

SECP3744-01 ENTERPRISE SYSTEMS DESIGN AND
MODELING (WBL)

PAST, CURRENT AND FUTURE TREND IN ENTERPRISE INFORMATION SYSTEM

Group 10



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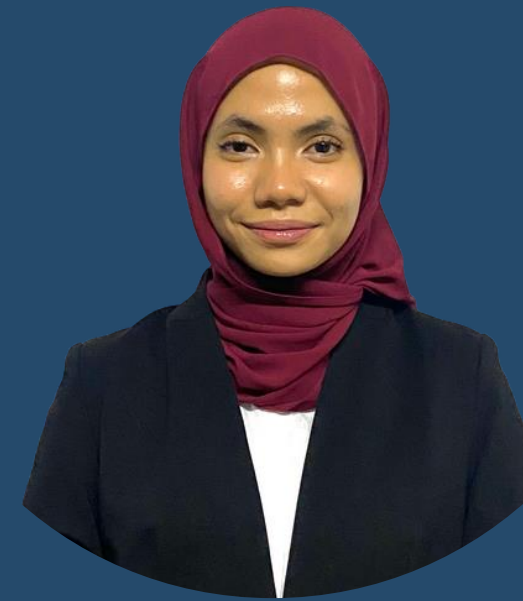


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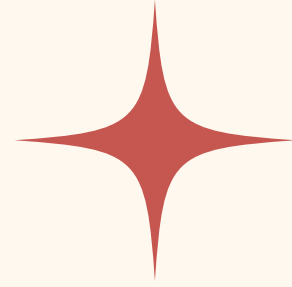
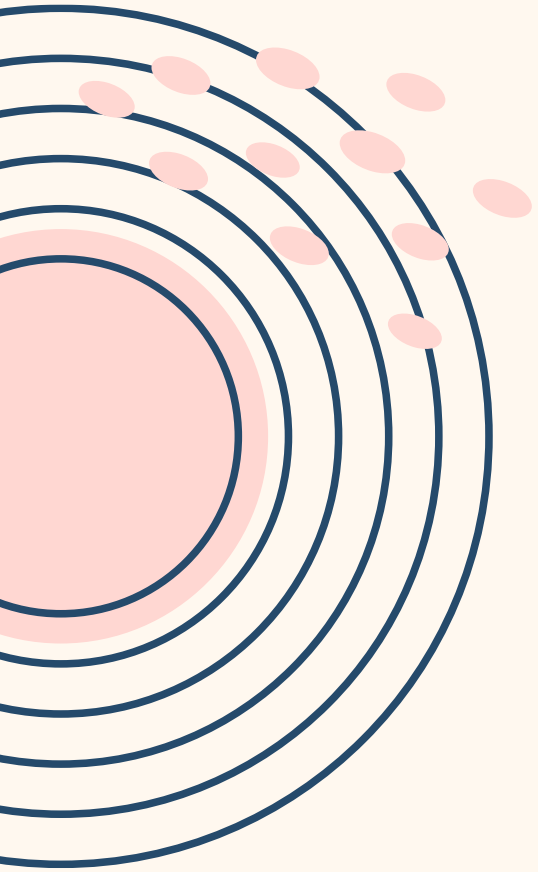
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Introduction

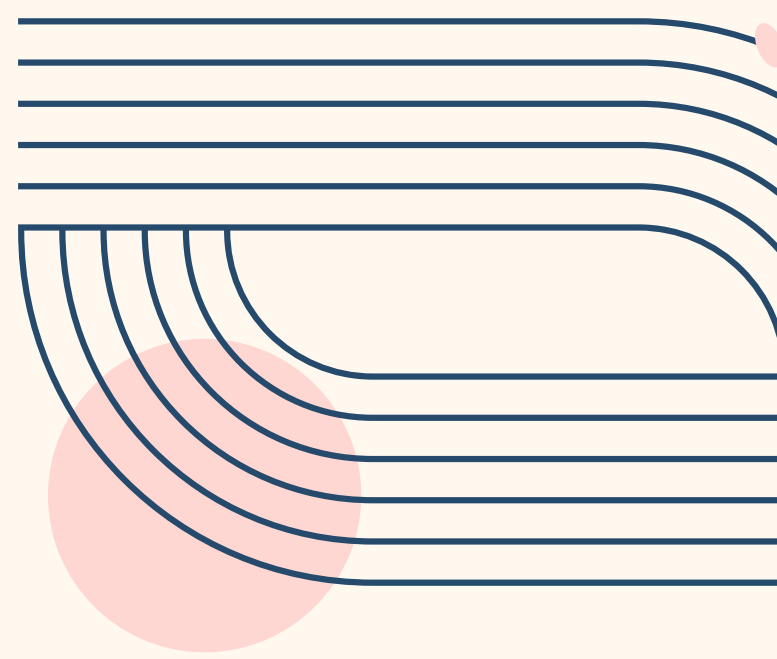
The rise of Enterprise Information Systems (EIS) has fundamentally transformed business operations, enhancing data management, communication, and decision-making processes. As a result, EIS has become a foundation for enterprises striving to maintain competitiveness and broaden their influence in the digital age.

EIS are a subset of ES, comprising all information systems that enhance the functionality and efficiency of enterprise operations through integration. EIS includes hardware, networking, databases, and software applications.

The rise of internet technologies led to web-based EIS solutions, enabling real-time access to information and team collaboration.



Past Trends



in EIS





EIS History

EARLY 1960S

The history of EIS began with the integration of computers into industry automating manual tasks



Replacing paper-book system



Stand-alone system





EIS History



MRP I

1960S

Material Requirement Planning (MRP I) is an EIS system that self built by the construction machinery manufacturer



Created by IBM and J.I Case



Help in monitoring inventory and production



Limited function and high cost



EIS History

1970S



MRP II

Manufacturing Resource Planning (MRP II) is an extended version of MRP I as it allow various departments involved



More solution added to software to handle more process i.e. scheduling



Still in manufacturing industry



Better Coordination

EIS History

1990S

ERP I

Enterprise Resource Planning (ERP/I) is a software that integrates various business processes and data into a single system

Term introduces by research firm, Gartner

Accounting, sales, engineering and human resources (HR)

Web-aware, closed and monolithic.

Used local network

Earliest ERP software recorded is SAP R/1 in 1970!

