Reliance Industries Limited

Executive Board Presentation

BEST BUSINESS PRACTICES & MEASURES

SAP INDUSTRY BLUEBOOK : Oil & Gas

APPROACH WHITE PAPER

BUSINESS TRANSFORMATION SERVICES

28th June 2011

Author .

UJJAL CHAKRABORTY

PRINCIPAL

SAP BUSINESS CONSULTING

INDIA SUB-CONTINENT. BANGALORE

THE BEST-RUN BUSINESSES RUN SAP™

Agenda

Energy Industry Highlights – & Value Drivers

Oil & Gas – Best Business Practices

Best Business Practice – Baseline Scenarios

SAP INDUSTRY BLUEBOOK : Oil & Gas

Volume – 1
Energy Industry Highlights & Value Drivers

APPROACH WHITE PAPER

BUSINESS TRANSFORMATION SERVICES

28th June 2011

Author .

UJJAL CHAKRABORTY

PRINCIPAL

SAP BUSINESS CONSULTING

INDIA SUB-CONTINENT. BANGALORE

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

Key trends
... driving change in Oil & Gas Industry

Energy Policy Changes

Volatile Prices and Margins

Increasingly Complex Assets

Shifting Demand and Supply Patterns

- Raw goods price volatility
- Geographical match of supply and demand
- Evolving energy markets, (for example, gas)
- High growth rates in emerging countries

Increased Governmental Regulation

- IFRS, OPEC, REACH
- Sarbanes-Oxley Act
- Sanction party compliance
- Hedging laws – IAS 39, FAS133
- Excise taxes
- Environmental compliance

Global Market Dynamics

- Resource and asset optimization
- National oil companies expanding
- Increased mergers and acquisitions
- Global business operation models

Maximize Reserve Recovery

- Operational excellence
- Digital oil fields
- Asset performance
- Trend to remote and smaller discoveries
- Hazardous environments

Renewables and Energy Conservation

- Increasing use of biofuels
- Competition from alternative energies
- Innovation in energy efficiency

Energy Market –

… outlook to future

- By 2030, global energy demand will increase by 50%
- Oil & Gas will remain predominent energy source with increasing contribution of natural gas (2003: 95 Tcf, 2030: 182 Tcf)*
- Gas is experiencing rapid growth in demand and production as the energy source

Critical will be to successfully meet the significant energy supply and demand challenges ahead

Outlook for Energy Demand – View to 2030 and Beyond

- **By 2030 global energy demand will increase by 50%***
  (*Source: EIA, World Energy Projections)
- **Oil & Gas will remain predominant energy source for next few decades, but a tipping point has been reached**

"The break point is already here. Oil is in the process of losing its almost total domination in ground transport. It is not going to fade away soon—such is the scale of its use and convenience that it will retain a dominant position for many years."

Daniel Yergin, Chairman of Cambridge Energy Research Associates
"Oil Has Reached a Turning Point", Reprinted from The Financial Times, May 27, 2008

The balance of future supply and demand remains challenging

Extensive Capital Investment Required to Bring on New Sources of Supply

Source: ConocoPhillips Projection Based on IEA World Energy Outlook 2005

Diverse, but concentrated $5T annual turnover industry

Source: SAP Analysis from various external sources, 2007

Oil & Gas

… Vital Contributor - Overall Energy Ecosystem

kde3

Oil & Gas - Refining

© SAP 2008 / Page 10

Slide 10

kde3 Modified Slide to remove enterprise platform

Ken Evans, 12/12/2008

Oil & Gas
... Supply & Trading

Oil & Gas – Downstream Marketing & Retail

...Disruptive Growth

Cost, Revenue & Margin

- High number of incorrect invoices and high Days Sales Outstanding
- High transportation cost due to poor utilization of fleet
- High fuel purchasing cost
- Disconnected or non-existing price management processes

Distribution Planning & Customer Management

- High error rates due to poor inventory accuracy
- Disconnect between replenishment and transportation planning
- Transportation inefficiencies
- Customer service requirements (e.g. VMI)
- Constant expediting to meet terminal demand
- Channel allocation & margin management
- Disconnect with haulier companies

Business Process Platform

- Heterogeneous applications with disparate data models
- Inflexibility in dealing with business changes (i.e. M&A, business relationships, etc.)
- Compliance issues
- Transparency & growth limitations

Terminal Management & Automation

- Missing visibility into terminals
- Missing integration of existing terminal systems
- Paper based and manual processes
- Lack of supplier integration

Fuel and Convenience Retailing

- Disconnect between fuel and dry goods business
- High cost of operations
- Loss of margins
- Low profit per customer visit

Battle For New Resources

… Balancing Profitability against Sustainability

Common barriers for both profitability and sustainability … in Upstream Oil & Gas Industry

SAP – Upstream Enablers

… to balance profitability vs. sustainability

Gas Reserves,
Future Demand and Volume Growth

More than 90% reserves are not in OECD countries

About 70% of the future gas demand are in OECD and other countries

Production

Consumption

Transportation across different time zones and countries is day-to-day business

Source: Cedigaz

Rise of Liquefied Natural Gas (LNG)

- **Interregional gas trade in 2030 will be nearly five times greater than today**
  - **In large parts due to the rapidly developing liquefied natural gas market**

- **Effective cooperation and significant investments to sustain and enhance natural gas infrastructure, are critical to achieve the growth**

LNG Contributes around 40% to the total gas growth

Future LNG Markets

LNG Value Chain

GAS - Key Business Observations

- Gas will continue experiencing high demand as clean source of energy.
- Liquefied Natural Gas (LNG) will be the future of global gas
- Expansion of horizon to be the main theme for LNG – Companies expanding their footprints in other segments of the value chain
- Trading and spot contracts to become the normal business in LNG
- Technology advancement and gas prices will remain critical for LNG to be a success.
- A Single ERP platform will be needed by the players to remain agile with changing face of business
- SAP will provide the platform and with current and future industry tailored solution and will continue making IT as business enabler.

The Approach ...
pure play Business

Increase short and long-term

PROFITABILITY

by holistically managing economic, social and environmental risks and opportunities.

Profitability and Sustainability

..... Remains Difficult

- After-tax margin % have been flat despite dramatic increases in price
- Rising reserve replacement costs and taxes are to blame
- When combined with any stagnation or retreat in prices,
  ...margins are forecast to decline slightly
- It is increasingly difficult to replace reserves and boost production
  - Oil Reserves Not Replaced
  - Gas Looks Good
- M&A/divestitures will be extremely active as companies enhance their development portfolio

Source: "2006 Global Upstream Performance Review," John S. Herold, Inc. Harrison Lovegrove & Co.

The O&G Challenge –

Limited Visibility, High Uncertainty

- Limited real-time production and asset performance across the enterprise.
- Disparate applications and multiple spreadsheets

- Excessive risk to people, environment, and assets
- No comprehensive closed loop solution
- Limited proactive and continuously improved management of operations

- Limited knowledge of own carbon footprint
- Uncertain supply chain footprint
- Difficult to improve public perception

- Poor asset information
- Reduced user adoption of systems
- Overall impedance of best business processes

- Inability to know where the production is being lost
- Difficult to correlate production performance to maintenance practices

- Misaligned sourcing and contract management
- Limited ability to ensure global contract compliance and delivery of negotiated savings

Key Challenges in the Oil & Gas Industry
... constant competitive squeeze

Energy Security Shapes Policy
Increased risks of supply disruption
Policy impacts on regulations & taxes
Unconventional resource incentives
Sustainable and responsible development

Compliance & Governance
Sarbanes Oxley
Sanction Party compliance
Hedging laws – IAS 39, FAS133
Excise taxes
Environmental controls

Complex & Volatile Market
Price Volatility
Changing Supply/Demand Pattern
Competition between 'Global Majors' and 'National Giants'

Globalization
Global operating models
Concentration of portfolio into strategic plays
Resource optimization (capital assets, inventory/transport capacity, talents)

O&G Business

Challenges and Drivers

Difficult Macro-Economic Environment

- Record earnings for many companies in 2004
- Volatile market conditions
- Terrorism
- OPEC

Increasing Government Regulations

- Sarbanes Oxley
- Low sulfur mandates
- Emissions Reporting Standards
- EH&S
- Increased company profits lead to increasing tax rates

Constrained Growth Opportunities

Record Earnings Upstream.. But Margin Pressure continues in Downstream segments

Volatile Raw Material Costs

Supply-Demand Balance

- US Consumption vs Production
- Increasing Global demand (e.g. China and emerging economies)
- Refinery capacity
- Crude sourcing

Changing Face of Industry

- Consolidation
- Global Super Majors vs Regional majors, Independents, and National Oil Companies
- Asset rationalization
- Impact of NGL and GTL on business processes and global markets

O&G Business

Challenges and Drivers

Gas Processing

- Asset Rationalization
- Demand for integrated value chain
- Mega Projects (capital investment)
- Reduced LNG processing and transport costs

Markets and Demands

- Regional pricing
- Fuel switching
- Expanding economies
- Electricity and NG industry restructuring
- Trading Evolvement
- Consolidation
- De-regulation

Supply

- Remote opportunities
- Increase in LNG investment
- Cyclical markets
- Availability of skilled workers
- Gas supply in decline near larger markets
- Complicated and lengthy regulatory processes

Geo Political and Globalization

- Comprehensive gas security policy
- Climate change and push to reduce CO_2 emissions
- Environmental and employee safety
- Energy efficiency regulations

Difficult Macro-Economic Environment

- **Global unrest in key producing regions has put into question the dependability of oil supplies, just as economic growth from the China, and emerging economies has led to a surge in oil demand.**
- **As Oil prices rise, OPEC's influence appears weak amid little spare capacity. OPEC may try to regain control by increasing spending and entering into new ventures.**

Energy Security shapes policy…

- **Global unrest in key producing regions has put into question the dependability of oil supplies owing to supply disruptions.**

- **The emerging economies like China are leading a surge in oil demand owing to their economic growth and as Oil prices rise, OPEC's influence appears weak amid little spare capacity.**

- **Governments are levying heavy taxes on Oil& Gas companies. This is to encourage alternative energy sources and energy conservation by providing tax breaks.**

Oil Supply Disruptions since 1951

Disruption Year	Supply Disruption Months	Average Gross Supply Shortfall (Million B/D)	Reason for Oil Supply Disruption
1951-1954	44	0.7	Iranian oil fields nationalized, followed by unrest and strikes in Abadan area.
1956-1957	4	2	Suez War
1966-1967	3	0.7	Syrian Transit Fee Dispute
1967	2	2	Six Day War
1970-1971	9	1.3	Libyan price controversy; damage to Tapline
1971	5	0.6	Algerian-French nationalization struggle
1973	2	0.5	Unrest in Lebanon; damage to transit facilities
1973-1974	6	2.6	October Arab-Israeli War; Arab oil embargo
1976	2	0.3	Civil war in Lebanon; disruption to Iraqi exports
1977	1	0.7	Damage to Saudi oil field
1978-1979	6	3.5	Iranian revolution
1980	3	3.3	Outbreak of Iran-Iraq War
2002-2003	3	2.1	Venezuela strikes and unrest.
2003	6	0.3	Nigeria unrest.
2003-2004	19	1	Iraq war and continued unrest.

Source: http://www.eia.doe.gov/emeu/security/distable.html

Oil Consumption by Area (Asia Pacific is the highest)

Complex and Volatile Market...

- Oil prices have always been volatile because they are affected by unpredictable yet recurrent natural disasters and political instability.

- Volatile markets also because of the high liquidity of the trading market which makes opportunistic trading a realistic venture - which drives volatility as well

- The world's thirst for oil is ever increasing, government-controlled national oil companies are challenging international firms in the global competition for oil reserves.

