WEEK 1

考点 1.Reason of implement

考点 2.The different of EPR with other system

考点 3.The pros and cons of each implement strategic of ERP system

考点 4.The Obstacle of implement of ERP systems

An enterprise system can be defined as " an enterprise-wide, modular process integrated, real time, real time information system using a single database, which is responsible for transaction processing across all main business areas of an organisation.(PPT12 页)
企业系统可以定义为"使用单个数据库的企业级，模块化，流程集成的实时信息系统，它负责组织的所有主要业务领域的事务处理。

An ERP system enables various departments or operating units such as Accounting and Finance, Human Resources, Production, and Sales and Distribution to coordinate activities, share information, and collaborate with customers, vendors etc. Additionally having access to this information enables management to make timely informed decisions
ERP 系统可实现各种目标 会计等部门或运营单位财务，人力资源，生产，销售和 分配以协调活动，共享信息和 与客户，供应商等合作。另外 访问此信息可使管理层及时做出明智的决定

Information systems perform three vital roles in any type of organisation. That is, they support an organisation's:
1.Business operations 支持公司的运作
2.Managerial decision making 帮助管理人员做决策
3.Strategic competitive advantage 加强公司的竞争优势

过程：

Input date（导入数据资源）

Processing data(more efficient)（数据处理加工成信息）

Output of Information Products:（交付数据给用户）

The Enterprise of the Future is a self-organizing, adaptive, learning network of knowledge entrepreneurs achieving mutual goals. Such an enterprise is built on a sustainable, four-pillar framework for continuous renewal:

Leading：Co-creating new business ecosystems and strategies 共同创造新的商业生态系统和战略

Connecting：Building a continually evolving, adaptive infrastructure nexus 建立不断发展的适应性基础设施关系

Co-creating and delivering： Designing agile, intelligent systems and processes 设计灵活，智能的系统和流程

Discovering： Creating work environments for continuous growth and fulfillment 创造持续增长和实现的工作环境

What does an enterprise system do ?
Brings together previously isolated information systems with the goal of providing a more whole or complete information resource. Integrate all resources (Bring people process system information together.). Achieve a common strategic business goal.

An enterprise system can help you to achieve common strategic business goals? How.....
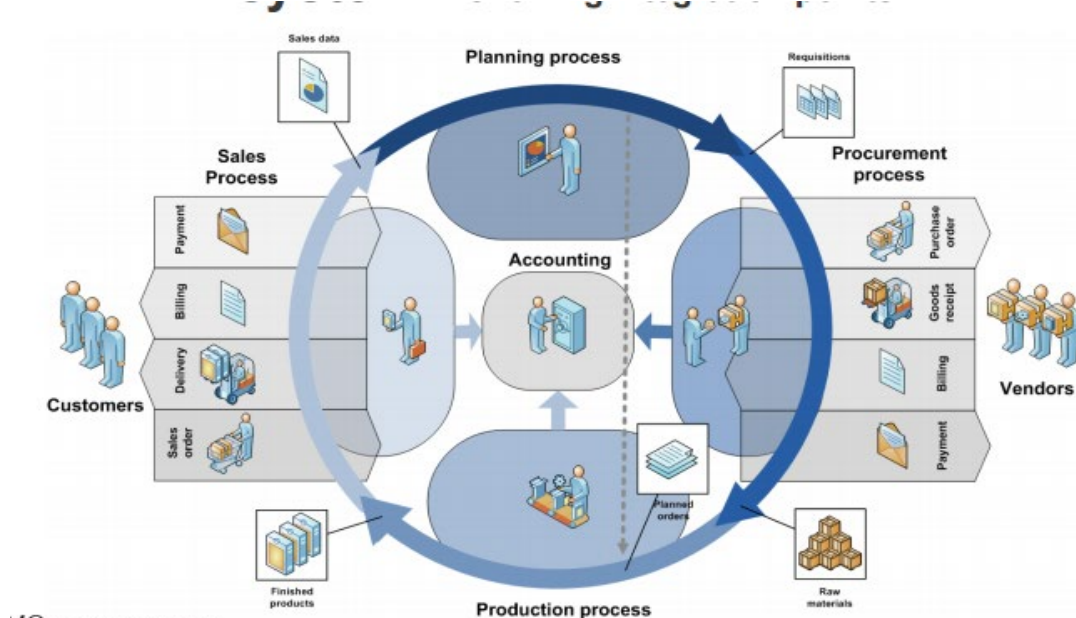1. Ebusiness
Enhanced supply chain
link your systems with your vendors
2 .EGlobalisation
Growth of global trading communities and partners
3. Collaboration
Extended Business partners
Customer requirements
4. Company takeovers/mergers acquisitions

Enterprise Systems may include
Enterprise wide systems such as ERP systems
Manufacturing systems
Supply chain and inventory management systems
Customer relationship management systems
Financial information systems
eMarketing and eCommerce applications
Business intelligence (BW)
Enterprise resource planning system

ERP System Integration Points

Why implement ERP systems: Drivers for ERP(重点)***（19 年考试内容）

streamline and improve business processes 简化和改进业务流程，
integrate business processes eliminate unproductive processes 整合业务流程消除非生产性流程
use best practice business processes 使用最佳实践业务流程
better manage information systems expenditure 更好地管理信息系统支出
competitive pressures to become a low cost producer 成为低成本生产商的竞争压力
increased responsiveness to customers and their needs 提高对客户及其需求的响应能力
provide a common platform and better data visibility 提供通用平台和更好的数据可见性
Act as a strategic tool for the move towards digital transformation 作为实现数字化转型的战略工具
Integration as a response to mergers and acquisitions and takeovers 整合作为对并购和收购的回应
Better decision making 更好的决策

企业实行 Enterprise System 的原因

Technology Rationales：公司各个系统相互独立，数据无法流通

Business Process Rationales：提高工作效率

Strategic Rationales：更多功能，适应未来电子商业

Competitive Rationales：更低的成本，更好的竞争优势

Benefits of implementing an ERP system

- Enhance all aspects of key operations across a company's entire back office

  from planning through execution, management, and control.

  they accomplish this by taking processes and functions that were previously disparate and disjointed, and seamlessly integrating and coordinating them.

- Facilitate more efficient completion of day to day tasks.

- Reduce the redundant and overlapping activities that waste time and money by standardizing core procedures.
- Eliminate data silos by creating a single, centralized repository of timely, accurate business data.
- Enable more effective resource allocation and management.

Top 10 Enterprise system benefits
Improved management decision making 改进管理决策
Improve financial management 改善财务管理
Improved customer service and retention 改善客户服务和保留
Ease of expansion/ growth and increased flexibility 易于扩张/增长并增加灵活性
Faster, more accurate transactions 更快，更准确的交易
Headcount reduction 人数减少
Cycle time reduction 缩短周期时间
Improve inventory/ Asset management 改善库存/资产管理
Fewer physical resources/better logistics 物质资源减少/物流更好
Increased revenue 增加收入

What makes ERP systems unique from other systems?(ERP 特点,为什么用 ERP)（19 年）
Links all business processes automatically
Transactions occur one time at the source
Maintains an audit trail of all transactions
Utilises a common database for
– Master data
– Transactional data
– Enabling BI
Utilise a common architecture (Netweaver 集成平台)
Performs internal conversions automatically (tax, foreign currency, legal rules for payroll)
Real time data extraction
Utilises best practice business processes
Most system functionality has a common interface and terminology

答题时注意看问题出发点！
年轻人为什么玩王者荣耀：开黑，皮肤，时间自由
王者荣耀为什么好玩：开黑，游戏机制，玩法新鲜，
王者荣耀的特色是什么：开黑，皮肤，不用电脑，首款手游

Types of ERP Systems

Decentralized Systems (Legacy Systems)（19 年）

Data is maintained locally at the individual departments (Silos）

Departments do not have access to the data of other departments.

Problems with Decentralized Systems

- Numerous disparate systems are developed over time.
- Integrating the data becomes time and money consuming.
- Inconsistencies and duplication of data.
- Lack of timely information leads to customer
- dissatisfaction, loss of revenue and reputation.
- High inventory, material and human resource cost.

Centralized Systems (ERP Systems)

Data is maintained at a central location and is shared with various departments.
Departments have access to the data of other departments.

Benefits of a Centralized ERP System

- Eliminates the duplication, discontinuity and redundancy in data.
- Provides information across departments in real time.
- Provides control over various business processes
- Increases productivity, better inventory
- management, promotes quality, reduced
- material cost, effective human resources
- management, reduced overhead boosts profits.
- Better customer interaction, increased
- throughput, improves customer service.

