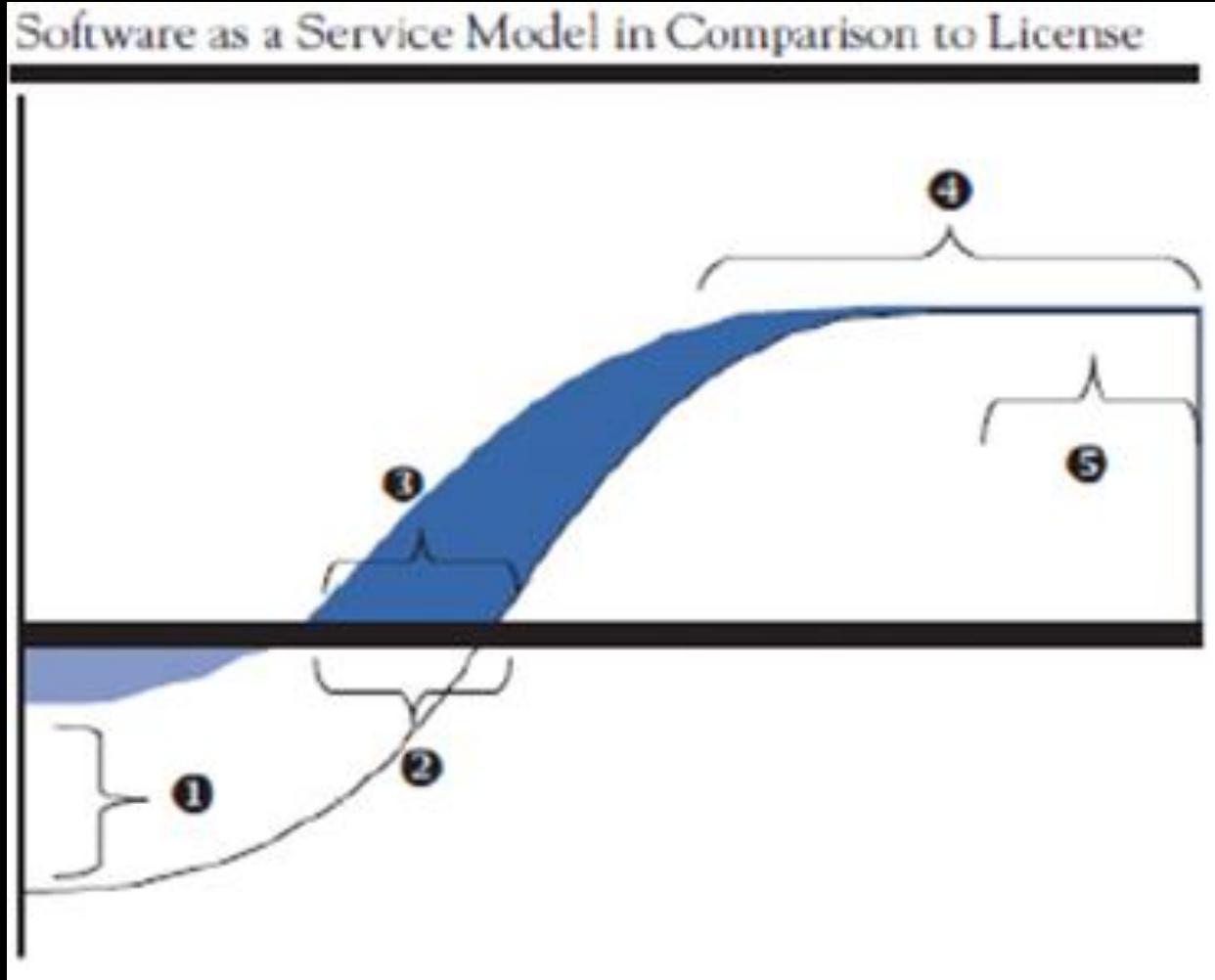
Initial investment by the client

- Upfront license
- Implementation / integration
- IT support & personal
- Hardware / Capex
- Training of users

# Software As A Service Model (SAAS) : Higher agility & faster time to value

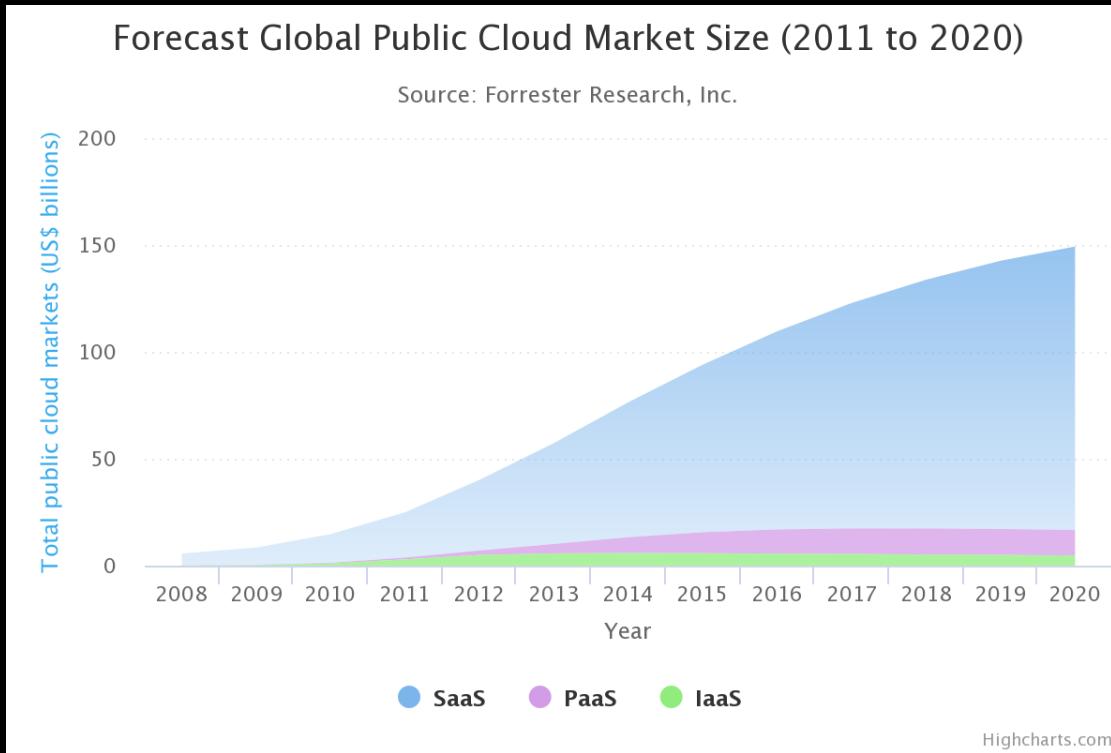
Client return on investment

Initial investment



- Pay as you go (1)
- Rapid deployment results (2)
- Accelerated time to market and use of technology (3)
- Predictable operating costs (subscription) vs uncontrollable maintenance and performance of the application costs (4)
- No future costs due to upgrade (5)

