



Universidade do Porto
FEUP Faculdade de
Engenharia

Sistemas de Informação *Information Systems*

ERP Introduction

Agenda

- Lectures Planning
- Evaluation Method
- ERP Concepts
- Primavera Software
- Master Data
- Standard Flows in an ERP
 - Purchases
 - Sales
 - Production
 - Payroll
 - Finance

Lectures Planning

| | 27-09-2018 28-09-2018 | 05-10-2018 | 04-10-2018 12-10-2018 | 11-10-2018+18-10-2018 19-10-2018 | 25-10-2018 26-10-2018 | 01-11-2018 02-11-2018 |
|-----------------------------|-------------------------|-----------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| Week | 1 | | 2 | 3 | 4 | |
| Summary | ERP - Basic Concepts | | ERP - Basic Concepts Team Project: Mockups + Features + Team Project Specifications and Scope | Workshop VM/Integration. DEMO. Support on the adjustment of the students Mockup and definition of scope of the team project and of the specifications + Project Tracking and Support | Project Tracking and Support | FEUP Week |
| Student Deliverables | | Public Holiday for Friday classes | | Virtual Machine | Functional Specifications Information Architecture and Final Project Plan - Gantt with tasks (list of features, alignment to the structure and to the functional module and resources) | |
| Evaluation | | | Continuous | Continuous | 25% | Continuous |

Lectures Planning

| | 08-11-2018 09-11-2018 | 15-11-2018 16-11-2018 | 22-11-2018 23-11-2018 | 29-11-2018 30-11-2018 | 06-12-2018 07-12-2018 | 13-12-2018 14-12-2018 | 17 to 21-12-2018 |
|-----------------------------|------------------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|------------------------------|------------------------------|------------------------------------------|
| Week | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Summary | Project Tracking and Support | Project Tracking and Support | Project Tracking and Support | Project Tracking and Support | Project Tracking and Support | Project Tracking and Support | Project Tracking and Support |
| Student Deliverables | | | Interoperability : WS layer Demo: Model, Controller + API C# Primavera + ERP validation Primavera + Documentation + Prototype Presentation (with views/forms) | | | | Final Presentation and Report |
| Evaluation | Continuous | Continuous | 25% | Continuous | Continuous | Continuous | 50% |

Team Projects

Evaluation

- **60% of the global evaluation of the Information System lecture**
 - Team project to develop a webapp with integration with PRIMAVERA ERP
- **Team Project detail**
 - *25% - Functional specification (26 - Oct)*
 - *25% - Interoperability (Test w/ ERP) and Prototype Presentation (23 - Nov)*
 - *(50%) Final Presentation (21 Dec)*
 - 40% - Final Presentation (15 Minutes + 5 minutes Q&A)
 - 10% - Report of the Project (max 20 pages - Times-New-Roman 12)
- Teams with 5 elements

What's an ERP?

Enterprise resource planning (ERP) is a cross-functional enterprise system driven by an integrated suite of software modules that supports the basic internal business processes of a company. ERP gives a company **an integrated real-time view of its core business processes** such as production, order processing, and inventory management, tied together by ERP applications software and a common database maintained by a database management system.

ERP systems track business resources (such as cash, raw materials, and production capacity) and the status of commitments made by the business (such as customer orders, purchase orders, and employee payroll), no matter which department (manufacturing, purchasing, sales, accounting, and so on) has entered the data into the system. ERP facilitates information flow between all business functions inside the organization, and manages connections to outside stakeholders.

Benefits

- ERP can greatly improve the quality and efficiency of a business. By keeping a company's internal business process running smoothly, ERP can lead to better outputs that benefit the company such as customer service, and manufacturing.
- ERP provides support to upper level management to provide them with critical decision making information. This decision support allows the upper level management to make managerial choices that enhance the business down the road.
- ERP also creates a more agile company that better adapts to change. ERP makes a company more flexible and less rigidly structured so organization components operate more cohesively, enhancing the business—internally and externally.
- ERP can improve data security. A common control system, such as the kind offered by ERP systems, allows organizations the ability to more easily ensure key company data is not compromised.

Benefits

- ERP provides increased opportunities for collaboration. Data takes many forms in the modern enterprise.
- Documents, files, forms, audio and video, emails. Often times each data medium has it's own mechanism for allowing collaboration. ERP provides a collaborative platform allowing employees to spend more time collaborating on content, rather than mastering the learning curve of communicating in various formats and across distributed systems.

