JD | VALUATION
ANALYTICS
SAP TRAINING

www.jayeshdesai.com

SAP Technology, Modules & Integration

Profile

VALUATION I ANALYTICS I SAP

BUSINESS
Valuation

FINANCIAL
Modelling

DATA
Analytics

SAP FICO
Consulting

Jayesh P Desai & Co.

Cost Accountants

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Practicing Cost Accountant

FCMA, CFA, CISA
CIA, PMP, UCLA (PGPX)
Registered Valuer (IBBI)

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DesaijayeshP

- Practicing Professional (Since 2017)
  - Business Valuation
  - Data Analytics – Product Costing, Pricing & Profitability Analysis
  - SAP Consulting & Training
- Key Accomplishments
  - Developed Financial Model for Start-up in areas such as Blockchain, AI, Data Analytics, Gaming, Online Education, E-commerce, Electric Vehicle
  - Valuation of early and funded start-up, matured companies, CIRP under Companies Act, FEMA, IBBI and other needs
  - Data Analytics for manufacturing companies in power, Consumer Durables, Injection Molding, Textiles
  - SAP trainer for Institute of Cost Accountants of India. Conducted 2 sessions of 60 hours each with 150 participants
  - Conducted several Webinars on SAP for Finance Professionals for over 200 participants

CMA Jayesh P Desai

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DesaijayeshP

- Corporate Professional (1991-2016)
  - Financial Accounting, Product Costing, Profitability Analysis, Internal/ System Audit, Corporate Restructuring
  - SAP Implementation, Data Analytics, Project & Delivery Management
  - Building Global Teams & Leadership, Leading Innovation
- Key Accomplishments
  - Worked with General Mills, IBM, Colgate, Bayer, Shaw Wallace, General Motors
  - Over 20 years SAP experience as delivery manager, consultant and power user
  - Implemented 4 SAP FICO projects with integration
  - Domain experience in Finance & Controlling in SAP environment
  - Specialised in SAP Controlling (CCA, PC, COPA, PCA)
  - Lead & Delivered global SAP & Data Analytics projects. Managed Global Teams in India, US, UK
  - Lead Innovation and Data Analytics initiatives across various functions and countries

SAP Overview Jan 05

1 **Understanding SAP**
- About SAP
- Technology
- S/4 HANA

2 **Design**
- Enterprise Structure
- Configuration (SPRO)
- Master Data
- Transaction

3 **Modules**
- FI-CO
- MM
- PP
- SD

4 **Processes**
- O2C
- P2P
- R2R
- I2P

5 **SAP Live**
- Document
- Account
- Process
- Report

Technology for Finance

Rising Consumerism:

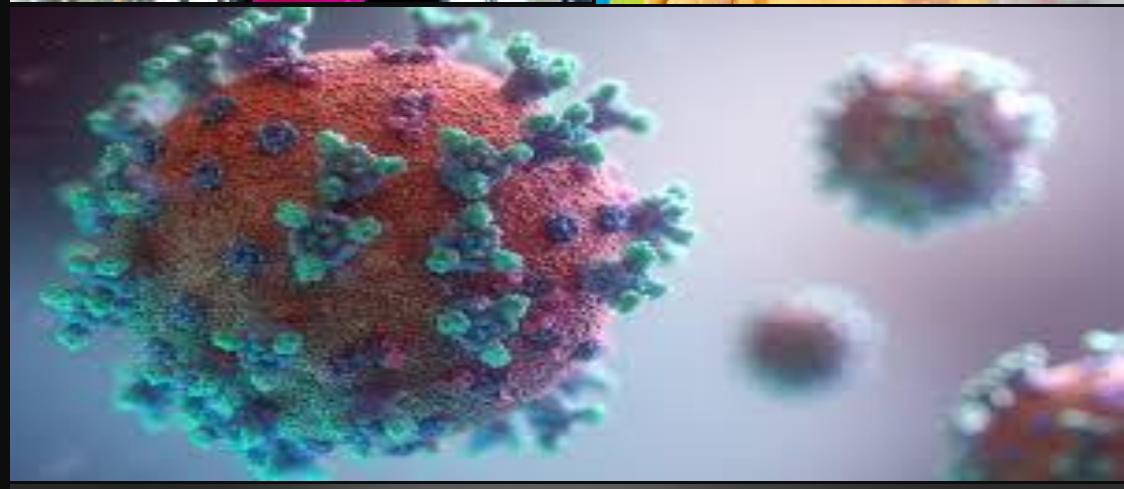
- Consumer have competitive choices
- Preferences & Loyalty changing rapidly

Tech-Savvy Consumers:

- Facebook, Instagram, Twitter, WhatsApp
- Mobile has revolutionised Consumerism

Impact:

- Stiff competition in an open market
- Corporates looking for tech-savvy professionals to work with

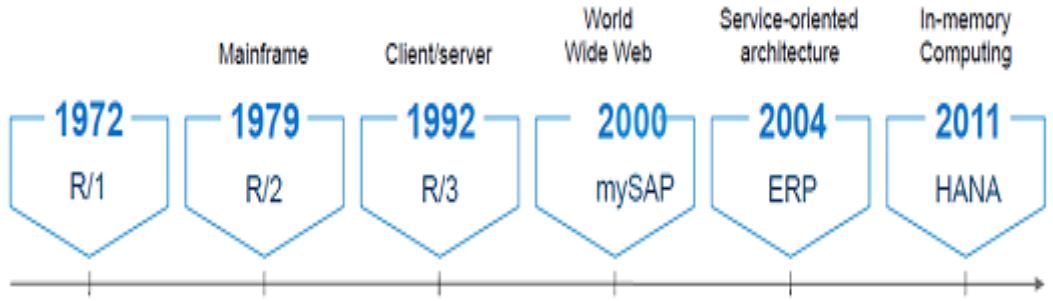


What is SAP?

Off-the-shelf software which can be configured and customized as per business requirements

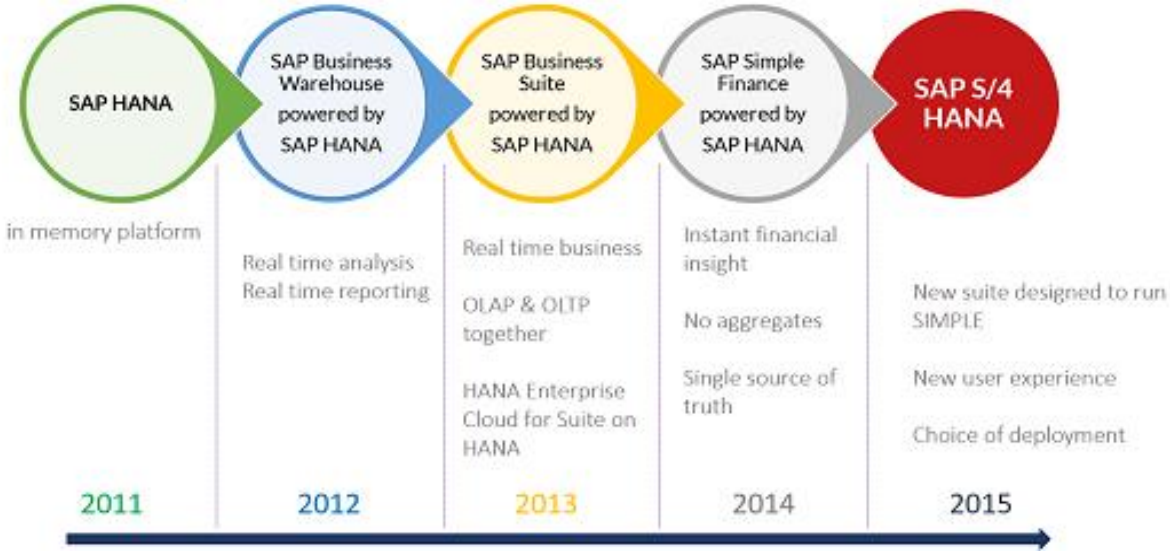
Standard SAP without major changes can be implemented in a very short time