# Cloud market : 150 ++ bn \$ in 2021

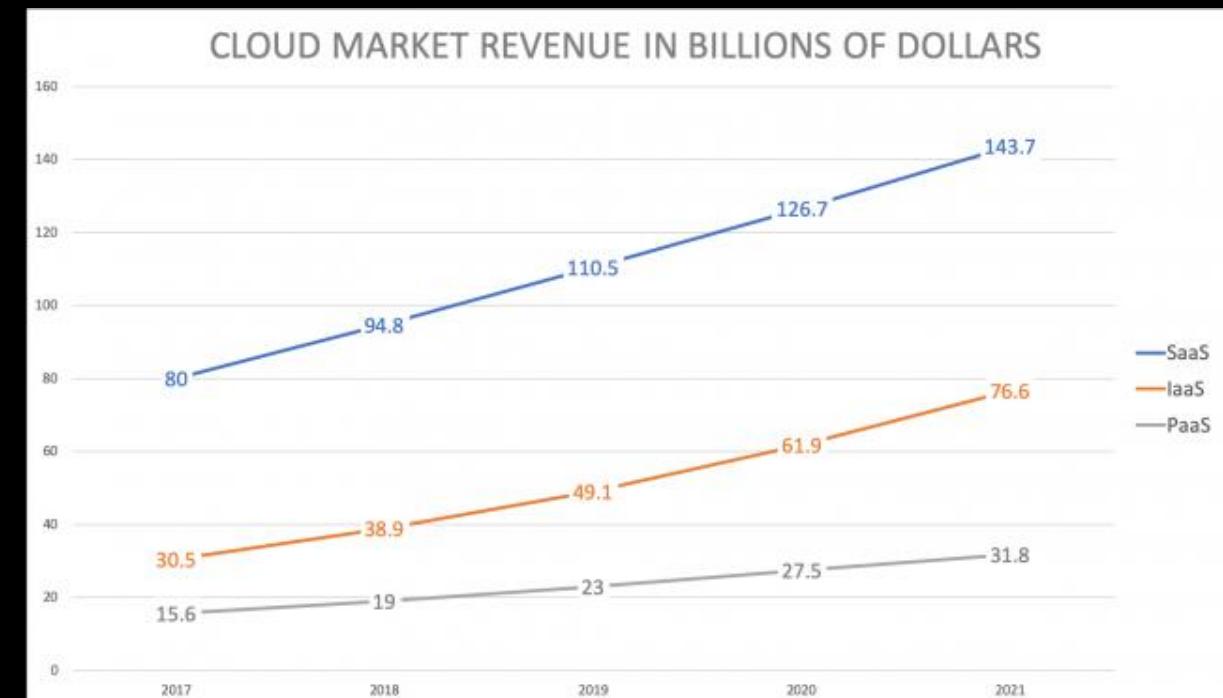


Forrester (2015)

Gartner (2019)

## SAP reports for Cloud subscr. & support

- FY2014 : € 1.1 bn
- FY2015 : € 2.3 bn
- .....
- FY2019 : € 6.9 bn
- Forecast 2020 : € 7.5 - 8 bn



## Data Center video

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**HANA Enterprise Cloud in SAP's Data Center**

<https://www.youtube.com/watch?v=y7zQMMeeDQg>

THE FUTURE IS NOW....  
FOCUS ON HANA



# New technologies mean new expectations for the users....

Because of new technologies available, and higher data volume, **expectations are much higher than ever before** on the users side (with lower or similar budget...):

- Users expect **quick response times**
- There are more and more data in the data bases – **BIG DATA** - which could cause slower response
- Business value of analytics decreases with the time – Time is Money....We need **REAL TIME ANALYTICS**
- Cross analysis are more and more complex
- Business need to anticipate (or try to anticipate) the future Business with **PREDICTIVE ANALYTICS**
- Users expect self service BI

# What is SAP HANA ?



- SAP HANA (**H**igh-performance **A**NALYTIC **A**ppliance) provides a single platform for integration of transactional data and analytical data **in a single database**.
- Traditional database stores the data in the disk but HANA stores data **in the main memory, i.e., RAM** making it **more powerful**.

In memory means, all data is stored straight away in the memory (RAM), there is no time wasted in loading the data from hard disk to RAM.

- Allows analyzing large data volumes and **faster data aggregation** for **real-time decision making**.

# BUSINESS IMPACTS OF SAP HANA : new business applications = new business

- These new technologies allow :
  - analyzing **large data volumes** quicker
  - **real-time** decision making
  - Increasing business **productivity**
  - **Creating** new business applications, new business and new opportunities for our customers.
- Our customers are now able **to follow, to analyse, to predict** more information in a shorter time.
- Any information, any data which is generated by a system can be stored, analysed, transformed, followed, cross-analyzed with others.
- **All businesses** (retail, insurance, maintenance, consumer product industries, health care ...), all functions in a company (marketing, sales, governance / control, production...) , all individuals **are impacted**.

# What is SAP HANA ? Technical highlights

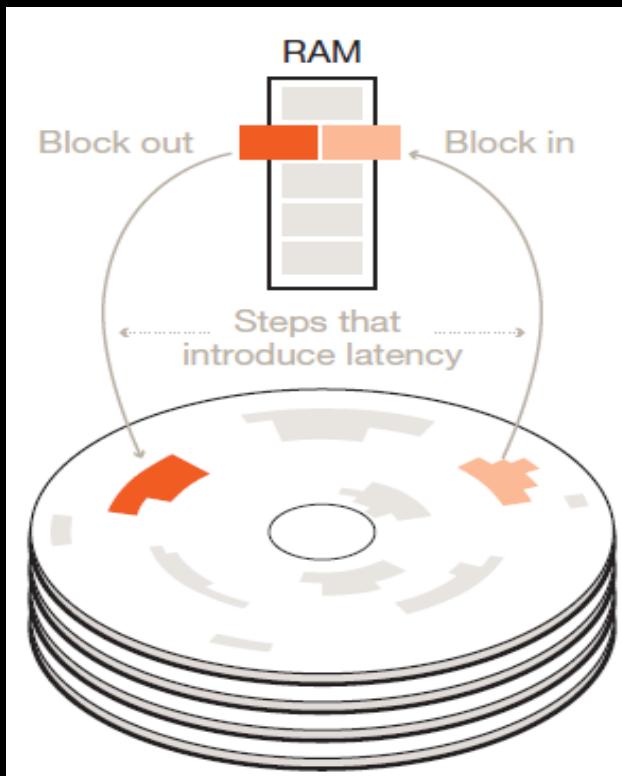


- Data is stored in the **column** as well as in **row** pattern;
  - row is useful for Metadata
  - Column is useful for Big data -10-20x **Data Compression**.
- SAP HANA runs on a **multi-core CPUs** (Central Processing Unit = heart of the computer) with column based **parallel processing**, and is **ten times faster** than current database systems
- SAP HANA is a **multi-query engine** that supports all the graphic data and text data

