NAVSUP/NAVAIR SMART ERP Pilot Brief

July 31, 2001

Agenda

- Why is the Navy implementing ERP
- What is ERP
- What is SAP
- How is SMART implementing SAP
- Questions

Revolution in Business Affairs (RBA) Working Group Charter

- ✓ **Assess current initiatives**
- ✓ **Accelerate use of commercial practices**
- ✓ **Develop Strategic Plan to help DOD decision makers**
- ✓ **Establish a plan and architecture to implement reforms**

Background…Why ERP?

Joint Vision 2010

- ➔ **Increased Responsiveness**
- ➔ **Increased Visibility**
- ➔ **Accessibility of Logistics Resources**
- ➔ **Enabled by Innovative Info Technology**

Sep 98

Commercial Business Practices Working Group

Nov 98

Offsite Headed by AIR 00

Recommended Exploring ERP as Solution for Navy to RBA Board of Directors

Dec 98

AIR 00 Appointed as Head of Commercial Business Practices Executive Steering Group -- Determine Viability/Capability of ERP systems

DoN Revolution In Business Affairs (RBA) Goal,
"*...be as agile and technologically advanced in business as we are in war fighting.*"

Navy's ERP Pilots: Answering the Call

Joint Vision 2010

"The nature of modern warfare demands that we fight as a joint team. It was important yesterday, it is essential today and it will be even more imperative tomorrow." - John M. Shalikashvili, Chairman of the Joint Chiefs of Staff

The Department of the Navy Revolution in Business Affairs (RBA)

"The Department's business vision is to efficiently and effectively design, acquire and support the world's premier operational naval forces. Our vision must ensure that Department of Navy business practices typify those of the best public and commercial enterprises."

Commercial Best Practices (CBP) Working Group

The CBP Working Group, one of RBA's initiatives, is exploring the use of Enterprise Resource Planning (ERP) as a means for achieving revolutionary change in DoN Business Processes. The working group is conducting several pilots to prove the effectiveness of ERP in facilitating process re-engineering prior to broader implementation.

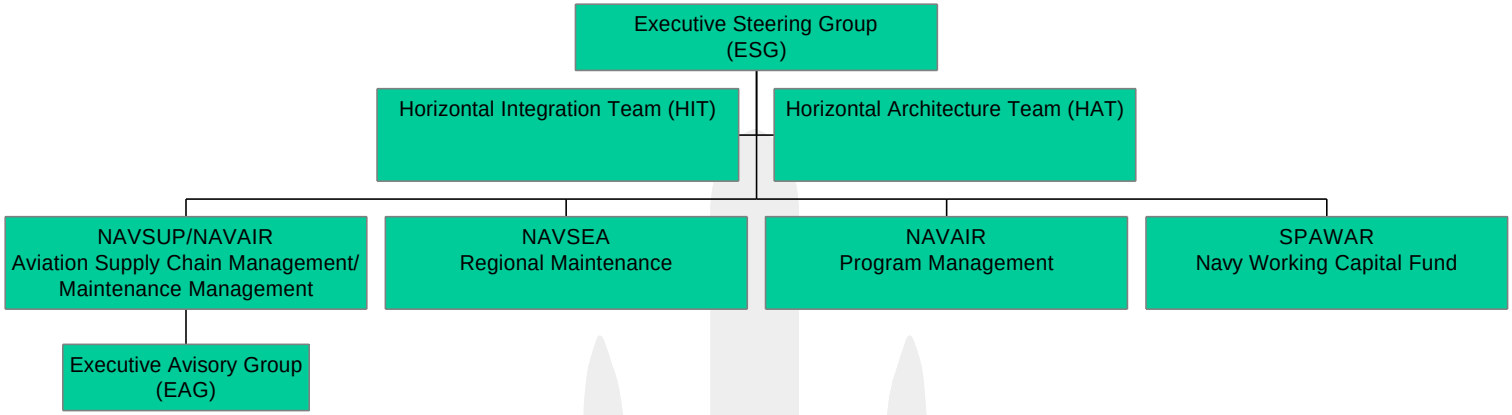
Aviation Supply Chain Management/ Maintenance Management (NAVAIR/NAVSUP)	Program Management (NAVAIR)	Regional Maintenance (NAVSEA)	Navy Working Capital Fund (SPAWAR)

Four Active Pilots

Marine Logistics	Shore Station Management (NAVFAC)

Two Inactive Pilots

A Navy-wide View…the enterprise



- All 4 Pilots have selected SAP R/3 for the ERP backbone
- All 4 pilots will be using the Accelerated SAP or ASAP methodology
- Timelines for the 4 pilots are not in parallel…
- Systems Integrators include:
  - EDS/DC …. NAVSUP/NAVAIR
  - PwC/CSC….SPAWAR
  - KPMG/IBM…NAVAIR Program Management
  - KPMG/IBM/SAIC/Lockheed Martin/DSIC…NAVSEA

Agenda

- Why is the Navy implementing ERP
- What is ERP
- What is SAP
- How is SMART implementing SAP
- Questions

ERP Defined

Enterprise Resource Planning (ERP)

What it is

- Commercially available packaged business software
- Seamlessly integrated business processes
- Common transaction data
- No interfaces between functional areas

What is does

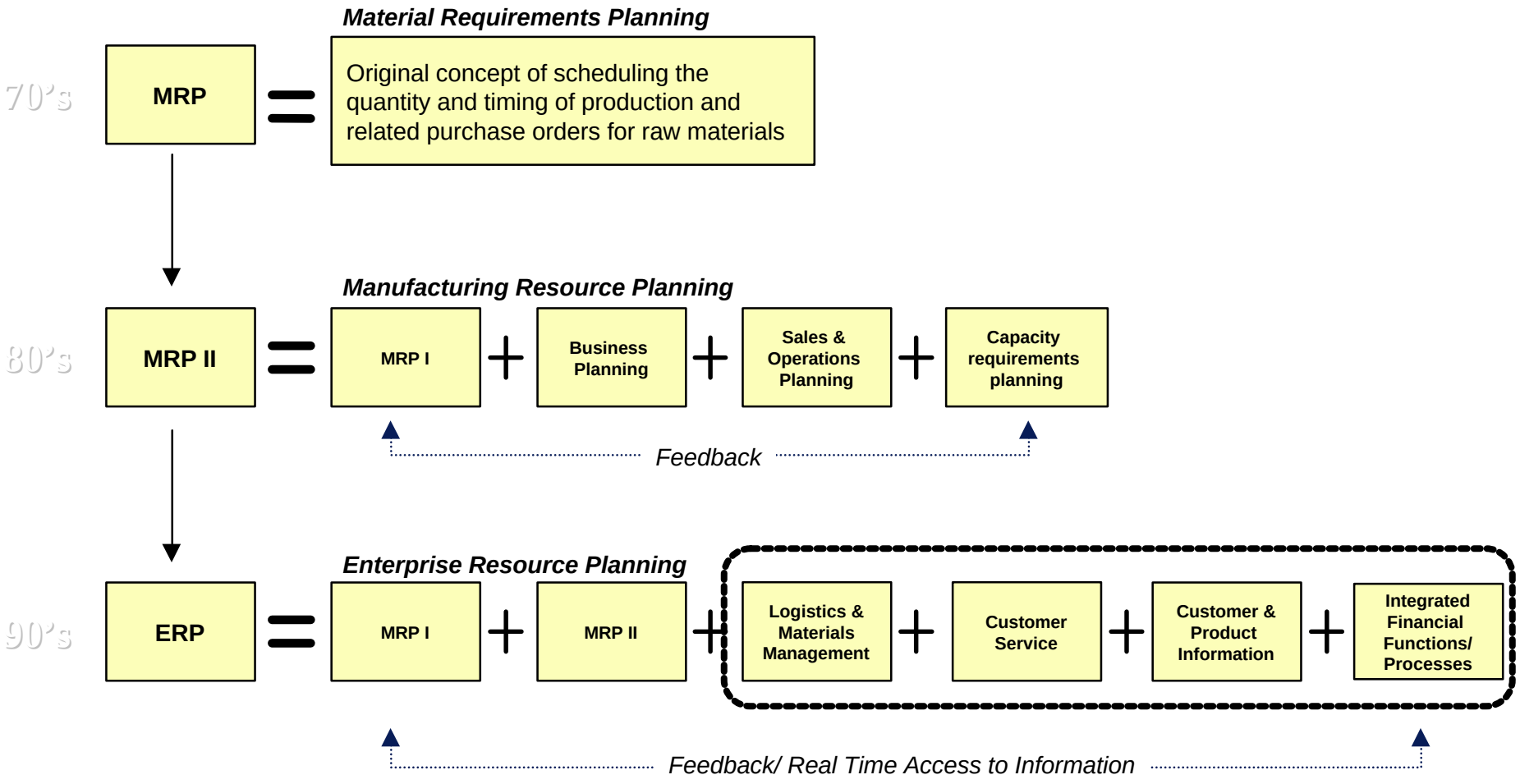
- Transform the majority of its business processes
- Share common data and practices across the entire enterprise
- Produce and access information in a real-time environment
- Have consistent and timely information for decision making and performance measurement

ERP is less about technology than processes and people.

The concept of ERP is often misunderstood

It is . . .	***It is NOT . . .***
An enterprise-wide process	***A process for manufacturing***
Integrated operations planning	***A tactical, shop-floor scheduler***
Dependent upon technology to create "one" information source	***A system that operates independent of technology***
Driven by business and customer requirements and plans	***Distinct from business and sales planning***
Dependent on human knowledge	***Automated intelligence***
Owned by multiple functions	***Managed by one group***
A proven success	***An unproven process***