SAP Journey of Innovation



- ✓ Integration
- ✓ Standardization
- ✓ Globalization

- ✓ +40 years of innovation across industries
- ✓ 282 thousand customers
- ✓ 74% of the world's transaction revenue touches an SAP system



Release History of SAP

- SAP R/1 System RF: 1973
- SAP R/2 Mainframe System: 1979
- SAP R/3 Enterprise Edition 1.0 A: July 1992
- SAP R/3 Enterprise Edition 2.0B (SAP R/3 2.0B): July 1993
- SAP R/3 Enterprise Edition 3.1I (SAP R/3 3.1I): 11 May 1998
- SAP R/3 Enterprise Edition 4.0B (SAP R/3 4.0B): 6 April 1998
- SAP R/3 Enterprise Edition 4.3
- SAP R/3 Enterprise Edition 4.5B (SAP R/3 4.5B): 29 March 1999
- SAP R/3 Enterprise Edition 4.6B (SAP R/3 4.6B): 6 December 1999
- SAP R/3 Enterprise Edition 4.6C (SAP R/3 4.6C): 3 April 2000
- SAP R/3 Enterprise Edition 4.6F
- SAP R/3 ENTERPRISE 4.7X110: 15 July 2002
- SAP R/3 ENTERPRISE 4.7X200: 22 September 2003
- SAP ERP Central Component (ECC) 5.0: 21 June 2004
- SAP ERP Central Component (ECC) 6.0: 24 October 2005
  - SAP enhancement package 1 for SAP ERP 6.0 (EHP1 FOR SAP ERP 6.0): 21 December 2006
  - SAP enhancement package 2 for SAP ERP 6.0 (EHP2 FOR SAP ERP 6.0): 27 July 2007
  - SAP enhancement package 3 for SAP ERP 6.0 (EHP3 FOR SAP ERP 6.0): 7 December 2007
  - SAP enhancement package 4 for SAP ERP 6.0 (EHP4 FOR SAP ERP 6.0): 21 November 2008
  - SAP enhancement package 4 for SAP ERP 6.0 on SAP enhancement package for SAP Net Weaver 7.0 (EHP4 FOR SAP ERP 6.0 / NW7.01): 21 November 2008
  - SAP enhancement package 5 for SAP ERP 6.0 (EHP5 FOR SAP ERP 6.0): 12 July 2010
  - SAP enhancement package 6 for SAP ERP 6.0 (EHP6 FOR SAP ERP 6.0): 24 August 2011
  - SAP enhancement package 7 for SAP ERP 6.0 (EHP7 FOR SAP ERP 6.0): 13 August 2013
  - SAP Fiori 1.0 for SAP ERP (UI FOR EHP7 FOR SAP ERP 6.0): 29 November 2013
  - SAP enhancement package 8 for SAP ERP 6.0 (EHP8 FOR SAP ERP 6.0): 20 January 2016
- SAP S/4HANA 1511
  - SAP S/4HANA 1610
  - SAP S/4HANA 1709
  - SAP S/4HANA 1809
  - SAP S/4HANA 1909

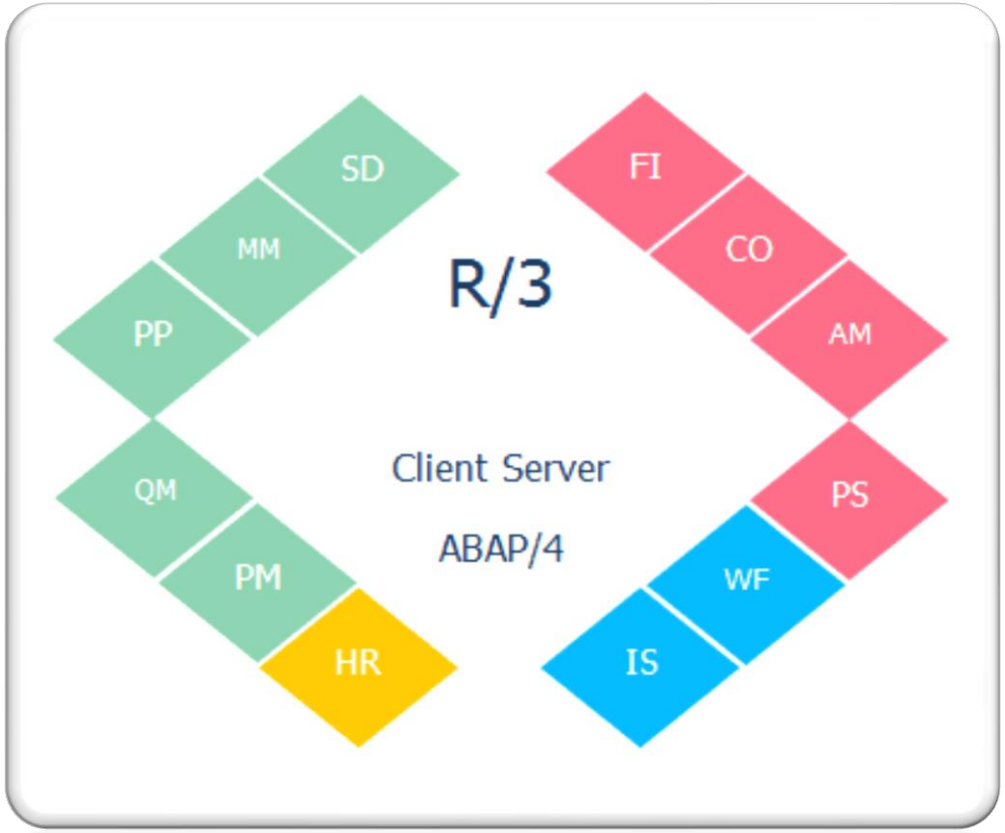
HANA

High-Performance Analytic Appliance

- Storage
  - In-memory close to CPU vs Spinning Hard Disk
  - Data compression 11 times reduces storage space
- Database
  - Columnar database versus Rows
  - Memory reads faster by 1 million times than conventional DB Hard Disk
- Processor
  - Parallel processing, multicore CPU architecture in distributed environment
- OLAP/ OLTP
  - OLAP/ OLTP in single database and real time, on the fly analytics
- Data Model
  - Simplified data model combining large number of tables