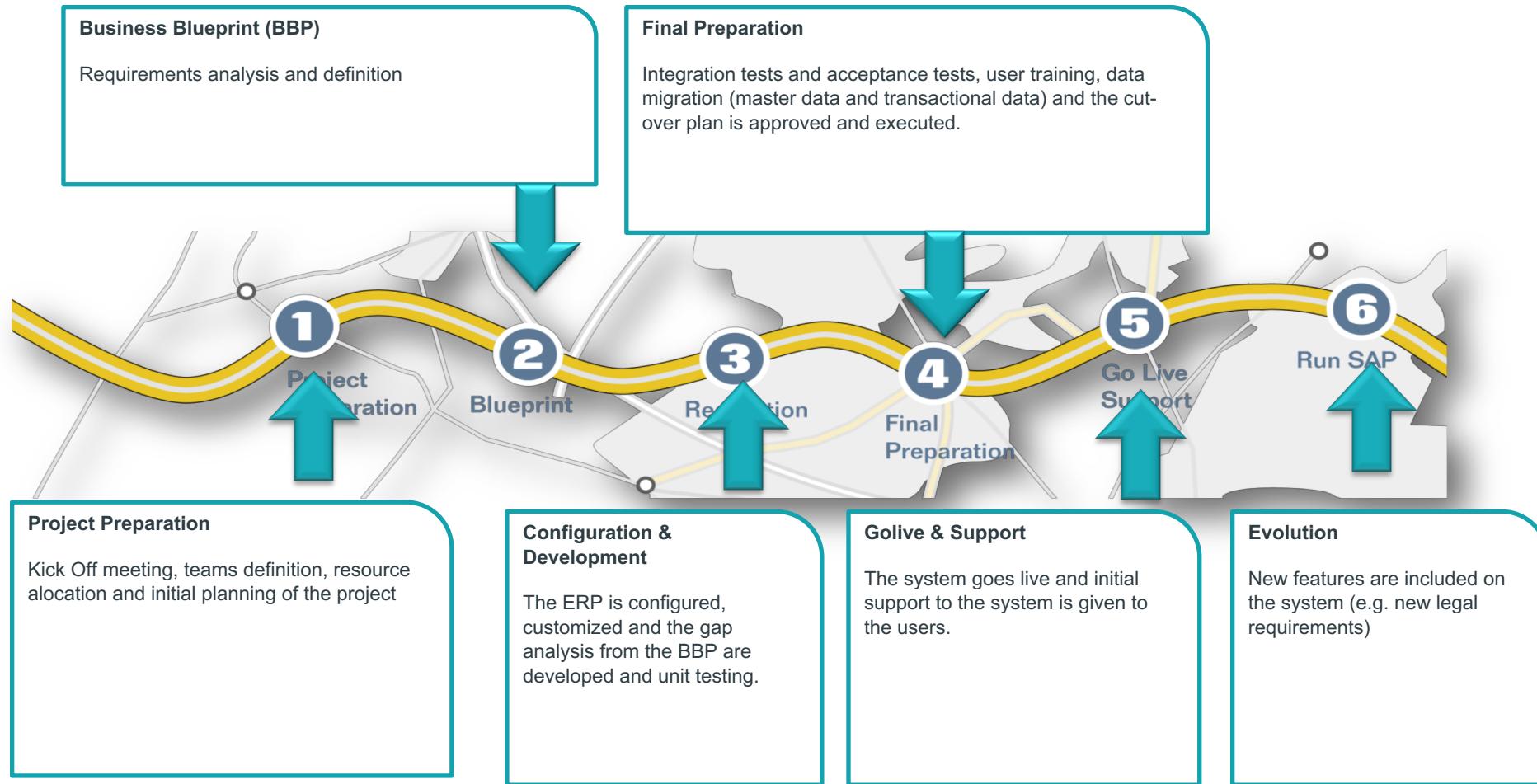
Disadvantages

- Customization is problematic.
- Re-engineering business processes to fit the ERP system may damage competitiveness or divert focus from other critical activities.
- ERP can cost more than less integrated or less comprehensive solutions.
- High ERP switching costs can increase the ERP vendor's negotiating power, which can increase support, maintenance, and upgrade expenses.
- Overcoming resistance to sharing sensitive information between departments can divert management attention.
- Extensive training requirements take resources from daily operations.
- Harmonization of ERP systems can be a mammoth task (especially for big companies) and requires a lot of time, planning, and money.