ERP evolves from the MRP systems of the 1970's



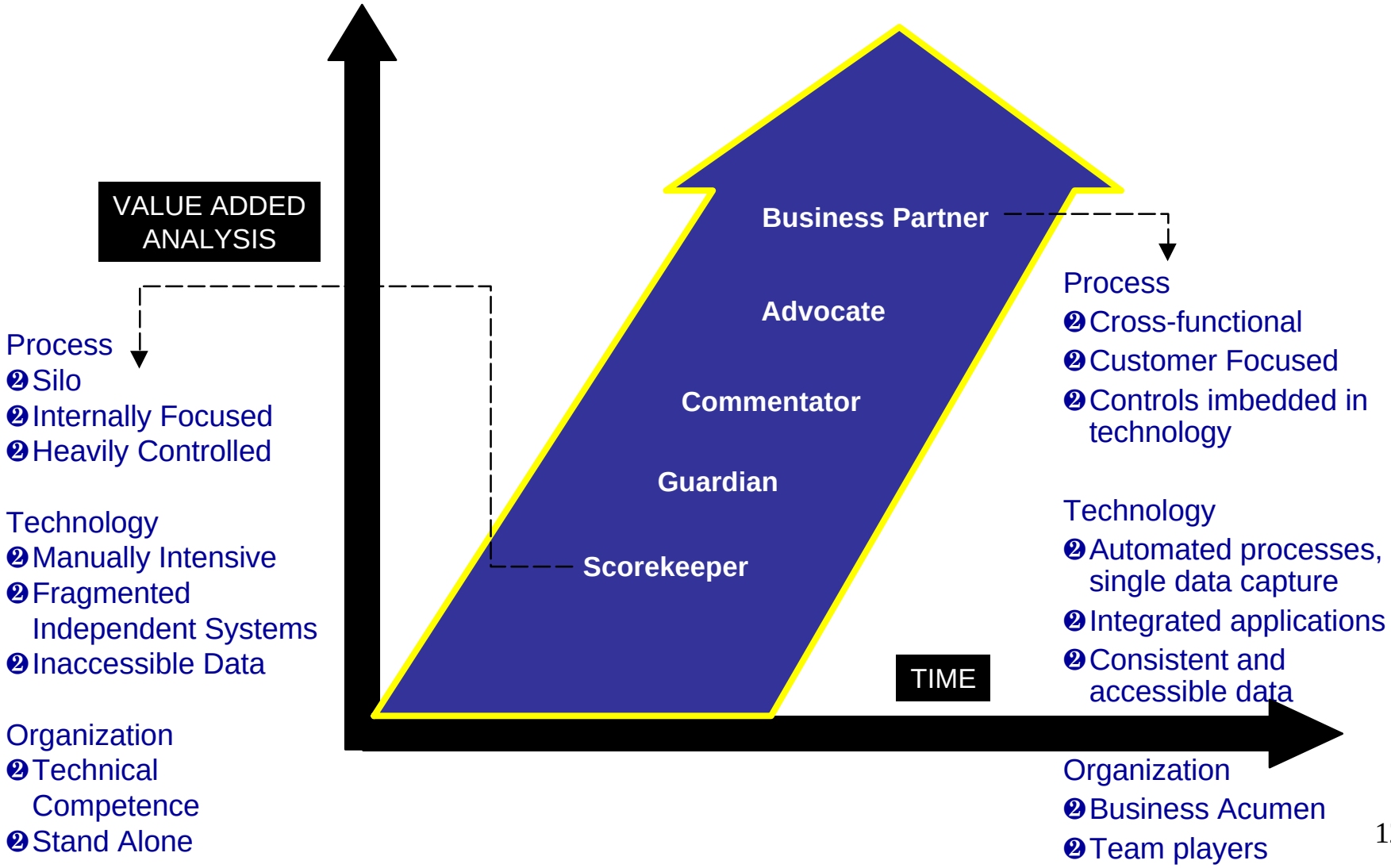
What processes does ERP support?

Revolutionary change in business processes for dramatic improvements

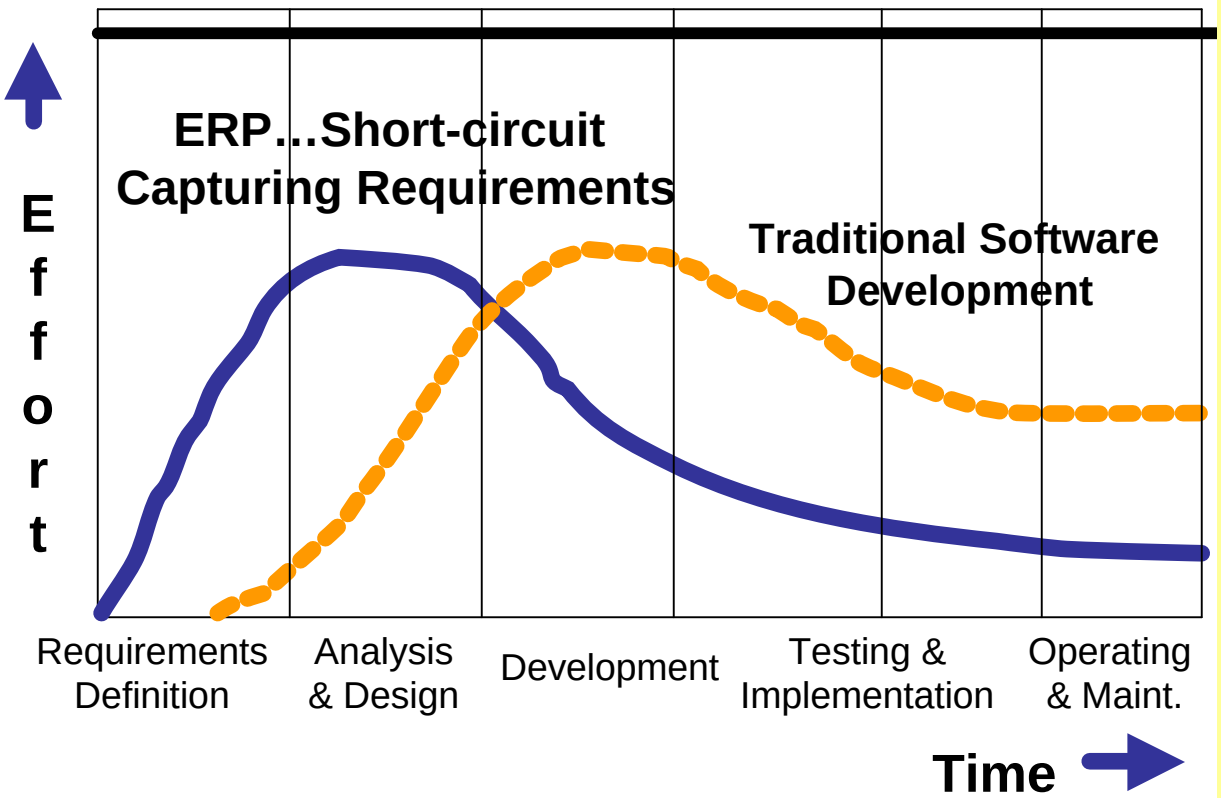
Integration of business processes to optimize functions across enterprise (e.g., supply chain, finance, manufacturing/ maintenance, HR etc.)

DON Business Goal #3: Decision Support Systems...Deliver recognizable value for every dollar spent.

ERP allows organizations to spend more time managing the business



Background…What is ERP?



<u>Comprehensiveness and Flexibility</u>...At Heart of Systems Reside Computer Aided System Engineering(CASE) Like Repository of All Details of Pre-developed Applications...

ERP Distinguishing Characteristics:

Transforms Enterprise into Info Driven Enterprise

Fundamentally Perceives Enterprise as Global

Reflects/Mimics Integrated Nature of Enterprise

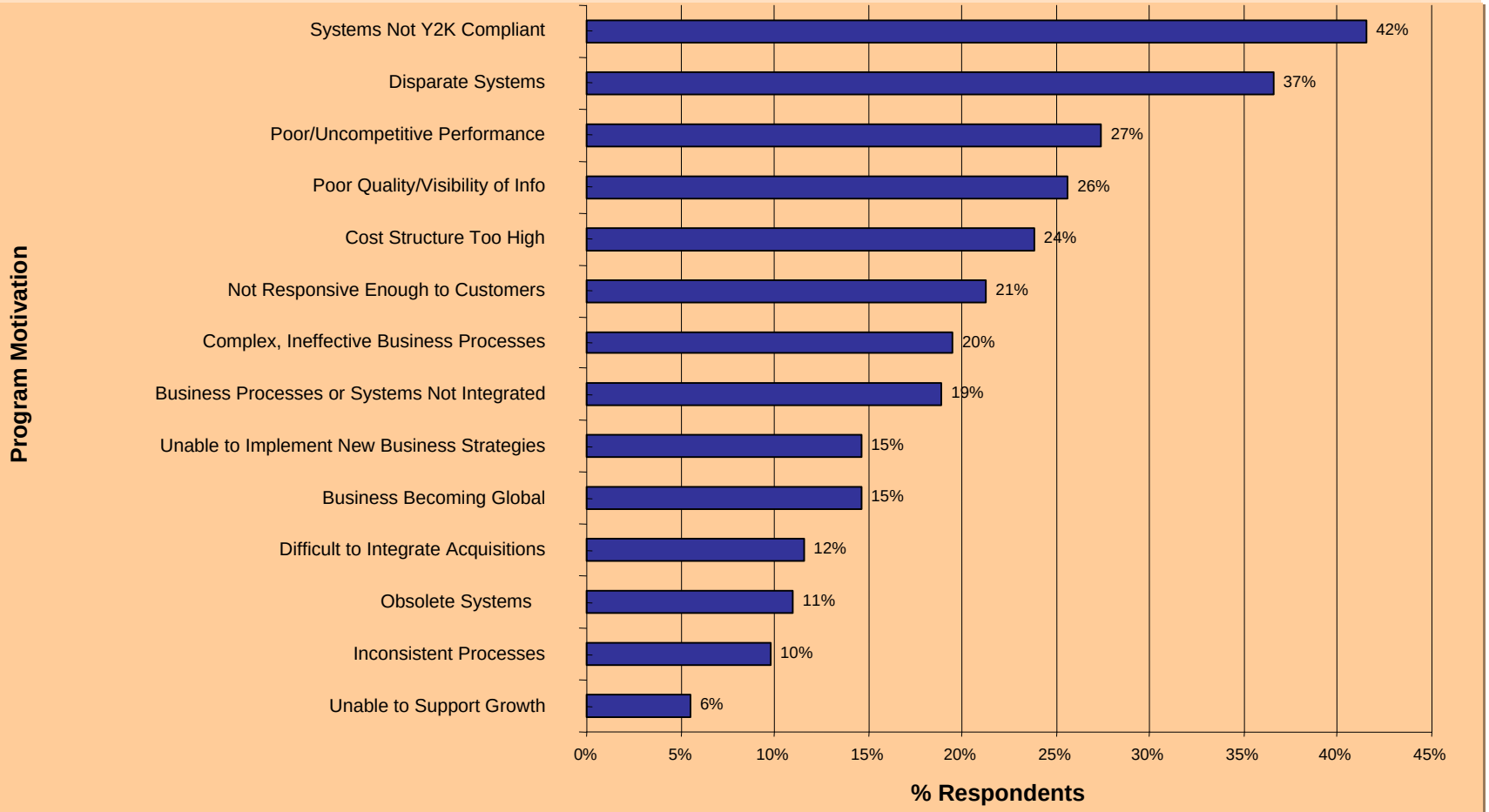
Fundamentally Models Process Enables Real-time Enterprise