# What is SAP HANA ? Technical highlights

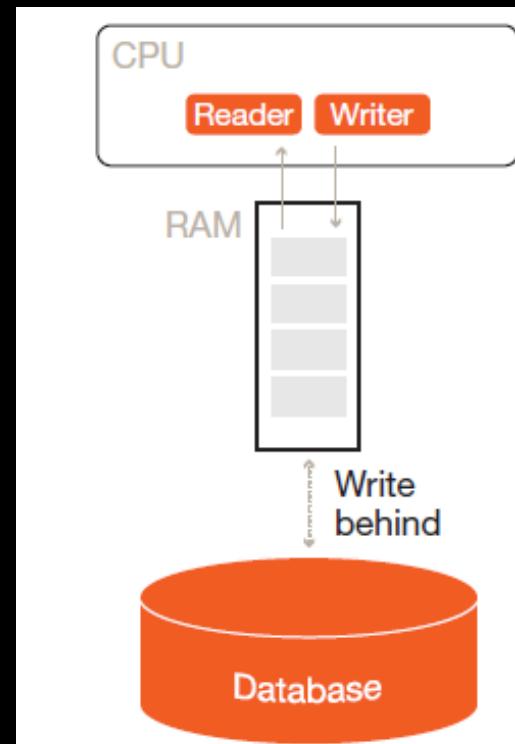
## Without high-capacity RAM

- Database stored on disk
- *Bottleneck*: Latency between disk and RAM

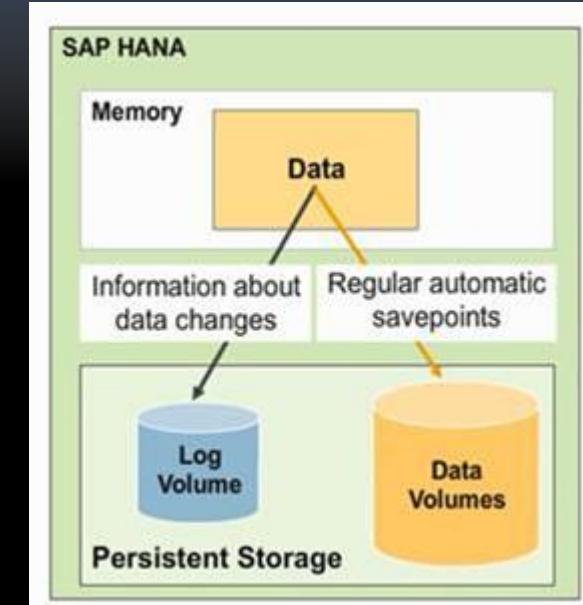
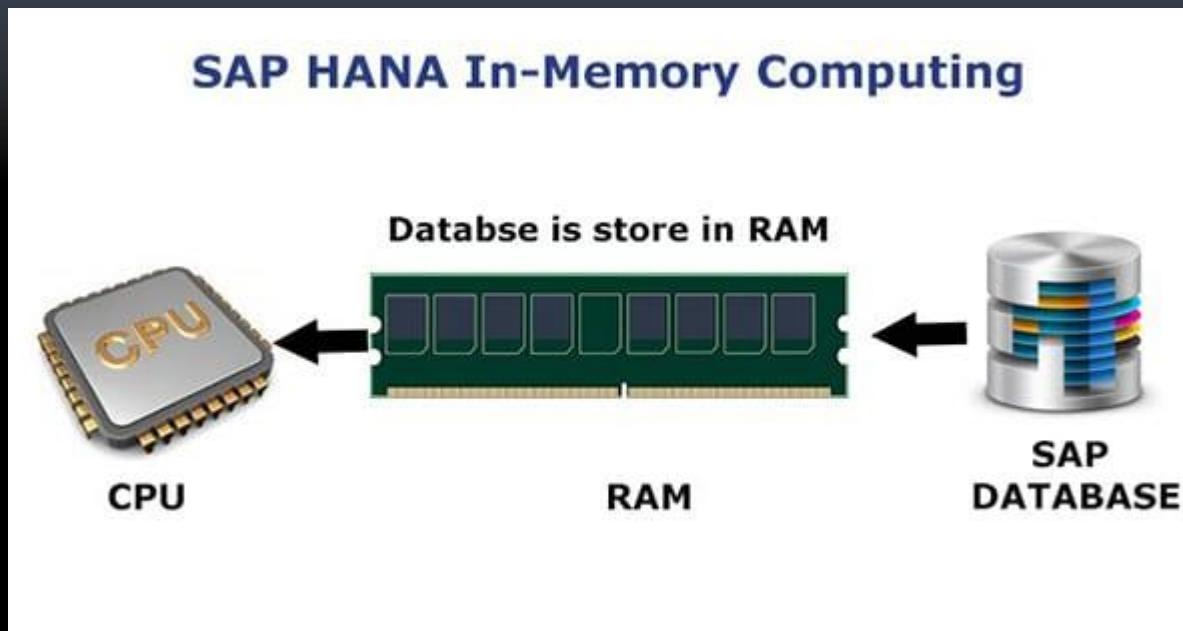


## With high-capacity Random Access memory (RAM)

- Database stored in memory
- Response time highly improved
- *Bottleneck*: No Latency between Central Processing Unit (CPU) and RAM
- Data is closer from CPU



# What is SAP HANA ? Technical highlights



SAP HANA takes some data in memory to allow instantaneous analytical operations. (nano seconds vs milliseconds for physical systems)

The persistent storage keeps all data.

SAP HANA allows durable storage on RAM (thanks to transaction journal)

Oracle TimesTen is the main competitor on the « in memory » data base segment

# What is SAP HANA - In memory ?

<https://www.ionos.fr/digitalguide/hebergement/aspects-techniques/bases-de-donnees-in-memory/>

<https://www.decivision.com/blog/sap-hana/presentation-sap-hana>

<http://www.expandbi.com/wp-content/uploads/2016/06/SAP-S4-HANA-Finance-Laurent-Allais.pdf>

# INTRODUCTION TO A CREATIVE METHODOLOGY ON THE WAY TO INNOVATION : DESIGN THINKING



**Before starting... two interesting thoughts.....**

**“The ability to perceive or think differently is more important than the knowledge gained”**

**David BOHM (American Physician)**

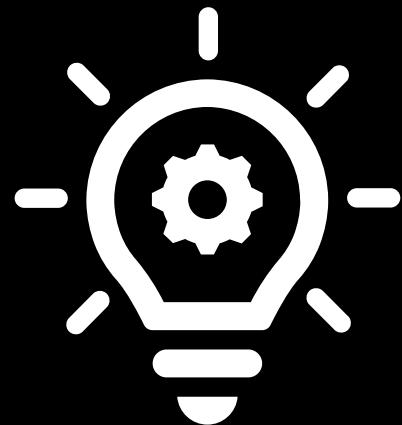
**“One step to improve the ability to innovate is to improve in design, because we believe that design in one way or the other will lead to innovation.”**

**Hasso PLATTNER (SAP founder)**

EMPATHY, COMMUNICATION, CREATIVITY AND IMAGINATION LEAD TO...