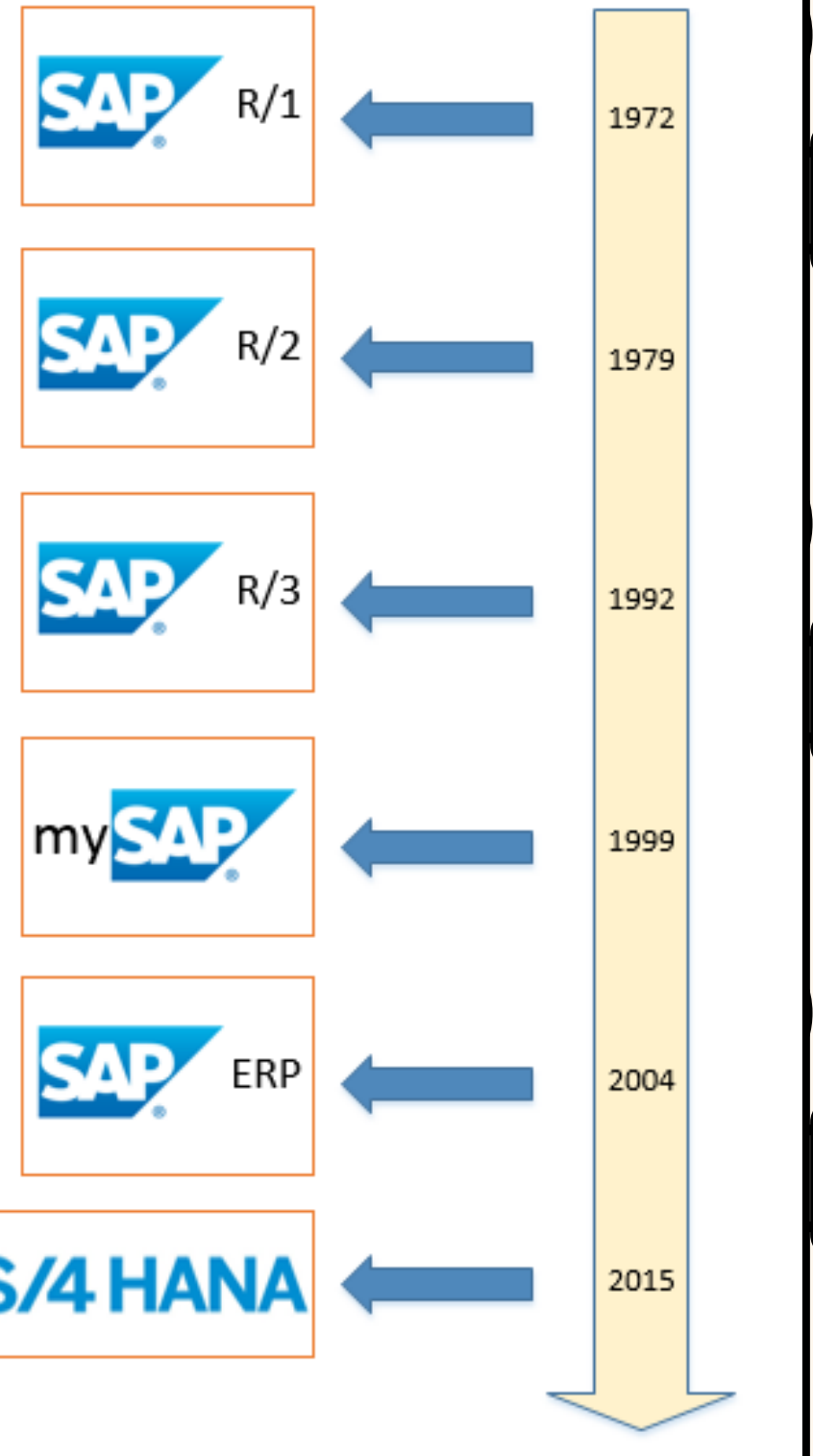


ERP I

Evolution of GUI version for SAP R/2 and SAP R/3

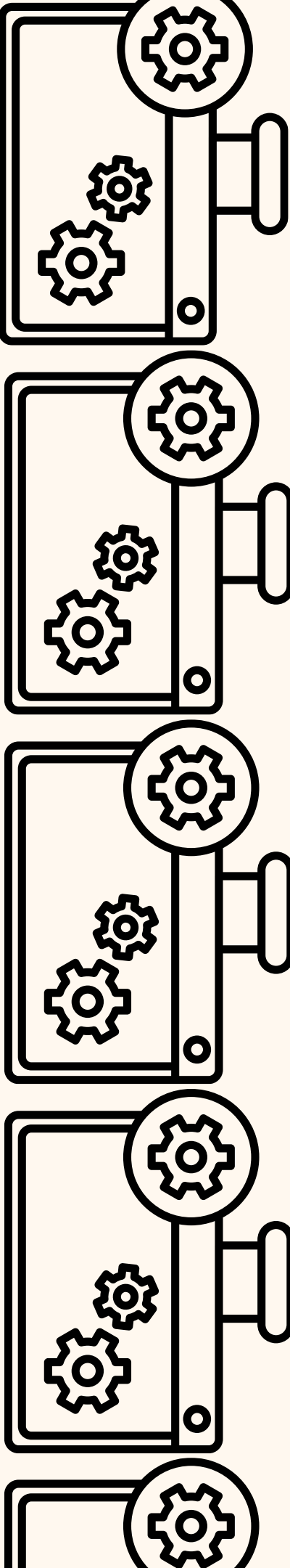
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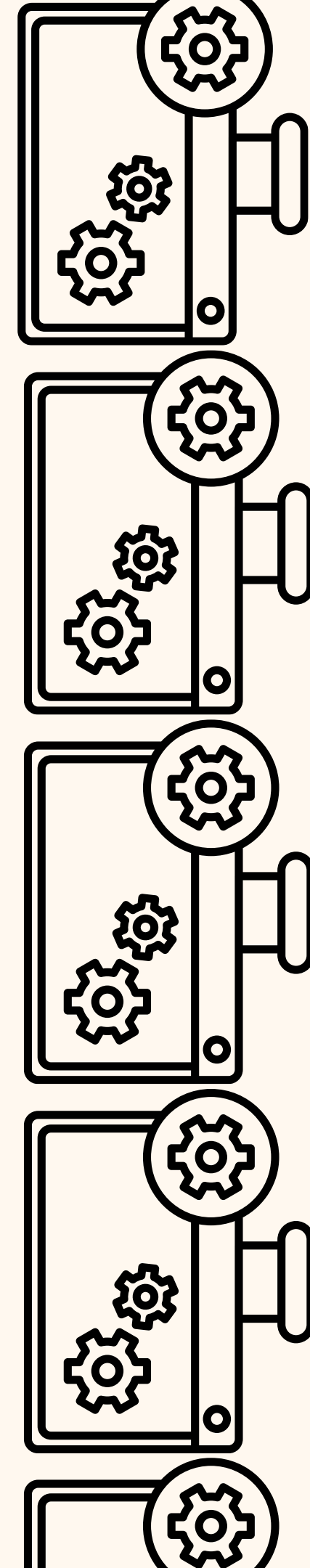
