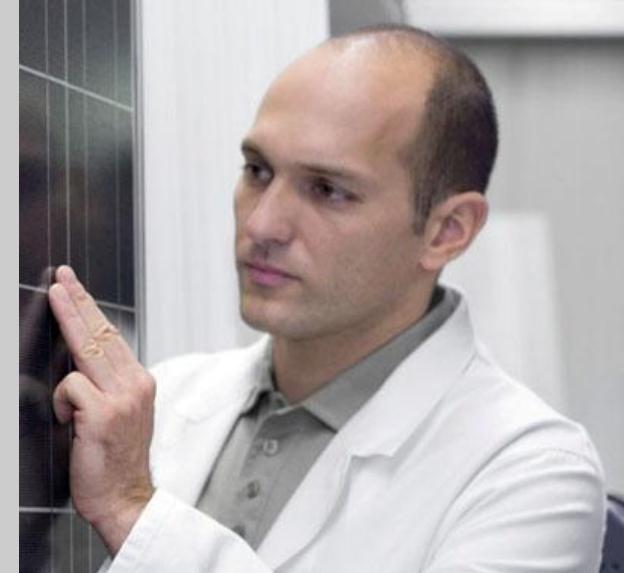


# Reliance Industries Limited

Executive Board Presentation  
**BEST BUSINESS PRACTICES & MEASURES**



SAP INDUSTRY BLUEBOOK : Oil & Gas

APPROACH WHITE PAPER  
BUSINESS TRANSFORMATION SERVICES

28<sup>th</sup> June 2010

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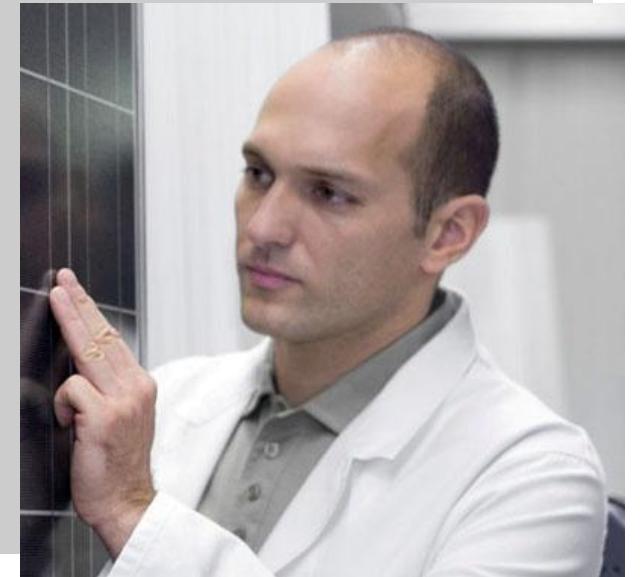
THE BEST-RUN BUSINESSES RUN SAP™



# SAP INDUSTRY BLUEBOOK : Oil & Gas

Volume - 2 ( PART - A )  
Oil & Gas - Best Business Practices

## APPROACH WHITE PAPER BUSINESS TRANSFORMATION SERVICES



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## Content – Volume(2)

-  Planning Building Commissioning Assets
-  Optimized Asset Operation & Maintenance
-  Fuel Replenishment & Terminal Automation
-  Fuel Price Management
-  Oil & Gas - Strategic Sourcing & Procurement
-  Venture Partnership (JVA)
-  Operation Risk management in Oil & Gas
-  Oil & Gas – Risk Compliance
-  Oil & Gas – UpStream Operations
-  Oil & Gas – Down Stream Marketing & retailing

## Content – Volume(2)

O&G – Primary & Secondary Distribution

O&G – Terminal Automation

O&G – TSW & Scheduling Cockpit

O&G - Pipeline Visualization

O&G - Sustainability

O&G – Refining & Manufacturing

O&G – Supply Transmission & Trading

O&G – High Performance Organization

O&G – Energy Data Management

O&G – Identity Management

## Content – Volume(2)

O&G – HR Operations

O&G – Core HR / Global Payroll

O&G – Operational Financials

O&G – Financial Closure

O&G – Financial Analytics

O&G – Consolidation & Strategic IT

O&G – International Trade & Scheduling

O&G – Bulk Transportation Management

O&G – Work Force Scheduling

O&G – Asset Safety & Compliances

## Content – Volume(2)



O&G – Process Integration

O&G – Enterprise Performance Management

O&G – Business Intelligence / Platform

# Best Practice Value Scenario

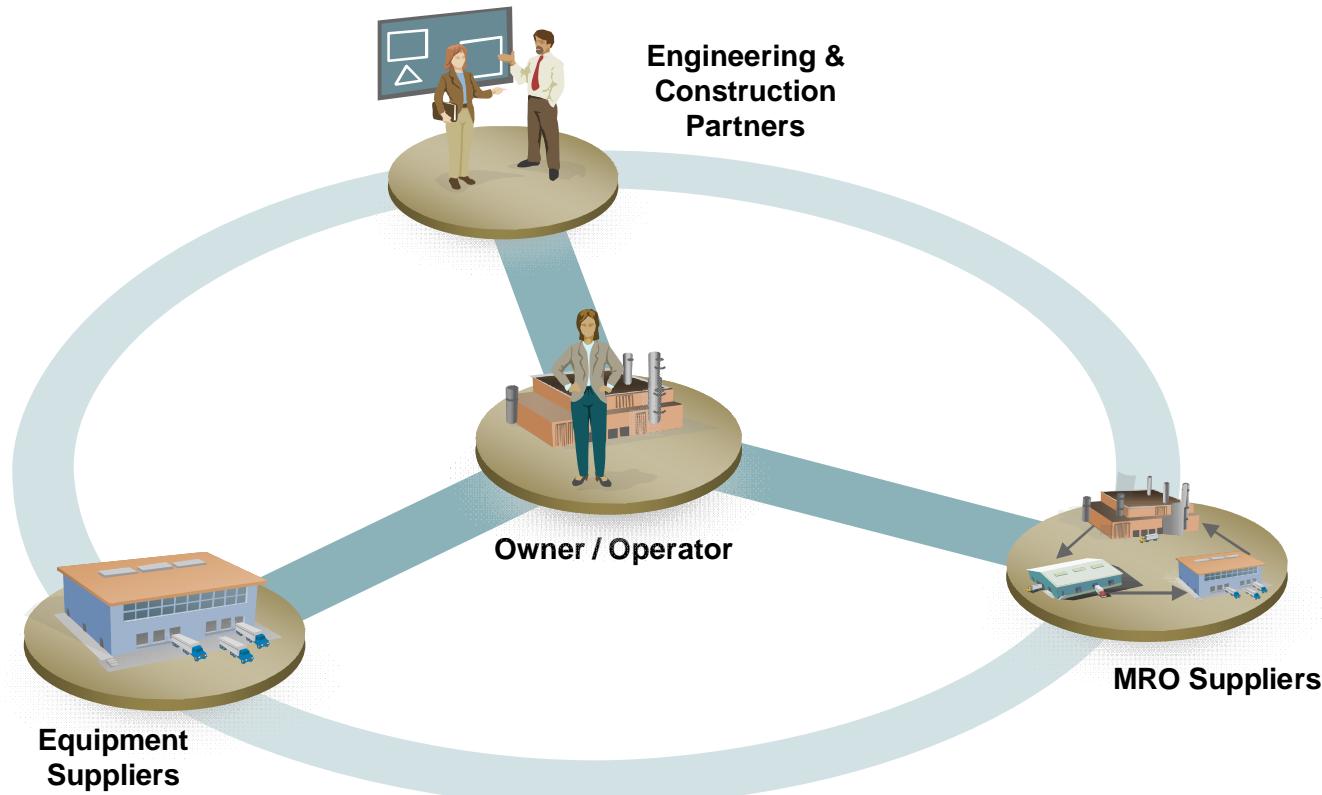
## O&G Planning, Building, and Commissioning Assets



THE BEST-RUN BUSINESSES RUN SAP™



# Planning, Building, and Commissioning Assets Involves Complex Interactions



## Capital expenditure tidal wave is approaching

The global energy infrastructure requires investments in the order of \$20 trillion in the next 20 years

## Coping with risk and fluctuating market conditions

Companies in capital-intensive industries face incredibly complex investment decisions

## Asset Information is becoming a key enabler of ROA

Having the right information to make the right decisions is the way to outperform the competition

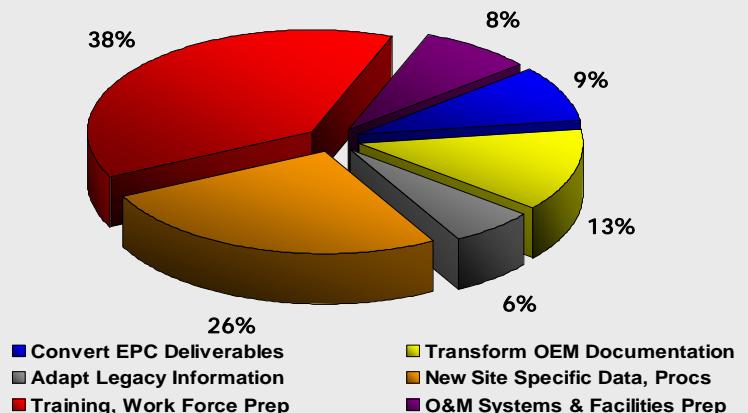


**Oil and gas companies are busy these days, so it is difficult for them to free up resources for new projects. The fact is that many jobs and projects get commissioned without a clearly defined objective. Then, once the job is complete, no one looks back to assess its value. And in the rare cases where an assessment is made, there is no feedback loop that can influence the commissioning of the next round of jobs.**



**Reporting on \$374 billion in new construction in the U.S., a National Institute for Standards & Technology report estimates the cost of inadequate interoperability\* to be \$15.8 billion per year or approximately 4% of capital spent.**

**Source:**  
US National Institute of Science & Technology



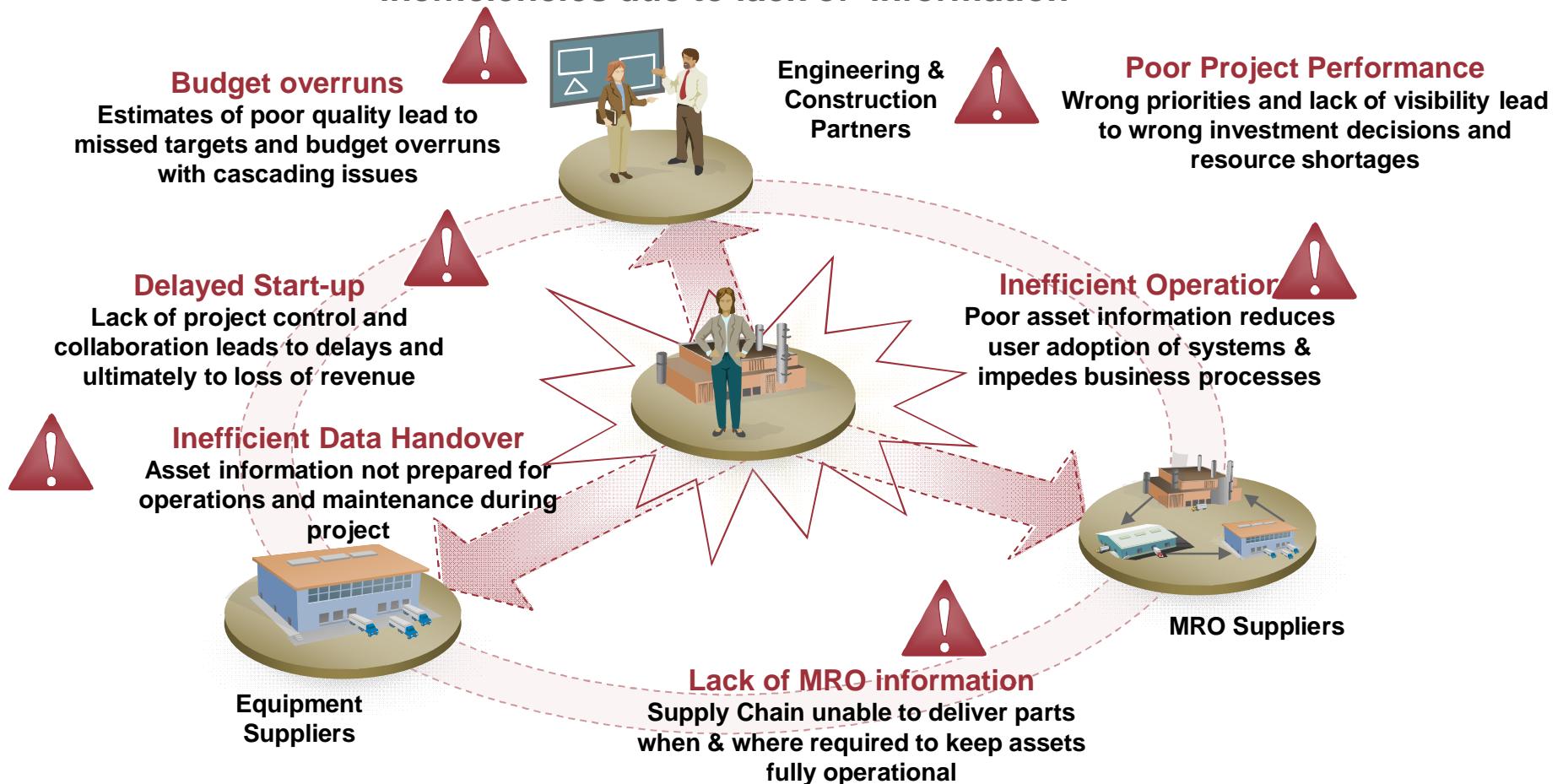
\* The interoperability of business processes, IT systems, and information (data & documents) among owner operators, EPC's, and equipment manufacturers

# Wrong Priorities and Lack of Collaboration

## Impair Project Portfolio and Operational Readiness



Owners / Operators set wrong priorities and are unable to manage the resources required for capital projects and suffer from project delays and operational inefficiencies due to lack of information

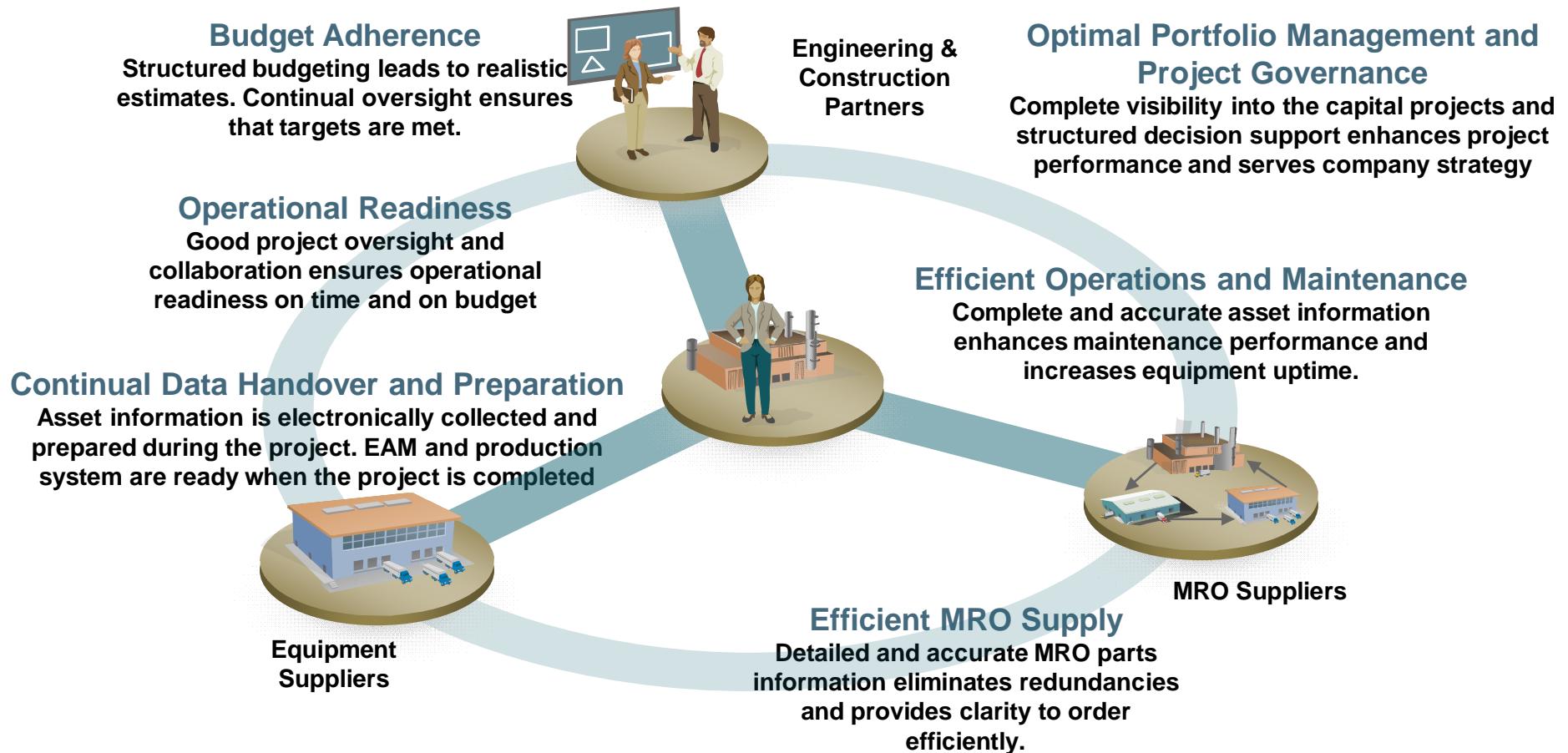


# Effective Projects and Asset Information

## ... ensure Readiness and Operational Excellence



Owners / Operators set the right priorities and oversee all projects in the corporate context. Continuous collaboration with partners and suppliers ensures operational readiness on time and on budget.



# Planning, Building, and Commissioning Assets

## Key Stakeholders & Objectives



Operational readiness requires careful assessment of opportunities and risks, prioritization of capital projects, and excellence in execution and hand-over.



COO/CFO



Steering Committee



PMO



VP of Engineering

### Asset Portfolio Management

How do I extend and preserve operational capacity in the most effective way?

- Capital Expenditures
- Time-to-operate
- ROA / Break-even
- Milestone attainment

How do I assess risks and opportunities to avoid wrong investment decisions?

- Average break-even time
- Average planned ROI deviation
- Total deviation of planned budgets
- % Projects with high risk

### Capital Project Management

How do I make sure projects are executed on time and on budget?

- Cost Schedule Index
- Budget at Completion
- % Overdue project tasks
- Schedule Perf. Index
- Earned Value

### Asset Information Management

How do I facilitate an effective handover and make sure the assets are ready to run?

- Master data completeness
- Cost to develop asset info
- % Visual asset information
- Avrg. time to access info
- Cost of data handover in % of capital project

How do we balance resources and collaborate to optimize operational readiness?

# Planning, Building, and Commissioning Assets

End to End Process



The SAP solution connects business planning, portfolio assessment, capital project management, and asset information management to ensure operational readiness.



COO/CFO



Steering Committee



PMO



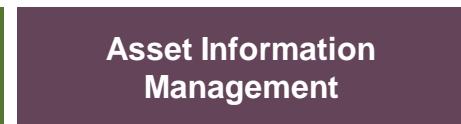
VP of Engineering



Asset Portfolio Management



Capital Project Management



Asset Information Management



# Asset Portfolio Management

## Objectives, Issues, Capabilities and Benefits



### Objective:

**Optimal capital portfolio decisions and project execution  
Align capital project portfolio to support growth and strategy**

### Best practice solution:

**Integrated portfolio and project management to assess investment opportunities regarding risk and priorities and govern the execution of the capital projects**

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Lack of objective selection criteria (risk, value, cost, ...) for capital spend decisions</li><li>■ Time, costs &amp; effort associated with decision-making process</li><li>■ Lack of governance and audit trail of decisions</li><li>■ Cost over-runs due to deviation between forecast cash flow and actual spend</li><li>■ Better governance and an increased audit trail of decisions</li></ul>	<ul style="list-style-type: none"><li>■ Evaluation, simulation and scoring models</li><li>■ Structured risk evaluation, gated approval process supported by workflow</li><li>■ Improved communication &amp; visibility during the project lifecycle</li><li>■ Governance tool set including dashboards and reporting based on operational processes and data from ERP and non-ERP systems</li></ul>	<ul style="list-style-type: none"><li>■ Reduced risk of failure and overruns</li><li>■ Efficient and streamlined planning process</li><li>■ Reduced overall project cost due to better usage of critical resources</li><li>■ Better contract terms with external contractors, through visibility of spend</li><li>■ Real-time visibility into project portfolio performance</li></ul>

# Asset Portfolio Management

## SAP Solution



### SAP Solution



### SAP Differentiators

**Decision support:** SAP Strategy Management allows you to manage business goals and cascade the strategy across the enterprise. SAP Portfolio and Project Management (SAP PPM) solution provides dashboards, risk questionnaires, and workflows to enable a fact based and trackable risk and opportunity evaluation process.

**Integration:** SAP PPM seamlessly integrates with SAP ERP's project system, financials, HR, and SAP NetWeaver BI to provide cross project visibility.

**Flexibility:** Strategy Management supports various methodologies. PPM risk questionnaires, matrices, and workflows as well as the phase gate process can be set up to model the specific business processes of your company.

# Customers drive value with Asset Portfolio Management



## Project and Program Management

Manage the capital project funnel:

- One Truth for all levels
- Efficient process management
- Decision support
- Includes costs, profits, resources, HSE



## Project and Program Management

- \$1B++ capital expenditures per annum, 30-40 projects in excess of \$50M
- PPM as strategic enabler for growth
- Alignment between PPM, capital management and strategic long-term planning



## Business Planning and Consolidation

- Reduced risk for regulatory reporting
- Increased productivity in capital spending processes
- Enhanced forecasting with ad hoc analysis
- Single view of actual, budget, and forecast data
- Increased reporting flexibility

“

Better decisions under uncertainty require, for example, learning to **track the economic value at risk in projects in real time** and to tie this knowledge to processes that would help them escalate decisions to the proper levels quickly. Upstream O&G companies that are developing new capacity at the high end of the cost curve, for example, must focus on lowering costs in order to ensure the **profitability of projects** throughout all the phases of the economic cycle.”

McKinsey & Company, Global trends in energy, 2007

# Long-term Planning and Capital Budgeting



Long-term Planning    Capital Budgeting    Program Governance

Initiate Project  
Plan Asset Replacements / Additions

The long-term planning and capital budgeting process communicates strategy and KPIs, identifies capital investment opportunities, ranks them in terms of risk and reward, and obtains approval for the required budgets.

## Process Steps



# Project Initiation and Program Governance



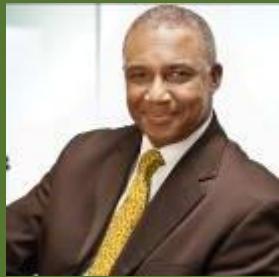
The project initiation and program governance process identifies the necessary projects and programs and sets the framework for program and portfolio governance

## Process Steps



# Capital Project Management

## Objectives, Issues, Capabilities and Benefits



### Objective:

**Effective monitoring of progress and cost of primarily externally managed projects**

### Best practice solution:

**Post and monitor financial information in consistent structures and roll-up into for cross-project visibility.**

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Lack of control regarding progress, cost and outgoing payments</li><li>■ Deviations between budget, commitments and actuals go unnoticed for too long</li><li>■ Material and equipment are received and installed without reference to the plan details</li><li>■ Collaboration with engineering and construction partners depends on emails and individuals</li></ul>	<ul style="list-style-type: none"><li>■ Post planned cost, commitments and actuals against the same project structure</li><li>■ Continuous progress monitoring, status and cash flow control of the project</li><li>■ Logistical postings against the same project structure</li><li>■ Structured and traceable collaboration with external parties</li></ul>	<ul style="list-style-type: none"><li>■ Ability to easily compare plan, commitments, and actuals in a meaningful structure</li><li>■ Ability to react to issues when they occur</li><li>■ All encompassing visibility of cost categories and cashflow</li><li>■ No loss of information, duplication of work or ambiguities in terms of engineering and construction related information</li></ul>

# Capital Project Management



## SAP Solution

Development Collaboration		
Project Planning / Estimation	Project Execution	Project and Investment Controlling
Collaborative Construction		
General Contracts	MRO and Services Procurement	

**■ Structured information exchange with engineering and construction partners with cFolders**

**■ Project planning and accounting based on work break-down structures and networks in SAP ERP's Project System (PS)**

**■ Procurement of parts / equipment and services related to the project structure with the possibility to keep separate project stock**

**■ Progress monitoring and cash management**

**■ Management of asset under construction accounts until final settlement to fixed assets**

## SAP Differentiators

**Integration:** Built for capital intensive projects and projects with tight integration into financial and logistical processes. Strong integration to core enterprise processes: project-oriented procurement, detailed costing including material-related cost, revenues, budgets, and cash management. Planning and procurement of external services.

**Scalability:** Management of large and complex projects in all industries, hierarchical and network-oriented structuring options.

**Collaboration:** Exchange of engineering and construction related documents via collaboration folders.

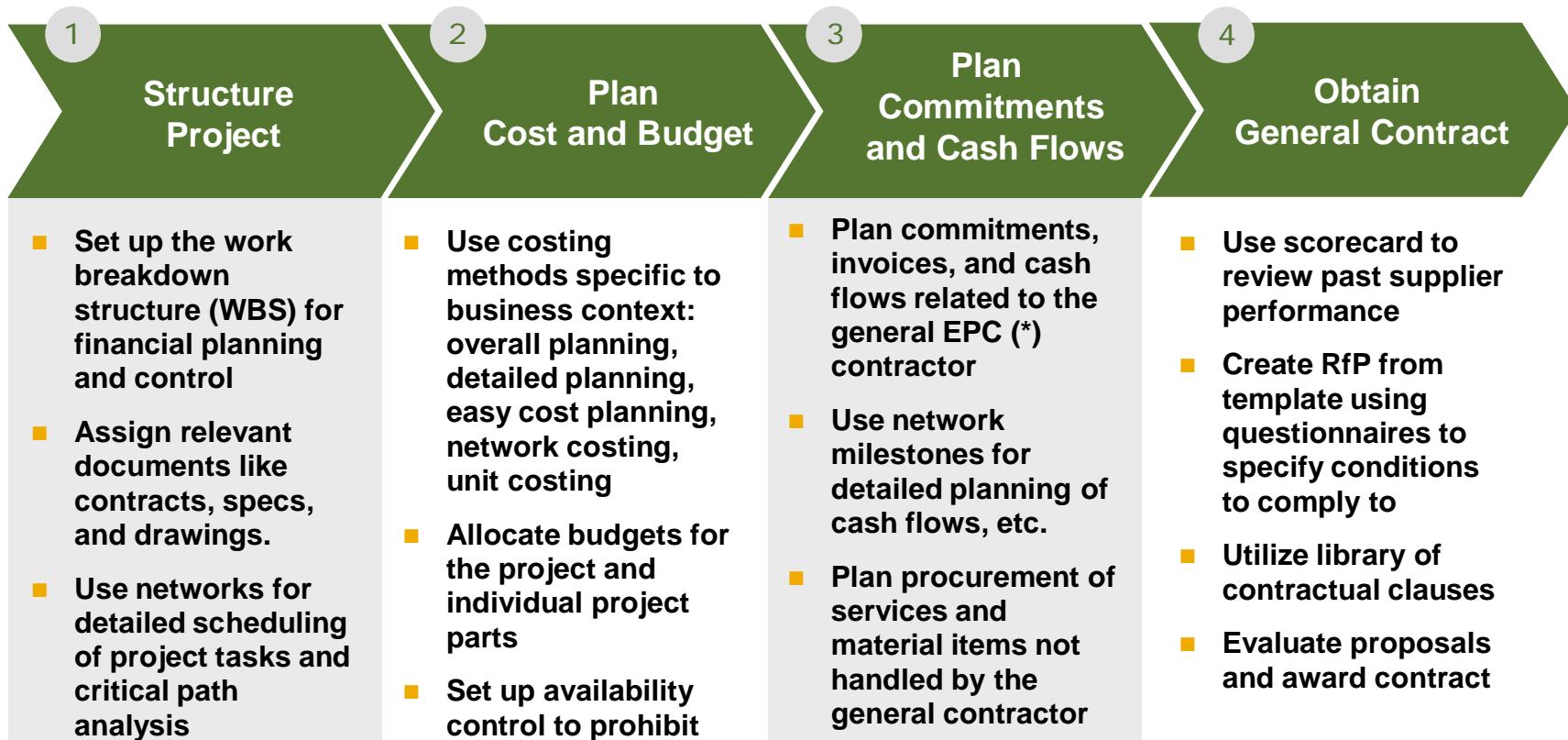
# Project Planning



The ERP Project System provides comprehensive planning capabilities with regards to financials and all types of required resources. Enterprise Sourcing helps to define and obtain the general contract.



## Process Steps

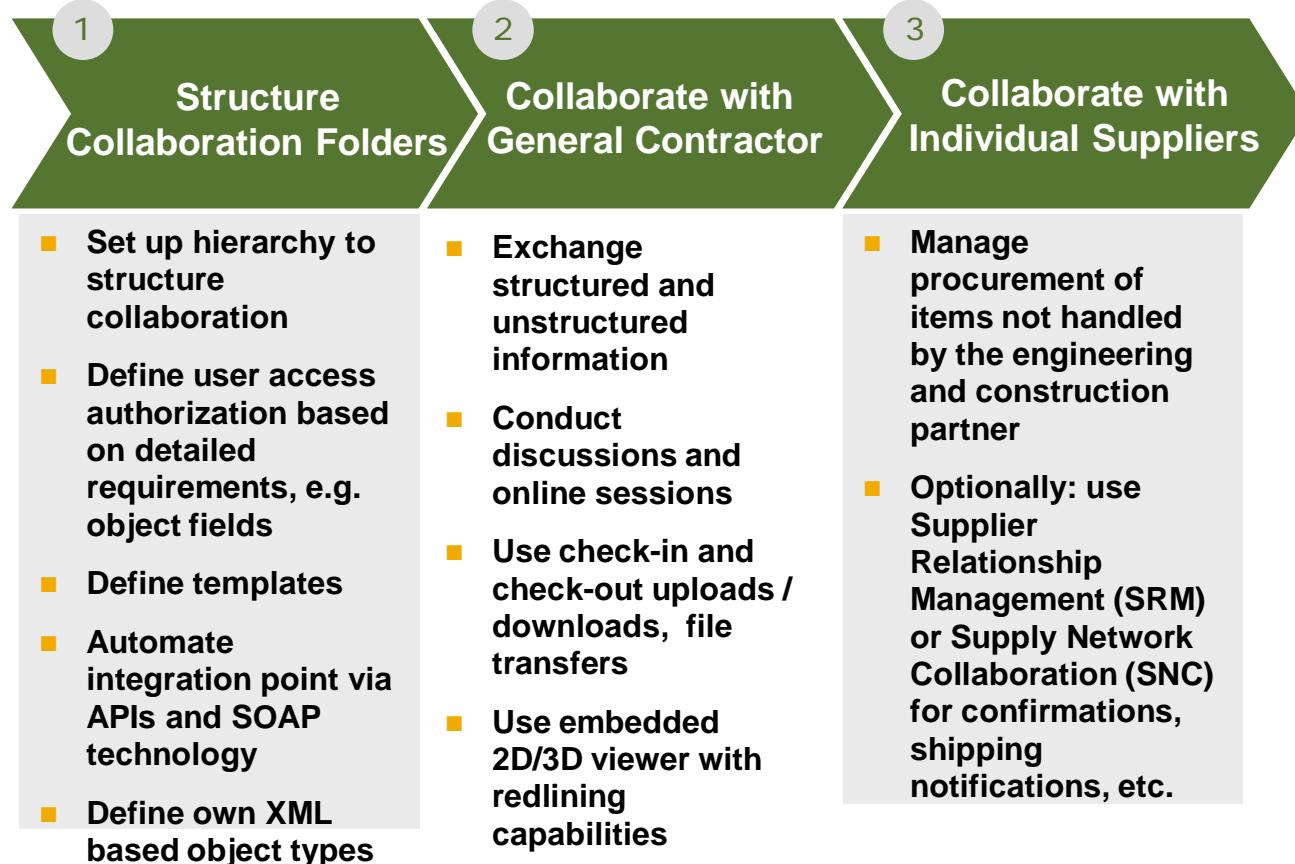


# Project Collaboration



Use structured collaboration techniques to shorten decision cycles, establish transparent and traceable communication with the engineering and construction partner.

## Process Steps



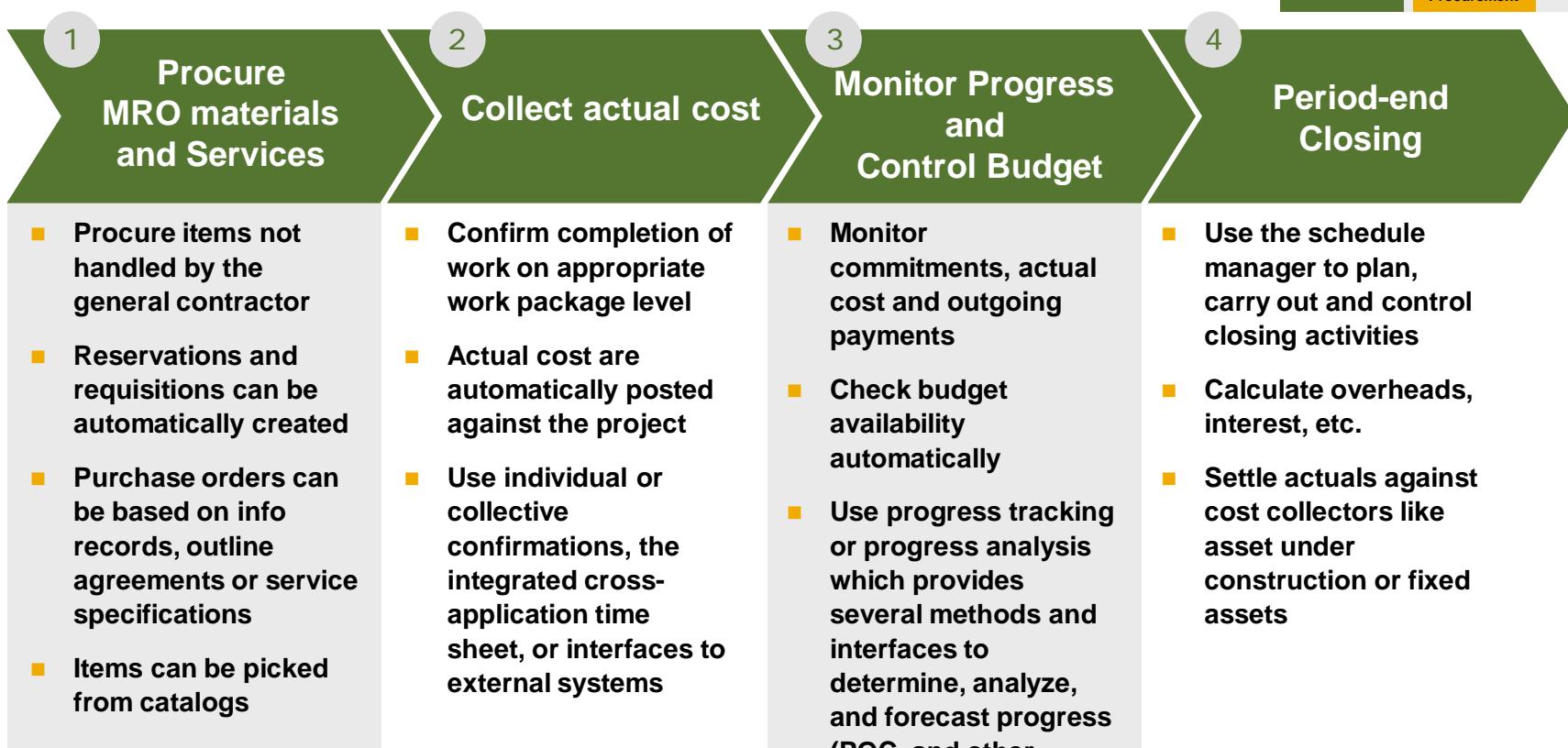
# Project Execution



During the project execution, all actual can be tracked against planned values and budgets, milestones and flexible metrics can be used to measure progress and verify invoices.



## Process Steps



# Asset Information Management

## Objectives, Issues, Capabilities and Benefits



### Objective:

**Complete, accurate, and accessible information for Operations and Maintenance**

### Best practice solution:

**Electronic handover of engineering information during capital project.  
Collaboration with OEMs to collect and transform into maintenance and  
operation relevant data.**

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Asset information becomes only available at project completion creating enormous time pressure</li><li>■ Engineering information is not directly usable for operations and maintenance</li><li>■ High effort to collect and structure information for operative EAM system</li><li>■ Limited time and resources to deal with data handover lead to incomplete, redundant, and inconsistent data</li></ul>	<ul style="list-style-type: none"><li>■ Continual electronic handover during project execution</li><li>■ Easy transformation and enrichment of data before deployment to target systems</li><li>■ Collaboration with EPCs* and OEMs** to collect information relevant for operations and maintenance</li><li>■ Synchronization of asset information into target ERP and Document Management systems</li></ul>	<ul style="list-style-type: none"><li>■ No delays in start-up because information can be prepared during project</li><li>■ Easy manipulation and collaboration features minimize effort for data handover</li><li>■ Best possible information foundation for operations, maintenance, and purchasing</li><li>■ Up-to-date asset information for future projects</li></ul>

# Asset Information Management



## SAP and partner solution

Electronic  
Import of Eng.  
Data

Transformation  
and OEM  
collaboration

Document  
Management

Technical  
Assets  
Management

Technical Parts  
Management

- Load engineering structure from plant design system. Transform into relevant asset structure for maintenance purposes.
- Collaborate with equipment manufacturers to complete maintenance information. Enrich with visual information, build illustrated parts catalogs,
- Deploy information to ERP and document management systems and synchronize any changes over time. All EAM related master data and MRO materials are supported.

## SAP and partner differentiators

**STAGING:** NRX Asset Center, an SAP Endorsed Business Solution provides the capability to collect and prepare SAP master data even before the ERP system is implemented. Data manipulation is easy and then is seamlessly synchronized to ERP, which becomes the system of record during the maintenance and operations phase.

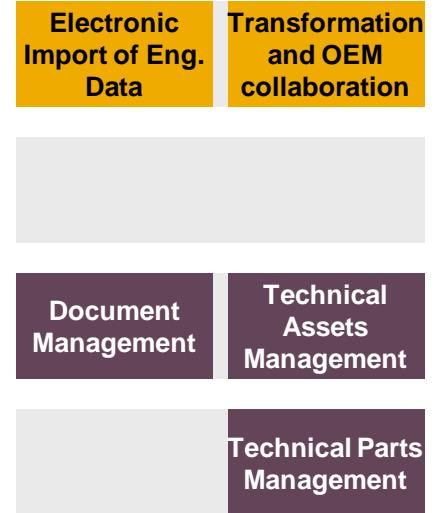
**ENRICHMENT:** NRX Asset Center provides collaboration features to collect the necessary information from vendors or within the own company. Drawings can be hot-spotted to create illustrated parts books. The collection of visual information can be organized efficiently.

**SYNCHRONIZATION:** The synchronization to SAP ERP comes fully automated and preconfigured. Information is automatically kept in sync, if changed on the operative EAM side.

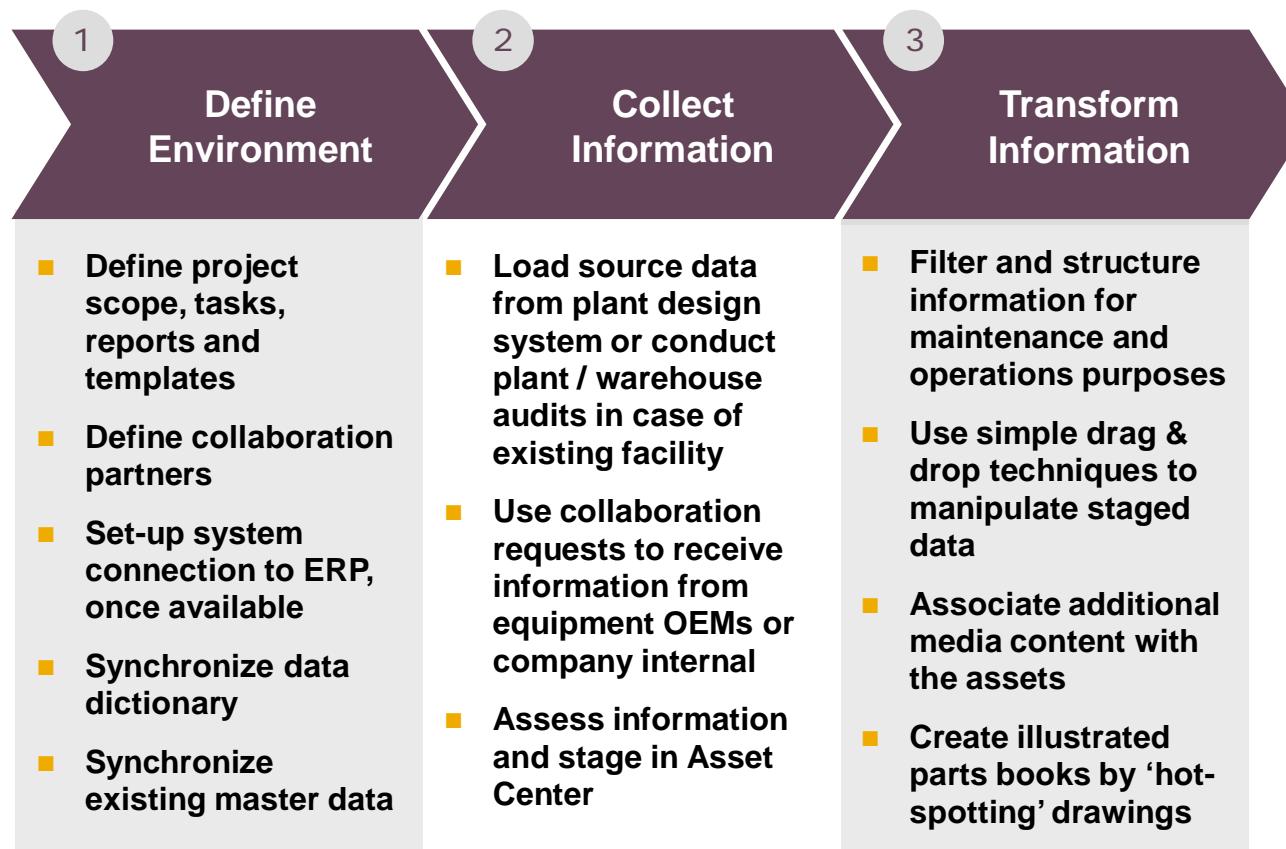
# Asset Information Preparation



While the physical plant is being built, asset information can already be prepared independently of ERP system in an intuitive way. Multiple data sources can be used, like plant design systems, OEM information, own digital pictures.



## Process Steps

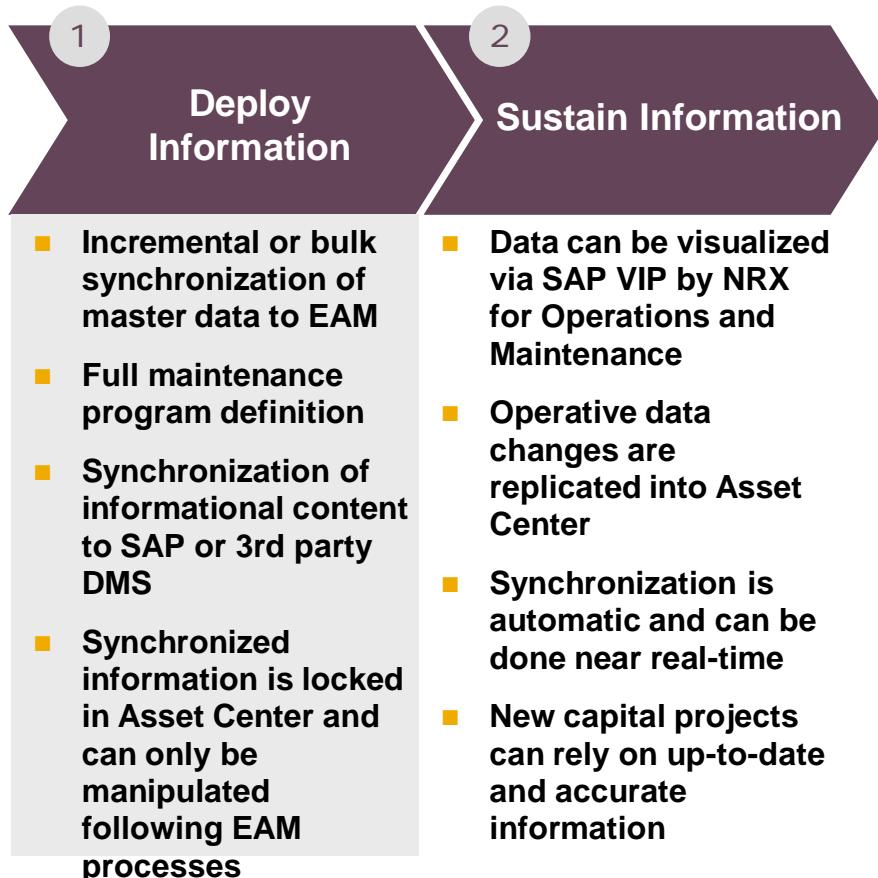


# Asset Information Deployment



After preparation master data and documents are synchronized to EAM and document management systems (DMS). Once a piece of information has been synchronized, EAM becomes the system of record with controlled and trackable processes.

## Process Steps



Electronic Import of Eng. Data

Transformation and OEM collaboration

Document Management

Technical Assets Management

Technical Parts Management

# Best Practice Value Scenario

## O&G Optimized Asset Operations and Maintenance

# Increase Reliability in spite of ... Aging Assets, Aging Workforce, and Cost Pressure



- Lower budgets available for maintenance and operations
- Workforce approaches retirement age, assets approach end of lifetime
  - Equipment becomes more sophisticated

Significant shortage of skilled MRO staff	Experienced planners and supervisors retire	Hard to cope with sophisticated equipment	Maintenance services are outsourced	Equipment changes not documented
<ul style="list-style-type: none"><li>■ Operations and maintenance cannot rely on "experience" (I've done it this way and it works")</li><li>■ Defined processes and IT systems needed to ensure reliability targets.</li><li>■ Can't waste precious wrench time.</li></ul>	<ul style="list-style-type: none"><li>■ Not enough experienced and qualified technicians to replace them.</li><li>■ Informal processes based on personal knowledge about equipment.</li><li>■ Poor planning and supervision hurt maintenance effectiveness.</li></ul>	<ul style="list-style-type: none"><li>■ Assets not maintained and run in the optimal way.</li><li>■ Quality issues and frequent unplanned downtime waste precious machine capacity.</li><li>■ Equipment does not yield the returns it is designed for.</li></ul>	<ul style="list-style-type: none"><li>■ Contractors must be found and contracted appropriately.</li><li>■ Buyers have to deal with an increasing number of complex bids for services.</li><li>■ Difficult to manage, monitor &amp; control an increasing number of services.</li></ul>	<ul style="list-style-type: none"><li>■ Inaccurate master data lead to obsolete or redundant stock.</li><li>■ Lack of planning leads to reactive maintenance and stock outages.</li><li>■ Orders cannot be completed in time because of inventory stock-outs.</li></ul>

# Analyst Reports Confirm Challenges ... for the Oil & Gas Industry



## Aging Workforce and Aging Assets: Escalation of Maintenance Costs

**The average age in Oil & Gas industry is 51 and is among the oldest of any industry. Over 50% of the current workforce will retire by 2015**

CERA Survey – Cambridge Energy Research Associates

- Maintenance costs haven risen 10 to 15 % per year for the past 25 years
- Approximately one third of the total maintenance spend not necessary
- Maintenance workers spend fewer than 4 hours per day performing hands on work

Benchmarking Best Practices in Maintenance Management – Terry Wireman

**Plant / Production unit of the future: Increase productivity and profitability by incorporating information technology**

**With expansion and new construction, refineries have a unique opportunity to increase the productivity and profitability of their assets by incorporating information technology in their design plans**

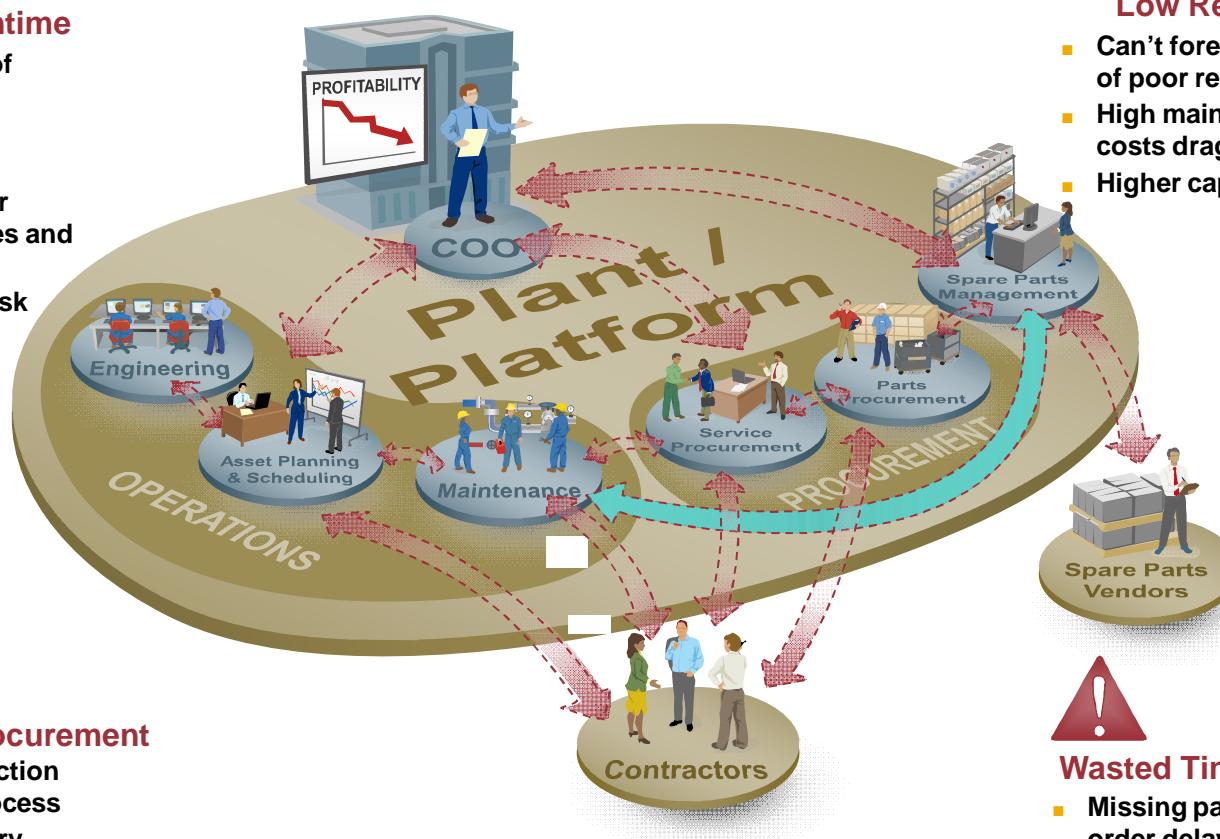
Refinery of the Future: The Industry's Vision – Energy Insights report

# Reliability Issues and Inefficient MRO Processes ... Impede Refining / Production Productivity



## Excessive Downtime

- Frequent breakdowns of equipment
- Longer time to repair equipment
- Time wasted looking for maintenance procedures and drawings
- Unplanned downtime risk



## Low Return on Assets

- Can't forecast output because of poor reliability
- High maintenance & operating costs drag returns
- Higher capital investment



## Inefficient Service Procurement

- Inefficient supplier selection and bidding and PO process
- Delays in service delivery
- Higher repair costs as contracts are not used



## Wasted Time and Resources

- Missing parts resulting in order delays
- Inflated spares inventory
- Obsolete parts

Inefficient maintenance and operations lead to high costs, excessive equipment downtime, and poor asset productivity

# Efficient and Effective MRO Processes

## ... Boost Refining / Production Productivity



### Minimal Downtime

- Assets available when needed
- Resource hours and material requirements happen as planned
- Increasing Mean Time Between Failures (MTBF)
- Reduce work backlog



### Keep Assets Profitable

- Increase equipment reliability
- Reduced work backlog
- Better utilization of assets
- Control maintenance spend



### Enforce Service Levels

- Speedy supplier selection, spot bidding and purchasing process
- Shorten cycle-times for service delivery
- Increase contract utilization and reduce repair costs.