The Evolution of ERP Systems(PPT20)

WEEK 2 Terminology of SAP ERP

考点 1：Why some company can Realize much more value from their systems comparing with other company?
考点 2：How to define SAPS/4ＨＡＮＡ（19 年）

S4/HANA
•Designed for In memory computing
•Data is stored in RAM
•Simplified Data Model
•Removed Redundancy (Removal of Aggregates & Indices)
•Less Data Footprint
•Row + Column based storage
•Up to 1800 times faster processing
•Proactive Business Model

SAP HANA is designed to process structured data from relational databases. It is capable of using three styles of data replication depending on the source of the data – the relocated structured data is stored directly in memory. Because of this, data can be accessed quickly in real time by the applications that use HANA. 处理关系数据库中的结构化数据

SAP HANA supports various use cases for real-time analytics. Some examples include:
• Monitoring and optimization of telecommunications network
• Supply chain and retail optimization
• Fraud detection and security
• Forecasting and profitability reporting
• Energy use optimization and monitoring

SAP HANA：数据库
SAP HANA is an in-memory database , column-oriented, relational database management system developed and marketed by SAP,not a ERP system.内存数据库

The in memory computing engine allows HANA to process data stored in RAM as opposed to reading it from a disk. This allows the application to provide instantaneous results from customer transactions and data analyses
内存计算引擎允许 HANA 处理存储在 RAM 中的数据，而不是从磁盘读取数据。 这允许应用程序提供客户交易和数据分析的即时结果
Its primary function is as a database server to store and retrieve data as requested by the applications immediately. In addition, it performs advanced analytics (predictive analytics, spatial data processing, text analytics, text search, streaming analytics, graph data processing) and includes an application server.

New version of ERP system

SAP rebuilt their ERP solution (SAP ECC) from the ground up to take advantage of HANA's performance and innovative data models. S/4HANA provides an award winning UX (SAP Fiori) along with a host of application and use case-specific benefits.

SAP Fiori :
SAP Fiori is a new user experience (UX) for SAP software and applications. It provides a set of applications that are used in regular business functions like work approvals, financial apps, calculation apps and various self-service apps.SAP Fiori provides 300+ role-based applications like HR, Manufacturing, finance, etc. When you open the SAP Fiori home page application, you will see a picture of the flowers. It is because Fiori means 'flowers' in Italian

SAP Fiori UX is the new face of SAP to business users for ALL lines of business across devices and deployment options

used SAP functions, such as workflow approvals, information lookups, and self-service tasks. They provide simple and easy-to-use access across desktops, tablets, and smartphones.

Challenges in traditional DBs
•Designed to perform well on computers with limited RAM
•Data Storage in HDDs
•Complex Data Model
•Redundancy of Data/ Need of Aggregations
•High Data Footprint
•Row based Data Storage
•Slower Transaction Processing
•Slower Reporting
•Reactive Business Model

SAP HANA supports various use cases for real time analytics .
 Some examples include:
•Monitoring and optimization of telecommunications network
•Supply chain and retail optimization
•Fraud detection and security
•Forecasting and profitability reporting
•Energy use optimization and monitoring

好处：HANA design innovations such as in-memory operation and a simplified data structure improve performance, leading to higher productivity, real-time visibility and better use of analytics. For example, companies can react to market conditions based on up-to-the-minute data, rather than relying on the last quarterly reports.

Functional Areas and Business Processes

Definition : "A functional area is a broad category of business activities". The main functional areas are

•Marketing and Sales (M/S)
•Supply Chain Management (SCM)
•Accounting and Finance (A/F)
•Human Resources (H/R)

Definition : "A business process is a set of tasks or activities that produce desired outcomes"

Key Business Processes
1. The Procurement Process (Buy)
   - The procurement process includes all of the tasks involved in Acquiring needed materials externally from a vendor.
   - This process would be triggered when the warehouse needs to procure materials, perhaps due to the low levels of inventory.
2. The Production Process (Make)
   - The production process includes all of the tasks involved in Acquiring needed materials internally.
   - This process would be triggered by a customer order or the material planning process.
3. The Fulfillment Process (Sell)
   - Fulfillment is concerned with efficiently processing customer orders.
   - This process would be triggered by a customer purchase order that is received by the sales department.
4. The Material Planning Process (Plan)
   - The purpose of material planning is to match the supply of materials with the demand.
   - These materials may be Finished goods, Semifinished goods and raw materials.
   - The demand for finished goods is dependent on customer orders while the demand for the other materials is based on the demand for the finished goods.
5. Inventory & Warehouse Management (Store)
   - IWM is concerned with the storage and movement of materials.
   - For a business to operate efficiently, it is essential that materials be stored so that they can be quickly and easily located when necessary.
   - Stock movements may be the result of production, procurement, or fulfillment processes.
6. Lifecycle Data Management (Design)
   - Lifecycle data management provides a set of tools to manage product design and improvement throughout the lifecycle of a product.
   - LDM (also called Product Lifecycle Management PLM) enables an organisation to optimize its product development process, from design to market and eventually until the product is discontinued, while ensuring that it complies with industry, quality an regulatory standards.
7. Human Capital Management (People)

- HCM consists of numerous processes related to all aspects of managing people in an organization.
- HCM touches every process in the organization as it is the people in the functional areas who perform the tasks.

8. Project Management (Projects)
   - A project is temporary in nature and is typically associated with large, complex activities such as the construction of a factory.
   - Project management refers to the process a company uses to plan and execute large scale projects.
   - Projects rely on resources and capabilities available in other processes.

9. Accounting & Finance (Track)
   - There are two areas :
     Financial Accounting track for external reporting
     Management Accounting track for internal reporting.
   - Financial accounting (FI) is concerned with tracking the financial impacts of processes with the goal of meeting legal and regulatory reporting requirements (e.g. profit and loss statement, balance sheet)
   - Management Accounting or Controlling (CO) is concerned with Tracking costs and revenues to assess the profitability of various profits and market segments.

Why Focus on procurement
Major factors contribute to the importance of purchasing as a process to be engineered:
1. Rising Costs
Materials and supplies are costly
2. Advancing Technology
Technical purchasing expertise
3. Need for high quality materials and services
the quality of the input depicts the quality of the
4. Need for Shorter lead times*
JIT (just in time inventory)
Established ongoing relationships with your vendors
5. Link to porter 's value

SAP Business Process （Modules）
Sales and Distribution
records sales orders and scheduled deliveries Information about the customer (pricing, address and shipping instructions, billing details, and so on) is maintained and accessed from this module.
Materials Management

manages the acquisition of raw materials from suppliers (purchasing) and the subsequent handling of raw materials inventory, from storage to work in progress goods to shipping of finished goods to the customer.

Production Planning

maintains production information. Here production is planned and scheduled, and actual production activities are recorded.

Quality Management

plans and records quality control activities, such as product inspections and material certifications.

Plant Maintenance

manages maintenance resources and planning for preventive maintenance of plant machinery in order to minimize equipment breakdowns.

Asset Management

helps the company manage fixed asset purchases (plant and machinery) and related

Human Resources

facilitates employee recruiting, hiring, and training. This module also includes payroll and benefits.

Project System

facilitates the planning for and control over new research and development (R&D), construction, and marketing projects. This module allows for costs to be collected against a project, and it is

frequently used to manage the implementation of the SAP ERP system. PS manages build to order items, which are low volume, highly complex products such as ships and aircrafts.

Financial Accounting

records transactions in the general ledger accounts. This module generates financial statements for external reporting purposes.

Controlling

serves internal management purposes, assigning manufacturing costs to products and to cost centers so the profitability of the company's activities can be analyzed. The CO module supports

managerial decision making.

Workflow

is a set of tools that can be used to automate any of the activities in SAP ERP. It can perform task flow analysis and prompt employees (by email) if they need to act. The Workflow module works well for business processes that are not daily activities but that occur frequently enough to be worth the effort to implement the workflow module such as preparing customer invoices.

Customer Relationship Management (CRM)

is a tool for managing and maintaining relationships with customers. It keeps track of business contacts, employees, clients, contract wins and sales leads.

Supplier Relationship Management (SRM)

is a tool for planning for, and managing, all interactions with third party organizations that supply goods and/or services to an organization in order to maximize the value of those interactions.

Supply Chain Management (SCM)

is a module dealing with controlling the flow of goods through the supply chain. It starts from the acquisition of raw materials to the delivery of finished products to the end user.

**Product Life Cycle Management (PLM)**

is a system which helps companies to plan, design, build and administer production with greater
visibility and more control. It allows efficiently tracking, controlling and managing all information related to products over the complete lifecycle.

Industry Solutions

SAP has many customized modules which address a wide range of industries with specific business processes.