- Access and competition for reserves is growing ever more difficult with many new opportunities in increasingly remote or difficult areas

Global Trade Remains Complex and Robust

Source: BP Statistical Review, June, 2008

Refinery Margins are Increasingly Volatile

Globalization...

- **Oil and Gas companies are adopting global operating models to allow them to effectively supply and deliver in the current environment of supply demand imbalance.**
- **They also have to concentrate their reserve portfolios into strategic plays where they can gain economies of scale at an acceptable level of geopolitical risk**
- **The merger and acquisition in downstream activity has been increasing. These M&A in Downstream are shifting assets but not increasing overall refining capacity**

Portfolio Optimization and Need for Economies of Scale Continue to Drive Mergers and Acquisitions

O&G Segment	Number	Total Value (US $ bn)	Average Value (US $ bn)
Upstream	576	133.3	0.231
Midstream	74	29.9	0.404
Downstream	94	61.7	0.656
Services	149	67.3	0.451

Source: PricewaterhouseCoopers, O&G deals, Annual Review 2007,John S, Herold

Supply and Demand Balance

Supply & Demand Situation

- US consumes 25% of World Oil Production but only produces 15%, gap is widening
- Increasing portion of Crude shipped over long distances
- Time to first production of new fields constrains production growth
- US Refineries operate at high utilization levels – Greenfield expansions very unlikely largely driven by environmental/regulatory hurdles
- Spread between light/heavy crude prices in constant flux

Key Implications

- US Oil and Gas companies are increasingly dependent on and exposed to international challenges
- Global inventory management and management of oil movements increasingly important
- Development of concurrent exploration and development planning activities. Introduction of new, time-saving techniques (e.g., FPSO)
- Refinery up-time and safety increasingly critical to US refiners
- Refiners moving toward more operational flexibility and sophisticated yield management solutions

Changing Face of Industry

Changing face of the Industry

- The merger and acquisition activity is again increasing. Global markets are still dominated by "supermajors" but NOCs (e.g. CNOOC) and Independent Producers are now operating and competing globally
- Refiners in US and Western Europe are expanding capacity in existing facilites rather than new construction.
- Midsize Oil Companies increasingly invest in refining niche markets in US
- Business are moving towards seeing complete value chain as a single entity rather than having segregated business units (supply and trading)

Key Implications

- Adoption of "global business processes" by NOCs and Independent producers
- Mergers and Acquisitions in Downstream are shifting assets but not increasing overall refining capacity
- Organizations are focused on their core competencies. They are evaluating how to improve margins and profitability by either acquiring or divesting of assets
- Move towards integrating their Supply and Trading business units into the overall supply chain

Increasing Government Regulations

Highlights of Government Regulations

- Sarbanes Oxley: The CEO/CFO must certify quarterly and annually that the SEC report being filed has been reviewed and does not contain any untrue statements or omit any material facts. Section 301 requires that Management certify internal controls and section 404 requires that Management annually assess the internal controls and procedures for financial reporting
- Emissions Reporting – global governments are instituting tighter reporting controls and emissions controls.
- Low Sulfur Mandates – requires organizations to supply low sulfur fuels
- Increasing government share of profits through higher taxes and/or larger share of production

Key Implications

- Organizations must have reliable, accurate and swift reporting in order to close their books
- Organizations must have a system that is robust, captures all costs, contains status management and facilitates prompt reporting
- Organizations need a system to control, measure and document emissions output that will support reducing costly fines and improve productivity by aligning compliance processes with existing workflows.
- Organizations need a system that supports the management of their supply chain and distribution channel.
- Organizations must take advantage of all available deductions and must comply with changing tax regulations

Industry Dynamics & Performance Demands focus on Asset Performance & Operations

1 New Projects Commissioned

Increasing number of new projects commissioned

2 Refinery Utilization

Refinery Utilization has dropped >5% over 10 yrs

3 Maintenance Costs Rising

Maintenance costs have risen 10%-15% per year

Safety related issues are tightly linked to utilization

Sources: "Benchmarking Best Practices in Maintenance Management," Terry Wireman, 2004; Hydrocarbon Processing, Market Data 2003, a Gulf Publishing Company

Strategic Imperatives for Oil and Gas Industry

Strategic Imperatives	Key Business Requirements	Main Future Themes	Major Impact
Maximize ROCE while meeting Energy Supply Challenge	• Optimize investment portfolio to meet both strategic and financial objectives with manageable risk • Control escalating capital costs and speed project delivery from concept to on-stream • Collaborate globally and across ecosystem to deliver superior quality projects that meet the changing demands	Capital Excellence	• ROCE • Time to First Oil • Reserve Replacement
Maximize Operational Efficiencies	• Visibility and performance management across breadth and depth of enterprise assets • Identify and share best practices across the enterprise • Maximize overall asset effectiveness via improved reliability and operations • Quickly assimilate merged or acquired entities to leverage size • Recruit, Retain, Reequip, & redistribute available work force to minimize impact of GreY2K (aging workforce)	Operational Excellence	• Productivity • Overall Asset Effectiveness • Cost of Goods Sold
Navigate Global Energy Policy Changes	• Assure proactive management of sustainable operations that mitigates risks to employees, community, and environment • Assure compliance with flexible, secure, controlled, visible and transparent global processes that satisfy the needs of all policy making stakeholders	Sustainable Operations	• Carbon Footprint • Brand Value • Lost time accidents

© SAP 2007 / Page 34

Industry's Move from Businesses To Business Networks Continues & Accelerates

Operating Efficiency	*Key Focus*	**Competitive Advantage**
Locally Constrained	*Labor Distribution*	**Globally Flexible**
Individuals	*Primary Work Center*	**Communities**
Work Day	*Time*	**Follow the Sun**
Enterprise Systems	*Technology*	**Business Process Platforms**

Future LNG Market Challenges –

… NOCs moving downstream

Trends

- Move towards Downstream & the shipping part of the Supply Chain ("insourcing" effect)
- Develop infrastructure, technical prerequisites & invest in transportation network and vessels
- Simplicity & Stability (financing purpose) is an objective
- Participate in Hubs to be build - Strategic storage needed

Challenges

- Environmental issues
- Rising costs & delays
- Local communities have to benefit from the projects
- Political risks
- Greater flexibility with rising trading activities needed

Success Factors

- Enhanced business processes
- Enhance technical & functional skills for LNG processing & transportation
- Efficient collaboration with partners (joint ventures)
- Flexible Trading capabilty
- Compliance (regulatory, environmental, safety)
- Efficient usage of the expensive assets

Future LNG Market Challenges –

… Majors being 'squeezed'

Trends

- Fully integrated and complete visibility on the supply chain
- Bring added-value from field development to regasification plants
- Attract best transfer prices
- Longterm sales agreements are the foundation for major investments
- Diversification of supply sources needed

Challenges

- Technical prerequisites for Liquefaction technology
- Transportation distances increase (in a more uncertain world) - Political risks in ex- and importing countries
- Flexible, long distance supplies of LNG are the key to the future
- Regasification capacity will contribute to this
- Ability to sell gas in highly competitive markets
- Cope with a liberalized market
- Intense competition among the players for lease acquisition

Success Factors

- Collaboration with partners (joint ventures)
- Move into role of trusted advisor for NOCs
- Technical Innovation
- Strong relationships with key market players
- Quality and cohesion of investors
- Establish Global Planning
- Trading capabilty

Future LNG Market Challenges –

Energy companies rolling up the supply chain

Trends

- Move up the LNG value chain (Shipping & Transportation)
- JVs in E&P & Regasification
- Acquire interests e.g. in liquefaction facilities
- Secure supply
- Capable to either remove or put pressure on upstream

Challenges

- Rising costs / Facing delays
- Political risks in exporting and importing countries
- Rising competition for supplies
- Imports - Gas security is deteriorating
- Adapt to the regulatory framework
- Influence of energy mix on LNG
- Price is key – so are flexible and innovative deals that meet customer needs

Success Factors

- Technical Innovation (e.g. floating terminals)
- Strong relationships with key market players
- Balance energy sources
- Compliance (regulatory, environmental, safety)
- Trading capabilty
- More agility – Quikcly acquire the knowledge/technology

Improved Ownership

… Transparency and Compliance

Problem Statement

- Lack of transparency and difficult management of complex lease ownership and partnership relationships
- Land solution is not integrated into ERP system leading to increase risk of non-compliance

Key Solution Capabilities

- Ability to model and execute the most complex ownership or working interest relationships
- Industry specific and leading functionality for Joint Venture Accounting, Production and Revenue Accounting, Production Sharing Accounting
- Full lifecycle land management/GIS solution via endorsed business solution from Quorum Business Solutions

Proven Benefits

- Improved productivity from exemption based, streamlined, and integrated processing
- Improved insight and decisions due to increased visibility and cross functional usage
- Reduced compliance risk from data and transactional integration with ERP

Statoil ASA

$58B Norwegian National Oil Company

KEY BENEFITS RECOGNIZED

- Increased reporting accuracy
- Increased productivity
- Reduced compliance risk

"Our routines are undoubtedly more efficient and the accuracy of our accounting has increased since we started using SAP Joint Venture Accounting (JVA). Where previously it could take two days to produce a monthly statement of accounts, it now takes half that time and the data is of a much higher quality."

Kjell Petter Gilje, JVA Solution Manager, Statoil

Anadarko Petroleum

$7B US Upstream Independent

KEY BENEFITS RECOGNIZED

- Increased productivity of land management resources
- Transparency across the enterprise into Land function

"We selected the Quorum Land product because of its flexibility, the fact that the product could handle all of our land related agreements for both exploration (leases, contracts, surface use agreements) and pipeline (right-of-ways, site leases, facilities)."

Susan Hollcroft, Supervisor Land Admin, Anadarko

Extended Logistics

... for Remote Assets

Problem Statement

- Increasingly remote and complex operations with scarce storage space for parts & materials
- Downtime or work delays due to not having the right materials at the right time
- Excessive inventory and onshore lay down area needed to assure parts availability

Key Solution Capabilities

- Optimized supply transport planning for remote facilities
- Coordination of all required documents for these complex movement to remote locations
- Visibility of requisition to delivery lifecycle

Benefits

- Reduced materials management costs
- Increase visibility of rotating spares
- Reduced material delivery lead times
- less production downtime
- no overstocking situations

Statoil ASA

$58B Norwegian National Oil Company

KEY BENEFITS RECOGNIZED

- Reduced expediting costs
- Reduced material handling costs
- Reduced spare part inventory
- Reduced replenishment lead times

"To support the complex process of moving goods offshore to oil platforms in the North Sea, Statoil implemented SAP Remote Logistics Management (RLM). The international, integrated energy company can now access detailed reports and more efficiently schedule repair and maintenance"

Statoil Customer Testimonial Video

Optimize

...Capital and Operating Project Portfolio

Problem Statement

- Sub-optimal portfolio of competing capital investments
- Misalignment of investments with corporate strategy
- Inability to efficiently maximize production from existing pools

Key Solution Capabilities

- Align portfolio to organizational strategy & objectives through simulation and prioritization
- Monitor portfolio performance through increased visibility into operations and sophisticated analytics
- Phase gated project management focusing on deliverables, roles and commitments
- Tight integration into logistics and financials

Benefits

- Maximize ROI and minimize risk of projects based on marketplace constraints and demand
- Reduced Reserve Replacement Costs ($/BOE)
- Reduce labor costs by unifying, streamlining and collaborating on project management and modification work processes
- Improve productivity of all available resources

Statoil ASA

$58B Norwegian National Oil Company

KEY BENEFITS RECOGNIZED

- Provided common process and tools for managing project portfolio
- Improved usability
- Integration to existing project management capabilities in SAP ERP
- Improved cross project procurement with favorable pricing

Buhler Group

$1.2B Engineering & Construction Co.