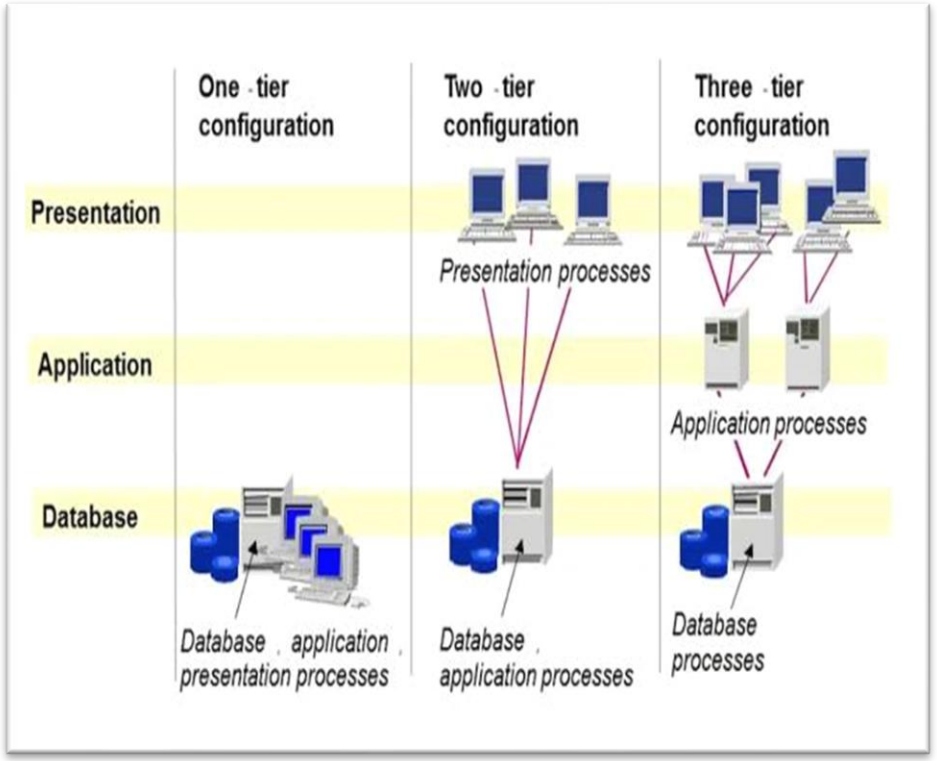
More on SAP Technology

- Client-Server Architecture
- Client
- Landscape
- ABAP
- Netweaver
- FIORI



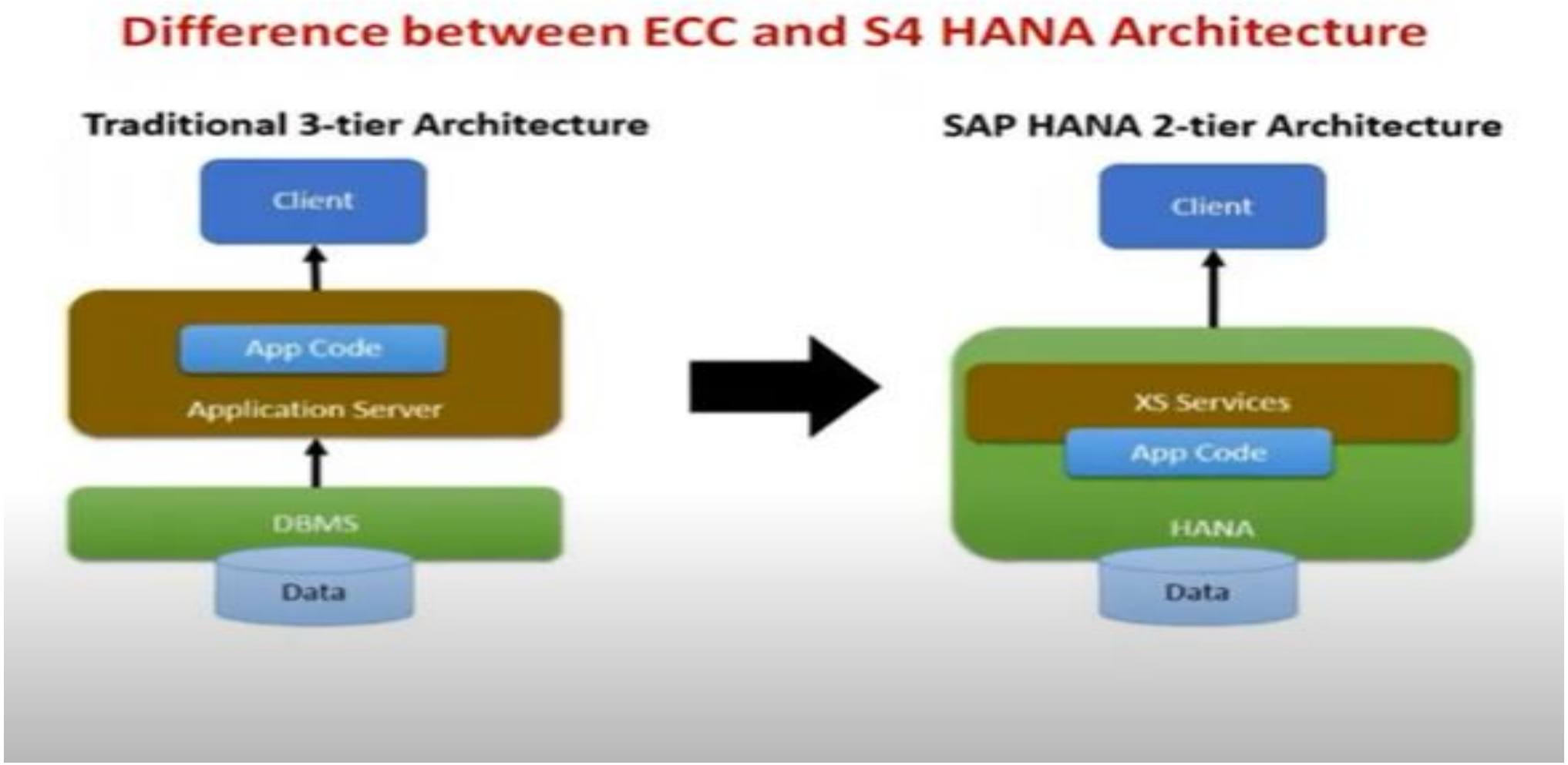
Three Layer, One System

- Presentation layer (SAP GUI) runs on each user's computer; they don't have to worry about time-sharing the GUI on a server
- The application layer executes the business logic, accessing data only when it is necessary
- The database layer persists the business transactions