## INNOVATION

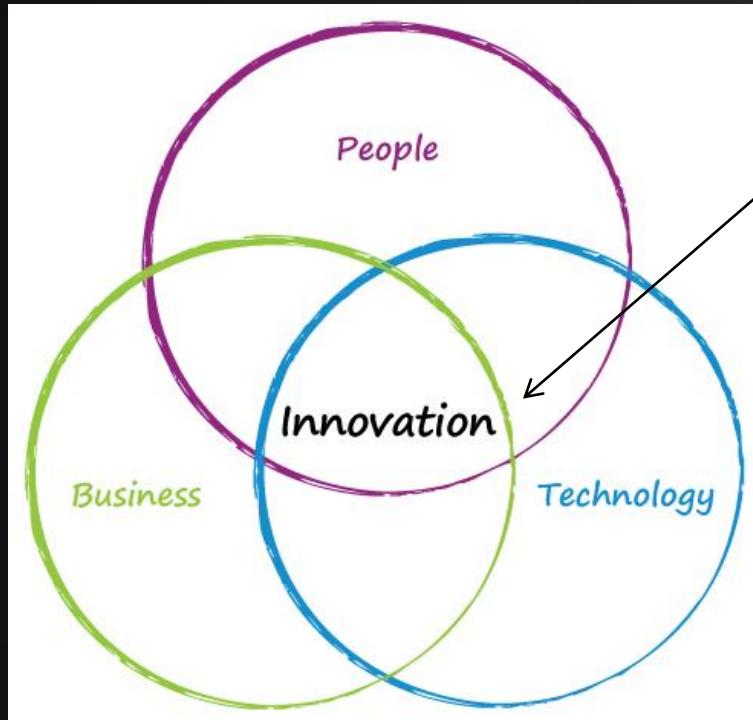
*Usable and*  
**DESIRABLE**



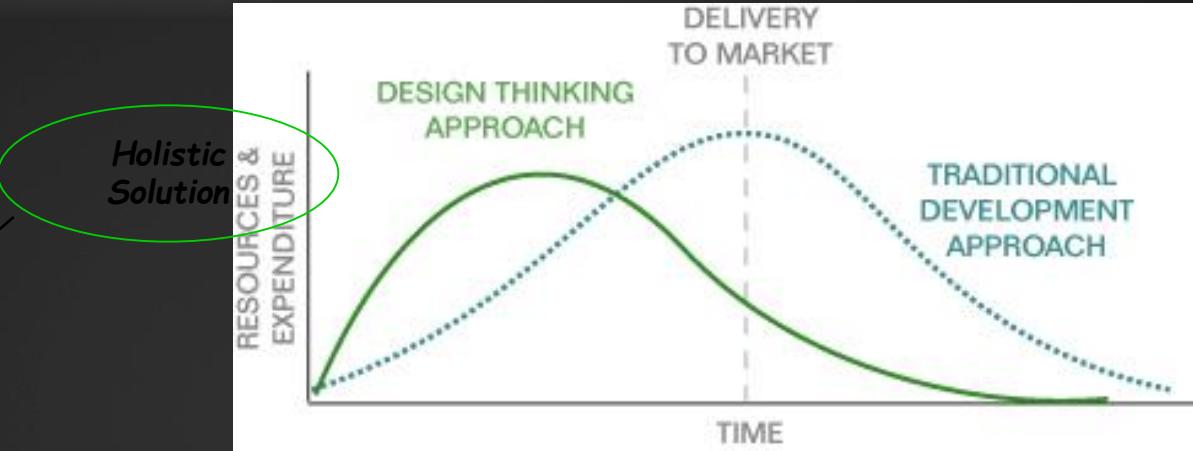
**VIABLE**  
*For Business*

*Technologically*  
**FEASIBLE**

# Design Thinking : a methodology helps to think and to innovate in a different way



Source: Design Thinking  
public domain



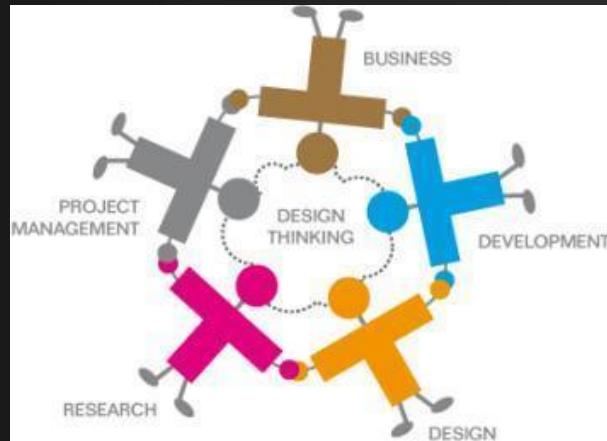
This approach helps to ensure that the right solution is built and that development teams are equipped to do so.

The effort in the beginning to understand and validate what the right problem is avoids expensive redesigns in later phases.

# Design Thinking - Core Components

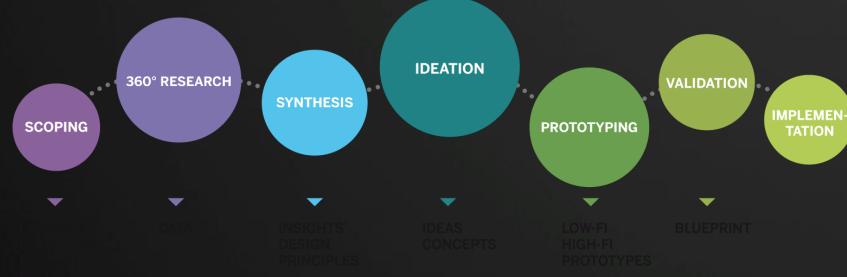
## People

multidisciplinary team of T-shaped people with a culture of empathy .



## Environment and Materials

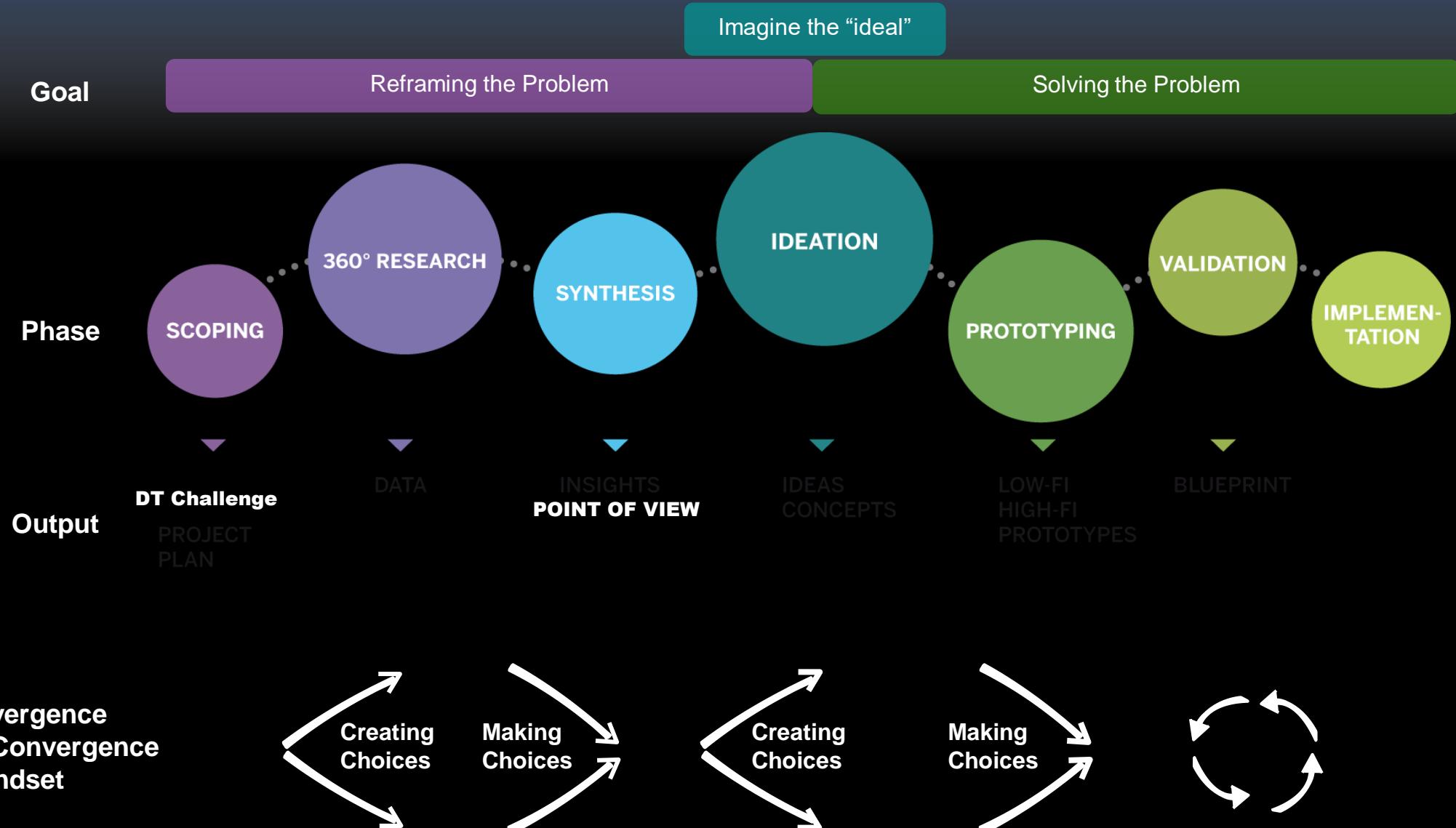
An environment with a culture of trust and the space/material for creative teamwork.



## Approach

that is an highly iterative **process** consisting of activities.

# GLOBAL PROCESS



# RFI – RFP - WHAT ELSE?



# Before starting a project, let us think to our needs....

**YOU**, as a future Manager, need to change your information system or part of it:

- **You are first looking for a solution for your company** : you send a Request For Information (**RFI**) to several editors. You need some modules, some software to fullfill your requirements in term of functionalities.

A solution is made from one or several softwares with or without interfaces (integrated)

- In the RFI, you describe requirements in term of functionalities (scope), eventually actual and future way of working, number of sites, users....
- The different editors send a proposal including which requirement they can fullfill or not fullfill.
- **According to the answers to the RFI, you pre select one, two or three solutions.**

# Before starting a project, let us think to our needs....

- You are now looking for the implementation of your future project :
- You send a Request for Proposal (RFP) to pre selected editors and several integrators.
- The RFP document should describe in details existing and targetted application : functionalities expected , planning, technical and functional architecture, detailed business process, reports, interfaces.
- It is a **contractual document that will be part of the future relation between client and integrator.**
- The different integrators send a proposal including which requirement they can fullfill or not fullfill, what is included in the price, what is not, maintenance, price for change request and GTC (General Terms and Conditions) ....
- **According to the answers to the RFP, you select one solution and one integrator to implement the project.**

HOW DO WE RUN A PROJECT ?  
WHAT IS THE METHODOLOGY ?