Elevates IT Strategy as Part of Business Strategy

Mass User-oriented Application Environment

***Source: Implementing SAP R/3, The Guide for Business and Technology Managers**

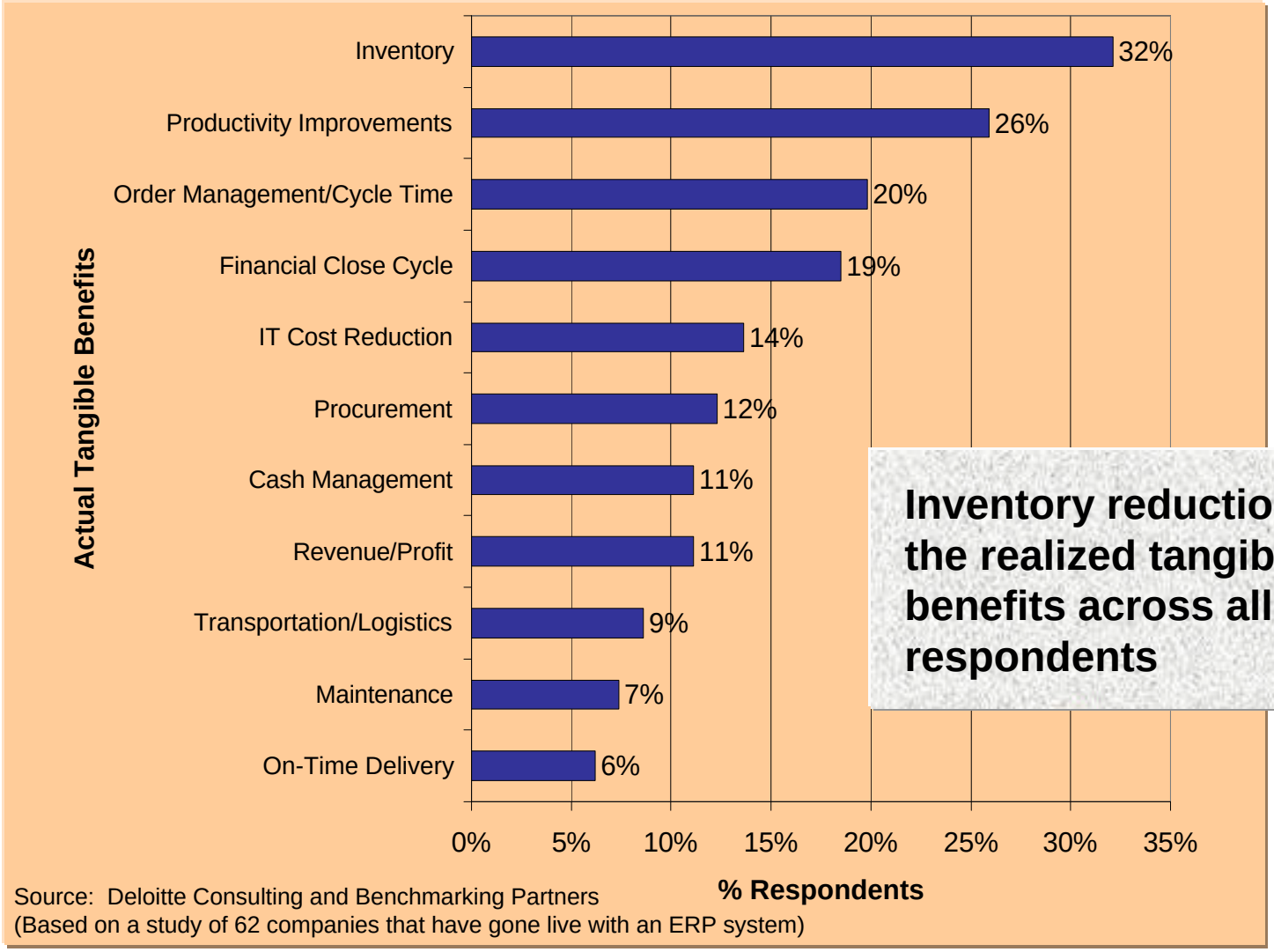
Both Technology and Operational Problems Have Motivated Companies to Undertake ERP



Note: Based on multiple answers per respondent

Source: Deloitte Consulting and Benchmarking Partners
(Based on a study of 62 companies that have gone live with an ERP system)

Tangible Benefits of ERP

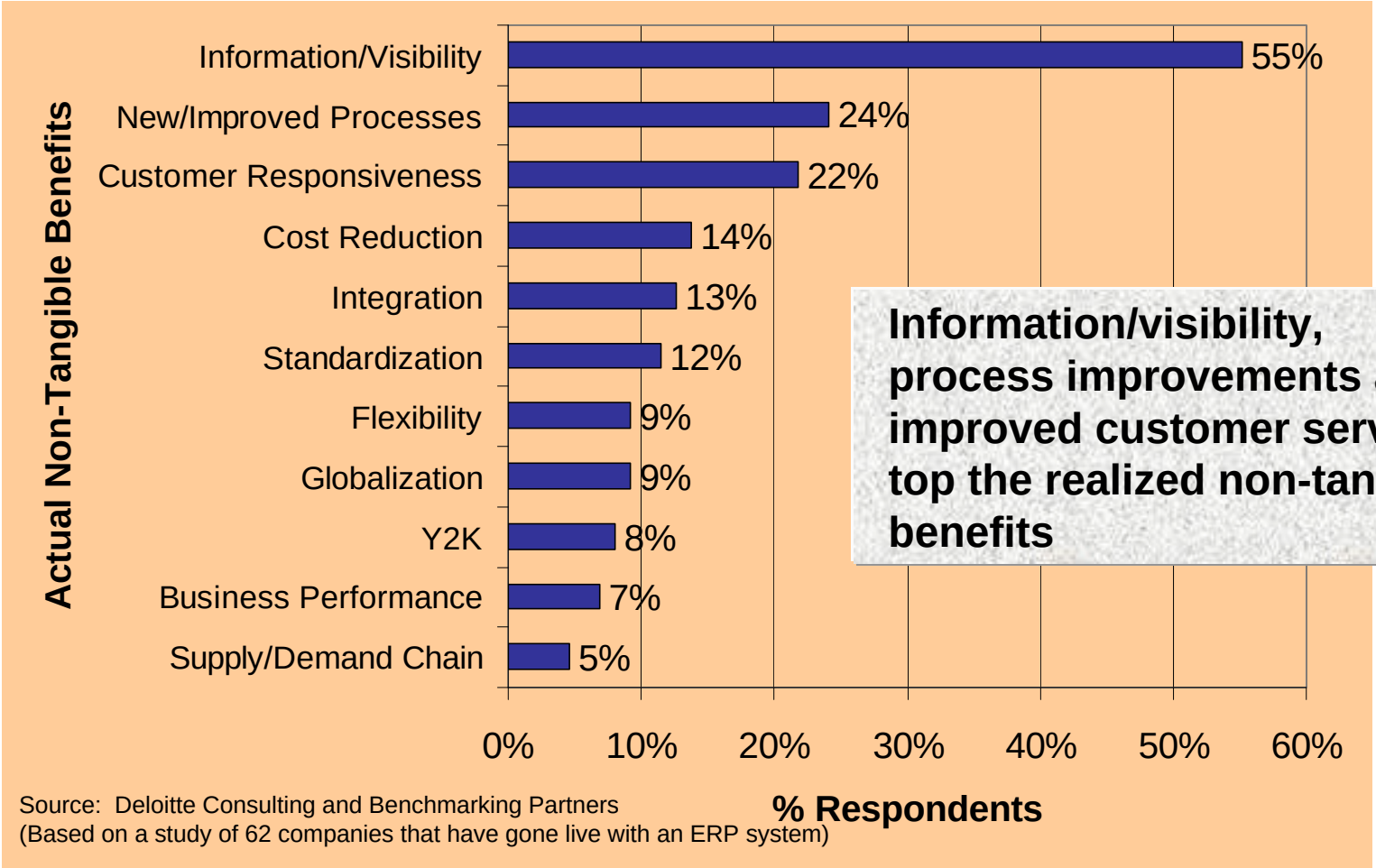


Inventory reductions top the realized tangible benefits across all survey respondents

Source: Deloitte Consulting and Benchmarking Partners
(Based on a study of 62 companies that have gone live with an ERP system)

Note: Rounded percentages; Based on multiple answers per respondent

Non-tangible Benefits of ERP



Information/visibility, process improvements and improved customer service top the realized non-tangible benefits

Note: Rounded percentages; Based on multiple answers per respondent

Agenda

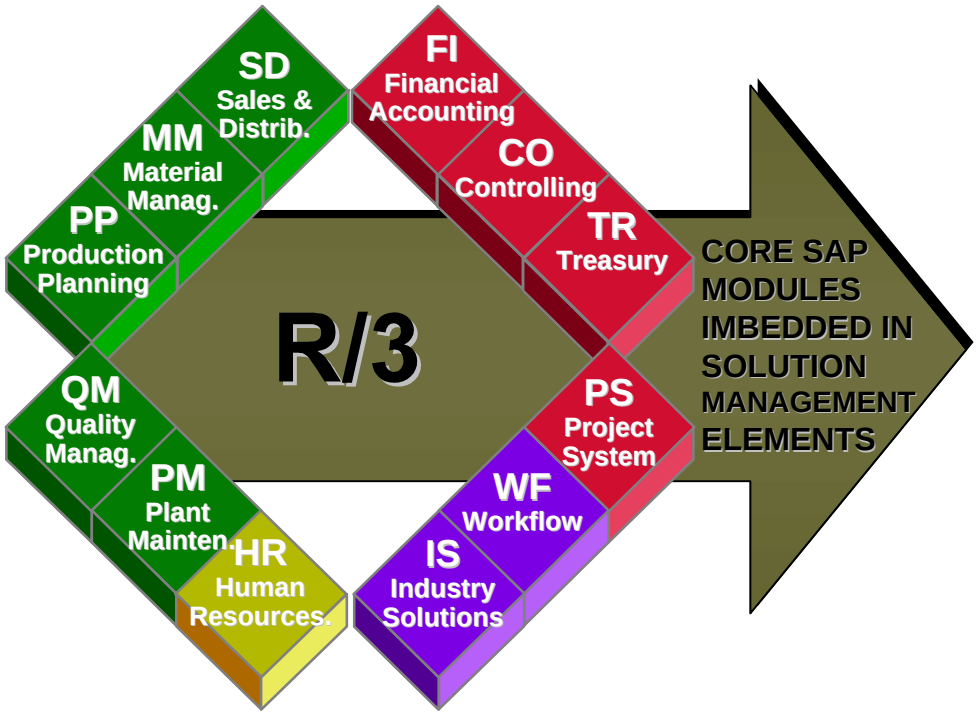
- Why is the Navy implementing ERP
- What is ERP
- What is SAP
- How is SMART implementing SAP
- Questions

System, Applications for data Processing (SAP)