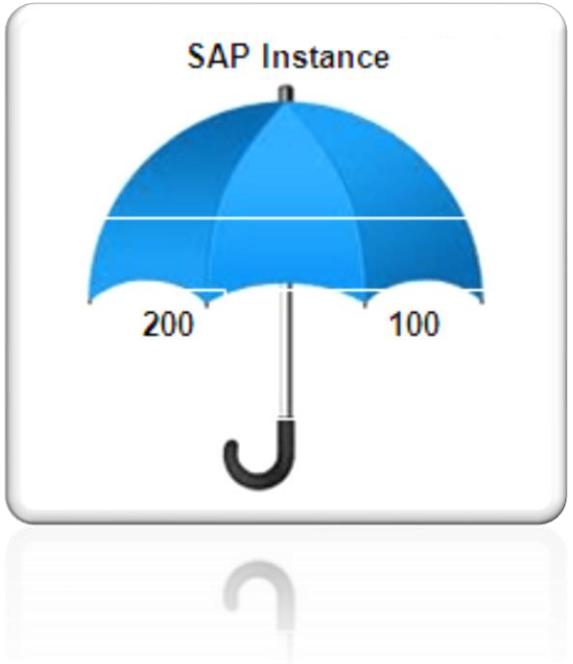
Division of solution in three layer & client server architecture allowed organizations to run each of the layers on separate specialized hardware.

HANA Architecture



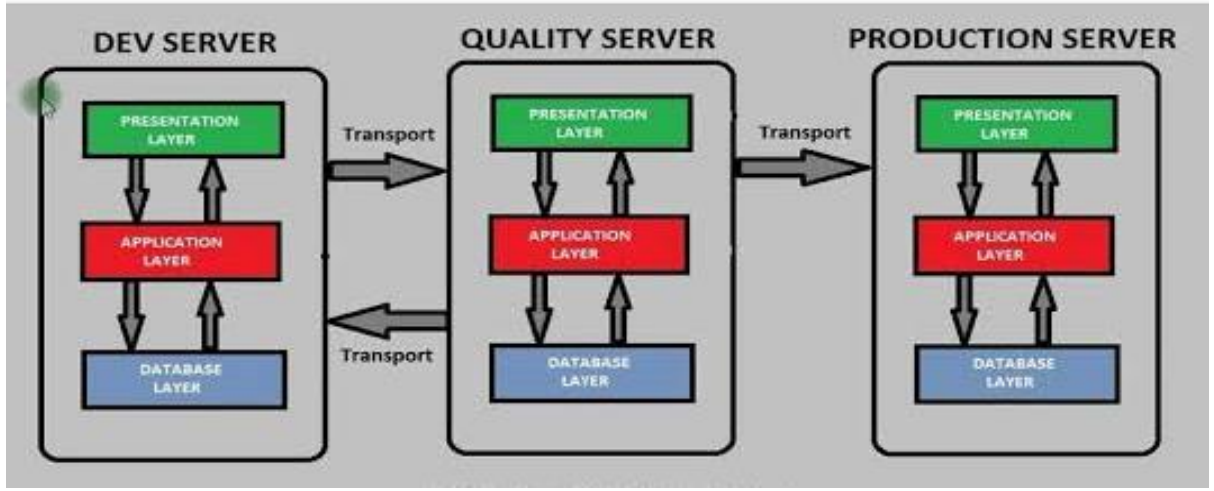
Client

- **Client** is a 'Customer' in SAP, each customer maps to one client.
- Within one SAP instance, a number of Clients can be created.
- No need to install separate software for each and every customer. It provides isolation, one client cannot see the data of another
- Clients help establish SAP landscape – development, test and production



Landscape

- Arrangement of the SAP servers in an organisation
- By default, three Landscapes
- Development
  - Sandbox Client
  - Golden Client
  - Unit Testing Client
- Quality
  - Integration Testing Client
  - Training Client
- Production



Other SAP Terms to Know

- **ABAP** or Advanced Business Application Programming is the default programming language for SAP applications. It is the fourth generation language used for programming, create custom reports and interfaces on SAP platform.
- **Netweaver** is a web-based, open integration, application platform that serves as the foundation for Enterprise Service-Oriented Architecture (Enterprise SOA) and allows the integration and alignment of people, information, and business processes across business and technology boundaries. It is built primarily using the ABAP programming language, but also uses C, C++, and Java

Other SAP Terms to Know

- **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.

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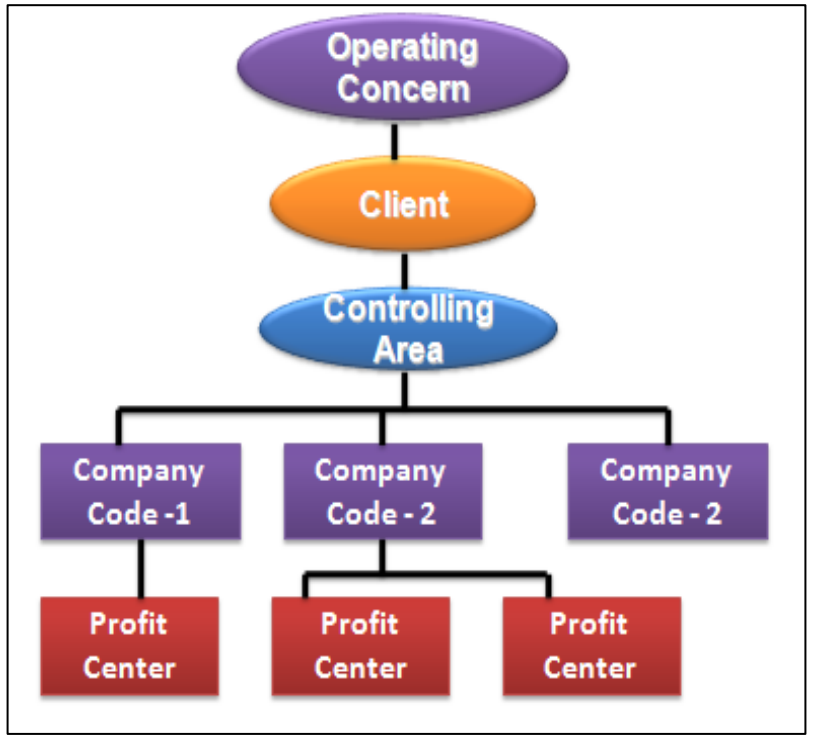
SAP Design

- Using Lego blocks you can build houses (or any object) in variety of shapes
- SAP has similar building blocks that are put together to build a system
- SAP building blocks:
  - Enterprise Structure
  - Configuration
  - Master Data
  - Transactions
  - Modules
  - Business Processes