## Introduction

« Statistics state that up to 70% of IT projects run late, over budget, or do not meet planned goals... Consequently, **implementation risk** is a critical factor »

*Source: Introducing packaged solutions by Michael Krigsman*

« Now when companies think about implementing an application, they really want to implement **an integrated solution** »

*Source: Henri D. Morris SVP Worldwide Software and Services IDC*

# From ASAP to SAP Activate (step 1)



Very robust methodology but sometimes uncertain and complex to implement....

- 1. Project Preparation:** The project is formally initiated, and planning is well under way.
- 2. Business Blueprint :** The project team gathers requirements and conducts the conceptual design of the solution.
- 3. Realization :** The solution is built and the integration tested; performance tests are planned.
- 4. Final Preparation :** End users are trained; this is the final check before the cutover to the new system solution.
- 5. Go Live and Support :** The solution receives confirmation, ongoing support is in place, and the project is closing.
- 6. RunSA:** The operability of the solution is ensured.

# From ASAP to SAP Activate (step 2)



A step forward on the way to simplification ...

## SOFTWARE

1. Quickly address the most urgent business processes

## CONTENT

2. SAP best practices, templates and tools simplify the integration

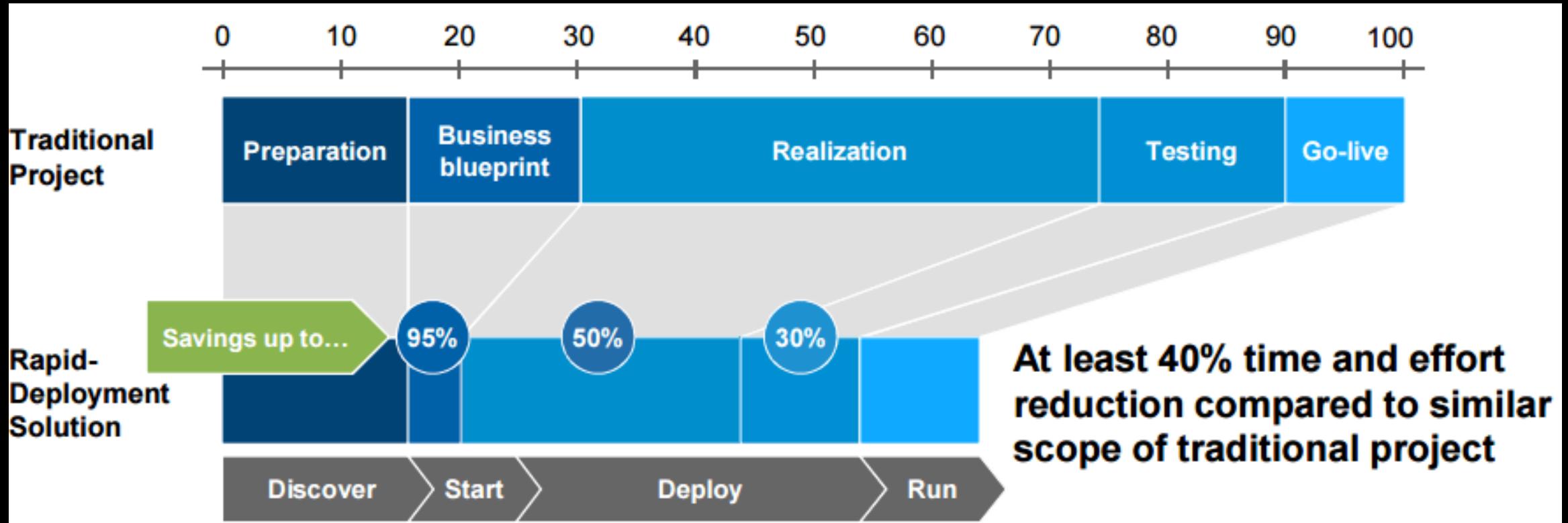
## ENABLEMENT

3. Guide and educational material accelerate end user adoption

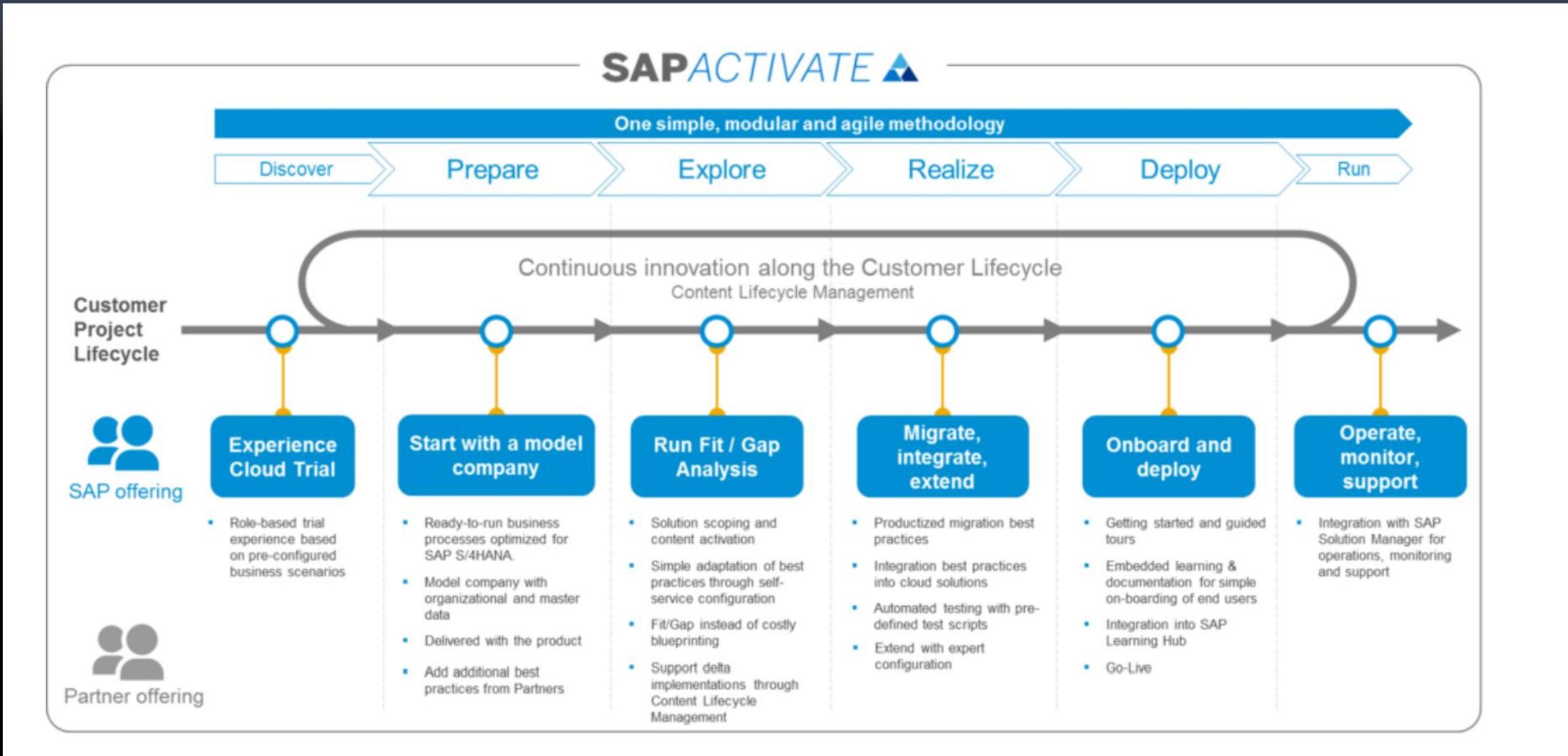
## SERVICE

4. Fixed scope provides maximum predictability (planning) and lowers risks of the implementation

## From ASAP to SAP Activate (step 2)



# From ASAP to SAP Activate (step 3)

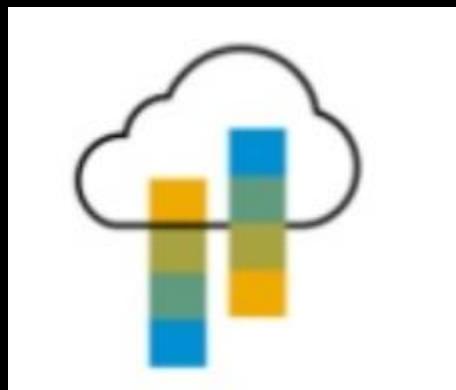


## From ASAP to SAP Activate (step 3)

**SAP<sup>ACTIVATE</sup>** methodology is available for both S4HANA cloud and on premise projects.

It is based on :

- Use of SAP best practices (direct inspiration from RDS principles)
- Agile project delivery
- Reduced project lifecycle (Only 4 main phases)
- Leverage guided configuration
- Blueprint activities replaced with solution fit / gap workshops
- Up to 10 key deliverables per phase
- Easier access to key guides and accelerators



# Discover



The purpose of the Discover phase is to discover the solution capabilities, understand the business value and benefits of the solution to customer's business, determine the adoption strategy and roadmap in alignment with understanding the solution capabilities and product roadmap.