SME SAP Solutions

mySAP All-in-One

Midsize companies and subsidiaries
Complete functionality
Easy to get started
Pre-configured, single database
Adaptable
Industry templates & configurable
Partner network with
Proven solutions and expertise
Proven ROI and over 2000 customers

SACHS   BRITISH AMERICAN TOBACCO   fredericks DAIRIES   HAWAIIAN TROPIC

SAP Business One

- Small enterprises and subsidiaries
- "Off-the-shelf" product
- Easy to customize
- Wide range of innovative functionality
- Immediate impact
- Easy to use / running in a few days
- Low cost of entry and ownership
- Low maintenance
- Over 800 customers

P&G Israel   REVLON   BOC EDWARDS

Business Function & Process
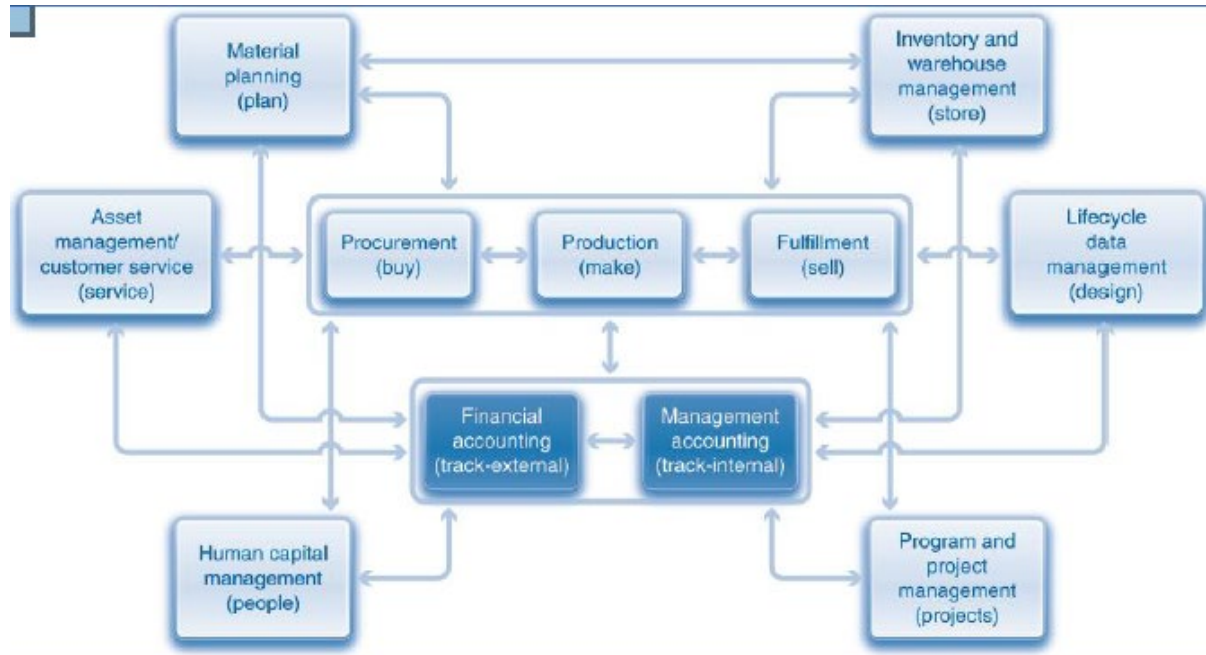
Benefits of BPM

▪ Formalisaton of current processes：

▪ Allows for re engineering – – improved process performance

▪ Provides the base for Strategic initiatives

▪ Greater efficiency

▪ Increased productivity

▪ Decreased head count

▪ Traceability of compliance processes

▪ Links to web service powered processes that can communicate with other processes in other companies and are wired for EAI. (Enterprise Application Integration

Business benefits of BP integration

▪ Companies can integrate all their critical business activities.

▪ Develop process chains

    – Links together customers and vendors

    – Core processes (finance/production) more efficient and cost effective

    – Brings competitive advantage

• Through reduced costs

• Faster time to market

• Improved responsiveness to customer requirements etc

• Better decision making

• Greater transparency of data

• Enable agile organisation

WEEK 3 & WEEK 4

Organizational Elements(PPT 前几页)
Definition :
In the SAP System, organizational elements form structures that represent the legal and organizational views of a company. These views include: accounting, manufacturing planning and execution, materials management, and sales and distribution .
In summary, the organizational elements and their structures form the framework in which all business transactions are processed.
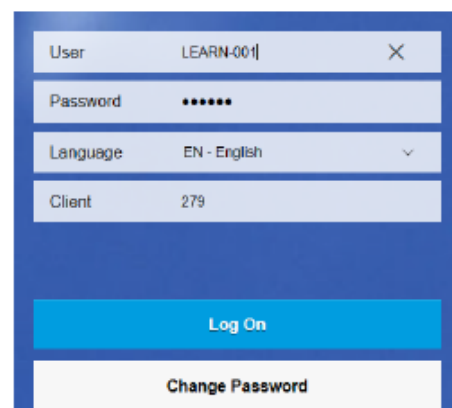在 SAP 系统中，组织元素形成代表公司法律和组织视图的结构。 这些视图包括：会计，制造计划和执行，物料管理以及销售和分销。
总之，组织元素及其结构构成了处理所有业务交易的框架。

Organizational Elements - Client

Highest Hierarchical Level in SAP(e.g. a Corporation)

The SAP client concept allows an organization to split a system into logical subunits. Clients may operate as separate business units, where all data is stored in a common database. Access rights for each client are defined during the installation process. Client specific data includes user master data (including authorizations and user groups), data customization and application/business data.

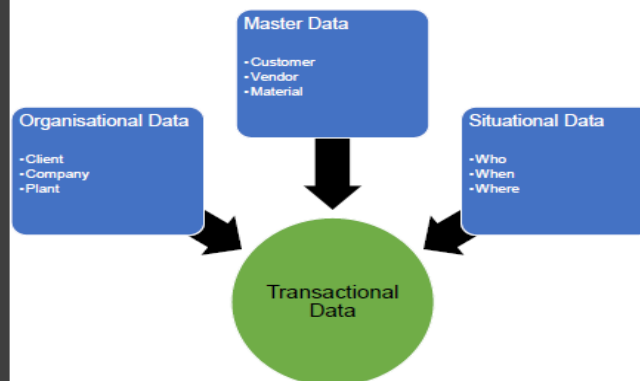Can be Used to Differentiate between a Development, Quality Assurance, and Production System within SAP

User	LEARN-001	×
Password	••••••	
Language	EN - English	⌄
Client	279	

Log On

Change Password
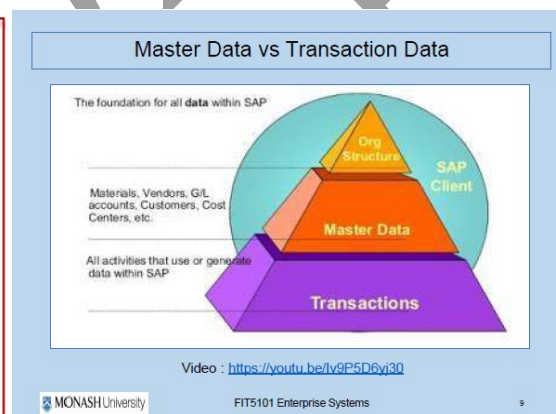
Master Data vs Transaction Data

Transactional Data

Processes are executed in the context of organizational levels, involve master data, and result in transaction data. **Transaction data** reflect the consequences of executing process steps, or *transactions*. Examples of transaction data are dates, quantities, prices, and payment and delivery terms. Thus, transaction data are a combination of organizational data, master data, and situational data—that is, data that are specific to the task being executed, such as who, what, when, and where.

Organisational Data
- Client
- Company
- Plant

Master Data
- Customer
- Vendor
- Material

Situational Data
- Who
- When
- Where

→ Transactional Data

Master Data Example – Material Master

- Basic data
- MRP
- Stocks at plant/stor. loc.
- Accounting
- Storage
- Warehouse management

Material master record

- Purchasing
- Sales
- Work scheduling
- Quality management
- Forecasting
- Classification

Material Master Data

Master Data vs Transaction Data

The foundation for all **data** within SAP

Org Structure — SAP Client

Materials, Vendors, G/L accounts, Customers, Cost Centers, etc. — **Master Data**

All activities that use or generate data within SAP — **Transactions**

Video : https://youtu.be/Iv9P5D6yj30

Documents record data after the process steps are completed.
Document: These include financial accounting [FI] documents, management accounting or controlling [CO] documents, and material documents.
FI and CO documents record the financial impact of process steps. For example, when a company receives a payment from a customer, there is a financial impact, and an FI document is created.

Report: Reporting is a general term used to describe the ways that users can view and analyze data to help them make decisions and complete their tasks.

Master data represented in the SAP system for our purposes covers the core business objects

Master data is the core data that is essential to operations in a specific business or business unit. It is the primary focus of the discipline of Master Data Management (MDM).   Master data is not transactional data as such but is called up from a specific database area to be included in transactional documents; such as purchase orders, sales orders etc.

数据是对特定业务或业务单位中的操作至关重要的核心数据。它是主数据管理（MDM）学科的主要关注点。主数据本身不是事务数据，而是从特定数据库区域调用以包含在事务文档中;例如采购订单，销售订单等

The reason of implement master data management:

•Better Partner integration and collaboration：

•Global demand and supply chain optimisation

•Privacy and data protection

•Better implement data mining and analytics

•Improved customer insight and interactions

•Better able to manage data

Master data management make sure every department has a same view of data(one consistent view of data), other else Master data generated and trapped in silos.

Material Master Data

The material master record is the main material data source in the enterprise.

Material data is integrated into one single database object:

Designed to reduce data redundancy

Master data used in Materials Management and Production Planning includes:

Material Master：Material Master is the most important central data object in a manufacturing system. 它用于存储 Raw materials，Operating supplies，Semi-finished products，Finished products。

Bill of Material ： 材料清单
is a structured **list of the components** which make up the product or assembly.
The list contains the material code of each component as well as the quantity per and unit of measure.
BOM 会被用在 Material resources planning, procurement 和 producing costing 部分。
Work centre：
is where an **operation or activity is carried out within a production plant**.

The work centre may be a single machine, a group of machines, or an area where a particular type of work is done

Routing:明确生产步骤

contains the steps necessary to convert raw materials into components during production. This includes the operations, their sequence and the work centres that will do the work.