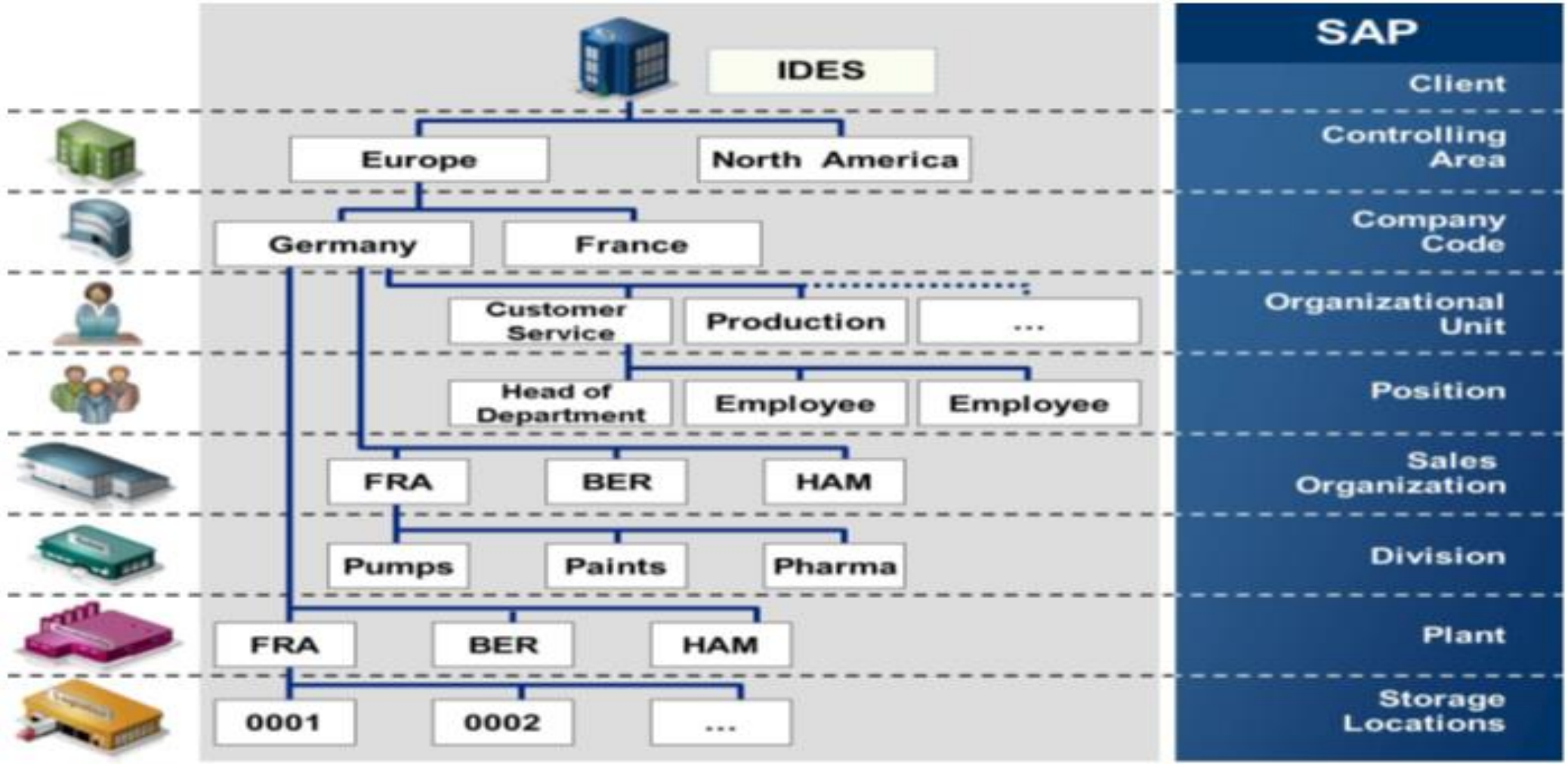
Tip: To learn SAP - **Think BIG!!**

Data – Enterprise Structure

- Represent different legal and functional facets of an enterprise, e.g., there can structure pertaining to legal entity, controlling, sales etc.
- Every transactions carried out by the enterprise will have a reference to at least one enterprise structure data element
- Do not change unless the organisation itself undergoes a change and therefore, enterprise structure is considered as permanent or non-changeable data



Data – Enterprise Structure



Data - Configuration

- IMG (Implementation Guide) contains thousands of tasks, organised by functional area. Transaction code SPRO
- SAP Consultant or Business Analyst configure the SAP system in a way that it supports the company business processes
- For example
  - Setting up of company, plant, warehouse, distribution channel
  - Defining business processes for export, import, production
  - Setting up screen making field mandatory or optional
  - Rules for determining certain business areas, segment

Master Data

- Data that is created centrally, and is valid for all applications. It remains constant over time but we need to update it on a regular basis. For example: Vendor is a type of master data that is used for creating purchase orders or contracts.
- Examples of Master Data:
  - Customer
  - Vendor
  - Material
  - BOM, Routing
  - Cost Centre
  - General Ledger
  - Asset

Transaction Data

- Transaction data are entered through SAP transaction code either manually or automatically by other devices or sources
- Each instance of a transaction data will be different from another in some way or the other
- Transactions are referenced to one or more Enterprise Structure/ Configuration data and deploy one or more master data element(s)
- Generally, transactions are represented by a document
- For example, invoice posting for goods received from a supplier or payment received from a customer

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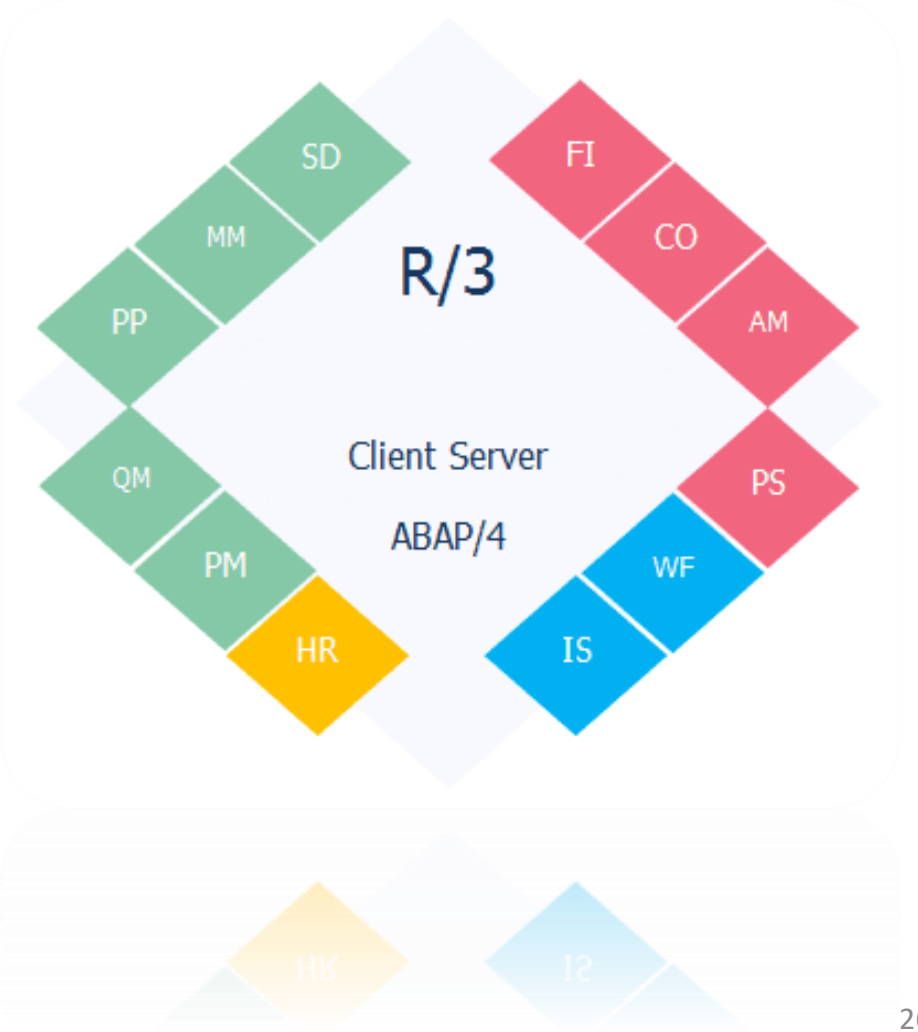
Integrated Modules