How to implement an ERP ...

1. Total board of directors commitment to the Project;
2. Strong Expectation Management (well defined and feasible);
3. Clear vision of the goals and the vision to all teams and stakeholders;
4. Define key people between the different parties involved with a clear knowledge of the activities and business operations as well as of the future strategy of the company;
5. Focused teams on the implementation of the Project;
6. Clear project methodology;
7. Well defined milestones for the validation and acceptance of work in progress;
8. (some) Documentation;
9. Always get the lessons learnt in each project phase.

Implementation Methodology (E.g. ASAP)



Primavera Figures and Facts



20,6 millions € Turnover
(2016)



27.000 Customers



600 Partners



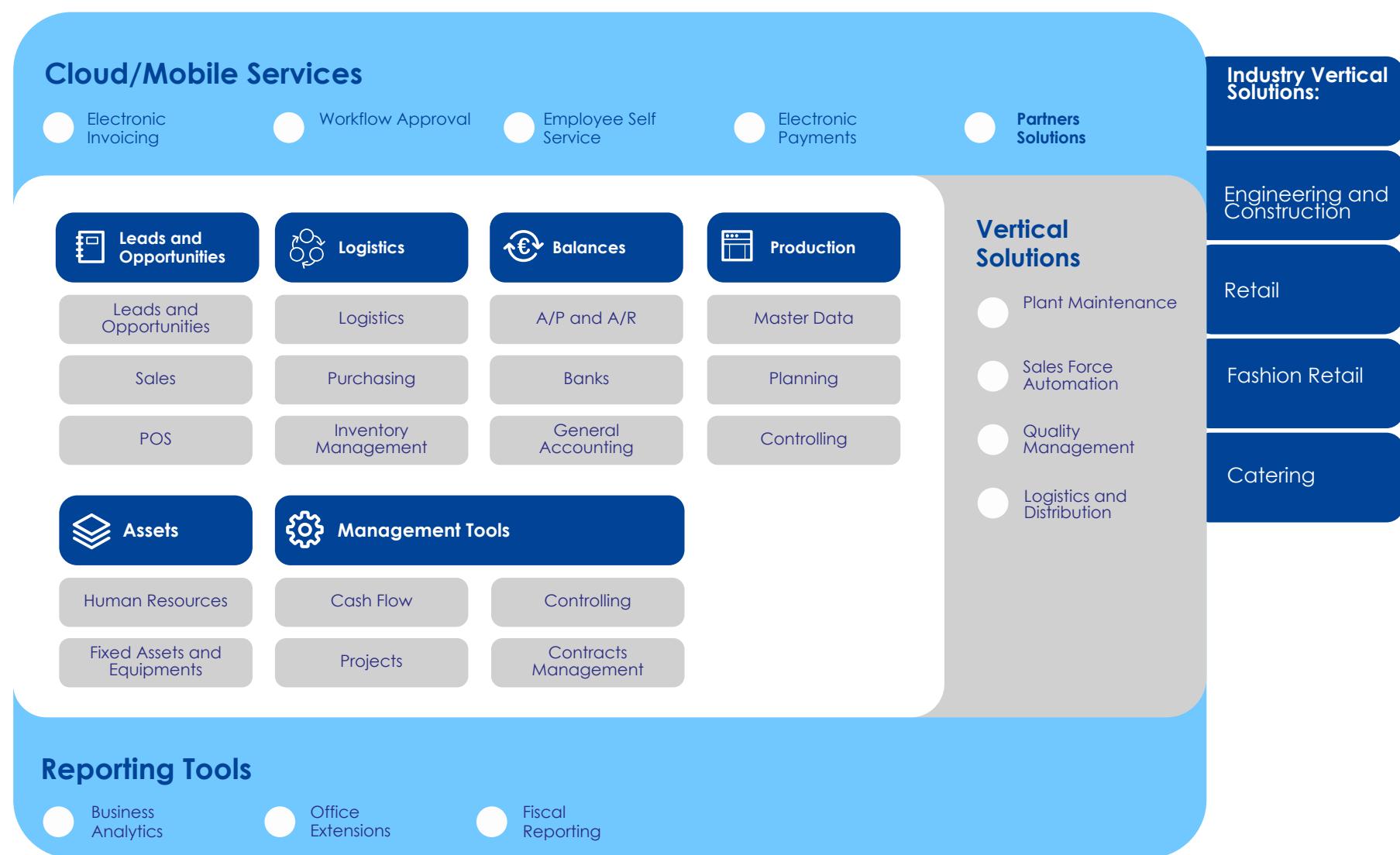
#1 ERP Vendor in Portugal and on the Portuguese-speaking African countries