KEY BENEFITS RECOGNIZED

- Streamlined, cost efficient processes
- Improved project portfolio visibility
- Reduced unprofitable projects
- Improved productivity and agility

"In the past, we sometimes incurred heavy losses through poor quality processes or from having to provide additional services we hadn't budgeted for ... SAP xRPM saves us a significant amount of time and money."

Alfred Höllwarth, Head of IT & Processes at Bühler AG

Right talent and knowledge

... at the right time and place

Problem Statement

- Difficulty in managing talent throughout lifecycle on a global basis
- Enterprise knowledge not available at the time and point of need
- Lack of visibility into overall training activities and costs

Key Solution Capabilities

- HCM strategy creation and measurement
- Integrated talent management
- Workforce process management
- Self-services, shared services, and alternate delivery channels
- One source for employee, organizational, and competency data

Benefits

- Improved insight for better strategic planning
- Maximizing Human Capital Investment
- Cost savings through automation and self services
- Compliance with government regulations

Oil Super Major

Key Benefits

- Global HR delivery
- Reduced systems footprint to automate HR functions

This super major replaced its PeopleSoft HR system to enable standardization of global business processes and global management of its talent with a solution that is seamlessly integrated with its other SAP enabled functions

Hellenic Petroleum

$8B Integrated National Oil Company

Key Benefits

- Aligned human capital management with business needs
- Improved HR Function Productivity
- Improved compliance

"SAP helps us manage the complete employee life cycle – from hiring through to retirement – and balance business needs with the career aspirations of our people. It also ensures we manage staff in line with Greek employment law, which helps us maintain good relations with trades unions."

Vassilis Protopapas, IT Director, Hellenic Petroleum

Improve

… Asset Interoperability

Problem Statement

- Inability to collaboratively manage and exchange the critical capital asset related information needed across an asset's lifecycle with all relevant constituents in its management

Key Solution Capabilities

- Engineering data handover and asset lifecycle data exchange
- Create and sustain asset information foundation
- Maintenance program master data management

Benefits

- Reduce CAPEX by 1 to 2%
  - Reduce delays from design changes & handover inefficiencies
  - Eliminate/reduce efforts to reenter, gather, and analyze data
- Reduce Start-Up and Commissioning Risk
  - Asset data interoperability across entire asset lifecycle
  - Reduce capital project timeline and cost
- Increase Operating Margin and Asset Utilization
  - Reduced spare parts cost and inventory
  - Transition from reactive to proactive asset management
  - Increase compliance, knowledge retention & reduce training

" Asset-heavy companies need to chart a holistic asset management strategy and then make the necessary improvements in automation, particularly in the collection, normalization, and dissemination of asset-related data."

Aberdeen Group

"Poor communication and maintenance of as-built data …. culminate in downstream costs.."

2004 NIST Cost Analysis of Inadequate Interoperability Study

Integral management

... of HSE requirements

Problem Statement

- Difficulty in managing the health, safety, and environmental risks on a proactive and comprehensive basis

Key Solution Capabilities

- Occupational Health, Industrial Hygiene & Safety Management
- Integrated Incident Management
- Hazardous Substance Management
- Regulatory Reporting
- Emissions Management & Reporting

Benefits

- Ensures the safety of employees, customers, and the community
- Reduced cost and risk of compliance
- Faster and more accurate responses to inquiries and incidents
- Enhance your company's image

E.ON BENELUX

KEY BENEFITS RECOGNIZED

- Greater efficiency and productivity through automated emissions management processes
- Increased integration and improved information visibility for exception and incident management
- Reduced risk of noncompliance
- Simplified reporting
- Improved audit transparency, building goodwill with regulatory authorities

"[SAP xEM] saves us time and money, helps us stay flexible enough to respond to changed market conditions, and prevents legal sanctions. But the best thing about SAP xEM is that it brings us much closer to our goal of being a sustainable, environmentally friendly operation."

Herman Poortinga, CIO, E.ON Benelux

Challenge to *reduce* F&D and production *costs for assets with increasing complexity & remoteness*

Cost per Well Rising Steeply, But Reserves per Well Steady …

- Since 2001, worldwide production volumes have gained 12% while the cost of production (lease operating expenses, severance, royalties, etc.) has doubled from $96 billion to $201 billion
- Soaring costs are a topic of major concern in every boardroom

Difficulty in acquiring, developing, and *managing an aging and tightening* industry *talent pool*

Median Age of U.S. Employees by Industry

Source: U.S. Bureau of Labor Statistics, 2005

Human Ability to Deal with Increased Volumes of Data

Source: Energy Insights, 2006

Origin and Geographic Shift of E&P Workers

Source: Energy Insights, 2006

- The systematic reduction in the E&P workforce due to volatility in prices and M&A activity has resulted in workers moving out of the oil and gas (O&G) industry and created a stigma that discourages young people from joining the industry
- From a global standpoint, E&P workers are being hired in large numbers from South America, India, and China for operations in North America, Russia, Southeast Asia, the North Sea, and the Middle East.
- Many E&P companies are going beyond labor replacement and knowledge retention and have started developing plans for technology-enabled process improvement and business innovation

Source: Energy Insights

Lack of *interoperability across* production *asset's* design to disposal *lifecycle*

Industry Pain

- Inability to collaboratively manage and exchange the critical capital asset information needed to manage across an assets' entire lifecycle

Complication/Business Impact

- Per U.S. Department of Commerce's National Institute of Standards and Technology, direct quantifiable impact is 1- 2 % of CAPEX due to:
  - Increased project cost from design changes, handover inefficiencies, and associated delays
  - Unproductive efforts to gather necessary to re-enter, gather, and analyze data used in both operating and decision making processes
- The indirect impact during an asset's operation phase includes
  - Suboptimal asset portfolio performance from inaccurate asset performance analysis, management, maintenance and reporting
  - Increased cost and inventory of spare equipment and materials that results from erroneous sourcing analysis and management

EH&S requirements disconnected from normal asset operations

"the Health & Safety Executive (HSE) damned ConocoPhillips for 'potentially catastrophic' lapses that caused a fire and explosion at its Humberside refinery"

The Guardian
December 13, 2009

"Safety regulators have proposed fines of $384,000 on BP for a string of infringements at an Indiana oil refinery, adding to a long list of woes to hit the company's American operations"

The Guardian
November 29, 2008

"BP Plc's global management team knew of safety concerns at the company's Texas City, Texas, oil refinery before a deadly explosion last year, U.S. safety investigators said."

Bloomberg
October 30th, 2009

Sub-optimal portfolio

… of competing capital investments

Return on Capital Employed can vary widely across a portfolio

Inability to efficiently … *maximize production* from existing pools

Cost Pressures Are on the Completion Side

- Restricted access to new resource-rich areas increases the importance of maximizing production from existing basins
- Development costs have been on the rise as recent discoveries have been smaller than in prior years, or they have been in hostile environments, which has boosted costs.

Difficulty in *assessing an assets true relative performance* to make timely disposal decision

Speed and accuracy is needed

- Global upstream M&A transaction value more than doubled to nearly $160 billion from ’04 to ‘05
- Deal pricing per proved boe soared to record highs in 2005
- *International competition* for sizeable asset packages *has become increasingly intense*, with state-owned or controlled companies (NOCs) continuing to emerge as major buyers of assets

SAP O&G MESSAGE HOUSE

… AND PROOF POINTS

SAP for Oil & Gas improves both profitability and sustainability

Improving capital and operating cost management across full asset lifecycle

PEMEX STATOIL

KEY BENEFITS

PEMEX Reduced prices on one-year contracts by 6% on average and lowered bidding process costs by 13% through electronic collaboration with SAP SRM

Statoil takes half the time to produce its monthly statement of accounts and the data is of a much higher quality with SAP Joint Venture Accounting

Mitigating Governance and compliance risk

PACIFICORP ONGC

KEY BENEFITS

PacifiCorp reduced response times to non-compliance events with SAP xEM Emissions Management

ONGC improved legal compliance, reduced bid cycle times and lower prices with SAP SRM

Providing a Business Platform for profitable and sustainable growth

STATOIL

KEY BENEFITS

BG Group reduced TCO by 43% and improved organizational agility and employee productivity

Statoil integrated its heterogeneous systems landscape, improved the quality of information and decision making for its 24,000 employees across the 28 different countries it operates in

Business Challenges

... Driving IT Requirements

Gas Processing

Markets and Demands

IT implications:

- Value Chain Integration Drives Cost Efficiency
- Integration of Business Execution for Business Decision Support
- End-to-End Supply Chain Efficiency Requires Best in Class Technology Proposition
- Compliance Management

Supply

Geo Political and Globalization

O&G Market Players –

… key IT needs

Key common Needs

- Robust and Integrated supply chain handling and optimization with complete visibility
- Optimized Asset Management
- Compliance with Regulatory Procedures to minimize environmental hazards
- Full Visibility into Project & Portfolio Management to maximize profits
- Human Capital Management
- Knowledge Management and Collaboration
- Management Dashboards and Analytics for efficient and quick decision support
- Management of Joint Ventures
- Flexible infrastructure allows quick integration of new business processes
- Minimize exposure to political risks

One ERP Platform for all players

O&G Market Players –

… key IT needs

NOC

- Understand and adapt to new business processes (Supply, Transportation, Trading and Storage)
- Mass Allocation, balancing & Yield Accounting
- Integration of "Top floor to shop floor„ - Liquefaction plant to Enterprise
- Trading integrated to logistics and accounting
- Cross business integration (Upstream with Supply)
- Mobile Liquefaction facility

Majors

- Excel and improve existing business processes
- Integrated midstream and downstream business
- Diligent management of projects
- Strong pricing and trading capabilities
- Efficient management of longterm sales contracts

Energy Companies

- Integrated midstream and downstream
- Enter upstream areas
- Integration of "Top floor to shop floor„ - Regasification terminal to Enterprise
- Pricing and trading capabilities
- Quick adoption of new technology is key to success
- Mobile regasification facility

One ERP Platform for all players

Robust IT Platform
... Need to support internal network

Establish a stable Business Process platform with the ability to maximize fast paced innovation and minimize disruption through the enterprise for the players

NOC
Integrated Supply

- Enable a flexible IT environment that supports Broad User Adoption for greater collaboration across innovative processes and best industry practices

- Continuous IT innovation and future expansion into new technologies

- Optimized value chain with realtime communication and tracking

Majors
Trusted Advisor

- Greater ability and flexibility to develop and deploy adaptable business processes using enterprise SOA to handle changing business requirements and priorities

- Event driven architecture to resolve business exceptions quickly and react to ever changing business conditions
- Integrated project management

Energy Companies – Secure the Flow

Future growth into new business horizons with improved data quality and complete insight and visibility

New demand driven business processes to optimize the demand with supply

Optimal IT landscape by enabling enterprise SOA to safegaurd IT investment

Building the foundation for value creation

Drive Business Objectives

SAP Performance Management

Companies spend excessive time and money tracking and reporting sustainability objectives.