- SAP has modular structure with tight integration between modules
- All transactions across all modules with monetary impact post automatically into finance through automatic account assignment
- Data from SD, MM, PP, PM, PS can post to CO to determine profitability of operations



Understanding SAP - Bird's Eye View

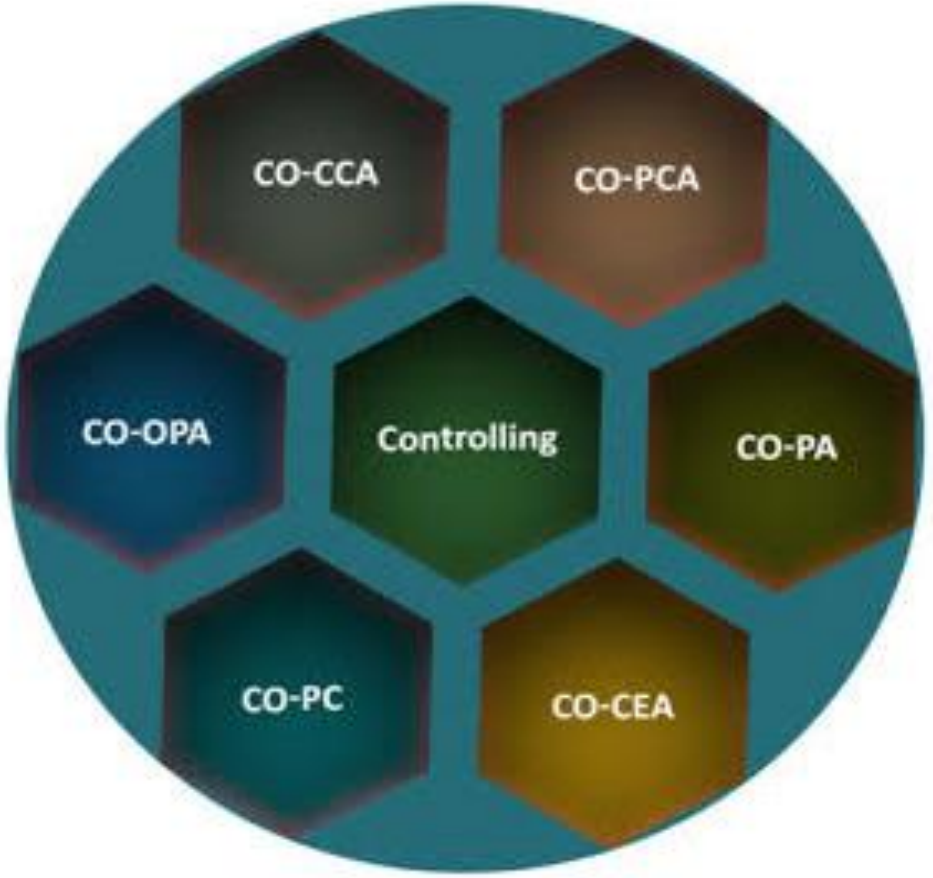
Accounting	Logistics	Human Resources
Financial Accounting (FI)	Materials Mgt. (MM)	Personnel Management
Controlling (CO)	Sales & Distribution (SD)	Time Management
Project System	Production (PP)	Payroll
Strategic Enterprise Mgt.	Logistics Execution	Training Management
Investment Management	Plant Maintenance	Travel Management
Real Estate Management	Quality Management	Envir, Health & Safety

In this presentation, we will discuss FI, CO , MM, SD and PP modules in detail

Accounting

Finance

Controlling



Finance (FI)

- General Ledger (FI-GL)
  - Has all accounts used for preparing financial statement
  - New GL meets different legal and reporting needs (US GAAP, Local)
  - It can be posted directly or can be integrated with other modules for sales, material and production postings
  - It has reconciliation accounts for Payable & Receivable for auto-reconciliation
- Accounts Payable (FI-AP)
  - Sub-module that captures all transactions with vendors
  - Reconciliation accounts in GL are updated with every posting in real time
  - Transactions include invoice posting, credit memo posting, down payments, invoice payment, automatic payment program and executing vendor reports

Finance (FI)

- Accounts Receivable (FI-AR)
  - Sub-module that captures all transactions with customers
  - Reconciliation accounts in GL are updated with every posting in real time
  - Transactions include invoice posting, credit memo posting, down payments, invoice payment, dunning program and executing customer reports
- Asset Accounting (FI-AA)
  - Sub-module that manages all transactions relating to assets of an entity
  - Reconciliation accounts in GL are updated with every posting in real time
  - Transactions include asset acquisition, asset retirement, asset sale, asset transfer, asset revaluation and asset depreciation
  - Different legal & reporting needs can be met like US GAAP, Companies Act, Income Tax Act, Other requirements

Controlling (CO)

- Controlling provides with information for management decision-making, showing where costs have been incurred in the organization and for what purpose
- Provides the basis for associating the cost of sales with the revenue earned
- The main task of controlling is planning. Variances are determined by comparing actual data with plan data which enable control over business flows
- Income statements such as, contribution margin accounting, are used to control the cost efficiency of individual areas of an organization, as well as the entire organization

Controlling (CO)

Cost Element Accounting (CO-OM-CEL)

- Provides with an overview of the costs and revenues that occur in an organization.

Cost Center Accounting (CO-OM-CCA)

- Useful for a source-related assignment of overhead costs to the location in which they occurred.

Internal Orders (CO-OM-OPA)

- Internal orders are used to collect and control according to the job that incurred them.

Controlling (CO)

Product Cost Controlling (CO-PC)

- Product Cost Controlling calculates the costs that occur during manufacture of a product, or provision of a service.

Profitability Analysis (CO-PA)

- Profitability Analysis analyzes the profit or loss by individual market segments and provides a basis for decision-making, for example, for price determination, customer selection, etc.