280 employees,
present in **6** countries

(Portugal, Spain, Angola, Mozambique, Cape Verde and United Arab Emirates (UAE))

Primavera Solutions



Primavera Customers ...



Portugal

Ach.Brito

grupo
moneris
Para quem o negócio conta


Manpower®


Rock in Rio

AMNISTIA
INTERNACIONAL
PORTUGAL



GuyLian
The World's Favourite
Belgian Chocolates


Nestlé
Waters


STCP


crioestaminal
líder desde o primeiro dia


ipma
instituto português
do mar e da atmosfera


Pastéis de Belém®
desde 1837


ESPORÃO


LA
LANIDOR


RE/MAX®


URBANOS®


U.PORTO



Master Data – What is it ?

- Data shared across computer systems in the enterprise.
- Dimension or hierarchy data in data warehouses and transactional systems.
- Data worth managing.
- Common Examples: Customers, Suppliers, Materials, ...

Master Data vs. Metadata vs. Transactional

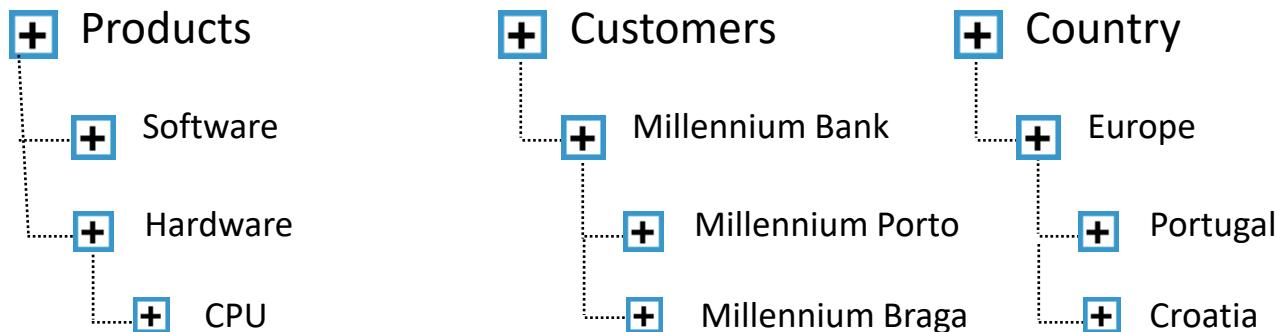
Transactional

| Company | Country | Account | Sub-Account | Date | Amount |
|------------|---------|---------|-------------|----------|---------|
| Millennium | PT | 2110001 | 211 | 20150925 | 39.500€ |