SAP allows executives to focus on strategic execution instead of data collection…

…Because it is the only solution that ties key business information from SAP operational systems to sustainability reporting

Sustainability Performance Mgmt

Assured Reporting	Benchmarking & Analytics	Strategy & Risk	Financial Performance

SAP Stewardship

compliance, traceability, safety

Embedded Compliance controls **and** hydrocarbon **master data management for your sustainable enterprise**

Document compliance actions with workflows and central data

Manage MSDS**, labeling from master data,** Hazardous Substance Mgmt

SAP Recycling Administration **manages recycling and reuse**

Product Safety and Stewardship	Product Compliance	Matl. & Prod. Safety	Recycling & Re-Use	Recall Management	Product Footprint	Sustainable Design

Solution -
SAP Provides Visibility and Compliance

- Operations data integrated with technical & financial data
- Real time production status
- Reduced process costs
- Faster proactive approach to changing business requirements
- Optimized production opportunities

- Standard HSE procedures yields reduced incident rate and compliance costs
- Manage operational risks and keep stakeholders informed

- Easily capture and credibly report carbon footprint
- Profitably reduce enterprise carbon footprint
- Promote reductions in supplier footprint

- Consistent and aligned organizational KPIs support continuous, confident improvement
- Benchmarking measurement enables strategic planning

- Sustained savings from greater sourcing and procurement visibility and controls

- Reduce downtime through alert notification, increased information access and reduced approval time.
- Complete and accurate asset information enhances maintenance performance, increases equipment uptime, reduces consumption and carbon footprint

Achieve Supplier Goals

Sustainable Sourcing & Procurement

Reduce Capital Project costs: Supplier Life-Cycle View **with** vendor master data

Specify Sustainable Purchasing **needs**

Supply and demand matching **for** inventory optimization **and increased margins**

Gather Carbon and Footprint Impacts

Demand Driven **Supply Chain**

Sustainable Supply Chain

Procurement	Traceability	Commodity Trade & Risk Management	Resource Optimization	Supply Chain Optimization

Manage Risk & Cost

SAP EHS Management

…SAP enables EH&S managers to minimize losses by rapidly identifying risks needing corrective actions…

Air Emissions Management
Water Compliance
Permits, Incident Handling
Environmental Reporting
Occupational Health
Industrial Hygiene
Incident Mgmt

… Because only SAP's analytics automatically imports operational data from SAP and non-SAP systems for better decision support

Environment, Health and Safety | **Environmental Compliance** | **Occupational Health** | **Industrial Hygiene & Safety** | **Emergency Management**

IT Infrastructure Roadmap

… just not an Integration Problem

- **Close the loop between strategy and execution**
  SAP sustainability apps are pre-integrated with SAP Business Suite.
- **Analyze, optimize and co-innovate your value chain**
  SAP Business Suite is fully SOA enabled.
- **Holistically manage sustainability**
  Always understand the financial impact of your activities.

IT Infrastructure | **Availability, Security, Accessibility & Privacy** | **Green IT**

OIL & GAS –

Business Objectives

Scenario:	Business Objectives:
Allocation and Settlement	**Improving Regulatory Compliance** • Improved transparency and auditability of activities • Reduce risks of fines and penalties **Increase Speed & Efficiency** • Automate - eliminate errors due to manual processes **Increasing Transparency & Accountability** • Increase data transparency **Reducing Operating Costs & Increasing Efficiency** • Reduce administration, improve business processes
Bulk Supply Chain Execution and Settlement	**Improving Service Delivery** • Faster access to relevant information **Increase Speed & Efficiency** • Automate - eliminate errors due to manual processes **Increasing Transparency & Accountability** • Improve transparency and auditability of activities **Reducing Operating Costs & Increasing Efficiency** • Automation and standardization of business processes • Reduce transaction costs

OIL & GAS –

Business Objectives

Scenario:	Business Objectives:
Bulk Supply Chain Operations and Scheduling	**Increasing Revenue** • Improve capacity utilization **Increasing Transparency & Accountability** • Increase data transparency • Provide decision support **Reducing Operating Costs & Increasing Efficiency** • Automation and standardization of business processes • Lower logistics costs
Bulk Supply Chain Planning and Optimization	**Increase Speed & Efficiency** • Increase collaboration (internally & externally **Increasing Revenue** • Improve capacity utilization **Lowering Working Capital** • Shorten order-to-cash cycle **Reducing Operating Costs & Increasing Efficiency** • Lower logistics costs • Reduce inventory levels
Bulk Supply Chain Reporting and Analytics	**Improving Corporate Strategy** • Definition and monitoring of a set of targets for business activities **Increasing Transparency & Accountability** • Provide decision support

OIL & GAS –

Business Objectives

Scenario:	Business Objectives:
Capital Portfolio Management, Design & Construction	**Managing Fixed Assets & Resources** • Minimize investment in operating facilities • Improve physical inventory process • Improve return-on-investment (ROI) of fixed assets • Optimize capital equipment and asset utilization **Reducing Operating Costs & Increasing Efficiency** • Reduce transaction costs • Lower communications expenses • Reduce administration, improve business processes
Convenience Retailing	**Improving Customer Service** • Improve service quality **Increasing Revenue** • Efficient campaign planning and management • Improve customer retention and loyalty **Lowering Working Capital** • Reduce out-of-stock situation **Reducing Operating Costs & Increasing Efficiency** • Automation and standardization of business processes
Customer Service	**Improving Customer Service** • 24x7 customer self-service • Better service levels • Complaint management and tracking • Improve service quality • Provide a single face to the customer

OIL & GAS –

Business Objectives

Scenario:	Business Objectives:
E&P Contract Management	**Improving Customer Service** • Collaborate with business partners **Improving Regulatory Compliance** • Comply with future accounting and regulatory reporting requirements **Increase Speed & Efficiency** • Automate - eliminate errors due to manual processes **Increasing Security** • Improve document control, integrity and retention **Reducing Operating Costs & Increasing Efficiency** • Improve accounting processes
Exploration and Appraisal	**Improving Corporate Strategy** • Capital budgeting and allocation process • Support for the strategic planning process **Increase Speed & Efficiency** • Increase collaboration (internally & externally **Increasing Revenue** • Develop new markets **Increasing Transparency & Accountability** • Accurately calculate project risks

OIL & GAS –

Business Objectives

Scenario:	Business Objectives:
Hydrocarbon Products Transportation	**Improving Service Delivery** • Faster access to relevant information **Increasing Transparency & Accountability** • Increase data transparency **Reducing Operating Costs & Increasing Efficiency** • Automation and standardization of business processes • Lower logistics costs • Integrate processes across divisions and functions
Liquid and Gas Production	**Improving Corporate Strategy** • Production Growth **Improving Regulatory Compliance** • New business opportunities - participate in cutting edge "green tags" or "carbon credits" market **Increasing Transparency & Accountability** • Improvement of regulatory compliance **Lowering Working Capital** • Improve capacity utilization **Reducing Operating Costs & Increasing Efficiency** • Improve asset and maintenance management

OIL & GAS –

Business Objectives

Scenario:	Business Objectives:
Lubes Manufacturing Operations	**Increase Speed & Efficiency** • Speed innovative products / designs to market **Increasing Revenue** • Improve capacity utilization • Maximize profitability by product **Lowering Working Capital** • Increase inventory turns **Reducing Operating Costs & Increasing Efficiency** • Automation and standardization of business processes
Maintenance Management	**Managing Fixed Assets & Resources** • Optimize capital equipment and asset utilization • Reduce down-time **Reducing Operating Costs & Increasing Efficiency** • Improve procurement processes
Marketing Planning and Execution	**Increasing Revenue** • Efficient campaign planning and management • Extend market share • Improve customer retention and loyalty • Maximize profitability by customer • Develop new markets

OIL & GAS –

Business Objectives

Scenario:	Business Objectives:
Oil and Gas Paper Trading and Risk Management	**Improving Regulatory Compliance** • Comply with future accounting and regulatory reporting requirements • Reduce risks by permanent compliance tracking with internal and external regulations **Increasing Transparency & Accountability** • Improve transparency and auditability of activities • Support risk management **Reducing Operating Costs & Increasing Efficiency** • Removing maintenance of interfaces (Financial Accounting, Cash Management and Risk Management)
Opportunity to Cash	**Improving Customer Service** • Increase multi-channel delivery of services **Increasing Revenue** • Enable cross-sell/up-sell capability **Lowering Working Capital** • Shorten order-to-cash cycle **Reducing Operating Costs & Increasing Efficiency** • Automation and standardization of business processes • Re-deploy labor to higher value-added activities • Reduce order processing costs

OIL & GAS –

Business Objectives

Scenario:	Business Objectives:
Physical Oil and Gas Commodity Trading	**Improving Corporate Strategy** • Support for the strategic planning process **Increasing Revenue** • Maximize profitability by customer • Maximize profitability by product **Reducing Operating Costs & Increasing Efficiency** • Automation and standardization of business processes • Improve inventory visibility
Refining Operations	**Improving Regulatory Compliance** • Improve manufacturing plant operations by optimizing operating conditions against permit constraints **Increasing Revenue** • Improve capacity utilization **Managing Fixed Assets & Resources** • Reduce down-time **Reducing Operating Costs & Increasing Efficiency** • Improve inventory visibility • Reduction of costs for integration with Accounting and Finance Management
Remote Site Logistics	**Reducing Operating Costs & Increasing Efficiency** • Improve procurement processes • Automation and standardization of business processes • Minimize manual processes

OIL & GAS –

Business Objectives

Scenario:	Business Objectives:
Sales Planning and Account Management	**Improving Customer Service** • Strengthen partnerships and account management • Improve forecast accuracy **Increasing Revenue** • Efficient sales planning and management • Improve customer retention and loyalty • Maximize profitability by customer
Service Station Fuel Management	**Improving Regulatory Compliance** • Reduce risks of fines and penalties • Comply with future regulatory reporting requirements **Lowering Working Capital** • Reduce out-of-stock situation **Managing Fixed Assets & Resources** • Improve physical inventory process **Reducing Operating Costs & Increasing Efficiency** • Automation and standardization of business processes • Reduction of costs for integration with Accounting and Finance Management
Sourcing & Procurement	**Improving Service Delivery** • Reduce administration, improve business processes **Increasing Revenue** • Improve customer retention and loyalty **Reducing Operating Costs & Increasing Efficiency** • Reduce transaction costs • Reduce inventory levels

OIL & GAS –

Business Objectives

Scenario:	Business Objectives:
Terminal Management	**Improving Service Delivery** • Collaborate with business partners • Improved quality and accuracy **Increase Speed & Efficiency** • Automate - eliminate errors due to manual processes **Lowering Working Capital** • Reduce out-of-stock situation **Reducing Operating Costs & Increasing Efficiency** • Improve inventory visibility

Influence of Best Practice Coverage on *Key KPIs for Oil & Gas Companies*

Best Practice	Low Coverage		High Coverage
Revenue Growth *Every additional point in Revenue Growth = $xM in incremental operating income*	14.6%	56%	22.9%
Asset Utilization *Every 1% improvement in asset utilization = $xM in freed up capital*	1.13	53%	.53
COGS as % of Revenue *Every 1% reduction in Cost of Sales = $xM in incremental operating income*	66%	7%	61%
Days in Inventory *Every day of improvement in Days of Inventory = $xM in free cash flow*	32 days	78%	7 days

Performance Improvement Opportunity %

OIL & GAS –

Key Performance Indicators

Scenario:	Key Performance Indicators:
Allocation and Settlement	• Earnings Before Depreciation, Interest, And Tax • Capacity Utilization • Netback value
Bulk Supply Chain Execution and Settlement	• Number of Orders without Complete and Accurate Documentation • Operating Cash Flow • Days Of Sales In Backlog • Customer Invoicing, Accounting Costs • Inventory Carrying Costs
Bulk Supply Chain Operations and Scheduling	• Delivery Performance to Scheduled Commit Date • Cost of Goods Sold • Detailed Schedule Creation Time • Distribution Costs • Inventory accuracy
Bulk Supply Chain Planning and Optimization	• Delivery Performance to Scheduled Commit Date • Cost of Goods Sold • Capacity Utilization • Inventory Carrying Costs • Total Supply Chain Costs
Bulk Supply Chain Reporting and Analytics	• Distribution Costs • Forecast Accuracy • Inventory accuracy
Capital Portfolio Management, Design & Construction	• Rate Of Return On Capital • Return On Assets