Profit Center Accounting (EC-PCA)

- Profit Center Accounting evaluates the profit or loss of individual, independent areas within an organization. These areas are responsible for their costs and revenues.

SAP Material Management (MM)

Purchasing

- MRP creates procurement proposal & gets converted into PR
- PR gets converted to PO followed by GR and invoice verification

Inventory Management

- Movement types are used for goods issue, goods receipt etc.

Valuation

- Various material valuation methods for Balance Sheet

Material Requirements Planning

- MRP is required to procure or produce the required quantities on time

Material Master

- Important master data used in MM, PP, SD & CO

SAP Sales & Distribution (SD)

Master Data

- Business Partner, Products, Conditions, Sales doc, Billing doc

Sales

- Inquiry, quotation, Order, Scheduling Agreement, Contract

Shipping & Transportation

- Picking, Pack, Loading, Shipment, PGI, POD, Billing

Billing

- Billing Doc, Invoice List, Rebate, Revenue Recognition,

Credit Management

- Managing the credit limits of the customers. It can be figured in two different ways - simple credit check and automatic credit check

SAP Production Planning (PP)

Master Data

- Material, BOM, Routing, Work Center

Production Planning

- Based on Sales plan, PR and planned orders are created
- Planned orders converted to actual Production Order & are scheduled

Demand Management

- Make to Stock and Make to Order scenarios

Material Requirement Planning

- Net requirement is calculated and generate Planned order or PR

Production Order

- Specified what material needs to be produced and in what quantity
- It had BOM and routing to determine RM and activities needed

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Business Processes

- Tight integration in a modular structure helps build business processes connecting entire enterprise
- Key processes
  - Procure to Pay (P2P)
  - Order to Cash (O2C)
  - Plan to Produce (P2P)
  - Record to Report (R2R)

Procure to Pay (P2P)

SAP Procure to Pay process is required when we need to purchase materials/services from an external vendor for our company. This process includes all the business tasks starting from a purchase requisition (PR) and finishing with payment to the vendor.

- Purchase Requisition (ME51N)
- Request for Quotation (ME41)
- Open Contract (ME31K)
- Purchase Order (ME21N)
- Contract Release Order (ME21N)
- Goods Receipt (MIGO)
- Service Entry (ML81N)
- Invoice Processing (MIRO)
- Payment (F110)