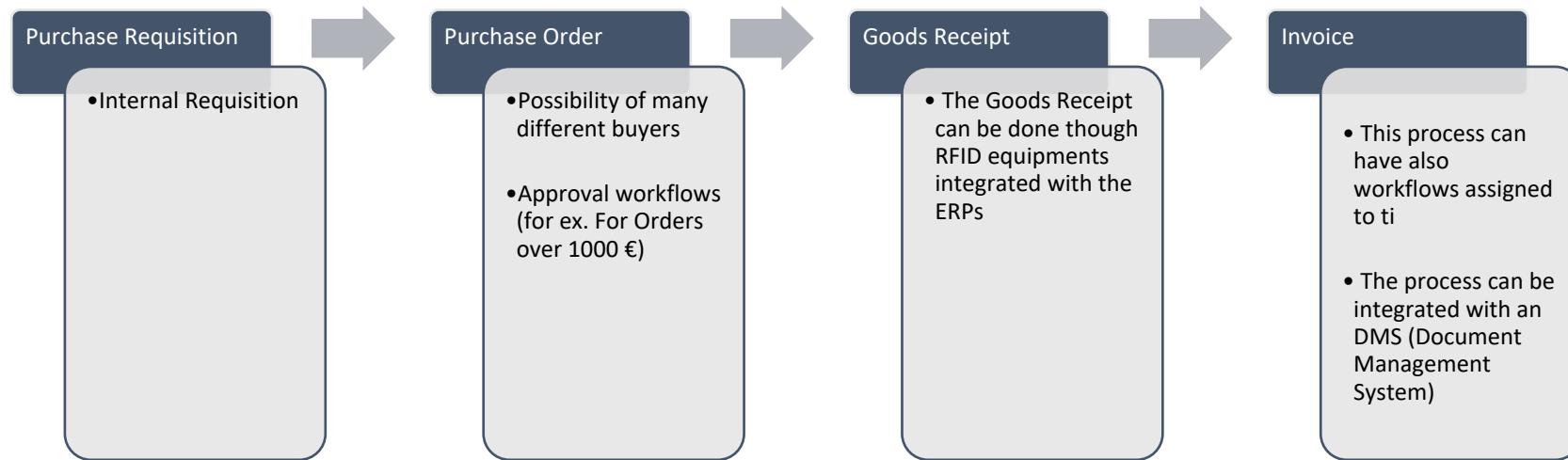
Metadata

| Company | Country | Account | Sub-Account | Date | Amount |
|--------------|---------|---------|-------------|---------------------|---------|
| Text | Text | Integer | Integer | Date | Float |
| nVarchar(50) | Char(2) | Int(6) | Int(3) | Datetime (YYYYMMDD) | Decimal |