OIL & GAS –

Key Performance Indicators

Scenario:	Key Performance Indicators:
Convenience Retailing	• Customer Satisfaction Index • Operating Expenses • Headcount • Supplier on time Delivery Performance • Inventory accuracy
Customer Service	• Number of Callbacks as % of total inquiries • Percentage of Customer Complaints • Percentage of Customers getting served via Internet Protocol • Percentage of Service Requests • Customer Satisfaction Index
E&P Contract Management	• Administration Costs Reductions • Customer Invoicing, Accounting Costs • Cycle Time: Inquiry to Contract • Fast close support • Faultless Invoices
Exploration and Appraisal	• Cash Flow • Economic Profit - Capital Charge • Internal Rate Of Return • Finding & Development costs • Reserves replacement ratio

OIL & GAS –

Key Performance Indicators

Scenario:	Key Performance Indicators:
Hydrocarbon Products Transportation	• Delivery Date Accuracy • Delivery Performance to Customer Request Date • Distribution Costs • Order Fulfillment Costs • Perfect Order Fulfillment
Liquid and Gas Production	• Return On Capital Employed • Lost Time Incident Ratio • Lifting Costs • Production Stoppage • Hazardous Materials Emissions
Lubes Manufacturing Operations	• Average Development Cost per New Product • Number of End Products,SKUs • Time to Market
Maintenance Management	• Return On Capital Employed • Incidence Rate (Per 100 FTEs) • Overtime Rate • Percentage of Planned Maintenance Work • Productivity • Production Stoppage • Capacity Utilization

OIL & GAS –

Key Performance Indicators

Scenario:	Key Performance Indicators:
Marketing Planning and Execution	• Campaign/Event Cost Revenue Ratio • Contact Efficiency • Percent of New Customers per Year • Percent Revenue Growth – Existing Customers
Oil and Gas Paper Trading and Risk Management	• Operating Cash Flow • Inventory Carrying Costs
Opportunity to Cash	• Customer Satisfaction Index • Sales Cycle Time (Orders) • Cycle Time: Inquiry to Contract • Order Fulfillment Costs • Invoice Accuracy Rate • Order Receipt to Order Entry Complete Time
Physical Oil and Gas Commodity Trading	• Cost of Goods Sold • Operating Cash Flow • Operating Revenue Margin
Refining Operations	• Operating Revenue Margin • Average Inventory • Return On Capital Employed • Material Stock shortfalls
Remote Site Logistics	• Delivery Performance to Scheduled Commit Date • Material Management and Planning Costs • Inventory

OIL & GAS –

Key Performance Indicators

Scenario:	Key Performance Indicators:
Sales Planning and Account Management	• Revenue • Revenue Per Full-Time Equivalent Employee • Sales • Selling Expenses • Contract Negotiation Time
Service Station Fuel Management	• Contribution Margin Rate • Gross Profit • Inventory Turnover
Sourcing & Procurement	• Supplier on time Delivery Performance • Supplier Service Level • Contract Negotiation Time
Terminal Management	• Inventory • Inventory accuracy • Inventory Days of Supply (Quantity) • Shrinkage

SAP Drives Oil & Gas Industry

550+ Oil & Gas Customers Worldwide

Broad global adoption of SAP by Oil & Gas Companies with 1.1 + Million Business Users

>30 years of industry expertise

The only complete and integrated solution that meets the needs of the oil and gas business lifecycle

Global use of SAP extends from super-majors and majors to national oil companies, independent producers, pipelines, refiners, and retailers as well as to oilfield mfg., supply, and services companies.

PetroChina
PETRONAS
LUKOIL OIL COMPANY
REPSOL
Saudi Aramco
中国海洋石油总公司 CHINA NATIONAL OFFSHORE OIL CORP.
OMV
Indian Oil
StatoilHydro
bp
ConocoPhillips
ExxonMobil
Chevron
PETROBRAS
TOTAL
PDVSA
SK
Marathon Oil Corporation
出光
>> to English

Oil & Gas SAP Business Portfolio

- Planning, Building, and Commissioning Assets
- Asset Visibility and Performance
- Operational Risk Management
- Optimized Asset Operation & Maintenance
- Centralized Sourcing and Contract Management (incl. SRM)
- *Operations Performance Management (selling ramp ups in 2010)*

- Manage Financial & Operational Performance
- Accelerated Global Financial Close
- Financial Shared Services
- Financial Value Chain
- Cash and Treasury Management
- Manage Risk and Compliance in Commodity Industries
- Manage Effective Venture Partnerships

- Integrated Trading and Scheduling
- Primary Distribution
- Secondary Distribution & Terminal Management

- Retail Network Operations
- Price Management & Optimization
- Loyalty Management

- Insight & Analytics
- Enterprise Information Management
- Business Process Management and Integration
- Project & Portfolio Management in IT
- IT Operations Management

- HR & Payroll (incl Shared services & BPO deployment)
- Talent Management

Color Legend:

- = New opportunity compared to 2009
- = Renamed from 2009
- = Same as 2009

SAP Oil & Gas Best Practices
comprehensive , integrated solutions

SAP is the only software solution provider with a complete solution from wellhead to pump

Upstream Solution Portfolio

Upstream | **Supply** | **Refining & Gas Plants** | **Primary Distribution** | **Secondary Distribution** | **Retail**

Joint Venture Accounting

Production & Revenue Accounting

Production Sharing Accounting

Remote Logistics Management

Upstream

Business challenges for Upstream Oil & Gas

- Increasing general and administrative costs
- Complex ownership structures
- Maintenance and scheduled downtime
- Simulations of asset acquisitions / divestures

SAP Solution

- ERP
- Joint Venture Accounting
- Production and Revenue Accounting
- Production and Sharing Accounting
- Remote Logistics Management
- Enterprise Asset Mgmt.
- Supplier Relationship Management
- Enterprise Performance Management

Business benefits

- Eliminate manual tasks, duplicate data entry, and manual reconciliations efforts
- Increase efficiency of reporting, consolidations and analytics
- Reduce maverick spend through compliance to contracts
- Increase supplier collaboration
- Increase asset uptime through optimized maintenance and scheduling
- Reduced capital expenditures

Refining / Manufacturing Portfolio

Upstream | **Supply** | **Refining & Gas Plants** | **Primary Distribution** | **Secondary Distribution** | **Retail**

Enterprise Asset Management

Plant Maintenance
Mobile Asset Management
Supplier Relationship Management

SAP Environmental Compliance

Compliance Mgmt.
Permit Management
Emissions Mgmt.
Greenhouse Gas Mgmt.

SAP MII Manufacturing Integration & Intelligence

Real-time Analytics, KPI's
Role-based Dashboards
Real-time connectivity, alerts

Lubes Manufacturing

Production Planning
Detailed Scheduling
Manufacturing Operations

Refining & Manufacturing

Business challenges for Oil & Gas Refining & Manufacturing

Capacity Constraints
Availability of Materials
Plant Downtime
Compliance

SAP Solution

ERP
IS/Oil Downstream
Enterprise Asset Management
Supplier Relationship Management
EH&S
MII

Business benefits

Consistent Raw Material at controlled price
Reduced Plant Outages and Downtime
Reduced Risk of Liability and Compliance Fines

Downstream Solution Portfolio

Upstream | **Supply** | **Refining & Gas Plants** | **Primary Distribution** | **Secondary Distribution** | **Retail**

Trader's & Scheduler's Workbench

Commodity Trading and Risk Management

IS-Oil Downstream

Oil & Gas Secondary Distribution

Supply, Transmission & Trading

Business challenges for Oil & Gas Supply, Transmission & Trading

- Market Volatility
- Capacity
- Supply & Demand Balance

Solution

- ERP
- Supply Chain Management
  - Advanced Planning & Optimization
  - Supply Chain Event Management
  - Lean Inventory Management
  - Railcar Management
- Enterprise Asset Management
- Traders & Schedulers Workbench
- Trading Risk Management
- Global Trade Management

Business benefits

- Level Management of Materials
- Financial Risk Mitigation
- Ability to project and meet demands

Service Station and Convenience Retailing Portfolio

Upstream	Supply	Refining & Gas Plants	Primary Distribution	Secondary Distribution	Retail

Convenience Retailing (incl. Store Management)

Assortment Planning
Merchandising
Retail Pricing
Promotions

Fuels Management

Fuel inventory
Fuel Pricing
Payment Card Handling
Dealer Settlement

Site and Headquarter Accounting

Rebate Management
Payment Card Processing
Site Settlement
Site Expense Invoice

Business Analysis and Reporting

Sales Analysis
Vendor Performance
Loyalty Card Processing
Franchisee Support

Downstream

... Marketing & Retail

Business challenges for Oil & Gas Marketing & Retail

- Support the trade promotion spending and volume-planning processes
- Plan, sell, deliver, execute, validate, track, monitor, pay, reconcile, and evaluate the promotion and volume plans.

Solution

- ERP
- Enterprise Asset Management
- Supply Chain Management
  - Advanced Planning & Optimization
- Terminal Automation System
- Oil & Gas Secondary Distribution
- Service Station & Convenience Retailing

Business benefits

- Increased trade efficiency
- Increase return on investment
- Reduce capital expenditures
- Single source of sales planning data
- Remote and online sales planning function

Oil Field

... Mfg., Supply, & Services

Business challenges for OFS Oilfield Mfg., Supply, & Services

- Ineffective capital expenditure management
- Extensive delays in time to repair
- Containment of operating expenses
- Optimizing asset utilization
- High risk of Health, Safety and Environmental (HS&E) issues

Solution

- ERP
- Enterprise Asset Management
- Supplier Relationship Management
- Environmental Health and Safety

Business benefits

- Increased Production
- Improved schedule attainment
- Increase maintenance productivity
- Reduce overtime
- Reduce emergency purchases
- Increase planning/budgeting efficiency
- Improve equipment availability
- Reduce excess inventory
- Faster repair cycles

O&G Business Challenge
... Supply Chain & Detail Scheduling

- Managing the bulk supply chain can represent as much as 80% or more of your business, Analysts and companies believe a 50 cents per barrel saving can be achieved with SCM – that's $35 million per day for the industry!
- The "glue" that cements the whole process together is the Operations and Scheduling stage – dealing with the Real World and performing the business there.
- Currently the daily work of a scheduler is spread over several instance and screens - or even worse: different systems.
- Since scheduling is a complex task, multiple transactions need to be supervised and executed.

Solution – TSW

Design & Implementation - Scheduling Cockpit

The Scheduling Cockpit offers tailor-made portal access for a Scheduler of an Company that has to plan bulk movements; the screen covers the daily business requirements that a scheduler is facing

- The Design and Implementation Service for Scheduling Cockpit as a tool will help your schedulers to do their work more efficiently.
- Access scheduling functions via a tailor-made Portal makes the daily work for a scheduler much easier - faster decision making, tracking and avoid mistakes!
- Our service utilizes the capabilities of SAP NetWeaver and the functional strength of the Traders and Schedulers Workbench to create a single platform to manage scheduling activities.
- From designing, to prototyping and up to a full-scale implementation: this service is scalable.
- Does not compete with any functionality in the SAP Standard releases.