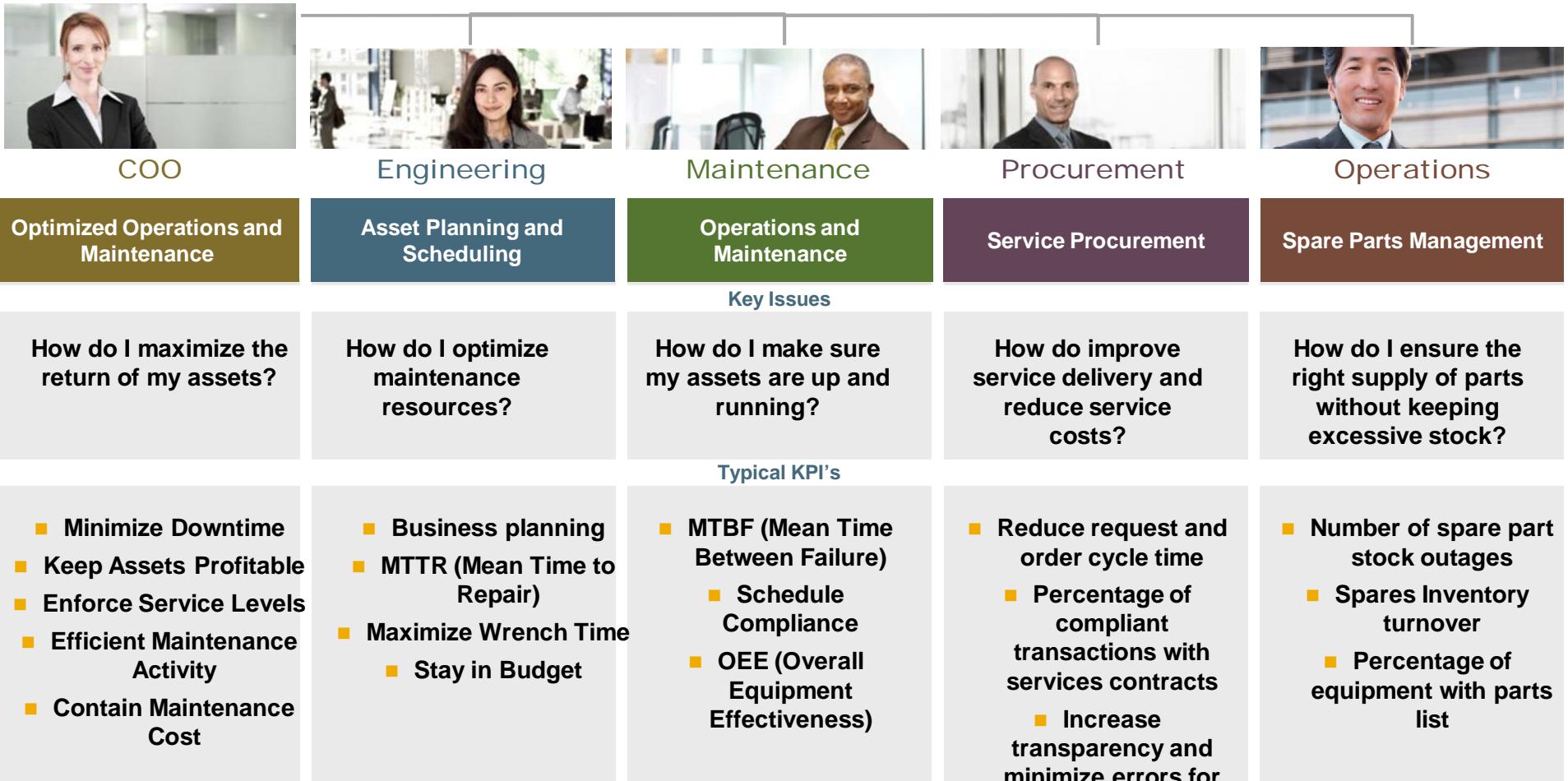
### Efficient Maintenance Activity

- Fast and accurate part replenishment process.
- Reduction of capital tied up in spare parts inventory
- Visibility to current spares list

Streamlined maintenance processes lead to high levels of equipment reliability, increased asset uptime and reduced costs

# Asset Operations and Maintenance

## ... Key Stakeholders & Objectives

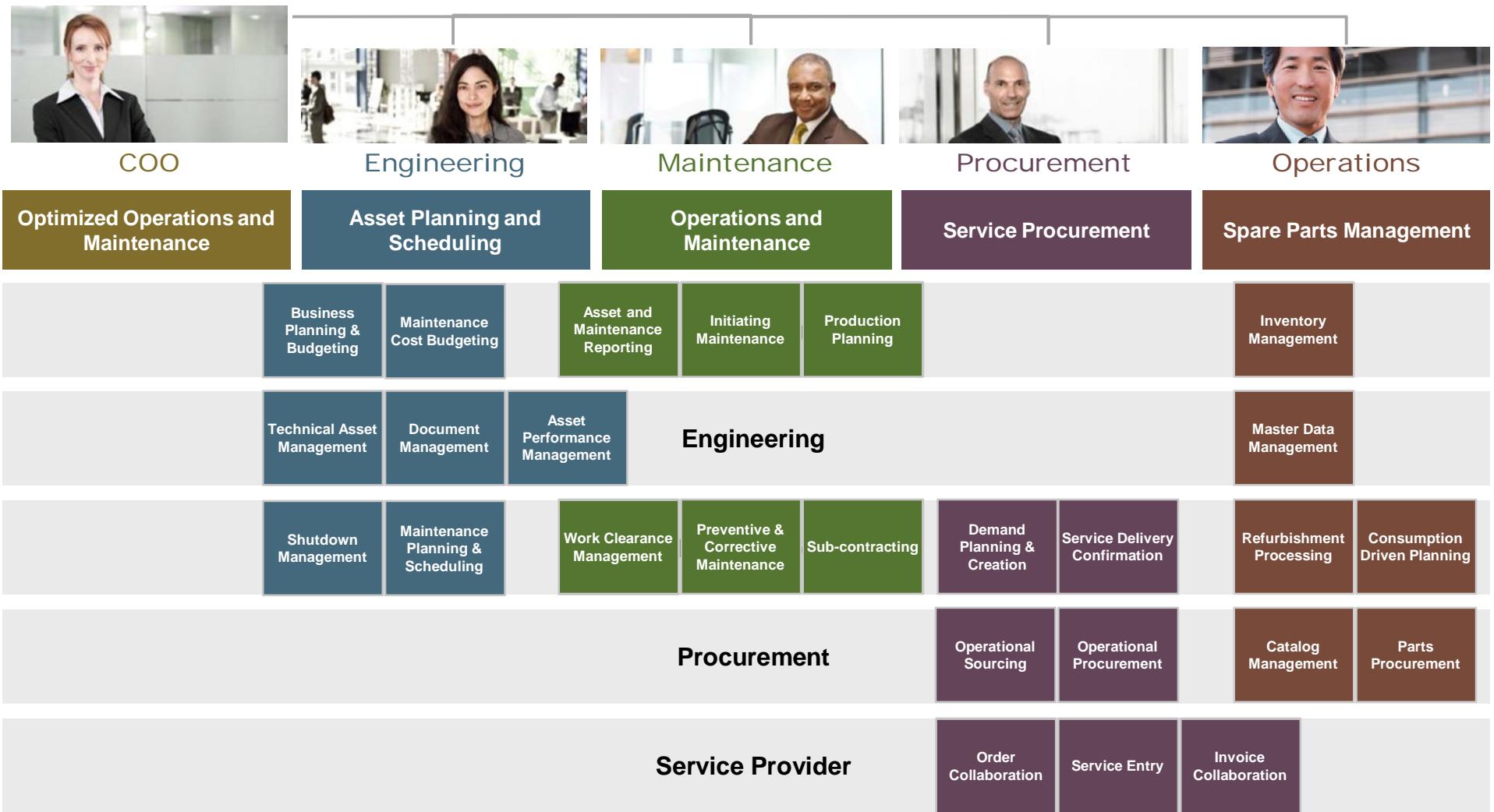


Optimized Asset Operations and Maintenance requires alignment between several stakeholders with differing objectives

# Optimized Asset Operations and Maintenance is an End-to-end, Cross-functional Process



Optimized Asset Operations and Maintenance connects processes across departments to ensure a compliant product.



# Operations and Maintenance

## Objectives, Issues, Capabilities, and Benefits



### Objective: Keep Assets Profitable

#### Best practice solution:

Integrate plant systems to update equipment information for quicker reaction to problems. Use of mobile applications to capture work order information as source.

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Frequent equipment breakdowns due to improper or no preventive maintenance.</li><li>■ Ineffective maintenance processes and resource availability lead to delays in work order closure.</li><li>■ Poor maintenance program leads to unplanned downtime and diminished equipment condition</li><li>■ Equipment downtime disrupts production</li><li>■ Insufficient or manual log-out / tag-out procedures cannot ensure safe execution of maintenance</li></ul>	<ul style="list-style-type: none"><li>■ Proactive maintenance minimizes occurrence of breakdowns, so MTBF is maximized. Auto calculation of MTBF based on downtime recording.</li><li>■ Appropriate planning, clear procedures, visible resource availability and easy access to information lead to timely closure of tasks.</li><li>■ Optimized maintenance minimizes unplanned downtimes</li><li>■ Integrated production and maintenance planning</li><li>■ Integrated Work Clearance Management</li></ul>	<ul style="list-style-type: none"><li>■ Increase equipment reliability</li><li>■ Reduced work backlog</li><li>■ Better utilization of assets</li><li>■ Minimized impact on production</li><li>■ Safe execution of maintenance</li></ul>

## SAP Solution

Asset and  
Maintenance  
Reporting

Initiating  
Maintenance

Production  
Planning

Work Clearance  
Management

Preventive &  
Corrective  
Maintenance

Sub-contracting

- Use of SAP Analytics (BI), SAP Manufacturing Intelligence and Integration (MII) to access yield, quality and condition information, and access to complete maintenance history.
- Propagate planned downtimes to Supply Chain Management (SCM) for constraint based planning.
- Efficient order execution based on predefined task lists, associated documents, and access to historical information.
- Integrated Work Clearance Management supports lockout / tagout safety procedures
- Use of Mobile Asset Management (MAM) application avoids delayed back office processing

## SAP Differentiators

- Integrated Document Management System (DMS), unified view via Portal, access to Engineering and other systems via web services.
- SAP Manufacturing Intelligence and Integration (MII) and Business Intelligence (BI) offer unique insight into parameters from various sources, contributing to Overall Equipment Effectiveness (OEE).
- Integrated Work Clearance Management ensures safe execution of maintenance work, both during shutdowns and in day-to-day maintenance

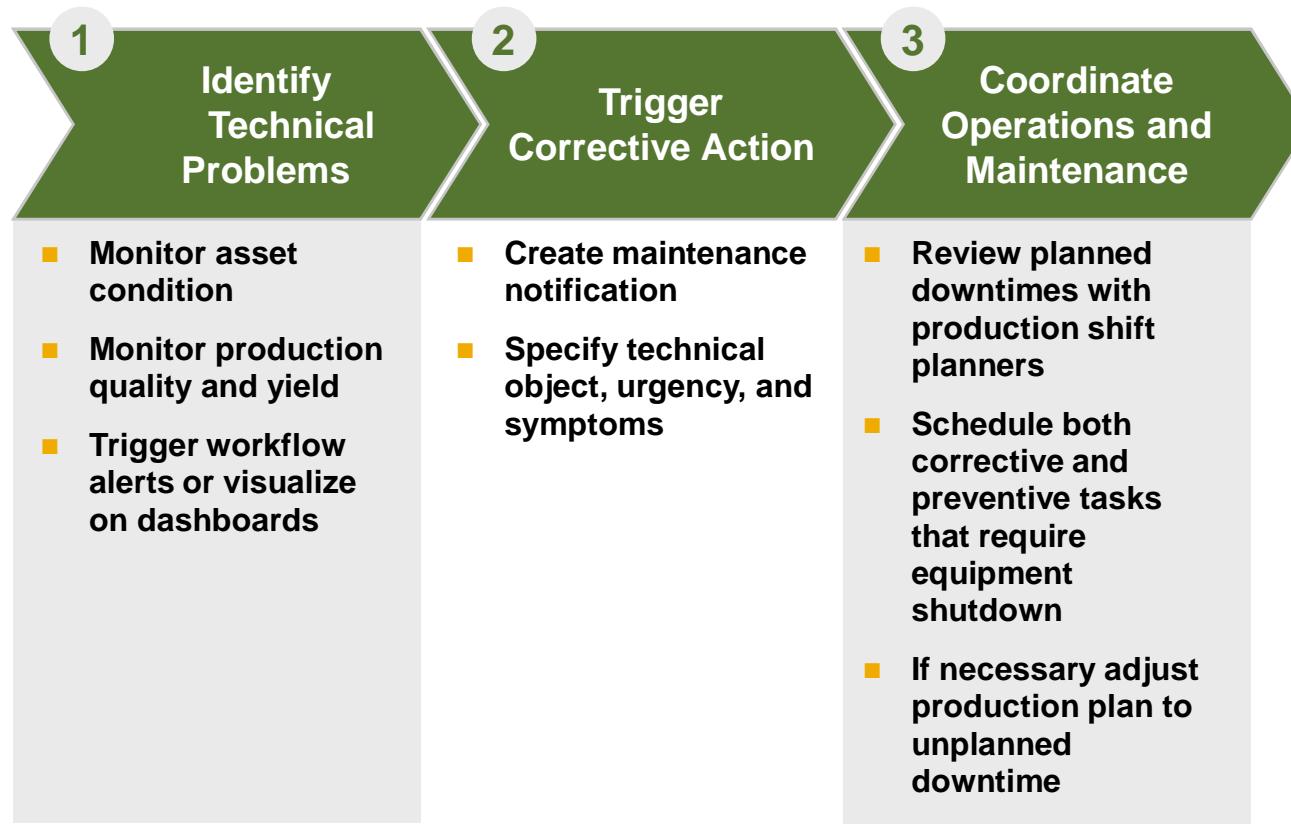
# Maintenance Initiation



**Problems are identified and corrective maintenance is triggered.**  
Maintenance opportunities, e.g. planned production downtime, are identified and maintenance activities that require shutting off the equipment are planned accordingly.



## Process Steps



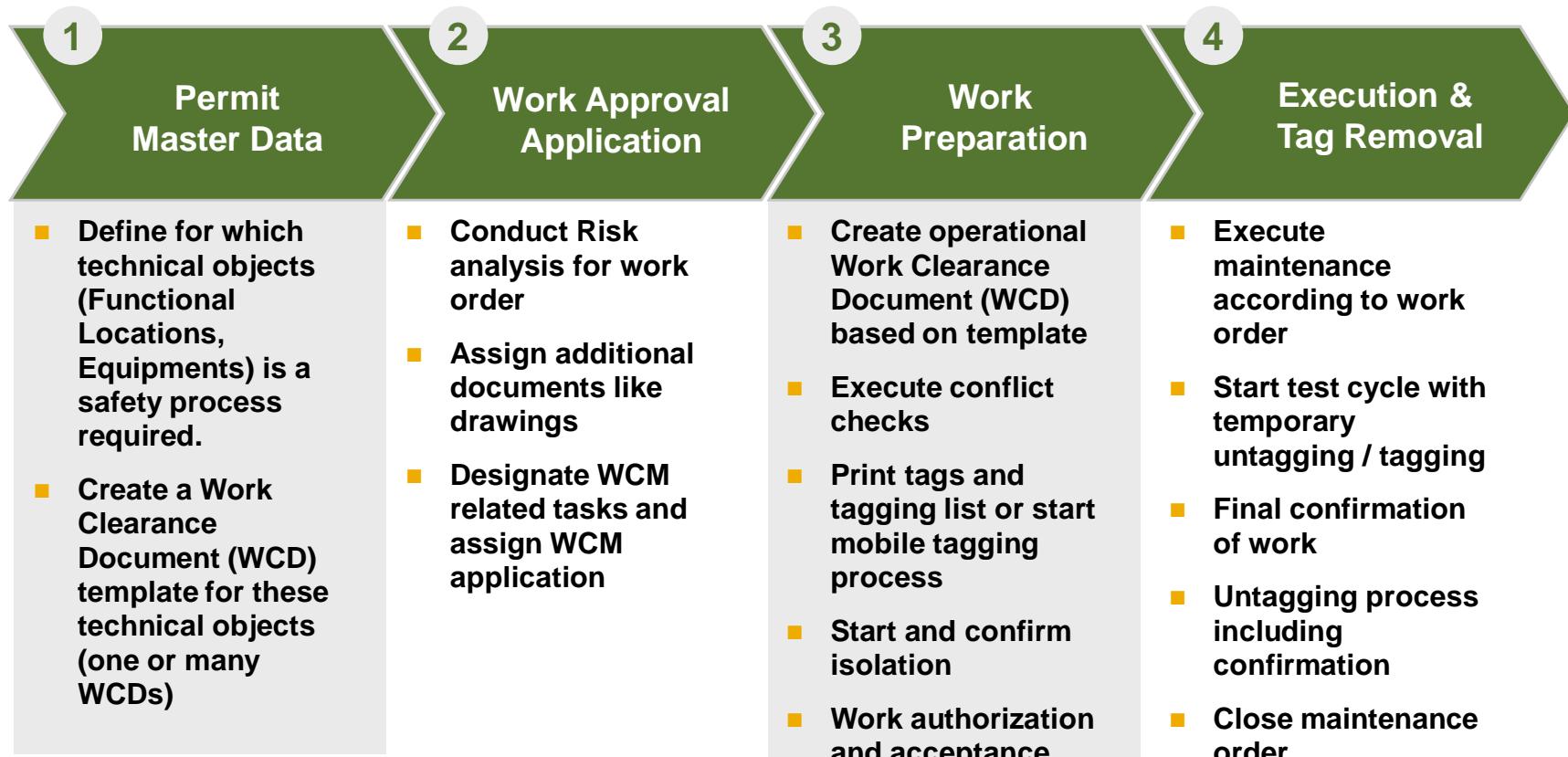
# Work Clearance Management



If assets need to be maintained while running this may constitute a hazardous environment requiring special precaution as required by regulations like OSHA. Work Clearance Management (WCM) ensures a safe process through lockout / tagout procedures.



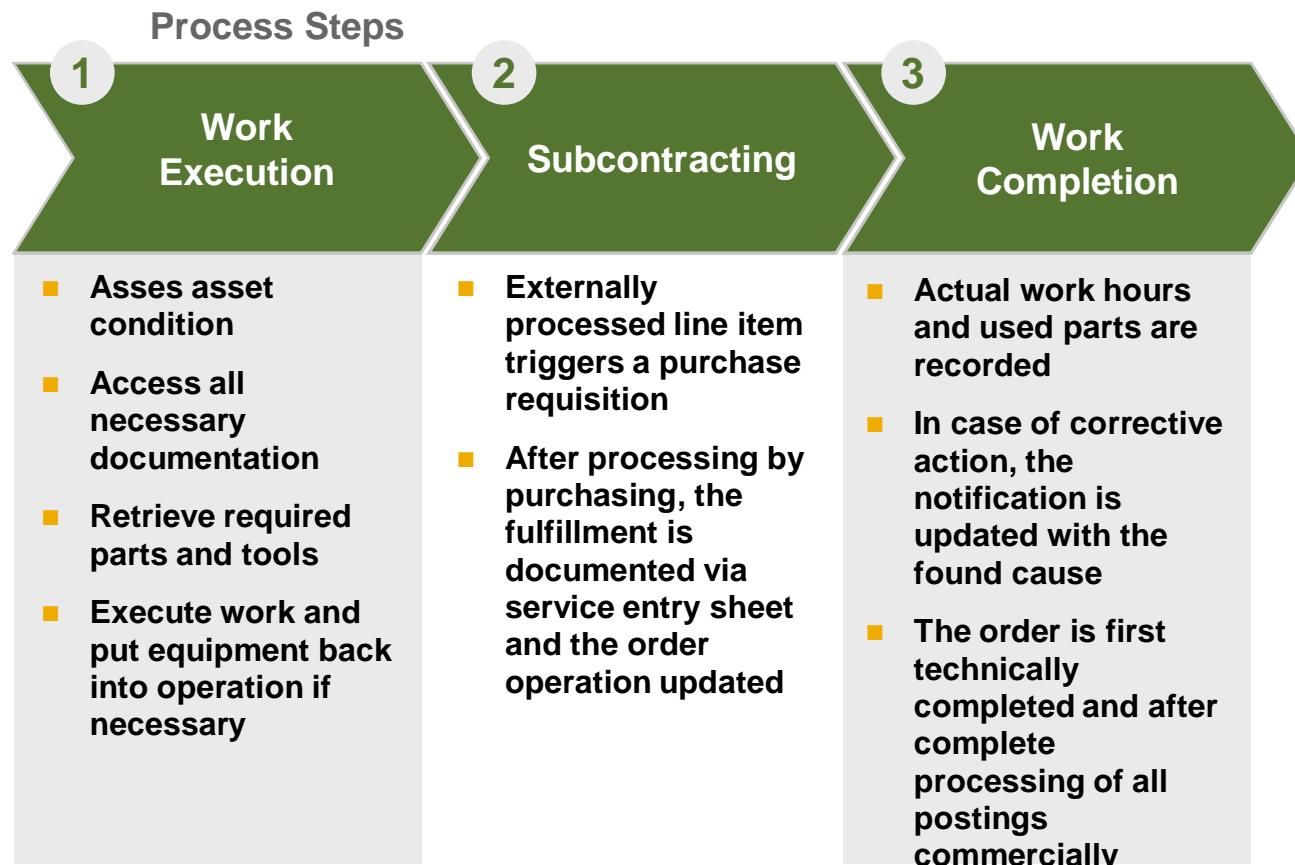
## Process Steps



# Maintenance Execution



After a job has been planned and scheduled, one or more technicians execute the maintenance task and record the results in the system. In case of partial or complete outsourcing of the work, a service procurement process is initiated.



# Service Procurement

## Objectives, Issues, Capabilities, and Benefits



### Objective: Enforce Service Levels

#### Best practice solution:

**Standardize and automate the complete service procurement process from service requests, spot sourcing to the order and pay process for all plant maintenance services**

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Inefficient supplier bidding, selection and PO processing for maintenance services</li><li>■ Delays in service delivery</li><li>■ Higher asset repair costs as contracts are not used</li></ul>	<ul style="list-style-type: none"><li>■ Fully integrated and standardized service procurement capability: Streamlined service bidding and procurement activities</li><li>■ Online supplier collaboration for service request specification, quoting, order confirmation and status</li><li>■ Schedule compliance</li></ul>	<ul style="list-style-type: none"><li>■ Speedy supplier selection, spot bidding and purchasing process. Shorten cycle-times for service delivery</li><li>■ Enable efficient collaboration. Increase contract utilization to realize negotiated savings</li><li>■ Reduce repair costs and increase equipment utilization</li></ul>

## SAP solution



- SAP Business Suite covers the entire service procure to pay process including service requests from ERP integrated to sourcing and contracts, purchase order processing, supplier collaboration and settlement
- Integration to Materials Management for Service Requests and use of Supplier Relationship Management (SRM) bidding engine and Supplier Self Services for efficient web-based bidding collaboration and service fulfillment
- Contracts can be used as source of supply to reduce costs

## SAP differentiators

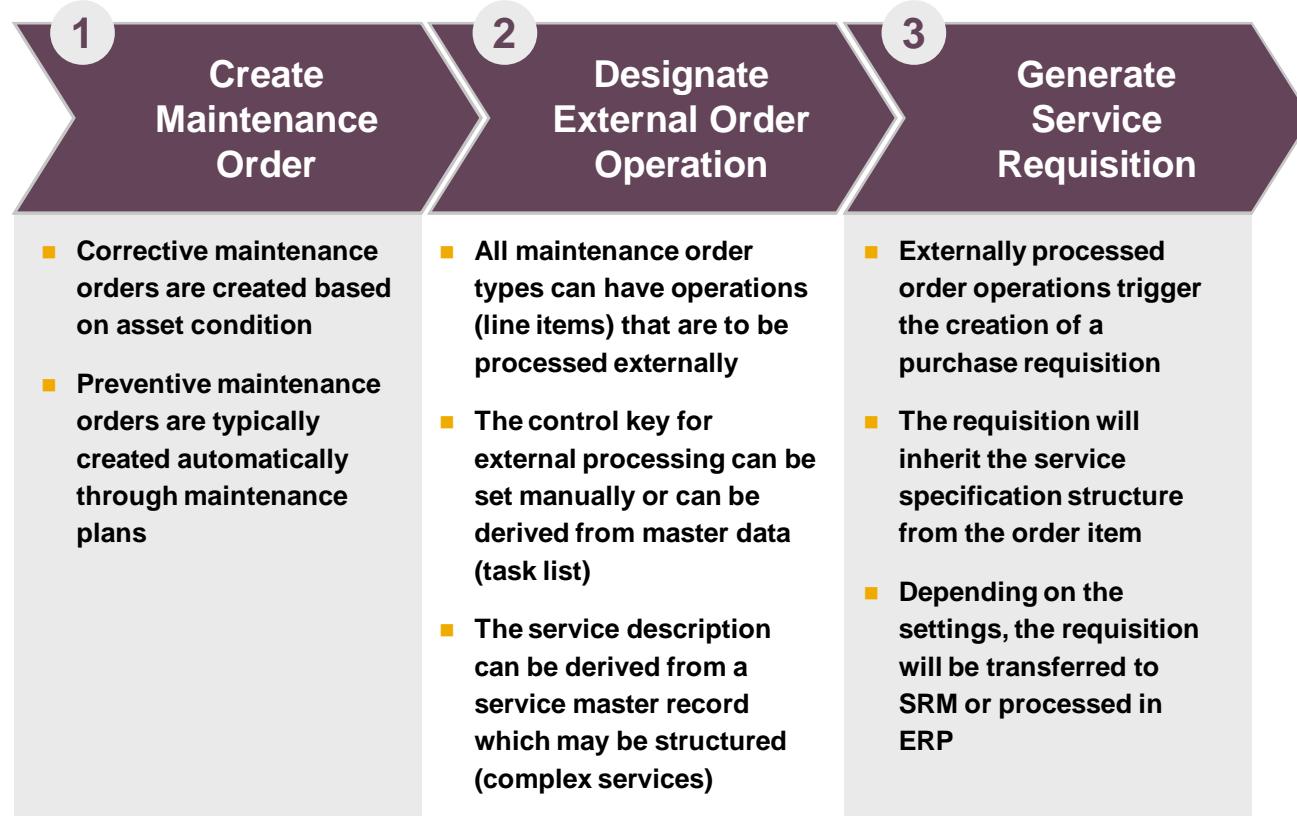
- Fully integrated plant maintenance service request, spot bidding and procurement process.
- Integrated supplier self services supporting hierarchical service structures.
- Supplier Collaboration for Service structure definition and order collaboration.
- Enterprise Service Oriented Architecture (eSOA) based ERP-SRM integration.

# Demand Planning and Creation



Service procurement requisitions can be created manually, but typically they are integrated, resulting from maintenance order operations.

## Process Steps



# Operational Sourcing and Procurement



All information, including hierarchical service structure definitions from ERP, is available in Supplier Relationship Management (SRM) for sourcing. SRM uses portal based vendor collaboration to facilitate the sourcing and procurement process.



## Process Steps

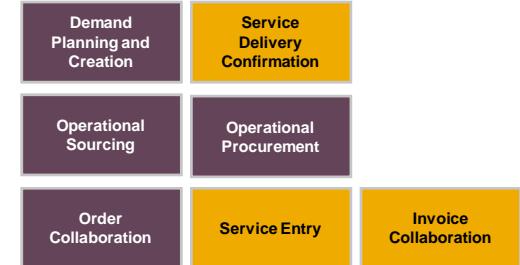
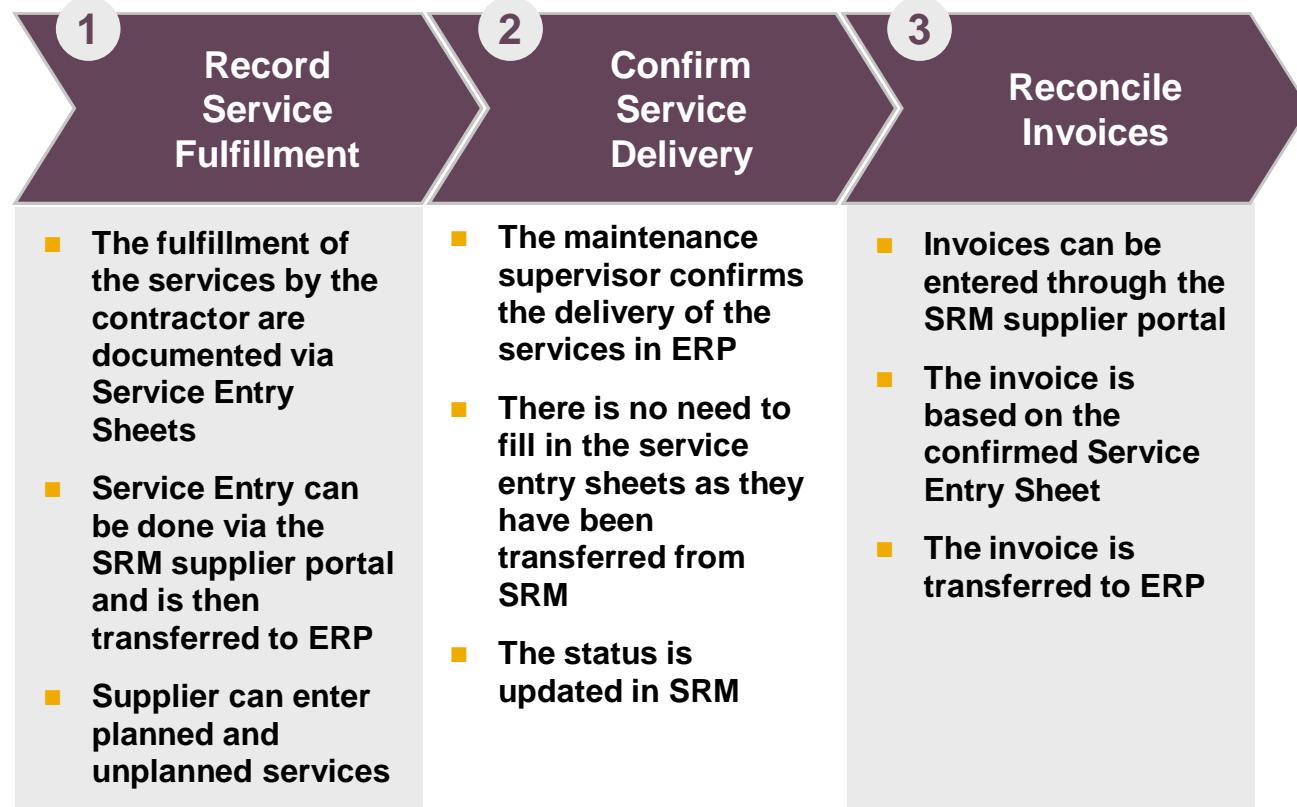


# Order Fulfillment



The suppliers can access all relevant information through the SRM supplier portal and enter their responses there. Fulfillment information is transferred back to ERP for confirmation.

## Process Steps



# Spare Parts Management

## Objectives, Issues, Capabilities, and Benefits



### Objective: Efficient Spare Parts Management

#### Best practice solution:

Automating the spare parts management system can generate cost savings. Requisitions are based on re-order points (ROP) and re-order quantities (ROQ) that are stored in the inventory record. Once inventory levels for a spare part fall below the re-order point threshold, a suggested re-order is placed for the required quantity, which in turn creates a purchase requisition.

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Erratic demand and the attempt to reduce spares inventory lead to missing parts situations.</li><li>■ Inflated spare parts inventory due to obsolete / redundant parts and inappropriate requirements planning.</li><li>■ Spare parts in inventory but not on a parts list: obsolete parts.</li><li>■ Repairs and installation of expensive spares not reflected in asset value</li></ul>	<ul style="list-style-type: none"><li>■ History based safety stock calculation and automated replenishment.</li><li>■ Identify obsolete and redundant spare parts. Reduce inventory levels based on forecast requirements.</li><li>■ Use of Task Lists and Bills of Materials (BOM's)</li><li>■ Flexible settlement of incurred cost, e.g. against asset (capitalization of repair cost)</li></ul>	<ul style="list-style-type: none"><li>■ Saves time and prevents the delays and errors that can occur with manual purchasing processes.</li><li>■ Reduction of capital tied-up in spare parts holding.</li><li>■ Enables quicker selection of spare parts; can be allocated to maintenance schedule.</li><li>■ Asset register reflects current value</li></ul>

## SAP solution

Inventory  
Management

Master Data  
Management

Refurbishment  
Processing

Catalog  
Management

Consumption  
Driven Planning

- Automated parts replenishment through consumption-based Material Requirements Planning (MRP).
- Automatic forecast model selection, re-order point (ROP) and re-order quantity (ROQ) calculation.
- Use Master Data Management (MDM) to identify obsolete and redundant part numbers. Forecast in the material master.
- Eliminate manual planning work through creation of Bills of Materials (BOM) and assigned to Equipment / Functional Location.
- Flexible order settlement against various cost receivers. including fixed assets

## SAP differentiators

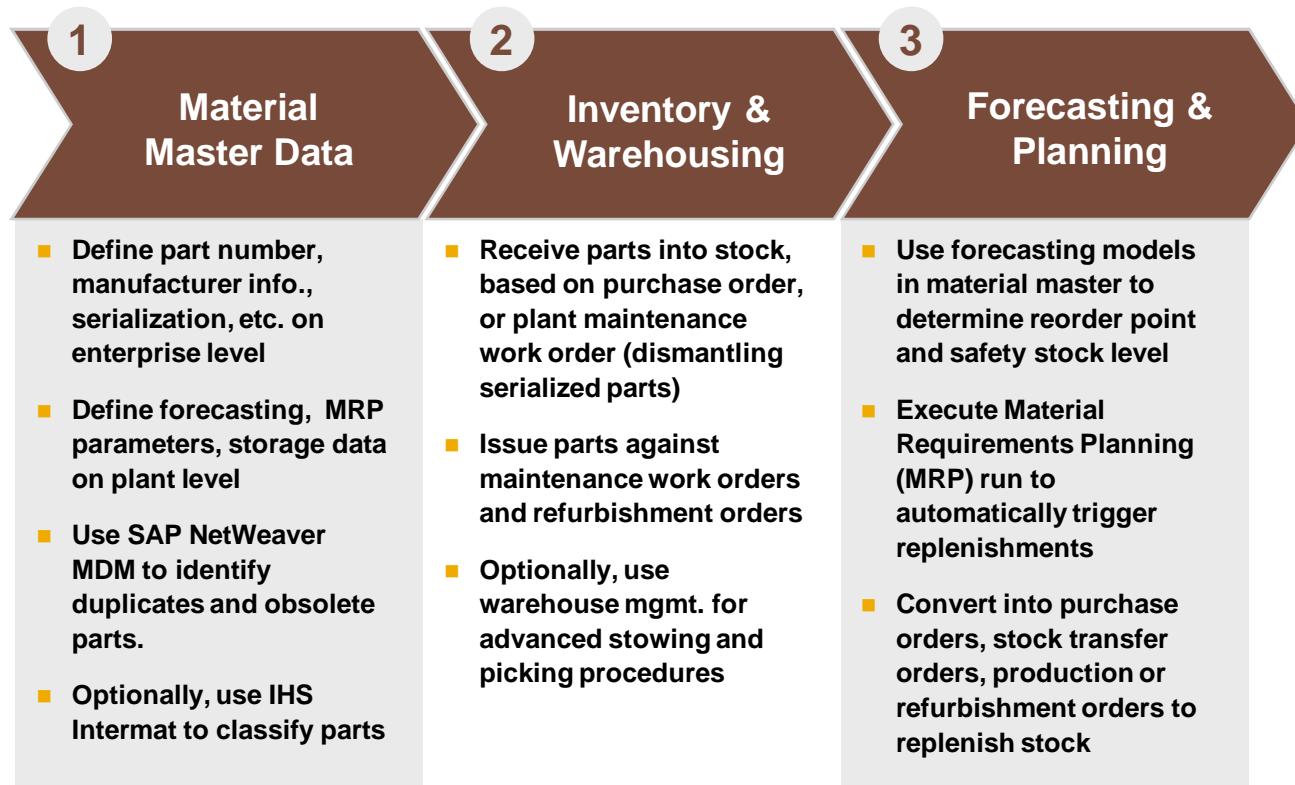
- Seamlessly integrated Maintenance and Materials Management.
- Integrated consumption based Material Requirements Planning.
  - Forecasting models in Materials Management.
  - Master Data Management (MDM).
- Integration to financial processes for capitalization of assets

# Inventory and Consumption Driven Planning



Maintain relevant planning and access data for spare parts. Keep track of parts receipts, transfers, and issues via inventory management and warehousing. Plan for non-deterministic demand using forecasting to calculate reorder point and safety stock levels.

## Process Steps

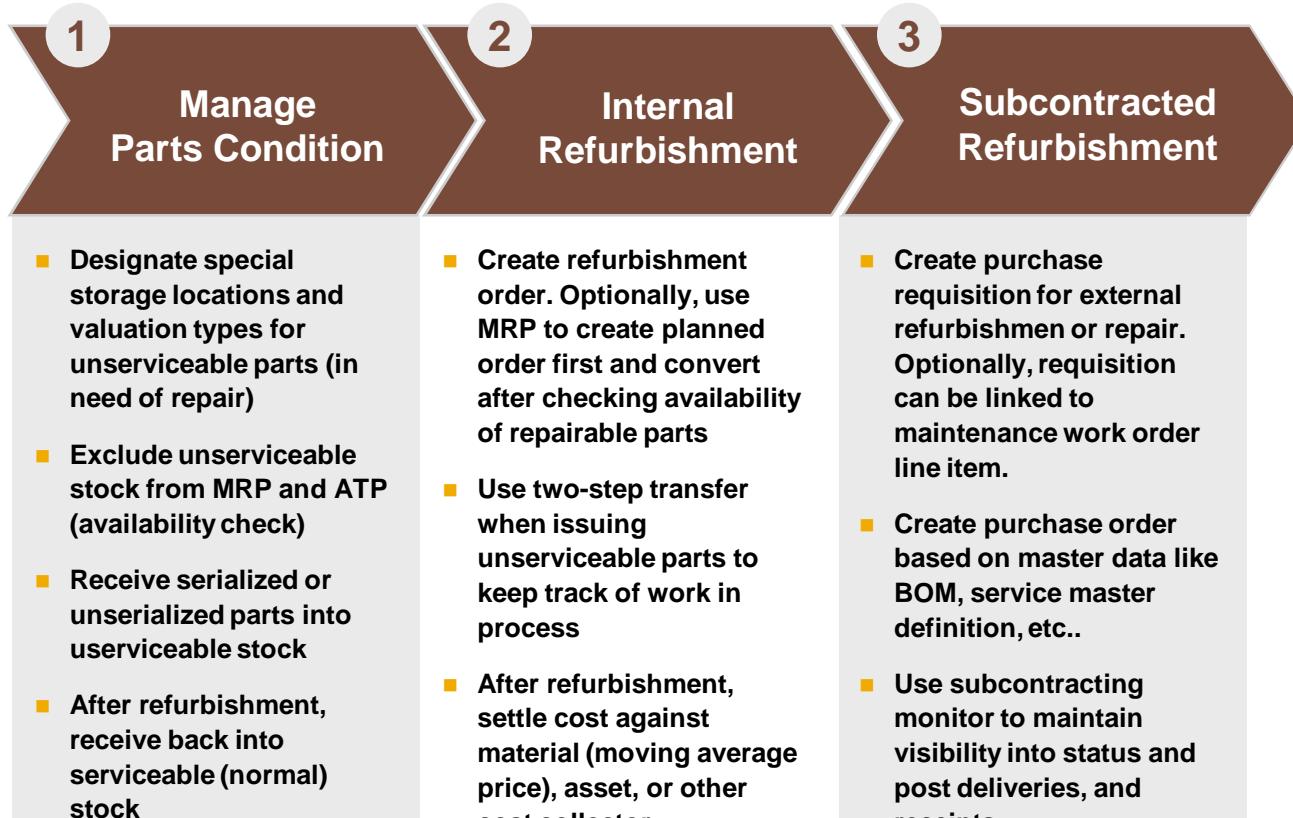


# Internal and Subcontracted Refurbishment



Manage repairable items in inventory, making sure only 'good' parts count as available. Plan and execute internal and external refurbishment or repair, keeping track of parts via special stock segments.

## Process Steps

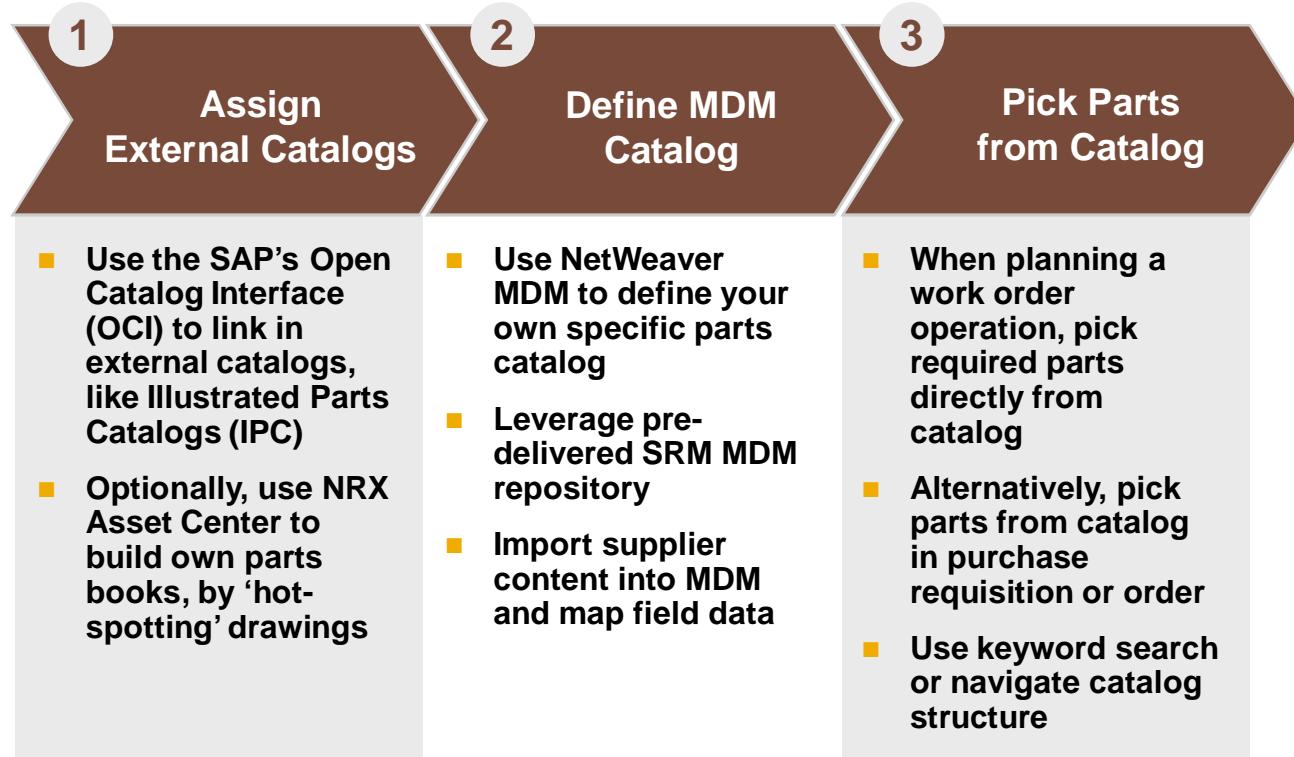


# Catalog Management



**Link external illustrated parts catalogs for intuitive picking. Build own catalogs in NetWeaver MDM.**

## Process Steps



# Best Practice Value Scenario

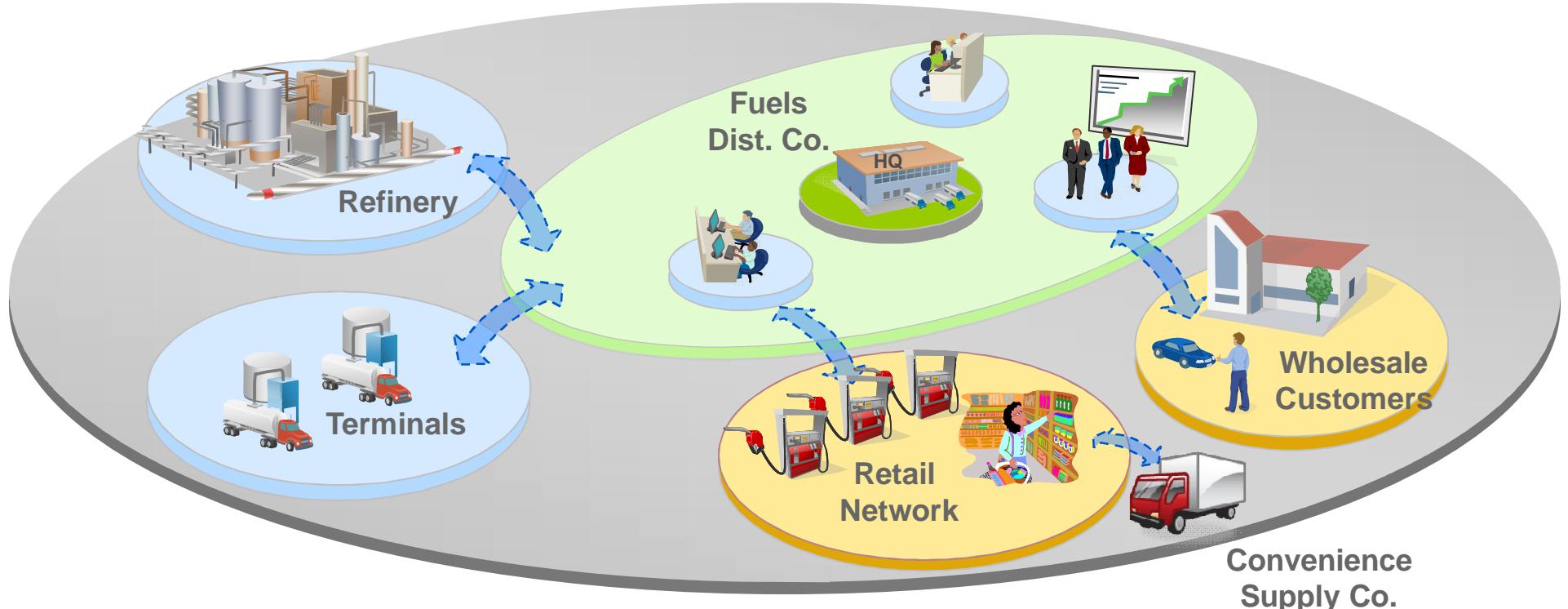
O&G Fuel Replenishment and Terminal Operations Automation



THE BEST-RUN BUSINESSES RUN SAP™



# Integration & Automation - Key to Make Fuels Sourcing, Fuels Replenishment and Terminal Operations More Efficient



## Cost Control and Profit Margin Maximization

Providing the visibility to manage costs and sense and respond to market volatility

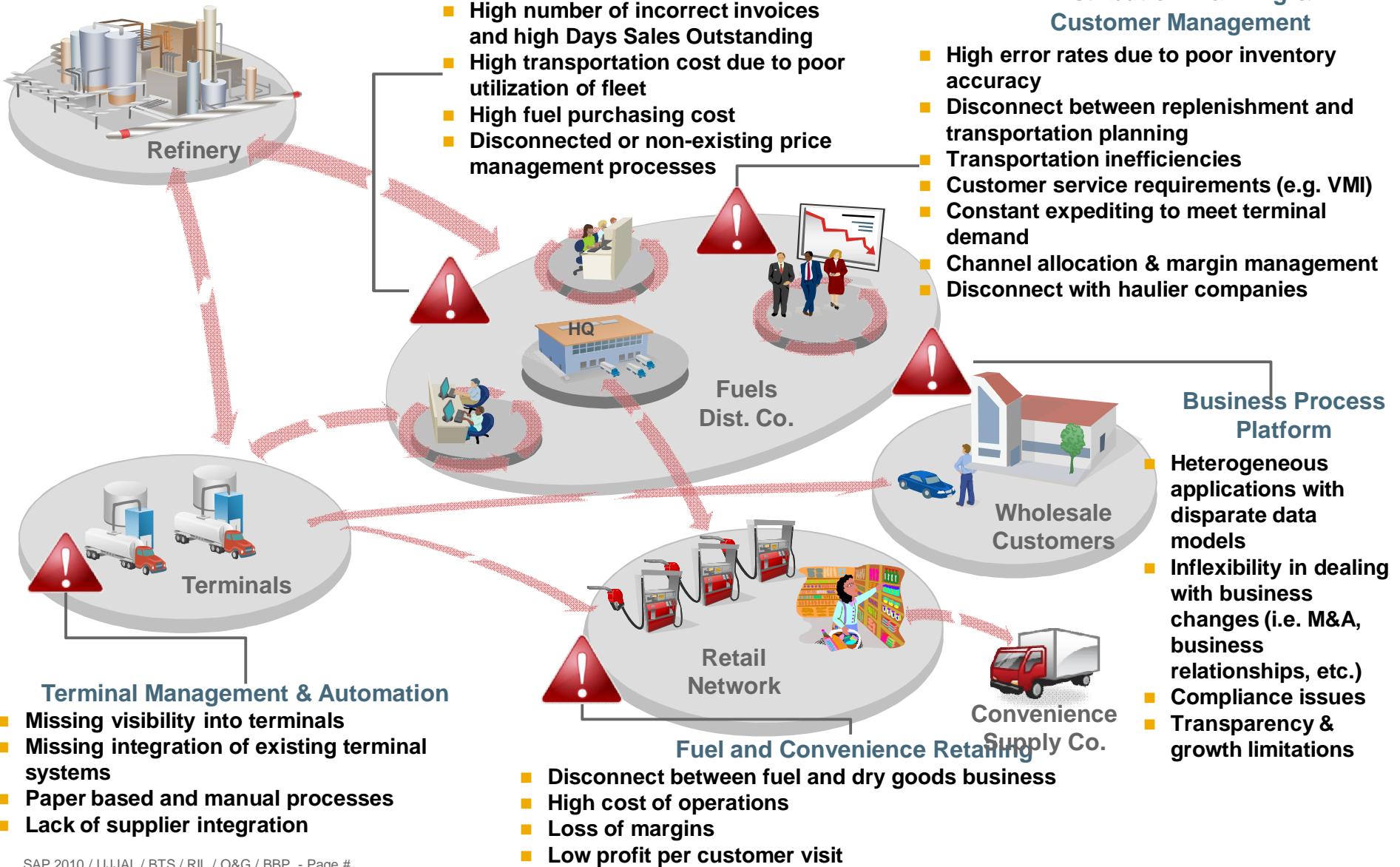
## Distribution Excellence & Customer Satisfaction

Optimizing fleet, fuels delivery, transportation processes, and fuel inventory levels

## Build Customer Loyalty & Increase Customer Satisfaction

Exceptional reliability, high fulfillment rates, competitive pricing, and top-notch service

# Downstream Marketing & Retailing Disruptive Growth

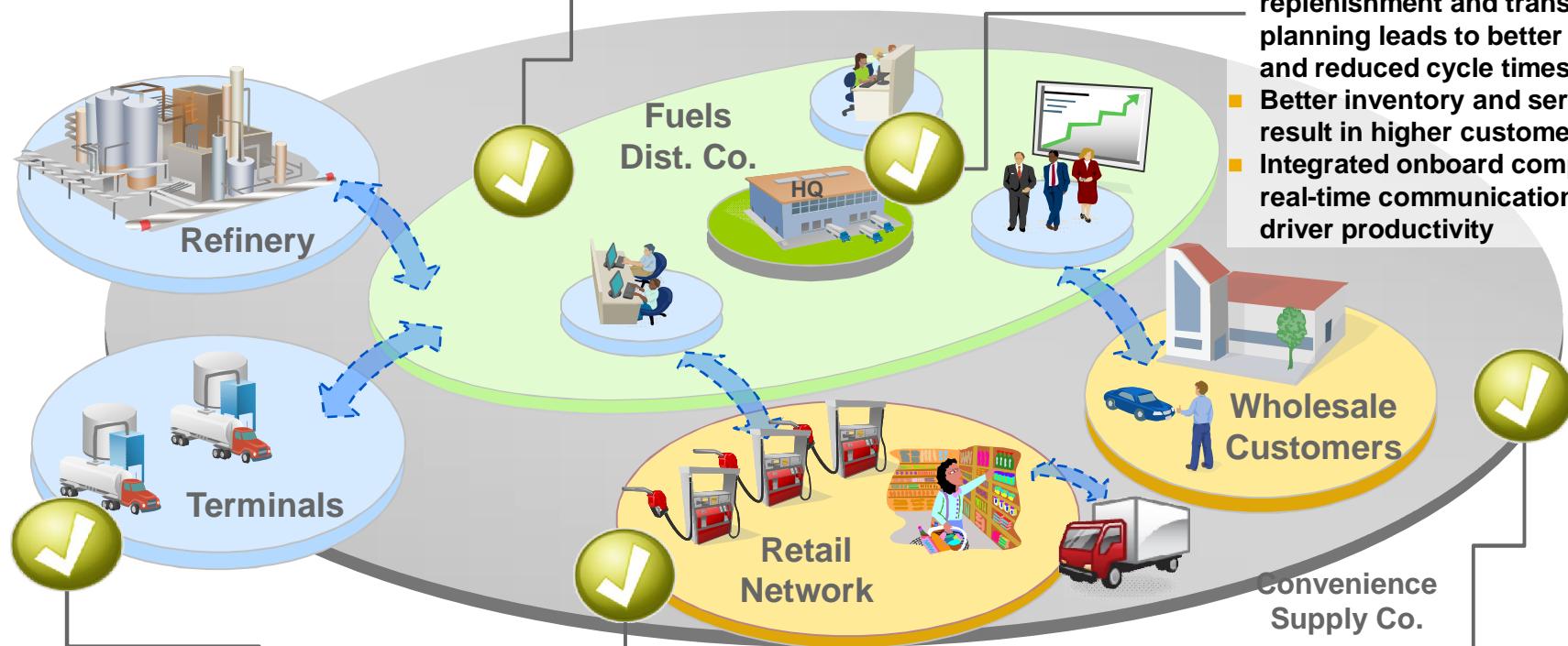


# Downstream Marketing & Retailing: Profitable Growth



## Cost Control and Profit Margin Maximization

- Low administrative and operational costs due to automated processes, e.g. short billing times through up-to-date delivery information and reconciliation
- Reduced fuel purchasing and transportation cost (best buy support, optimal usage of fleet)
- Increased margin due to closed loop price management & optimization processes from refinery gate to retail pump



## Terminal Management & Automation

- Full visibility into terminals
- Integration of existing terminal systems
- Fully automated processes
- Integration of suppliers

## Integrated Fuel & Convenience Retailing

- Integrated wet and dry good business
- Managed margins
- Reduced cost of operation
- Increased customer visit basket size

## Distribution Excellence & Customer Satisfaction

- Streamlined forecasting and real-time requirements planning result in more forecasts
- Integrated and automated replenishment and transportation planning leads to better decisions and reduced cycle times
- Better inventory and service levels result in higher customer satisfaction
- Integrated onboard computers and real-time communication increase driver productivity

## Business Process Platform

- Flexible and agile platform for addressing business needs
- Low TCO from integrated solution
- Supporting compliance, transparency & growth

# Aligning Stakeholders to achieve Efficient Fuels Replenishment and Terminal Operations



Effective Fuels Replenishment and Terminal Operations requires alignment between several stakeholders with differing objectives



CEO /  
Vice President of fuels  
marketing & distribution



Head of  
Distribution



Head of  
Terminal  
Management



CFO /  
Head of  
Accounting

## Optimize Costs & Margins and Prepare for Growth

How do I control costs and maximize profit margins and how can I sense and respond to market volatility?

- Revenue & cost
- Operating Margin
- Enterprise Growth

## Fuel Distribution

How do I achieve fuels distribution excellence?

- Customer Satisfaction
- Forecast Accuracy
- Optimize transport cost
- Optimize fuel sourcing
- Fuel inventory levels

## Terminal Management

How do I get visibility into my terminals and streamline processes?

- Visibility into terminals
- Integration of terminal systems
- Automated processes
- Integration of suppliers

## Reconciliation, Accounting & Billing

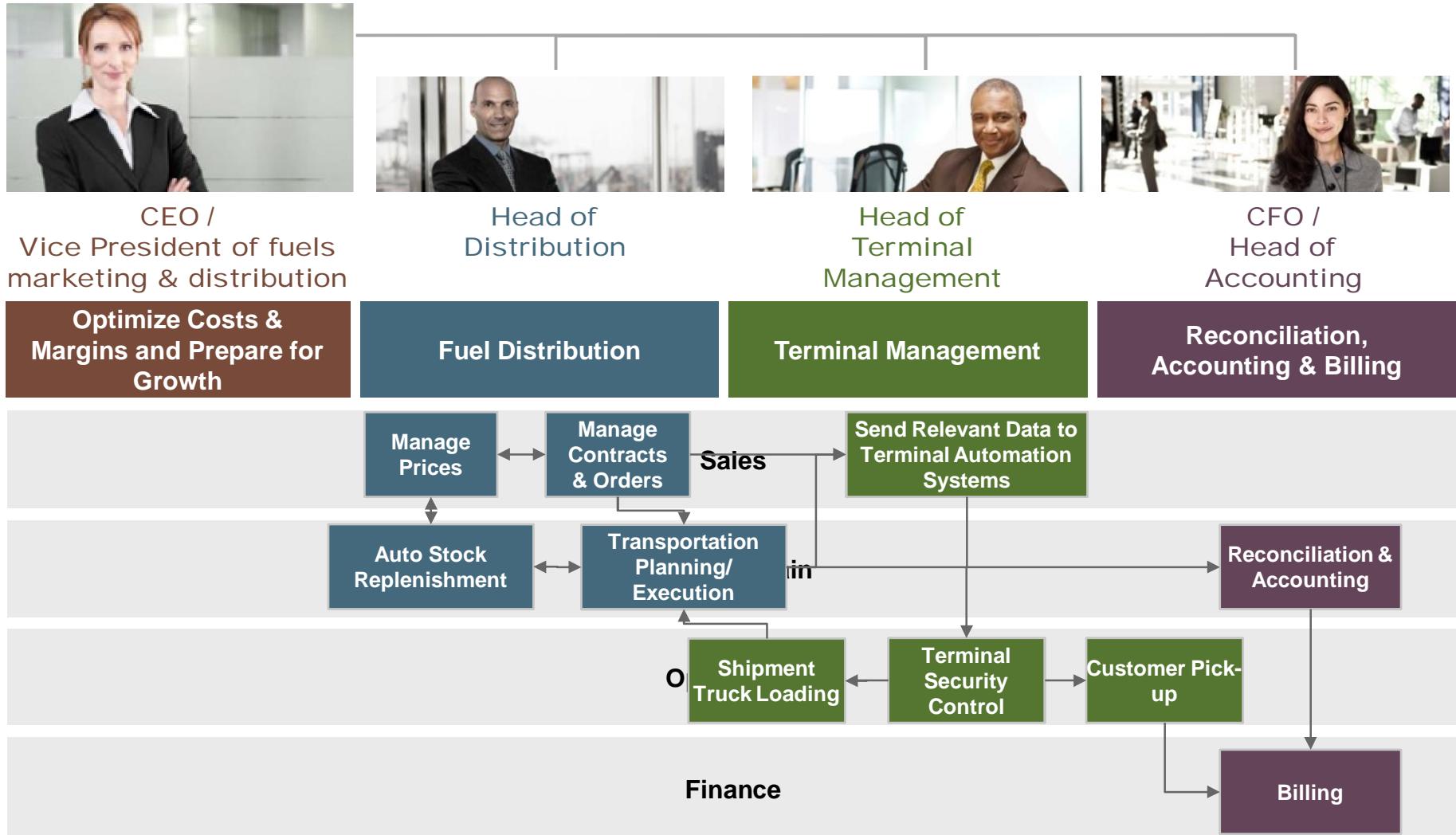
How do I ensure correct accounting and regulatory compliance?