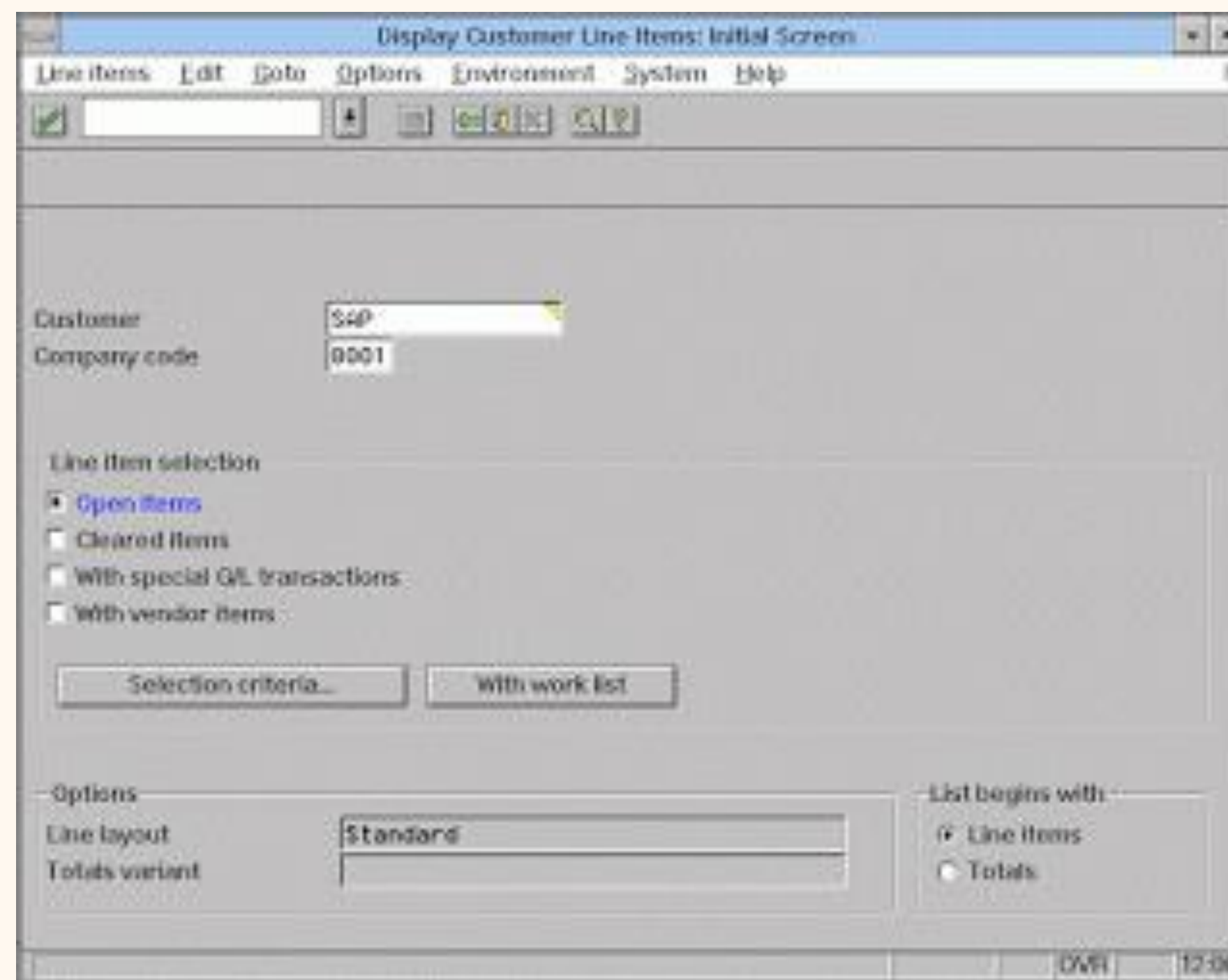
Evolution of GUI version for SAP R/2 and SAP R/3





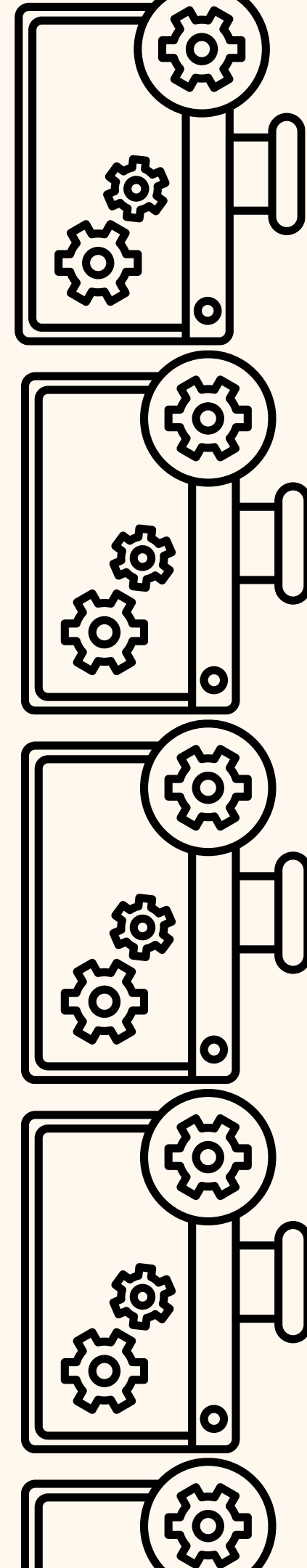
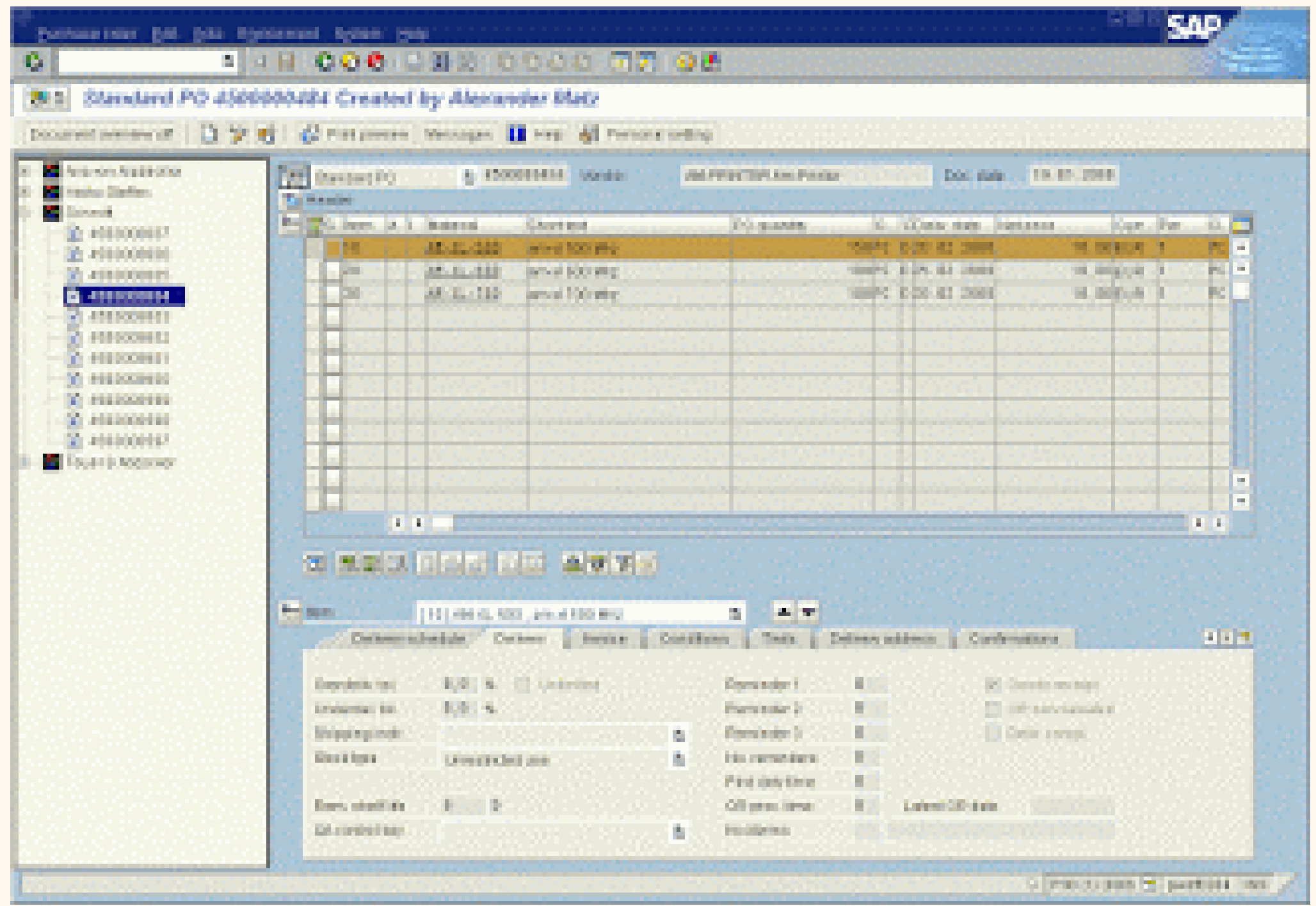
ERP I