Design and Implementation for
Scheduling Cockpit – Approach and Deliverables

Approach/Activities

- Define Scope and Responsibilities
- On-site workshops ("As-Is analysis")
- Analysis of scheduler's requirements
- Adapt design template, mapping to back-end scheduling solution (TSW)
- Set-up Composition Environment
- This Service is Scalable :
  - "Net new" (in parallel w/ TSW)
  - "On top" of existing TSW

Results/Deliverables

- Defined scenarios with clear objectives, mapped to TSW and other applications ("To-Be" processes)
- Implementation approach; Project Plan (separated implementation in parallel with overall SCM approach)
- Set-up CE 7.x (or other release)
- Tailor-made Portal for a scheduler (incl. Documentation); fully integrated with TSW and ERP

TSW Business Benefits and Value Proposition

- SAP TSW is the world's No. 1 scheduling application for Oil & Gas
- Access scheduling functions via a tailor-made Scheduling cockpit makes the daily work for a scheduler much easier
- This service can be combined with a TSW implementation which enables integration among Operative and Commercial areas
- TSW will already give you a unique source information – the scheduling cockpit simplifies it!
- It can be adapted / enhanced for various business processes, e.g. marine scheduling, laytime & demurrage handling, Vetting; Event handling; etc.
- Upcoming TSW functions (e.g. Dynamic Scheduling) can be incorporated)

O&G Business Challenge

Pipeline Visualization & Scheduling

- Pain Points
  - Since scheduling is a complex task, multiple transactions need to be supervised and executed in real time.
  - Complex nomination processes put a huge data and workload on a scheduler's desk.
  - Pipeline networks require sophisticated allocation processes and up-to-date inventory information – batches needed to be located time, quality and quantity wise.

- Goals/Needs
  - Managing the bulk supply chain can represent as much as 80% or more of your business, Analysts and companies believe that up to 50 cents per barrel of savings can be achieved with efficient Supply Chain Management – that’s $35 million per day for the industry!
  - Front end scheduling functions should have an intuitive GUI allowing easy access to data and functionality to optimize that data.
  - Scheduling functions should be tightly coupled with back end realizations to enable a fast and error free translation of plans to actions.

Pipeline Visualization Solution:
… Design and Implementation Tool

The Pipeline visualization tool designed and implemented by our service is a tailor-made "add-on" that takes the usability and comfort within the nomination process to a higher level

- Seamless integration in existing *SAP for Oil & Gas* solution
- The graphical display of transportation scheduling documents (nominations) in the pipeline network supports the scheduler with his daily work
- A range of functionalities including viewing pipeline batches, switching batches between nodes to achieve operational optimization, and validations and plausibility checks on operations based on capacities and physical constraints are delivered.
- Easier and faster hands-on experience for new colleagues

Design and Implementation
Pipeline Visualization Tool – Approach and Deliverables

Approach/Activities

- Define Scope and Responsibilities
- On-site workshops ("As-Is analysis")
- Analysis of nomination requirements
- Adapt design template, model TSW master data concept
- Set-up Adobe Flex Development environment

Results/Deliverables

- Project Plan with defined scope
- Design of prototype
- Implementation result: Graphical visualization of the pipeline network and the nomination(s)
- A flexible add-on which prepares and displays specific information on nomination/pipeline network basis
- Advanced capabilities for working with pipeline batches is built as per business requirements.

Architecture – components

SAP for Oil &Gas - Pipeline Visualization

The Pipeline Visualization is based on:

- SAP NetWeaver technology
- Data preparation in the SAP ERP Backend
- Elements of the graph theory (algorithms, data model)
- Processing in the SAP NetWeaver J2EE Engine
- Developed with the Adobe Flex development infrastructure

Architecture – components

SAP for Oil & Gas - Pipeline Visualization

SAP ERP 6.0

SAP NetWeaver2004s (J2EE 7.0)

SAP NetWeaver (2004s)

Functional Enhancements

Scalable Vector Graphics (SVG)

JSP (view)

EJB, Servlets (business logic)

ABAP (function blocks, data model)

Example ...
How the network looks like

SAP for Oil & Gas - Pipeline Visualization

Example ...
Viewing nominations and paths

SAP for Oil & Gas - Pipeline Visualization

Graph control bar

Graph

00000000000000006607

Properties

Key	Value

1. Select starting node: RAUNHEIM

2. Select nomination:

Key	Value	
0000006609	05.03.2010 O	1.050,000 M3
0000006606	05.03.2010 D	2.100,000 M3
0000006607	06.03.2010 D	1.890,000 M3

3. Select target node:

Assign Cancel

Example ...
Mouse overs and node switch selection

SAP for Oil & Gas - Pipeline Visualization

Example ...
the switch after , and the new path

SAP for Oil & Gas - Pipeline Visualization

Graph control bar

Graph

00000000000000006607

Properties

Key	Value

1. Select starting node: ESSEN

2. Select nomination:

Key	Value	
0000006604	27.02.2010 D	3.256,000 M3
0000006607	05.03.2010 D	1.890,000 M3
0000006608	04.03.2010 O	850,000 M3

3. Select target node:

Assign **Cancel**

TSW MD definitions
…..pipeline network layout

Note: The pipeline above does not represent a real physical pipeline, but only a representation of TSW master data object, Transport System. The physical pipeline is represented in the picture below.

SAP SOLUTION MAPs !

OIL & GAS
Industry Solution Maps

OIL & GAS
Industry Solution Maps

OIL & GAS - UPSTREAM
Industry Solution Maps

Suppliers & Partners	Exploration & Appraisal	Development & Production	Hydrocarbon Supply & Gas Transmission	Refining & Manufacturing	Primary Distribution	Terminal Management	Secondary Distribution	Commercial Sales & Retailing	Customers & Channels
	Upstream								

Exploration and Appraisal

- Portfolio and Risk Analysis (SAP S6,S28,S34,S38)
- Identify Potential Exploration Targets
- Acquire Leases and Licenses (SAP S6 P ◆P6)
- Surveying, Positioning & Evaluation
- Exploration and Appraisal Drilling for Boundary Determination (SAP S25)
- Build Reservoir Models

E&P Contract Management

- JOA/PSC Strategic Planning (SAP S6,S30,S38)
- JOA/PSC Opportunity Analysis (SAP S38)
- JOA/PSC Development (SAP S6,S38)
- Venture Equity Trading (SAP S6,S38)
- Joint Venture Management (SAP S6,S38)
- PSC Management (SAP S6,S38)
- Third Party Drilling Contract Management (SAP S6)
- Third Party Drilling Contract Development (SAP S25)

Liquid and Gas Production

- Well Mapping (SAP S39)
- Capacity Management (SAP S39 ●P3) P
- Production Execution (SAP S29,S39 P ●P3)
- Capture Field Data (SAP S29,S39 P ●P3)
- Volume Determination (SAP S39 ●P3) P
- Monitor Reservoir Model
- Environmental Compliance Health and Safety (SAP S7)
- Emissions Management (SAP S5,S7) P
- Secondary and Tertiary Recovery
- Depletion Planning
- Well Abandonment & Site Restoration (SAP S6,S7)

Allocation and Settlement

- Contractual Allocation (SAP S6,S39 P ●P3)
- Ownership Allocation (SAP S6,S39 P ●P3)
- Lease Fuel Valuation (SAP S39)
- Revenue Accounting (SAP S39)
- Gas Plant Accounting P
- Regulatory Reporting (SAP S39)
- Reserves Accounting and Reporting

● SAP Product Available ▶ SAP Product Available with Future Releases ◉ Future Focus P Partner Product Available P▶ Partner Product Available with Future Releases

OIL & GAS - Supply, Transmission & Trading
Industry Solution Maps

Suppliers & Partners	Exploration & Appraisal	Development & Production	Hydrocarbon Supply & Gas Transmission	Refining & Manufacturing	Primary Distribution	Terminal Management	Secondary Distribution	Commercial Sales & Retailing	Customers & Channels

Supply, Transmission & Trading

Bulk Supply Chain Planning and Optimization

- Demand Planning & Forecasting (SAP S6, S37)
- Supply Planning & Sourcing (SAP S6,S37)
- Trade Planning (SAP S6,S37)
- Allocation Planning (SAP S6,S37)
- Exchanges & Terminalling Planning (SAP S6,S37)
- Bulk Schedule / Program Planning (SAP S6,S37)
- Inventory Planning (SAP S6,S37)
- Bulk Transportation Planning (SAP S6,S37)
- Strategic Planning (SAP S6,S37 P2)

Bulk Supply Chain Operations and Scheduling

- Bulk Marine Voyage Scheduling (SAP S37)
- Bulk Batched Pipeline Scheduling (SAP S37)
- Bulk Operational Inventory Management (SAP S37 P4)
- Contract Operations Management (SAP S37)
- Bulk Supply Chain Monitoring & Control (SAP S37)
- Export / Import Compliance Management (SAP S19,S20,S37)
- Bulk Schedule Management (SAP S37)
- Bulk Rail Scheduling (SAP S37)
- Bulk Continuous (non-Batched) Pipeline Scheduling (SAP S37)

(continued...)

- Exchanges & Terminalling Operations Management (SAP S37)
- Freight Management (SAP S37)
- Allocation Management

Bulk Supply Chain Execution and Settlement

- Custody Transfer Management (SAP S37 P4)
- Inventory Update & Management (SAP S37 P4)
- Bulk Movement Invoicing & Settlement (SAP S37)
- Inventory Valuation Update & Management (SAP S37)
- Allocation Processing (SAP S37)
- Exchanges & Terminalling Execution and Settlement (SAP S37 P4)
- Hydrocarbon Quantity Conversion (SAP S37)
- Inventory Reconciliation (SAP S37 P4)

(continued...)

- Exchanges & Terminalling Reconciliation (SAP S37 P4)
- Customs Execution Management (SAP

Bulk Supply Chain Reporting and Analytics

- Bulk Movement Planned / Actual Analyses (SAP S6,S37)
- Bulk Movement Profit / Loss Analyses (SAP S6,S37 P2)
- Planning Forecast & Actuals Analyses (SAP S6,S37)
- Exchange Balance Reporting (SAP S6,S37)
- Inventory Analyses (SAP S6,S37)
- Trading Analyses (SAP S6,S37 P2)
- Contract Performance Analyses (SAP S6,S37)
- Transportation Performance Analyses (SAP S6,S37)
- Bulk Supply Chain Tax Reporting (SAP S6,S37)
- Asset Utilization Analyses (SAP S6,S37)

Physical Oil and Gas Commodity Trading

- Deal Capture Management (SAP S6 P2)
- Trade Contract Management (SAP S6,S37 P2)
- Position Management (Long/Short; MtM etc) (SAP S6 P2)
- Portfolio & Strategy Mgmt (SAP S6 P2)
- Trading Commodity Pricing (SAP S6,S37 P2)
- Export / Import Compliance Management (SAP S6,S19,S20)

Oil and Gas Paper Trading and Risk Management

- Risk Assessment and Evaluation (SAP S6,S14 P2)
- Deal Capture Management (paper) (SAP S6,S14 P2)
- Paper Contract Management (SAP S6,S14 P2)
- Portfolio & Strategy Management (SAP S6,S14 P2)
- Treasury & Financial Management (SAP S6,S14)

OIL & GAS – Refining & Manufacturing
Industry Solution Maps

Suppliers & Partners	Exploration & Appraisal	Development & Production	Hydrocarbon Supply & Gas Transmission	Refining & Manufacturing	Primary Distribution	Terminal Management	Secondary Distribution	Commercial Sales & Retailing	Customers & Channels
			Refining & Manufacturing						

Refining Operations	Lubes Manufacturing Operations
Demand Planning (SAP S6)	Supply Plan & Sourcing (SAP S16)
Crude & Feedstock Inbound Processing (SAP S6)	Supply Chain Monitoring and Control (SAP S16,S30)
Refinery Production Planning & Scheduling	Inbound Processing for Base Oils and Additives (SAP S6,S16)
Refined Product Outbound Processing (SAP S6)	Lubes Production Planning (SAP S6,S16)
Semi-finished Products Blending (SAP S6)	Lubes Production Scheduling (SAP S6,S16)
Emissions Management (SAP S5)	Lubes Blending & Packaging (SAP S6,S16)
	Warehousing and Storage (SAP S6,S16)
	Outbound Processing of Finished Products (SAP S6,S16)
	Quality Assurance and Control (SAP S6,S16)

OIL & GAS – Downstream Marketing & Retailing
Industry Solution Maps

Suppliers & Partners	Exploration & Appraisal	Development & Production	Hydrocarbon Supply & Gas Transmission	Refining & Manufacturing	Primary Distribution	Terminal Management	Secondary Distribution	Commercial Sales & Retailing	Customers & Channels
						Downstream Marketing & Retailing			

Marketing Planning and Execution

- Customer Profitability Analysis (SAP S4,S6)
- Marketing Planning and Budgeting (SAP S4)
- Campaign Planning and Execution (SAP S4)
- Customer Segmentation (SAP S4)
- Surveying Customers with Interaction Center (SAP S4)
- Campaign Monitoring and Analysis (SAP S4)
- Lead Processing (SAP S4)

(continued...)