Cost centres:记录生产和采购过程中所花费的费用

Cost Centres are used to collect the actual costs from one or more work centres.

Manager and staff responsible for cost, not for revenue

在公司中，Cost centres 可作为一个部门
Benefit of material planning process for company:
–increasing customer satisfaction,
–increasing productivity and
–decreasing overall operating costs

Inventory 存货：is the stock of any item or resource used in an organization.Inventory 能自己生产也能从外面购买..

Typical Inventory System

INPUTS AND OUTPUTS OF A TYPICAL INVENTORY SYSTEM
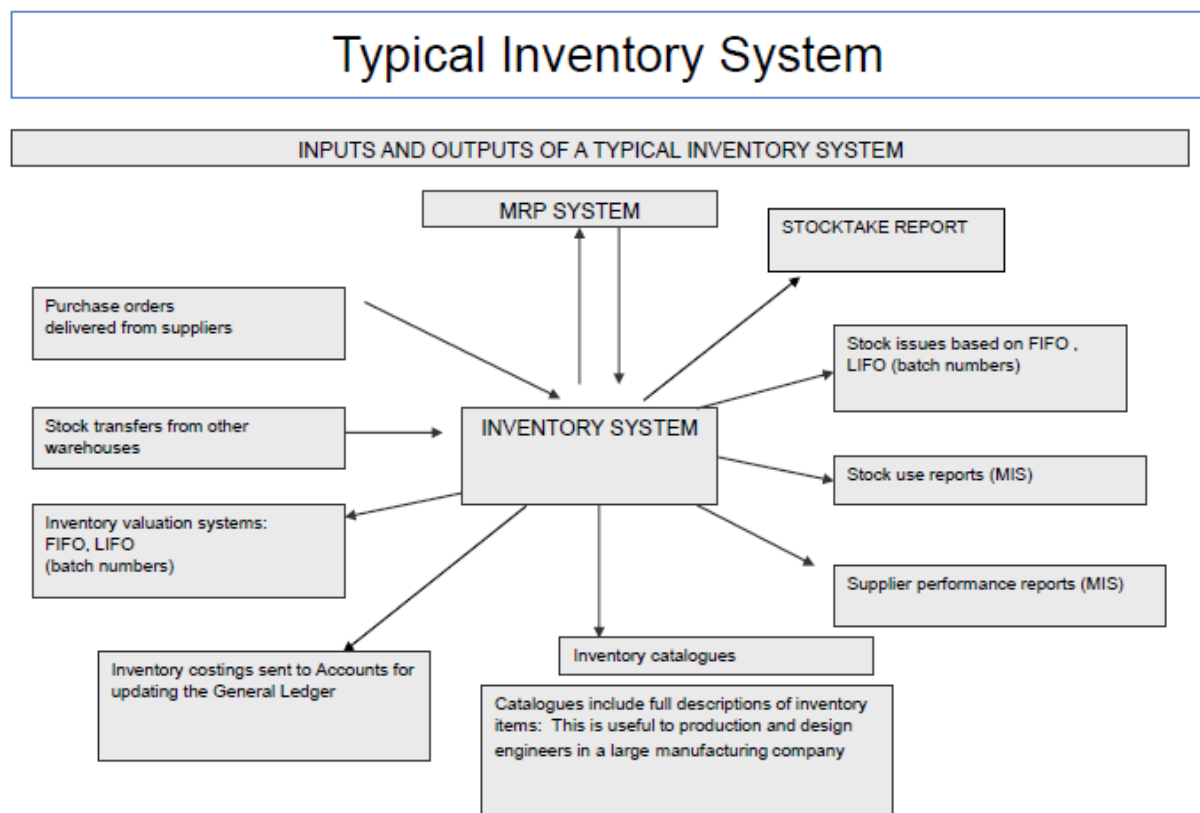
Inventory Transactions（20 年）

Goods Receipt

goods receipt is the physical inbound movement of goods or materials into the warehouse. It is a goods movement that is used to post goods received from external vendors or from in plant production. All goods receipts result in an increase of stock in the warehouse.库存增加

Goods Issue

goods issue is defined as a physical outbound movement of goods or materials from the warehouse or it is the issue of physical goods or materials from the warehouse. It results in a decrease in stock from the warehouse.库存减少

Inventory Transfer

This function is used to move inventory from one warehouse to another.

Inventory Count

Inventory counting is crucial to any company that manages an inventory . By matching the actual inventory to the quantities saved in the database, companies can make adjustments to existing inventory records, detect unusual or unacceptable discrepancies, and improve

Stock Overview

Shows the current stock quantities at company, plant and location levels

Procurement

The procurement process includes all of the tasks involved in acquiring needed materials externally from a vendor.

Procurement is comprised of five steps that are completed in three different functional areas of the organization.

Business process

Process step:指商业流程中的单个活动

Business process:有多个 process step 组成的一个完整的商业流程。商业流程是为了某个特定的结果而产生.
business process describes a sequence of activities or tasks for the creation of goods and services, affecting the success of the company and is driven by a transaction

Business Scenario: 由多个 business process 组成

Business scenario

Business process

Process step

P2P connects procurement through to payment of goods

The purchase to pay **process**, also known as the **P2P process**, connects the procurement and entire supply chain **processes** within a company through the goods receipt **process**, and finally to the payment issued to the vendor.

Best practices in the procure-to-pay process

The following five best practices can help organizations improve the efficiency and effectiveness of their procure-to-pay process:

- Implement procure-to-pay software

- Keep the process transparent
- Improve supplier engagement
- Optimize inventory（JIT）
- Streamline contract management

How procure-to-pay software can bring in efficiency in purchasing

1. Purchase requisition and approvals

只需在采购工具中输入适当的详细信息，选择所需的产品/服务，然后从主数据库中选择其首选的供应商。数字采购付款套件还可以按正确的顺序将购买请求发送给所有利益相关者和批准者.

2. Purchase order management

大多数从采购到付款的解决方案都会根据批准的采购申请自动创建采购订单，并启动 PO 派送流程,从向单个供应商发送多个批处理订单到根据单个购买请求创建多个 PO 都可以完成。

3. Digitalised vendor management

通过供应商管理实现数字化将改变您的采购团队衡量和评估供应商绩效的方式，使用按需付款工具处理有关供应商绩效的数据（价格，折扣，交付时间表的遵守情况，策略合规性等。

4. Invoice matching

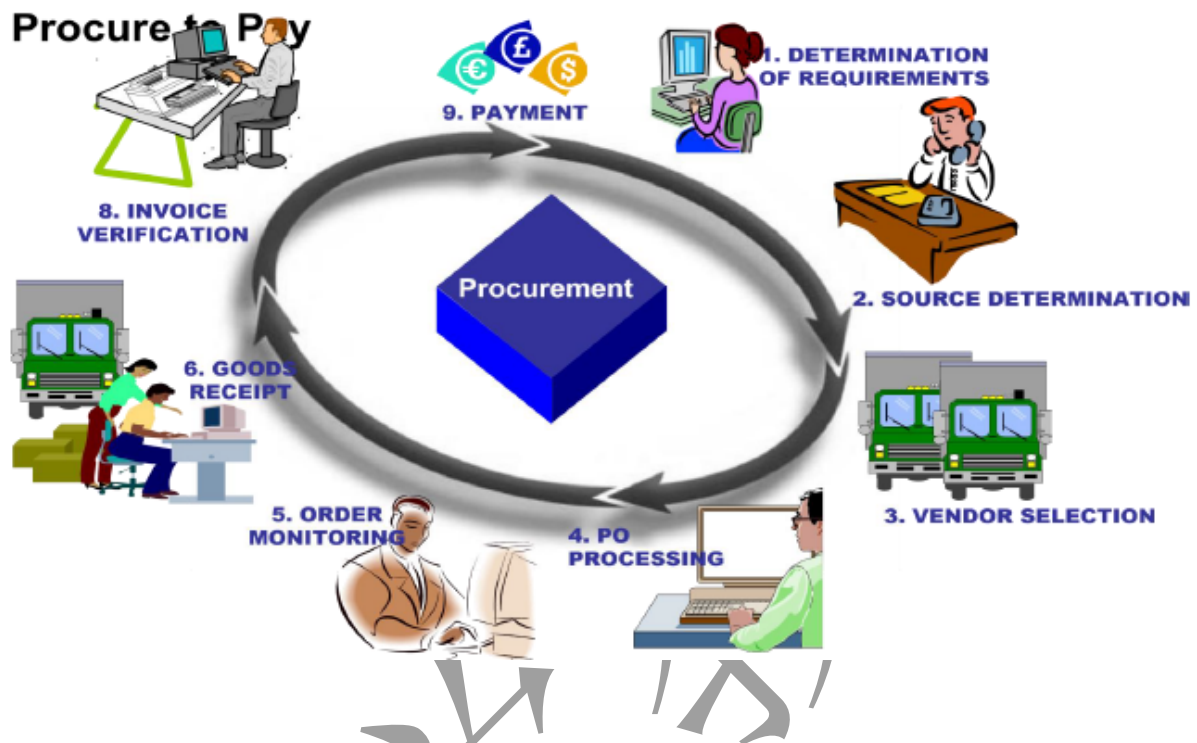从采购到付款的软件，组织可以确认收货并捕获发票信息。组织可以批准发票，执行 PO 匹配以及与电子支付或应付账款系统集成。