Evolution of GUI version for SAP R/2 and SAP R/3





Evolution of GUI version for SAP R/2 and SAP R/3





EIS History



ERP II

2000

ERP II was introduced in conjunction with the Internet arrival where enterprises were able to share and extract information and data from external sources



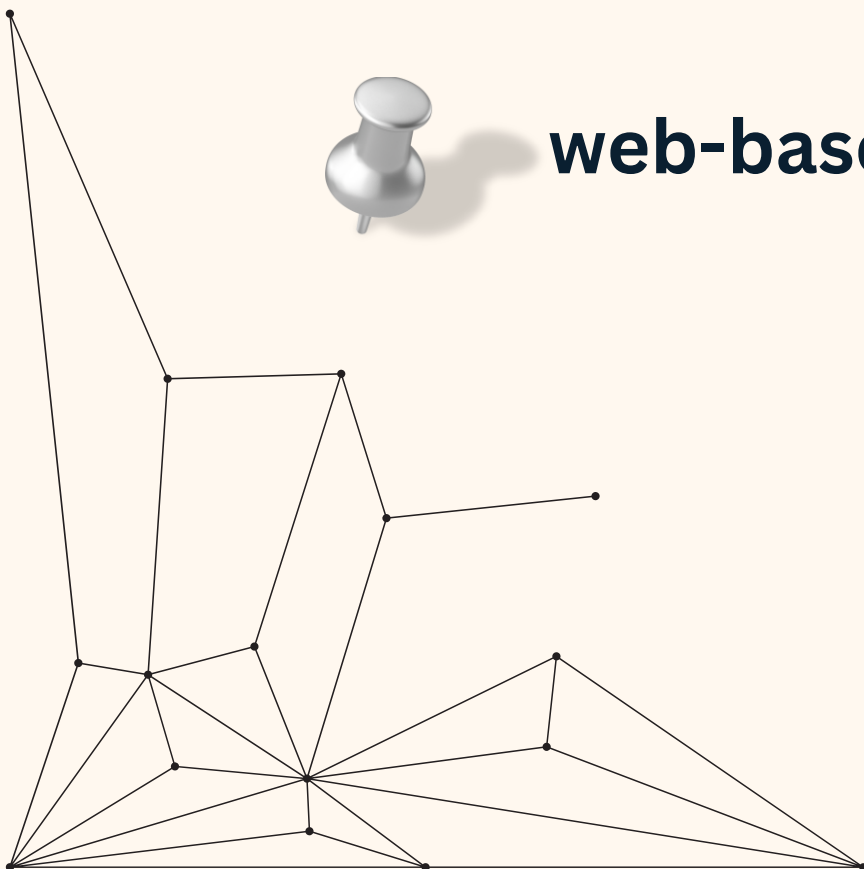
Internet-enabled