Sales Planning and Account Management

- Sales Planning and Forecasting (SAP S4)
- Sales Pipeline and Funnel Analysis (SAP S4)
- Sales Performance Analysis (SAP S4)
- Account Processing (SAP S4)
- Activity Processing (SAP S4)
- Account Analysis (SAP S4)
- Analytics for Field Sales Force (SAP S4)

Opportunity to Cash

- Activity Processing (SAP S4)
- Opportunity Processing (SAP S4)
- Inquiry Processing (SAP S6,S36)
- Quotation Processing (SAP S4,S6)
- Contract Processing (SAP S4,S6,S33,S36)
- Sales Order Processing (SAP S4,S6,S36 ◆P7)
- In- and Outbound Telesales (SAP S4,S36)
- E-Commerce Sales Order Processing (SAP S4,S6)

Customer Service

- Customer Service Interaction Center (SAP S4)
- Information Help Desk (SAP S4)
- Live Web Collaboration (SAP S4)
- Self-Service Support through FAQ and Solution Search (SAP S4)
- Complaints Processing (SAP S4,S6)
- Complaints and Returns Analysis (SAP S4)
- Service Performance Analysis (SAP S4)

Terminal Management

- Physical Stock Monitoring (SAP S4,S6 ◆P4)
- Physical Stock and Book Stock Reconciliation (SAP S4 ◆P4)
- Shared Depot Handling (SAP S4 ◆P4)
- Replenishment Planning (SAP S36 ◆P4)
- Supplier Managed Inventory Processing (◆P4)
- Hydrocarbon Quantity Conversion (SAP S4)
- Terminal Automation (SAP S4 ◆P4)

Hydrocarbon Products Transportation

- Bulk Transportation Planning (SAP S4,S36 ◆P4)
- Bulk Transportation Execution (SAP S4,S36 ◆P4)
- Packaged Products Transportation Planning (SAP S6)
- Packaged Products Transportation Execution (SAP S6)
- Freight Cost Handling (SAP S4,S6)
- Bulk Shipment Reporting (SAP S4)

(continued...)

Service Station Fuel Management

- Station Fuel Pricing (SAP S4 ◆P5)
- Fuel Book Stock Management (SAP S4)
- Fuel Tank Management and Inventory Reconciliation (SAP S4)
- Payment Card Settlement (SAP S4)
- Station Dealer Settlement (SAP S4)

Convenience Retailing

- Category Planning and Analytics
- Assortment Management
- Physical Inventory
- Store Replenishment
- Supply Chain Visibility & Tracking
- Retail Pricing
- Promotion Management
- Store Promotion Management
- Merchandise Distribution
- Customer Loyalty Analysis
- POS Data Analytics
- Data Download

OIL & GAS – Downstream Marketing & Retailing
Industry Solution Maps

Suppliers & Partners	Exploration & Appraisal	Development & Production	Hydrocarbon Supply & Gas Transmission	Refining & Manufacturing	Primary Distribution	Terminal Management	Secondary Distribution	Commercial Sales & Retailing	Customers & Channels
						Downstream Marketing & Retailing			

Marketing Planning and Execution	Sales Planning and Account Management	Opportunity to Cash	Customer Service	Terminal Management	Hydrocarbon Products Transportation	Service Station Fuel Management	Convenience Retailing
• Lead Analysis (SAP S4) • Analyzing local data with Mobile Client (SAP S4)		• Delivery Processing (SAP S4,S6) • Billing (SAP S4,S6) • Opportunity Analysis (SAP \ S4) • Contract Analysis (SAP S4) • Sales Quotation and Order Analysis (SAP S4) • Managing Catalog Content (SAP S4)			• Fleet Management (SAP S6) • Tour Planning (SAP S36) • Data Collation (SAP S36) • Export Control (SAP S19,S19)		• Data Upload • Category Planning & Analytics

OIL & GAS – Enterprise Asset Management
Industry Solution Maps

Suppliers & Partners	Exploration & Appraisal	Development & Production	Hydrocarbon Supply & Gas Transmission	Refining & Manufacturing	Primary Distribution	Terminal Management	Secondary Distribution	Commercial Sales & Retailing	Customers & Channels
	Enterprise Asset Management								

Capital Portfolio Management, Design & Construction

- Capital Portfolio Management (SAP S6,S34)
- Project Planning and Scoping (SAP S6)
- Project Execution (SAP S6)
- Document Management (SAP S6)
- Collaborative Specification & Design (SAP S6)
- Collaborative Construction (SAP S6,S31,S40 ◆P1)
- Data Handover (SAP S6,S31,S40 ◆P1)

Sourcing & Procurement

- Requirement Processing (SAP S6,S17,S18)
- Source of Supply Management (SAP S6,S17,S18)
- Processing Purchase Orders (SAP S6,S17,S18)
- Service Entry (SAP S6,S17)
- Inbound Processing and Receipt Confirmation (SAP S6,S17)
- Invoicing (SAP S6,S17)
- Supplier Order Collaboration (SAP S6,S17,S18)

Maintenance Management

- Technical Assets Management (SAP S6,S40)
- Document Management (SAP S6)
- Preventive & Predictive Maintenance (SAP S6,S29)
- Quality Management (SAP S6)
- Reliability-Centred Maintenance (SAP S6 ◆P8)
- Maintenance Cost Budgeting (SAP S6)
- Work Clearance Management (SAP S11)
- Shutdown/Turnaround Management (SAP S6 ●P1)
- Inspection Management (SAP S6)
- Rotables Managment (SAP S6)
- Mobile Asset Management (SAP S6)
- Planning, Scheduling and Dispatching (People/Tools) (SAP S6 ●P1)
- Asset Transfer & Disposal (SAP S6)
- Analytics and Reporting (SAP S6,S30)

Remote Site Logistics

- Requirement Processing (SAP S6,S15)
- Processing Purchase Orders (SAP S6,S15)
- Service Entry (SAP S6,S15)
- Outbound Processing from Base/Remote Locations (SAP S15)
- Inbound Processing at Base/Remote Locations (SAP S15)
- Material Tracking (SAP S15)
- Returns Management (SAP S15)

Voyage Management and Information System (SAP S15)

OIL & GAS – Enterprise Management & Support Industry Solution Maps

Analytics

Financial Analytics	Operations Analytics	Workforce Analytics
Financial and Management Reporting (SAP S6)	Sales Planning (SAP S6)	Workforce Planning (SAP S6)
Financial Planning, Budgeting and Forecasting (SAP S2,S6)	Procurement Analytics (SAP S6)	Workforce Cost Planning & Simulation (SAP S6)
Profitability Analytics (SAP S2,S6)	Inventory and Warehouse Management Analytics (SAP S6)	Workforce Benchmarking (SAP S6)
Product and Service Cost Analytics (SAP S6)	Manufacturing Analytics (SAP S6)	Workforce Process Analytics & Measurement (SAP S6)
Overhead Cost and ABC/M Analytics (SAP S2,S6)	Transportation Analytics (SAP S6)	Talent Management Analytics & Measurement (SAP S6)
Payment Behavior Analytics (SAP S6)	Sales Analytics (SAP S6)	Strategic Alignment (SAP S6)
Legal and Management Consolidation (SAP S2,S6)	Customer Service Analytics (SAP S6)	
Balanced Scorecard (SAP S6)	Program and Project Management Analytics (SAP S6)	
Risk Management (SAP S6,S24)	Quality Management Analytics (SAP S6)	
Management Cockpit (SAP S6)	Asset Analytics & Performance Optimization (SAP S6)	
Corporate Investment Management (P9)		

OIL & GAS - Enterprise Management & Support Industry Solution Maps

Financials

Financial Supply Chain Management	Treasury	Financial Accounting	Management Accounting	Corporate Governance
Electronic Bill Presentment and Payment (SAP S6,S8)	Treasury and Risk Management (SAP S6,S12,S14)	General Ledger (SAP S6)	Profit Center Accounting (SAP S6)	Audit Information System (SAP S6)
Collections Management (SAP S6,S8)	Cash and Liquidity Management (SAP S6,S12,S14,S30)	Accounts Receivable (SAP S6)	Cost Center and Internal Order Accounting (SAP S6)	Management of Internal Controls (SAP S6,S23)
Credit Management (SAP S6,S8)	In-House Cash (SAP S6,S12,S13,S14)	Accounts Payable (SAP S6)	Project Accounting (SAP S6)	Risk Management (SAP S6,S24)
Dispute Management (SAP S6,S8)	Bank Communication Management (SAP S6,S8,S14,S26)	Contract Accounting	Investment Management (SAP S6)	Whistle Blower Complaints (SAP S6)
		Fixed Assets Accounting (SAP S6)	Product Cost Accounting (SAP S6)	Segregation of Duties (SAP S22)
		Bank Accounting (SAP S6)	Profitability Accounting (SAP S6)	
		Cash Journal Accounting (SAP S6)	Transfer Pricing (SAP S6)	
		Inventory Accounting (SAP S6)		
		Tax Accounting (SAP S6)		
		Accrual Accounting (SAP S6)		
		Local Close (SAP S3,S6)		
		Financial Statements (SAP S6)		

OIL & GAS - Enterprise Management & Support Industry Solution Maps

Human Capital Management

Talent Management

- Recruiting (SAP S1,S6)
- Career Management (SAP S6)
- Succession Management (SAP S6)
- Enterprise Learning (SAP S6)
- Employee Performance Management (SAP S6)
- Compensation Management (SAP S6)

Workforce Process Management

- Employee Administration (SAP S6)
- Organizational Management (SAP S1,S6)
- Global Employment (SAP S6)
- Benefits Management (SAP S6)
- Healthcare Cost Management (SAP S6 ◆P3)
- Time and Attendance (SAP S1,S6)
- Payroll and Legal Reporting (SAP S6)
- HCM Processes & Forms (SAP S6,S27,S32)

Workforce Deployment

- Project Resource Planning (SAP S6,S35,S41)
- Resource and Program Management (SAP S6,S34,S35,S41)
- Retail Scheduling (SAP S6,S35,S41)