- Fuel volume reconciliation
- Order-to-cash process
- Procure-to-pay process
- Days Sales Outstanding
- Regulatory Compliance

# Fuels Replenishment and Terminal Operations end-to-end cross-functional process



Fuels Replenishment and Terminal Operations connects processes across departments to enable a timely, profitable response to customer demand





### Objective:

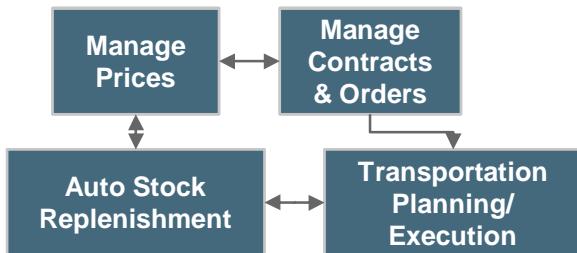
**Replenish retail networks and commercial customers' tanks**

### Best practice solution:

**Achieve distribution excellence by optimizing your fleet, fuels delivery, transportation processes, and fuel inventory levels**

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Poor visibility causes danger of run-outs leading to lower service levels &amp; customer dissatisfaction</li><li>■ Difficult to maximize/optimize utilization of fleets and minimize transportation costs</li><li>■ Sub-optimal fuel sourcing</li><li>■ Missing automation of business processes (order-to-cash, procure-to-pay, reconciliation)</li></ul>	<ul style="list-style-type: none"><li>■ Optimized sourcing based upon product availability, contracts &amp; costs</li><li>■ Integrated automatic stock replenishment with truck dispatch planning and optimization</li><li>■ Dispatching: must &amp; can go orders; trucks, trailers, compartments</li><li>■ Tele-Sales with integrated pre-scheduling</li><li>■ Optimization of single and multi drop scenarios</li><li>■ Automated reconciliation and posting of all required transactions in SAP</li></ul>	<ul style="list-style-type: none"><li>■ Reduced transportation costs; reduced truck fleet up to 12%</li><li>■ Reduced fuel cost through agile response to market volatility</li><li>■ Reduced replenishment costs up to 30%</li><li>■ Reduced stock-outs up to 15%</li><li>■ Improved operational productivity</li></ul>

## SAP Solution



- Optimized sourcing based upon product availability, contracts & costs
- Integrated automatic stock replenishment with truck dispatch planning and optimization
- Dispatching: must & can go orders; trucks, trailers, compartments
- Tele-Sales with integrated pre-scheduling
- Optimization of single and multi drop scenarios
- Price Management & Optimization for all channels of trade from refinery gate to retail pump
- Automated reconciliation and posting of all required transactions in SAP

## SAP Differentiators

**Completeness:** Complete solution including price & contract management, automatic stock replenishment, truck dispatch optimization and transportation execution

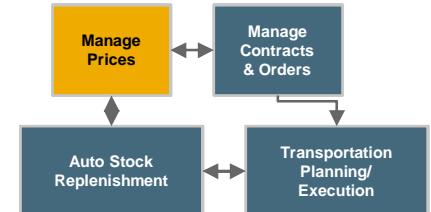
**Integration:** Real-time data availability from all connected parties: hauliers, trucks, terminals, back office, commercial customer & retail network tanks

**Scalability:** Scalable architecture for companies of all sizes

# Manage Price



**Price management allows companies to set price strategies, execute on those strategies and monitor results**



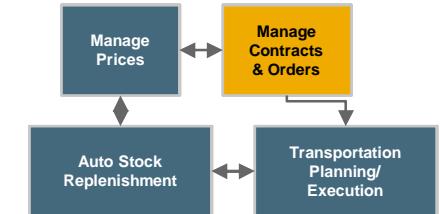
## Process Steps



# Manage Contracts & Orders



**Contract and order management allows companies to define business terms under which to operate with its customers and to manage the daily sales process**



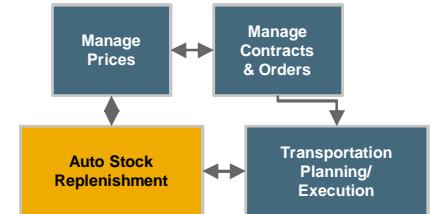
## Process Steps



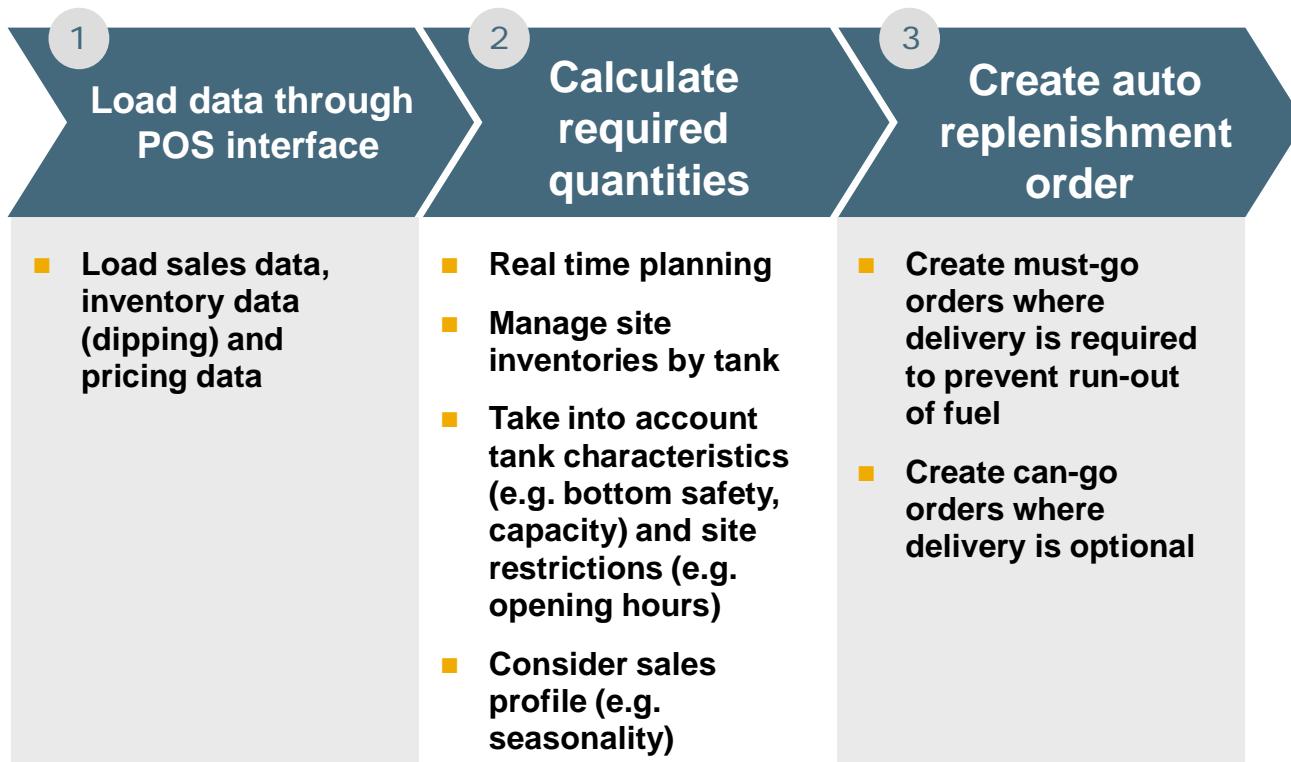
# Auto Stock Replenishment



**Auto Stock Replenishment ensures that customer tanks are filled up at the optimal point of time in order to avoid run-outs**



## Process Steps

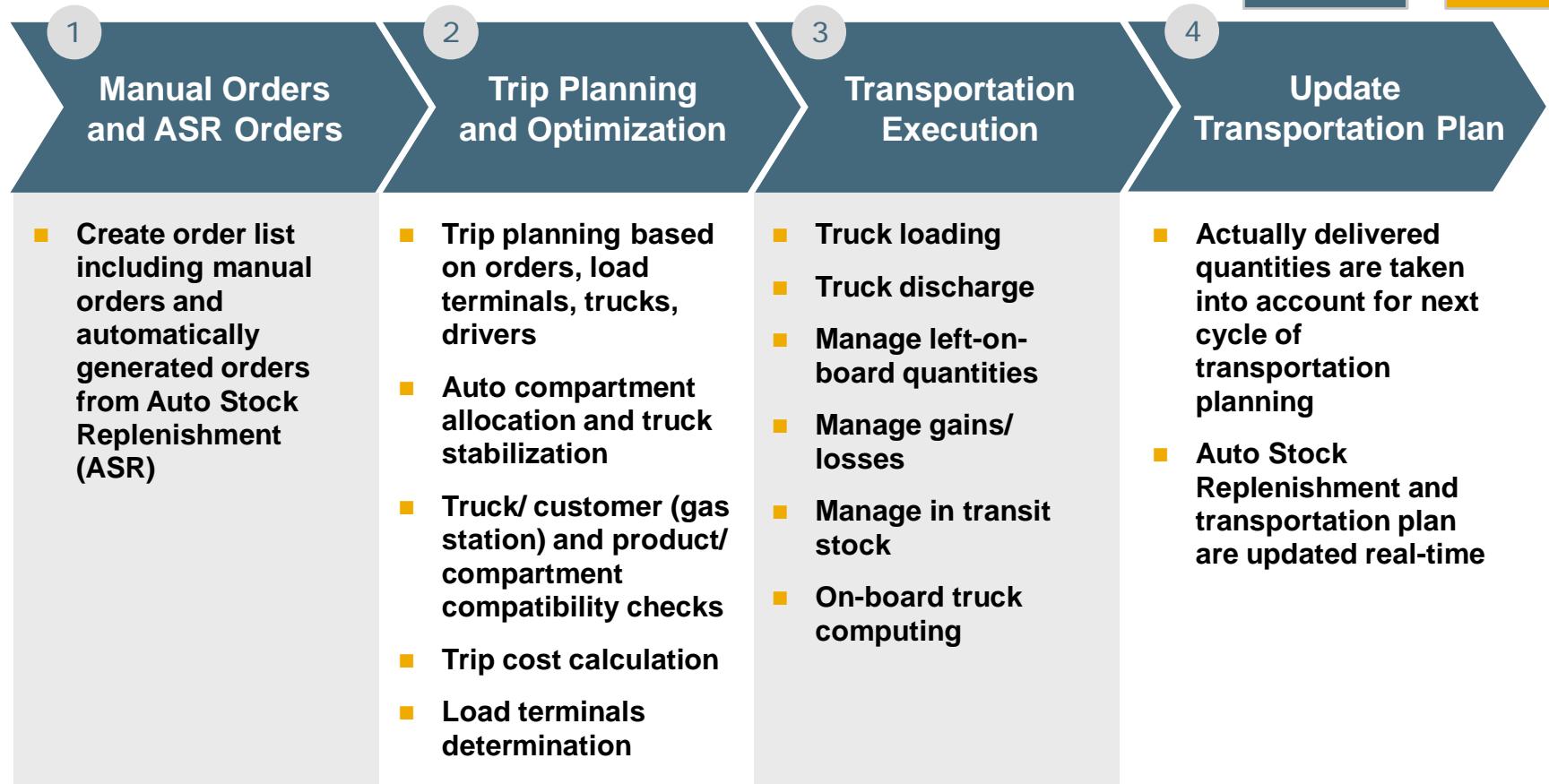


# Transportation Planning and Execution



Transportation planning and execution enables companies to maximize the utilization of their fleet, minimize transportation costs and increase customer satisfaction through prompt deliveries

## Process Steps



# Terminal Management

## Objectives, Issues, Capabilities and Benefits



### Objective:

**Integrate fuel terminals with the ERP system; optimize and automate logistic and administrative processes within terminals**

### Best practice solution:

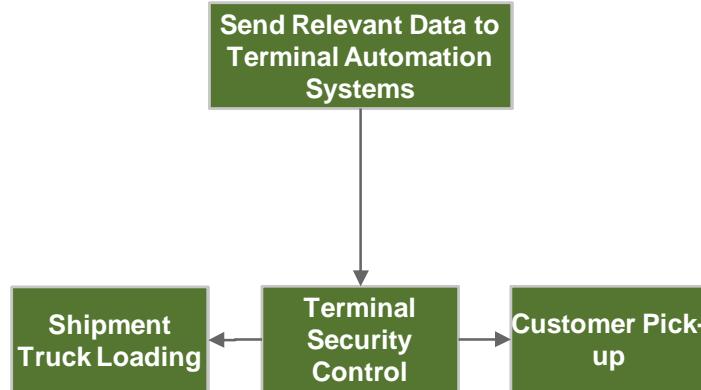
**Provide full visibility into terminals by integrating terminal systems and enabling communication between the field systems and the ERP system**

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Missing integration leading to information silos and disconnect from partners</li><li>■ No up-to-time data and poor data quality due to manual processes</li><li>■ Poor visibility into and control of business processes</li><li>■ Heterogeneous &amp; incompatible processes in acquired sites</li><li>■ Difficult to adapt to changing regulations &amp; to handle different regulations in different regions</li></ul>	<ul style="list-style-type: none"><li>■ Supports integration &amp; harmonization of field equipment and 3rd party TAS components</li><li>■ Depot stock management (per tank) for own stock and 3rd party stock</li><li>■ Automates and supports standard terminal processes, e.g. check-in, loading, check-out</li><li>■ Security management (identification of trucks and drivers)</li><li>■ Printing of transport documents</li><li>■ Fail safe capable for 24/7 operation</li></ul>	<ul style="list-style-type: none"><li>■ Improved operational efficiency and productivity</li><li>■ Improved data quality</li><li>■ Reduced labor costs up to 25%</li><li>■ Reduced maintenance costs up to 10%</li><li>■ Reduced administrative costs up to 20%</li></ul>

# Terminal Management



## SAP Solution



- Supports integration & harmonization of field equipment and 3rd party TAS components
- Depot stock management (per tank) for own stock and 3rd party stock
- Automates and supports standard terminal processes, e.g. check-in, loading, check-out
- Security management (identification of trucks and drivers)
- Printing of transport documents
- Fail safe capable for 24/7 operation

## SAP Differentiators

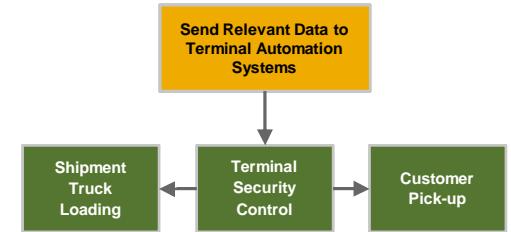
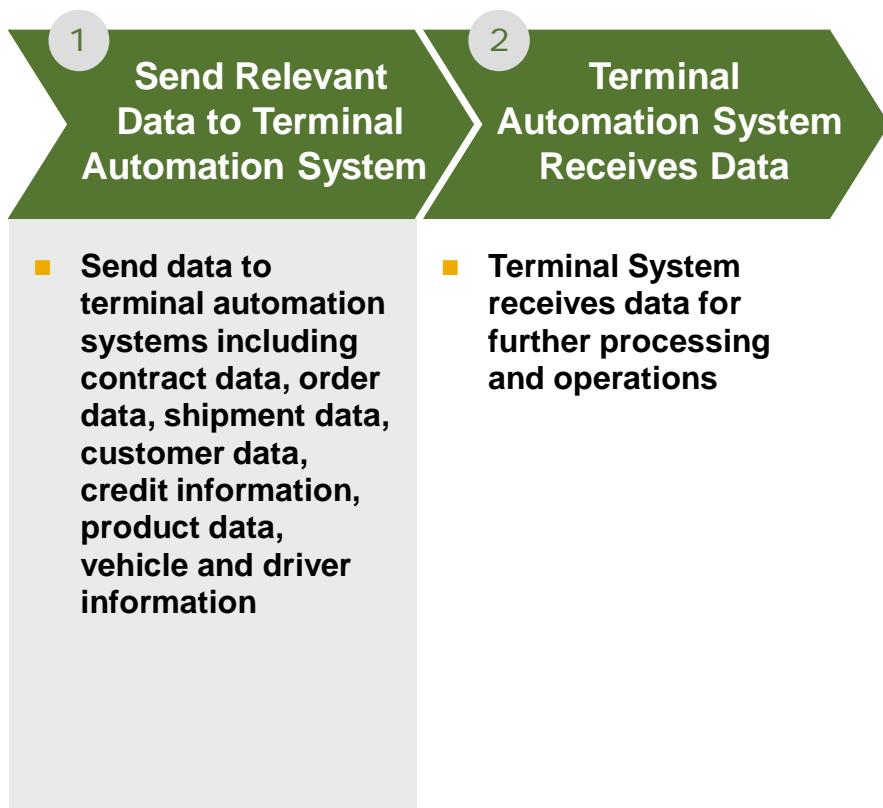
**Integration:** Ability to fully integrate ERP system with terminals and field equipment enabling real-time data communication and business process automation

**Scalability:** Scalable architecture for companies of all sizes

**Compliance:** Increases security and helps reaching regulatory compliance

**Sending relevant data to terminal automation systems ensures that terminals have all data for their daily operations (e.g. authorization control, product lifting, etc.)**

## Process Steps

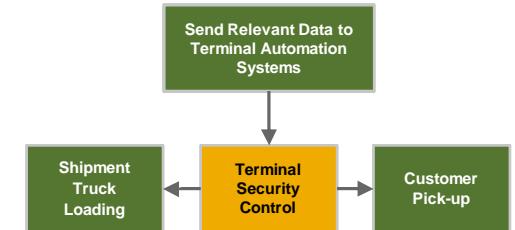
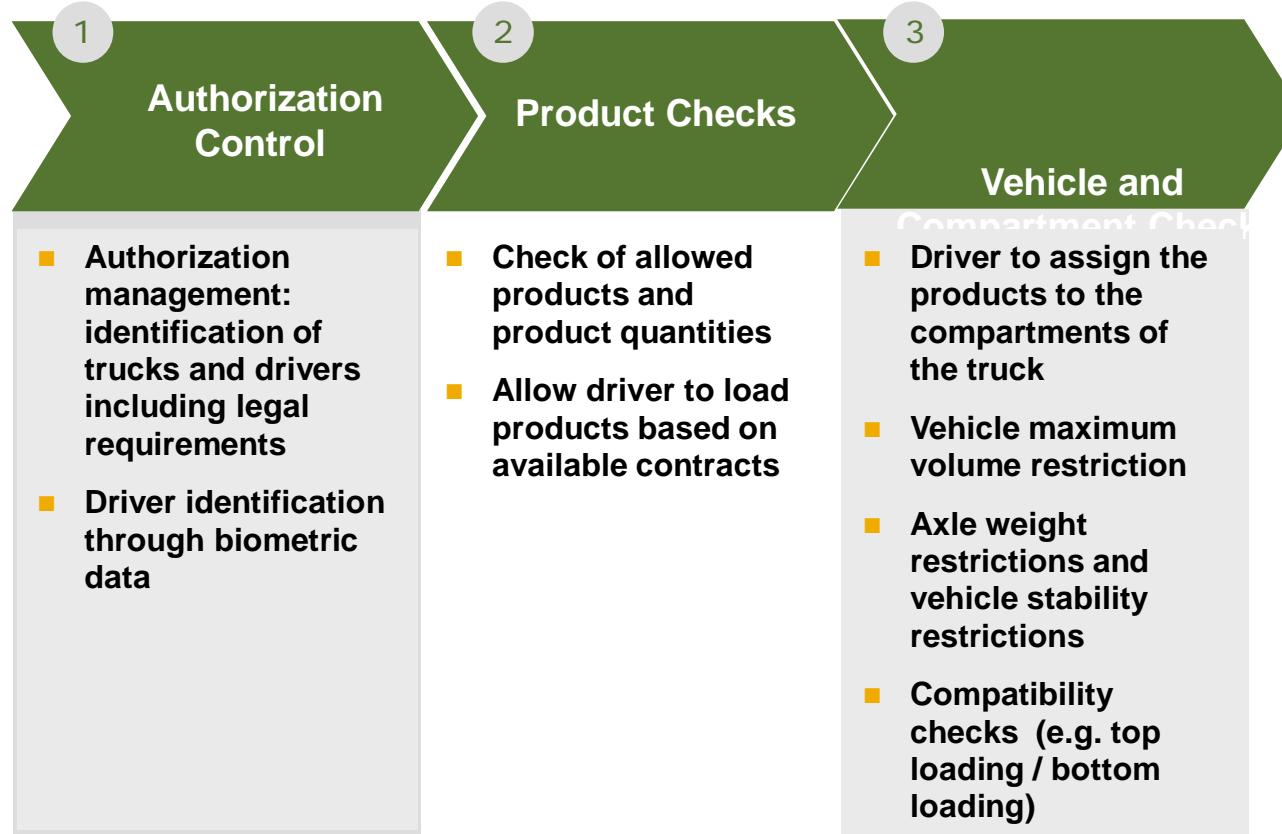


# Terminal Security Control



**Terminal security control ensures that all safety regulations and procedures are applied before loading a truck at a terminal**

## Process Steps

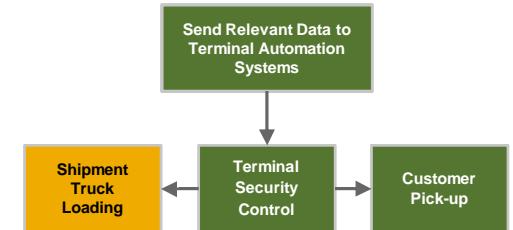
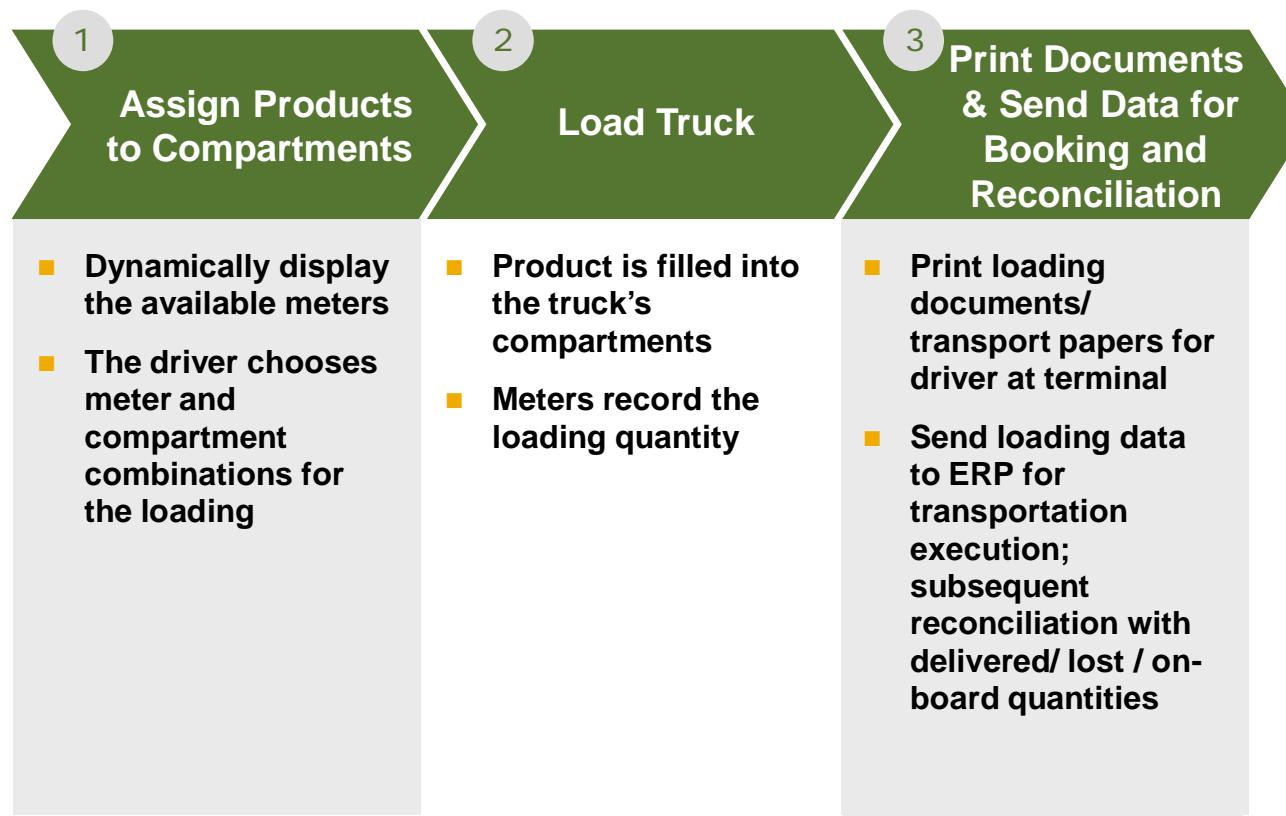


# Shipment Truck Loading



Truck loading for scheduled shipments covers the process of filling products into trucks on compartment level and subsequent printing of loading documents. Loading data is sent to the ERP system for subsequent shipment execution processing and reconciliation with delivery data.

## Process Steps

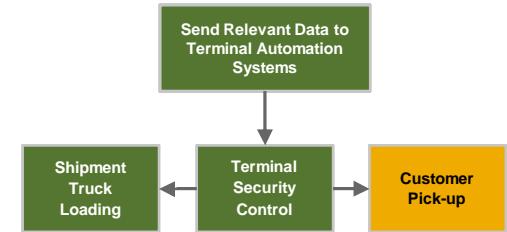
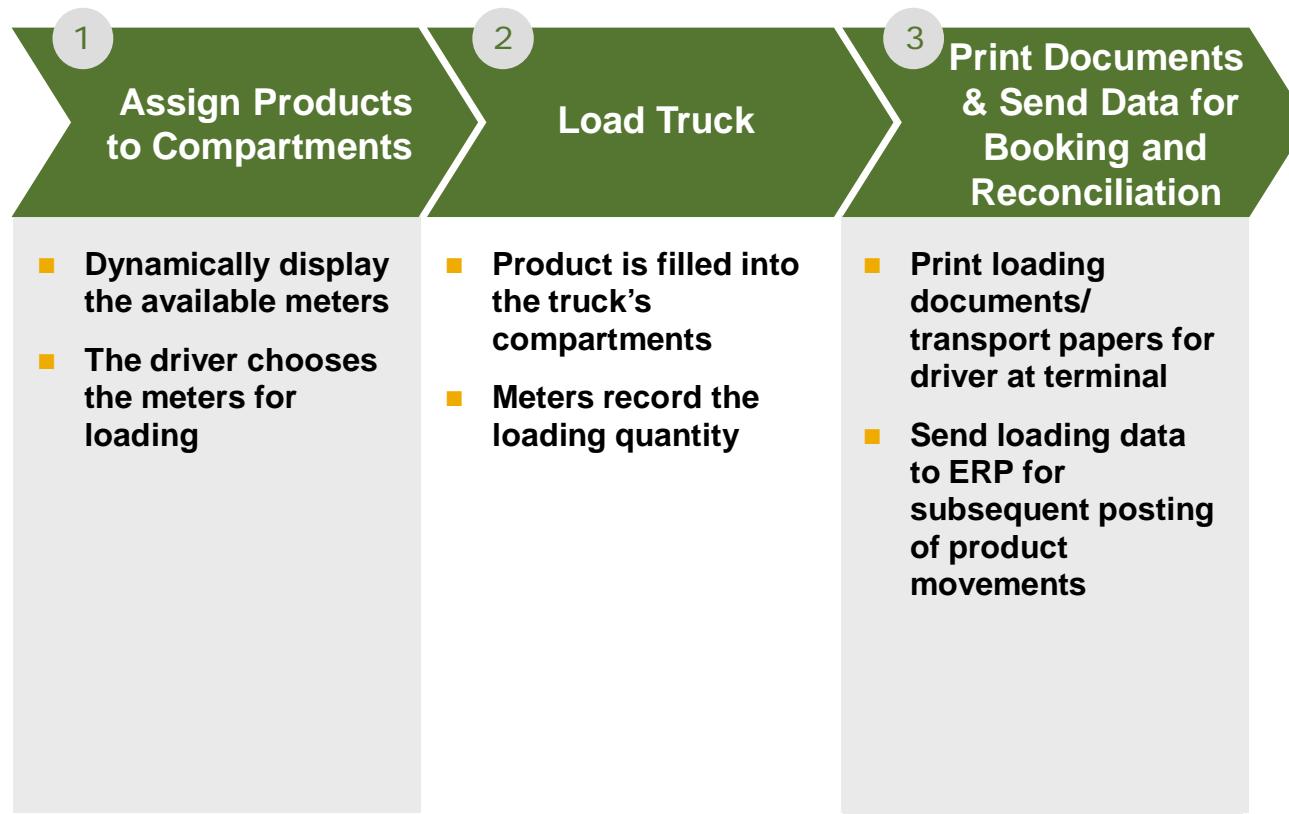


# Customer Pick-up



**Customer pick-up covers the process of customers lifting product at the terminal based on existing agreements. It includes subsequent printing of loading documents. Loading data is sent to the ERP system for subsequent booking.**

## Process Steps



# Reconciliation, Accounting & Billing

## Objectives, Issues, Capabilities and Benefits



### Objective:

**Reduce administrative and accounting costs through automated reconciliation of data from terminals & trucks and posting of documents; correct accounting and timely billing**

### Best practice solution:

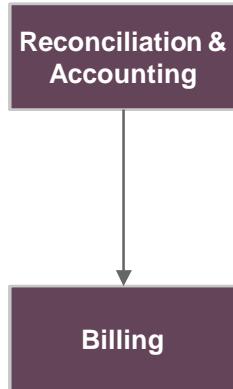
**Reduce reconciliation efforts and increase data integrity through automated fuel volume reconciliation and automated booking of data in the ERP system**

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Manual data entry leading to incorrect and incomplete data</li><li>■ Billing delays</li><li>■ High number of incorrect invoices and high Days Sales Outstanding (DSO)</li></ul>	<ul style="list-style-type: none"><li>■ Automatic reconciliation of ordered, loaded and delivered quantities</li><li>■ Integration of on-board truck computing and terminal systems in order to get accurate data faster</li><li>■ High integration of business processes</li></ul>	<ul style="list-style-type: none"><li>■ Reduce efforts for manual data entry and reconciliation</li><li>■ Real-time inventory and product movement data</li><li>■ Lower Days Sales Outstanding</li><li>■ Tighten planning &amp; scheduling cycles</li><li>■ Improve customer service levels</li><li>■ Increase data integrity and ensure compliance</li></ul>

# Reconciliation, Accounting & Billing



## SAP solution



- Automatic reconciliation of ordered, loaded and delivered quantities
- Integration of on-board truck computing and terminal systems in order to get accurate data faster
- High integration of business processes

## SAP differentiators

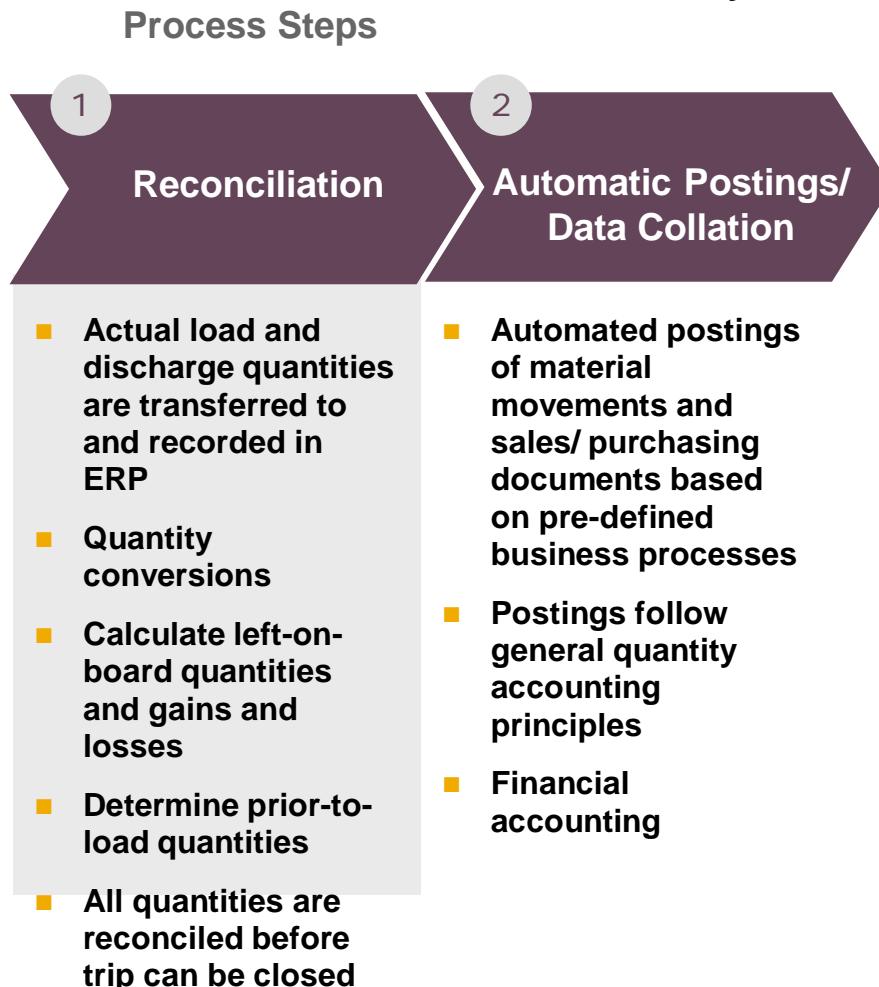
**Integration:** Enables full integration of data flows from terminals and on-board truck computer systems in order to allow fully automatic fuel volume reconciliation and booking in ERP

**Compliance:** Increasing data quality helps reaching regulatory compliance

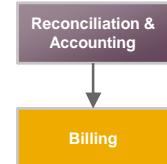
# Reconciliation & Accounting



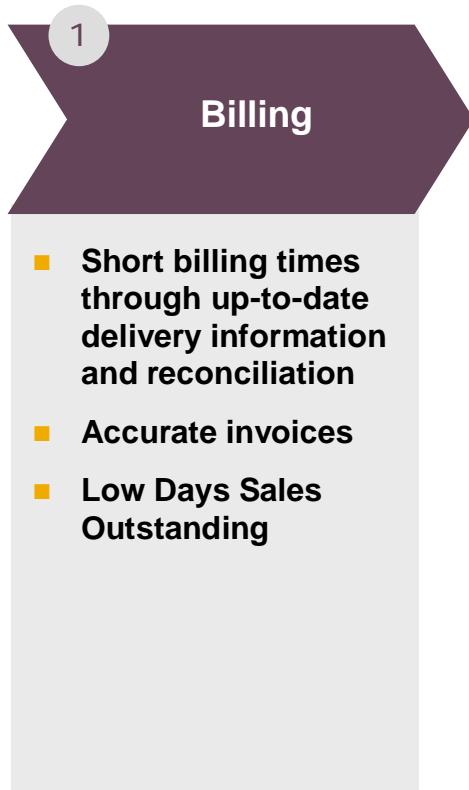
**Automatic reconciliation and accounting enables companies to reduce their administrative overhead, ensure fast and accurate postings and high inventory accuracy**



**Up-to-date delivery information and reconciliation enable companies to have short billing times and accurate invoices**



## Process Steps



- Short billing times through up-to-date delivery information and reconciliation
- Accurate invoices
- Low Days Sales Outstanding

# Best Practice Value Scenario

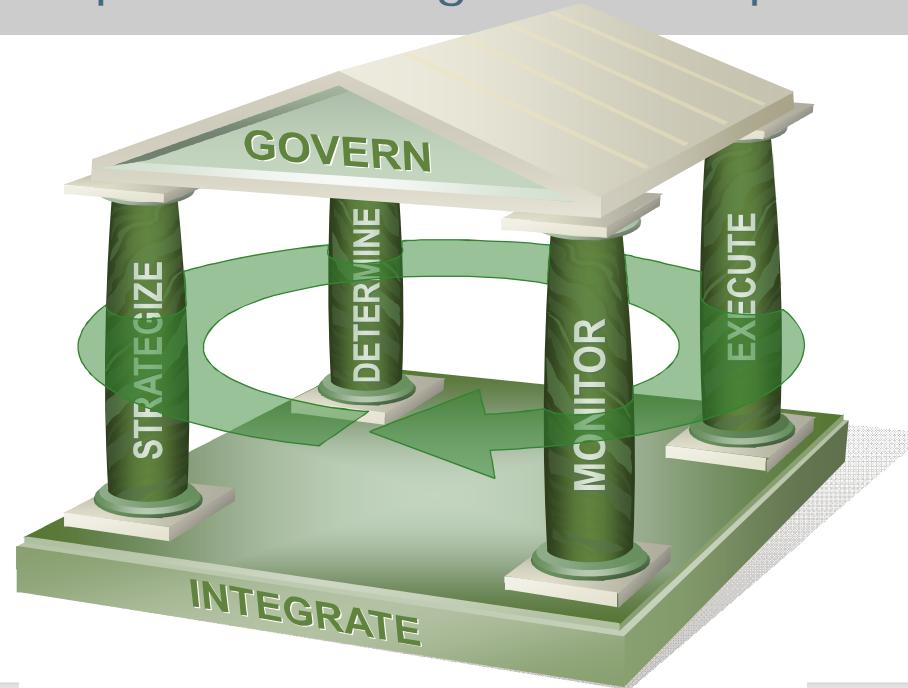
## O&G Fuel Price Management & Optimization



THE BEST-RUN BUSINESSES RUN SAP™



# Growing Profitable Business Requires Closed Loop Price Management & Optimization



## Governance Establishes Transparent Business Processes and Ensures Regulatory Compliance

Weak or loose controls and lack of audit trail hinder satisfaction of regulatory compliance and legislation leading to increased risks

Develop Optimal Strategies	Determine Prices Consistent with Strategy	Fast Execution Responding to Competitor Changes	Continuous KPI Monitoring
Effectively adapting strategy to address new competition, market cost/ price volatility & margin pressure	Tactics inconsistent with strategy results in missed opportunities, conflicts & reactive pricing	Manual processes result in pricing errors, volume/margin leakage and slow response to market/competitor changes	Delays identifying performance issues and limited KPI analysis means strategy no longer optimal; loss of margin/volume

## Integration Platform Ensures Consistent Data Definitions

Interfaces costly to develop & maintain; data duplication, poor quality & inefficient access severely affect pricing effectiveness

# AMR Pricing Survey Results - 2008



## Trends in Price and Profit Management Survey - 2008

Sample size: 219 completed interviews

### Primary business industry:

- High-Tech = 34 interviews (22%)
- Chemicals = 28 interviews (18%)
- Oil & Gas = 29 interviews (19%)
- Industrial Manufacturing= 32 interviews (21%)
- Wholesale Distribution = 32 interviews (21%)

### Company size (by annual revenue):

- 21% \$500M - \$999.9M
- 38% \$1B - \$4.9B
- 20% \$5B - \$9.9B
- 21% \$10B or more

### Job title:

- 25% Line of Business (COO, VP, Dir Operations/SC Management)
- 28% GM/Finance (CFO, VP, Dir)
- 48% Sales, Marketing, Pricing (CMO, VP, Dir Sales/Mktg or Chief Pricing/Revenue titles)

### Role in pricing management initiatives:

- 6% Solely responsible for decisions
- 44% Leader of a group responsible for decisions
- 50% Member of a group responsible for decisions

## Key Survey Findings

- 94% of companies engaged in pricing initiatives have improved profits
- Average payback period on pricing investments is 12 mo. 47% of companies have realized value in less than 12 months
- Key drivers of pricing initiatives are: COO (24%), SVP of Sales (18%), CFO (16%), CMO (10%), VP of Pricing (9%)
- Drivers behind price management initiatives include: improve overall profitability, better deal negotiation, improve response time to pricing triggers, recover product/service costs
- Average company spend on price management initiatives is \$4.3 MM
- 79% of companies are planning on increasing their spend on price management initiatives by an average of 18%
- Use of technology in pricing initiatives is growing

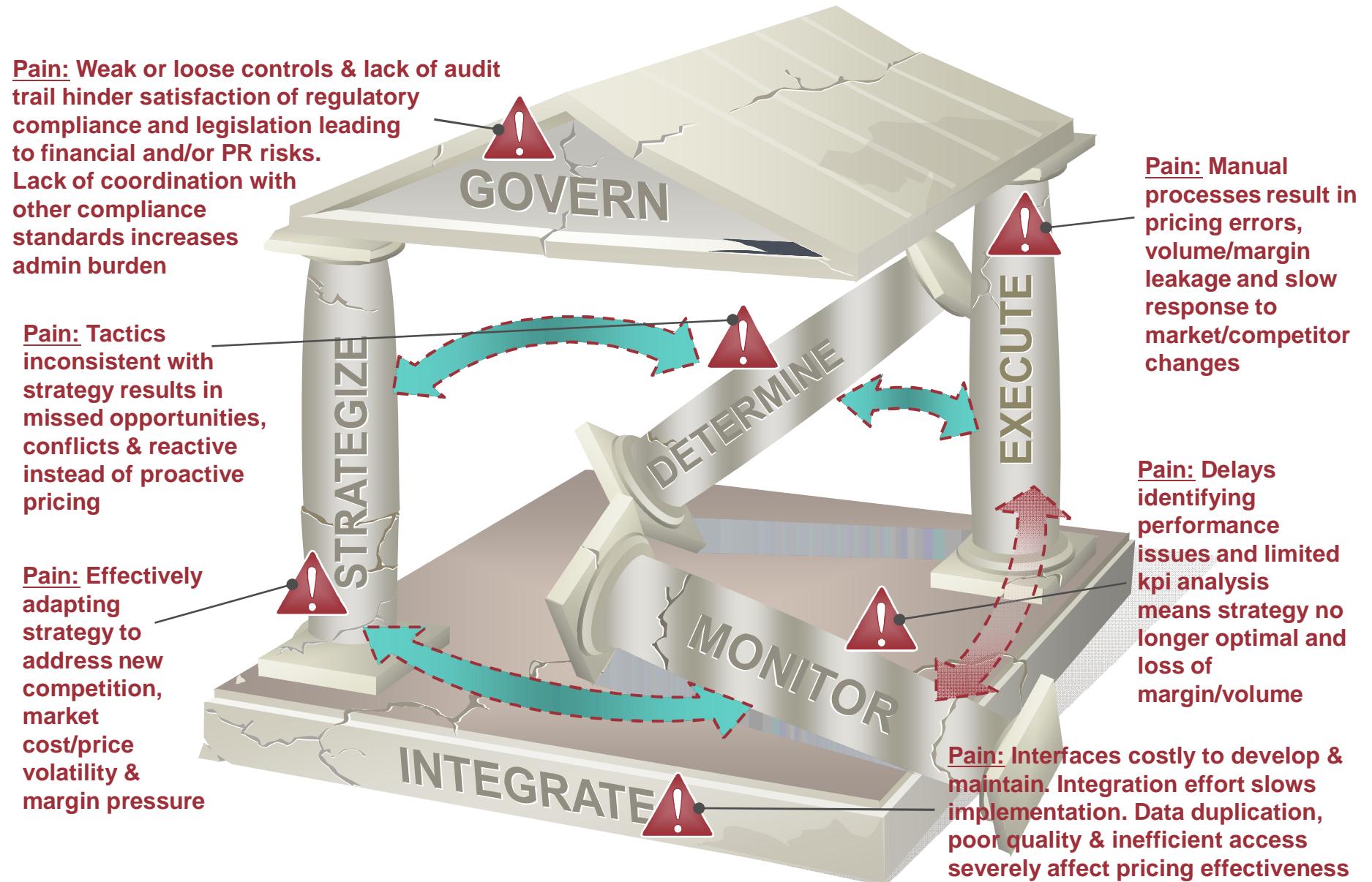
# What does this mean for your business?



## Typical CEO questions

- **How can I achieve better margins?**
- **How do I gain better visibility into competitor prices and behavior?**
- **How can I prevent broken pricing processes and execute efficiently my pricing strategy?**
- **How can I control more and higher variable costs?**
- **How can I provide cost-to-serve-based value to my customer portfolio?**
- **How can I ensure that I meet governance and compliance requirements?**

# Typical Challenges in the Pricing Process



# SAP & KSS only provide fully integrated, ... closed loop price management & optimization



## Solution:

Price-change limits by user login,  
Approval workflow, Capture & archive  
analyst over-rides, Compliance reports

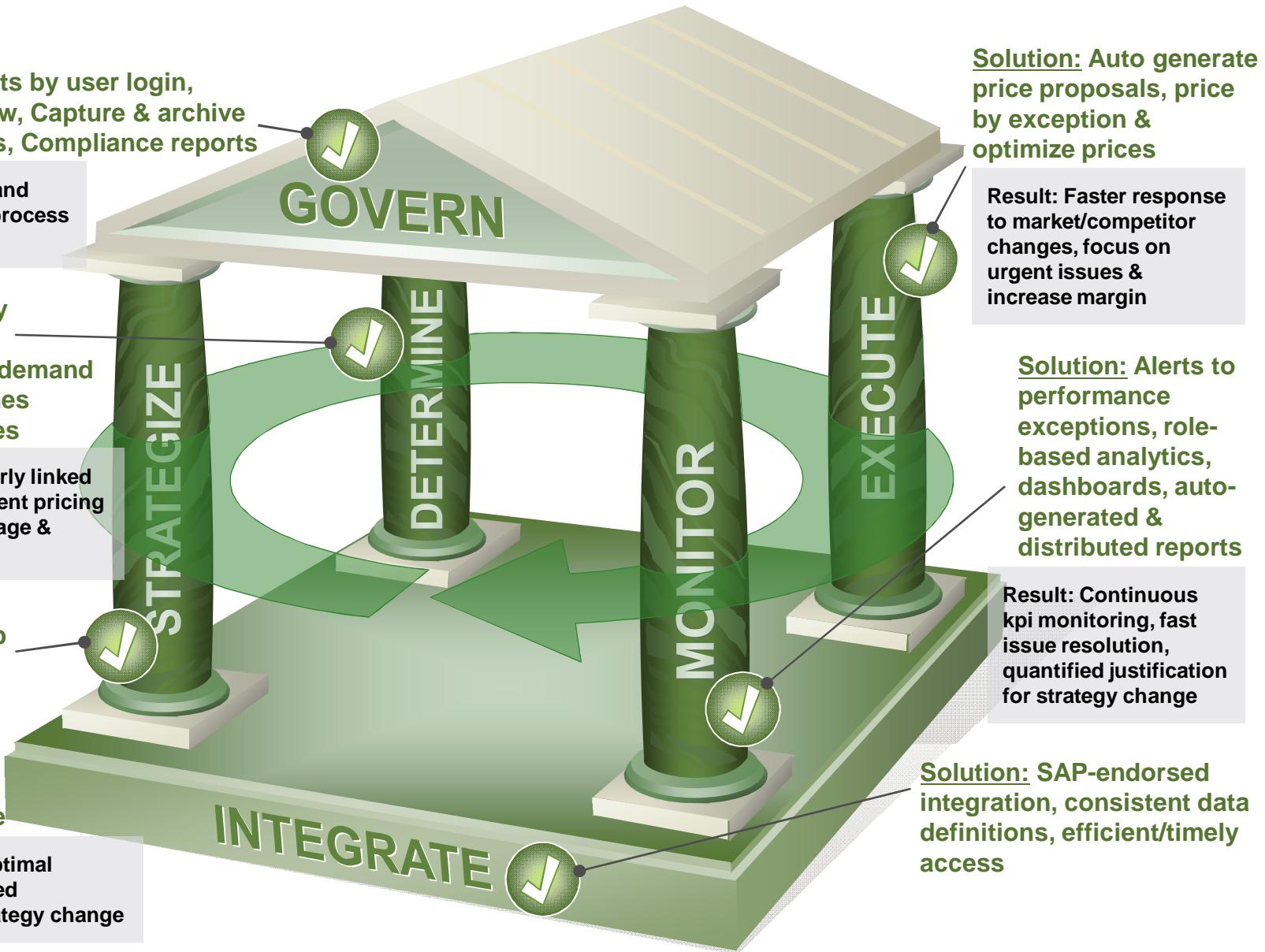
Result: Compliant and  
controlled pricing process  
with full audit trail

Solution: Strategy  
defined by clear  
consistent rules, demand  
modeling fine-tunes  
tactical boundaries

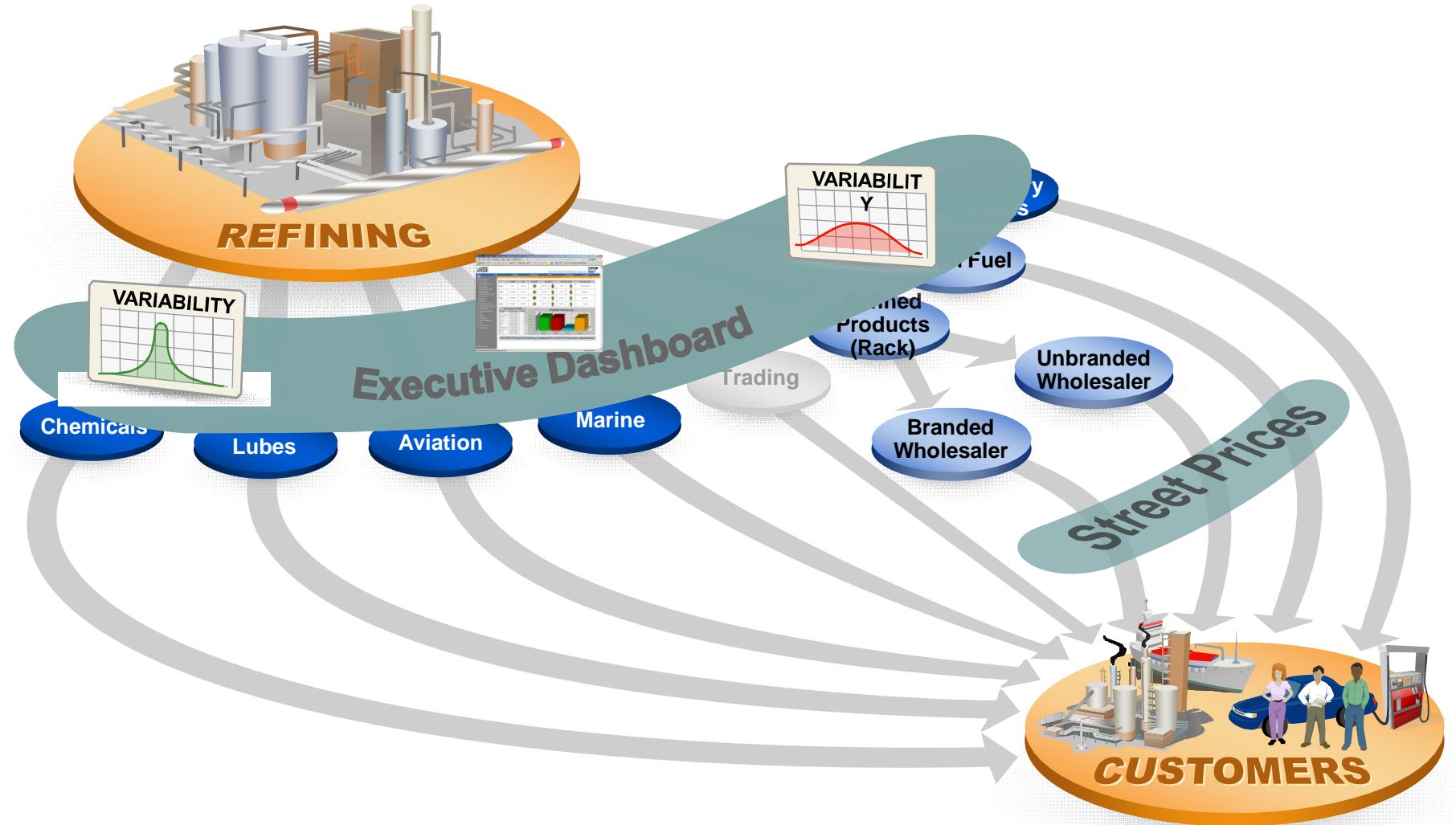
Result: Tactics clearly linked  
to strategy, consistent pricing  
enhances brand image &  
customer loyalty

Solution: Develop  
quantitative  
scenarios, apply  
competitor  
modeling,  
simulation &  
analytics to refine

Result: Adaptive optimal  
strategies, quantified  
justification for strategy change



# Price Management and Optimization ... for all Lines of Business

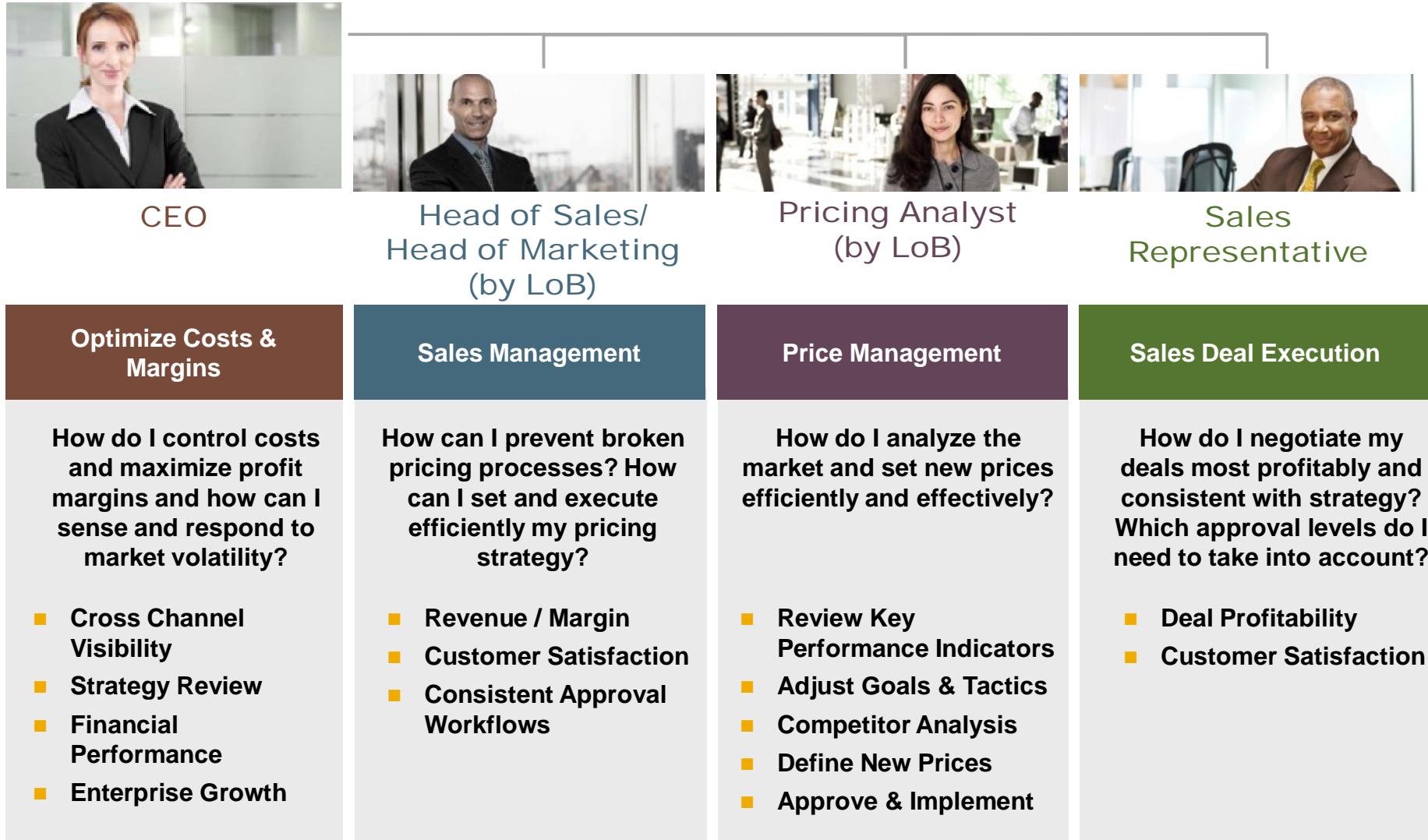


Different Tools Needed for Different Channels due to  
Differing Competitive Situations, Objectives, and Cycle Times