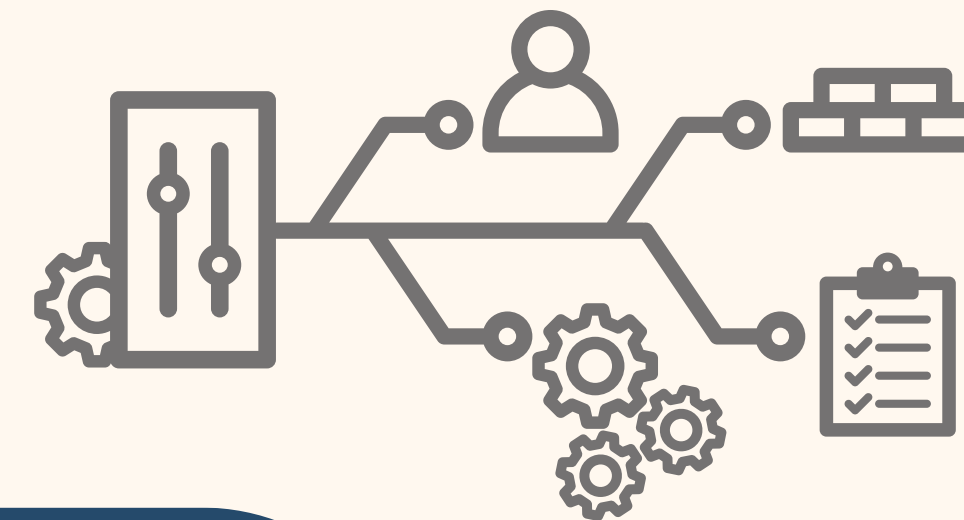
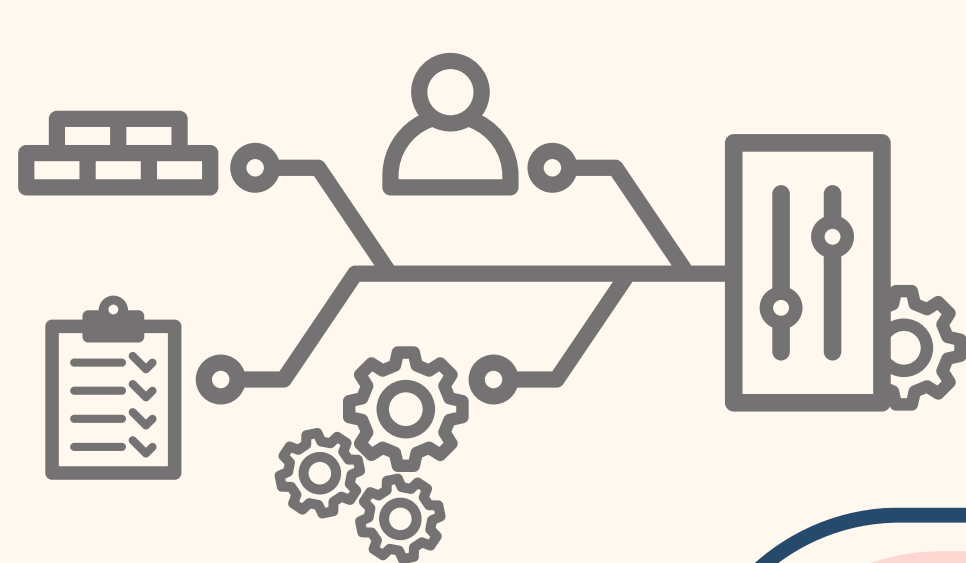
Bring functions such as SCM, SRM, and CRM .



web-based, open and componentized



EIS History



2009



IERP

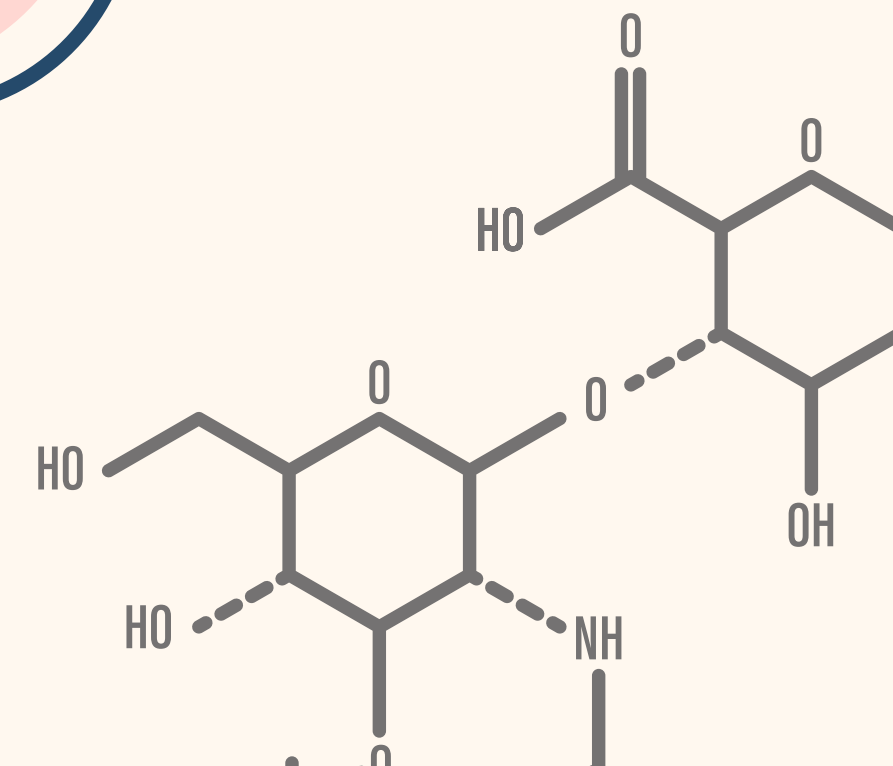
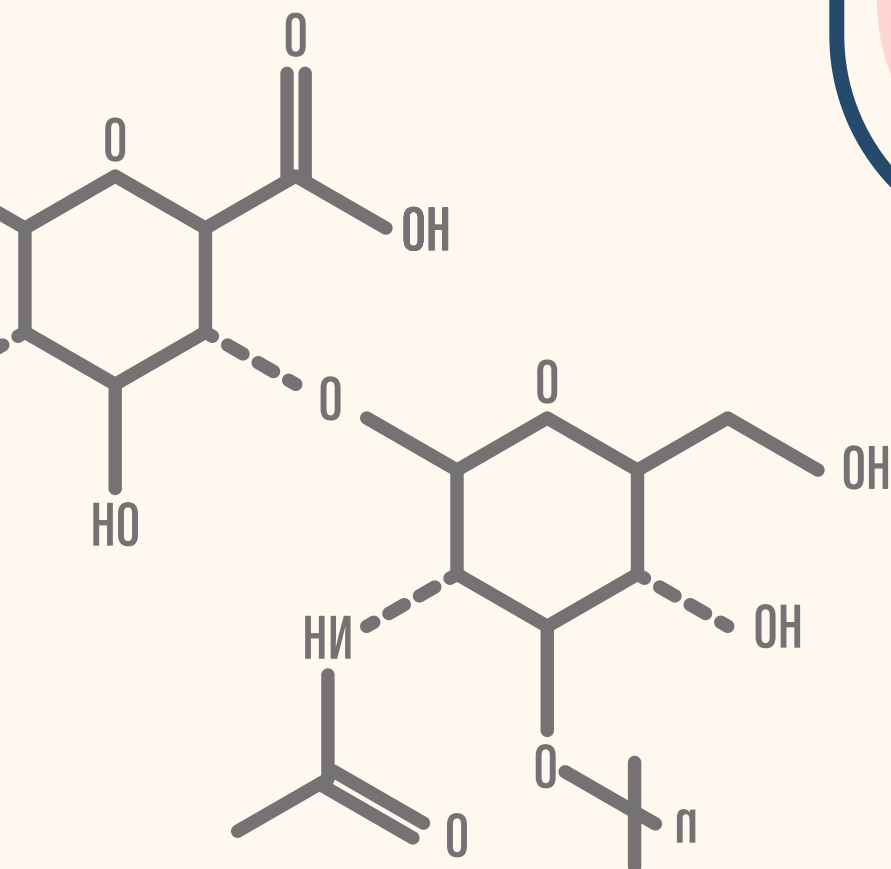
IERP is an ERP system developed for specific industries which are not covered in general purpose ERP.