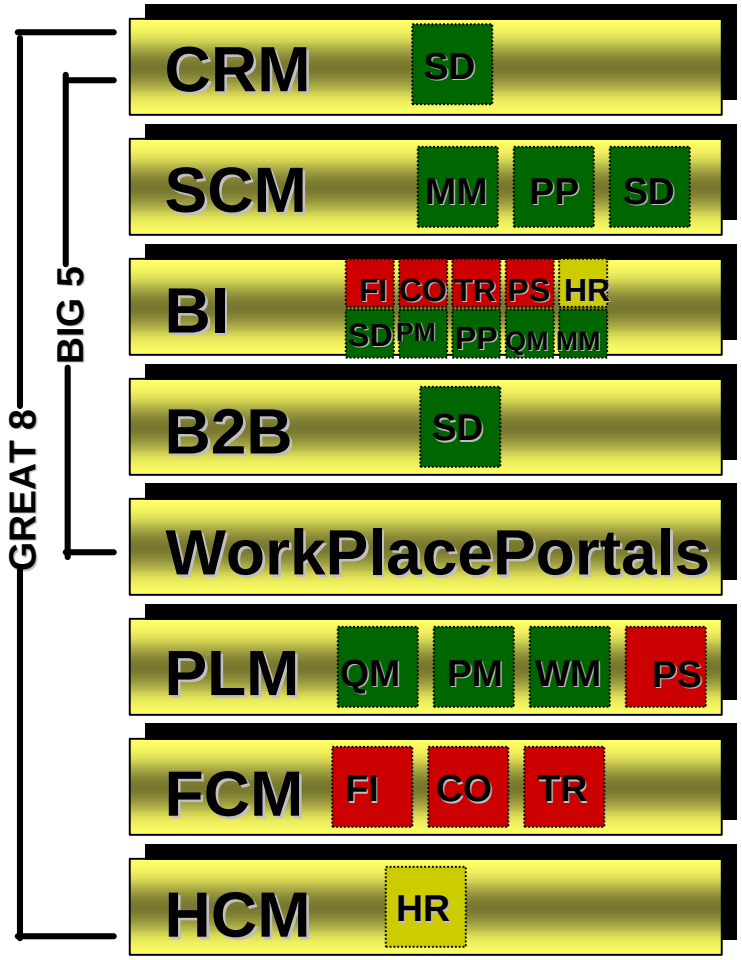
- 3rd largest software vendor in the world
- Market leader with 29% market share in Enterprise Business Solutions
- 29 years of business experience
- 10 million users
- 36,000 installations in 120 countries
  - 13,500 organizations
- 23,700 employees
- Worldwide presence in over 50 countries

SAP modules support business processes

Pre mySAP.com

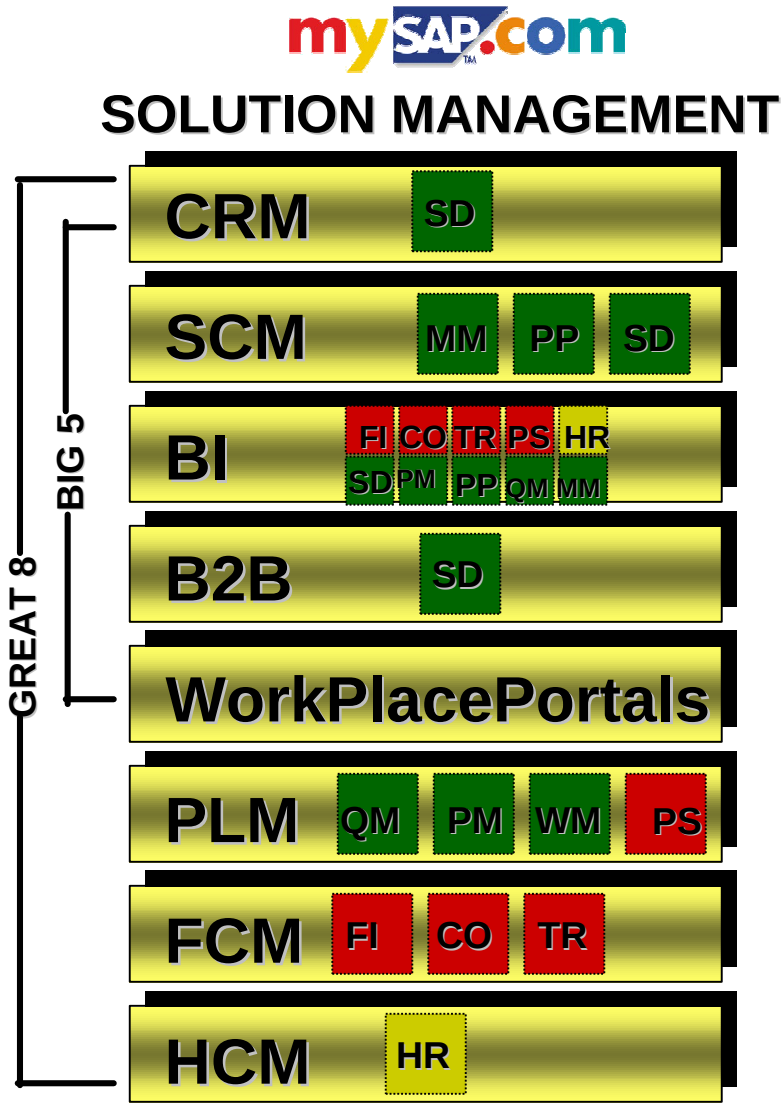


mySAP.com SOLUTION MANAGEMENT

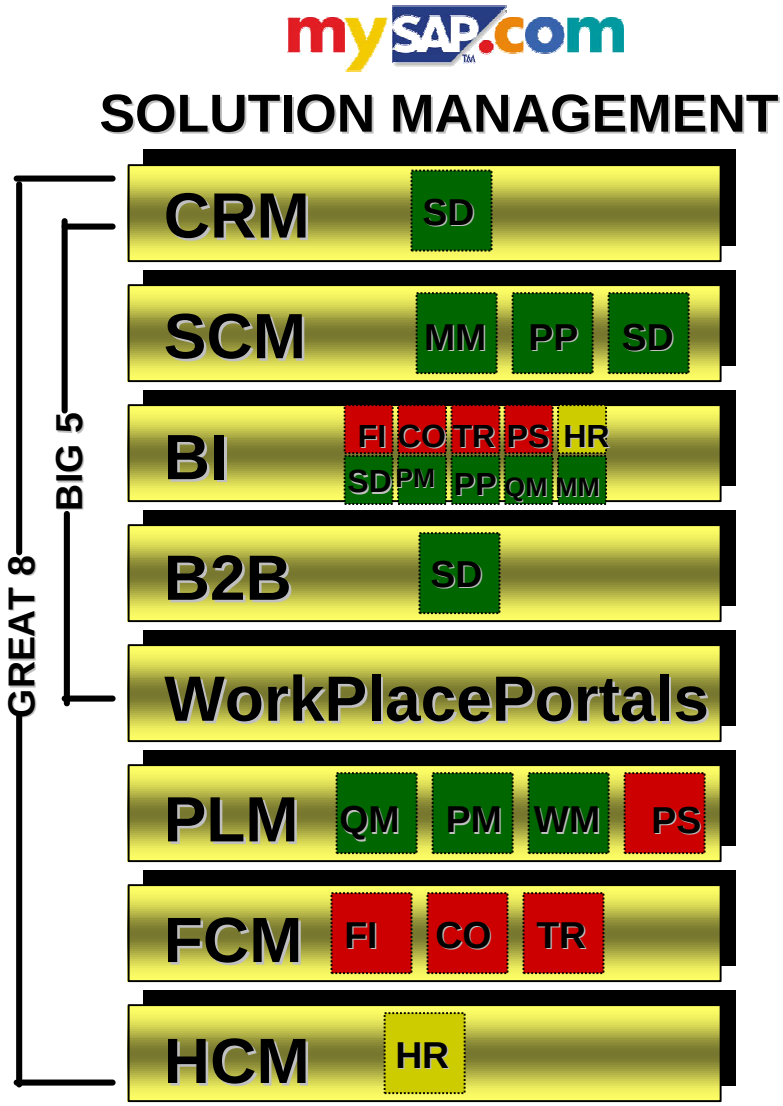


SAP Modules are imbedded into mySAP.com Solution Management . . .

- Customer Relationship Management
- Supply Chain Management
- Business Intelligence
- B2B / MarketPlace
- Portals / WorkPlace
- Product Lifecycle Management
- Financial Capital Management
- Human Capital Management



Module names represent functional processes



- SD – Sales & Distribution
- MM – Materials Management
- PP – Production Planning
- FI – Finance Accounting
- CO – Control Management
- TR - Treasury
- AM – Asset Management
- HR – Human Resources
- QM – Quality Management
- PM – Plant Maintenance
- WM – Warehouse Management
- PS – Project Systems

SMART is using a subset of mySAP.com

MM — **Supports the procurement and inventory function occurring in day-to-day business operations**