# Aligning Stakeholders in Price Management Optimization an Closed-Loop Business Process



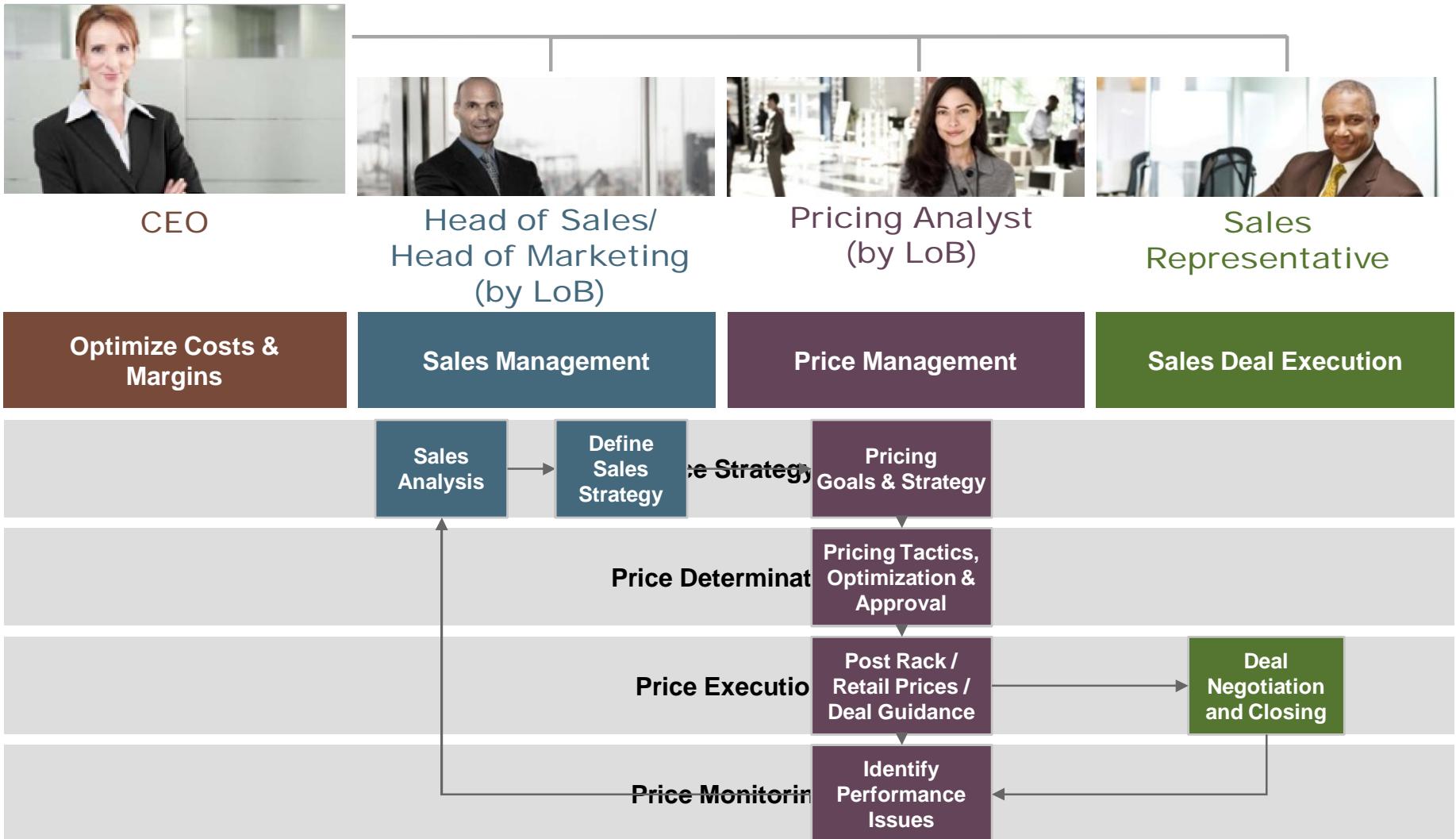
Effective Price Management & Optimization requires close alignment between several stakeholders



# Price Management & Optimization a Closed-Loop Process



Price Management & Optimization connects processes across departments to efficient strategy setting, price determination, execution and monitoring





### Objective:

**Set sales targets, goals and strategy for a line of business; e.g. lubricants, aviation, marine, bitumen, contracted fuels, rack fuels, retail fuels**

### Best practice solution:

**Develop adaptive strategies incorporating quantified justification, strategy adjustment through continuous KPI monitoring**

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Unable to effectively adapt strategy to address new competition, market cost/ price volatility &amp; margin pressure</li><li>■ No means to quantitatively challenge strategy: difficult to deal with new competition, tendency towards status quo and reliance on intuition/ gut feel</li><li>■ Cost/ price volatility: costs changing rapidly, price change frequency increasing, margin pressure</li><li>■ Missing insight into performance across channels</li></ul>	<ul style="list-style-type: none"><li>■ Alignment of pricing strategy and tactics</li><li>■ Market, cost, product, competitor and customer profitability analysis</li><li>■ Empower sales teams to negotiate more profitable contracts</li><li>■ Analytics for timely deal evaluation</li><li>■ Customer demand &amp; competitor modeling; simulate impact on volume &amp; margin, quantitatively evaluate scenarios for strategy changes</li><li>■ Performance alerts help to focus on exceptions</li><li>■ Cross channel executive dashboards</li></ul>	<ul style="list-style-type: none"><li>■ Improved pocket margins through quicker price adoption</li><li>■ Margin improvement opportunities by addressing negative margin customers</li><li>■ Corrected strategy to address strongest competitors by location</li><li>■ Eliminated unnecessarily constraining strategies such as fixed grade spreads</li><li>■ Validated strategic goals as achievable &amp; consistent with desired price image</li></ul>

## SAP Solution



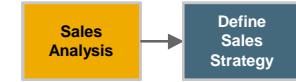
- Market, cost, product, competitor and customer profitability analysis
- Empower sales teams to negotiate more profitable contracts
- Analytics for timely deal evaluation
- Customer demand & competitor modeling; simulate impact on volume & margin, quantitatively evaluate scenarios for strategy changes
- Efficient capture of cost changes, model competitor effects to determine if strategy changes necessary

## SAP Differentiators

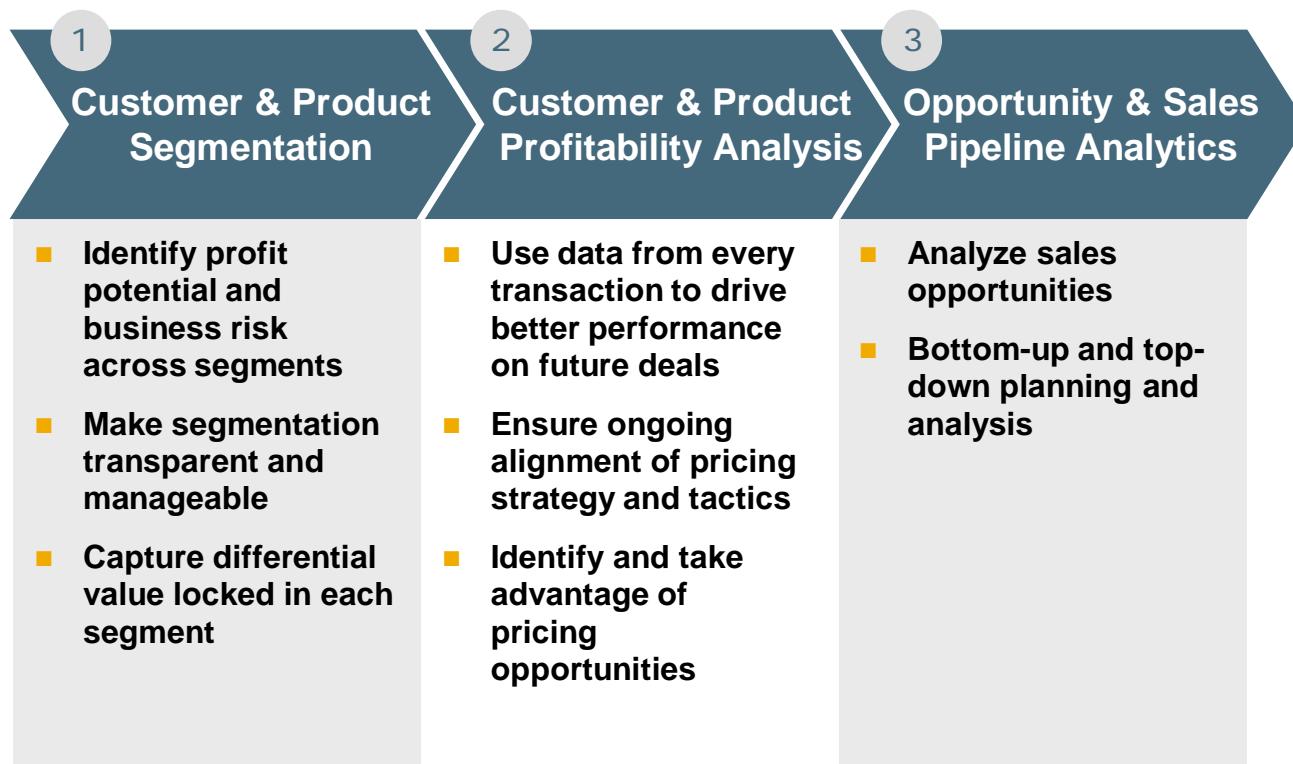
**Completeness:** Ability to manage all channels of trade/ lines of business including chemicals, lubricants, aviation, marine, bitumen, rack and retail sales

**Integration:** Completely integrated solution based on SAP NetWeaver technology

A quantitative sales analysis is critical for companies in order to adapt their sales strategy to current market conditions



## Process Steps



# Define Sales Strategy



## Define sales strategy by line of business





### Objective:

**Consistently manage and optimize prices in order to meet sales objectives at maximum achievable margin**

### Best practice solution:

**Closed loop price management solution – strategize, determine, execute, monitor –ensuring regulatory compliance and using one integration platform**

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ No means to quantitatively challenge strategy</li><li>■ Tendency towards status quo and reliance on intuition/gut feel</li><li>■ Strategy not clearly documented: potential for analyst bias</li><li>■ Lack of clear, enforced pricing rules, manual intervention needed to resolve</li><li>■ Manual pricing processes</li><li>■ No feedback loop to adjust strategy based on observed results</li><li>■ Inefficient reporting processes due to lack of analytic tools</li><li>■ Lack of audit trail, limited approval workflow</li></ul>	<ul style="list-style-type: none"><li>■ Quickly &amp; quantitatively evaluate scenarios for strategy changes</li><li>■ Customer demand &amp; competitor modeling: simulate impact on volume &amp; margin</li><li>■ Role-based analytic tools enable clear translation of strategy to tactics, eliminating bias<ul style="list-style-type: none"><li>■ KPI assessments</li></ul></li><li>■ Pricing process automation<ul style="list-style-type: none"><li>■ Price optimization</li></ul></li><li>■ Flexible reporting tools to generate ad hoc or custom reports, exception alerts</li><li>■ Price-change &amp; other authority limits</li><li>■ Compliance reports</li></ul>	<ul style="list-style-type: none"><li>■ Strategy addresses key competitors by location/ channel/ product</li><li>■ Validated strategic goals as achievable &amp; consistent with desired price image</li><li>■ Eliminated unnecessarily constraining strategies</li><li>■ Eliminating analyst bias</li><li>■ Faster, “by-exception” resolution of pricing conflicts</li><li>■ Focus analyst time on value-adding activities</li><li>■ Margin and / or volume growth</li><li>■ Rapid assessment of &amp; response to performance issues</li><li>■ Full audit trail to demonstrate compliance at all times</li></ul>

## SAP solution



- Quickly & quantitatively evaluate different scenarios for strategy changes
- Customer demand & competitor modeling: simulate impact on volume & margin
- Analytic tools enable clear translation of strategy to tactics, eliminating bias
- Pricing process automation
- Price optimization
- Flexible reporting tools to generate ad hoc or custom reports, exception alerts
- Price-change & other authority limits
- Compliance reports

## SAP differentiators

Completeness: **Closed loop price management solution for all channels of trade from refinery gate to retail pump**

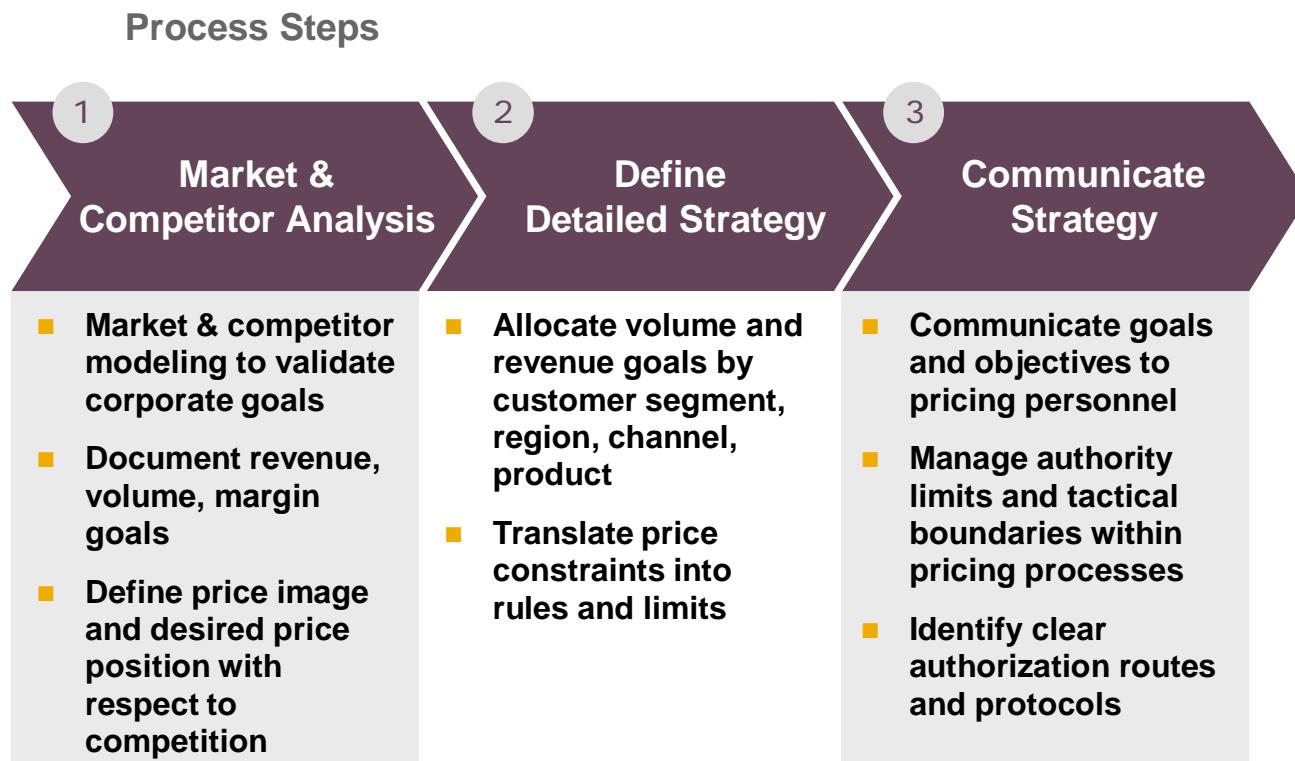
Integration: **SAP qualified integration using SAP NetWeaver with SAP ERP as integration platform**

Compliance: **Price change authority limit and full audit trail to demonstrate compliance at all times – significantly reduce financial risks when under regulatory scrutiny**

# Pricing Goals & Strategy



**Setting pricing goals and pricing strategies allows companies to adapt to new market conditions based on quantified information**



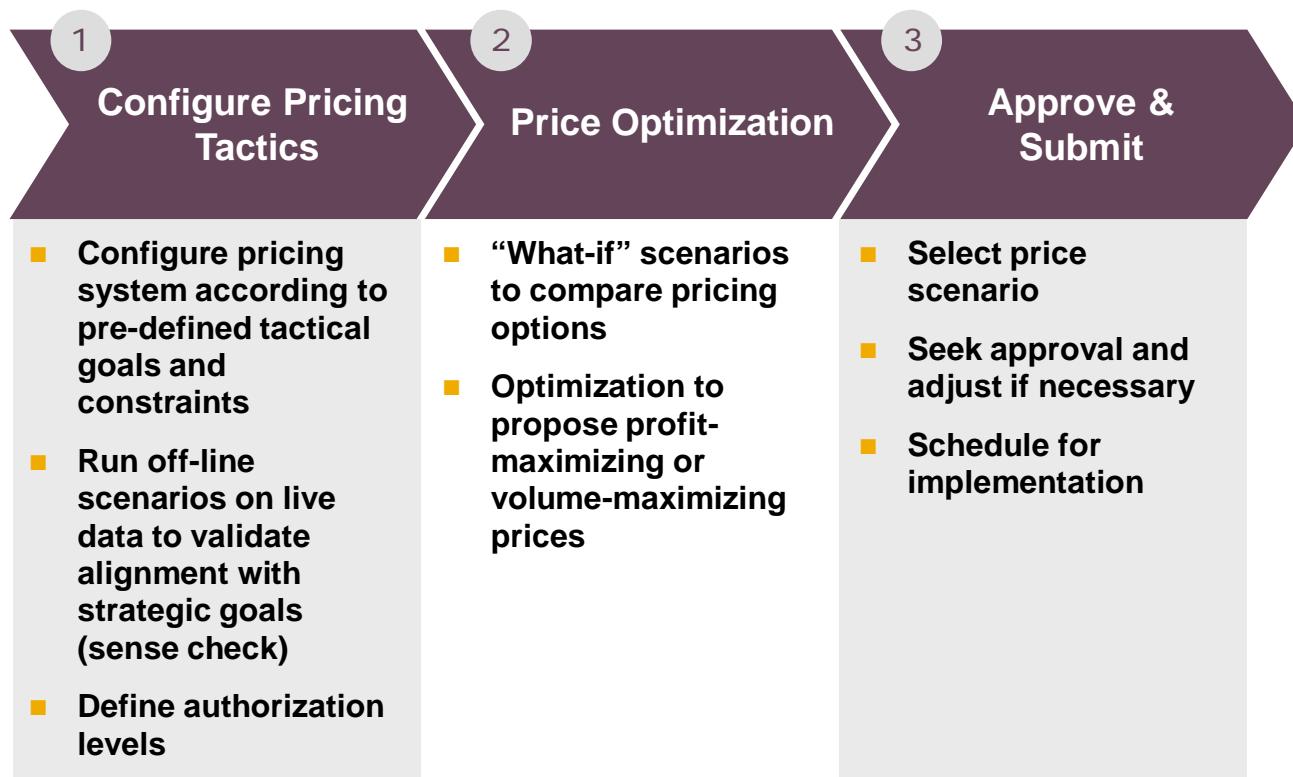
# Pricing Tactics, Optimization & Approval



Pricing tactics, optimization & approval links execution to strategy and allows for consistent pricing enhancing brand image & customer loyalty



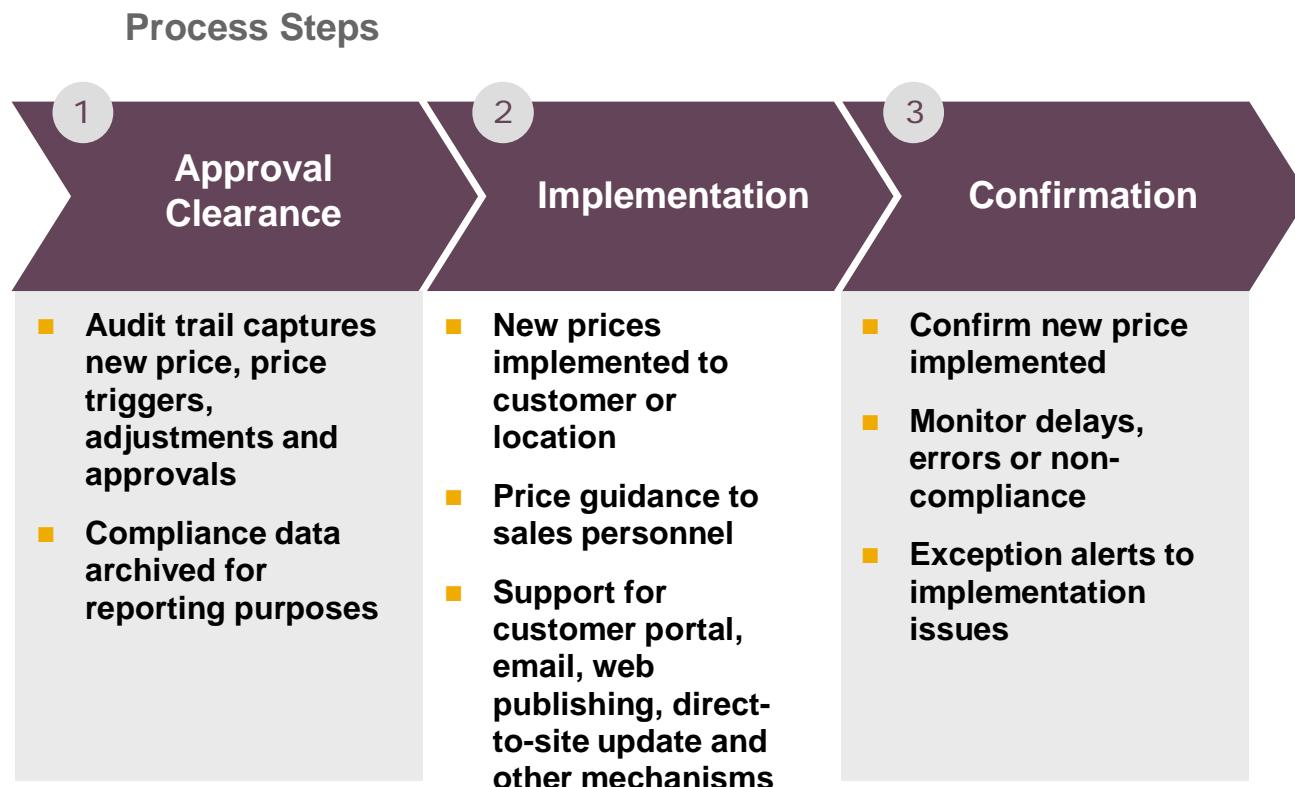
## Process Steps



# Post Rack / Retail Prices / Deal Guidance



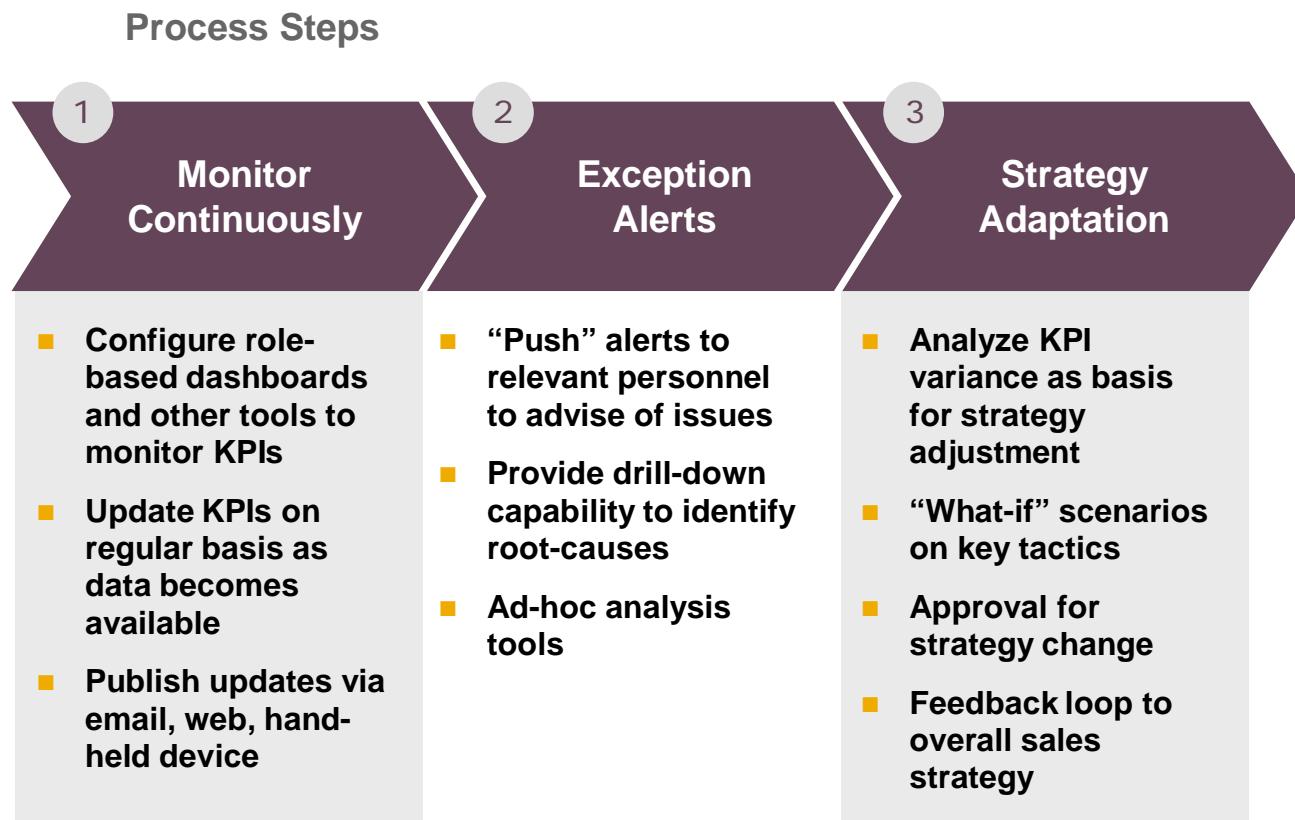
**Post rack and retail prices as well as deal guidance to sales personnel and monitor non-compliance**



# Identify Performance Issues



Identifying performance issues is critical for companies in order to adapt their sales strategy based on quantitative data



# Sales Deal Execution

## Objectives, Issues, Capabilities and Benefits



### Objective:

**Close sales deals most profitably and compliant with pricing strategy**

### Best practice solution:

**Use price guidance and scenario analysis in order to compare possible deals and close them with most profitable terms and conditions**

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Sales lacks contextual insight into customer behavior and similar deals</li><li>■ Sales does not have the right price and discount guidance</li><li>■ Lack of controls and enforcement to ensure compliance with policies (spreadsheet environment)</li><li>■ Service costs not understood</li></ul>	<ul style="list-style-type: none"><li>■ Segment specific policies for contact based business – e.g. for lubricants, bitumen, aviation, marine, contracted fuels</li><li>■ Deal specific pricing and guidance</li><li>■ Approval workflows</li><li>■ Contextual analytics: Peer deal comparison, customer purchase history, deal scores</li><li>■ Simulate/ compare deal terms to make decisions</li></ul>	<ul style="list-style-type: none"><li>■ Increases consistency of negotiation by delivering the right information at the right time</li><li>■ Reduced margin leakage across every deal with segment-based policies, guidance and workflow</li><li>■ Improved invoice accuracy through tight integration with enterprise systems</li></ul>

## SAP Solution

Deal  
Negotiation  
and Closing

- Segment specific policies for contact based business – e.g. for lubricants, bitumen, aviation, marine, contracted fuels
- Deal specific pricing and guidance
- Approval workflows
- Contextual analytics: Peer deal comparison, customer purchase history, deal scores
- Simulate/ compare deal terms to make decisions

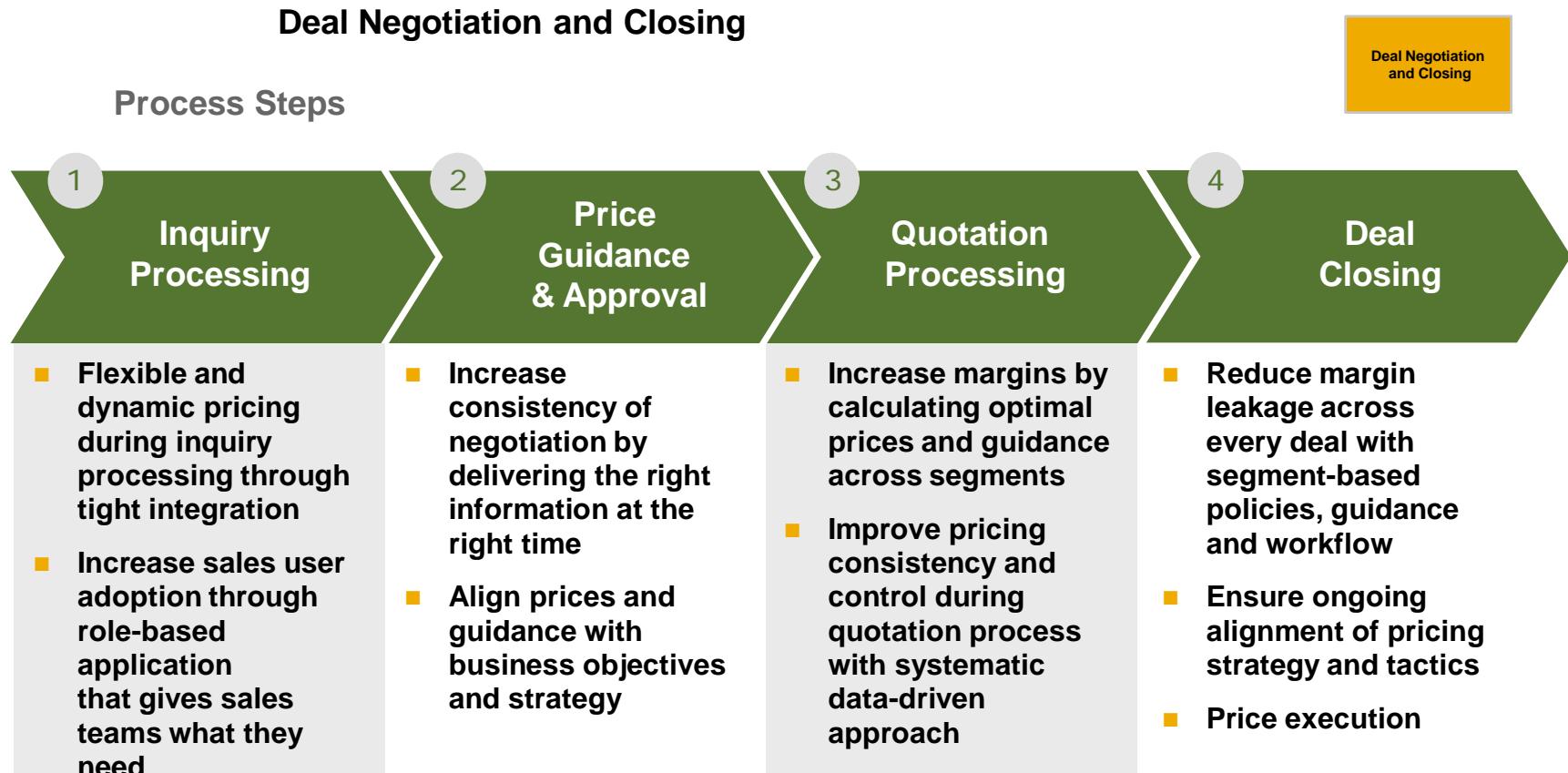
## SAP Differentiators

**Integration:** Seamlessly integrated with ERP pricing (Pricing Logic Integrator), back-end financials and accounts receivables

**Flexibility:** SAP offers the only solution that can support the complete price & margin management process including deal negotiation and closing

**Compliance:** Solution helps reaching compliance through audit trails and approval workflows

# Deal Negotiation and Closing



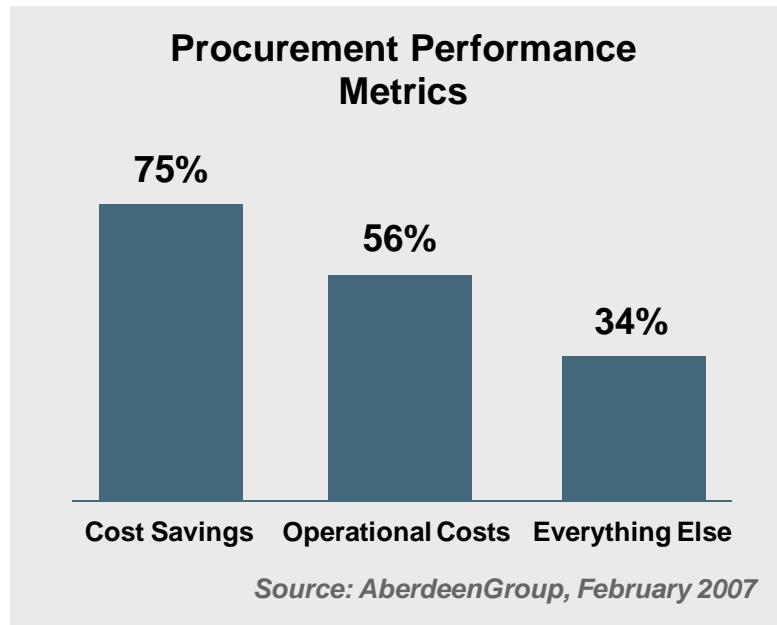
# Best Practice Value Scenario

## O&G Strategic Sourcing & Procurement Optimization

# Sourcing & Procurement - Missed Opportunities ... can Have Serious Impact

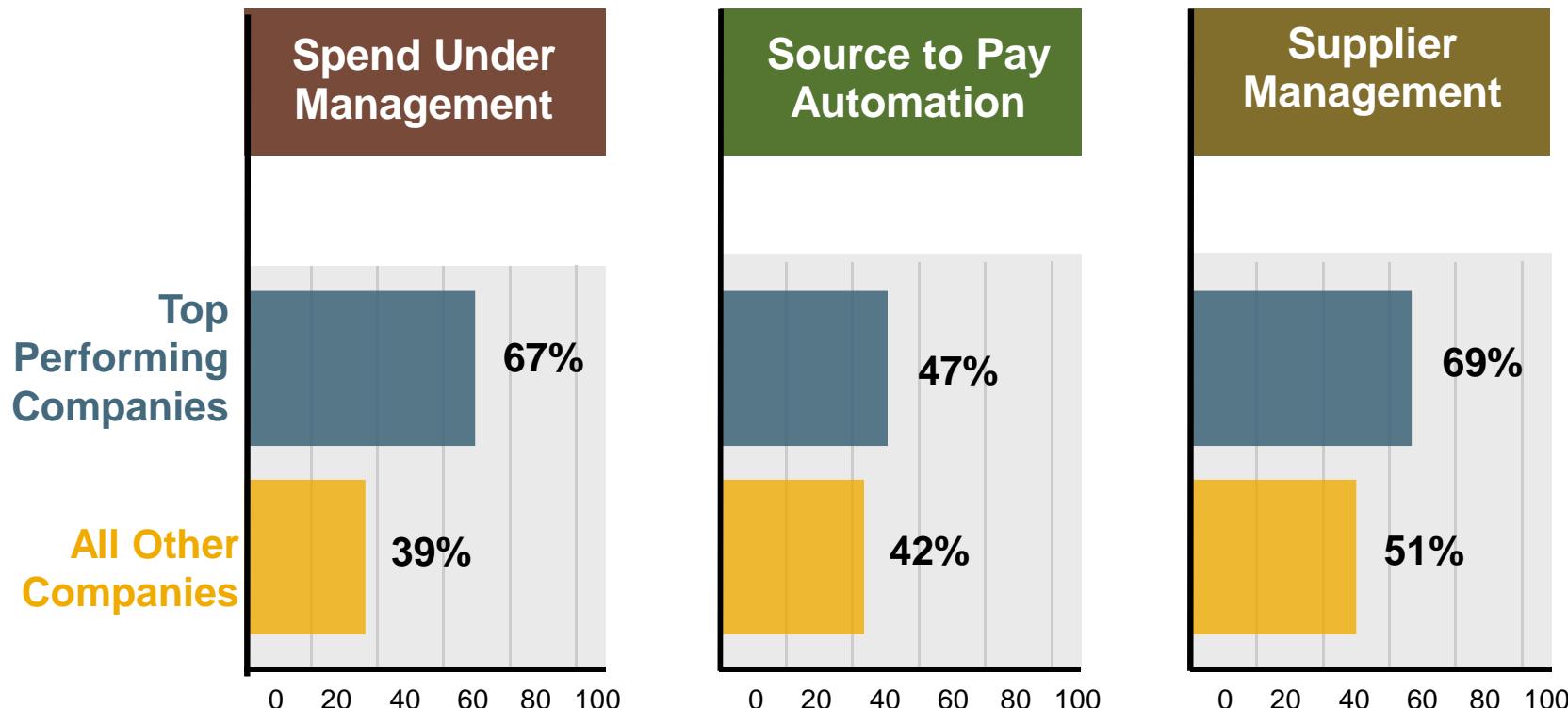


## Lack of Focus on Spend Impacts the Bottom line



- Costs savings is by far the most important procurement goal
  - Opportunity to reduce 1.9% of spend – every year

## Significance Difference in Focus Between Top Performing and Other Companies



Source – Aberdeen, CPO Rising, February 2008

# Chief Procurement Officer

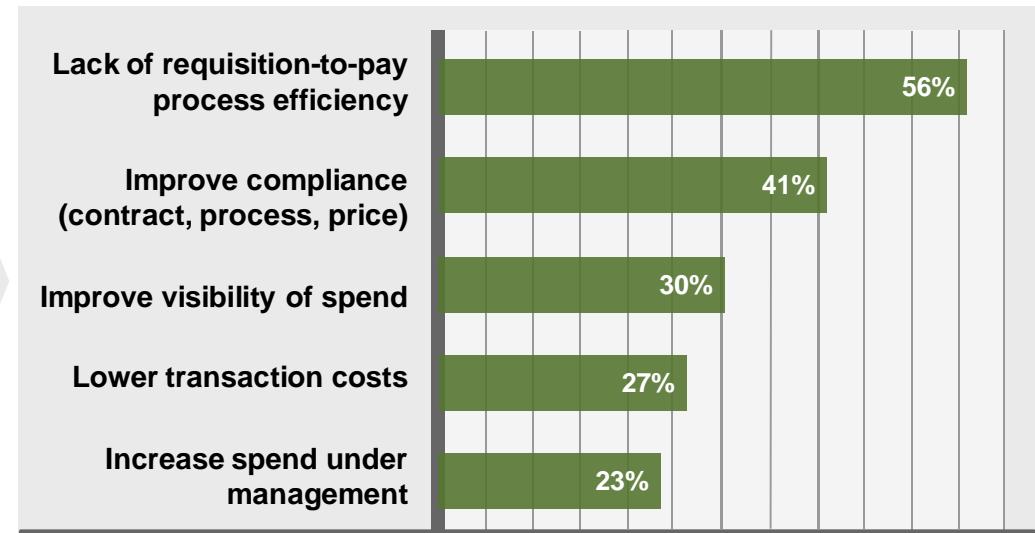
## Centralized Sourcing & Contract Management Priorities



### Increasing Pressure on Procurement..

- Accelerating business value and efficiency
- Lowering costs
- Compliance imperative
- Supplier risk

### ...is Driving CPO Focus



Source: Aberdeen report 'E-Procurement Trials and Triumphs, (Oct 2007)

### BUSINESS PRIORITIES

Ensuring lean, compliant procurement operations

Automating compliance to contracts and policies

Efficiency driven savings through integrated process

### GOALS

Freeing up time and resources

Improving operational execution and savings realization

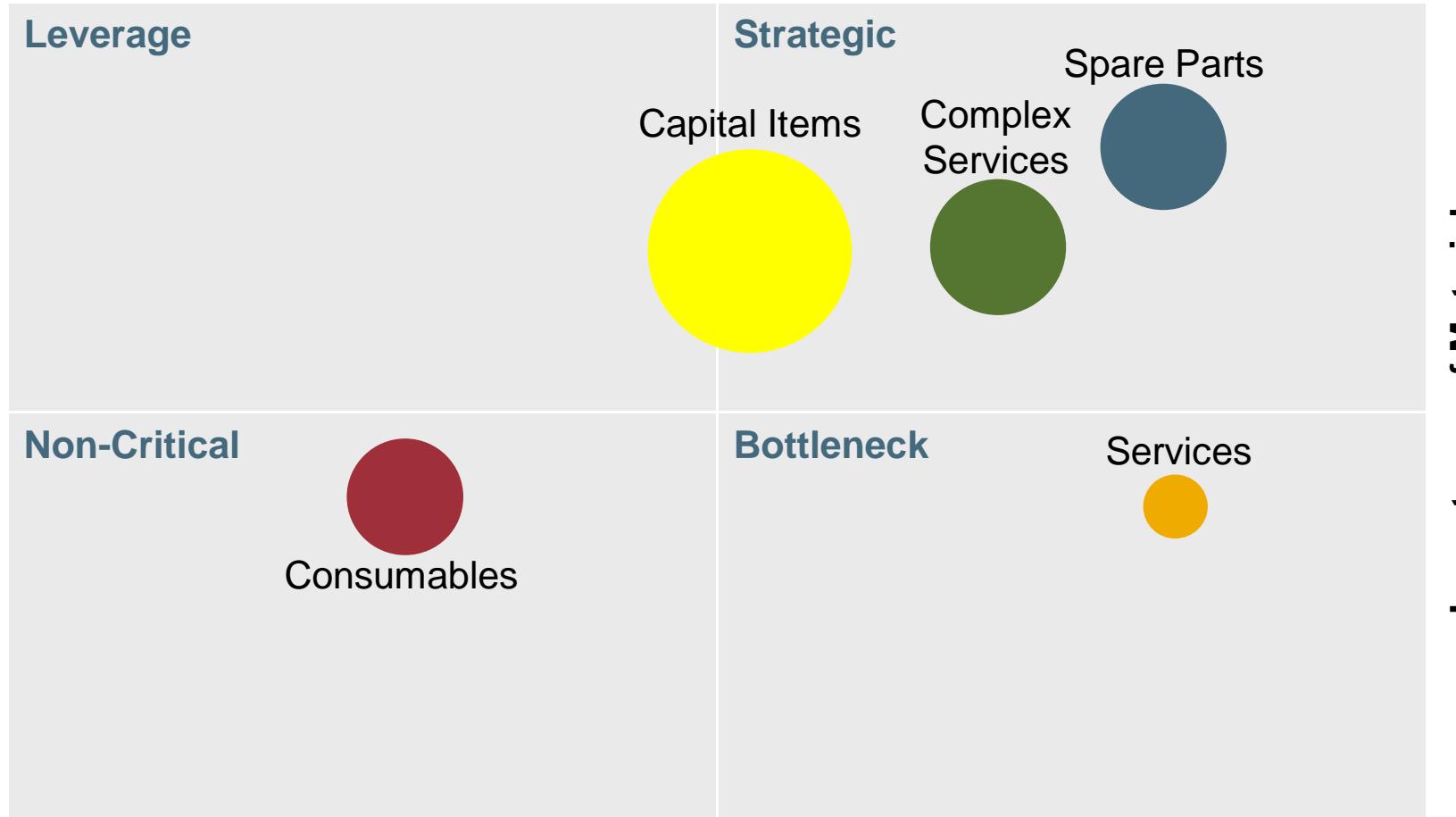
Closing the loop with suppliers, users and finance

# Spend Categories

## for Upstream



### Procurement Difficulty and Risk



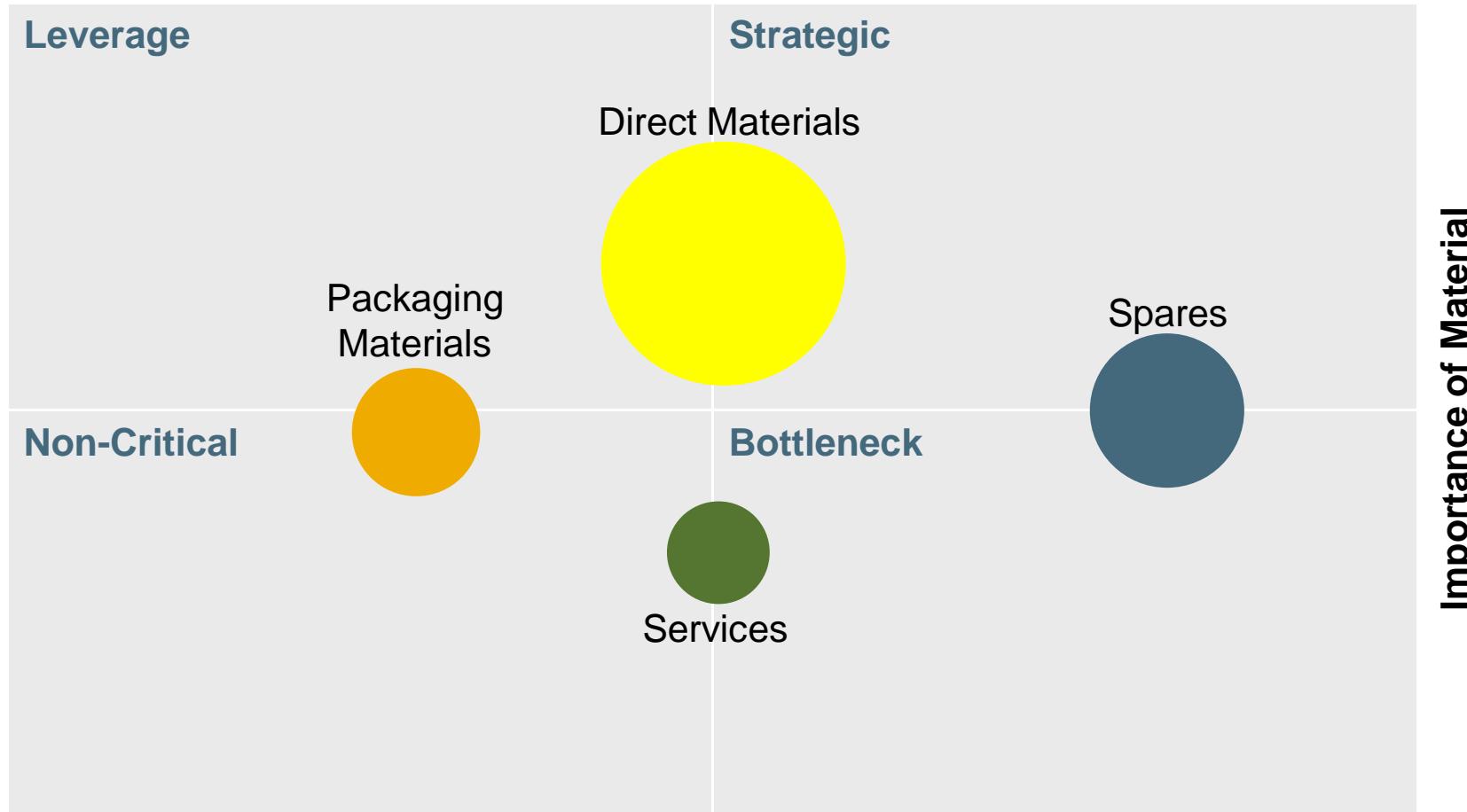
❖ Size of colored circle indicates total purchasing spend

# Spend Categories

for Downstream



## Procurement Difficulty and Risk



❖ Size of colored circle indicates total purchasing spend

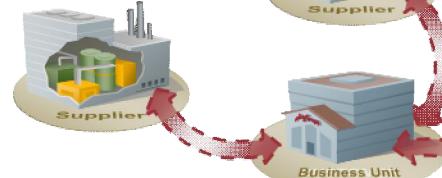
# Decentralized Sourcing and Procurement ... Results in Unrealized Savings



## High Supply Risk

### Implications

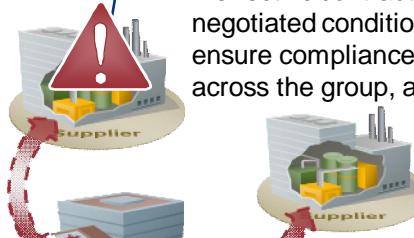
- Limited visibility on supplier performance and inefficient collaboration: Inability to identify low performing suppliers, decreased procurement productivity and increased costs



## Lack of Contract Compliance

### Implications

- Ineffective contract management with decentralized negotiated conditions: Savings leakage, Difficulty to ensure compliance and usage of contracts globally across the group, and tracking of captured cost savings



## Inability to Meeting Sourcing Demand

### Implications

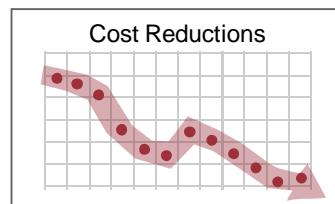
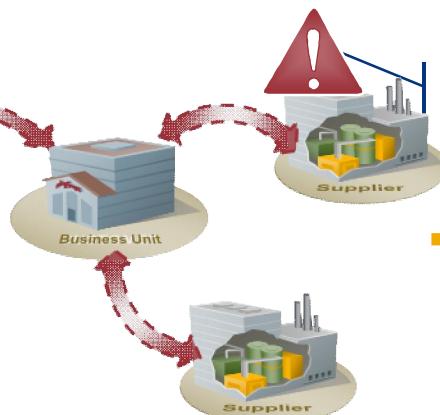
- Lack of formalized global sourcing practices, limited supplier data and management, disparate sources of demand and long cycle times: Poor ability to deliver negotiated cost savings



## High Procure To Pay Process Costs

### Implications

- Disparate systems, with non-standardized processes: High transaction costs, inability to deliver savings, poor user adoption and non-compliance with rules and policies



**Decentralized sourcing and procurement limits the ability to deliver on cost savings objectives**

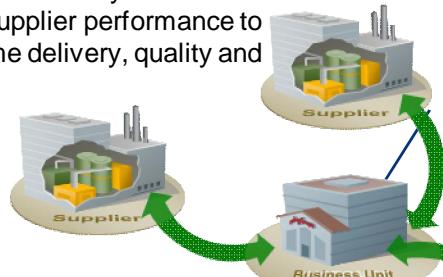
# Sourcing and Procurement Ensures ... Compliance with Contracts



## Managed Supplier Performance

### Benefits

- Connected suppliers to improve procurement productivity
- Visibility into supplier performance to improve on-time delivery, quality and availability



## Effective Contract Compliance

### Benefits

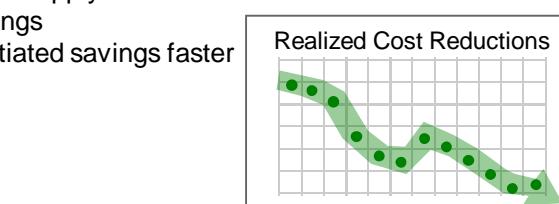
- Negotiated terms and conditions applied and used consistently globally across the group to deliver on savings objectives
- Accelerated cycle time to decrease maverick buying and speed-up contract utilization
- Complete and central transparency to maximize contract usage



## Deliver on Sourcing Demand

### Benefits

- Compliance with global sourcing process to meet savings and spend under management objectives
- Development of a global qualified supply base to generate further negotiated savings
- Ability to leverage globally negotiated savings faster with shorten cycle-times



## Reduced Procure To Pay Costs

### Benefits

- Standardized and automated operational processes to maximize savings delivery, reduce operational costs, increase contract compliance, avoid maverick buying, and improve productivity



**Sourcing and Procurement ensures compliance with contracts globally across the group to deliver on savings objectives**

# Streamlined Sourcing and Procurement Drives Significant ROI



Leading companies that enable their source to contract process are driving significantly more savings than their peers

Key Performance Indicators	Bottom	Average	Leader
Average savings	2%	9%	19%
Spend managed	1%	15%	51%
Staffing Mix: % on value-added activities	11%	36%	71%
Operating Income Growth	19%	21%	30%
FTEs per \$Billion in Spend	242	113	77

# Sourcing and Procurement

## Key Stakeholders & Objectives



Sourcing and Procurement can help global organizations ensure compliance with contracts across the group to maximize cost savings



CPO



Head of Supplier Mgt



Strat. Sourcing Manager



VP of Procurement



VP of Procurement

<p>How do I maximize cost savings?</p> <ul style="list-style-type: none"><li>■ Reduce supply risk</li><li>■ Maximize negotiated savings</li><li>■ Ensure contract compliance</li><li>■ Reduce operational costs</li></ul>
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Supplier Management
---------------------

- Supplier Management
- Supplier Performance improvements in on-time delivery, quality and availability
- Number of connected suppliers with the procurement organization

Central Sourcing
------------------

- How do I move beyond environmental compliance and proactively manage the companies "green" image?
- Percentage of sourcing events captured in the system
- Amount and percentage of negotiated savings
- Sourcing cycle-time
- Best practice provision

Central Contract Management
-----------------------------

- How do I execute and track a health, safety and certification program ensuring policies are followed globally?
- Amount and percentage of captured cost savings in global contracts across group
- Percentage of compliant transactions with contracts
- Contract creation cycle-time

Operational Procurement
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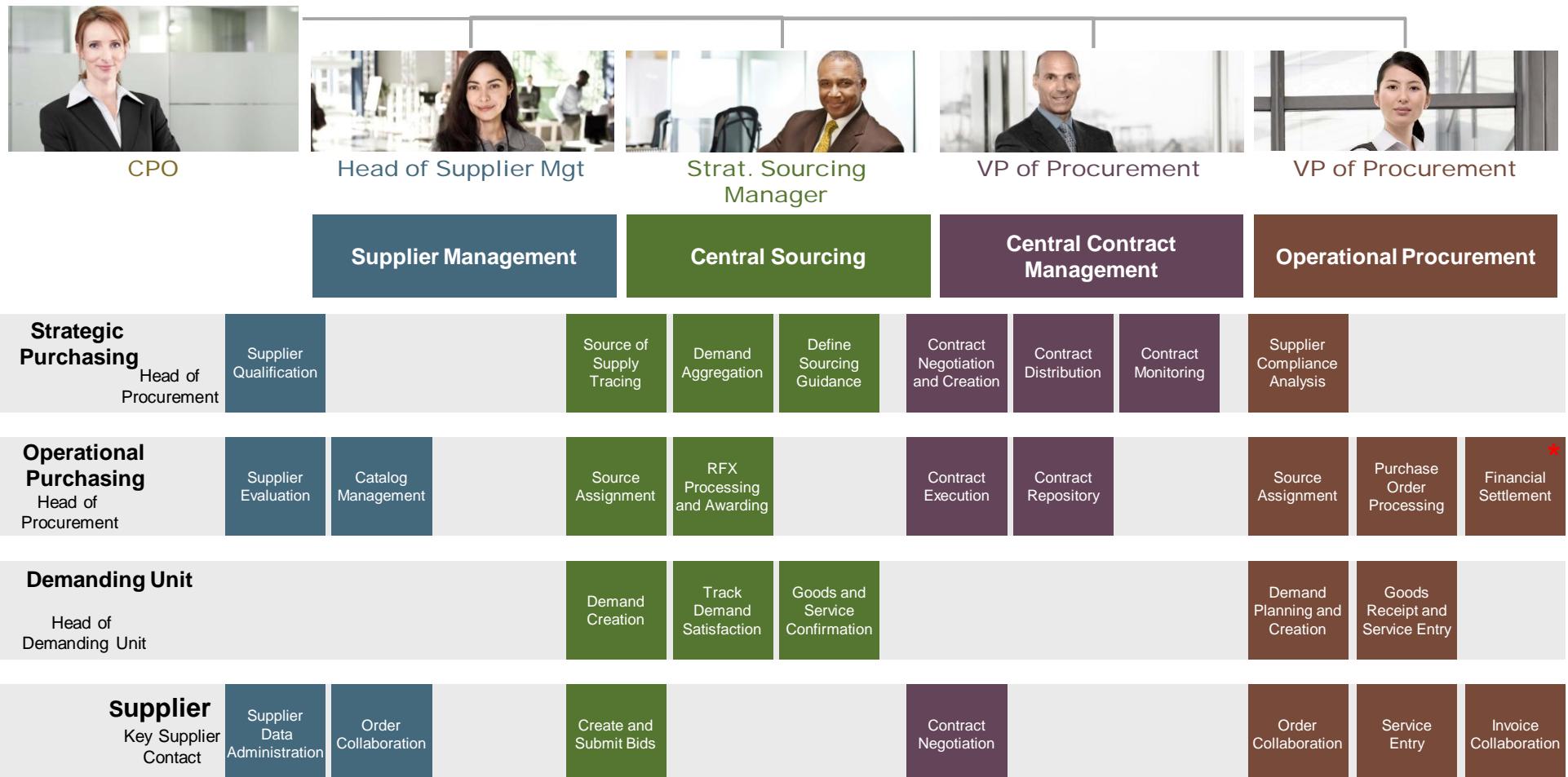
- How do I ensure safe operations and mechanical integrity through cost effective maintenance and reliability programs?
- Procurement operating cost as % of revenue
- Amount and percentage of savings realized
- Percentage of compliant transactions with contracts
- Procurement productivity

# Sourcing and Procurement

End to End Process View



Sourcing and Procurement connects Supplier Management, Central Sourcing, Central Contract Management and Operational Procurement



\* ERP process can be enhanced by SAP Invoice Management (by Open Text)

# Supplier Management

## Objectives, Issues, Capabilities & Benefits



### Objective:

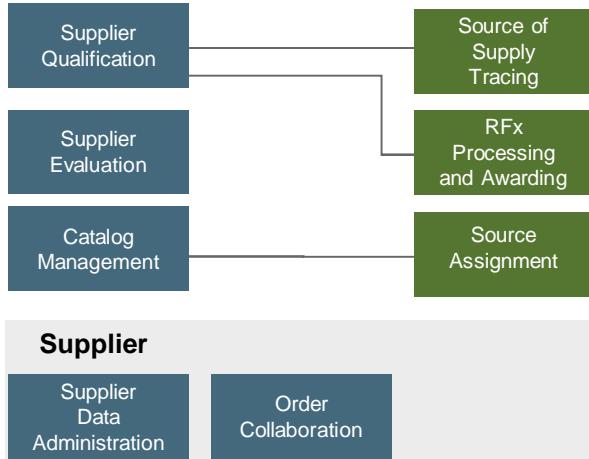
Reduce Supply Risk

### Best practice solution:

Supplier Integration and Supplier Performance Management lead to reduced supply risk. Connection with suppliers can help automate and accelerate the procurement order cycle. In addition, the availability of timely supplier evaluations increases supplier performance by enabling quality measures. All this leads ultimately to reduced supply risk.