Use new architecture (DSSA)



**Textil and apparel industry
(Datatex ITM)**



EIS History

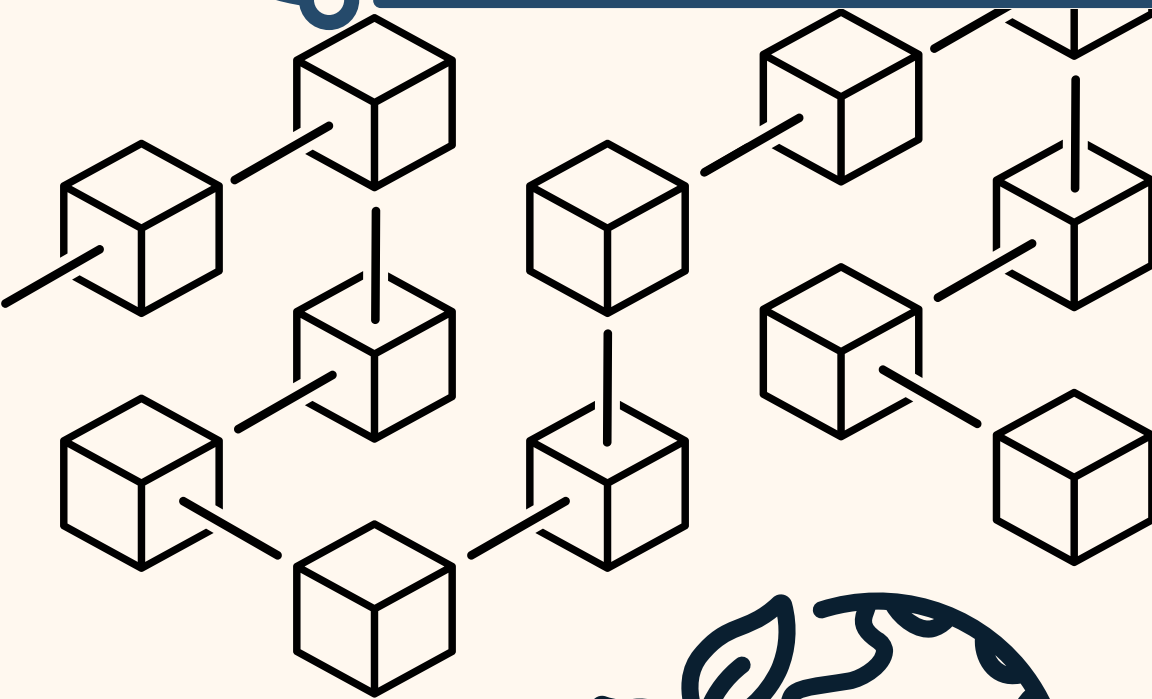


Big Data,
blockchain, BI, VR



ERP III

ERP III is known by integrating various business functions by using the modern software and high-end digital technologies



CRP

Complete Resource Planning (CRP) consists of unification of all ERP while encompasses the resources used by different industrial sectors to focus on economic, social, and natural aspect

Natural
material
flow

Social
material
flow, HCM

Current Trends in EIS

01

Generative Artificial Intelligence

✦ Have transformative capabilities

- Automate task
- Enhance customer experience

Personalized interactions

Real-time query resolution

- Drive business insights

✦ Adds business value

ChatGPT

✦ Analyze vast amount of data quickly and accurately

✦ Recognize patterns

✦ Provide intelligent recommendations

✦ Increased accessibility

✦ Prevent cyber risks and safeguard sensitive data

Network traffic patterns

Anomalies

Potential threats

Current Trends in EIS

02

Cloud Platforms

- ✦ Provide access to servers, storage, databases, networking and software
- ✦ Offer scalability, flexibility, and cost-effectiveness

✦ Industry cloud

- Provide a range capabilities tailored to specific industries
- Access to all necessary tools and resources required
- Eliminate separate maintenance

- ✦ Faster solution deployment
- ✦ Greater collaboration and information exchange
- ✦ Combine services
 - SaaS
 - PaaS
 - IaaS
- ✦ Drive business outcome

Current Trends in EIS

03

Edge Computing

A distributed computing framework that relocates computation and data storage closer to data sources.

✦ Involves processing data locally on devices instead of transmitting over long distances.

- Decreases the duration for data to travel

✦ Crucial for applications needing

- Real-time responses
- Low-latency responses

✦ Disperse processing tasks across a network of edge devices

✦ Enhance scalability

Augmented Reality
(AR)

Industrial
Automation

Autonomous
Vehicles

FUTURE TRENDS IN

INTERNET OF THING (IOT)



Network infrastructure made up of many connected devices which rely on sensory, communication, networking, and information processing technology



**E.g. Radio-frequency identification (RFID)
Wireless sensor network (WSN) used for sensing and monitoring**



Offers higher quality data in less time



FUTURE TRENDS IN

MOBILE ERP

A cloud-based ERP that enables access to ERP systems via mobile devices such as smartphones and tablets