## Key activities :

- Implementation scope
- Project timelines
- Targeted solution model.

# Prepare



The purpose of this phase is to provide the initial planning and preparation for the project. In this phase, the project is started, plans are finalized, project team is assigned, and work is under way to start the project optimally.

## Key activities :

- Define project goals, a high-level scope, and a project plan
- Identify and quantify business value objectives
- Secure executive sponsorship
- Establish project standards, organization and governance
- Define and secure approval for the implementation /upgrade strategy
- Define roles and responsibilities for the project team

- Develop a project team training strategy, and start project team training
- Establish project management, tracking, and reporting mechanisms for value delivery
- Document all initiation activities in the project charter
- Pre-assemble (or establish) the project environment, infrastructure, and IT systems including SAP Solution Manager

# Prepare

Set up of the project,

Identification of

- The stakeholders
- The scope and priorities
- Best practices related to the packaged solution

and implementation



# Explore



The purpose of this phase is to perform a fit/gap analysis to validate the solution functionality included in the project scope and to confirm that the business requirements can be satisfied. Identified gaps and configuration values are added to the backlog for use in the next phase.

## Key activities :

- Prepare, setup and conduct solution validation workshops
- Refine business requirements
- Identify master data and organizational requirements
- Confirm to be business processes
- Define functional solution design, including a gap analysis in solution design workshops
- Associate business requirements to the process hierarchy and the solution components

- Obtain business sign-off on delta requirements and design documents
- Collect end user information, analyzing learning needs, and developing a learning deployment strategy
- Establish project management, tracking, and reporting for value delivery

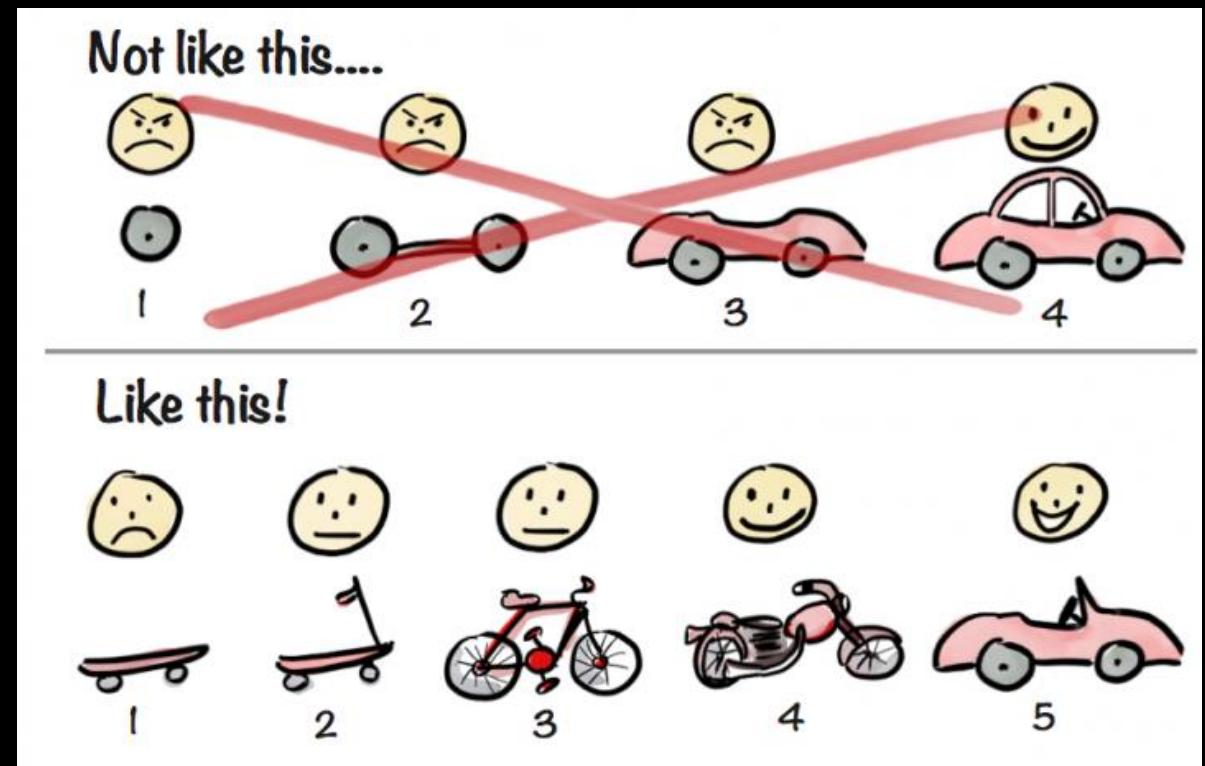
# Explore

This phasis will use the Design Thinking methodology in order to draw, share ideas about the future solution.

The team will make a prototype in a few weeks in order to understand and explore the possibilities and converge to the best solution.

This phasis also allows to understand the typical user journey, needs and the interactions with all stakeholders.

The team ideas contribute to build a prototype and a roadmap in order to better answer the users expectations.



# Realize



The purpose of this phase is to use a series of iterations to incrementally build and test an integrated business and system environment that is based on the business scenarios and process requirements identified in the previous phase. During this phase, data is loaded, adoption activities occur, and operations are planned.

## Key activities :

- Establish the solution landscape
- Implement the solution in the development environment using incremental build in time-boxed iterations
- Conduct overall end-to-end testing of the solution within the QA environment
- Setup production environment
- Prepare for data migration and data archiving
- Conduct performance testing
- Conduct project team and key user training

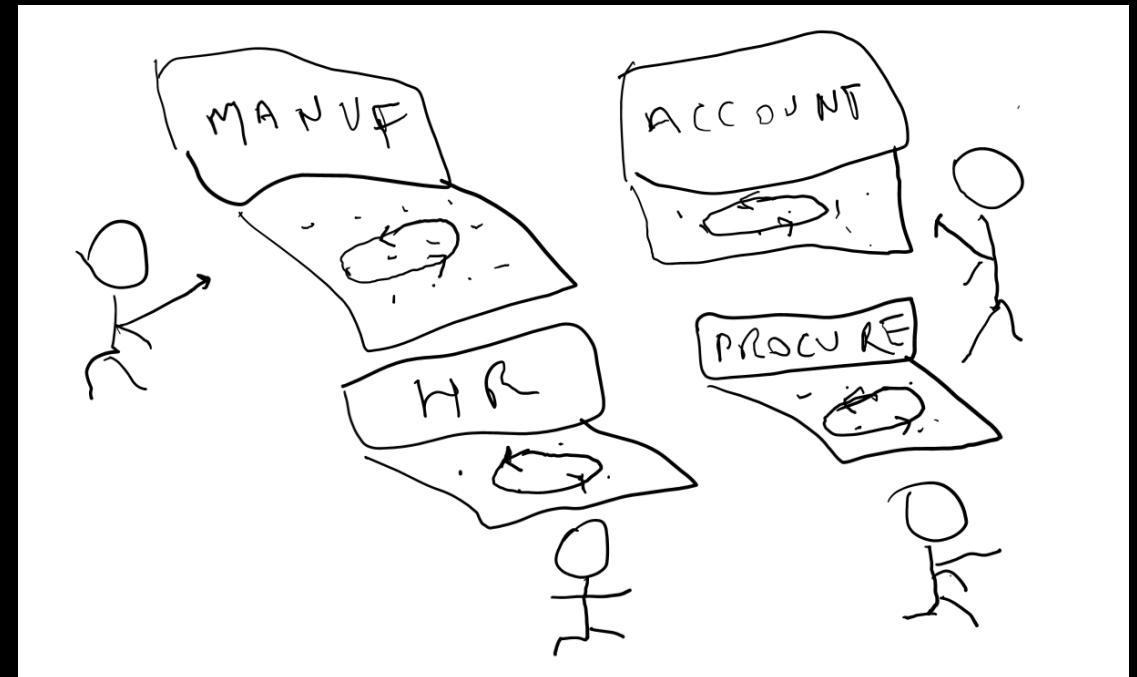
- Finalize end user training materials and documentation
- Track and report on value delivery

# Realize

This phase includes incremental delivery and tests of the scenarios based on user experience and users feed backs.