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Missing supplier quality management and missing supplier evaluation measures leading to reduced supplier performance and cloudiness about cost reduction potentials</li><li>■ Lack of system integration with suppliers leading to time-consuming workload and increasing inefficiency</li></ul>	<ul style="list-style-type: none"><li>■ Perform timely supplier evaluations across complete procurement cycle</li><li>■ Integrate suppliers in procurement cycle and automate procurement processes (e.g. purchase order management, shipping notification, invoice handling)</li></ul>	<ul style="list-style-type: none"><li>■ Supplier evaluations increase transparency into supplier quality and supplier performance and supports the enforcement of performance improvement measures</li><li>■ Supplier Integration accelerates cycle time of procurement documents and increases procurement productivity and efficiency</li></ul>

## SAP Solution



- SAP SRM offers a supplier evaluation process, that capture and consolidate performance data and present them across the enterprise
- SAP SRM delivers a web-based supplier survey cockpit for distribution and monitoring of ad-hoc surveys, using questionnaires
- SAP SRM uses the integration to SAP Netweaver BI to consolidate data and prepare reporting
- The SAP SRM-MDM Catalog can be used to search, compare, and procure products and services from suppliers.
- With SAP SRM the suppliers can receive purchase orders and create the purchase order responses. Partial deliveries are supported as well as advanced shipping notifications and maintaining of own personal data in an easy to use web interface.

## SAP Differentiators

- SAP delivers a sophisticated supplier evaluation process that collects data from various sources (e.g. questionnaires and automatically calculated key figures) into a single supplier score
- SAP delivers powerful integration of the catalog into procurement applications like SAP SRM and SAP ERP
- SAP supports in automating and standardizing the procurement interaction processes between supplier and purchasing organizations

# Central Sourcing

## Objectives, Issues, Capabilities & Benefits



### Objective:

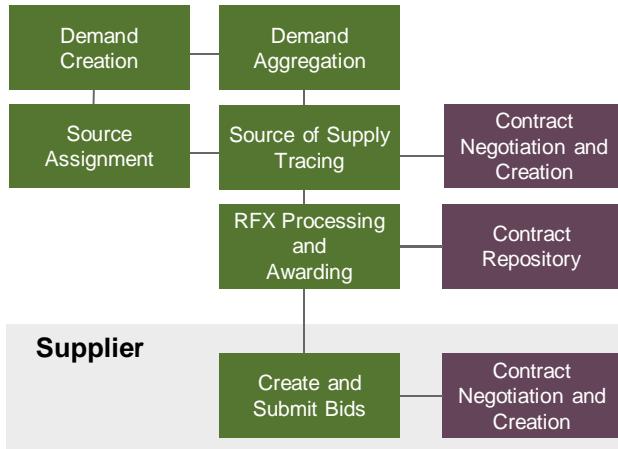
Negotiated Savings and Best Practice Provision

### Best practice solution:

Flexible and sustainable sourcing that creates bottom-line savings. Strategic supplier partnerships often result in cost savings, greater innovation, increased quality and continuity of supply. Central sourcing helps identify best global sources of supply, increases competition through online bidding, RFQs and auctions and provides best practices for local procurement teams. Negotiated terms are then turned into contracts and leveraged ultimately into the operational procurement process.

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Inconsistent use of best practices and non-compliance with sourcing process across all spend categories and group</li><li>■ Limited ability to locate suppliers and compare best offerings aligned with procurement needs and savings objectives</li><li>■ No consistent view of all demands across group</li><li>■ Multiple sources of supply with different prices and conditions for same product across the group</li></ul>	<ul style="list-style-type: none"><li>■ Define and apply a sourcing best-practice; track key tasks and milestones; collaborate with key stakeholders using a common system</li><li>■ Enrich supplier discovery capabilities and increase competition among suppliers with online bidding, RFQs and auctions</li><li>■ Provide common central view of group demands</li><li>■ Conduct sourcing events for aggregated demands across the group to achieve better prices</li></ul>	<ul style="list-style-type: none"><li>■ Ensure compliance with sourcing process that results in the ability to meet savings and spend under management objectives</li><li>■ Development of a qualified supply base to generate further negotiated savings and allow more strategic engagement with strategic suppliers</li><li>■ Ability to leverage negotiated savings faster with shorten cycle-times</li><li>■ Opportunity to achieve savings by aggregating demands in sourcing events</li></ul>

## SAP Solution



- SAP SRM provides a central view on demands originated in local procurement departments and to be sourced centrally. From there, each follow-on activity or process can be triggered and documents can be created automatically
- SAP SRM delivers RFX templates, with flexible models that can cover each company-specific practices, providing guidance and predefined bidding modalities
- SAP SRM delivers RFx/Auction, bid evaluation and supplier qualification capabilities
- SAP SRM offers requisitioners to create shopping carts and to benefit from check status capabilities in order to track the progress of the demand processing
- Sending and receiving of demands and the creation of RFX events in SAP SRM are Enterprise Service enabled. That allows customer to integrate non-SAP applications.

## SAP Differentiators

- SAP helps conduct simple or complex sourcing activities in direct, indirect, and service categories by automating the creation of requests for information, proposals, quotations, and reverse auctions and aggregating of demands for sourcing activities.
- SAP delivers a fully integrated solution that covers the entire source-to-pay process closing the-loop between sourcing and procurement
- SAP delivers one central view to process group demands and trigger follow-on activities

# Central Contract Management

## Objectives, Issues, Capabilities and Benefits



### Objective:

Global Contract And Local Compliance

### Best practice solution:

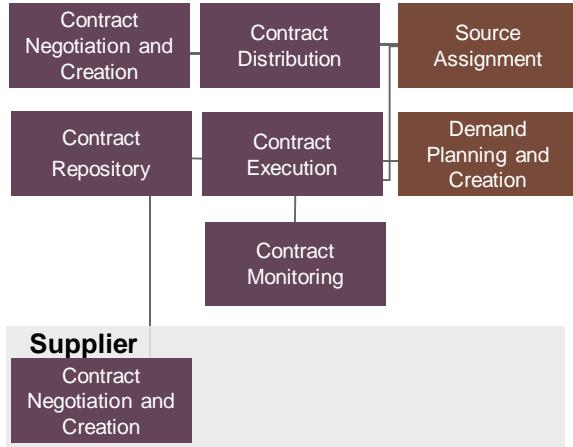
Transfer Globally Negotiated Terms and Conditions to be used in Local Operational Procurement Processes. Central operational contracts including negotiated terms and conditions are used to source upcoming demands in local entities. Compliance is increased and cost savings are maximized.

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Negotiated savings are often not leveraged in operational procurement due to the lack of integration with the contract repository</li><li>■ Lack of visibility and transparency into contract spend across the group</li><li>■ Contract creation and approval processes are cumbersome and time consuming</li><li>■ Different local contracts with different prices and conditions exist for same category</li></ul>	<ul style="list-style-type: none"><li>■ Transfer negotiated terms and conditions seamlessly into operational procurement</li><li>■ Unify and automate contract negotiation, creation and execution processes</li><li>■ Negotiate centrally volume discounts on group level spend</li><li>■ Central Transparency of all contract releases across entire group</li><li>■ Monitor contract compliance and maverick buying</li></ul>	<ul style="list-style-type: none"><li>■ Negotiated contracts can be utilized in operational procurement to deliver savings</li><li>■ Ensure negotiated terms and conditions are applied and used consistently in operational procurement to really deliver on savings objectives</li><li>■ Accelerated cycle time decreases maverick buying and speeds up contract utilization</li><li>■ Global terms and conditions ensure overall group savings</li></ul>

# Central Contract Management



## SAP solution



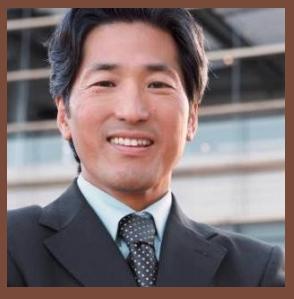
- SAP SRM helps automate transfer of global negotiated conditions into multiple SAP ERP systems and into non-SAP solutions using Enterprise Services.
- SAP SRM helps ensure contract compliance by creating a repository of standard contracts for the contract-generation process
- SAP SRM helps accelerate the procurement cycle by automating the contract management process:
  - Availability of global conditions in ERP's local source of supply assignment
  - Transparency of all local contract releases against central contract through one central view
- Monitor contract compliance and maverick buying using SAP SRM and SAP BI

## SAP differentiators

- SAP delivers seamless integration between SRM and multiple SAP ERP systems to ensure savings are delivered and sustained
- SAP generates, negotiates, and manages contracts with a single, searchable contract repository
- SAP SRM provides global negotiated terms and conditions for all local procurement sites and one central view on all contract releases across the group

# Operational Procurement

## Objectives, Issues, Capabilities and Benefits



**Objective:**  
Savings Delivery

### Best practice solution:

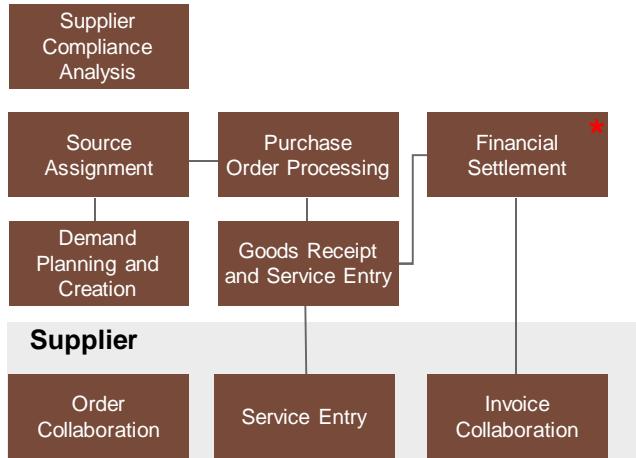
Standardize and Automate the Entire Procure To Pay Process. Standardize and automate the complete procure-to-pay process from daily requisitions, including spot sourcing, to the purchase order and pay process for all goods and services.

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Non-standardized procurement processes and disconnected systems</li><li>■ Non-integrated requisitioning, purchase order processing and approval processes</li><li>■ Disconnect between contract and operational procurement cycles leading to non-compliance with corporate policies and contracts</li><li>■ Mainly manual and paper-based procurement tasks with poor end-user adoption of existing systems</li></ul>	<ul style="list-style-type: none"><li>■ Integrate and standardize the entire Procure To Pay process</li><li>■ Unify and automate operational procurement process</li><li>■ Automate source-of-supply determination</li><li>■ Leverage easy-to-use procurement system using new technologies and ensure easy access to procurement knowledge</li></ul>	<ul style="list-style-type: none"><li>■ Efficient procurement operations with automated processing of requisitions and online access to catalogs that reduce operating costs</li><li>■ Ability to deliver savings negotiated and captured in sourcing and contract cycles</li><li>■ Increase contract utilization and avoid maverick buying</li><li>■ Optimize procurement tasks focused on value-adding activities and improve overall employee productivity</li></ul>

# Operational Procurement



## SAP solution

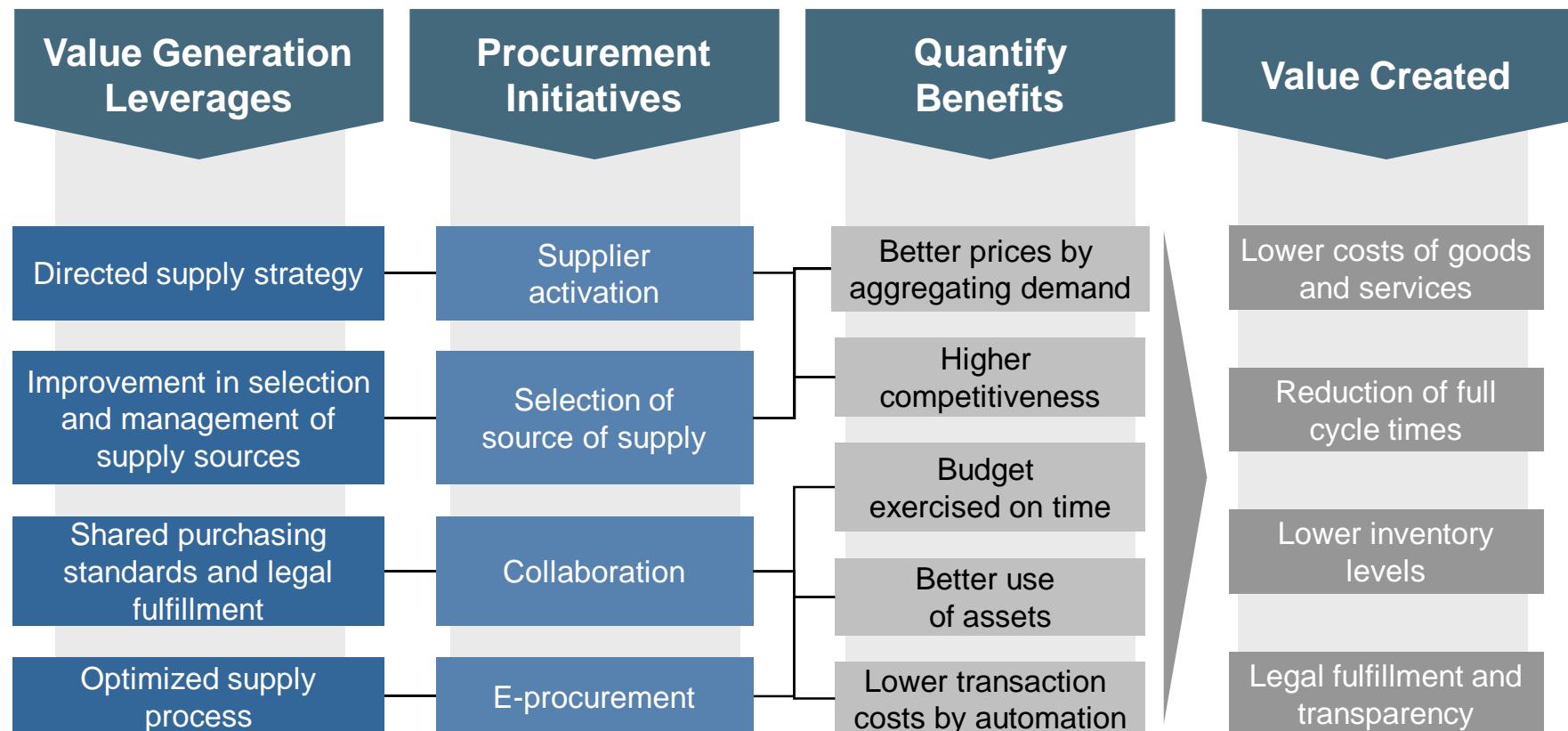


- SAP ERP covers the entire procure to pay process including requisitions, operational sourcing and contracts, purchase order processing, supplier collaboration and settlement
- SAP ERP Operations unifies operational procurement and strategic sourcing processes by ensuring integration between SAP ERP and SAP SRM
- SAP ERP Operations leverages central contract during each source of supply determination across all procurement organizations
- SAP ERP Operations helps increase employee productivity with personalized roles and easy access to relevant information along end-to-end procurement process. As a result, employees have more time to focus on value-adding activities
- SAP Invoice Management (by Open Text) optimizes and simplifies the process of creating, managing, monitoring and routing of invoices. It recognizes paper-invoice or electronic information, validates information against backend systems and performs match against order and goods-receipt. \*

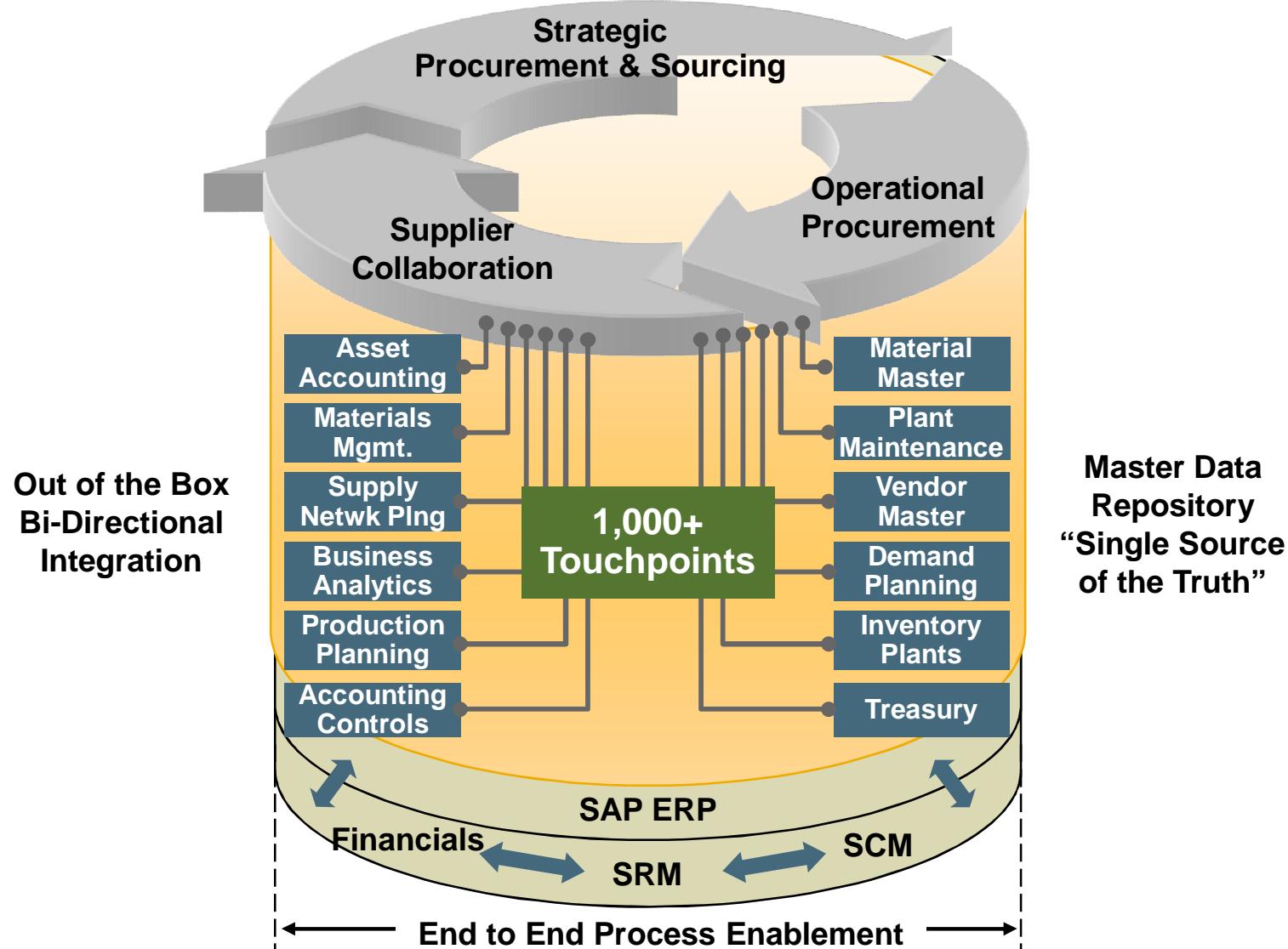
## SAP differentiators

- SAP enables organizations to manage and control all spend by using a single, integrated platform
- SAP provides a single platform to manage all spend across the value chain
- SAP enables full-integration of contracts and catalog data across suppliers and procurement systems
- SAP provides employees with personalized and easy access to end-to-end processes through dedicated roles

# Value Generation Leverages



# SAP's Value of Integration



# Best Practice Value Scenario

## O&G Retail Network Operations



THE BEST-RUN BUSINESSES RUN SAP™



# Industry player confirms Retail Networks are important to its business



**ExxonMobil Fuels Marketing creates long-term value by selling high-quality products and services daily to millions of customers across the globe. Our respected Exxon, Esso, Mobil and On The Run brands serve customers "on the move" at more than 32,000 retail service stations.**



High-quality products and services are provided to customers "on the move" at more than 32,000 service stations, like this site in St. Louis, Missouri.

Our popular *On the Run* store format provides customers with convenience, quality, and value.

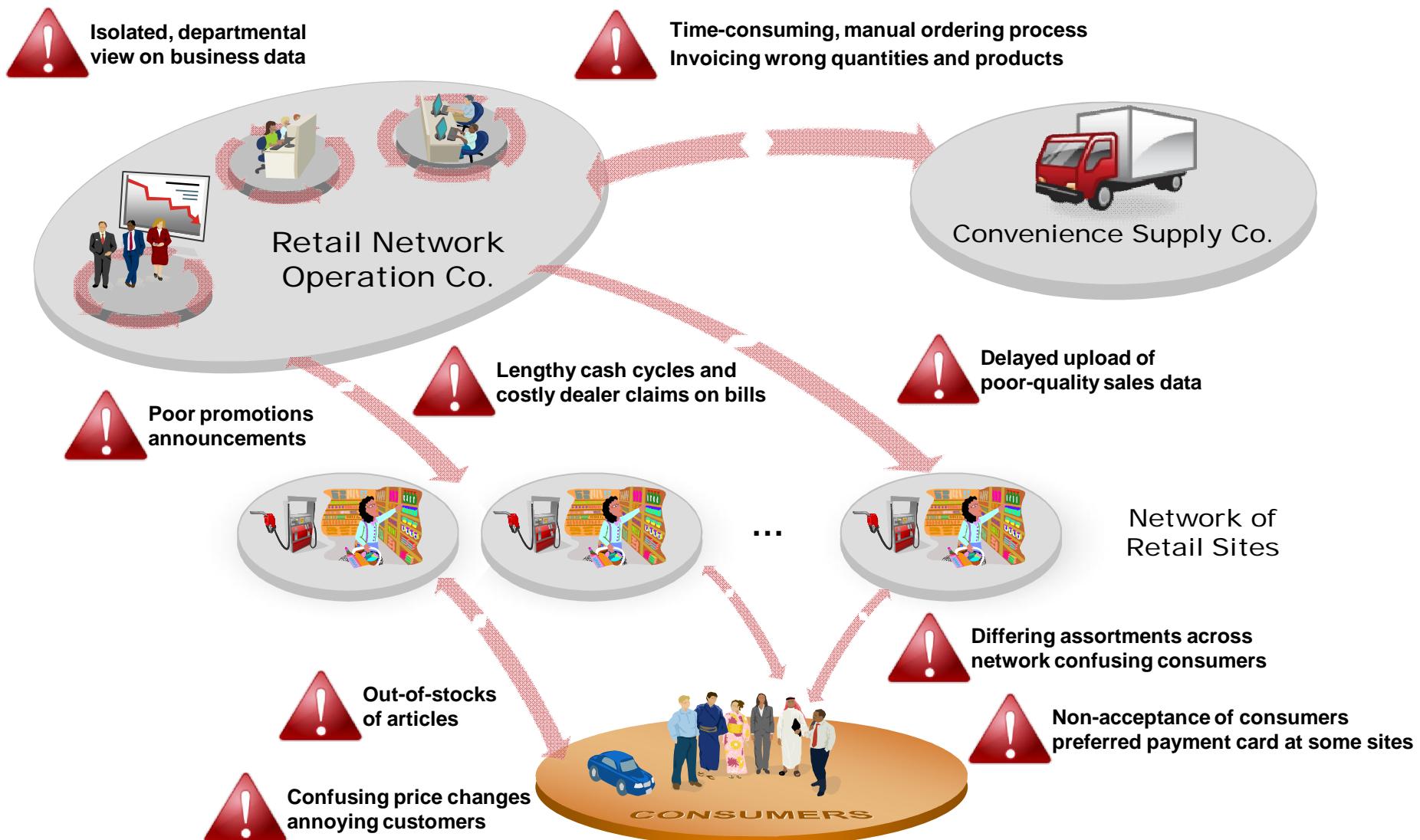


## NONFUELS MARGIN GROWTH

Further increasing non fuels margin continues to be one of our key priorities to optimize retail site profitability. Fuels Marketing offers innovative market-specific retail formats and products to fully meet our customers' need and expectation by delivering convenience, quality, and, value. Non fuels margin growth from convenience products, car washes, strategic alliances, rents, and card payment programs has increased site productivity nearly 30 percent since 2003, increasing the resiliency of our retail business and improving returns.

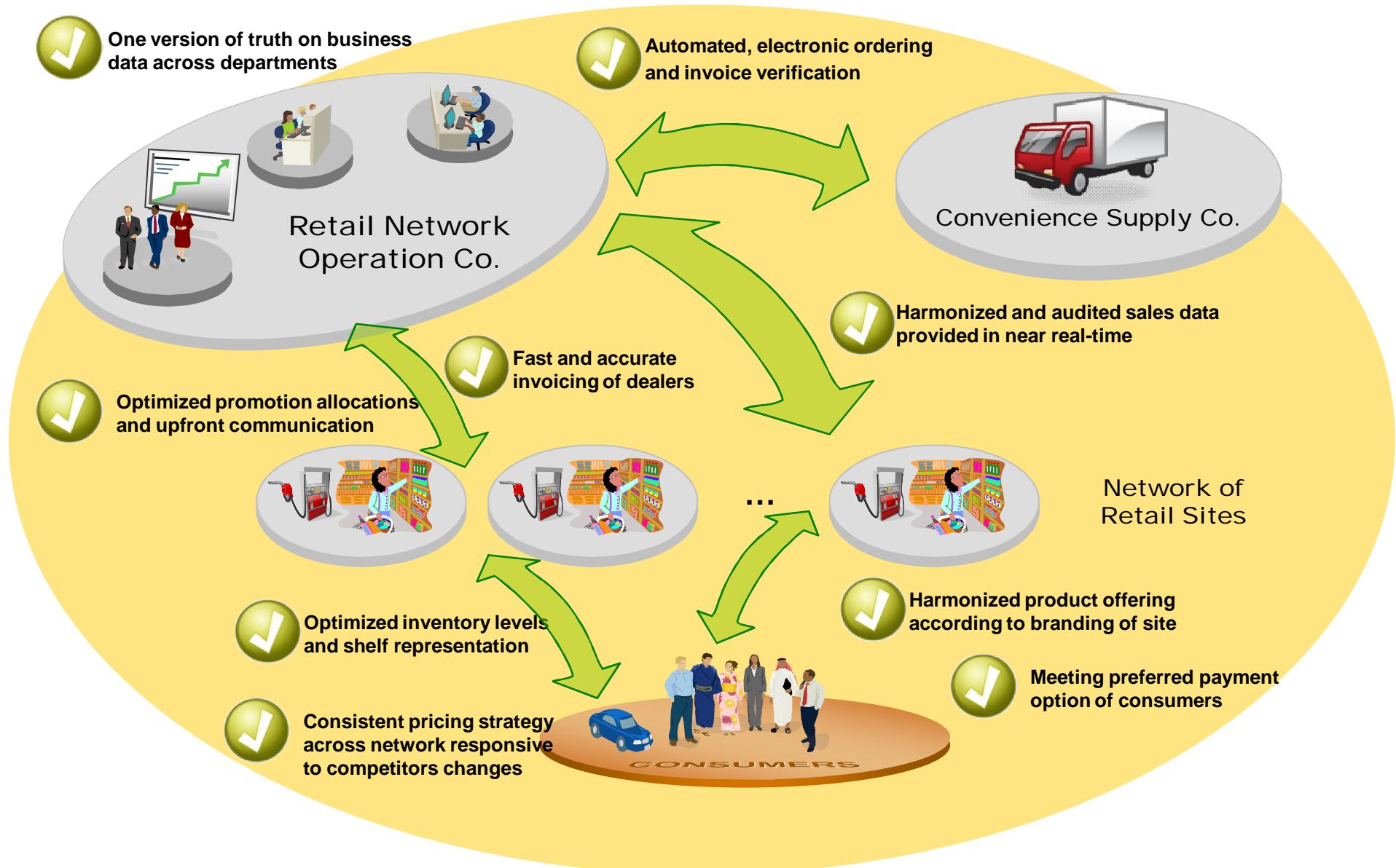
# Improve Retail Network Operations

... Poor alignment leads to unpleasant consumer experience



# Improve Retail Network Operations

Seamless collaboration increases sales and satisfies consumers



# Aligning Stakeholders

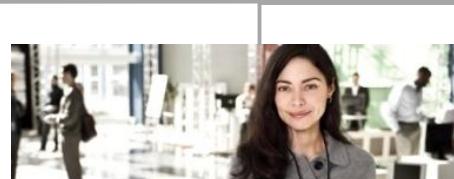
## ... to Improve Retail Network Operations



Effective Retail Network Operations requires alignment between several stakeholders with different business focus



Vice President Retail Network Operations



Head of wet stock operations



Head of dry stock operations



Head of Financials

### Retail Network Operations

How do I make best use of retail network at controlled costs to best serve our end customers?

- Revenue Growth
- Operating margin
- Customer Satisfaction

### Fuel Management

How do I best manage working capital in our network while best serving our customers?

- Manage fuel inventories
- Optimize fuel prices

### Convenience Retail

How do I ensure right products offering within limited space and avoid out-of-stock situations?

- Merchandising & Assortment Planning
- Automated Sourcing
- Promotion Handling

### Settlement with Partners

How do I ensure fast cash flow with minimal manual interventions?

- Supplier Invoice Verification
- Payment Card processing
- Dealer settlement

# Improve Retail Network Operations

... is a Cross-functional Process



Retail Network Operations connects processes across departments to ensure best customer service at controlled costs



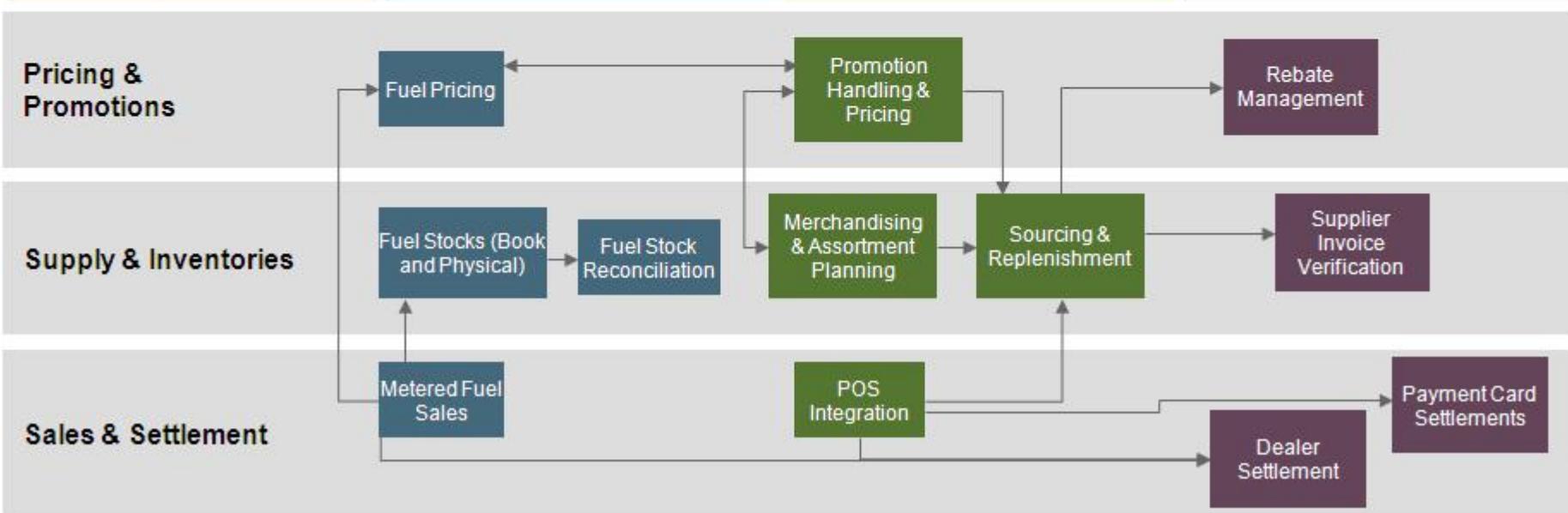
**Vice President Retail Network Operations**



**Head of wet stock operations**

**Head of dry stock operations**

**Head of Financials**





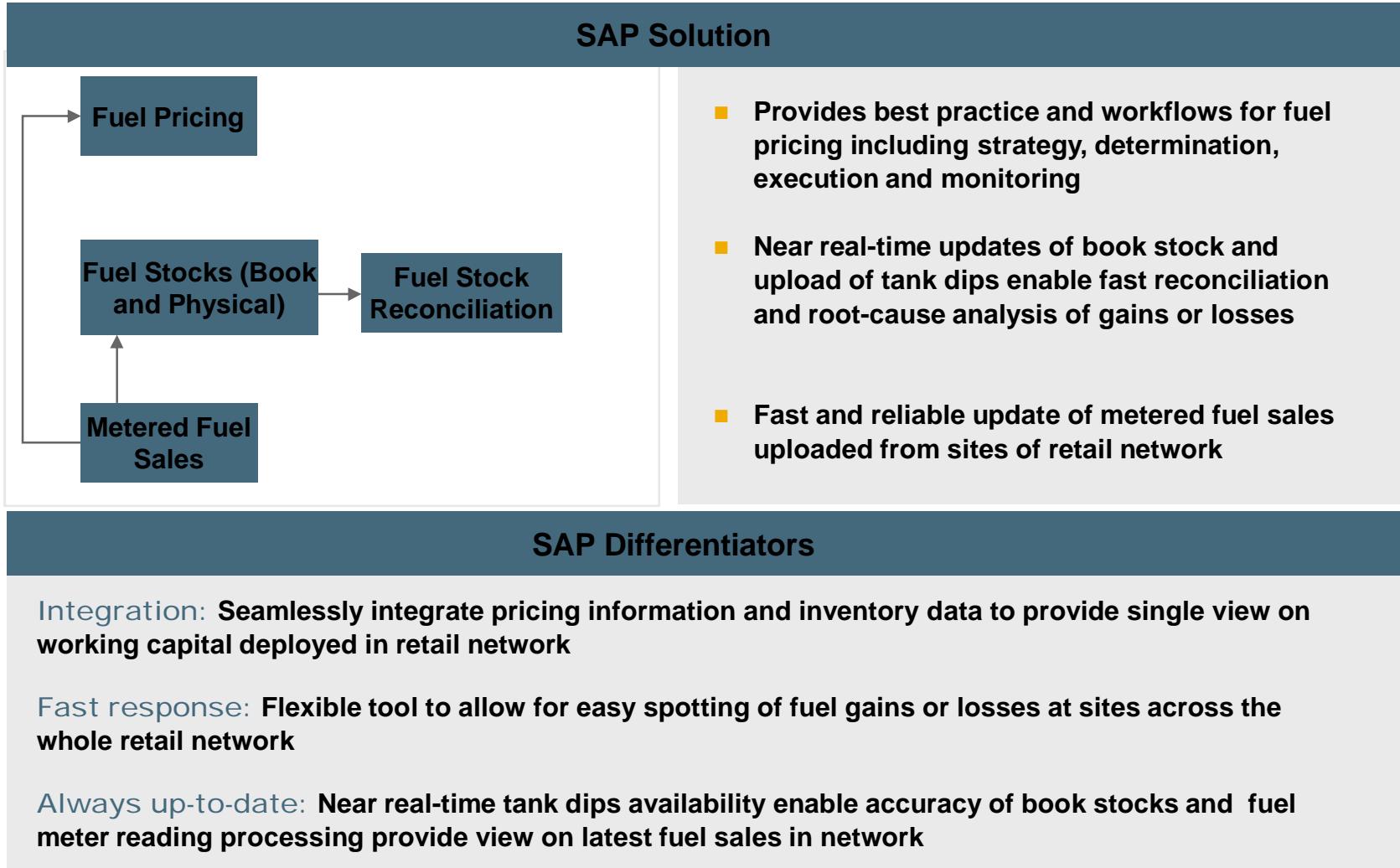
### Objective:

**Visibility of fuel inventories and effectively manage prices**

### Best practice solution:

**Harmonized processes and strategy across the retail network**

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Inability to respond to competitor price changes or increase of purchase costs</li><li>■ No timely update about fuels sold at sites</li><li>■ Missing view of differences of book vs. physical fuel stock</li></ul>	<ul style="list-style-type: none"><li>■ Implementation of a fuel pricing strategy and consistent application across the network</li><li>■ Near real-time view at head quarter on fuels sold at the sites</li><li>■ Timely overview of fuel stock differences at all sites</li></ul>	<ul style="list-style-type: none"><li>■ Increased sales margin while keeping ability to respond to competition</li><li>■ Updates sales data available for market analysis</li><li>■ Fast identification of gains and losses of fuel stock at sites</li></ul>



# Convenience Retail

## Objectives, Issues, Capabilities and Benefits



### Objective:

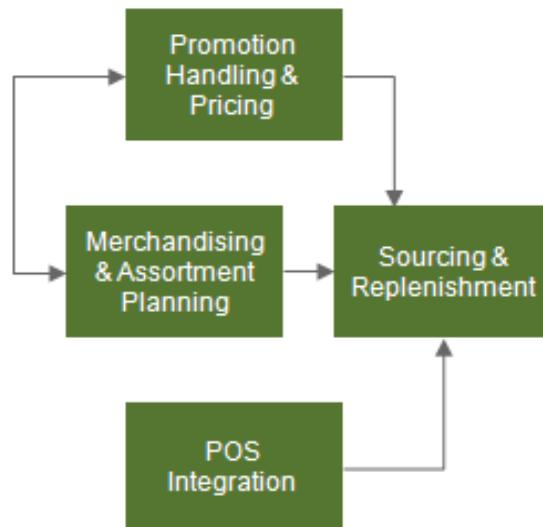
**Establish a brand image for convenience retailing**

### Best practice solution:

**Effectively run convenience stores at appropriate location within network**

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Inaccurate and late sales figures from POS</li><li>■ Increase sales and margin to drive profitability</li><li>■ Consistent and timely in-store execution with inventory to support the promotion</li><li>■ High inventory and storage costs due to limited space</li></ul>	<ul style="list-style-type: none"><li>■ Have 'one version of truth' on sales for all involved</li><li>■ Sales plans are based on consumer insight</li><li>■ Provide best product, price and offer mix with a view to overall profitability and consumer price perceptions</li><li>■ Optimize purchase orders based on shopper demand and inventory position</li></ul>	<ul style="list-style-type: none"><li>■ Accurate and timely response to customer buying patterns</li><li>■ Increased speed of products to shopper</li><li>■ Deliver a better shopping experience and increase customer loyalty</li><li>■ Reduce lost sales and increase shopper loyalty</li></ul>

## SAP Solution



- Support an end-to-end merchandise procurement process from vendor collaboration through store replenishment
- Align allocation and replenishment to shopper demand as well as brand image
- Coordinate activities to deliver on the brand promise, and inspire shoppers to return again and again

## SAP Differentiators

**Integration:** All shopper insight and promotional information is available across the enterprise from one common source of data

**Scalability:** Ability to manage the massive volumes of product-store level data to ensure unique store-level demand patterns are assessed, understood, and acted upon

**Flexibility:** With real time insight during promotional activity, retailers can adjust factors to optimize stock, sales and margin levels

# Settlement with Partners

## Objectives, Issues, Capabilities and Benefits



**Objective:**

**Fast and Error-free invoicing processes**

**Best practice solution:**

**Integrated solution to enable fast cash flows and easy invoice verification based on up-to-date logistical information**

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ High volume of payment card transaction with errors</li><li>■ Many claims from dealers due to inaccurate invoices</li><li>■ Overpaying suppliers due to wrong quantities or prices in invoices</li><li>■ Missing purchase cost saving potential</li></ul>	<ul style="list-style-type: none"><li>■ Verification of card transactions against set of rules before posting</li><li>■ Billing based on accurate and verified sales data</li><li>■ Ability to match supplier invoices against ordered and/or received quantities and listed prices</li><li>■ Agree on rebates with vendors based on e.g. sales volumes</li></ul>	<ul style="list-style-type: none"><li>■ Minimize charge-backs and re-invoicing with banks</li><li>■ Realize fast cash flow w/o manual interventions</li><li>■ Minimize costly manual interventions and avoid overcharges</li><li>■ Realize vendor rebates to lower overall purchase costs</li></ul>

# Settlement with Partners



## SAP solution

Rebate Management

Supplier Invoice Verification

Dealer Settlement

Payment Card Settlements

- Define, manage and monitor rebate agreements with vendors
- Input of vendor invoices with automated checking of accuracy and financial posting incl. blocking in case of mismatch
- Invoicing of dealers based on sales data like fuel meter readings in a timely manner to secure fast payment cycles
- Settlement of high volume of card transactions incl. debit, credit and fuel cards with corresponding banks and card issuers

## SAP differentiators

**VOLUME PROOF:** SAP enables the processing of high volume data streams as proven by many successful customer implementation

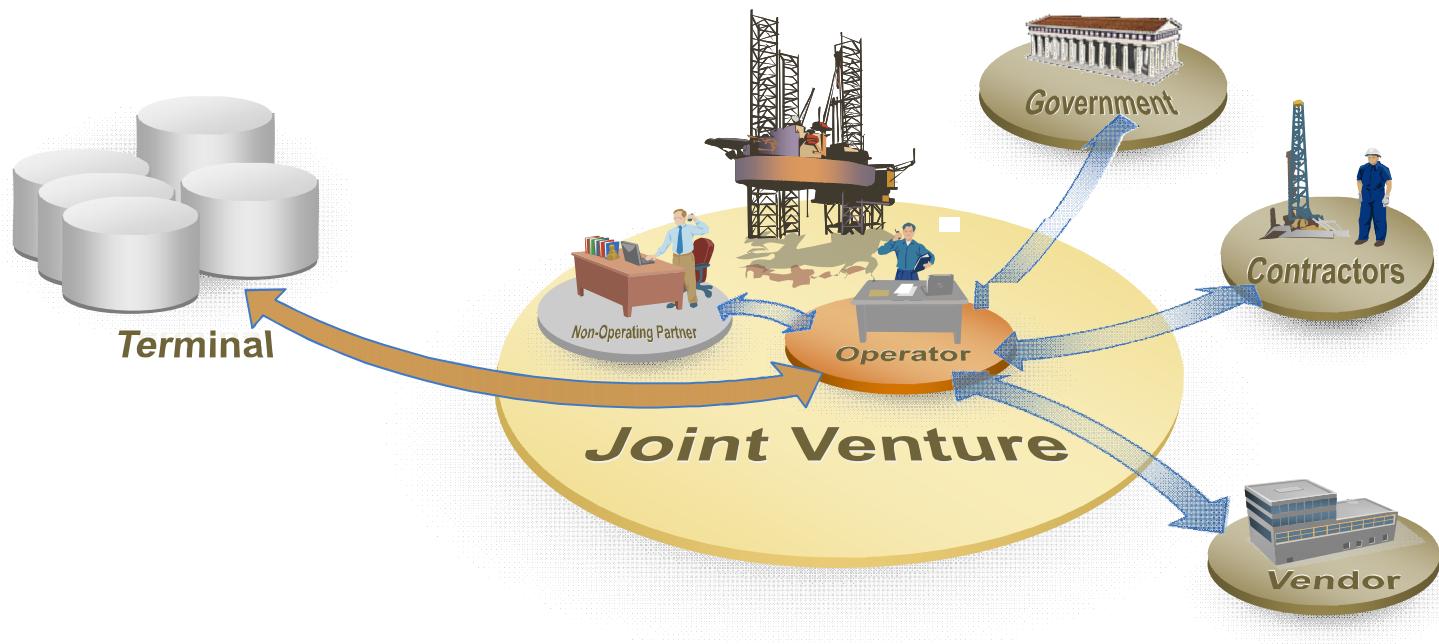
**FLEXIBILITY:** Configuration settings allow for multiple set-ups of settlement processing to fit business needs

**INTEGRATION:** Financial posting are based or related to up-to-date logistical data like fuel meter readings, purchase orders/goods receipts, or card transactions

# Best Practice Value Scenario

## O&G – Managing Effective Venture Partnerships

# Main Challenges in Oil & Gas Venture Partnerships



**Fluctuating costs impede the economic decisions**

**Exponential cost increase from suppliers challenges the operator**

**Complex ownership structures**

Economic conditions are squeezing Governments and O&G producers to increase the ROI

**Upstream Project Funding**

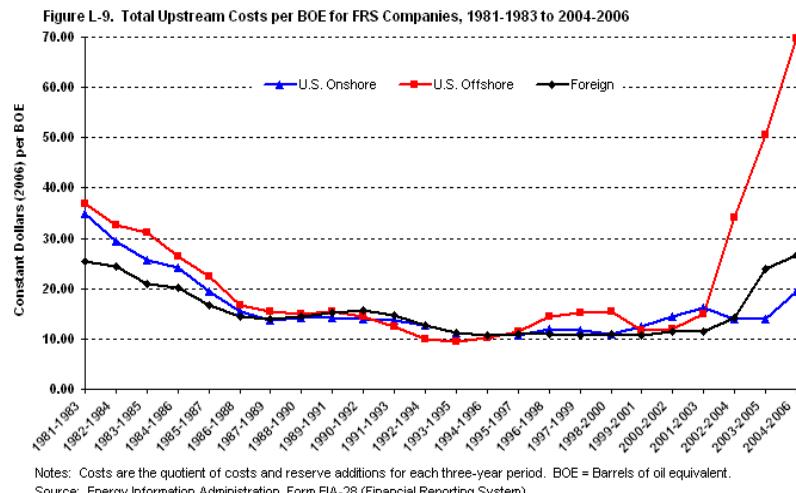
Uncertainty of the Oil price coupled with the tight credit market & budget impedes the ability to secure project funding

# Oil & Gas Upstream risks increase due to volatility of prices & costs, and economic developments

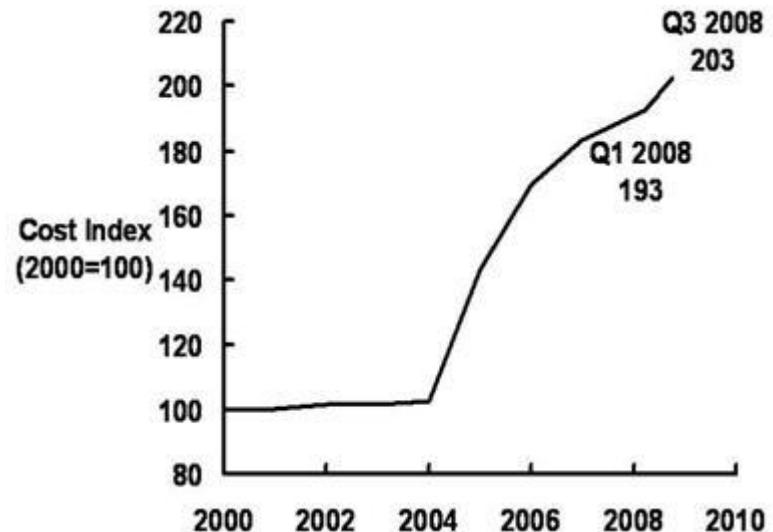


Oil&Gas Joint Ventures need to be able to get transparency on expenses and project funding.

## Upstream costs per barrel of oil equivalent



## CERA Upstream Operating Costs Index



“

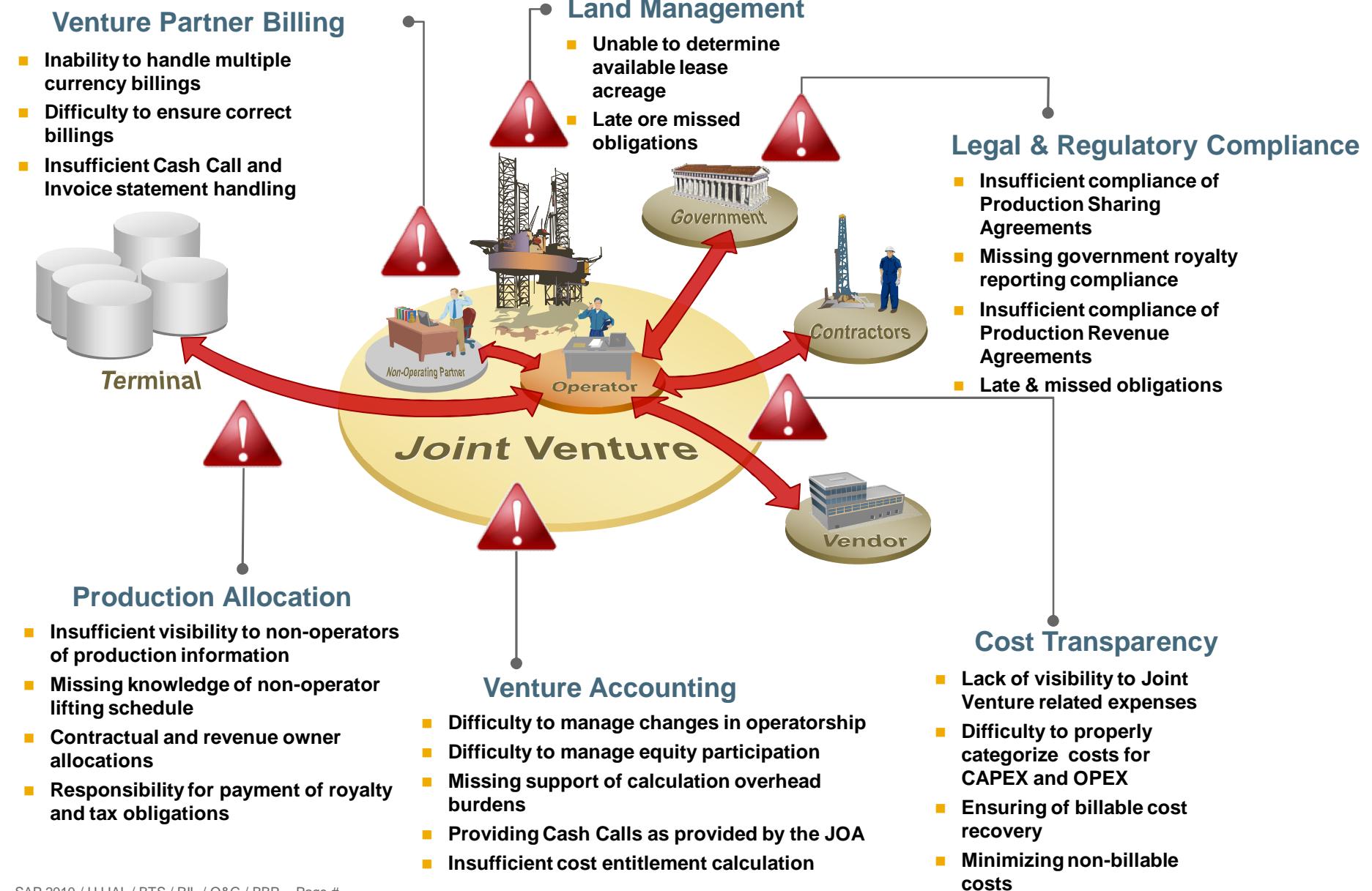
Although Oil&Gas prices have the most dramatic impact on profits, there are other uncontrollable factors that also affect the industry significantly- such as declining access to Oil&Gas resources and cost components that rise and fall independently from Oil&Gas price...