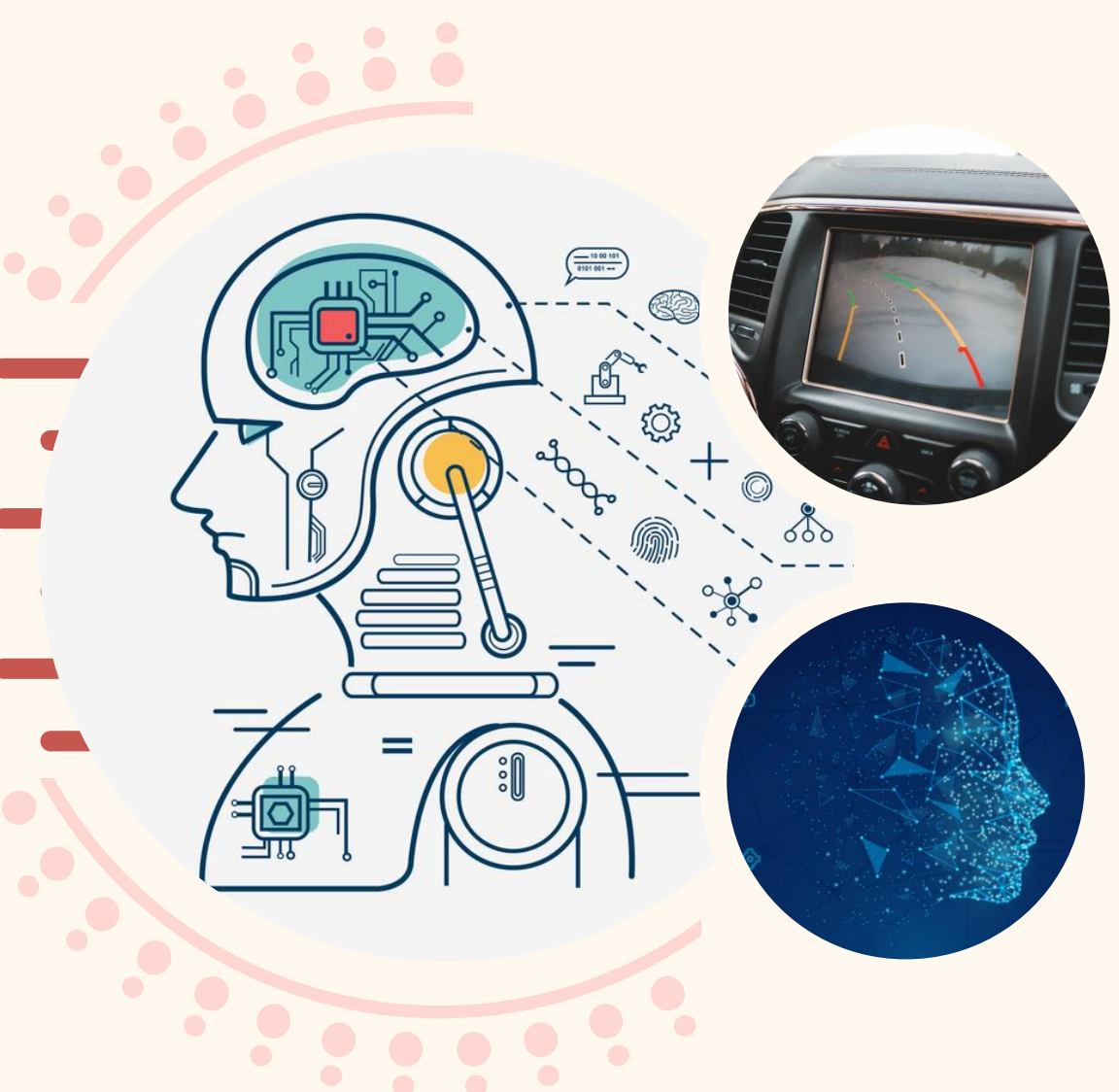
Streamlining operations, increase productivity, and improve efficiency

Impact the upcoming working environment, making remote work a new norm



FUTURE TRENDS IN

MACHINE LEARNING (ML)



A part of Artificial Intelligence that defines how systems undergo data learning to identify patterns and make decisions with minimal human intervention

Good for automating tasks which is similar to the concept of ERP and use predictive analysis in uncovering what will happen to gather much insightful info related to business

A protector for the enterprise digital environment by anticipating any potential issue that may arise

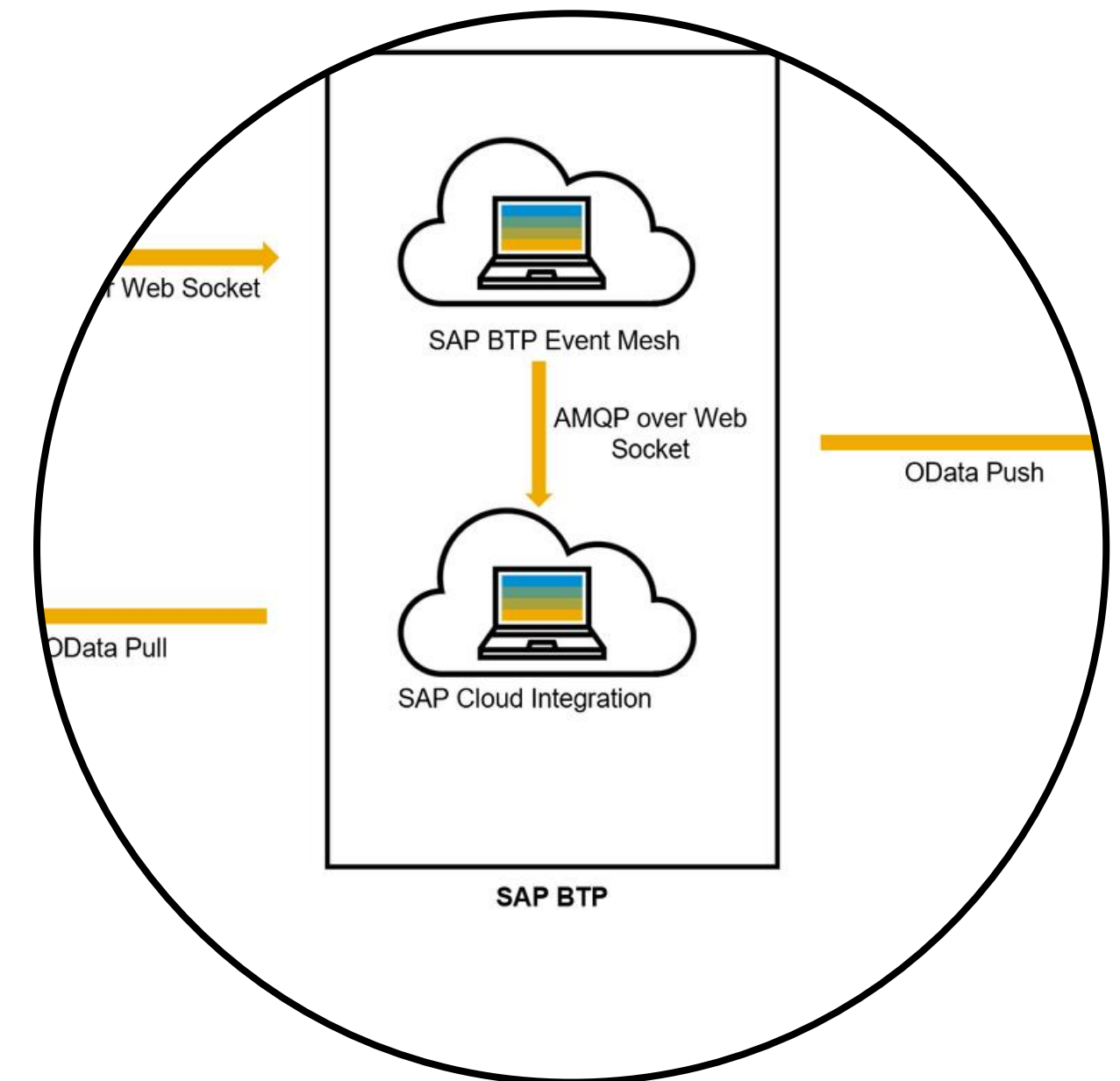
FUTURE TRENDS IN

TWO TIER ERP

Two-tier ERP is a strategy good for large enterprises, where core processes are handled by the tier one ERP system, while company subsidiaries use a tier two ERP system