PM — **Supports Maintenance planning and processing**

PP — **Used to plan and control inventory and production activities**

SD — **Supports order fulfillment, delivery, and billing**

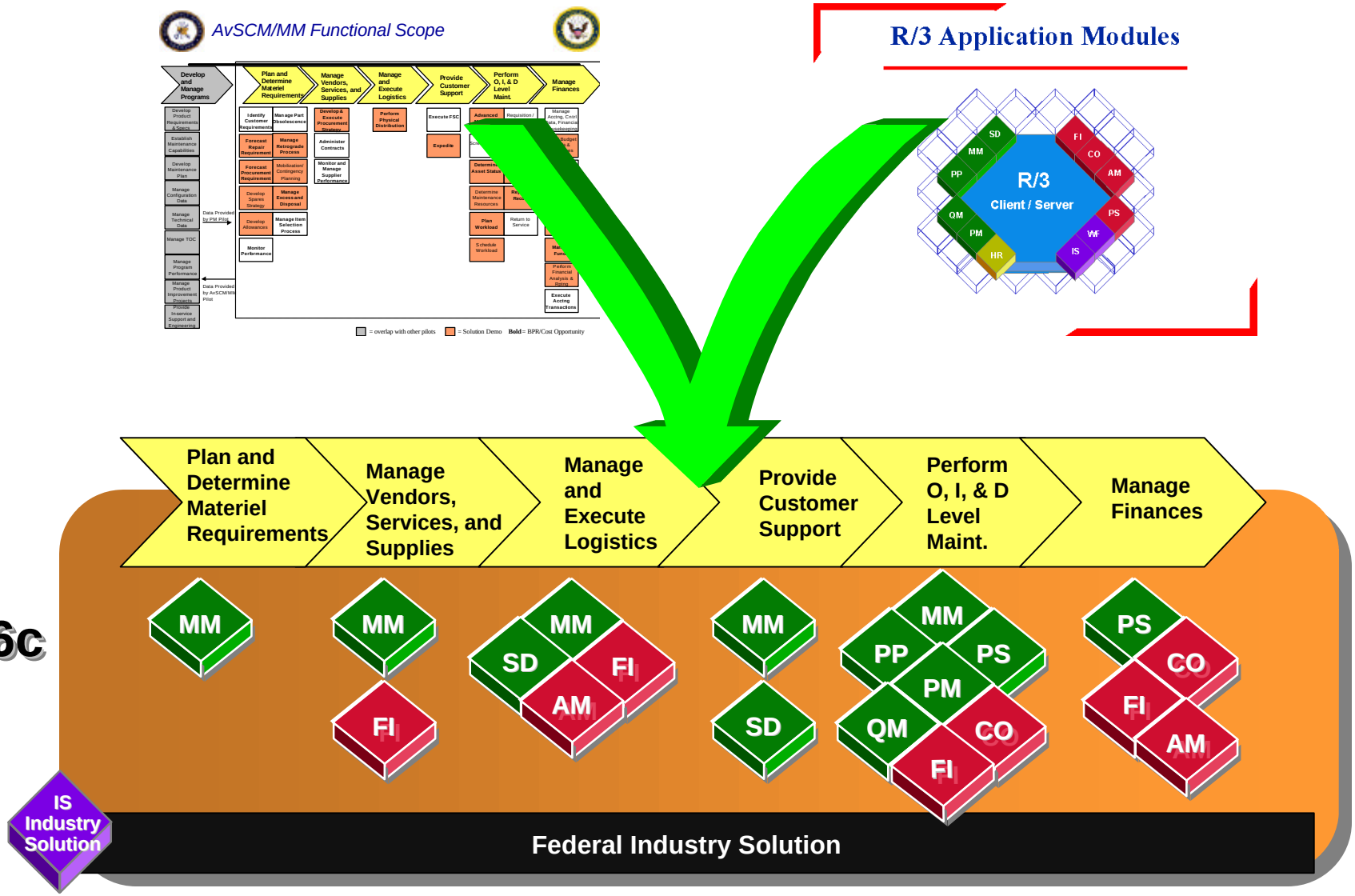
FI — **Supports statutory booking of accounting postings**

CO — **Represents Management view of costs and revenues**

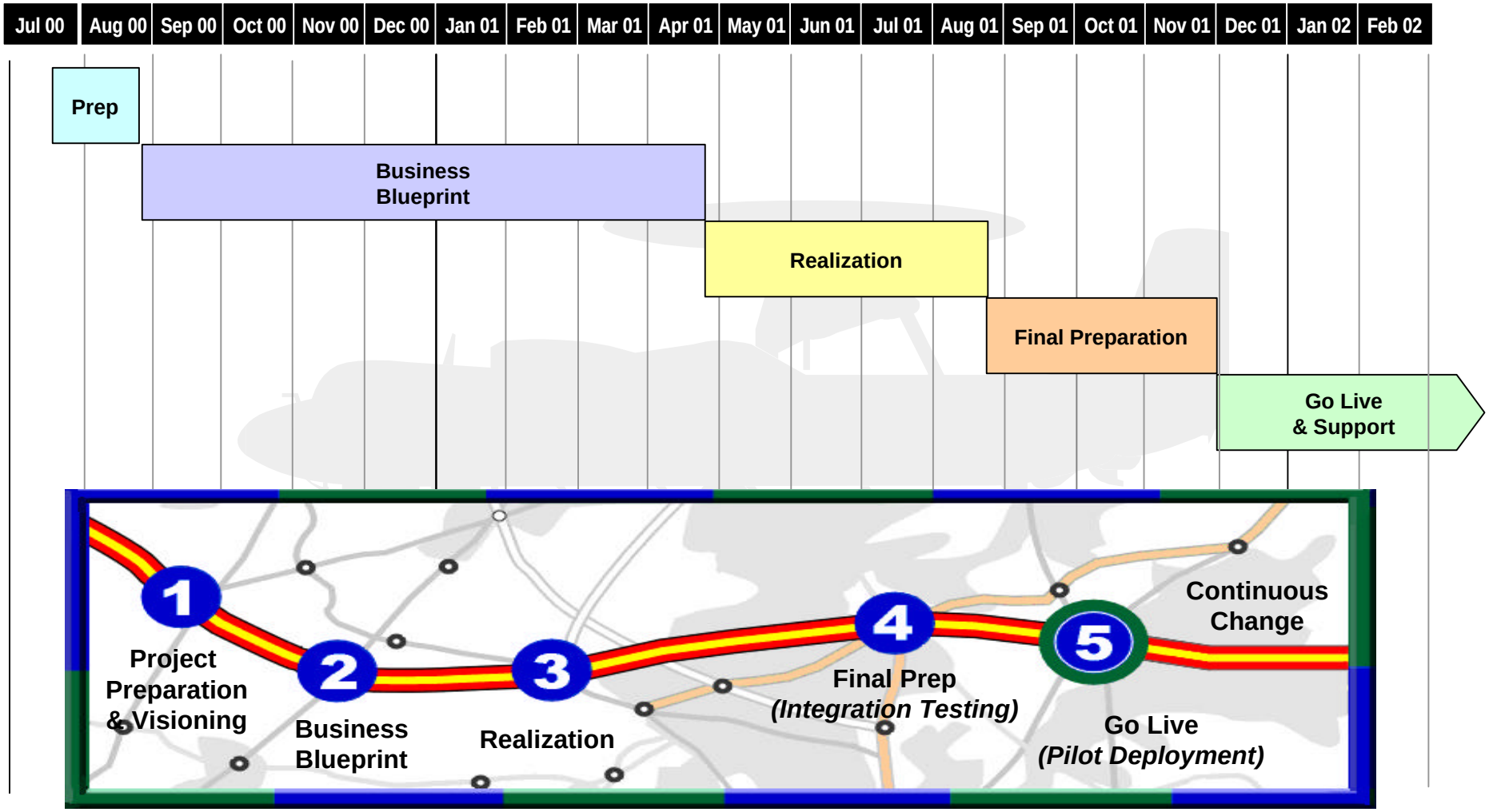
Agenda

- Why is the Navy implementing ERP
- What is ERP
- What is SAP
- How is SMART implementing SAP
- Questions

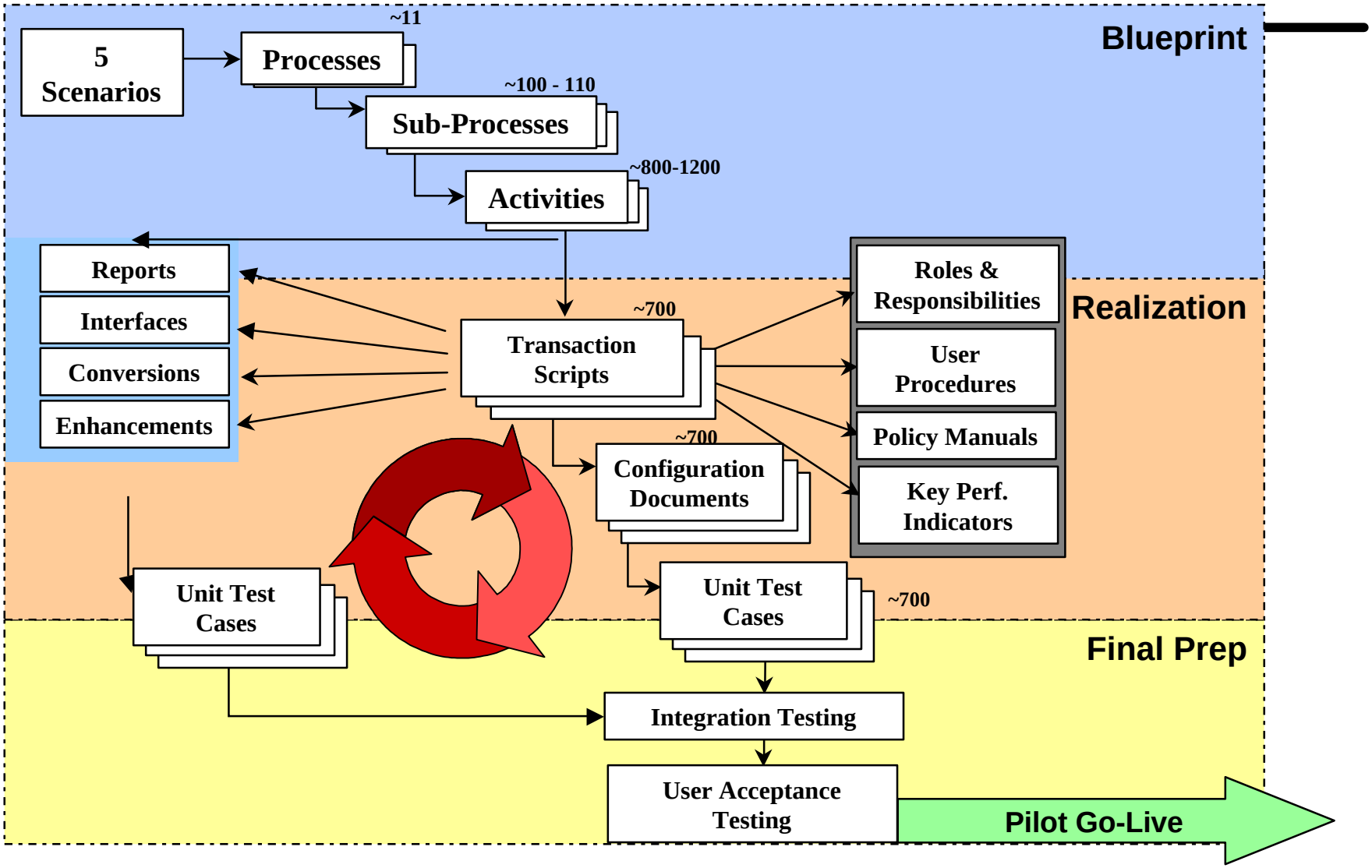
SAP R/3 Modules support Phase II business processes