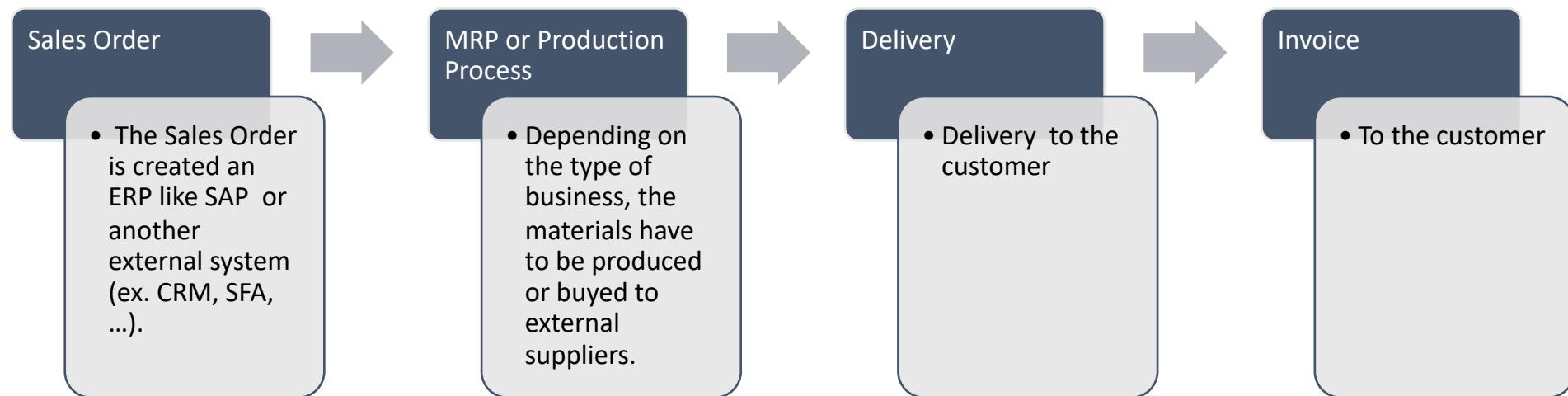
Master data



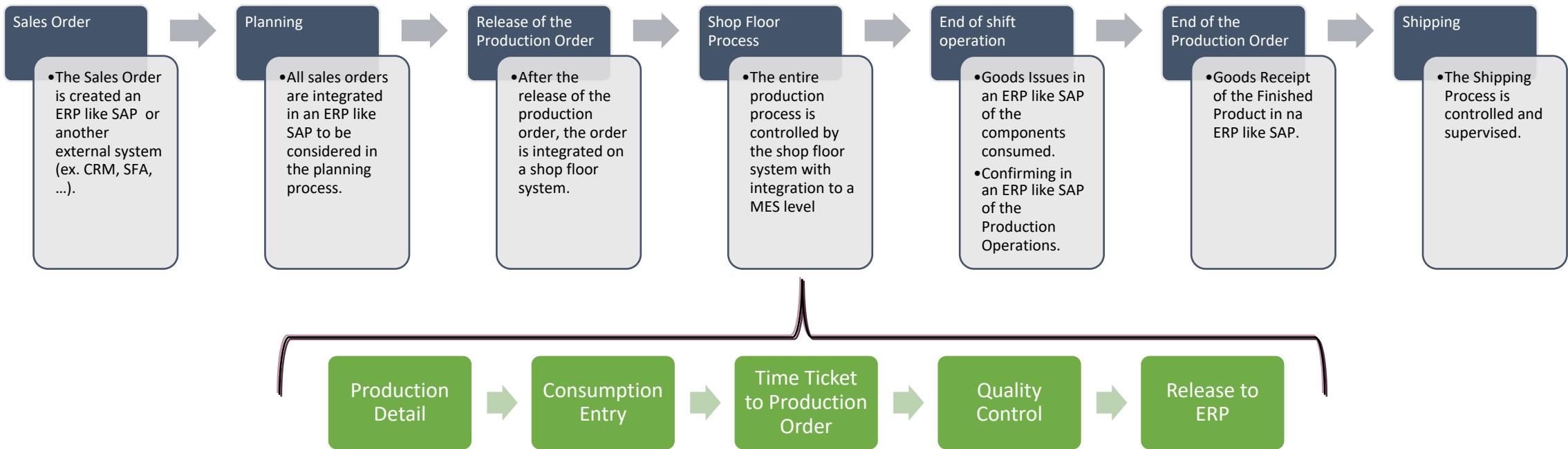
Standard Flows on ERPs – Purchasing Process



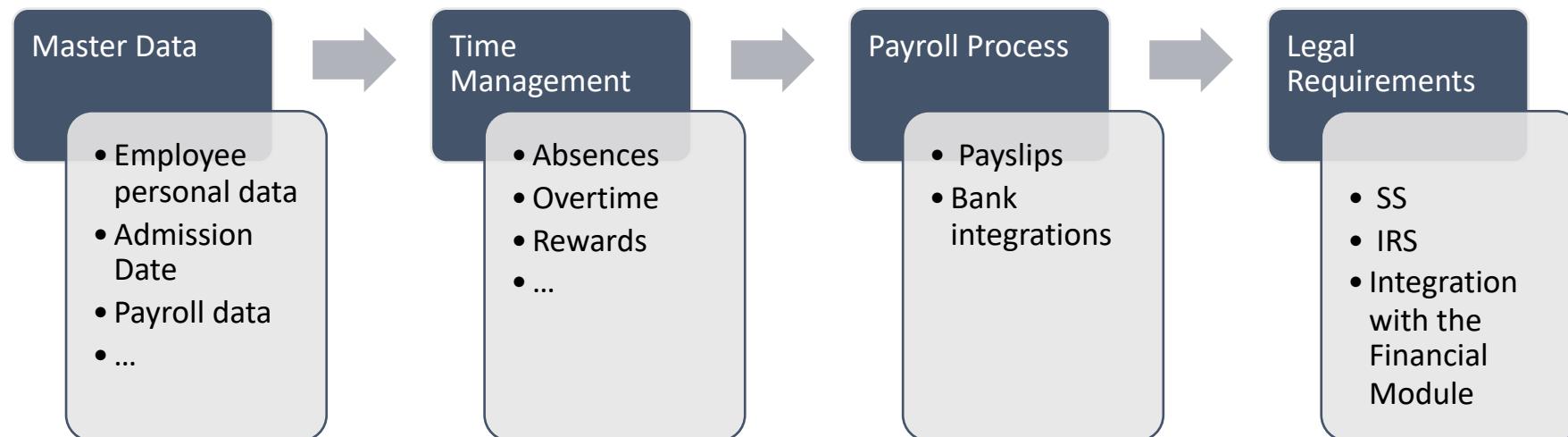
Standard Flows on ERPs – Sales Process



Standard Flows on ERPs – Production Process



Standard Flows on ERPs – Payroll Process



Standard Flows on ERPs – Financial Process