The scenarios and business process are adapted and transformed until it suits to business and users expectations as well as integration quality

Time for testing and between deliveries is limited !



# Deploy



The purpose of this phase is to setup the production system, confirm customer organization readiness, and to switch business operations to the new system.

## Key activities :

- Resolve all crucial open issues:
  - Conduct system tests
  - Check that system management is in place
  - Proceed with cut-over activities, including data migration
- Execute transition and cutover plans including organizational change management (OCM) plans
- Complete all scheduled end user training
- Identify and document all issues encountered in the transition to the new solution

- Monitor business process results and the production environment
- Establish an “extra-care” center of excellence for support that provides:
  - Production support processes
  - Exceptional business monitoring processes
  - Extraordinary technical support
  - System enhancements
- Track and report on value delivery

# Deploy

This phase includes all actions needed to prepare go live for validated solution.

All future interactions between IT and users for successive deployments are planned.

Successive versions tested by the project team facilitates the solution adoption.



# Run

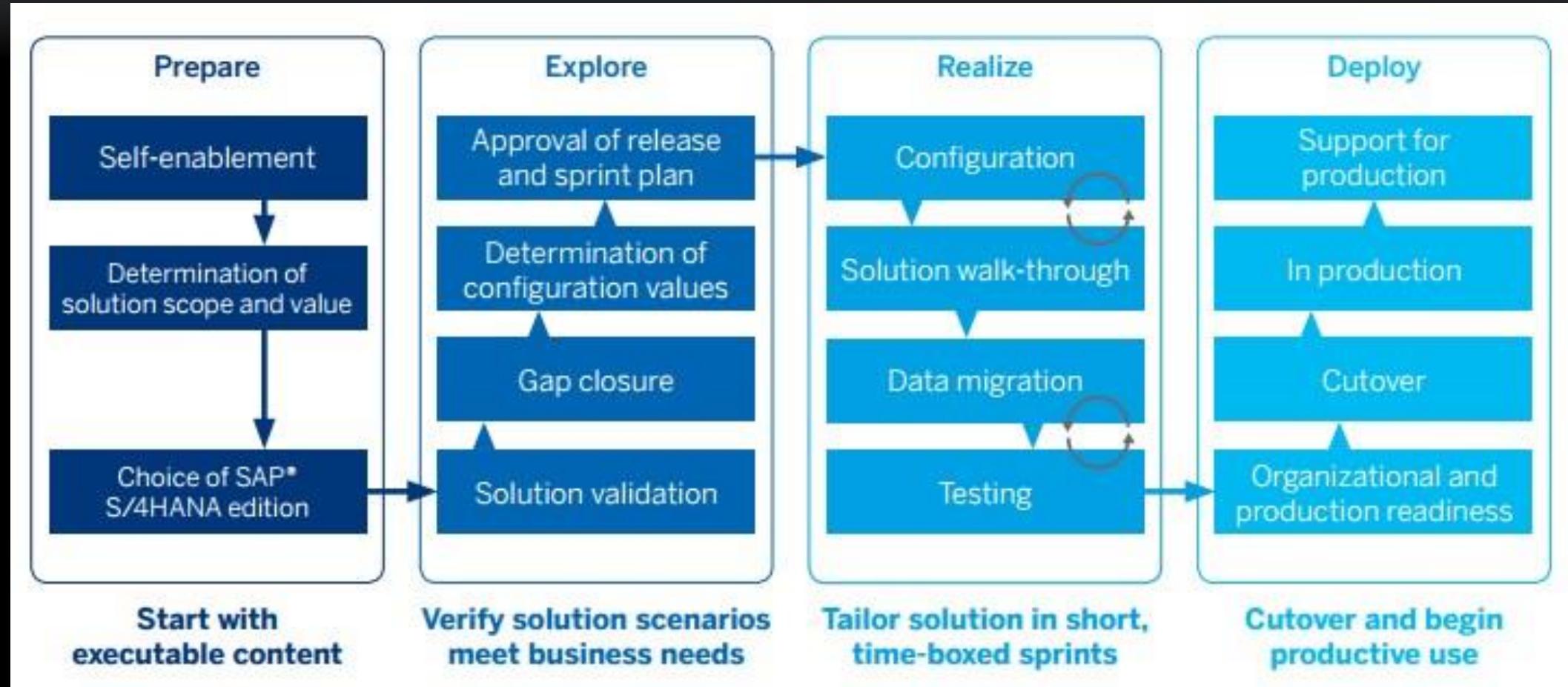


The purpose of this phase is to further optimize and automate the operability of the solution. Operability is the ability to maintain IT systems in a functioning and operating condition, guaranteeing systems availability and required performance levels to support the execution of the enterprise's business operations.

## S4 HANA METHODOLOGY

<https://go.support.sap.com/roadmapviewer/#group/3DAE6BF3-610C-4FC5-83E9-D7595854F5F8/roadmapOverviewPage/SUITEONPREMAGL:901B0E6D3F501EE7B6A708CDBDEB9054,901B0E6D3F501ED7B5C50088958E6E86,901B0E6D3F501ED7B5C50088958E8E86,901B0E6D3F501ED7B5C50088958EAE86,901B0E6D3F501ED7B5C50088958ECE86,901B0E6D3F501ED7B5C50088958EEE86>