Boston Consulting Group -

Maximizing value in Upstream Oil&Gas

# Main Challenges in Oil&Gas

## Venture Partnerships



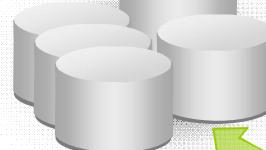
# and how SAP solves the issues in Oil&Gas Venture Partnerships



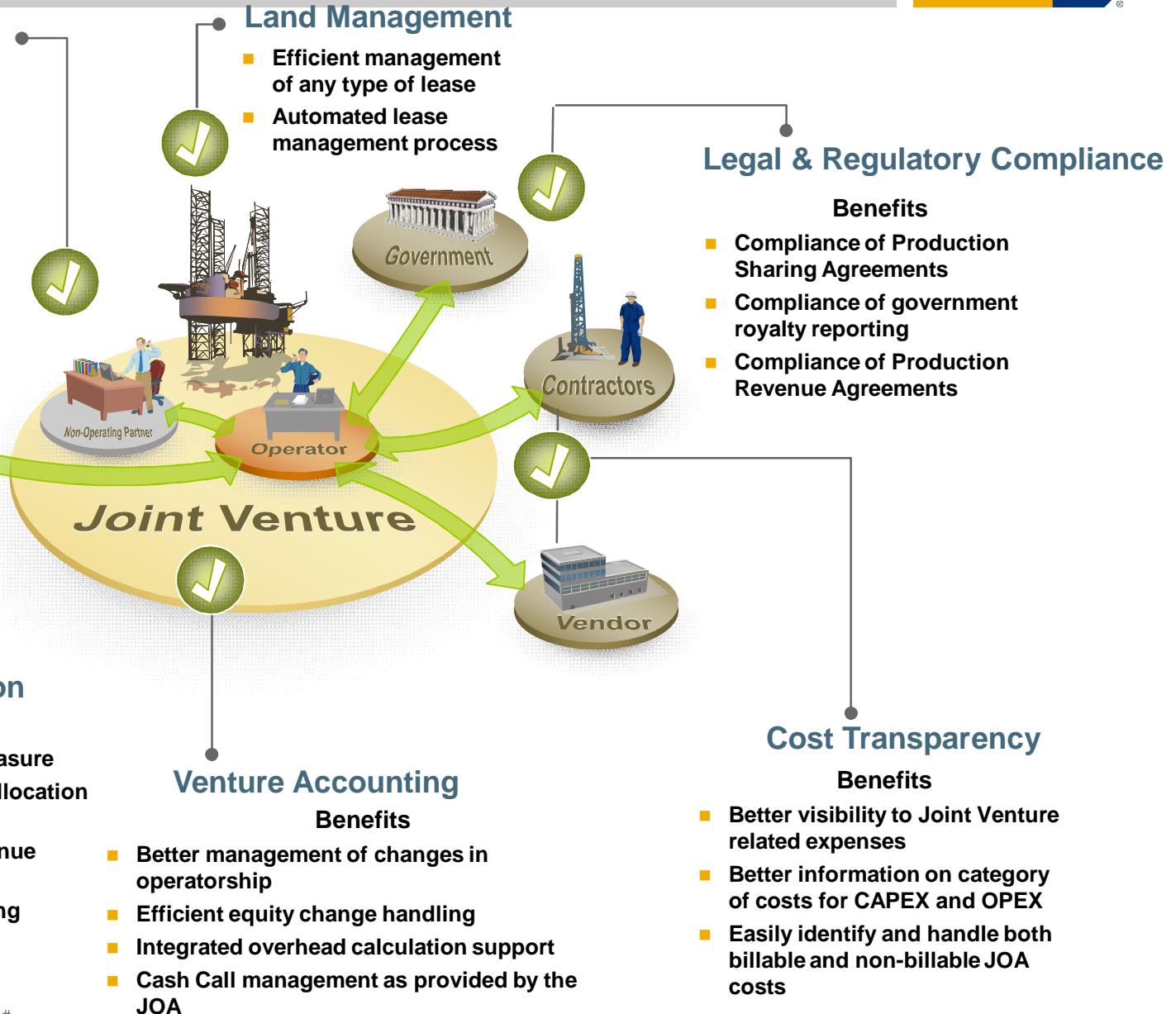
## Venture Partner Billing

### Benefits

- Efficient support of multiple currency billings
- Timely delivery of correct billings
- Better partner audit support with JADE reporting



Terminal



# Aligning stakeholders ... Key to effective Venture Partnerships



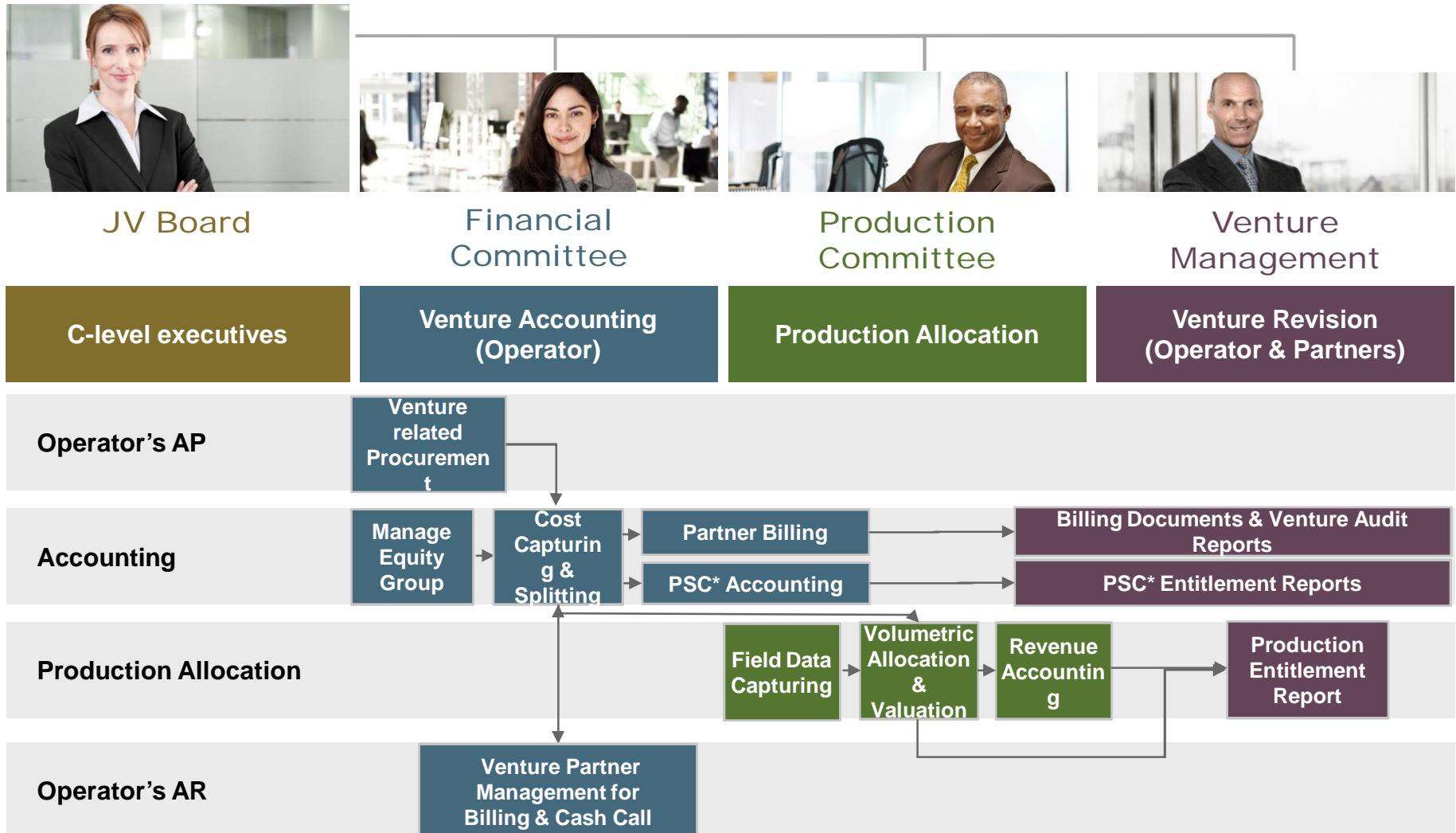
Management of effective venture partnerships requires an alignment between several stakeholders with differing objectives



# Managing Venture Partner stakeholders ... Key to effective Venture Partnerships



Effective Venture Partnerships connect processes across departments in order to increase efficiency and manage complex relations of ownerships and partnerships.



# Venture Accounting (Operator)

Objectives, issues, capabilities and benefits



## Objective:

**Accurate and compliant allocation and distribution of costs and government's royalty**

## Best practice solution:

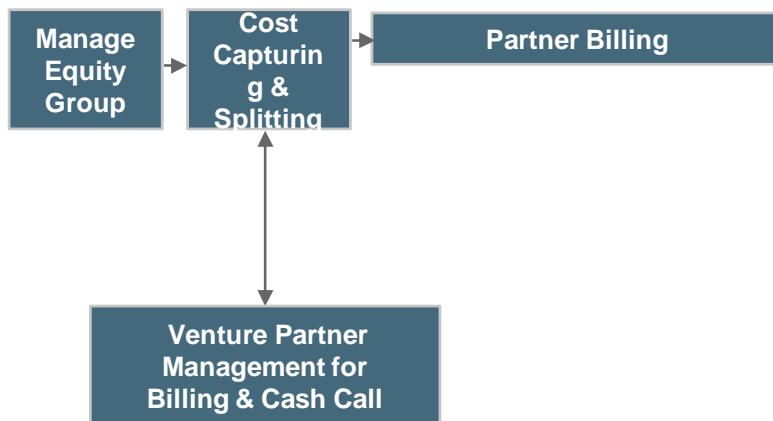
**The Venture Accounting uses SAP JVA and SAP PSA with integrated ERP functionality to allocate and distribute cost and government royalty.**

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Lack of visibility to venture and partner related expenses</li><li>■ Difficulty to manage changes in operatorships and equity participation</li><li>■ Cash Call handling and timely reimbursement by partners</li><li>■ Difficulty to ensure correct billings and government royalty reporting compliance</li></ul>	<ul style="list-style-type: none"><li>■ Capture of venture related cost object information and allocation to ventures and partners according to equity entitlement</li><li>■ Flexible venture master data model and equity change management</li><li>■ Integrated Cash Call management</li><li>■ Standard reporting on venture and partner level with flexible forms including government royalty reporting</li></ul>	<ul style="list-style-type: none"><li>■ Transparency on all venture and partner related expenses</li><li>■ Flexible and easy handling of changes in operatorships and equity participation</li><li>■ Cash Call Management streamlined with operator's AP process</li><li>■ Accurate and compliant venture accounting which meets partner and government reporting demands</li></ul>

# Venture Accounting (Operator)



## SAP Solution



- SAP JVA streamlines cash call and joint interest billing processes which shorten the cash flow cycle and ensure a reliable project funding
- SAP JVA provides full document drill-down & tracking, historical data and audit trail
- SAP JVA provides detailed joint venture data capture in real time to ensure an accurate and compliant allocation and distribution of costs on a venture by venture basis including partner billing

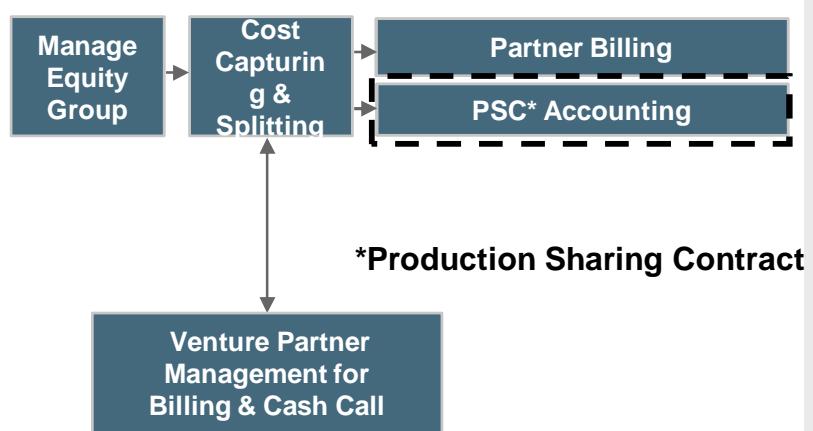
## SAP Differentiators

**Integration:** SAP JVA is fully integrated within SAP ERP Financials and ensures the capture and visibility of venture related costs for each Oil&Gas venture and its partner entitlements

**Efficiency:** Faster month end closing and financial reporting at lower cost

**Flexibility:** Enables flexibility to handle business changes including retroactive equity change handling

## SAP Solution



- SAP PSA facilitates the accounting and reporting requirements of oil and gas companies that work with governments under the terms and conditions of PSCs.
- SAP PSA provides accurate forecast, calculation and reporting on the amounts due.
- SAP PSA ensures accurate lifting and storage entitlement management

## SAP Differentiators

**Integration:** Full integration with SAP JVA and SAP ERP Financials ensures seamless production allocation to royalties and contractor costs (automated cost recovery management)

**Automation:** Automates your PSC accounting and reporting processes

**Flexibility:** Flexible entitlement calculations for all PSC parties (government/NOC, contractor, venture, partner)

# Production Allocation

Objectives, issues, capabilities and benefits



## Objective:

**Management of production accounting, entitlements, and revenue**

## Best practice solution:

**The Production Management uses SAP PRA to allocate volumetric data and account for the valuation and distribution of this data as production entitlement and revenue in accordance with contractual agreements**

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Contractual and revenue owner allocations</li><li>■ Responsibility for payment of royalty and tax obligations</li><li>■ Insufficient visibility to non-operators of production information</li><li>■ Missing knowledge of non-operator lifting schedule</li></ul>	<ul style="list-style-type: none"><li>■ Include volumetric contractual allocation of extracted products like, Natural Gas and Crude Oil, back to the originating well completions</li><li>■ Royalty and tax calculation</li><li>■ Complete measurement and allocation capabilities</li><li>■ Support of international unit of measure capability</li></ul>	<ul style="list-style-type: none"><li>■ Complete ownership and revenue accounting capabilities</li><li>■ Integrated compliance reporting</li><li>■ Better compliance with all units of measure</li><li>■ Permits employees throughout the company to work with the same data, thus eliminating unnecessary data re-entry and improving data consistency</li></ul>

## SAP Solution



- SAP PRA streamlines the business processes for the production, land, gas control, and financial functions of an upstream production company
- SAP PRA automates prior period adjustments
- SAP PRA manages processing at delivery network level
- SAP PRA includes a complete revenue ownership subsystem in SAP PRA (US)

## SAP Differentiators

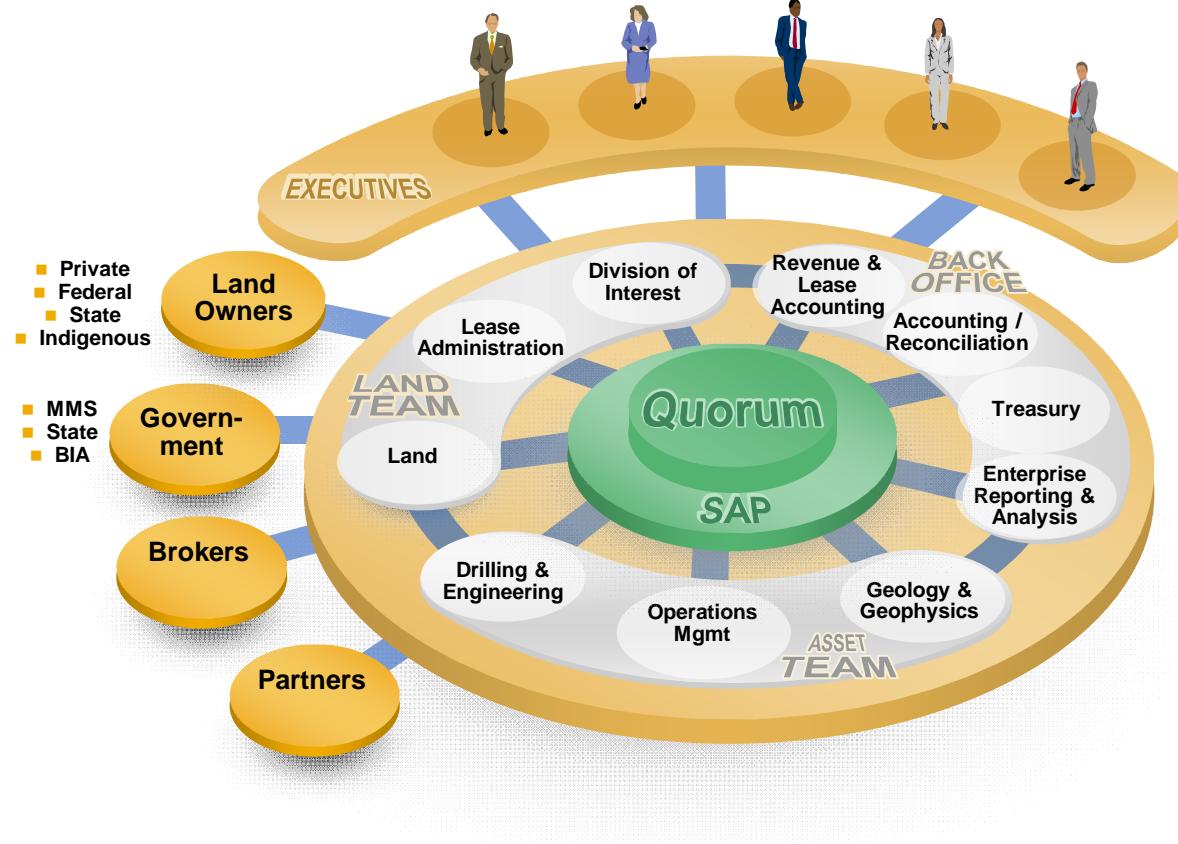
**Integration:** SAP PRA provides an integrated solution of the entire business process chain, from crude oil and gas production to distributing revenue to the interest owners

**Scalability:** Real time production data processing with Field Data Capturing

**Flexibility:** Graphical creation and maintenance of production networks

# Land Management

## Characteristics of the SAP/Quorum Solution



- ✓ Easy to use system with integrated processes enhance data integrity
- ✓ Widely available access to data & documents
- ✓ Powerful query & reporting tools
- ✓ Able to handle all types of agreements
- ✓ Tools to assist with acquisitions/dispositions
- ✓ Workflow with electronic notifications
- ✓ Rules driven configuration
- ✓ Standard integration with ERP and GIS
- ✓ Full visibility into overall Land position

**Quorum and SAP allow corporations to manage and visualize the full lifecycle of identifying, acquiring, operating, and disposing of Oil & Gas Land and Lease Assets resulting in increased financial results.**

# Venture Revision - Operator & Partners

Objectives, issues, capabilities and benefits



## Objective:

**Transparency on Venture related expenditures and contract compliance**

## Best practice solution:

**The Venture Revision uses reporting and audit information on venture expenses, production and revenue allocation delivered by SAP JVA, SAP PSA and SAP PRA**

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Lack of visibility to venture and partner related expenses and payments</li><li>■ Difficulty to ensure correct government royalty reporting compliance</li><li>■ Missing effective production information management reporting on contractor's production volume and revenue entitlement</li></ul>	<ul style="list-style-type: none"><li>■ Standard reporting and audit support on venture and partner level with flexible billing forms</li><li>■ Compliant government royalty and revenue reporting according Production Sharing Agreements</li><li>■ Production volume and revenue entitlement calculation and reporting including real time Field Data Capturing</li></ul>	<ul style="list-style-type: none"><li>■ Transparency on all venture and partner related expenses and project funding ( Accruals and Cash Calls)</li><li>■ Accurate and compliant venture and PSC* accounting which meets partner and government reporting demands</li><li>■ Effective production information that enables companies to adhere to strict compliance regulations and timely reporting requirements</li></ul>

**\*Production Sharing Contract**

## SAP Solution



- SAP JVA provides an accurate accounting and reporting tool, with real-time information on any partner or venture for timely decision-making
- SAP JVA supports venture audit standard JADE
- SAP PSA supports internal and external reporting on royalty and revenue entitlement according PSC\*
- SAP PRA uses volumetric, contract, and pricing data to provide Production, Tax, and Royalty related compliance reporting, as well as, entitlement and revenue accounting reporting.

## SAP Differentiators

Integration: Venture and production relevant cost information are ensured by integration

Flexibility: Faster period end reporting and greater ability to meet reporting deadlines

Flexibility: Flexible entitlement reporting for all PSC parties (government/NOC, contractor, venture, partner)

\*Production Sharing Contract

# Best Practice Value Scenario

## O&G ORM – Operation Risk Management

Moving beyond compliance to proactive and sustainable management of operational risks

## Compliant

- Adheres to laws in the countries for health, safety and reliability
- Risk averse or takes risk without knowledge
- Incomplete set of point/site specific solutions
- Ad hoc assessment of operational risks
- No understanding of risk principles or language.

## Standardized & Efficient

- Standardization and simplification of business processes and information across enterprise
- Cautious, Reactive Approach, aware of need to take risks
- Standard solution for each category of risk
- Qualitative assessment of Operational Risks
- Risk principles understood by few who may have had little or no formal training

## Performance-based Decisions

- Aligns risk performance via convergence with overall business objectives and business metrics
- Manages and takes appropriate risks
- Integrated suite of risk management solutions
- Periodic quantitative assessment of operational risks
- In-house core of expertise, formally trained in basic risk management skills.

## Sustainable Growth

- Integrates risk into forward looking business decisions
- Proactively plans portfolio of risks
- Risk management fully integrated into business management system
- Continuous process improvement is ingrained
- Continuous valuation of Value at Risk
- All staff risk aware and capable of using basic risk skills.
- Learning from experience as part of the process.
- Regular training for personnel to enhance skills.

Focus Today

# Today's Realities in Managing Operational Risk / Asset Safety & Compliance



The New York Times

Industry Fines  
Increase for Safety  
Violations...

DIE ZEIT  
Green, Green,  
GREEN !

INTERNATIONAL  
Herald Tribune  
What Is Environmental  
Sustainability?

THE WALL STREET JOURNAL.

Corporate Compliance  
Costs Rise to All-Time  
High...

FT.com

Growing List of  
Regulations Haunt  
Manufacturers...

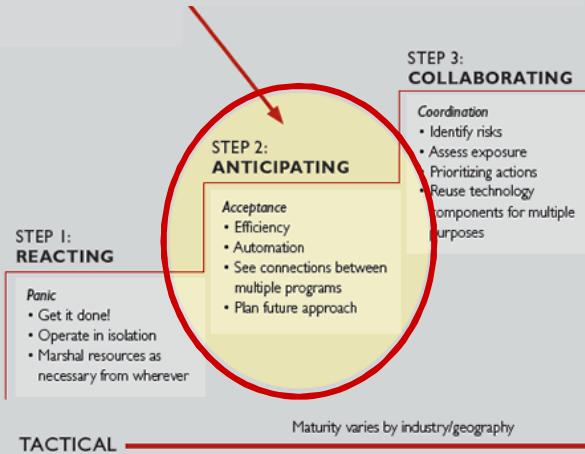


**THE WALL STREET JOURNAL.**  
ONLINE

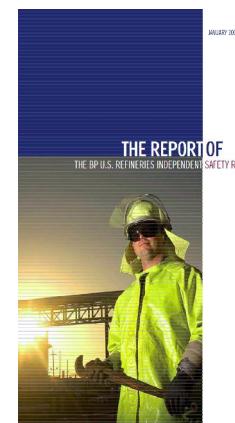
Spending on global regulation and compliance  
to double by 2010 to over \$70B USD

May 14, 2008

Where most organizations  
are today...



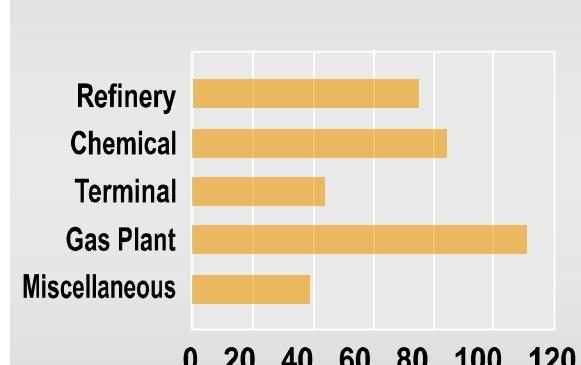
## Baker Report: Process Safety Management (PSM)



# Losses from Preventable Causes has Driven Response from Standards & Regulatory Bodies

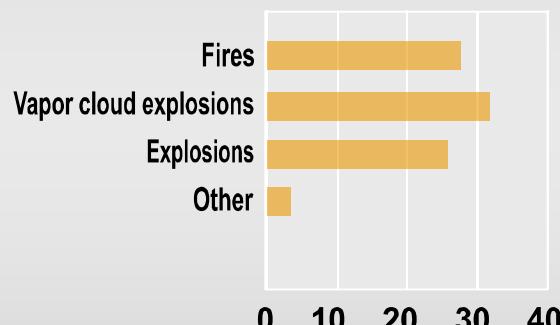


## 1 Losses by Industry (MM\$)

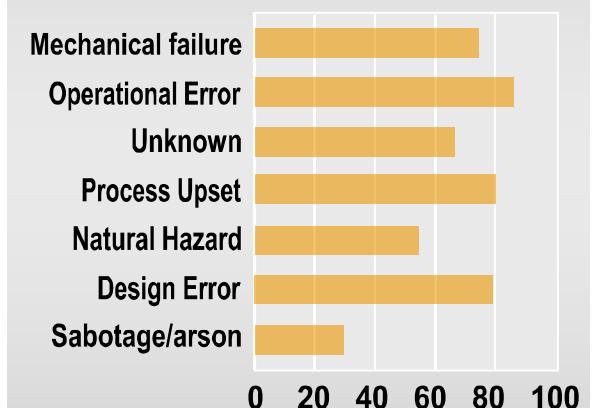


Source: J&H Marsh & McLennan, Inc.

## 2 Percentage of Loss Type



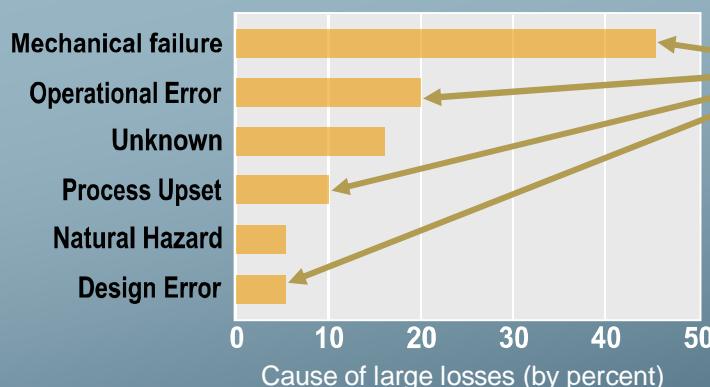
## 3 Loss by Cause (MM\$)



**Losses continue to occur across many industries**

**Types of incidents are catastrophic**

**Causes are varied and often interrelated**



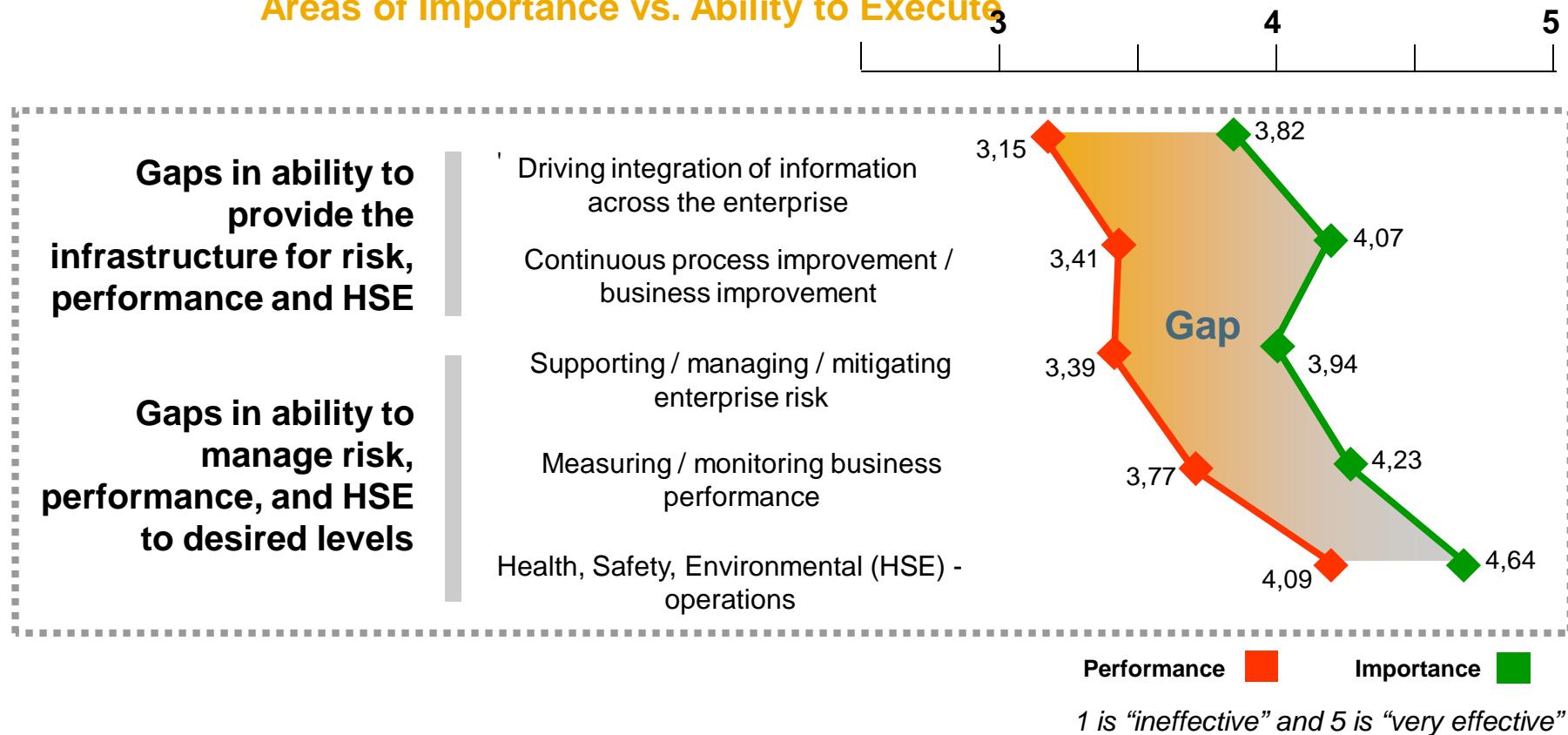
**Preventable causes have led to a number of initiatives requiring risk management systems**

- Process Safety Management (PSM)
- New Sources Review (NSR)
- Risk Management Program for Accidental Chemical Release (RMP)
- ACC - Responsible Care (RC)
- Recommended Practice 750

# Companies have a Desire to Manage Risks vs. their Ability to Execute...



## Chemical and Petroleum Executive Ranking on: Areas of Importance vs. Ability to Execute



Today there is a performance GAP between what is needed and what can be delivered...

Source: IBM Institute for Business Value Risk Management Survey, 2008

# Best Practices For Managing These Risks

A Couple of External Perspectives



From the U.S.  
Environmental Protection Agency

**Most EMS [Environment Management Systems] are built on the "Plan, Do, Check, Act" model. This model leads to continual improvement based upon:**

- **PLAN** - Planning, including identifying environmental aspects and establishing goals
- **DO** - Implementing, including training and operational controls
- **CHECK** - Checking, including monitoring and corrective action
- **ACT** - Reviewing, including progress reviews and acting to make needed changes to the EMS.



From the U.K.'s Health & Safety Executive,  
"Leading health and safety at work"

- **PLAN** - set the direction for effective health and safety management.
- **DELIVER** – introduction of management systems and practices that ensure risks are dealt with sensibly, responsibly and proportionately.
- **MONITOR** – receipt of both specific (e.g. incident-led) and routine reports on the performance of health and safety policy
- **REVIEW** - tells you whether your system is effective in managing risk and protecting people.

**Managing Risks Requires a System of Continuous Improvement**

# Best Practices For Managing Risks



- **PLAN** - set the direction for effective health and safety management.
- **DELIVER** – introduction of management systems and practices that ensure risks are dealt with sensibly, responsibly and proportionately.
- **MONITOR** – receipt of both specific (e.g. incident-led) and routine reports on the performance of health and safety policy
- **REVIEW** - tells you whether your system is effective in managing risk and protecting people.

From the U.K.'s Health & Safety Executive, "Leading health and safety at work"

**Managing Risks Requires a System of Continuous Improvement**

# Building Blocks for a Comprehensive ... Operational Risk Management Solution



**Example  
OSHA 1910**

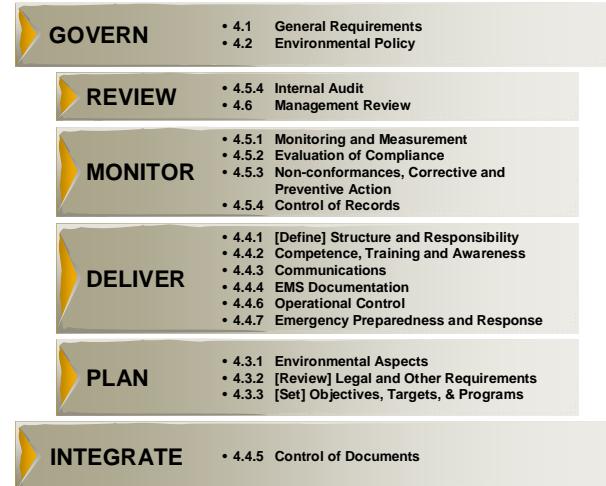
# Same Model Works for Number of other Risks and Standards



## OHSAS 18001



## ISO 14001



## ISO 9000



## CEC EMS



# Lack of Cohesive Operational Risk Management ... leads to Excessive Risk of Failure



Increasing operational risk due to lack of visibility and proactive compliance management

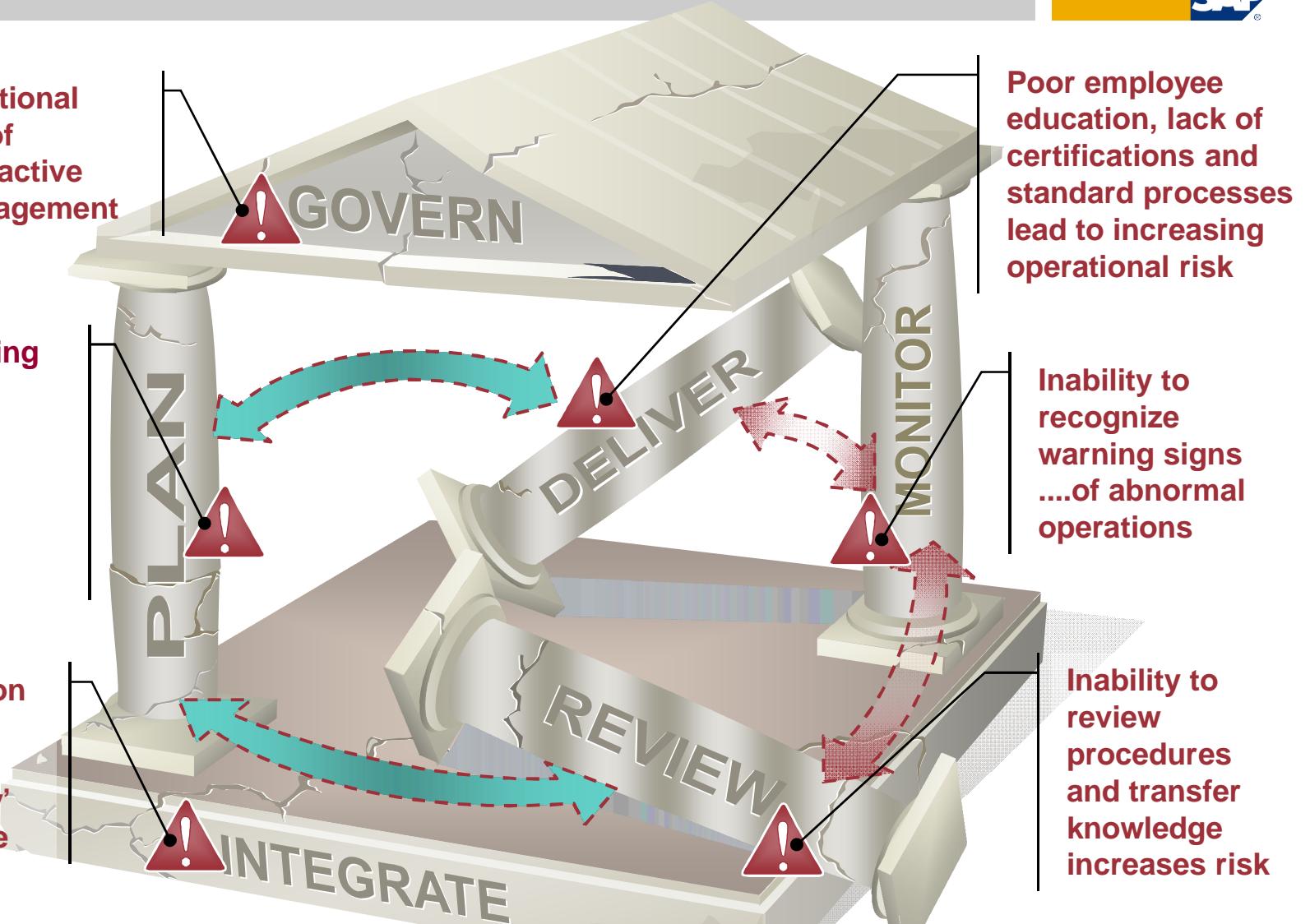
Poor engineering and lack of company wide prevention of incidents and exposures increases risk

Lack of integration and info sharing leads to 'false sense of security' across enterprise

Poor employee education, lack of certifications and standard processes lead to increasing operational risk

Inability to recognize warning signs ....of abnormal operations

Inability to review procedures and transfer knowledge increases risk



Without a consistent, reliable approach for managing safety and compliance, the enterprise grows more susceptible to catastrophic failure and operational risks

# Comprehensive Operational Risk Management Solution Increases Visibility and Reduces Risks



Visibility increases compliance and enhances operations reducing risks....

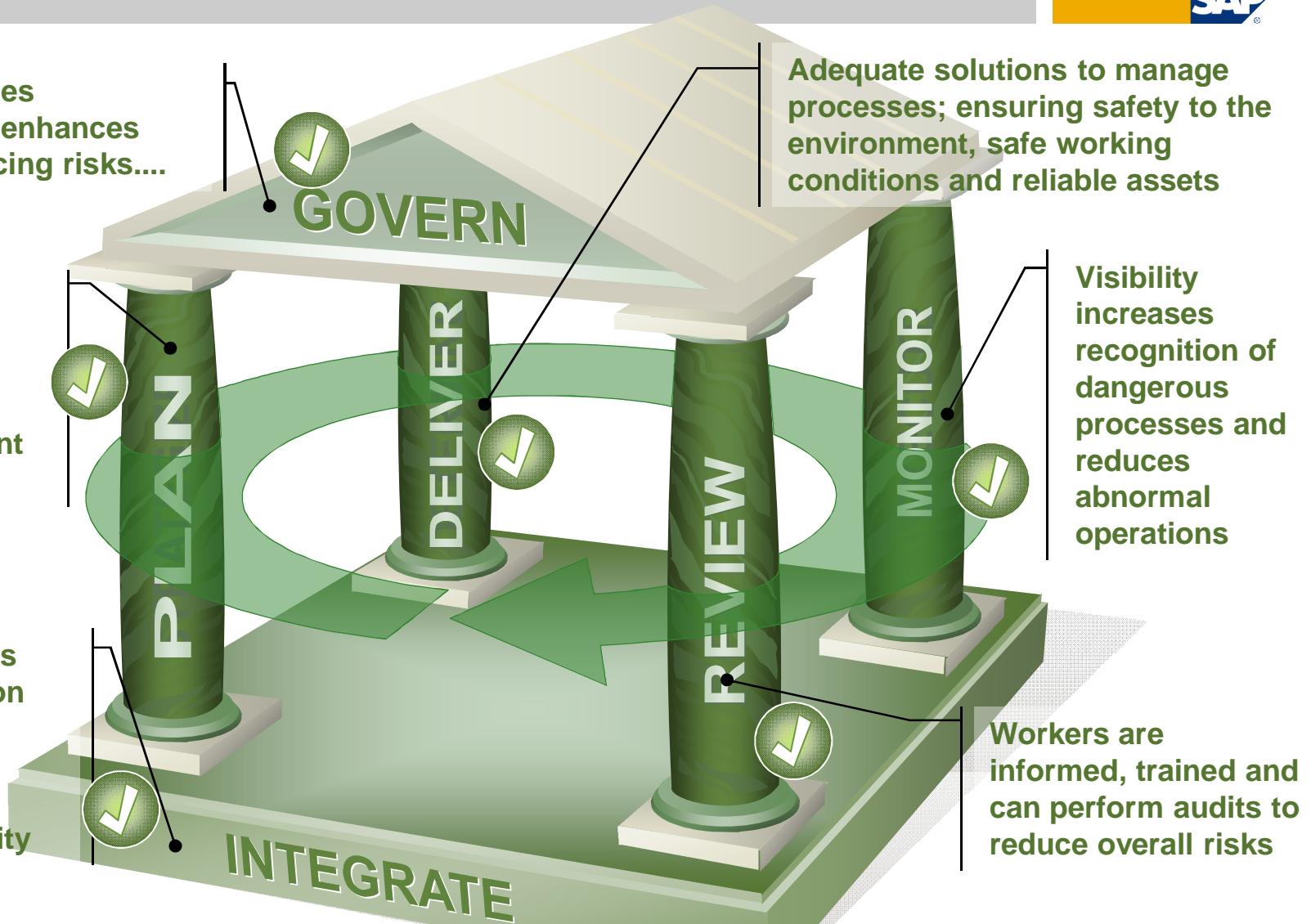
Ability to plan mitigation of risks to keep people, assets and environment safe

Accurate process safety information reduces costs, enhances operations and increases visibility

Adequate solutions to manage processes; ensuring safety to the environment, safe working conditions and reliable assets

Visibility increases recognition of dangerous processes and reduces abnormal operations

Workers are informed, trained and can perform audits to reduce overall risks



Increased operational visibility enables consistent processes for managing safety and compliance, reducing overall risks, while increasing flexibility and best practices

# Enterprise Risk Management

## Types of Risks to be Managed



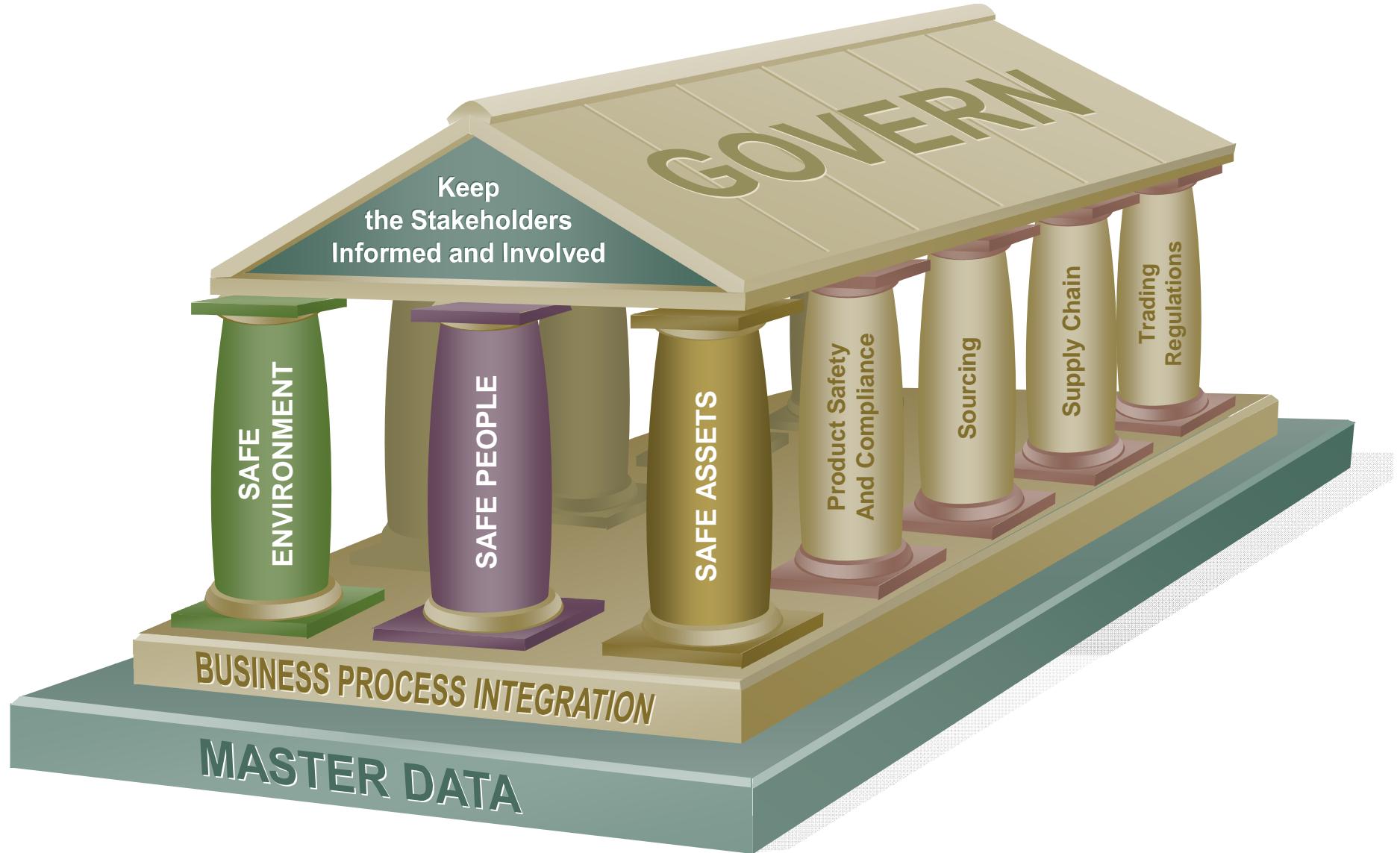
3. Prioritize & mitigate top risks across the enterprise

2. Manage Key Risks

1. Insight from Existing Systems



# Operational Risk Management Includes Facilities, Assets, People and Community...



# Operational Risk Management across the Asset Lifecycle



# Aligning Stakeholders to Achieve Operational Risk Management



Operational Risk Management is best achieved through aligning key stakeholders objectives and supporting the realization with an integrated solution.



Chief Compliance Officer



COO or  
VP Manufacturing



Plant Manager,  
Environmental Engineer



Plant Manager,  
Industrial Hygiene and  
Safety Officer



Plant / Maintenance /  
Engineering Manager

## Operational Risk Management

How do I meet all external and internal EHS requirements and prevent serious incidents?

- Cost of Enterprise EHS Compliance
- Corporate Fines & Penalties
- Safety Record
- Public Reputation

## Keep the Stakeholders Informed and Involved

How do I gain visibility to the status of EHS risks and performance?

- EHS Incidents
- EHS Performance Metrics
- EHS Risks
- Overdue Risk Mitigations and Tasks

## Keep the Environment Safe

How do I manage efficiently emissions, GHG, energy and worldwide compliance?

- Notices of Violations
- Emissions to Water, Air (including Green House Gas), etc.
- Energy Consumption

## Keep the People Safe

How do I execute a health and safety program ensuring policies are followed globally?

- Injuries and Near Misses
- Fatal Incidents
- Lost Time Injury Rate
- New Cases of Occupational Illnesses
- Safety Trainings

## Keep the Assets Safe

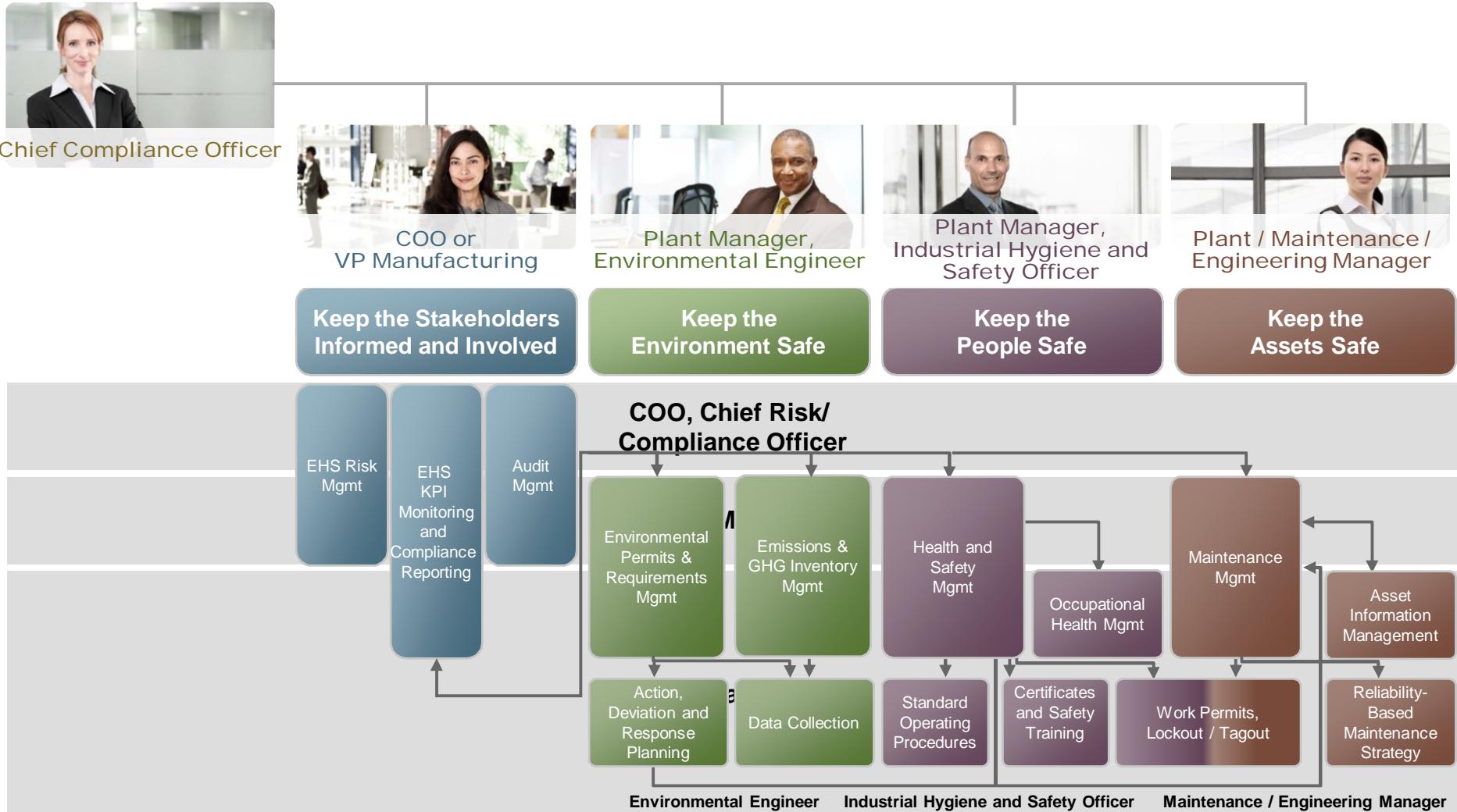
How do I ensure safe operations through cost effective maintenance?

- Overdue Maintenance of Safety Critical Equipment
- Ratio Planned / Unplanned Maintenance
- Work Permits
- Maintenance Costs

# Operational Risk Management is ... end-to-end & cross-functional process



**Operational Risk Management** connects the stakeholders with the operational management of safety for the environment, the people and the assets. This enables you to stay compliant, to create a proactive safety strategy and realize it in daily operations.



# Stakeholders: keep them Informed and Involved

## Objectives, Issues, Capabilities & Benefits



### Objective:

Assurance that safety and compliance standards and processes are being executed across enterprise

### Best practice solution:

- Visibility and proactive management of operational risks
- Corporate performance monitoring on environment, health, safety & compliance

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Accidents or incidents show unforeseen risks and lead to short term safety programs</li><li>■ Lack of transparency and standardization of local EHS activities and high manual efforts</li><li>■ External and internal audits create huge efforts</li><li>■ Costly collection of local data, lack of comparability, inconsistent KPI's</li><li>■ Risk of severe incidents that could harm people, damage image and lead to be called to account</li></ul>	<ul style="list-style-type: none"><li>■ Closed loop risk management including risk mitigation and prevention</li><li>■ Consolidate information and processes on an integrated, scalable and flexible platform</li><li>■ Auditable business processes and audit management solution that meet ISO 19011 standard</li><li>■ Visibility into operational performance metrics, enabling drill down to specific data</li><li>■ Effective management and control of risks, processes and preventive measures.</li></ul>	<ul style="list-style-type: none"><li>■ Effective anticipation of risk leads to improved prevention of incidents.</li><li>■ Safe time and money for inefficient Ad hoc activities as "firefighting"</li><li>■ Reduce cost of compliance and best practices can be shared</li><li>■ Ensure with moderate effort that internal and external standards are met</li><li>■ Easy to use monitoring to ensure compliance objectives are being met</li><li>■ Improve corporate EHS standards and prevention to minimize risks</li></ul>

### SAP Solution

Corporate  
EHS  
Risk  
Mgmt

Corporate  
EHS KPI  
Monitoring  
and  
Compliance  
Reporting

Audit  
Mgmt

- SAP GRC Risk Management
- SAP NetWeaver BI / SAP Environmental Compliance / SAP EH&S/ SAP ERP, optionally:  
Business Objects, SAP MII
- SAP ERP (Audit Management)

- Closed loop risk management allows to perform EHS risk analysis, monitor measures for risk mitigation and prevention, and results.
- Visibility into operational performance metrics, enabling drill down
- Compliance reporting to external authorities
- Audit management solution that meet ISO 19011 standard

### SAP Differentiators

- SAP provides the only integrated, operational risk management solution among ERP vendors; bringing together safety, compliance and performance monitoring and reporting capabilities.
- Enabling customers with greater visibility and flexibility to access corporate and plant information when necessary to improve decision-making or take immediate actions.

# Stakeholders: keep them Informed and Involved

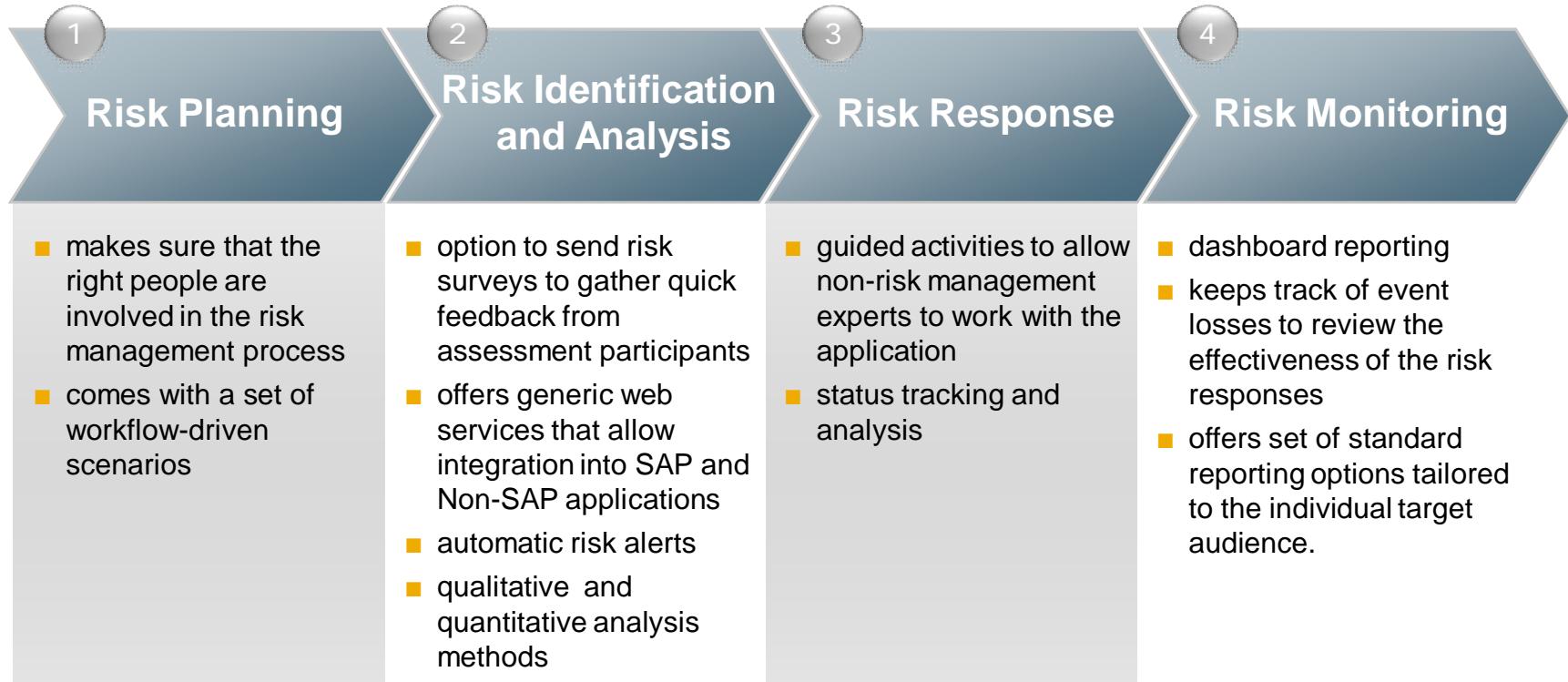
Corporate EHS Risk Management



**SAP GRC Risk Management automates key risk management business processes, enabling companies to prevent risk events and embed risk mitigations into enterprise strategies and initiatives.**



## Process overview



# Stakeholders: keep them Informed and Involved

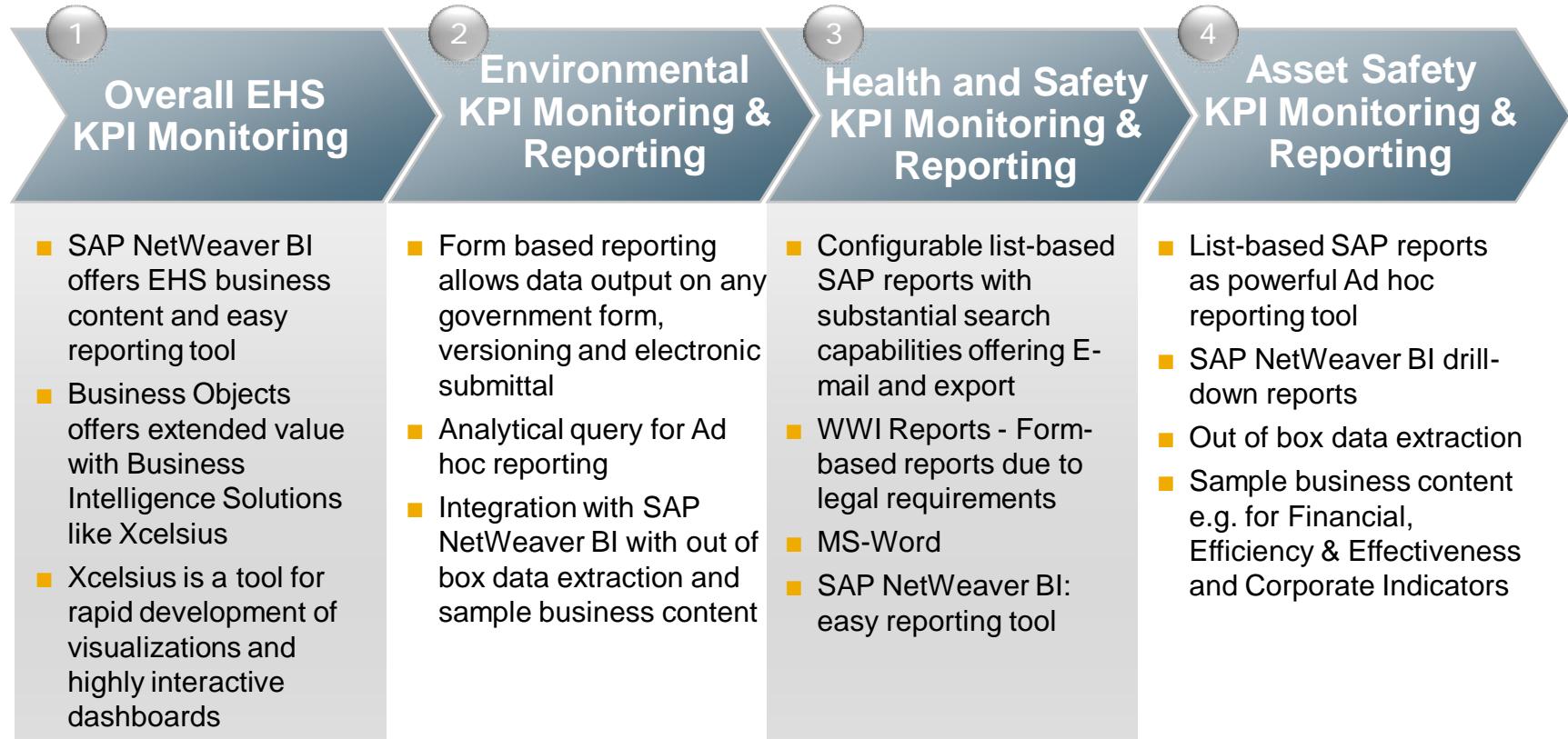
## Corporate EHS KPI Monitoring and Compliance Reporting



For environment, health and safety KPI monitoring and for internal and external reporting SAP offers flexible options and tools that fit to the individual needs of the different users.