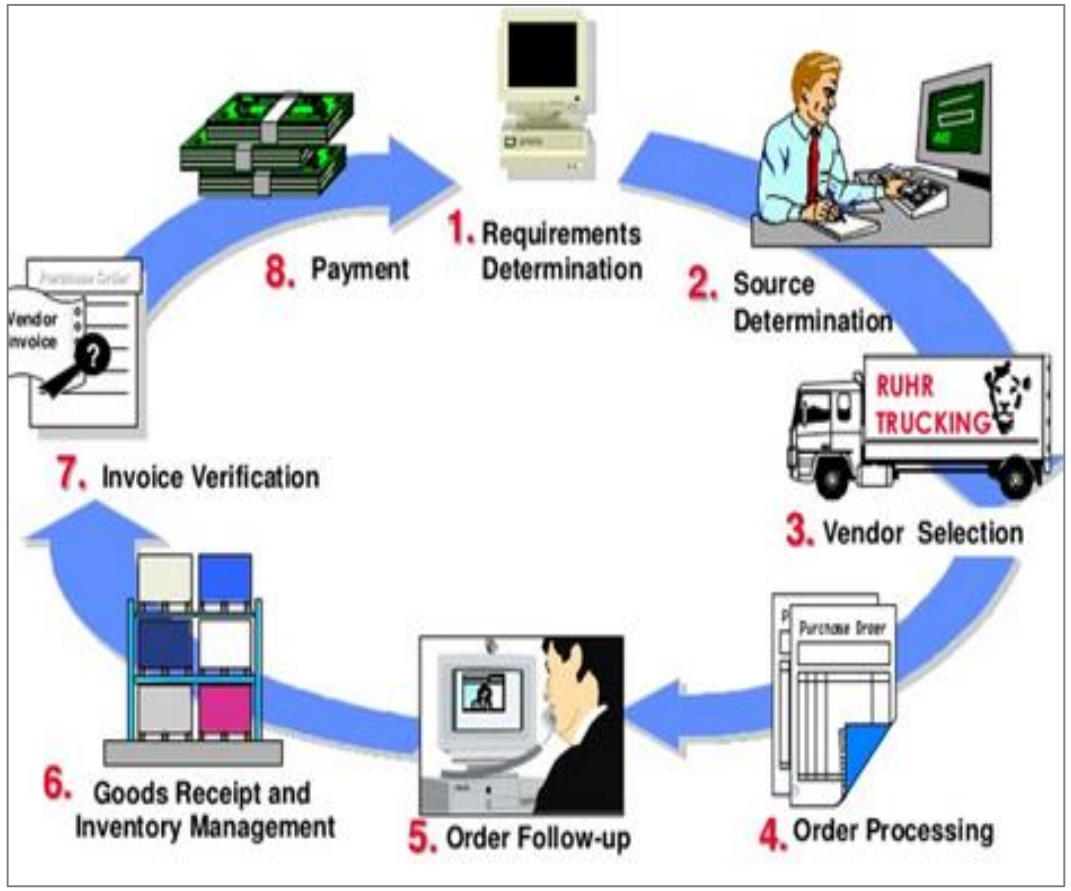
Procure to Pay (P2P) – FI Integration

No Accounting

Payment Run
Dr: Vendor
Cr: Bank

MIRO
Dr: GR/IR
Cr: Vendor

MIGO
Dr: Material or Expense or AUC
Cr: GR/IR



No Accounting

MK01/ FK01
Create
Vendor
Master

MR51N/ ME21N
No Accounting

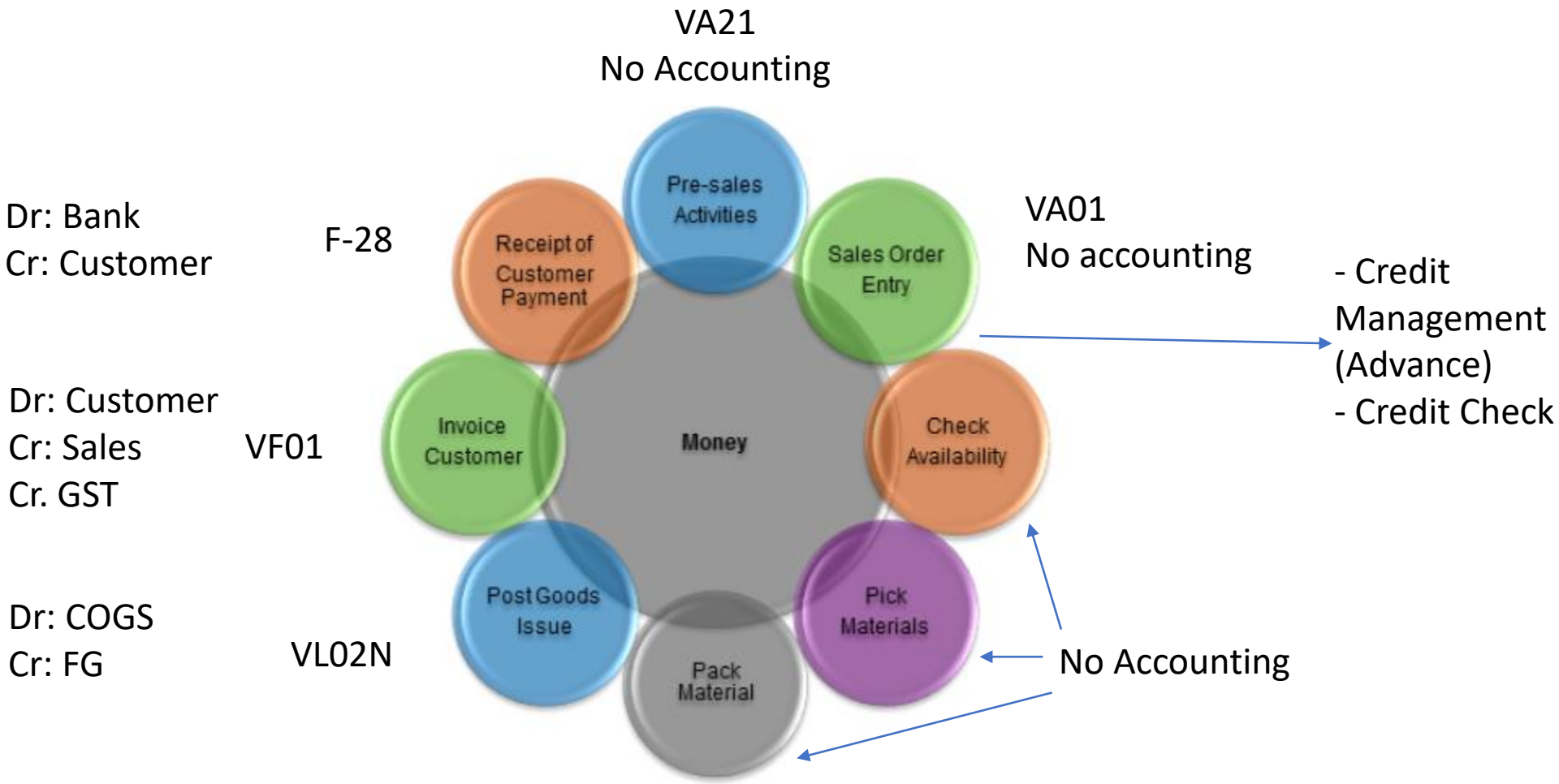
No Accounting

Order to Cash(O2C)

SAP Order to Cash process is required when we need to sell materials/services to an external customer for our company. This process includes all the business tasks starting from an inquiry, sales order, dispatch, billing and finishing with payment from the customer.

- Inquiry (VA11)
- Quotation (VA21)
- Contract (VA41)
- Sales Order (VA01)
- Picking & Confirmation
- Packing (VL02N)
- Transport & Shipment (VT01N)
- Post Goods Issue (VL02N)
- Billing (VF01)
- Payment (F110)

Order to Cash (O2C) – FI Integration



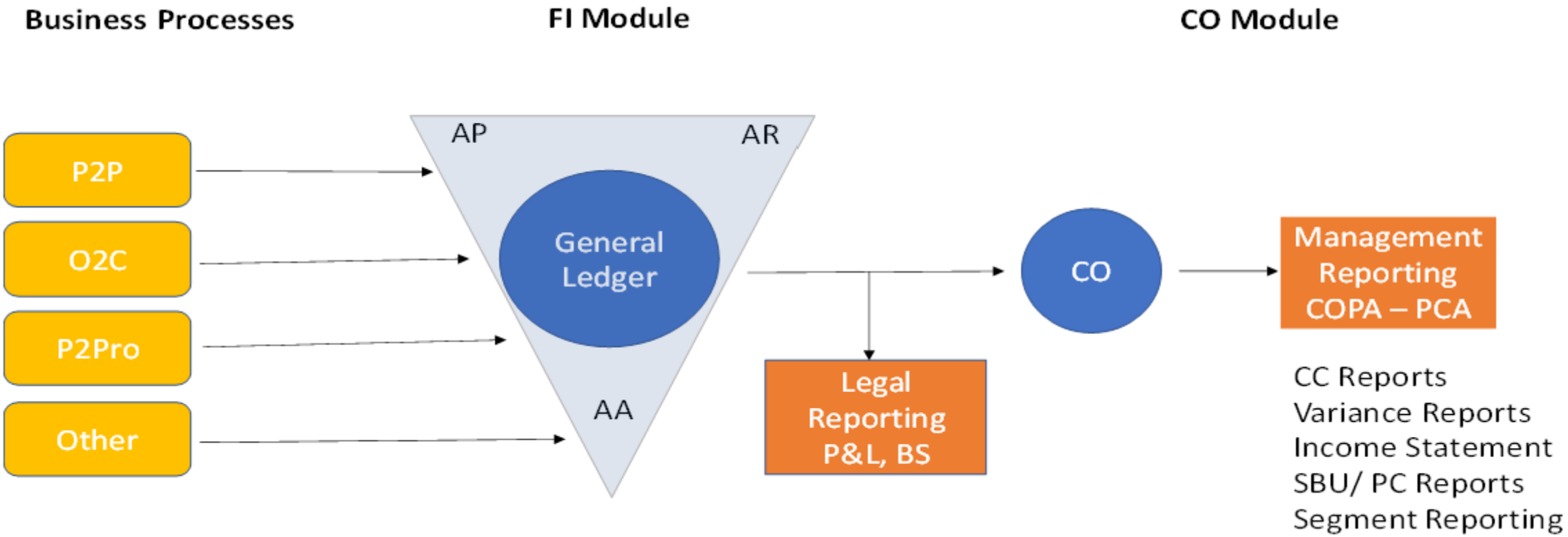
Plan to Produce (P2P)

SAP Plan to Produce process is required when we are producing goods to meet order from the customer or to stock inventory to meet future requirements from our customer. It involves planning of material based on anticipated demand, ordering of material and converting raw material into finished goods

- Planning Independent Req. (MD61)
- MPS/ MRP Run (MD41/ MD02)
- Production Planning (CO01)
- Receive Raw Material (MIGO)
- Production Confirmation (CO11N)
- Goods Receipt (MIGO)
- Production Order Closed (CO02)
- Variance Calculation (KKS1/ S2)
- Settlement (KO88)

Plan to Produce (P2P)

Record to Report (R2R)



These business processes may not be isolated but depending on business scenario interact/ integrates

This is a simplistic view of data flow in SAP

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DesaijayeshP

SAP4Me

Thanks!