# Key deliverables



# Key deliverables



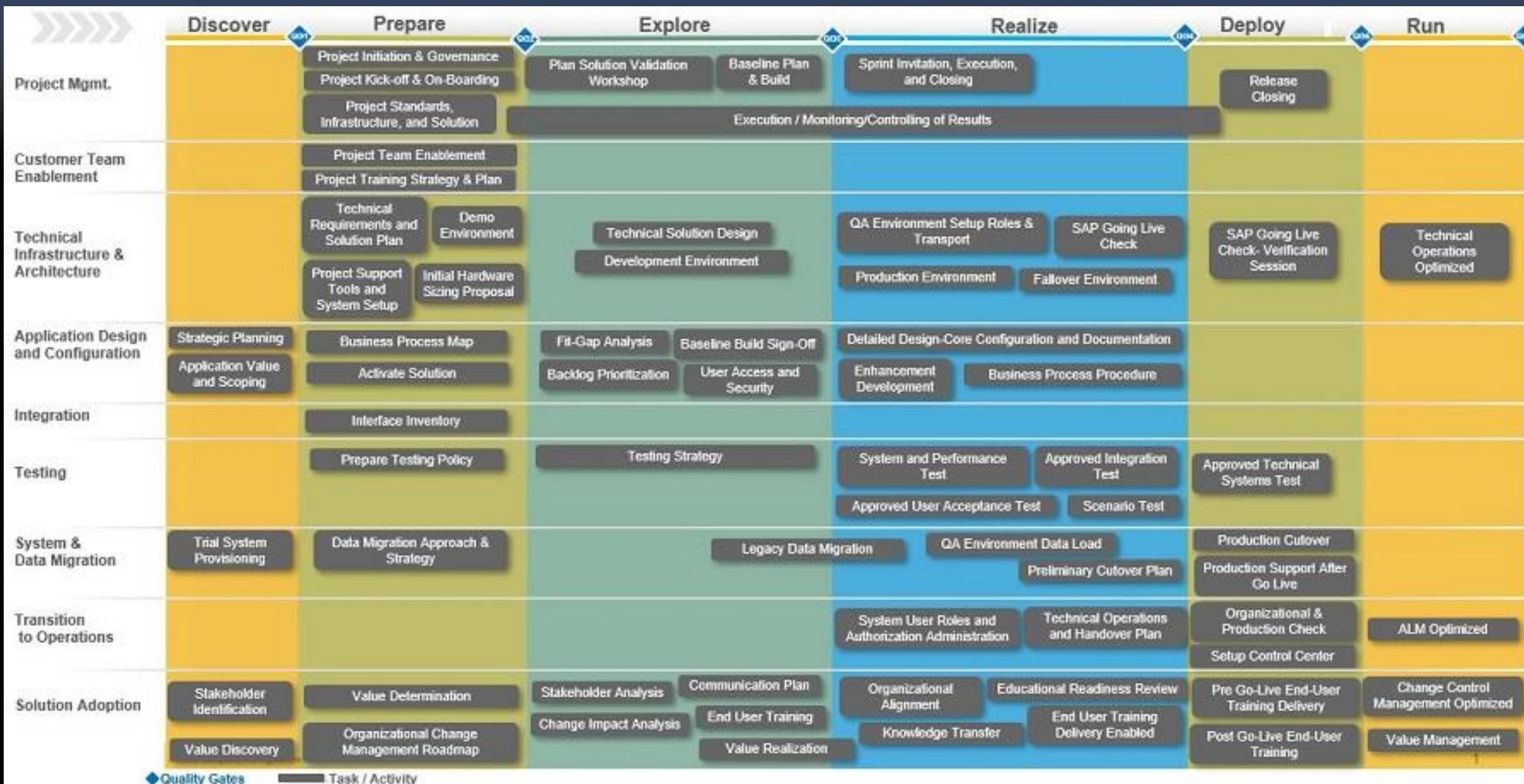
## Business Value

- Faster, less service intensive initial implementation in the cloud or on-premise
- Rapid adoption of innovations throughout the entire product lifecycle
- Extensible framework for partners

Faster **Time-to-Value**  
(initial and ongoing)

Reduced **Total-Cost-of-Ownership**  
(over total lifecycle cloud and on-premise)

# SAP Activate overview



CHANGE MANAGEMENT :  
A TEAM WORK



# CHANGE MANAGEMENT IS KEY

**CHANGE MANAGEMENT** is a **fundamental** step of the global project.

- **Users are used to working on a certain way with a certain process**
- **Users are not flexible at all and don't like change**
- **Change refers to territory, authority, power, organizations and should never be ignored, even for budget issues.**
- **Change often generates fear, negative feeling**
- **Therefore, change management must be planned and organized from the very beginning :**
  - Communication, presentation of the project and progress expected
  - Training, coaching
  - Going live and strong support assistance
  - Identify the weaker users

**ALL THE PROJECT TEAM SPIRIT IS NEEDED !**

WHAT DOES MY FUTURE  
CAREER LOOK LIKE ?

WHAT WILL MY JOB BE ?



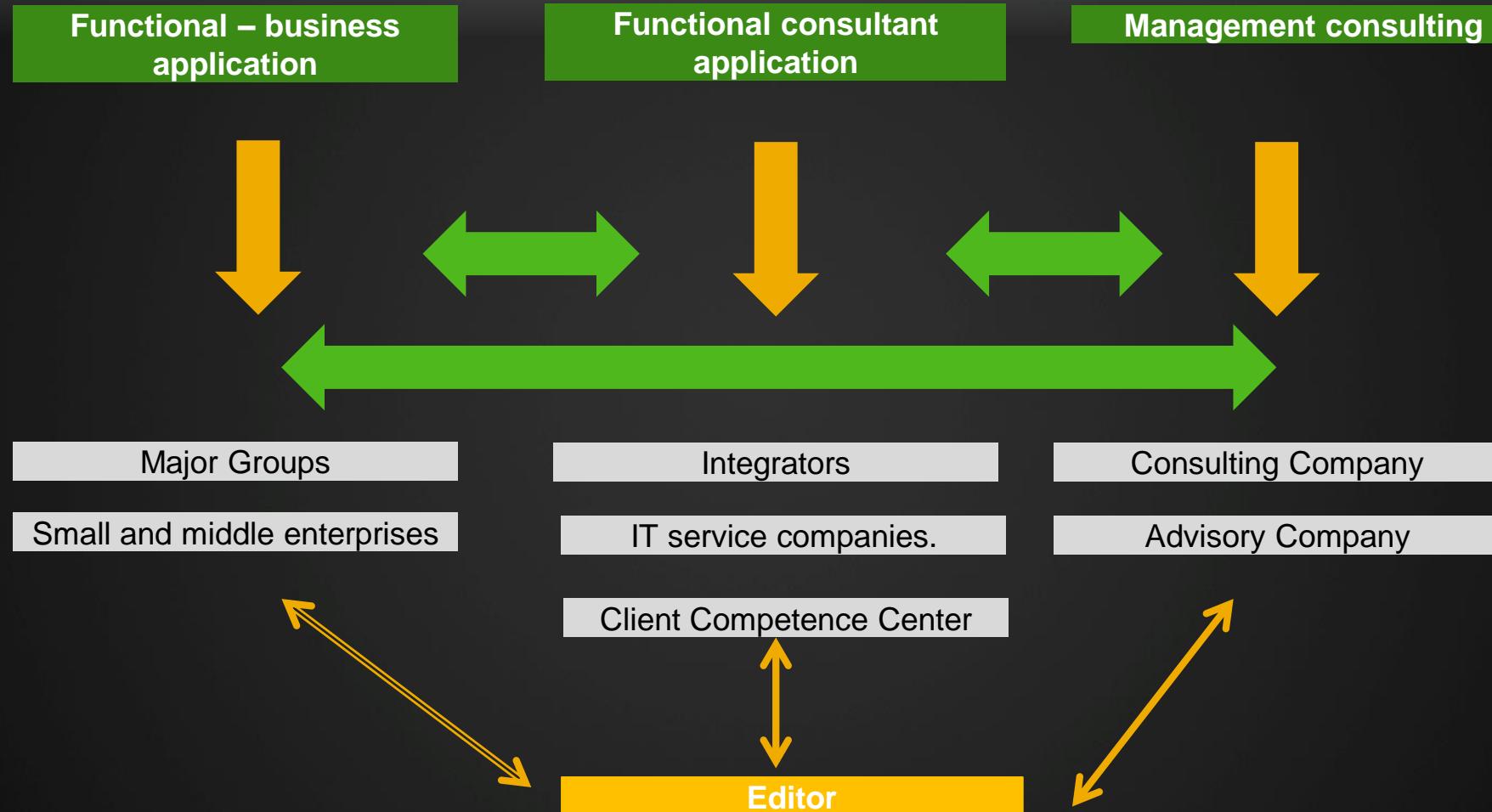
# Different ways for your careers.....

CUSTOMER	INTEGRATOR	ADVISORY
<b>Functional – business application</b>	<b>Functional consultant application</b>	<b>Management consulting</b>
Purchasing department	Blueprint / Realization / Customization of applications	Advisory on production management
Production department	Blueprint / Realization of reports	Production and environmental regulations
Logistics, transport management	Assistance for applications Run, maintenance of applications.	Assistance to project definition, project management (RFI, RFP)
Research and development		
Key user, blueprint of management information system : production, logistics, purchases, R&D...	Assistance to project definition, project management	
<b>Competence Center</b>		
IT Manager or applications maintenance		

# Different ways for your careers.....

EDITOR	EDITOR	EDITOR
Functional – business application	Technical	CROSS
Sales	Product development	Maintenance management
Presales	Technical consultant	Operations
Functional consultant	Technical Architect	Controlling
Project Manager	Presales	
Support consultant		
Technical Quality Manager		
Engagement Architect		
Product Management		

# Different ways for your careers....



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