5. Insights into purchasing

关于将采购数字化，报告和分析的最佳部分之一，可以帮助您了解进展顺利，哪些流程效率低下会浪费您的钱。

由于采购部门是一个支出很大的部门，因此从采购申请到发票批准，每个流程都具有透明度和可视性是很好的。

The External Procurement Cycle

Process of purchasing materials from Vendors (suppliers)

Tasks in the Procurement Cycle

- Internal Purchase Requisition is created by an internal department or by the MRP.
- PR is converted into a Purchase Order by purchasing dept.
- PO is sent to the vendor from the customer (this could be a request for a quote if it is a new vendor).
- Vendor sends stock to customer with Delivery Docket
- Customer creates a Goods Receipt from PO.
- Verify physical receipt of goods matched against PO.
- Customer receives Invoice from the vendor. Invoice details are entered into customer's system and materials and costs are confirmed.
- Customer then posts their Payment to the vendor.
  Vendor is referred to as Accounts Payable
- Payment is received by the vendor from the customer
  Customer is referred to as Accounts receivable
  Vendor processes the payment

Purchasing process: two functional areas
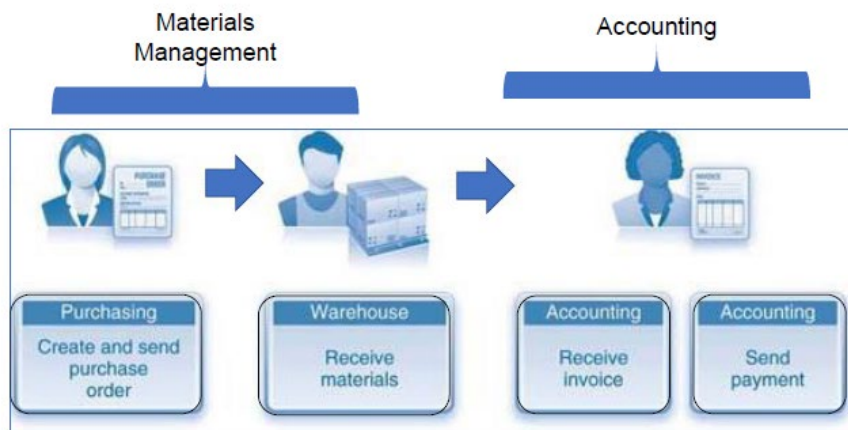
A **purchase requisition** is an internal request that is made to the purchasing organization to procure a certain list of materials. A purchase order is a formal request to a vendor to supply certain goods or services. It is

production order: is an order issued to produce a **specific quantity of material within a certain timeframe**.

A production order captures information such as which material is to be processed, at which location, at what time and how much work is required. It also defines which resources are to be used and how the order costs are to be settled
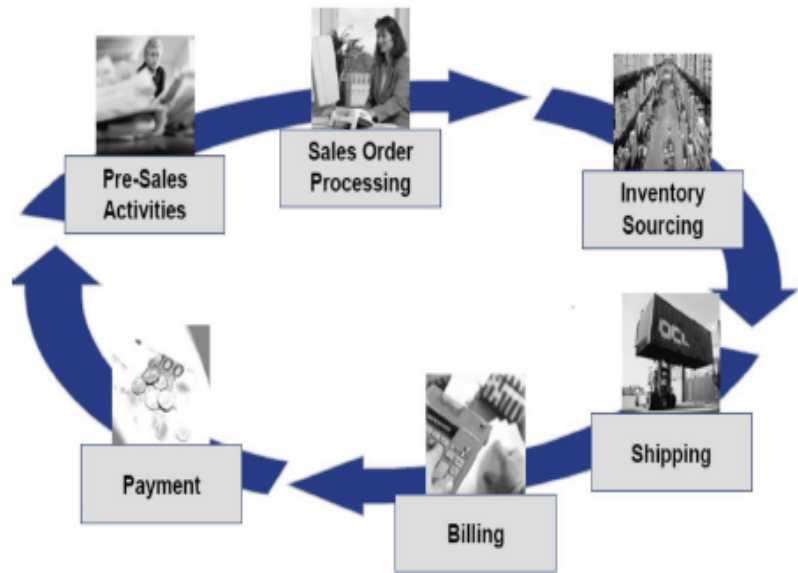
生产订单捕获信息，例如要处理的材料，在什么位置，什么时间，需要多少工作。 它还定义了要使用的资源以及如何结算订单成本

WEEK 5 Sales & Distribution / CRM

Sales and Distribution in ERP

SAP ERP Sales and Distribution module treats the sales order process as a cycle of events:

- Pre-sales activities
- Sales order processing
- Inventory sourcing
- Shipping (Delivery)
- Billing
- Payment

Customer Relationship Management

Companies without a good connection between their workers and their customers run the risk of losing business. Customer relationship management (CRM) software can help companies streamline their interactions with customers

SAP's CRM Software

SAP ERP system processes business transactions and provides much of the raw data for CRM

SAP's Business Warehouse: system for reporting and analysis of transactional data

Advanced Planner and Optimizer **(APO):** system that supports efficient planning of the supply chain(ATP)

SAP's view of CRM is to provide a set of tools to manage the three basic task areas, or jobs:
– Marketing, Sales, and Service

The Benefits of CRM

Lower costs

Higher revenue
Improved strategy and performance
measurement

WEEK 6 MRS MPR

What is sales forecasting?预测

Sales forecasting is the process of estimating future revenue by predicting the amount of product or services a sales unit (which can be an individual salesperson, a sales team, or a company) will sell in the next week, month, quarter, or year.
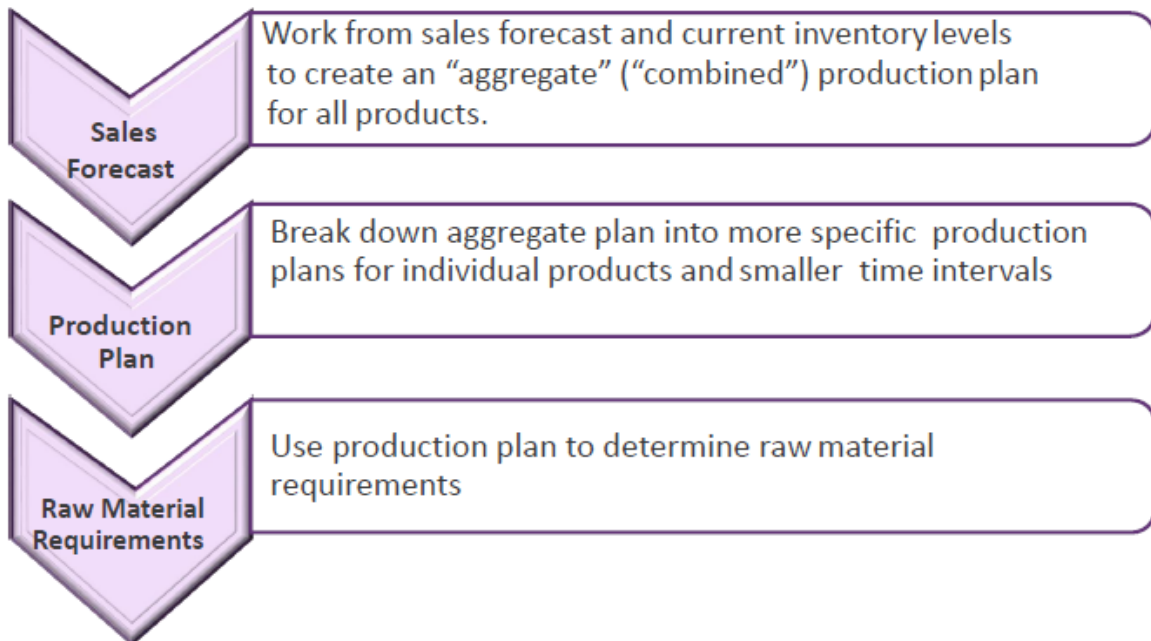
Why is sales forecasting important?决策，计划

Sales forecasting adds value across an organization. Finance, for example, relies on forecasts to develop budgets for capacity plans and hiring. Production uses sales forecasts to plan their cycles. Forecasts help sales ops with territory and quota planning, supply chain with material purchases and production capacity, and sales strategy with channel and partner strategies.

四个方法：

- SAP's ERP system takes an integrated approach Whenever a sale is recorded in Sales and Distribution (SD) module, quantity sold is recorded as a consumption value for that material
- Simple forecasting technique Use a prior period's sales and then adjust those figures for current conditions
- In SAP ERP, sales forecast can be made using: Historical sales data from the Sales and Distribution (SD) module Input from plans developed in Controlling (CO) module
- CO module Profit goals for company can be set Sales levels needed to meet the profit goals can be estimated

The Production Planning Process

Three important principles for production planning:

Sales Forecast — Work from sales forecast and current inventory levels to create an "aggregate" ("combined") production plan for all products.