### Process overview



# Stakeholders: keep them Informed and Involved



## Audit Management



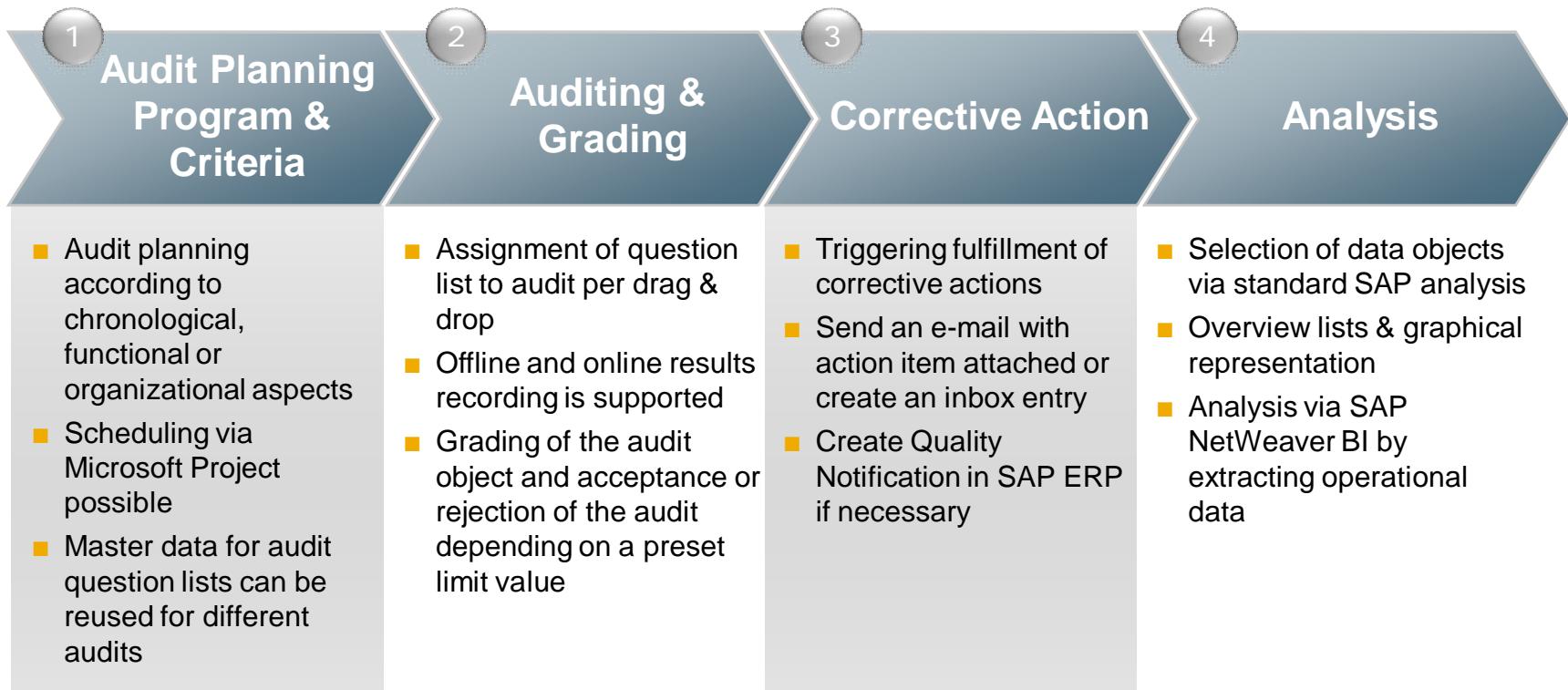
**Audit Management is a flexible and easy-to-use tool that covers planning, execution, and evaluation of all kinds of audits**

Corporate  
EHS  
Risk  
Mgmt

Corporate  
EHS KPI  
Monitoring  
and  
Compliance  
Reporting

Audit  
Mgmt

### Process overview





### Objective:

Run business operations in accordance with environmental laws and company policies to avoid or reduce pollution, save energy and prevent brand image exposure

### Best practice solution:

Company-wide transparency, management and measurement of:

- applicable environmental laws and company policies
- emissions and resource usage

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Complexity of regulation frameworks and frequency of change</li><li>■ Unable to easily fulfill required regulations (state, federal, and international)</li><li>■ High cost of compliance due to manual efforts and disparate systems</li><li>■ Lack of early warning system for deviations and critical issues</li><li>■ Direct operational and financial impacts</li></ul>	<ul style="list-style-type: none"><li>■ Integrated database and company-wide transparency regarding compliance with relevant regulations</li><li>■ Consistent, auditable and transparent business processes</li><li>■ Integration into SAP ERP and 3rd party systems</li><li>■ Flexible early warnings and alerts</li><li>■ Emissions and Energy Management</li><li>■ Basis for trading with emissions certificates</li></ul>	<ul style="list-style-type: none"><li>■ Improved processes and lower total cost of compliance</li><li>■ Reduce workload</li><li>■ Enables total compliance achievement</li><li>■ Reduced energy costs</li><li>■ Create revenue by selling free capacities of certificates</li><li>■ Reduced risk of incidents and fines</li></ul>

## SAP Solution

**Environmental  
Permits and  
Requirements  
Mgmt**

**Emissions & GHG  
Inventory Mgmt**

**Action, Deviation  
and Response  
Planning**

**Data Collection**

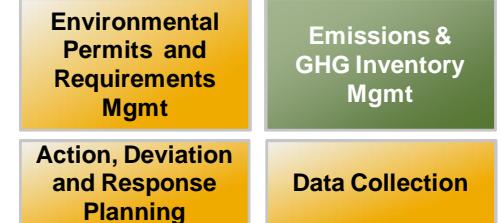
- SAP Environmental Compliance
- Optionally: SAP MII to collect data

- Management of permits, licenses and requirements
- Inventory Management of emissions like Green House Gases and GHG credits
- Predefinition and handling of early warnings, alerts and measurements
- Incidents management
- Data collection for emissions, consumptions and measurements
- Internal and external reporting

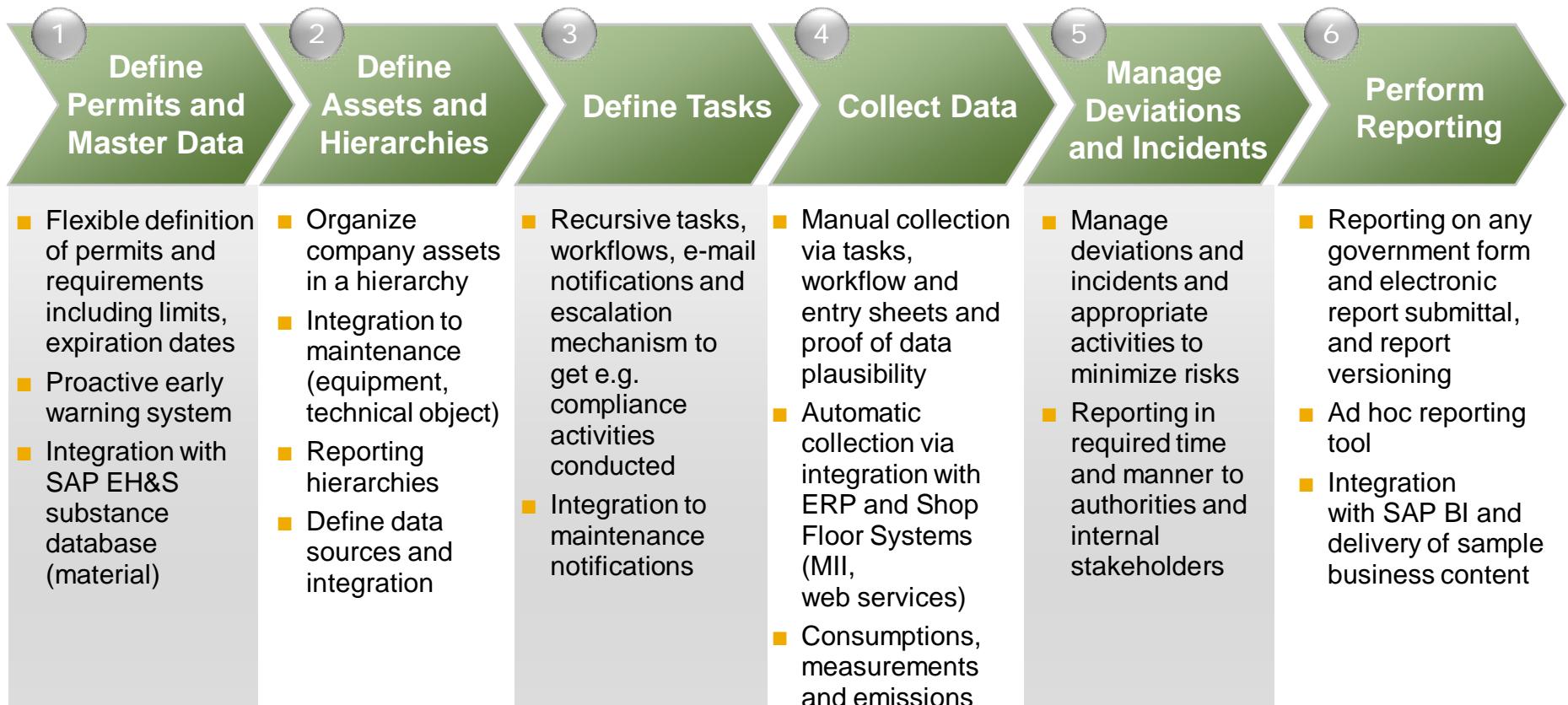
## SAP Differentiators

- Enterprise wide platform assuring compliance with environmental laws and internal policies
- Reduces operative costs, rising costs for energy and emissions certificates, management effort and non-conformance risks
- Seamless integration with the operations control data and SAP modules
- Consistent, auditable, transparent, and automated business and processes

**SAP Environmental Compliance provides an enterprise wide platform to run business operations in accordance with permits, legal or internal requirements to assure compliance and avoid, limit, or reduce pollution of the environment.**



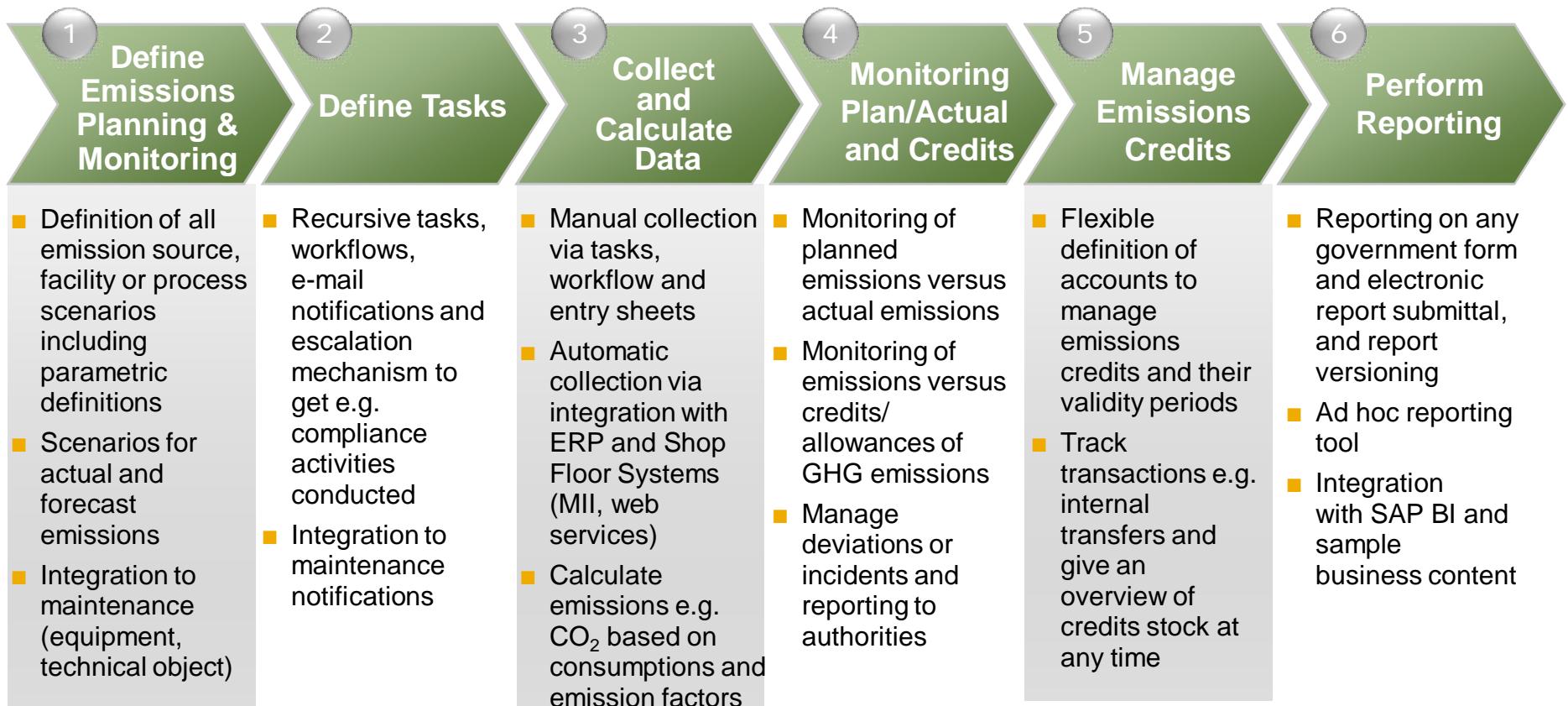
### Process overview



**SAP Environmental Compliance provides the management of emissions of Green House Gas (GHG) as well as other air or water emissions to fulfill legal requirements. This enables e.g. CO<sub>2</sub> and GHG emissions reporting and management of allowances according to the European or Australian GHG trading schemes.**



### Process overview





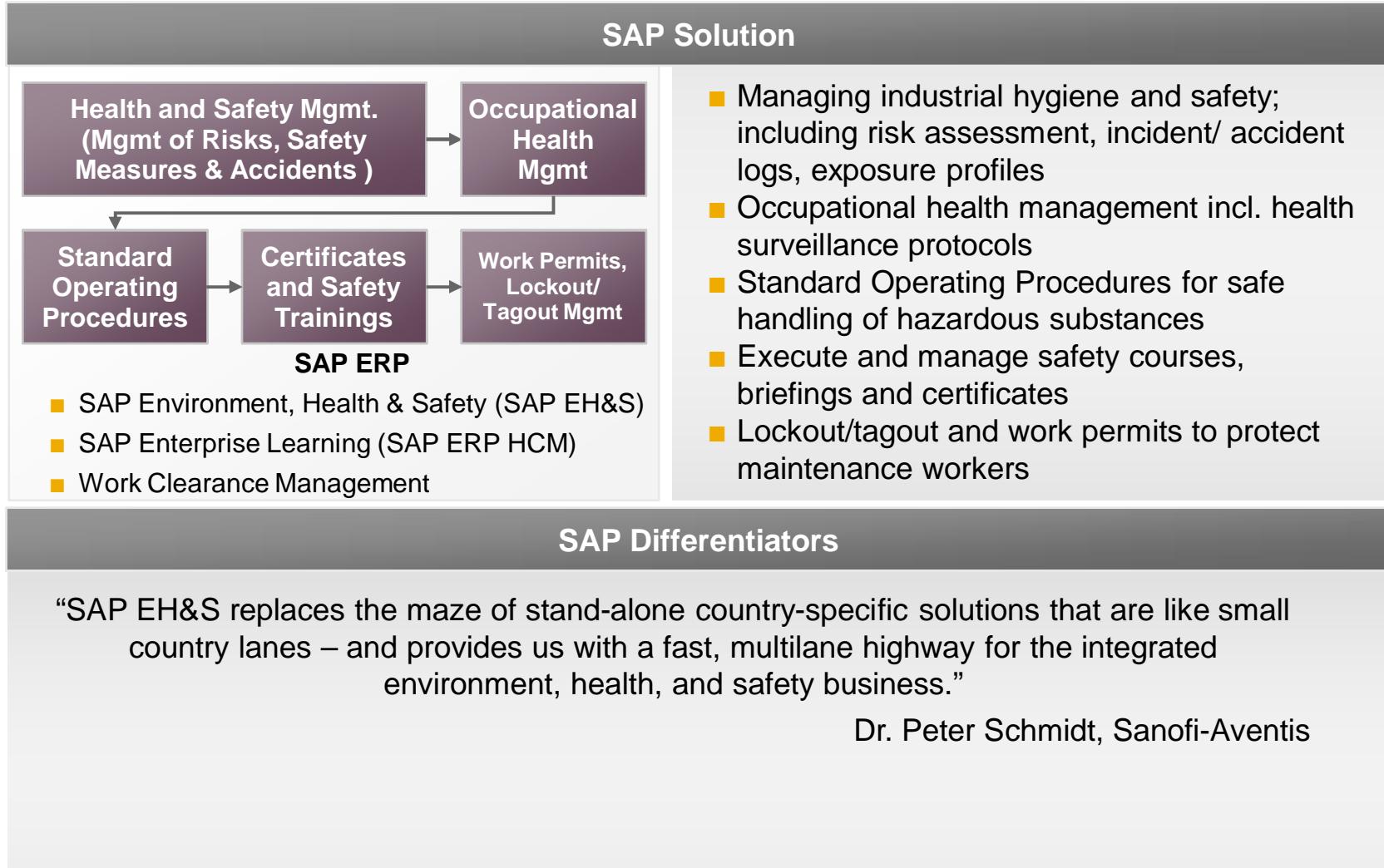
### Objective:

Proactive health, safety and certification program ensuring policies and guidelines are followed globally

### Best practice solution:

Closed loop processes including risk and exposure assessments, standard operating procedures, safety measures, certificates, health surveillance, incident management.

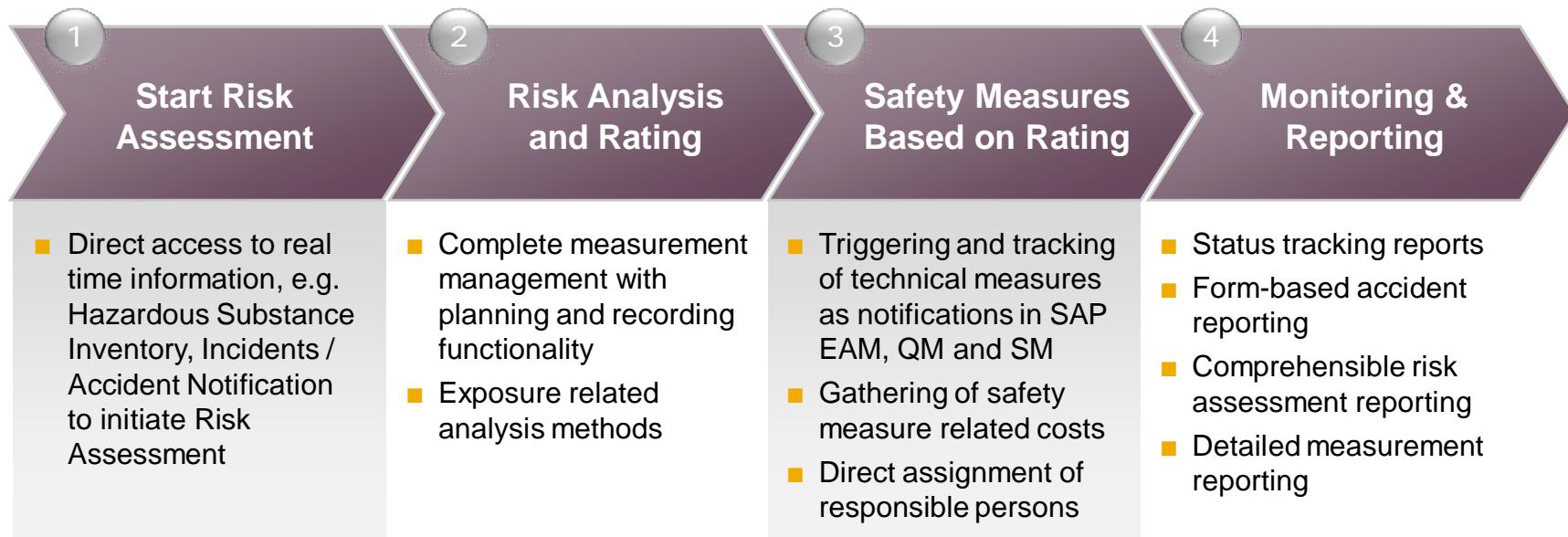
Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Lack of integration and process control</li><li>■ High risk of non compliance and personal reliability for workers</li><li>■ Need to ensure details like:<ul style="list-style-type: none"><li>■ What are the exposures?</li><li>■ What measures have been taken?</li><li>■ Have the necessary preventive medical check-ups been carried out?</li><li>■ Did employees follow the right trainings?</li></ul></li><li>■ Need to protect maintenance workers e.g. against electricity or radiation.</li></ul>	<ul style="list-style-type: none"><li>■ Streamlines collaboration between IHS professional, first-aider, asset management, HR department, and external authorities<ul style="list-style-type: none"><li>■ Health and safety management incl.</li><li>■ Risk and exposure management</li><li>■ Accident Management</li><li>■ System-controlled tracking of safety measures</li></ul></li><li>■ Medical management</li><li>■ Automated generation of SOPs and safe handling of hazardous substances</li><li>■ Safety trainings and certificates</li><li>■ Lockout/tagout and work permits</li></ul>	<ul style="list-style-type: none"><li>■ Streamlined processes</li><li>■ Reduced effort for investigation</li><li>■ Standardized capture of legally required information</li><li>■ Complete documentation of all processes</li><li>■ Reduced time and costs</li><li>■ Guarantee that each employee receives the necessary health surveillance protocols</li><li>■ Assure health of all employees and contractors</li></ul>



**Manages industrial hygiene and safety including risk assessment, incident / accident logs, ERP integration of safety measures, and compliance reporting.**



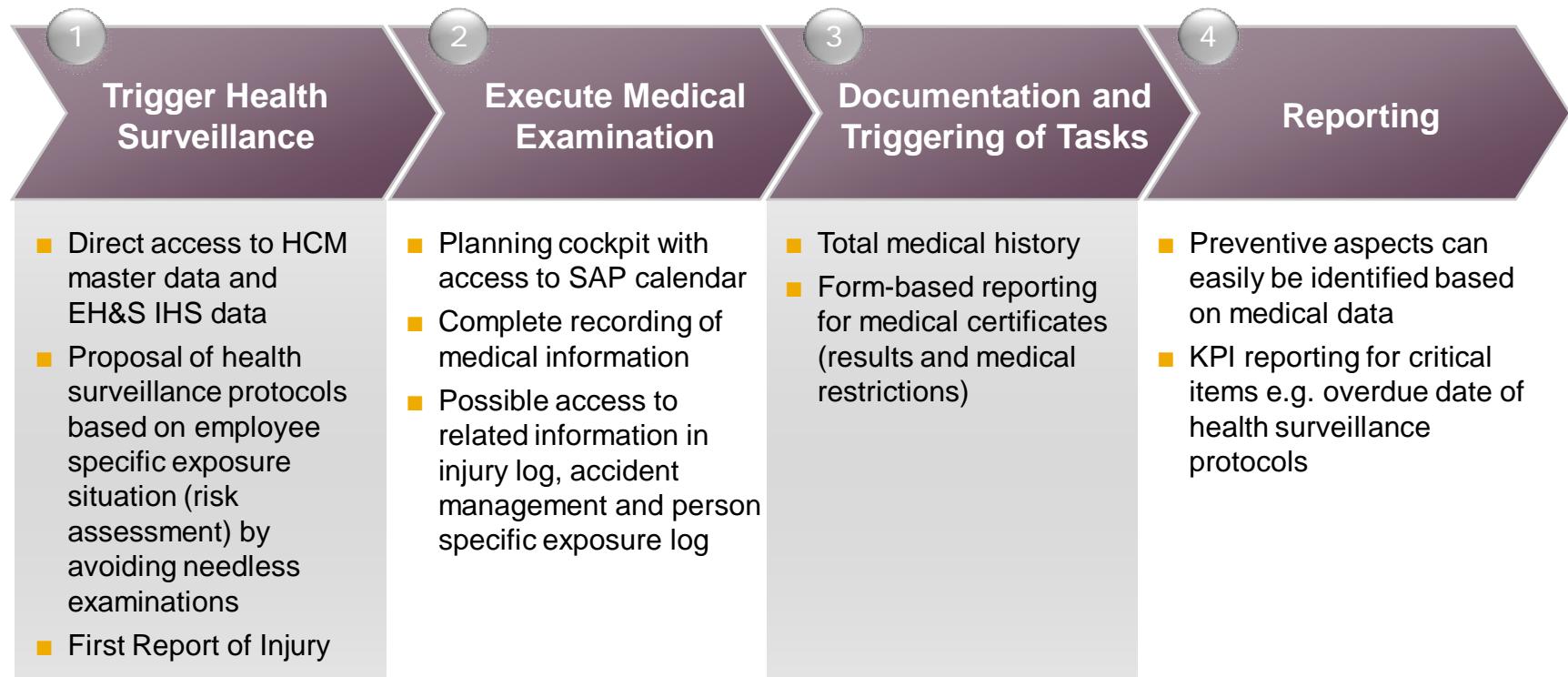
### Process overview



**Tracks enterprise health information; enabling the identification of trends to proactively address health concerns and reduce risks for operations**



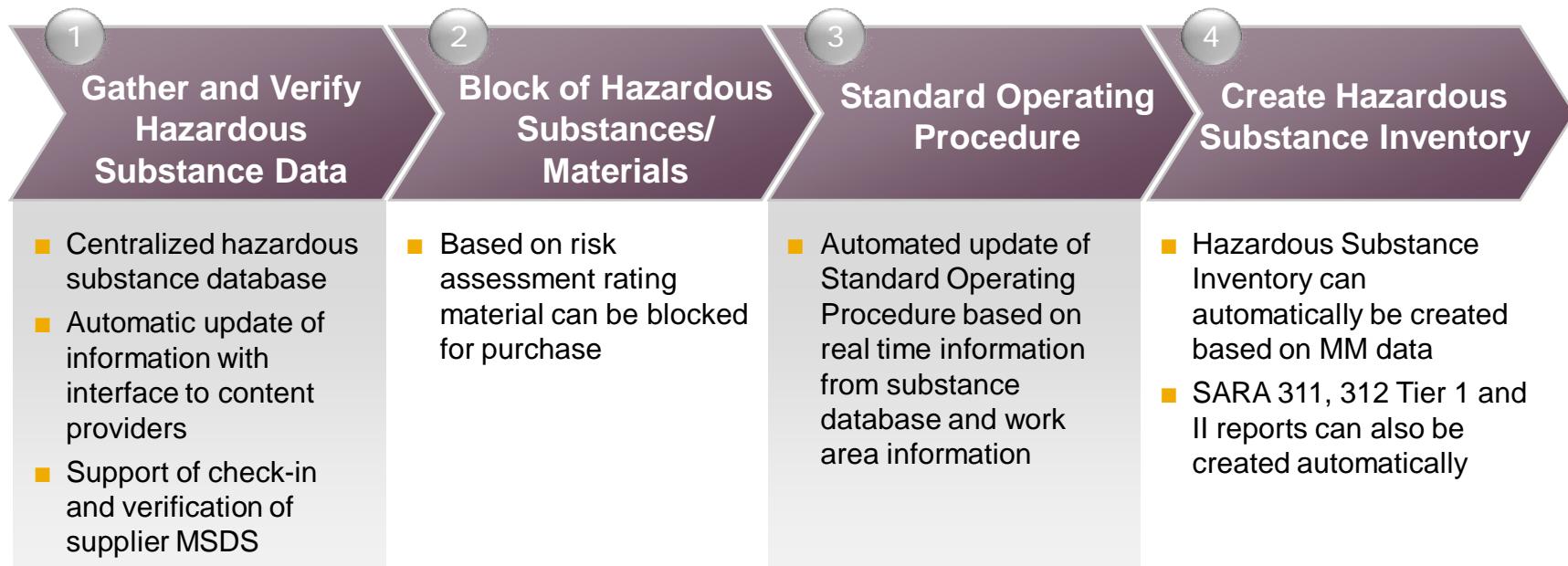
### Process overview



**Enables safe handling and tracking of hazardous substances that exist in designated areas of the enterprise.**



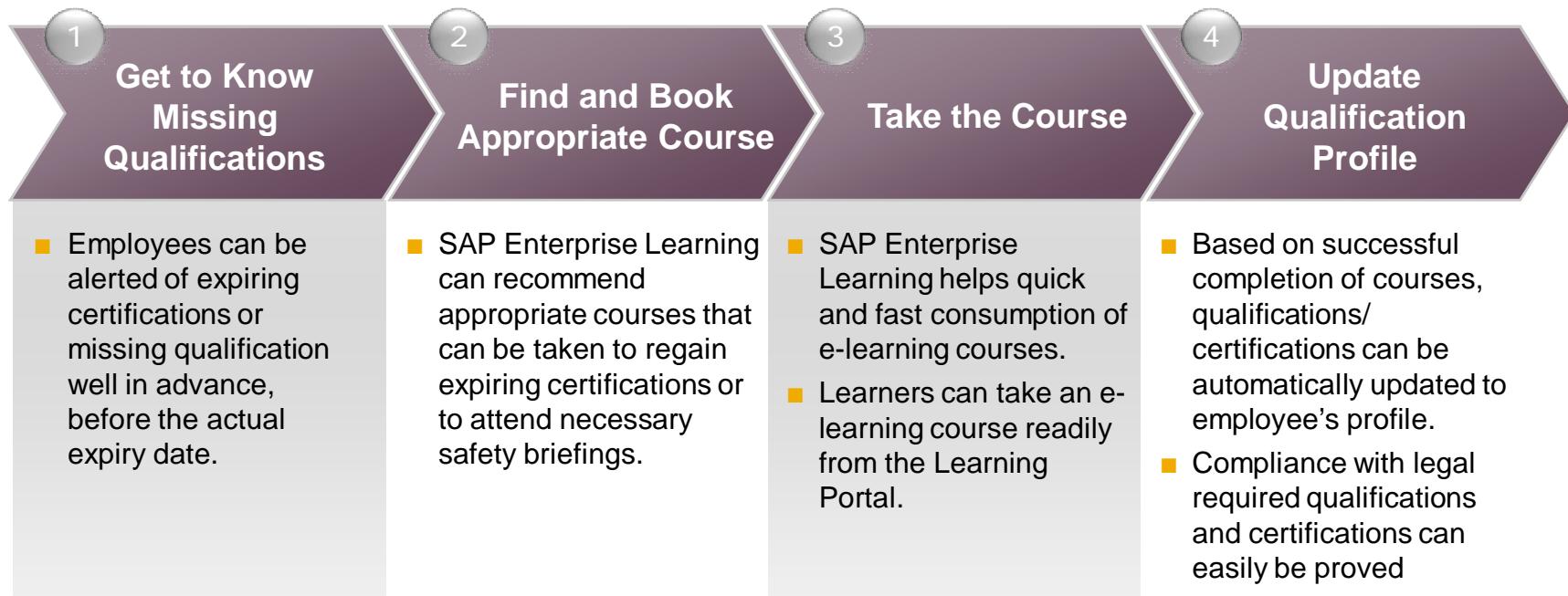
### Process overview



**SAP Enterprise Learning Environment enables employees to be up-to-date with the latest safety norms and procedures, undertake refresher courses and it helps managing expiring certifications.**



### Process overview





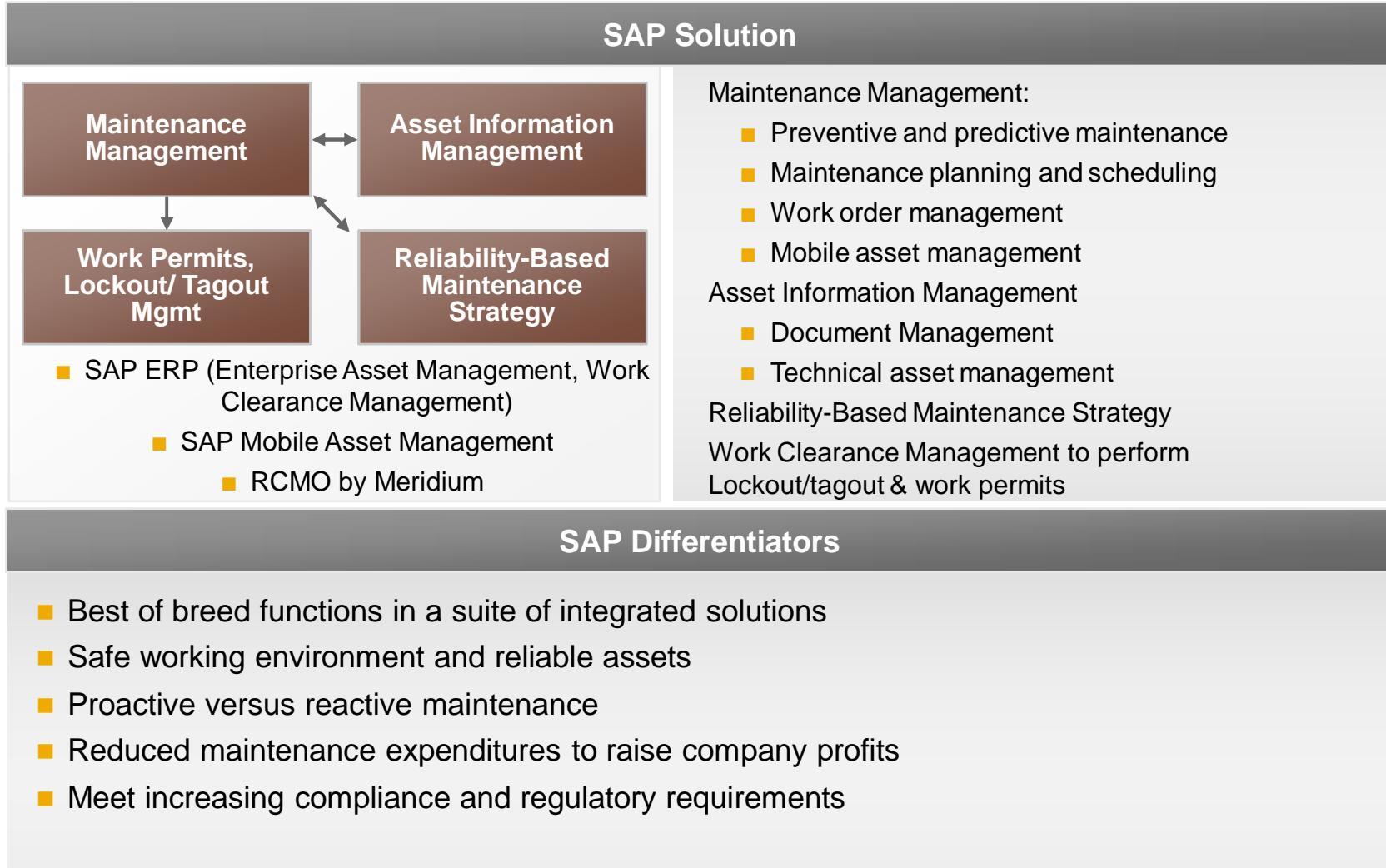
### Objective:

Ensure safe operations, avoid incidents that harm people or the environment and improve asset productivity

### Best practice solution:

Adapt maintenance plans to risk potential of assets to increase reliability and with reduced efforts

Issues	Key business capabilities	Benefits
<ul style="list-style-type: none"><li>■ Risk of incidents caused by assets or incorrect maintenance</li><li>■ Keep maintenance and follow-on costs to a minimum</li><li>■ Provide safety relevant documentation and instructions</li><li>■ Ensure the safety of maintenance employees</li></ul>	<ul style="list-style-type: none"><li>■ Integrated, end-to-end capabilities for enterprise asset management</li><li>■ Suitable maintenance and safety strategies</li><li>■ Reliability centered maintenance</li><li>■ Mobile Asset Mgmt.</li><li>■ Flexible assignment of safety documents</li><li>■ Seamless Integration with other SAP solutions</li></ul>	<ul style="list-style-type: none"><li>■ Manage all phases of the asset life cycle under safety aspects</li><li>■ Balance of performance, risk and cost to achieve maintenance excellence</li><li>■ Process efficiency and transparency e.g. safety measures</li></ul>



**Maintenance Management both preventive and corrective in nature has to be planned and scheduled. After a job has been dispatched, one or more technicians execute the maintenance task and record the results in the system.**

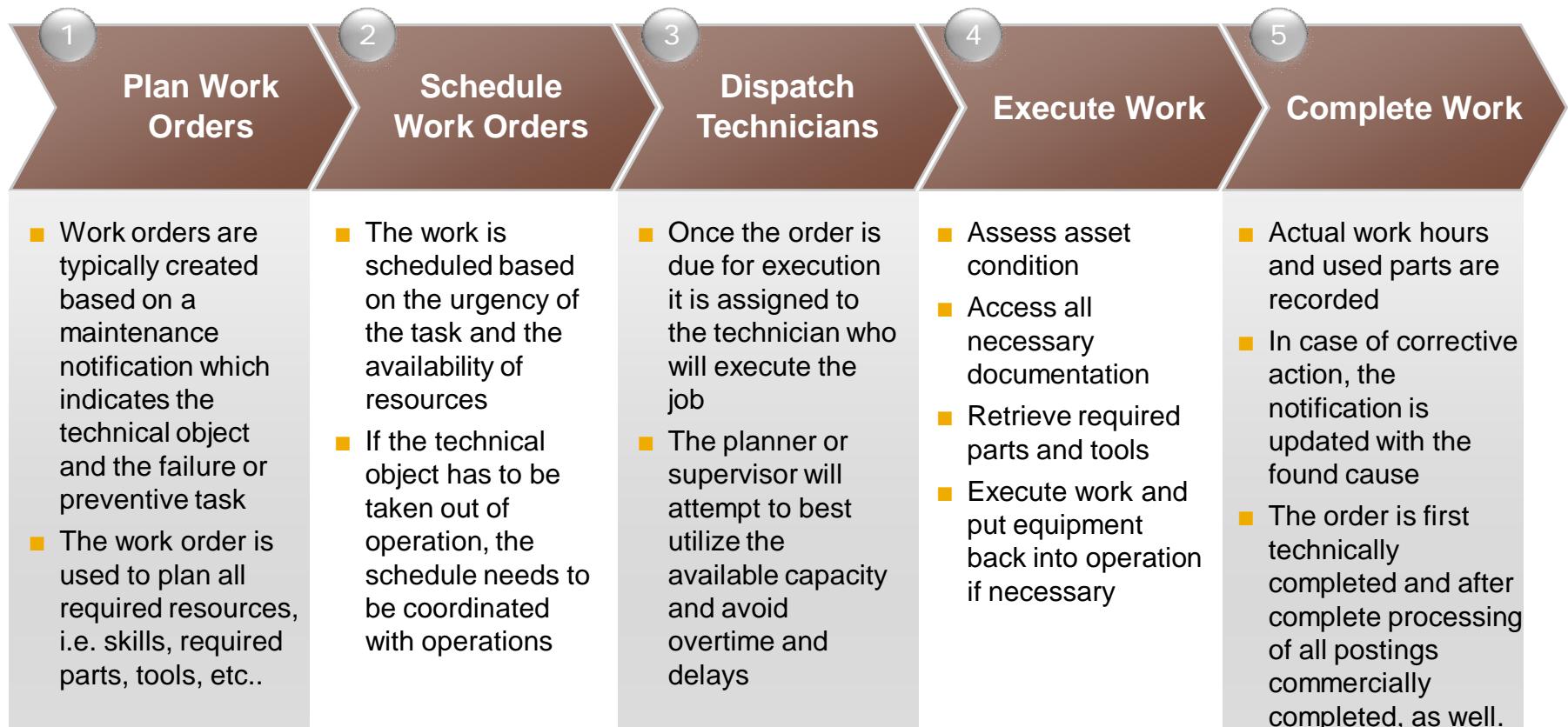
Maintenance Management

Asset Information Management

Work Permits,  
Lockout/ Tagout Mgmt

Reliability-Based Maintenance Strategy

### Process overview



**Asset Information Management deals with all asset related master data that are required for maintenance planning and execution. This includes system-relevant data (a.k.a. structured data) as well as documents to support the maintenance staff (a.k.a. unstructured data).**

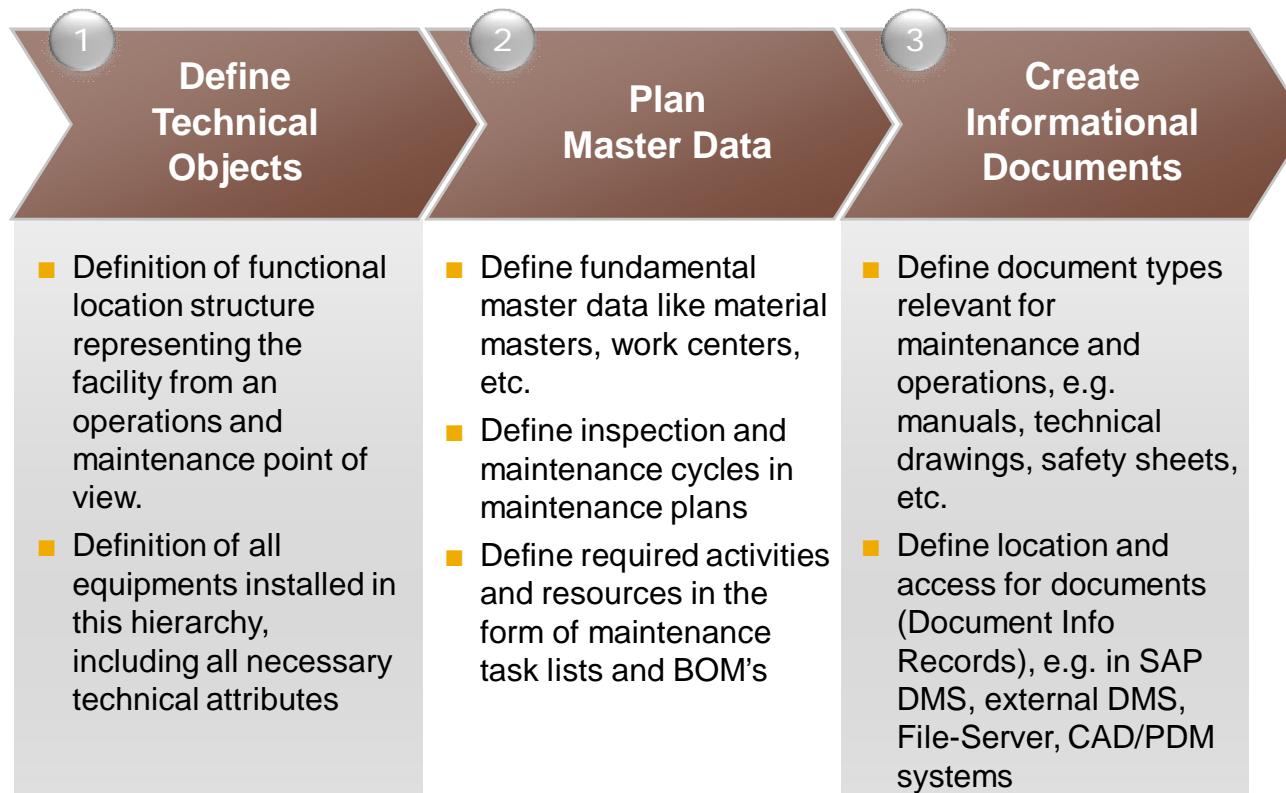
Maintenance Management

Asset Information Management

Work Permits,  
Lockout/ Tagout Mgmt

Reliability-Based Maintenance Strategy

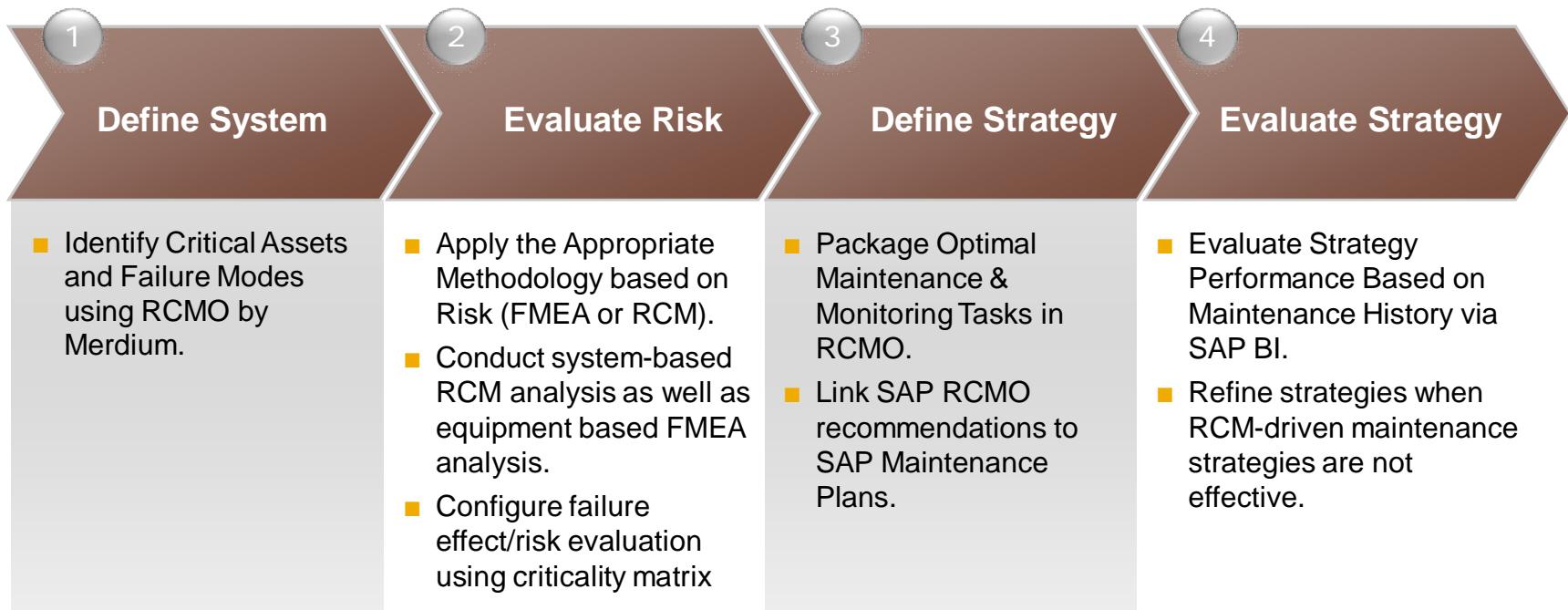
### Process overview



RCMO by Meridium integrates with SAP to give you a framework to define maintenance strategies based on RCM and Failure Modes & Effects Analysis (FMEA) principles. It also enables you to integrate recommendations from an RCM analysis into Maintenance Plans in SAP, as well as facilitating automated re-evaluation of maintenance strategies (allowing you to measure effectiveness constantly for continuous improvement).



### Process overview



If assets need to be maintained while their running this may constitute a hazardous environment requiring special precaution as required by regulations like OSHA. Work Clearance Management (WCM) ensures a safe process through lockout / tagout procedures.

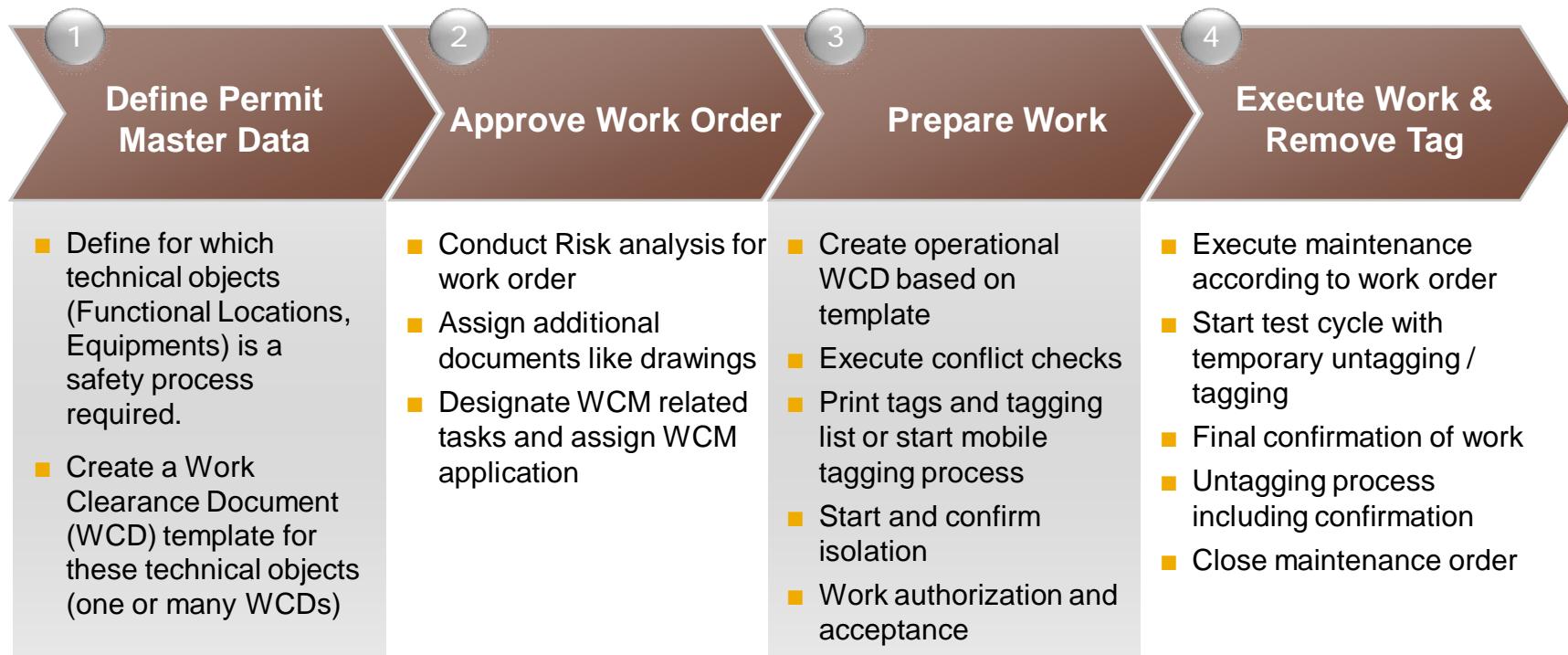
Maintenance Management

Asset Information Management

Work Permits,  
Lockout/ Tagout  
Mgmt

Reliability-Based Maintenance Strategy

### Process overview

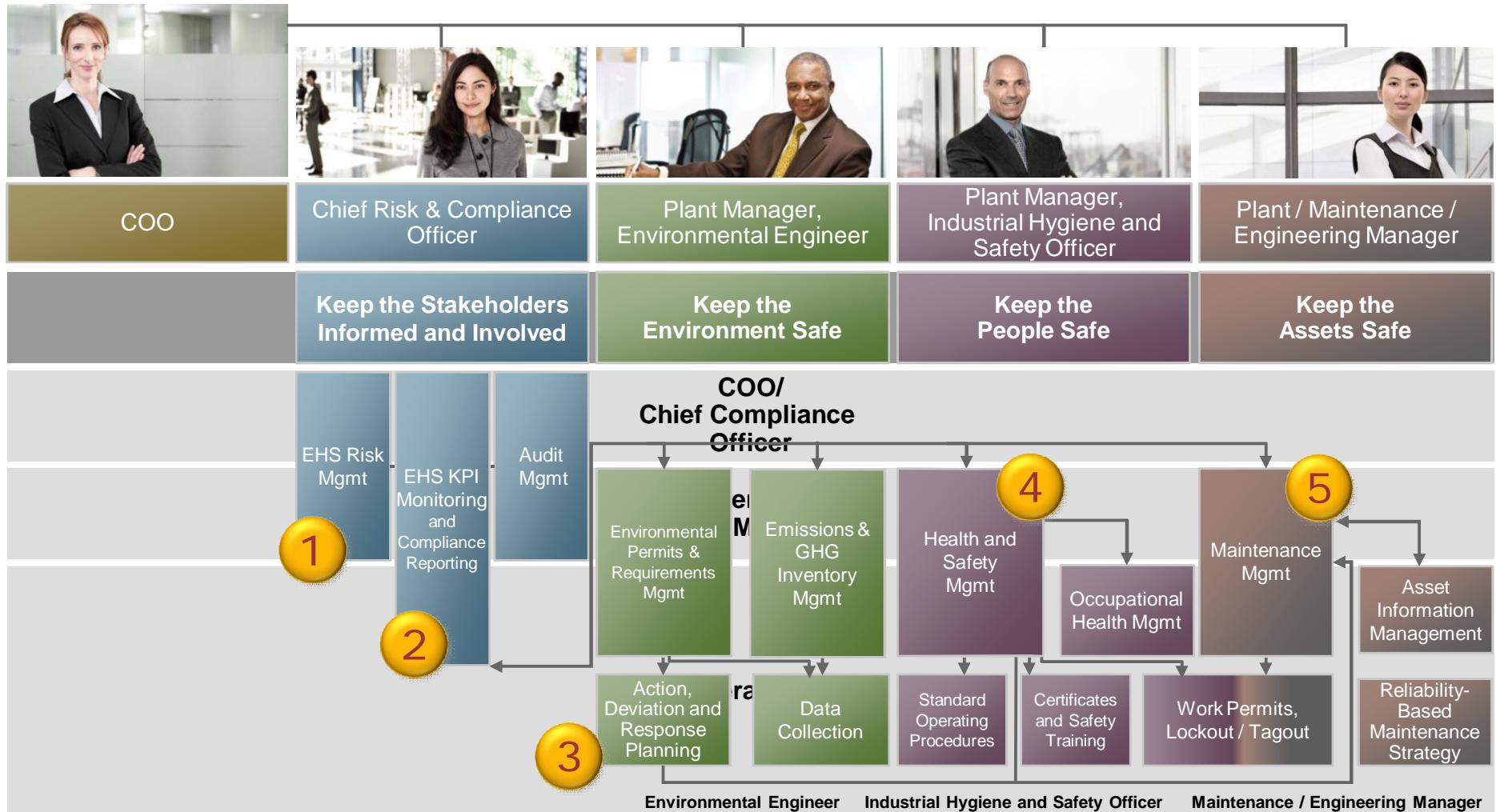


# Asset Safety and Compliance ...

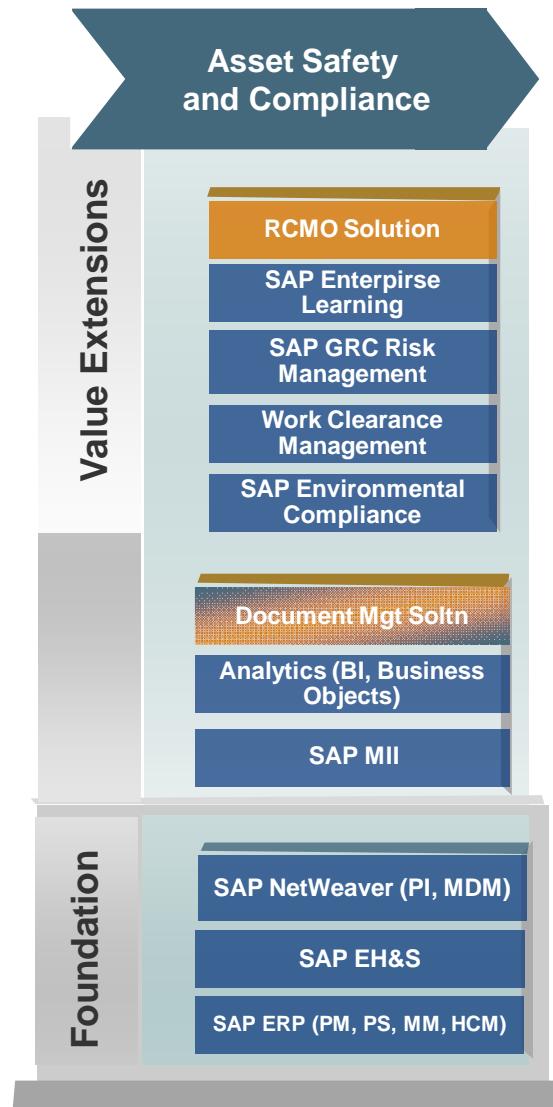
## ... end-to-end, cross-functional process



**Asset Safety and Compliance** connects the stakeholders with the operational management of safety for the environment, the people and the assets. This enables you to stay compliant, to create a proactive safety strategy and realize it in daily operations.