SMART is using the ASAP Methodology and Roadmap to structure work activities



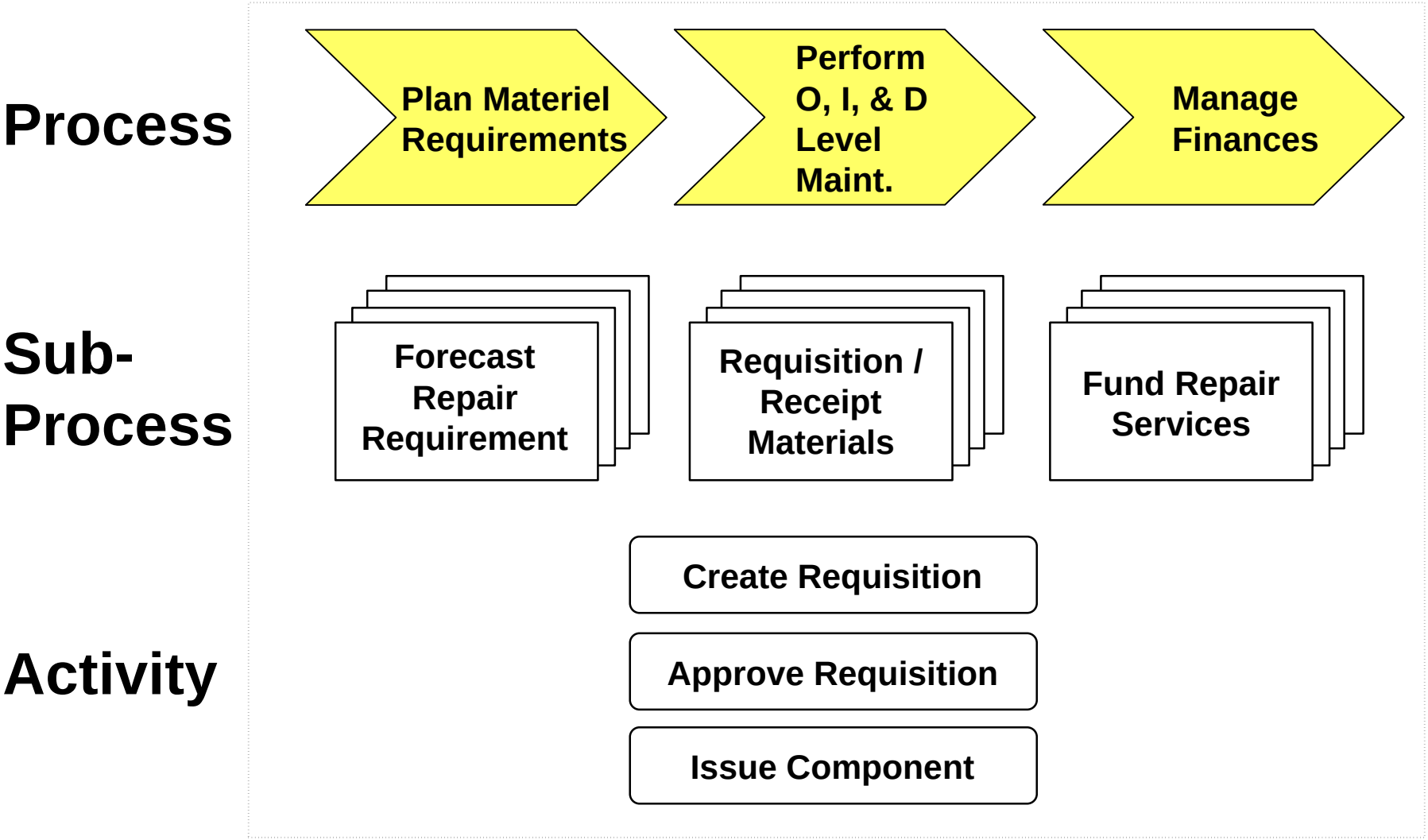
The ASAP development process is iterative



Five scenarios are represented within SMART

- Constrained Planning
- Perfect Order Fulfillment
- Procure to Pay
- Technical Directive
- Repair Cycle Processes

Business processes were defined during Blueprint



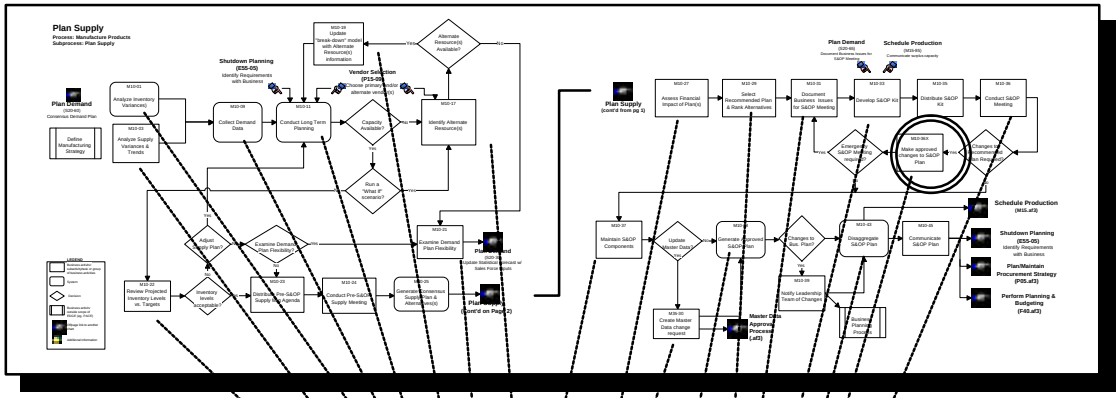
Blueprint focuses on defining processes

Process

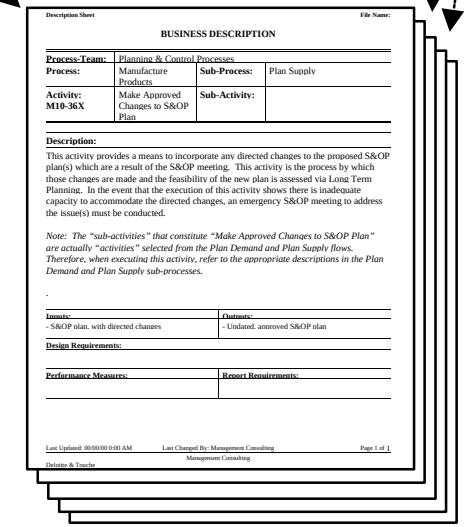
Sub-Process

Activity

Flow Diagram



Functional Descriptions



Description Sheet — File Name:

BUSINESS DESCRIPTION

Process-Team:	Planning & Control Processes		
Process:	Manufacture Products	**Sub-Process:**	Plan Supply
Activity: M10-36X	Make Approved Changes to S&OP Plan	**Sub-Activity:**	

Description:

This activity provides a means to incorporate any directed changes to the proposed S&OP plan(s) which are a result of the S&OP meeting. This activity is the process by which those changes are made and the feasibility of the new plan is assessed via Long Term Planning. In the event that the execution of this activity shows there is inadequate capacity to accommodate the directed changes, an emergency S&OP meeting to address the issue(s) must be conducted.

Note: The "sub-activities" that constitute "Make Approved Changes to S&OP Plan" are actually "activities" selected from the Plan Demand and Plan Supply flows. Therefore, when executing this activity, refer to the appropriate descriptions in the Plan Demand and Plan Supply sub-processes.

.

Inputs:	**Outputs:**
- S&OP plan. with directed changes	- Updated, approved S&OP plan

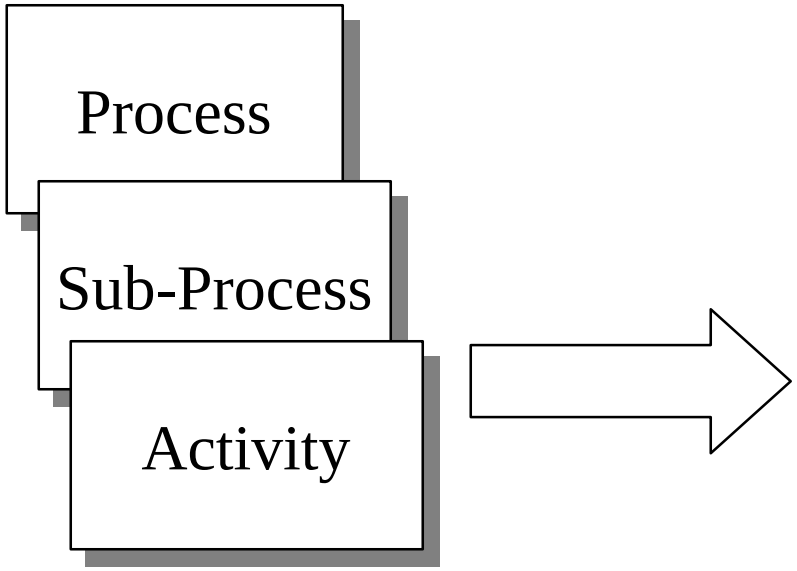
Design Requirements:

Performance Measures:	**Report Requirements:**

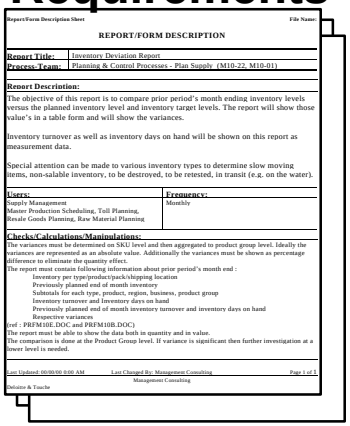
Last Updated: 00/00/00 0:00 AM — Last Changed By: Management Consulting — Page 1 of 1

Deloitte & Touche — Management Consulting

Technical Requirements are Derived from Process Scope



Report Requirements



Report/Form Description Sheet — File Name:

REPORT/FORM DESCRIPTION

Report Title:	Inventory Deviation Report
Process Team:	Planning & Control Processes - Plan Supply (M10-22, M10-01)

Report Description:

The objective of this report is to compare prior period's month ending inventory levels versus the planned inventory level and inventory target levels. The report will show those value's in a table form and will show the variances.

Inventory turnover as well as inventory days on hand will be shown on this report as measurement data.

Special attention can be made to various inventory types to determine slow moving items, non-salable inventory, to be destroyed, to be retested, in transit (e.g. on the water).

Users:	Frequency:
Supply Management Master Production Scheduling, Toll Planning, Resale Goods Planning, Raw Material Planning	Monthly

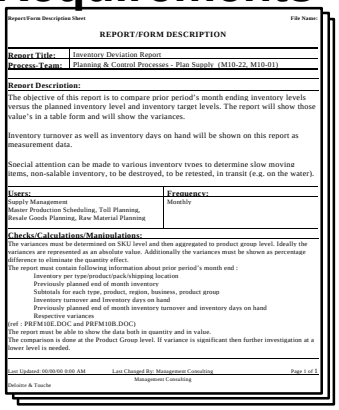
Checks/Calculations/Manipulations:

The variances must be determined on SKU level and then aggregated to product group level. Ideally the variances are represented as an absolute value. Additionally the variances must be shown as percentage difference to eliminate the quantity effect.
The report must contain following information about prior period's month end :
- Inventory per type/product/pack/shipping location
- Previously planned end of month inventory
- Subtotals for each type, product, region, business, product group
- Inventory turnover and Inventory days on hand
- Previously planned end of month inventory turnover and inventory days on hand
- Respective variances

(ref : PRFM10E.DOC and PRFM10B.DOC)
The report must be able to show the data both in quantity and in value.
The comparison is done at the Product Group level. If variance is significant then further investigation at a lower level is needed.