Production Plan — Break down aggregate plan into more specific production plans for individual products and smaller time intervals

Raw Material Requirements — Use production plan to determine raw material requirements

Three general approaches to production
Make to stock items: made for inventory (the "stock") in anticipation of sales orders
Make to order items: produced to fill specific customer orders
Assemble to order：items produced using a combination of make to stock and make to order processes

Materials Requirements Planning (MRP）

Determines required quantity and timing of the production or purchase of subassemblies and raw materials needed to support MPS

MRP process creates planned orders to meet dependent requirements
The main purposes of an MRP system are:
– Control inventory levels : "order the right quantity of the right part at the right time".
– Assign the correct priorities to items.
– Plan the capacity.

Production order execution

- For a production order to be issued and executed sufficient materials to make the stock must be in inventory referred to as Goods issue
- The MRP will check the BOM and inventory before proceeding with the production order
- Once goods are issued (goods receipt is created) costs are assigned to the production order

Providing Production Data to Accounting
- Once FS accepts shipment, Receiving must notify SAP ERP system of the arrival and acceptance of the material –Goods receipt transaction
- Receiving department must match goods receipt with purchase order that initiated it
- When receipt is successfully recorded, SAP ERP system immediately records the increase in inventory levels for the material

The Supply Chain

A supply chain is a network between a company and its suppliers to produce and distribute a specific product to the final buyer. This network includes different activities, people, entities, information, and resources. The supply chain also represents the steps it takes to get the product or service from its original state to the customer.
供应链是公司与其供应商之间的网络，用于生产特定产品并将其分发给最终买方。

SCMS includes: – Customer requirement processing – Purchase order processing – Inventory management – Goods receipt and Warehouse management – Supplier Management/Sourcing

The Measures of Success
- Cash to cash cycle time
Time between paying for raw materials and collecting cash from customer.
- SCM costs
Include cost of buying and handling inventory, processing orders, and information systems support.
- Initial fill rate
Percentage of the order that the supplier provided in the first shipment
- Initial order lead time.
Time needed for the supplier to fill the order.

- On time performance

If supplier agreed to requested delivery dates, tracks how often supplier met those dates.

Case：Building a Boeing Aeroplane in the factory

Week 7

General Ledger(总账):

General ledger provide a comprehensive picture for external accounting and accounts.

The General ledger is a set of accounts to record all financial business transactions (primary postings as well as settlements from internal accounting) in a software system that is fully integrated with data loaded real time with all the other operational areas of a company ensuring that the accounting data is always complete and accurate

Accounts receivable
– It contains monetary amounts that are owed by all your customers to you for services rendered
– shows monetary amounts that have been received by

会计科目表，是指按照经济业务的内容和经济管理的要求，对会计要素的具体内容进行分类核算的会计科目所构成的集合。会计科目按其所提供信息的详细程度及其统驭关系不同，又分为总分类科目 general ledger 和明细分类科目 subsidiary ledger 。

总分类科目是对会计要素具体内容进行总括分类，提供总括信息的会计科目，如"应收账款"、"原材料"等科目。

明细分类科目是对总分类科目作进一步分类、提供更详细更具体会计信息科目，如"应收账款"科目按债务人名称设置明细科目，反映应收账款具体对象。

Main categories:Assets Liabilities Owner's equity Revenue Expense

Procurement Process from Accounting view
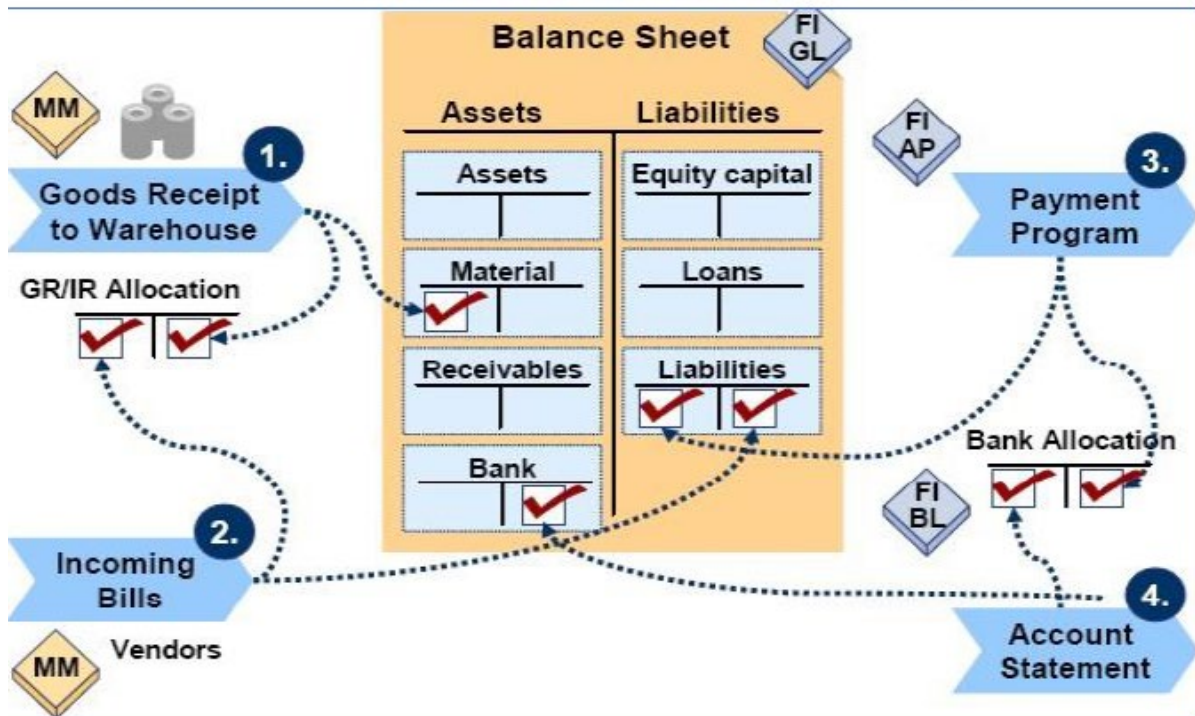
商品入库：

借：商品/原材料 **100**　　　　　贷：GR/IR **100** （这里就是 GR）

发票校验：

借：GR/IR **100** （这里就是 GR）　贷：应付账款 **100**

付款：

借：应付账款 **100**　　　　　贷：现金 **100**

Asset Management

Asset management is the process of developing, operating, maintaining and selling assets in a cost effective manner.

Every company needs to keep track of its assets. That way, the relevant stakeholders will know just what assets are available and what can be used to provide optimal returns.

The assets owned by any business fall into two main categories: fixed and current assets .
（一个是 longterm 一个是 shortterm）

Managerial Accounting
- Determine costs and profitability of company's activities

•To develop long term plans and strategy
- Provide managers with detailed information

•To make informed decisions
•To create budgets
•To determine profitability
- Information that managers use to control day to day activities

•To develop operational plans
•To handle different managerial issues

Using ERP for Accounting Information

Problems associated with unintegrated systems
- Data sharing usually did not occur in real time
- Accounting data were often out of date
- Accounting personnel had to do significant research
- In traditional accounting, company's accounts are kept in a record called a general ledger

Integrated ERPsystems
- ERP system, with its centralized database, avoids these problems
- Simplifies process of closing books and preparing financial statements
- In the SAP ERP system, different modules (such as SD, MM, PP, HR, AM) cause transaction data to be entered into the general ledger simultaneously as and when the business transactions occur

Accounting Problems
Managing Credit
Determining Product Profitability
Inaccurate Inventory Costing
Inaccurate Product Costing
Difficulty in Data Consolidation

HOW to solve?
Require real time information,Accounts receivable is immediately updated(credit), ERP and Activity based costing(inventory),
Standard costs for a product are established,
Consolidating Data from Subsidiaries
With ERP system, a vast amount of information is available for reporting purposes(manage report).
Document Flow for Customer Service(Provides an electronic audit trail)
Built In Management Reporting and Analysis Tools(build data warehousing)

Problems with unintegrated information systems

Results in out of date or inaccurate accounting data that can cause problems when a company is making operational decisions

Product Profitability Analysis产品盈利能力分析

• Business managers use accounting data to perform profitability analyses of a company and its products
• When data are inaccurate or incomplete, the analyses are flawed
• Main reasons for inaccurate or incomplete data
    • Inconsistent recordkeeping
    • Inaccurate inventory costing systems
    • Problems consolidating data from subsidiaries

The Sarbanes Oxley Act Implications of the Sarbanes Oxley Act for ERP Systems
- More stringent requirements for Financial Accounting.
- To meet the internal control report requirement, a company must: Document the controls that are in place and Verify that the controls are not subject to error or manipulation.
- Companies with ERP systems in place will have an easier time complying with the Sarbanes Oxley Act than will companies without ERP.

对公司财务，内部报告有要求，有 ERP 的公司更容易遵守
这个法案就类似一个监管机制，加强披露信息。

Archive : permanent storage
User Authorizations
Tolerance Groups 公差组包含控制系统处理现金折扣和付款差异的方式的详细信息
Financial Transparency
Reporting trend：Reports processed faster and validated easier，ERP systems accept data in XML and XBRL

Case Study：Sunraysia 一个家族企业，Sunraysia 的管理团队需要财务
多币种和国际化的管理解决方案能力，结果就是很好管理库存，成本降低，现金流增多，订单及时处理。
可以从中学到，时间管理，库存管理，正确的计划实施方案。

WEEK8

考点：BM BI **BR** 原因，分析，结果。

BPI：Business integration is the technique companies use to align the use of their technology assets with their business to meet a shared goal or outcome. The unification of technology and business goals allows companies to operate smoothly as they move forward and adapt.