# Asset Safety & Compliance Solution Leverages Your SAP Investment...



= Partner Solutions

Increases operational visibility...enabling consistent process safety management.... while reducing risks and ensuring compliance

- Increases recognition of dangerous processes and reduces abnormal operations
- Ensures compliance and enhances operations; reducing risk and enabling sharing of best practices
- Aligns production plans with operational risks and process hazards; reducing incidents and overall costs
- Identifies adequate procedures and training, reducing risks and overall plant maintenance costs
- Keeps workers informed, identifying training that is needed to improve processes, helping to manage risk reduction
- Provides accurate process safety information reducing costs, enhancing operations and increasing visibility

# SAP Operational Risk Management Impacts Critical Performance Metrics



## **Reduces O&M costs**

Through process monitoring and increased visibility

## **Increases efficiencies**

Optimization of processes and integration with the enterprise

## **Increases visibility and performance**

Proactive monitoring of people, projects, and processes

## **Reduces maintenance costs**

Streamlined maintenance processes and alignment with production metrics

## **Reduces asset capital investments**

Improved asset performance through greater asset reliability

## **Increases value chain agility and customer responsiveness**

Complete value chain integration and visibility

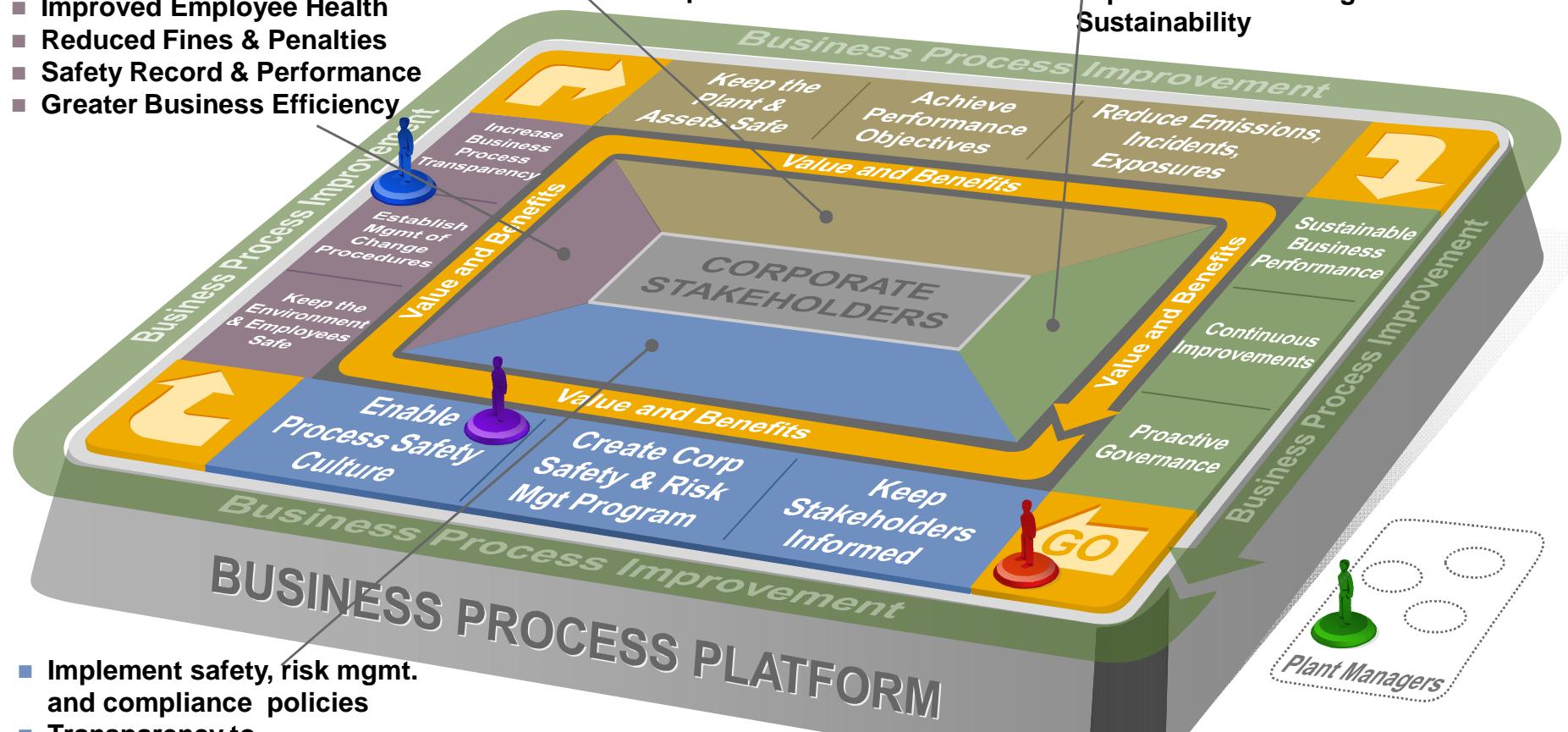
# Develop Strategy, then Build an ... Operational Risk Management Enterprise Roadmap



## Where are you on the path to success?

- Improved Employee Health
- Reduced Fines & Penalties
- Safety Record & Performance
- Greater Business Efficiency

- Visibility to policies / procedures
- Improved Employee Health & Safety
- Increased Safety and Compliance
- Reduced Exposure to Hazards
- Optimized Health, Safety & Compliance
- Improved Employee Health & Safety
- Improved Public Image & Sustainability



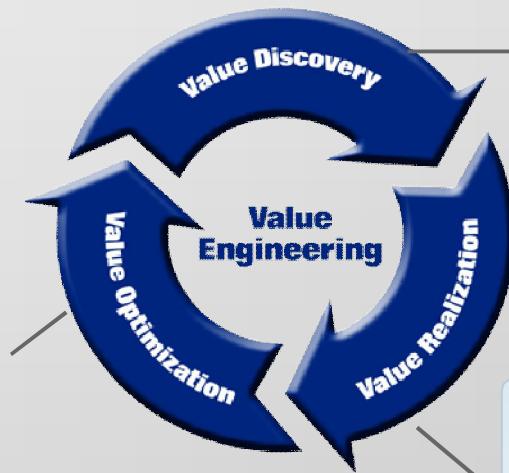
- Implement safety, risk mgmt. and compliance policies
- Transparency to stakeholders
- Business Process Efficiency

# SAP helps you define the Operational Risk Management Roadmap to Support Your Strategy



**SAP has dedicated organizations to enable each phase of the value creation lifecycle**

## Fully Integrated Value Management



- Survey users and management
  - Evaluate value realized
- Benchmark against best practice
- Recommend improvement areas
  - TCO detailed analysis
- Enhance governance model for sustainable value realization

- Align Business and IT Strategy
  - Identify business challenges
  - Map solution to pain points
  - Identify qualitative and quantitative benefits
  - Recommend implementation roadmap based on scope of assessment

- Develop operational metrics
  - Build in analytics and measurement process
  - Establish governance model
  - Align process, organization and technology

**“On-Time”, “On Budget” and “On Value”**

# Best Practice Value Scenario

## O&G - Managing Risk & Compliances



THE BEST-RUN BUSINESSES RUN SAP™



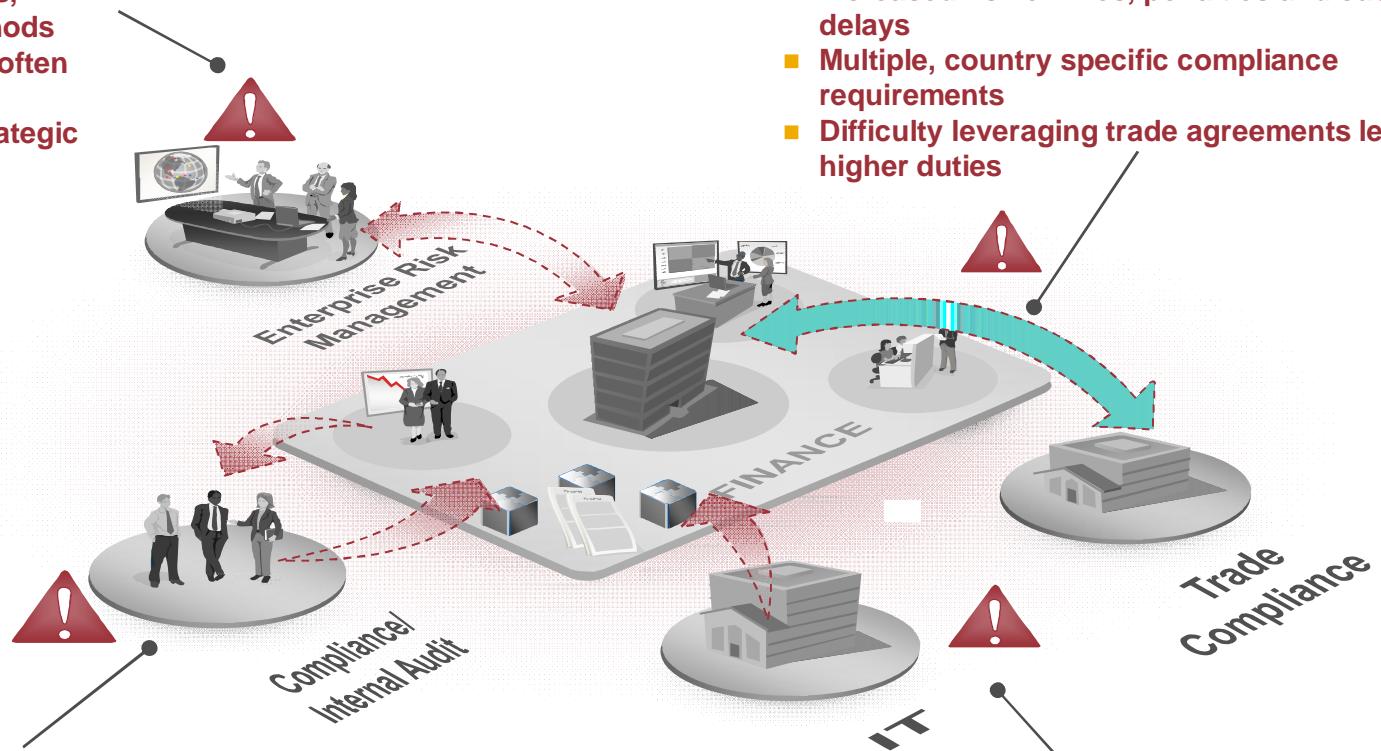
# Disconnect between strategy and execution

Fragmented and manual GRC processes



## Lack true enterprise insight

- Risk mgmt in silos, inconsistent methods
- Activities are too often reactive & one-off
- Perceived low strategic value



## Compliance is siloed, manual and not aligned to business risk

- Inability to prioritize and streamline control activities
- Increasing complexity of regulations and corporate policies
- Cost of establishing and maintaining compliance

## Siloed and manual processes with limited visibility

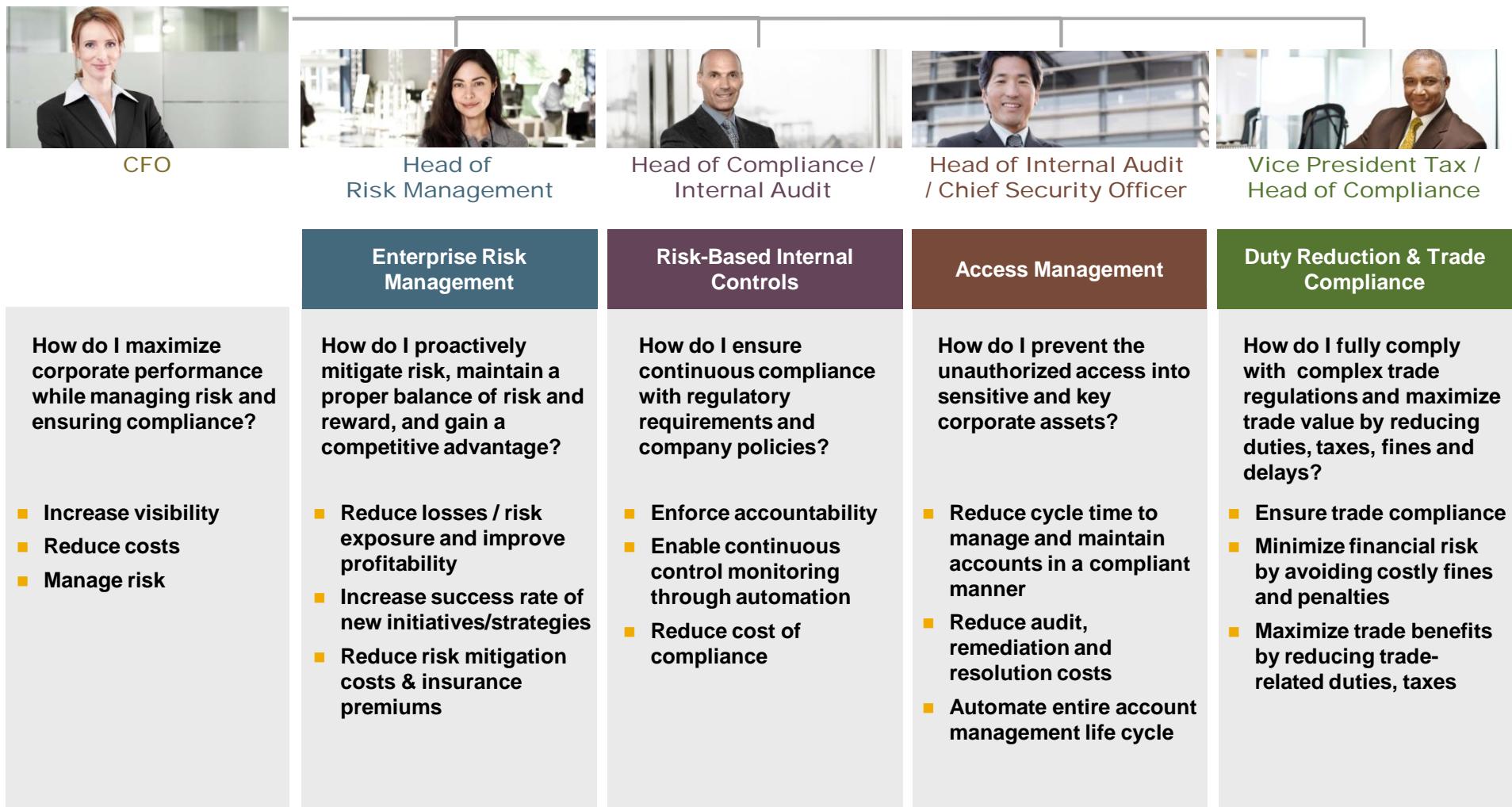
- Increased risk of fines, penalties and customer delays
- Multiple, country specific compliance requirements
- Difficulty leveraging trade agreements leading to higher duties

# Managing Risk and Compliance

## Key Stakeholders & Objectives



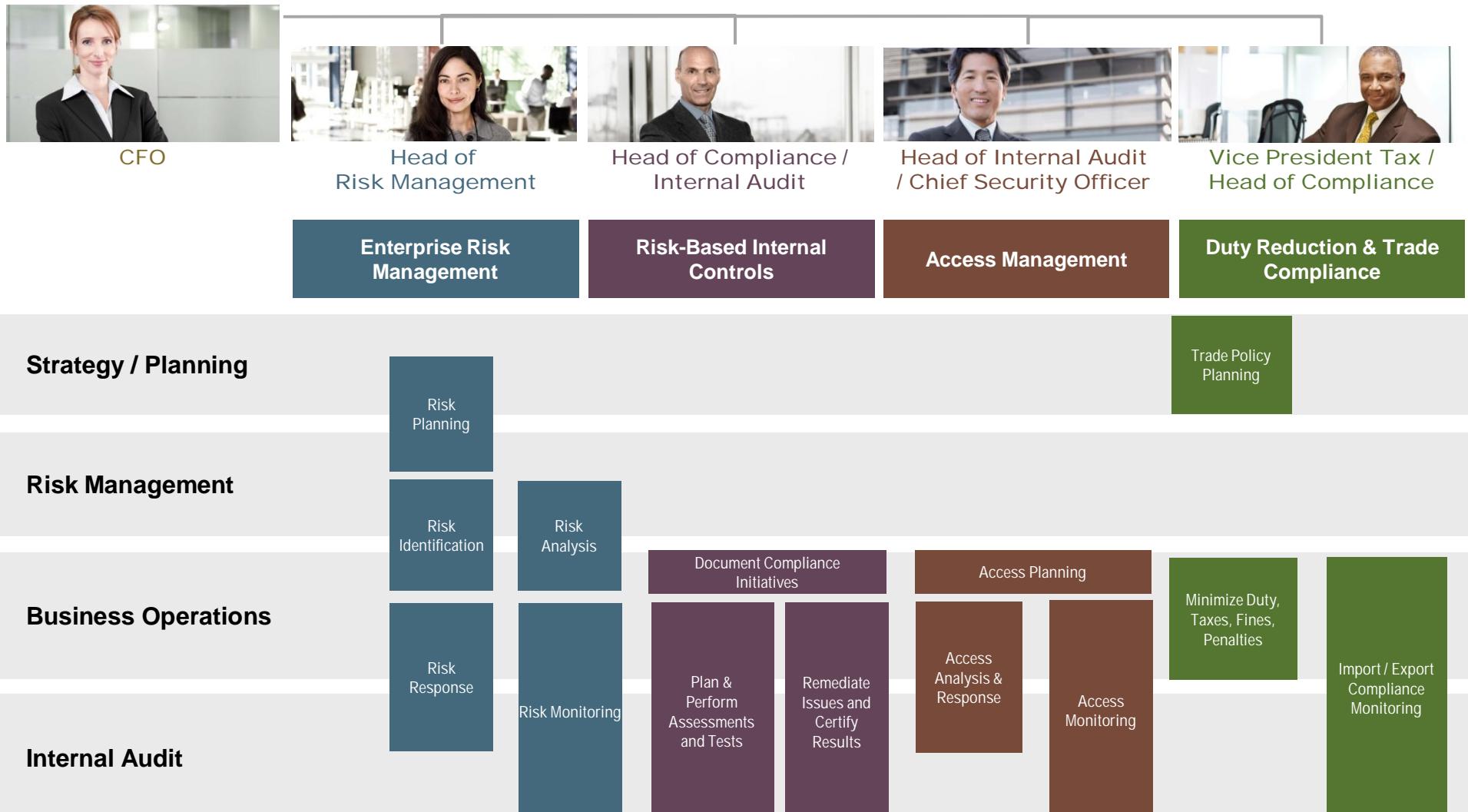
A unified approach to GRC maximizes performance by cost-effectively managing regulations and policy compliance, while proactively mitigating all types of business risk.



# Managing Risk and Compliance



**Managing Risk and Compliance ensures all categories of risk across the organization are aggregated at the enterprise level and managed holistically**

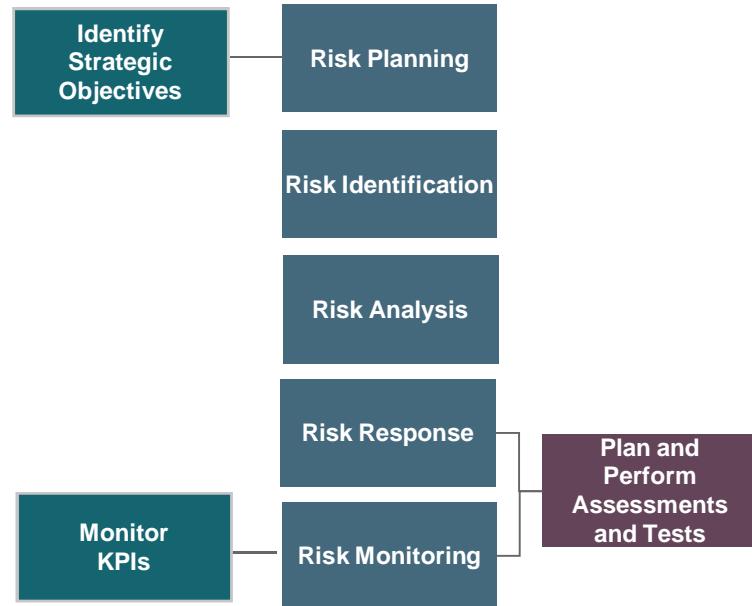


# Enterprise Risk Management

Risk-adjusted management of strategy and performance



## SAP Solution



- Drive agreement on top risks, thresholds, and appetite
- Identify all key risks across the enterprise
- Perform qualitative and quantitative analysis
- Create resolution strategies for top risks that maximize return on capital
- Build proactive monitoring into existing business processes and strategies

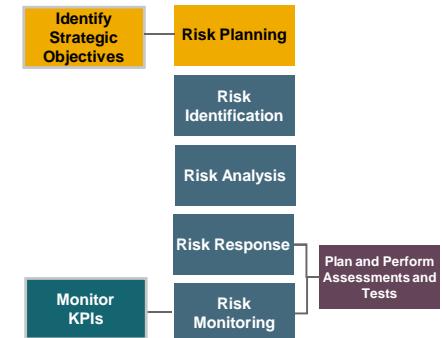
## SAP Differentiators

- Prevent risk events from occurring by continuously monitoring Key Risk Indicators and Control Effectiveness
- Increase the success rate of strategies and initiatives by incorporating risks with corporate strategy and performance

# Risk Planning



**Define the context within which business risks are to be managed including defining risk threshold levels and identifying the business activities to be assessed.**



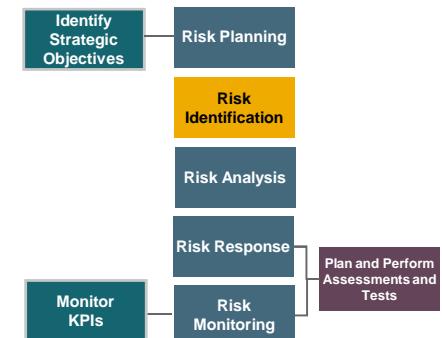
## Process Steps



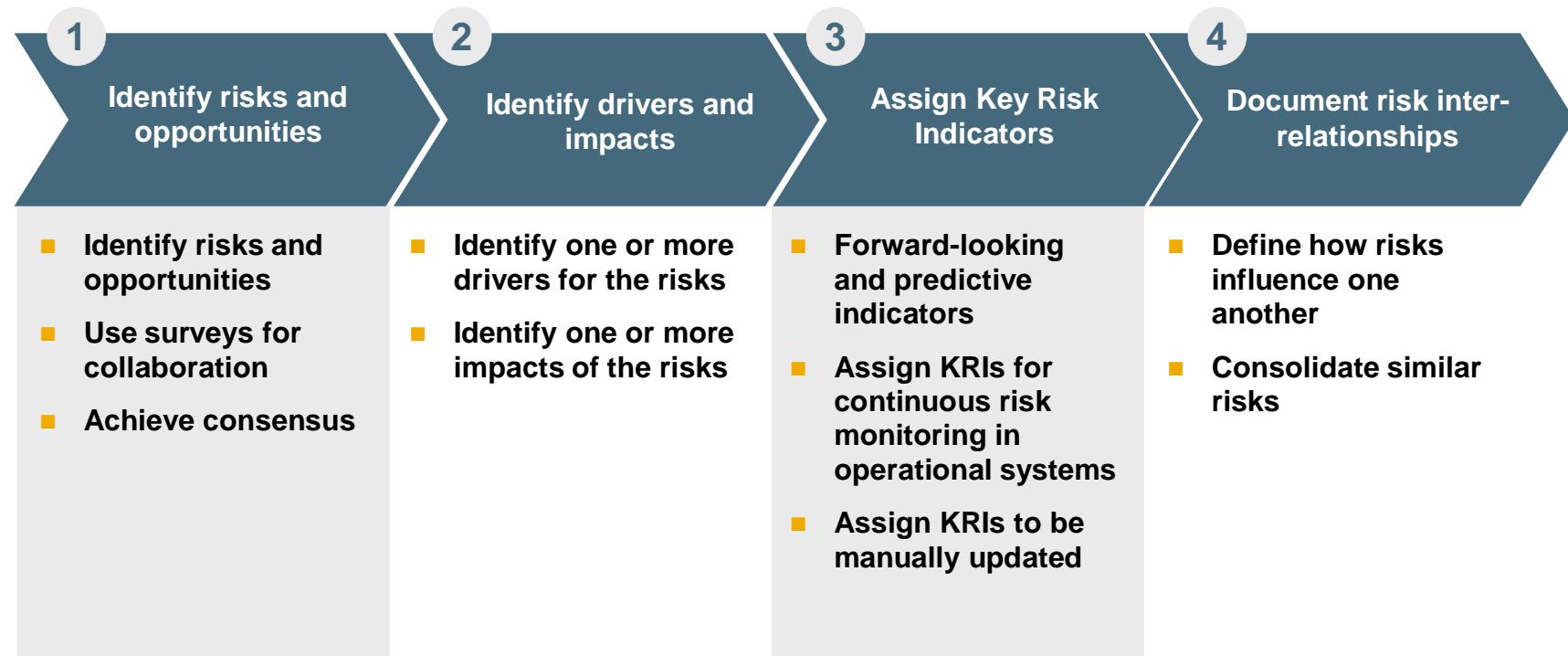
# Risk Identification



Capture the events that can have a negative or positive impact on the business objectives.



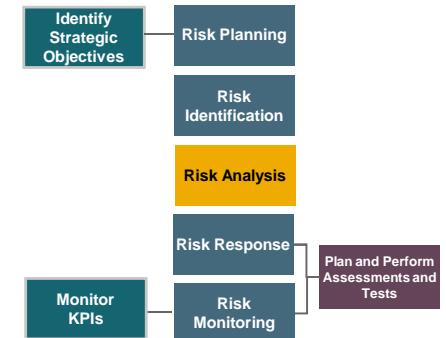
## Process Steps



# Risk Analysis



**Assess and evaluate risks for prioritization and developing effective response strategies.**



## Process Steps



# Risk Response



Evaluate the analyzed risks and select the risks (and opportunities) that should be “treated” by balancing the costs of implementing each option against the benefits derived from it.



## Process Steps

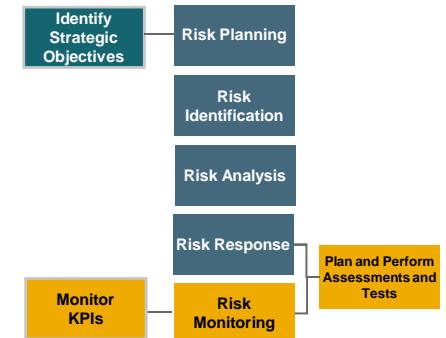


# Risk Monitoring



Monitor the effectiveness and completeness of the response actions, take corrective action, and communicate the status of the risks.

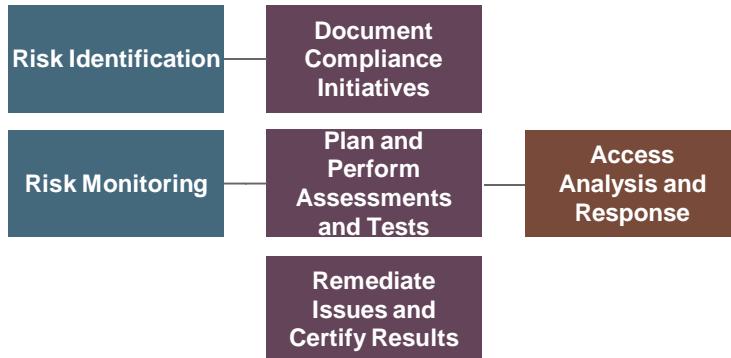
## Process Steps



# Risk-Based Internal Controls



## SAP Solution



- Document new compliance initiatives using a top-down risk-based approach
- Develop assessment, testing and monitoring strategy. Perform tests, report results and raise issues
- Analyze issues, perform necessary remediation and certify results

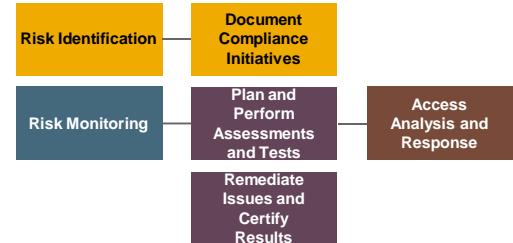
## SAP Differentiators

- Align enterprise strategy and risk with compliance initiatives
- Reduce cost and the risk of non compliance through rapidly deployable configurable controls
- Ensure control effectiveness across heterogeneous application landscapes through continuous monitoring

# Document Compliance Initiatives



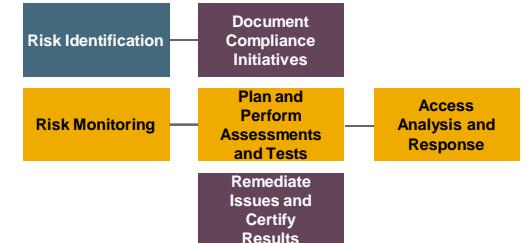
**Identify the risks associated with new regulations or policies and document the associated compliance structure using a top-down risk-based approach.**



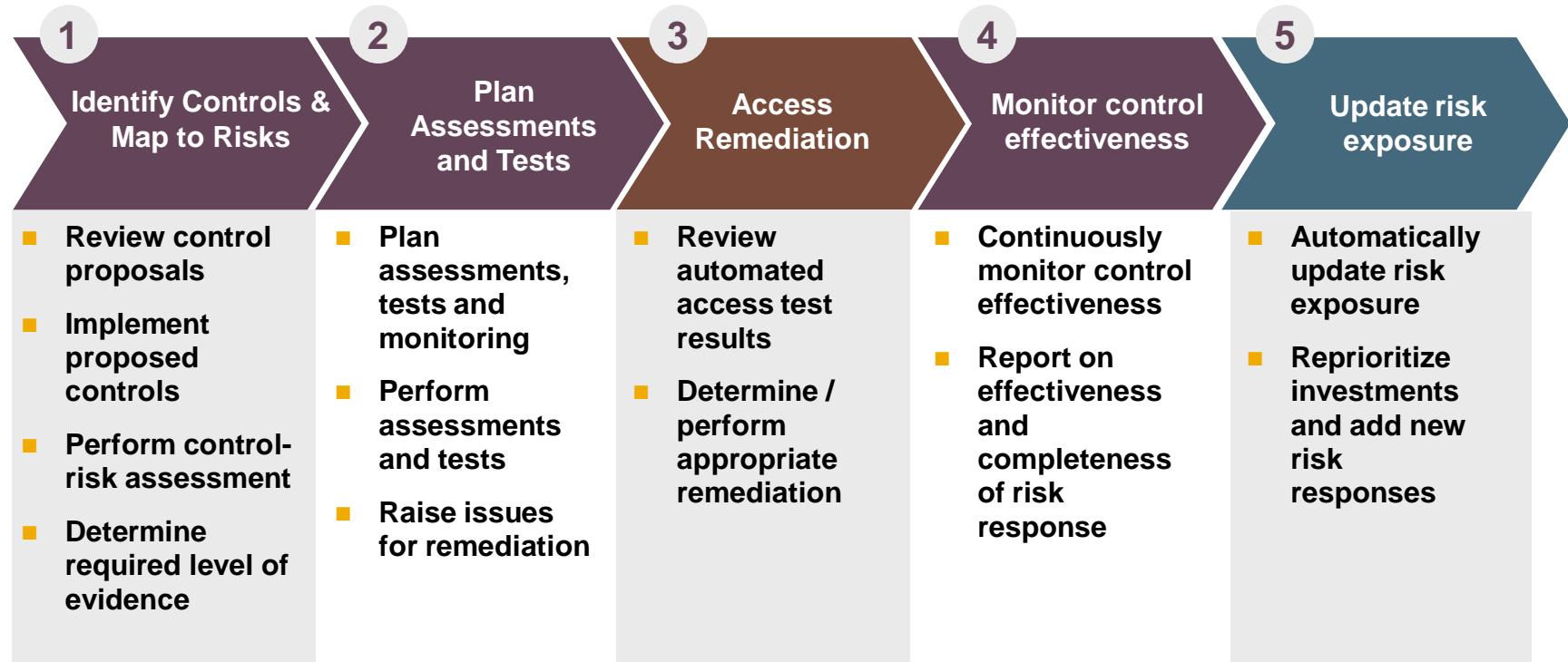
## Process Steps



**Align the planning and scheduling of testing in accordance with the compliance calendar. Conduct the tests, report the test results and raise issues for remediation.**



### Process Steps

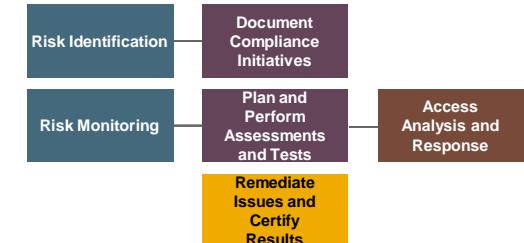


# Remediate Issues and

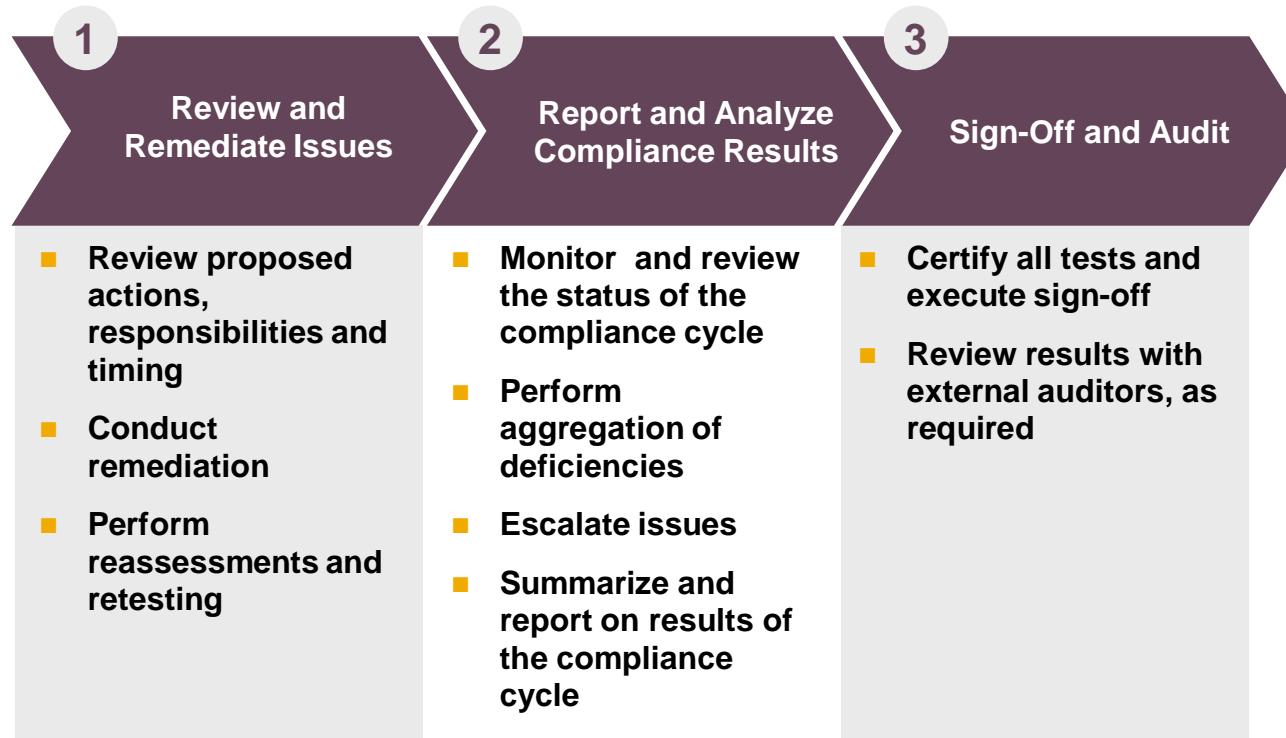
... Certify Results



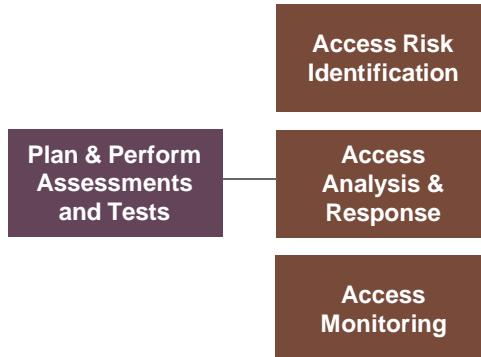
**Review the results of your compliance activities, remediate identified issues and certify your results through sign-off and audit**



## Process Steps



### SAP Solution



- Define access-related risks based on corporate policy, regulatory mandates and financial compliance requirements.
- Analyze identified access risks and select remediation response in compliance with policies and regulations.
- Continuously monitor access management compliance through periodic reviews and audits.

### SAP Differentiators

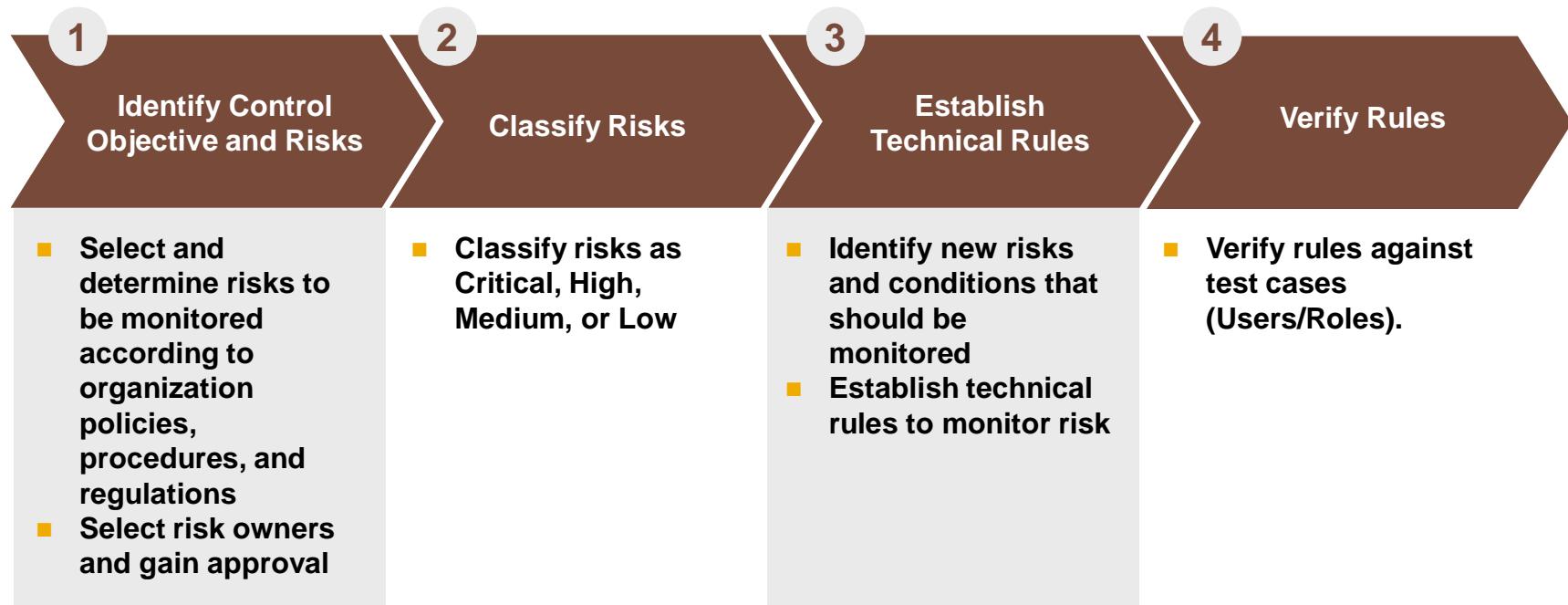
- Real-time preventive controls that work across SAP and non-SAP environments and allow “what if”-simulation
- Largest database of validated segregation of duties rules built over 10 years producing results from day one
- Support of open standards enables integration and leveraging of existing solutions such as Identity Management

# Access Risk Identification



Define risks based on corporate policy and financial compliance initiatives to identify inappropriate access to assets and potential abuse.

## Process Steps



Plan & Perform Assessments and Tests

Access Risk Identification

Access Analysis & Response

Access Monitoring

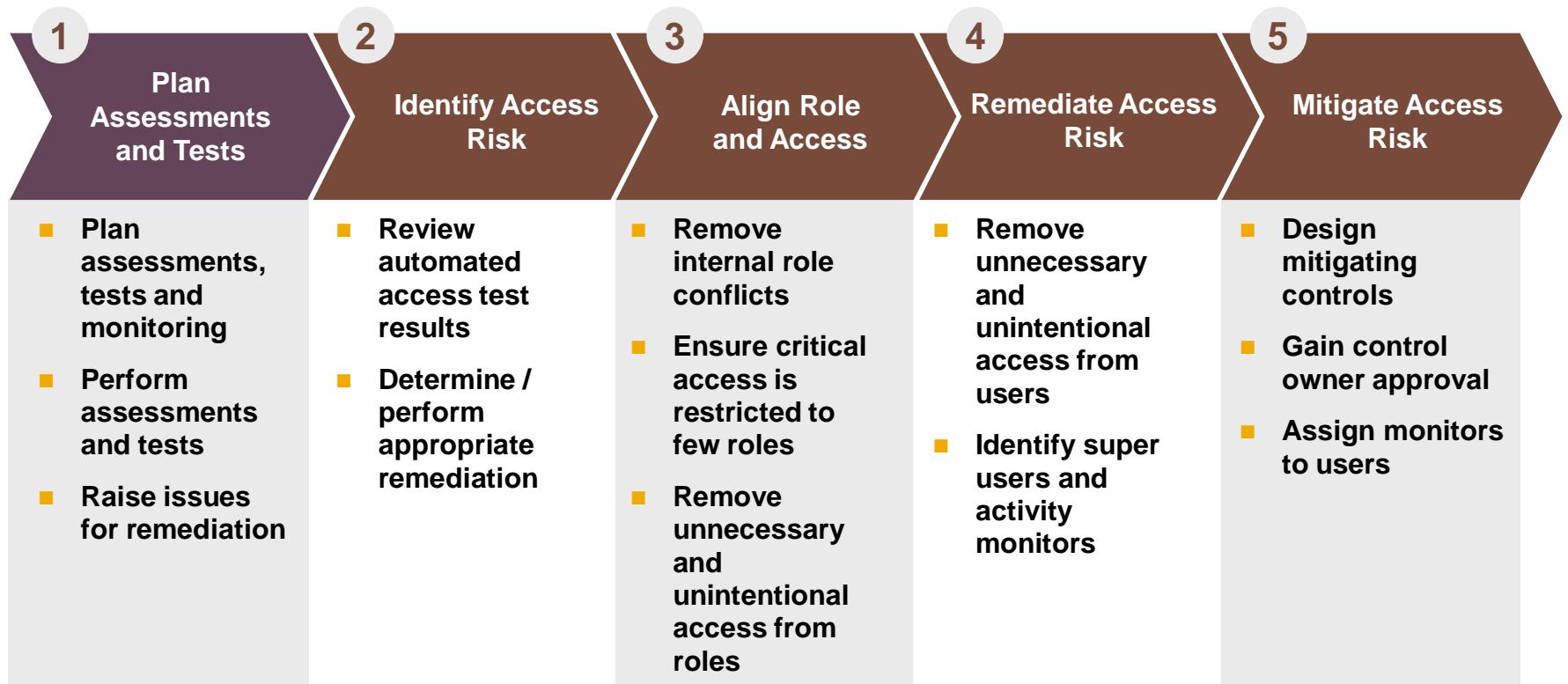
# Access Analysis & Response



Analyze identified access risks and select remediation response in compliance with policies and regulations.



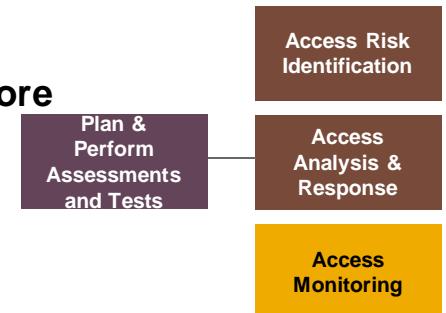
## Process Steps



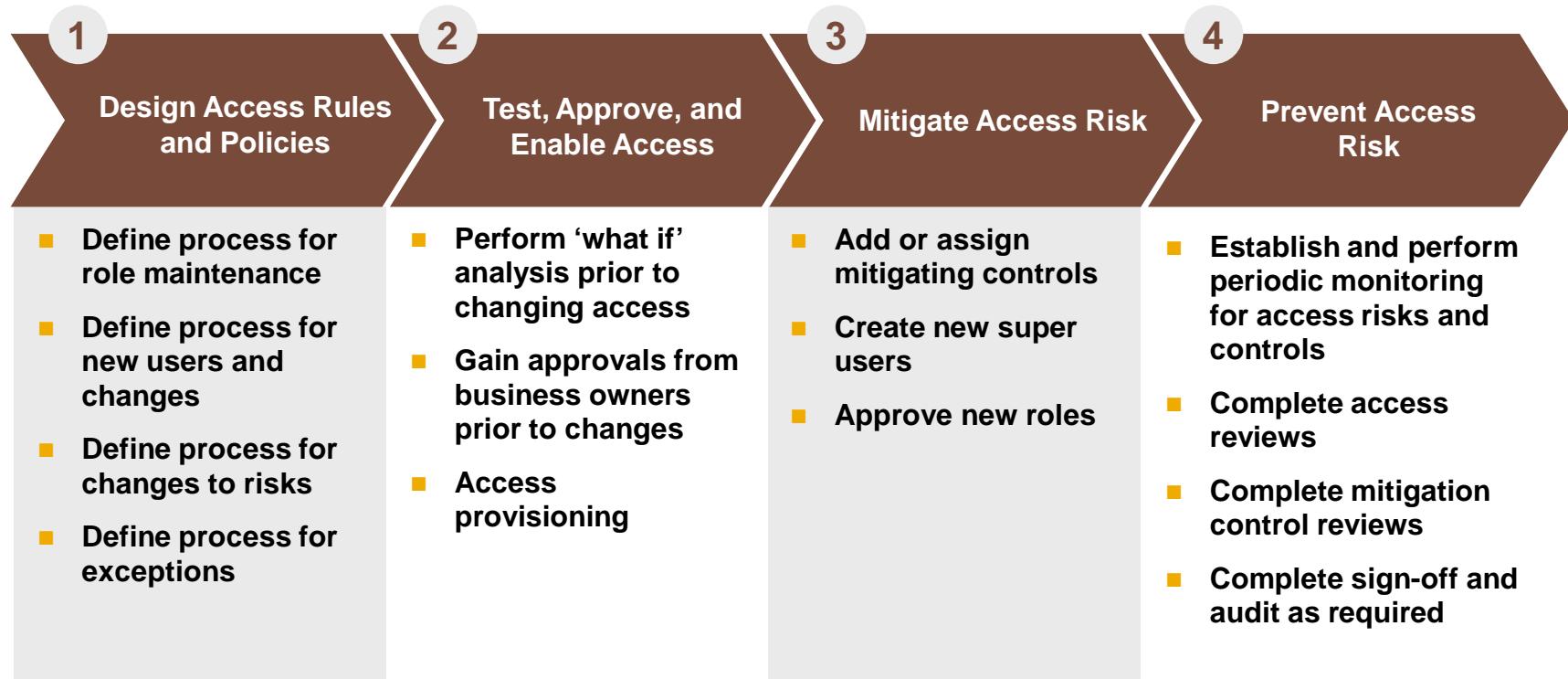
# Access Monitoring



Continuously monitor access management compliance through periodic reviews and audits. Simulate and analyze changing access requirements before deployment to prevent incompliance and new access risks.



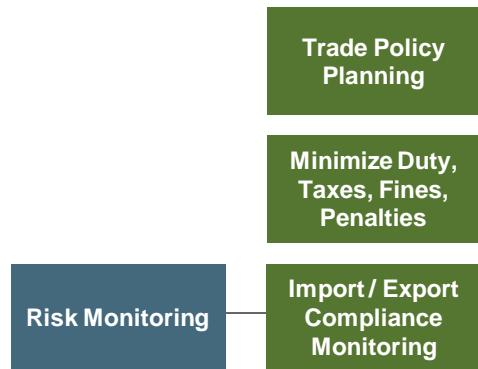
## Process Steps



# Duty Reduction & Trade Compliance



## SAP Solution



- Centralize all global trade agreement duty reduction & compliance requirements
- Determine duty reduction opportunities & trade compliance requirements
- Proactively and continuously monitor export and import transactions for duty-optimization and full compliance with trade regulations

## SAP Differentiators

- Enables greater duty reductions by supporting more duty-reduction scenarios than any enterprise solution vendor.
- Virtually eliminates costly non-compliance risks by offering the broadest set of real-time screening and prevention scenarios available on the market today.
- Fully manages and absorbs the cost of certifying electronic communications with Government customs systems in over 25 countries (and growing), more than any enterprise ISV.

## Definition and organization of company trade policies by the trade compliance organization

### Process Steps



Configuration of global trade data such as licenses, regulations, and business partners allows for centralization of trade transactions and processes.

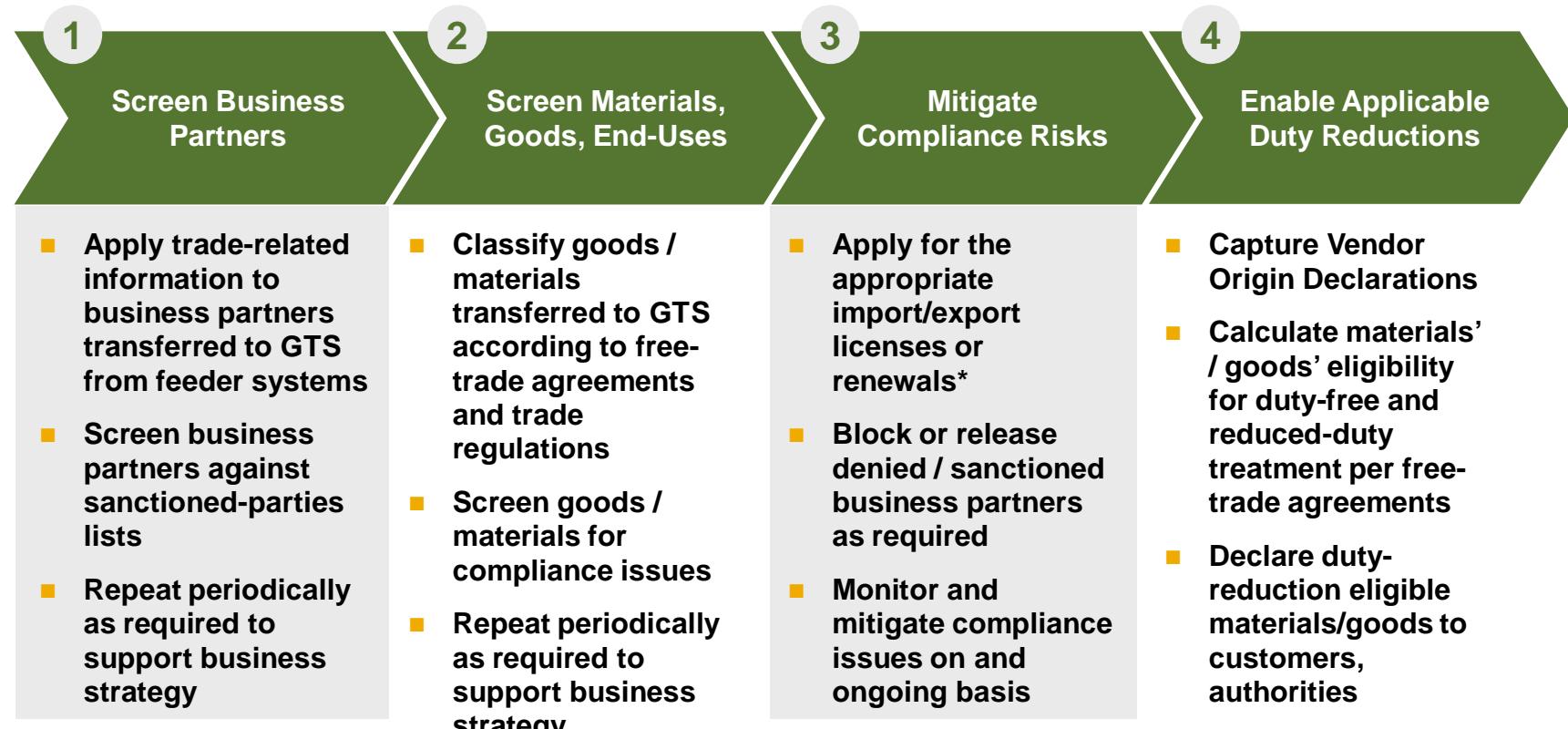
Trade Policy Planning

Minimize Duty, Taxes,  
Fines, Penalties

Risk Monitoring

Import / Export  
Compliance  
Monitoring

### Process Steps



**Continuous monitoring of import and export processes assures ongoing compliance.**

Trade Policy Planning

Minimize Duty, Taxes,  
Fines, Penalties

Risk Monitoring

Import / Export  
Compliance  
Monitoring

### Process Steps



# Thank you !



**Q E D : Volume-(2) PART-A**

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