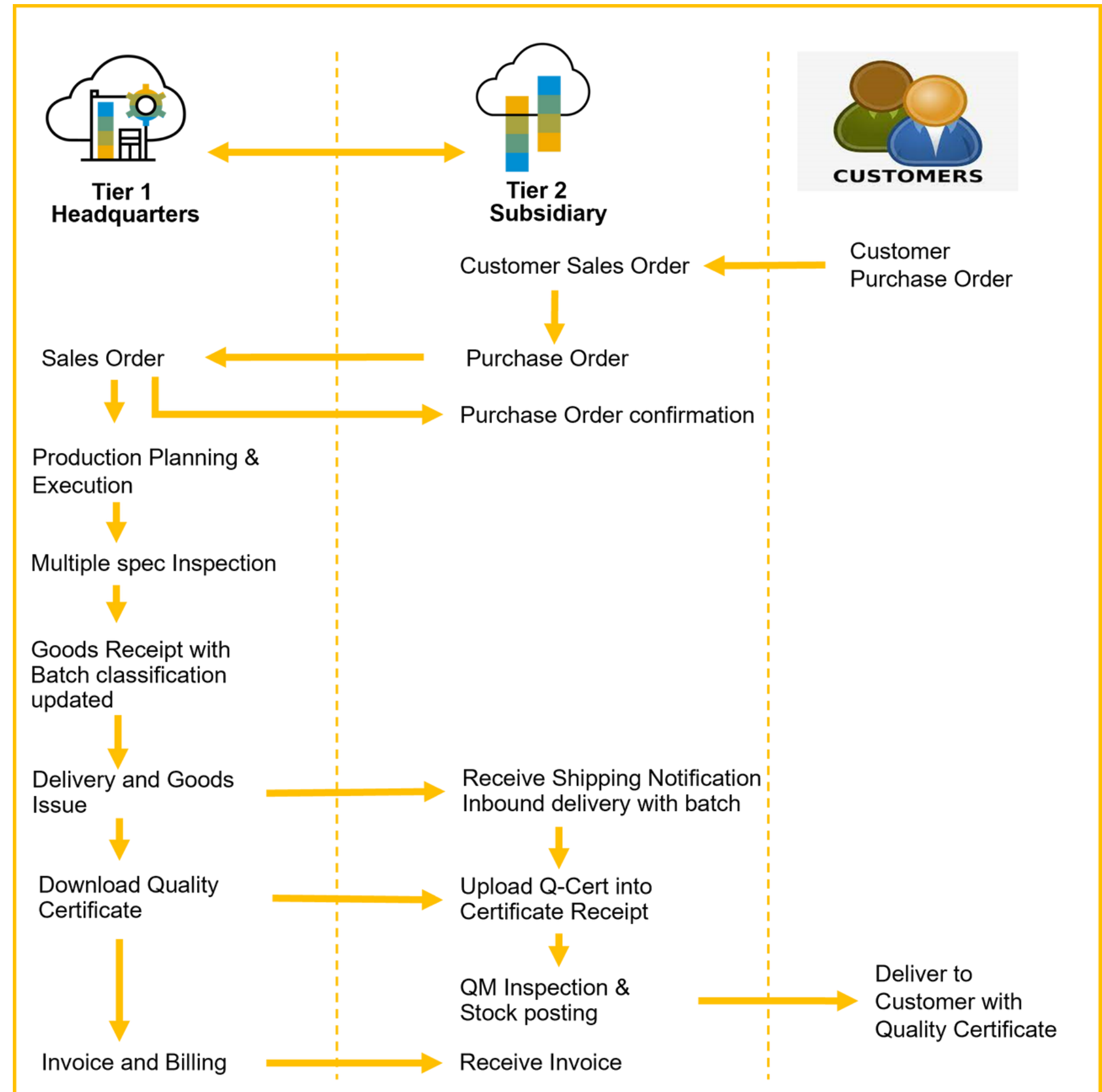
Less complex and costly to address specific needs

Giving subsidiaries more control and agility to achieve maximum performance.



TWO TIER ERP

SAP Event Mesh



Challenges



Data Value Chain Management

- Safeguard sensitive data from unauthorized access
- Managing the four Vs of Big Data
- Requires appropriate accessibility to be processed and analyzed
- Compliance with data protection regulations adds complexity

Volume

Variety

Veracity

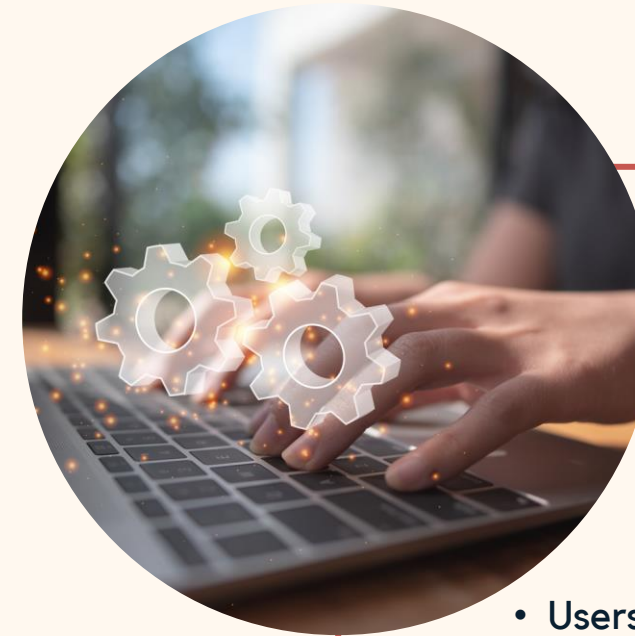
Velocity

GDPR

CCPA

HIPAA

- Developing incentives for secure data sharing
Obtain comprehensive information into the individual user interactions with a product



Context Awareness

Acts as a set ability for a current system to interpret external stimuli

- Developing accurate models
Context can be dynamic and multifaceted
- Difficult for users to access relevant and crucial information promptly
Hinders activity and overall activity
- Users are required to comprehend the significance of the provided information

User Adoption and Training

- Demands users to adapt and acquire particular skills
- Involves elements such as:
 - Training initiatives
 - Workshops
 - Educational materials
- Requires a complex ongoing investment of time, resources, and effort
- Challenge in establishing and sustaining the culture of continuous learning and skill development





Conclusion