The Benefits of ERP Integration

Increased Transparency and Information Sharing:
when other departments have immediate access to information, documents, or files that they need, it increases response time and boosts office efficiency.

Data Accuracy:
with software that accurately stores all information in an easily accessible place, ERP integration eradicates errors and time consuming manual processes.

Real Time Data Access: Rather than gaining access to critical data tomorrow, next week, or even next month, you can view everything in one place when you need it.

Automation:
by integrating your ERP with the rest of your business
platforms you can eliminate the need for redundant and manual data
entry.

Why Business Process Modelling(BI 建模的原因）

Standardize process documentation
Same problem understanding
Transfers Knowledge
Stresses shortcomings of current situation
Allows evaluation on completeness of to-be-process
Support certification and audits
Shows potential of re-engineering

Benefits of BPM

Formalisaton of current processes 当前流程的正式化
Allows for re engineering 允许重新设计
Improved process performance
Provides the base for Strategic
initiatives
Greater efficiency
Increased productivity
Decreased head count
Traceability of compliance processes 合规流程的可追溯性

Links to web service powered processes that can communicate with other processes in other companies and are wired for EAI.链接到支持 Web 服务的流程，这些流程可以与其他公司的其他流程进行通信，并为 EAI 进行连接。

重点 Business Process Re-engineering (BPR19 年)

BPR is a management approach aimed at improvements by means of elevating efficiency and effectiveness of the processes that exist within and across organizations.

Business process reengineering (BPR) is the analysis and redesign of processes within and between enterprises in order to optimize these end to end processes and automate non value added tasks.

Seven Reengineering Principles
1.Organize around outcomes, not tasks.
2.Identify all the processes in an organization and prioritize them in order of redesign urgency.
3.Integrate information processing work into the real work that produces the information.
4.Treat geographically dispersed resources as though they were centralized.
5.Link parallel activities in the workflow instead of just integrating their results
6.Put the decision point where the work is performed, and build control into the process.
7.Capture information once and at the source.

BPR will helps company（为什么要 BPR，怎么 BPR）

▪ Resist the temptation to automate obsolete processes with modern technology
▪ Stress the importance of simplicity
▪ Search for new ways to organize work
▪ Establish change as a constant of business in today's world
▪ Recognize and realize the potential of new technology
▪ Vanilla implementations using software that has best practice processes

▪抵制利用现代技术自动化过时流程的诱惑
▪强调简单的重要性
▪搜索组织工作的新方法
▪将变革视为当今世界的业务常态
▪认识并认识到新技术的潜力
▪使用具有最佳实践流程的软件实现 Vanilla

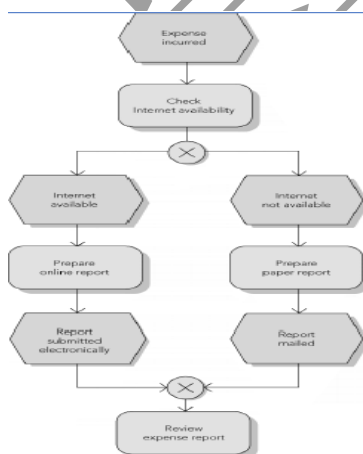Vannilla 实施意味着在实施过程中无需对 SAP 软件和数据库进行修改和定制

Tools for Process Modelling

- Flowcharts
- Process maps
- Hierarchical models
- Swimlane flowcharts
- Event process chains

每个图的详细介绍在 PPT 有

1. 图示化流程
2. 通常结合第一个
3. 分层结构图
4. Process 升级版，每个部门部署的结构图
5. 根据时间和功能结构的流程

Splitting and consolidating paths 分割合并

Workflow tools

Software programs that automate the execution of business processes and address all aspects of a process, including:

- Process flow (logical steps in the business process)
- People involved (the organization)
- Effects (the process information)

ERP Workflow Tools

Features and Benefits

• Eg: SAP Business Workflow

• Links employees to the business transactions that need to be performed

• Employees can track and monitor progress of workflow tasks and take action if tasks seem to be falling behind schedule

• Proactively connects employees with business transactions using SAP's internal email system and workflow tasks

• Workflow system can automatically take various actions like:

    o Changing the workflow task priority

    o Sending email reminders to the employees responsible for the work

• For sporadic processes, workflow tools are a powerful way to improve process efficiency and effectiveness

WEEK 9 ERP Implementation

Top 5 keys to successful ERP Implementation

•Clear alignment with overall business strategy

•Realistic expectations during implementation planning

•Focus on people, organisational change management and workforce transition

•Effective business process management and process improvement

•Strong project management, governance and controls

Case Study: RMIT AMS Project 2001：RMIT 学生管理系统存在一些问题，比如 enrol，收费，利益相关者管理有问题等

Key Findings:

–No project management methodology o PMBOK (Initiating, Planning, Executing, Controlling, Closing)

–Ineffective risk management

–Inadequate project reporting

–Lack of stakeholder management

–Poor change management

–AMS project failure due to internal culture

一般这种 IT project 失败就会导致 利益相关者失去信心，效率低，成本高，无法满足 goal。

原因：Poor project planning A weak business case

Lack of senior management involvement & support

Lack of user involvement (Failure factors KPMG 2002)

Technology new to the organization

Lack of business ownership

Poor or ineffectual training

–Train the trainer

–Consultants

Case Study：Hershey Foods（PPT21）

Problems:

•Unrealistic time frame

•Insufficient testing

•Cut over at the busiest time

WHY IS IT IMPORTANT TO MANAGE CHANGE??

How will a risk management strategy help with managing change?

•Establish a change management strategy as part of the implementation approach

•Conduct a risk management strategy as part of the implementation approach

A summation of responses identified the following best practices:

– Keeping staff informed by communicating changes and the need for these changes

–Training staff before during and after implementation

–Using staff as expert users and trainers (staff could relate to them Train the trainer approach

–Training manuals which are easy to follow

　　Users of the system form part of the process

　　Employ a variety of change strategies

基本上解决方法就是 training， communication，report（这里有很多工具，Lumira，Design Studio ， Analysis Office ， Crystal Reports ， Dashboards ， Explorer ， Web intelligencePPT40），control cost，通过 SAP，

sap（Embedded analytics 嵌入式分析，也就是实时分析，处理数据。Business Warehouse，一个驱动仓库数据模型）

1.What is the barrier of implement ERP system in the company?

2.Which factor can impact implement ERP system in the company?

The critical factors impeding a successful outcome

•Lack of leadership support (CSF)

• Resistance to change by stakeholders

• Management do not support the implementation

• End-users not ready for the change

• Organisational readiness

• Lack of communication and support (CSF) – SMEs – Change agents/Leadership support
• Lack of user education and training (CSF) – Train the trainer approach
• High turnover of key trained personnel
• Technological problems; – configuration and modification difficulties
• Cultural issues
• Lack of Change management strategy throughout the implementation (CSF)
• Lack of user involvement

WEEK 10 Current Technologies supporting ERP

Digital disruption is the change that occurs when new digital technologies and business models affect the value proposition of existing goods and services.

Digital transformation is the process of using digital technologies to create new or modify existing business processes, culture, and customer experiences to meet changing business and market requirements. This reimagining of business in the digital age is digital transformation.

Big Data is a phrase used to mean a massive volume of both structured and unstructured data that is so large it is difficult to process using traditional database and software techniques. In most enterprise scenarios the volume of data is too big, or it moves too fast or it exceeds current processing capacity.
结构化和非结构化数据，进行分析处理。

Business Intelligence technologies are capable of handling large amounts of unstructured data to help identify, develop and/or create new strategic business opportunities
商业智能技术能够处理大量非结构化数据

Data mining is the process of finding anomalies, patterns and correlations within large data sets to predict outcomes. Using a broad range of techniques, you can use this information to increase revenues, cut costs, improve customer relationships, reduce risks and more.
大型数据集中查找异常

In Memory Computing

Data in a data warehouse are structured as multidimensional data cubes
  –Allow for relationships in the data to be analyzed quickly
  快速分析数据
Two main challenges with using a multidimensional cube structure
  –A significant level of technical expertise is needed to construct a cube
  –A multidimensional cube necessarily restricts how the data can be analyzed
Accessing data from memory much faster than accessing data from a hard disk

Radio Frequency Identification (RFID) Technology
•Radio frequency identification RFID) uses electromagnetic fields to automatically identify and track tags attached to objects.
射频识别（RFID）使用电磁场自动识别和跟踪附着在物体上的标签。

RFIDTechnology (con t'd t)
Advantages of RFID technology
•Does not need a line of sight connection
•Can withstand most environmental stresses Application areas for RFID
•Walmart is on the leading edge of the move to integrate RFID technology into the supply chain
•Pharmaceutical firms are evaluating the use of RFID technology
• RFID technology is being employed to track medical devices
•Spectrum Health's Meijer Heart Center is using RFID technology to track stents

Cloud Computing
Definition : Cloud Computing is the use of hardware and software to deliver a service over a network (typically the Internet). With cloud computing, users can access files and use applications from any device that can access the Internet.
Examples : Gmail, Office 365

Cost Eliminates capital expense of buying hardware and software.
•Speed Extensive computing resources.
•Global Scale The ability to scale in different geographical locations.
•Productivity Hardware & software is managed.
•Performance Latest generations of hardware.
•Reliability Extensive backup and data recovery

•Security Broad set of policies, technologies and controls

成本消除了购买硬件和软件的资本支出。

•速度广泛的计算资源。

•全球规模在不同地理位置进行规模扩展的能力。

•生产力管理硬件和软件。

•性能最新一代的硬件。

•可靠性广泛的备份和数据恢复

•安全性广泛的政策，技术和控制措施集

Types of Cloud Computing

Public cloud

Public clouds are owned and operated by third party cloud service providers, which deliver their computing resources, like servers and storage, over the Internet. Microsoft Azure is an example of a public cloud. With a public cloud, all hardware, software, and other supporting infrastructure is owned and managed by the cloud provider. You access these services and manage your account using a web browser.