Last Updated: 00/00/00 0:00 AM — Last Changed By: Management Consulting — Page 1 of 1
Deloitte & Touche — Management Consulting

Interface Requirements



Report/Form Description Sheet — File Name:

REPORT/FORM DESCRIPTION

Report Title:	Inventory Deviation Report
Process Team:	Planning & Control Processes - Plan Supply (M10-22, M10-01)

Report Description:

The objective of this report is to compare prior period's month ending inventory levels versus the planned inventory level and inventory target levels. The report will show those value's in a table form and will show the variances.

Inventory turnover as well as inventory days on hand will be shown on this report as measurement data.

Special attention can be made to various inventory types to determine slow moving items, non-salable inventory, to be destroyed, to be retested, in transit (e.g. on the water).

Users:	Frequency:
Supply Management Master Production Scheduling, Toll Planning, Resale Goods Planning, Raw Material Planning	Monthly

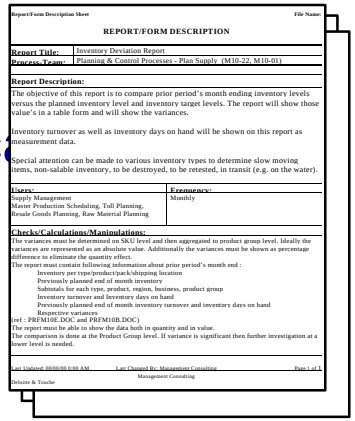
Checks/Calculations/Manipulations:

The variances must be determined on SKU level and then aggregated to product group level. Ideally the variances are represented as an absolute value. Additionally the variances must be shown as percentage difference to eliminate the quantity effect.
The report must contain following information about prior period's month end :
- Inventory per type/product/pack/shipping location
- Previously planned end of month inventory
- Subtotals for each type, product, region, business, product group
- Inventory turnover and Inventory days on hand
- Previously planned end of month inventory turnover and inventory days on hand
- Respective variances

(ref : PRFM10E.DOC and PRFM10B.DOC)
The report must be able to show the data both in quantity and in value.
The comparison is done at the Product Group level. If variance is significant then further investigation at a lower level is needed.

Last Updated: 00/00/00 0:00 AM — Last Changed By: Management Consulting — Page 1 of 1
Deloitte & Touche — Management Consulting

Extensions



Report/Form Description Sheet — File Name:

REPORT/FORM DESCRIPTION

Report Title:	Inventory Deviation Report
Process Team:	Planning & Control Processes - Plan Supply (M10-22, M10-01)

Report Description:

The objective of this report is to compare prior period's month ending inventory levels versus the planned inventory level and inventory target levels. The report will show those value's in a table form and will show the variances.

Inventory turnover as well as inventory days on hand will be shown on this report as measurement data.

Special attention can be made to various inventory types to determine slow moving items, non-salable inventory, to be destroyed, to be retested, in transit (e.g. on the water).

Users:	Frequency:
Supply Management Master Production Scheduling, Toll Planning, Resale Goods Planning, Raw Material Planning	Monthly

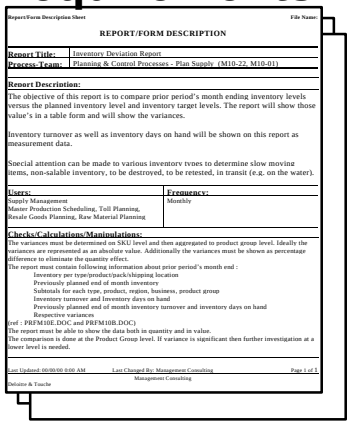
Checks/Calculations/Manipulations:

The variances must be determined on SKU level and then aggregated to product group level. Ideally the variances are represented as an absolute value. Additionally the variances must be shown as percentage difference to eliminate the quantity effect.
The report must contain following information about prior period's month end :
- Inventory per type/product/pack/shipping location
- Previously planned end of month inventory
- Subtotals for each type, product, region, business, product group
- Inventory turnover and Inventory days on hand
- Previously planned end of month inventory turnover and inventory days on hand
- Respective variances

(ref : PRFM10E.DOC and PRFM10B.DOC)
The report must be able to show the data both in quantity and in value.
The comparison is done at the Product Group level. If variance is significant then further investigation at a lower level is needed.

Last Updated: 00/00/00 0:00 AM — Last Changed By: Management Consulting — Page 1 of 1
Deloitte & Touche — Management Consulting

Conversion Requirements



Report/Form Description Sheet — File Name:

REPORT/FORM DESCRIPTION

Report Title:	Inventory Deviation Report
Process Team:	Planning & Control Processes - Plan Supply (M10-22, M10-01)

Report Description:

The objective of this report is to compare prior period's month ending inventory levels versus the planned inventory level and inventory target levels. The report will show those value's in a table form and will show the variances.

Inventory turnover as well as inventory days on hand will be shown on this report as measurement data.

Special attention can be made to various inventory types to determine slow moving items, non-salable inventory, to be destroyed, to be retested, in transit (e.g. on the water).

Users:	Frequency:
Supply Management Master Production Scheduling, Toll Planning, Resale Goods Planning, Raw Material Planning	Monthly

Checks/Calculations/Manipulations:

The variances must be determined on SKU level and then aggregated to product group level. Ideally the variances are represented as an absolute value. Additionally the variances must be shown as percentage difference to eliminate the quantity effect.
The report must contain following information about prior period's month end :
- Inventory per type/product/pack/shipping location
- Previously planned end of month inventory
- Subtotals for each type, product, region, business, product group
- Inventory turnover and Inventory days on hand
- Previously planned end of month inventory turnover and inventory days on hand
- Respective variances

(ref : PRFM10E.DOC and PRFM10B.DOC)
The report must be able to show the data both in quantity and in value.
The comparison is done at the Product Group level. If variance is significant then further investigation at a lower level is needed.

Last Updated: 00/00/00 0:00 AM — Last Changed By: Management Consulting — Page 1 of 1
Deloitte & Touche — Management Consulting

- IPT teams define business requirements
- Technical teams define technical specifica

During Blueprint, data relationships were defined

- SAP has three levels of data
  - Master Data: dynamic characteristics
    - Material Master
    - Vendor
  - Hierarchy data: static organizational representation
    - Company Code
    - Plant
  - Transaction Data: Business process
    - Execute order
    - Process general ledger posting

Data integration is dependant on a consistent approach to foundational data definition

- Foundational data includes
  - Hierarchy Data that represents organizational structures
  - Master Data needed to support transactions

Hierarchy Data

- Legal entities
- Physical & virtual plants
- Management reporting structures

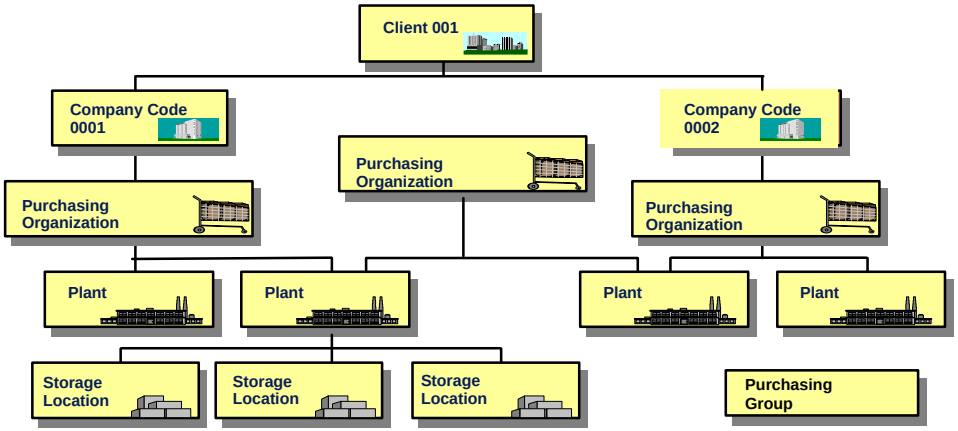
Master Data

- General Ledger Accounts
- Suppliers
- Customers
- Material

Hierarchy data define organizational relationships that structure transaction data

- Hierarchy data is tagged on every transaction to structure data by organization
- Reporting across instances requires consistent hierarchy definition
- Hierarchies are foundational to some system configurations; as a result, once defined, changes in hierarchies may be difficult to change

Operations Hierarchy



Organizational hierarchies have interdependencies with other disciplines

- Technical Infrastructure
  - Decisions about how the Navy establishes its technical landscape impact the degree of interdependency and flexibility of hierarchies. The greater the integration of business transactions across pilots, the greater influence on common naming/ numbering and definition of hierarchies.
- Common Data Structures
  - One driver of hierarchy definition is the degree of standardization / commonality of master data elements.
- Shared Services/Competency Centers
  - The concept of centralized (i.e. Finance, Procurement, HR, etc.) vs decentralized (Inventory control etc.) Shared Services impact the organizational hierarchy. Shared functions require consistent and non-conflicting hierarchy terminologies.
- Reporting
  - In order to realize meaningful enterprise reporting, enterprise organizational elements need to be defined to ensure consistent meaning once transactions feed a reporting system.

As SAP is the ERP core system that will support the Navy pilots, SAP organizational terms must be defined

- The SAP Hierarchy is comprised of (but not limited to) the following organizational elements:
  - Chart of Accounts
  - Global Company Code
  - Company Code
  - Profit Center
  - Controlling Area
  - Operating Concern
  - Credit Control Area
  - Financial Management Area
  - Plant
  - Storage Location
  - Warehouse
  - Purchasing Organization
  - Sales Organization
  - Distribution Channel
  - Division
  - Sales Area
  - Shipping Point
  - Maintenance Plant
  - Functional Location Area

The Pilots must also adopt a mechanism to communicate hierarchy decisions

Sample Template

Hierarchy Element: Company Code (CoCde)

SAP Meaning of Hierarchy Element:	***Navy Understandings , Facts, Issues:***	***Assumptions for Navy SAP Hierarchy:***
▪ Legal Entity with a Balanced Set of Books ▪ The Company Code provides the financial, external view of the organization	▪ 1)Reporting requirements ▪ 2)Claimancy ownership ▪ 3)Business requirements ▪ 4)Recognized issues	▪ 1) Naming and numbering schemes 2) Definition methodology 3) Proposed issues resolutions

Implications for Financial and Operational Hierarchy:

1) Implications within pilot instance
2) Implications across pilot instances
3) Reporting implication
4) Data creation/maintenance implication
5) Configuration implication

Company Code

FINANCE
- Company Code
- Controlling Area
- Financial Mgmt Area
- Functional Area
- Credit Control Area

Hierarchy Element: Company Code

Enterprise Classification: A

SAP Meaning of Hierarchy Element:

- Intended by SAP to represent a legal entity or an independent accounting unit within a client that has a self balancing set of financial books
- Intended to satisfy external statutory requirements, a balance sheet and income statement are produced for each Company Code
- All financial documents are posted at this level
- Some master data defined at Company Code level
- Multiple Company Codes may be defined per client
- Assignments at the Company Code level include: Fiscal year, Chart of Accounts and Accounting currency

Navy Requirements:

- Federal legal reporting requirements
  - 10 USC 2208: Separation of WCF Accounting (no commingling of Appropriated and Working Capital funds)
  - 31 USC 3515: Separate financial statement for Revolving Fund activities
  - 31 USC 1517: Anti – Deficiency Act requirements
- DOD Financial Management Regulations (FMRs)
- OSD & FMB guidance
- Naval Audit Service has endorsed separation of General and Working Capital Funds at the Company Code level.
- Financial reporting in accordance with CFO Act of 1990.