Private cloud

A private cloud refers to cloud computing resources used exclusively by a single business or organization. A private cloud can be physically located on the company's on site datacenter. Some companies also pay third party service providers to host their private cloud. A private cloud is one in which the services and infrastructure are maintained on a private network.

Hybrid cloud

Hybrid clouds combine public and private clouds, bound together by technology that allows data and applications to be shared between them. By allowing data and applications to move between private and public clouds, a hybrid cloud gives your business greater flexibility, more deployment options, and helps optimize your existing infrastructure, security, and compliance.

Types of Cloud Services

Infrastructure as a Service (IaaS)云计算服务的最基本类别。

Platform as a Service (PaaS)平台即服务是指云计算服务

Software as a Service (SaaS)软件即服务是一种通过服务交付软件应用程序的方法。互联网，按需且通常基于订阅。 借助 SaaS，云供应商托管和管理软件应用程序以及基础架构，并处理所有维护工作

Mobile Computing

- Increasing use of smartphones, tablet computers, and other mobile computing devices
- Mobile applications need to be developed for different kinds of smartphones, with different operating systems
- Companies need to make many decisions about the use of mobile devices by employees
- Mobile devices provide users with information and can also be sources of information

WEEK 11 Future Trends

Social Media Many applications already integrated within the system, such as human resources and customer relationship management software, have long been connected to social media e.g. it's quite common.

IoT is simply the network of interconnected things/devices which are embedded with sensors, software, network connectivity and necessary electronics that enables them to collect and exchange data making them responsive.

Improve data availability
The IoT has significant implications for enhancing ERP in areas including customer service, forecasting, inventory and asset management, and business intelligence.
IoT has already made a substantial impact in the manufacturing sector.
物联网对于在客户服务，预测，库存和资产管理以及商业智能等领域增强 ERP 具有重要意义。物联网已经对制造业产生了重大影响。

Improve communication
Now, IoT enables a product to communicate directly with the manufacturer from the moment it leaves the warehouse, providing both service and engineering departments a wealth of information. Inventory management also benefits from products being able to communicate directly with the ERP system.直接与制造商进行通信，从而为服务和工程部门提供大量信息

Improve business intelligence
Businesses can now monitor machine operations anywhere in the world and perform real time analysis of streaming data. As well as managing machine maintenance, the IoT enables social analytics and a more direct interface with customers. The instant availability of accurate business intelligence helps managers make better tactical decisions.企业现在可以监视世界任何地方的机器操作并执行流数据的实时分析

Quality Processes in Manufacturing
Traditional quality processes have been dependent on sampling techniques to

determine if products are being manufactured as per standards. Not only is this not accurate, it is also too late in the process. IoT technologies integrated with ERP can significantly reduce these incidents.质量管理，原来是采样，现在可以实时监控

Fleet Management

One of the biggest beneficiaries of IoT and ERP integration have been the fleet management industry. Apart from the regular benefits like vehicle tracking & geo fencing, data passed from IoT sensors can really help validate and help achieve business goals.车队管理 2002 年欧洲几个大车商联合开发的系统，对通信载具的定位，机械检查。

Artificial Intelligence(AI) is the branch of computer sciences that emphasizes the development of intelligence machines, thinking and working like humans. For example , speech recognition, problem solving, learning and planning.

AI in ERP

1.Offers Deeper Insights Into Your Data

AI systems can detect less obvious trends and make insightful inferences about specific business operations, which in turn allows for more accurate forecasting and informed decision making.

2. Automates Routine Processes

When a human performs a given task within their ERP system, they're following a set of rules that governs their actions and methodology. Such behavioral tasks can often be expressed in mathematical terms and programmed into software.

3. Improves User Experience Through Interaction

For example : Searching for information and consistently interacting with a certain set of record types, such as customer data or product catalog data. The software can then prioritize those search results.

总的来说 AI 在 ERP 系统可以识别模式并自动执行例行任务

Automation

通过 ERP 解决方案预先编程的功能可以确保更多

重复的任务不会遭受用户错误的困扰，并且可以将人为的输入转移到监视系统中

A blockchain is a decentralized, distributed, and oftentimes public, digital ledger that is used to record transactions across many computers so that any involved record cannot be altered retroactively, without the alteration of all subsequent blocks.

区块链是一种分散的，分散的，通常是公共的数字分类帐，用于记录多台计算机上的交易。

ERP Integration enables optimization of all operations of several different organizations, as well as trusted sharing data, in particular financial transactions.

SAP has also been experimenting with using blockchain in if then operational threads, 3D printing, and digital manufacturing.

How Can Blockchain Improve ERP Systems?
•Visibility in Every Stage of the Supply Chain Improves Transparency
•Promotes Trusts among All the Supply Chain Participants
•Authenticating and Verifying Personals before Giving Access to Participants
•Smart Contract Implementation to Automate Processes and Payments
•Lowers The Risk Factors In Digital Transactions
•Offers a High Level Of Security and Data Privacy in Real Time
•Compliance With GDPR And Secure Storage Facility For Sensitive Information
•Lowers The Costing Drastically
•Gives a Competitive Edge and Helps to Be On Top Of the Competitors
•Provides Accurate Forecasting Reports of the Market In Real Time

Additive manufacturing (AM) is the industrial production name for 3D printing, a computer controlled process that creates three dimensional objects by depositing materials, usually in layers.

增材制造（AM）是 3D 打印的工业生产名称。

WEEK 12 Revision

Types of ERP Systems：Decentralized Systems (Legacy Systems),Centralized Systems (ERP Systems)
Benefits of a Centralized ERP
SystemDrivers for adopting ERP Systems
Functional Areas and Business Processes
SAP Business Processes (Modules)
SAP S4/HANA
Master Data vs Transaction Data

Master Data Management
Materials Management Master Data
Procurement
Inventory*
Sales and Distribution in ERP
management (CRM) software
Sales Forecasting
The Production Planning Process
Production orders
The Traditional Supply Chain（SCM）
Accounting Activities
Asset Management
The Sarbanes Oxley Act
Business Process Modelling
Event Process Chain (EPC)
ERP Workflow Tools
Implementing ERP Systems
IT Project Failure statistics
Current Technologies supporting ERP： Digital Disruption /Transformation

Big Data，Business Intelligence / Data，Mining，In Memory Computing，RFID，Cloud Computing，SAAS，Mobility

Future Trends in ERP System： Social Media，IOT，AI，Automation，Blockchain，Additive Manufacturing

SAMPLE EXAM QUESTION：

- What is an Enterprise System and how is it different to a Legacy System ?
- List three problems with Decentralized Systems.
- List and explain two developments in business and technology that allowed ERP systems to evolve to their current form:
- List two of the MAIN drivers for companies adopting ERP Systems.
- What do the initials SAP stand for ?
- Define "In memory computing" and give an example.
- Define the term "Functional Area' and give two examples.
- Name and describe two of the key business processes in an organisation.
- List, in the correct order, the tasks involved in the Procurement Process.
- Explain the difference between Financial Accounting and Management Accounting.
- Explain the concept of an "In memory" database and give one example.
- List two features of SAP Fiori.
- Identify and describe TWO Master Data items that are used in Materials Management.
- What is an Exploded BOM ?
- Explain the meaning and use of a Material Master view.
- What effect do Goods Issues and Goods Receipts have on stock inventory levels ?
- What is a Purchasing Info Record ?
- What is the definition and purpose of a Purchase Order ?
- What Master Data items would be required in order to enter a Sales Order transaction ?
- What are the six processing steps that are involved in the Sales Order cycle
- Explain the difference between a Sales Inquiry and a Sales Quotation.
- What is the purpose of the Document Flow transaction in SAP ?
- List three benefits of CRM
- What are the three basic task areas managed by a CRM system ?
- Explain whether an organization should model its business processes before the system has been implemented or after?
- Provide five main benefits of reengineering your business processes.
- Identify one major business process that might benefit from reengineering in an organization.

- Explain the benefits that may occur from reengineering the business process you identified above.
- If you were asked to reengineer a business process; what approach would you take?
- Give one working example of a business process

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