Navy Definition of SAP Hierarchy :

- SMART Pilot: Total of 4 Co Codes
  - 1 Company Code = NAVSUP NWCF (SMAG)
  - 1 Company Code = NAVAIR NWCF (DMAG)
  - 2 Company Code = CLF AIRLANT and CPF AIRPAC Appropriation Funds (recording of financial transactions @ AIMD and ASD Norfolk locations)
- CLF Company Code to be considered a test bed for maintenance costing as it is anticipated that current legacy systems and business processes for funds administration & expenditure recording will remain intact. Expenses posted to this Company Code will not be the “book of record” for CLF.

SAP Implications for Financial and Operational Hierarchy:

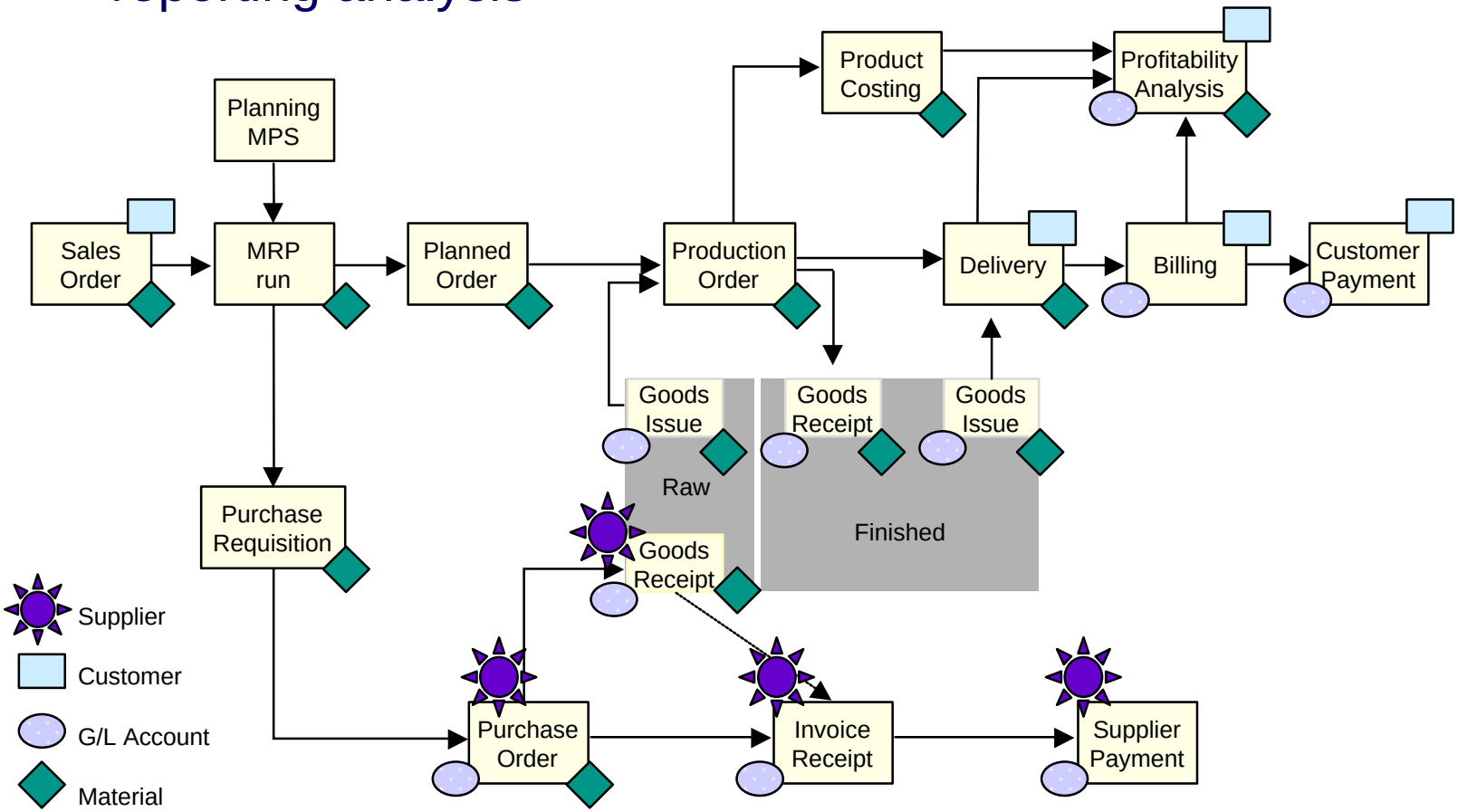
- Implications within pilot instance – NAVSUP Company Code transactions must have data integrity to feed GL postings directly to the DFAS CDB or through PX02 / PX04
- Implications across pilot instances – multiple Company Codes across NAVY claimancies requires a Navy wide master data synchronization effort for “A” items; need to coordinate with PM pilot to identify naming convention standards in place; need to confirm hypothesis re CLF’s current legacy systems (e.g., STARS) to continue as financial book of record and ensure design for tie in to NAVSEA financial systems in later phases.
- Reporting implication – separate NAVSUP Company Codes will potentially require consolidation in downstream phases
- Data creation/maintenance implication resulting from common master data within Pilot – e.g., USSGL, vendors, customers
- Inventory valuation will be done at the company code level.
- Increased complexity in design & configuration resulting from cross company code transactions within NAVSUP claimancy and across NAVSEA claimancy. (Eg. Multiple SAP Plants for one Unit Identification Code)

Master Data elements require a clearly defined characteristics

- What is master data?
  - Master data is dynamic by transaction,
    - whereas organizational hierarchies are static.
    - For example, a purchasing clerk may always post “purchase order” transactions for the same organizational entity (represented by hierarchy). However, each transaction will be tagged with unique vendors (master data).

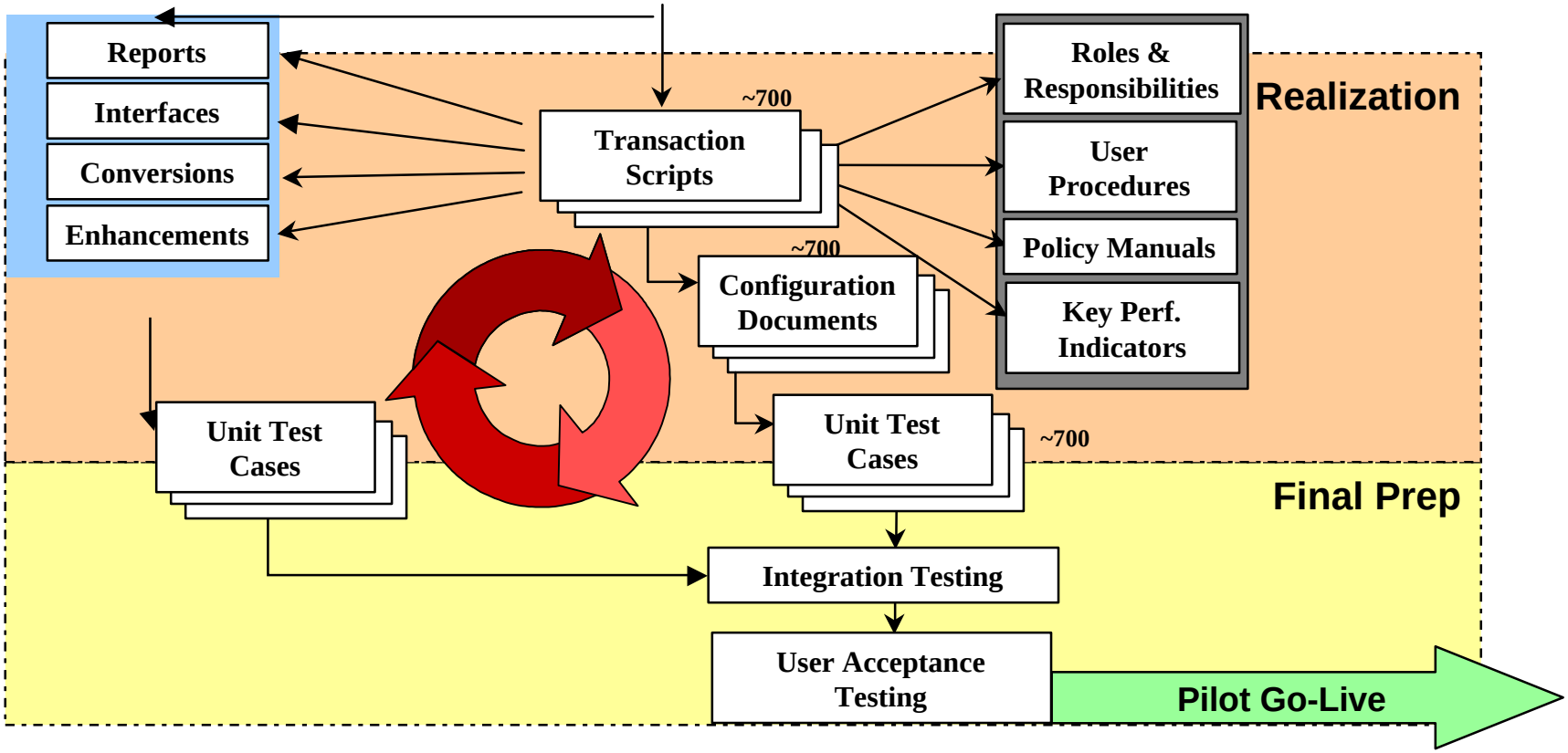
Master Data is used in virtually every business process

- Master data quality is critical to support transaction and reporting analysis



During the Realization phase, the system is built

- Process team members focus on configuration
- RICE team members focus on programming



Process team progress is tracked using the BPML

- Business Process Master List (BPML)
  - The BPML is a scorecard of functionality to be developed
- Transaction scripts document how to run an SAP transaction
  - ScriptBuilder is the database tool that captures transaction steps
- **Configuration Documentation defines system settings**
  - Configuration is the process of activating table settings

Questions?

Steps to accelerate your understanding of SMART

- Focus on a finite number of processes
- Review process designs that are impacted by your processes
- Review RICE justifications and functional specifications
- Identify the RICE and process expert familiar with your processes and RICE objects
- On-line CBT
- Read SAP books
- Visit SAP.com