Corporate Services

Travel Management

- Travel Request and Pre-trip approval (SAP S1,S6)
- Travel Planning - Online Booking (SAP S6)
- Travel and Expense Management (SAP S6)
- Global Travel Policy Compliance (SAP S6)
- Travel and Expense Analytics (SAP S6)

Environment, Health, and Safety Compliance Management

- Environment, Health & Safety (EH&S) (SAP S6,S7)
- Environmental Compliance (SAP S5,S6,S7)
- Compliance for Products (SAP S6,S7)

Incentive and Commission Management

- Incentive Business Configuration (SAP S6)
- Incentive Plan Maintenance (SAP S6)
- Incentive Processing (SAP S6)

Real Estate Management

- Portfolio Management (SAP S6,S10)
- Commercial Real Estate Management (SAP S6,S10)
- Corporate Real Estate Management (SAP S6,S10)
- Facilities Management (SAP S6,S7,S9,S10)
- Support Processes (SAP S6,S8,S10,S14)

OIL & GAS - Enterprise Management & Support
Industry Solution Maps

Operations Support

Life-Cycle Data Management	Project and Portfolio Management	Quality Management	Indirect Procurement	Global Trade Services	Global Trade Management
Document Management (SAP S6)	Project Planning (SAP S6,S34)	Quality Engineering (SAP S6)	Requisitioning (SAP S6)	Export Management (SAP S19)	Trading Contract Management (SAP S6)
Product Structure Management (SAP S6)	Resource and Time Management (SAP S6,S34)	Quality Assurance / Control (SAP S6)	Purchase Order Management (SAP S6)	Import Management (SAP S20)	Expense Management (SAP S6)
Recipe Management (SAP S6)	Project Execution (SAP S6)	Quality Improvement (SAP S6)	Receiving (SAP S6)	Trade Preference Management (SAP S21)	Trading Execution Management (SAP S6)
Specification Management (SAP S6)	Project Accounting (SAP S6,S34)	Audit Management (SAP S6,S6)	Financial Settlement (SAP S6)	Restitution Management (SAP S20)	Position Management (SAP S6)
Change and Configuration Management (SAP S6)	Prototyping and Ramp-Up (SAP S6)				Risk Management (SAP S6)
	Development Collaboration (SAP S6)				

O&G Applications – UpGraded & Enhanced

Component	July 2009	September 2009	February 2010
SAP ERP	ERP 6.0 EhP3 SP03, 32 bit	ERP 6.0 EhP4 SP03, 64 bit	
APO	SCM 5.1	SCM 7.0	
NW	NetWeaver 7.0 32 bits CE 7.1		NetWeaver 7.2 64 bits CE 7.1 SP08
BW(BI) / Portal	v. 7.0 SP13, 32 bit	v. 7.0 EhP1 SP04, 64 bit	
PI	v. 7.0 SP06, 32 bit		v. 7.11 EhP1, 64 bit
CE iwdf2109	v. 7.1		v. 7.1 SP08, 64 bit
Sol Man		SolMan 7.0 EhP1 SP20	
new			BOBJ MII 11.5 BOx (Polestar)

OIL & GAS – SAP Solution Ecosystem & Landscape

Key	Description
S1	DUET
S2	SAP Business Planning and Consolidation
S3	SAP Central Process Scheduling by Redwood
S4	SAP Downstream Marketing & Logistics for Oil & Gas
S5	SAP Environmental Compliance
S6	SAP ERP
S7	SAP ERP: Environment, Health and Safety
S8	SAP ERP: Financial Supply Chain Management - Biller Direct, Dispute, Credit and Collections Mgmt.
S9	SAP ERP: Sales/Service Order Processing
S10	SAP ERP: SAP Real Estate Management
S11	SAP ERP: SAP Work Clearance Management
S12	SAP ERP: Treasury - SAP Bank Communication Management
S13	SAP ERP: Treasury - SAP In-house Cash
S14	SAP ERP: Treasury - SAP Treasury and Risk Management
S15	SAP Extended Asset Logistics for Oil & Gas
S16	SAP Extended Manufacturing for Oil & Gas
S17	SAP Extended Procurement for Oil & Gas
S18	SAP Extended Sourcing for Oil & Gas
S19	SAP Global Trade Services - Export
S20	SAP Global Trade Services - Import
S21	SAP Global Trade Services - Trade Preference
S22	SAP GRC Access Control

OIL & GAS – SAP Solution Ecosystem & Landscape

Key	Description
S23	SAP GRC Process Control
S24	SAP GRC Risk Management
S25	SAP Integrated Exploration and Production (SAP IEP)
S26	SAP Integration Package for SWIFT
S27	SAP Interactive Forms by Adobe
S28	SAP Knowledge Warehouse
S29	SAP Manufacturing Integration and Intelligence (SAP MII)
S30	SAP NetWeaver
S31	SAP NetWeaver Master Data Management
S32	SAP NetWeaver Records Management
S33	SAP Price and Margin Management by Vendavo
S34	SAP Resource and Portfolio Management (SAP RPM)
S35	SAP Resource Management for Professional Services
S36	SAP Secondary Distribution for Oil & Gas
S37	SAP Supply Chain Management for Oil & Gas
S38	SAP Upstream Contracts Management for Oil & Gas
S39	SAP Upstream Production Management for Oil & Gas
S40	SAP Visual Information for Plants by NRX (SAP VIP)
S41	SAP Workforce Management for Retail and Wholesale Distribution

OIL & GAS – Solution Ecosystem & Landscape

SAP Partner Products Powered by SAP NetWeaver

Key	Description
P1	External Scheduling
P2	LogicNet Plus by Logic Tools
P3	Prodis PbNW by LogicaCMG (for gas production)

SAP Endorsed Business Solutions

Key	Description
P1	AssetHub 4.5 by NRX
P2	Commodity SL 5.6 by Triple Point Technology
P3	Health Benefits Management for ERP v.2.0 by VitalSpring
P4	OpenTas 4.0 by Implico
P5	PriceNet 4.5 by KSS
P6	Quorum Land System 5.0 by Quorum
P7	Rackprice 1.1 by KSS
P8	RCMO - Reliability Centered Maintenance and Optimization for SAP Service and Asset Management by Meridium
P9	zetControl Corporate Investment Management (CIM) 1.5. by zetVisions

Architecture - System landscape
...Communication Structure

Architecture - System landscape
... ERP Client Strategy

SAP BTS Value Discovery Offer

Help You Identify and Prioritize Quick Wins

Extensive Repository of Benchmarks and Best Practice based on 2000+ customer engagements

Rapid & Efficient Business Processes Health Check

Collaborative Prioritization of Quick Wins

ABC's Estimated Benefits: $189–$254 M Annual and $135–$176 M One-time

Potential **Annual** Benefits: $189 M – $254 M

Potential **One-time** Benefits: $176 M – $176 M

Conservative Estimate
Likely Scenario
One-time benefit

Direct Materials Procurement	**$119 M**	**$149 M**
Reduced Global and PO Price Gap	$61 M	$69 M
Reduced Spend via Parts Consolidation	$13 M	$19 M
Increased RFQ Automation	$29 M	$39 M
Reduced Spend via Delaying Purchases	$16 M	$22 M
Supply Chain Management	**$43 M**	**$68 M**
Reduced Inventory (One-time)	$120 M	$150 M
Reduce Obsolete Inventory	$15 M	$26 M
Reduce Inventory Carrying Costs	$16 M	$23 M
Reduce Expedited Transportation	$17 M	$26 M
Reduce Freight Costs	$10 M	$19 M
Manufacturing	**$5 M**	**$7 M**
Reduce Labor Expenses	$3 M	$5 M
Reduce Non-Labor Expenses	$2 M	$2 M

Quotation Management	**$7 M**	**$10 M**
Improved Margins for New Quotes	$5 M	$7 M
Improved Quoting-related Efficiency	$2 M	$3 M
Human Resources	**$7 M**	**$10 M**
Reduced Employee Turnover	$4 M	$6M
Increased Manager Self-Service	$3 M	$4 M
Finance/ Analytics	**$8 M**	**$10 M**
Improved Analytics-related Efficiency	$4 M	$5 M
Reduced Treasury Transaction Cost	$4 M	$5 M

Oil & Gas Service Portfolio

Reliance Industries Limited

SAP

Level of SAP Engagement

	PLANNING Define business process and IT roadmap	BUILDING Deploy initially or expand	RUNNING Run and incrementally improve total cost and value
Complete Execution We deliver a complete solution	Program and Project Management Business Process Design Solution Implementation Solution Optimization and Upgrade Custom Solution Development and Maintenance Hosting & Application Management		
Expert Guidance We solve key challenges	Business and IT Strategy Consulting Solution Architecture Design Technology Architecture Design Support and Operations Strategy	Solution Expert Consulting Solution Integration Technical Implementation Implementation and Optimization of Support and Operations	Conversion, Migration and Landscape Optimization
Quality Management We audit and provide directions	Solution Assessment Quality and Risk Management		
Enablement We provide knowledge and qualification	Enablement and Assessment of Support and Operations Training, Education and Certification		

FS Hub

Collaboration with BTS.

Enabled through other FS Teams

OGMPM Portfolio

Innovation Areas

Services

- Implementation for SAP Trader's and Scheduler's Workbench (TSW)
- Prototyping Service for SAP Trader's and Scheduler's Workbench
- Design & Implementation Service for a Scheduling cockpit
- Design and Implementation Service for a Pipeline Visualization Tool
- Design and Implementation Service for Upstream Accounting
- Implementation Service for SAP for Oil & Gas (IS Oil Downstream, *includes BBP and IS-Oil modules, e.g. QCI)*
- Implementation Service for Oil Terminal Automation
- Industry Analytics (BI) for O&G
- Industry specific training delivery (customer workshops)
- Expert consulting / Implementation Services for Secondary Distribution (OGSD)/ (Ramp-up 6.1)
- Implementation service for Best Practices for Mining

Innovation Areas / Service Potential

- Industry Value Packs & Value accelerators for Oil & Gas - using SBO tools (2010+) (joint efforts with IBU and SBO Hub)
- Design and Implementation SAP for Marine Terminals (2010+)
- Design & Implementation Service for Gas Operations (2011+)
- Utilization of APO Optimization capabilities for Upstream (Production) & Downstream (Transport networks) – POC, Design, & Implementation Service (2010+)
- Design and Implementation Service for *Operational Performance Management for Upstream* incl. RPM, MII, MDM et. al. (2010+)
- Design and Implementation Service for *Refinery Performance Management* (2011+)
- GeoTracking / GIS visualization - Visualization around SCM and SCEM (joint efforts with IBU, CD, SCM Solution management)
- Functional integration service for Commodity Trading & Risk Management

Leveraging

… Process Integration

Thank you !

Q E D : Volume-1

Copyright 2011 SAP AG
All rights reserved

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP AG. The information contained herein may be changed without prior notice.

Some software products marketed by SAP AG and its distributors contain proprietary software components of other software vendors.

SAP, R/3, xApps, xApp, SAP NetWeaver, Duet, SAP Business ByDesign, ByDesign, PartnerEdge and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and in several other countries all over the world. All other product and service names mentioned and associated logos displayed are the trademarks of their respective companies. Data contained in this document serves informational purposes only. National product specifications may vary.

The information in this document is proprietary to SAP. This document is a preliminary version and not subject to your license agreement or any other agreement with SAP. This document contains only intended strategies, developments, and functionalities of the SAP® product and is not intended to be binding upon SAP to any particular course of business, product strategy, and/or development. SAP assumes no responsibility for errors or omissions in this document. SAP does not warrant the accuracy or completeness of the information, text, graphics, links, or other items contained within this material. This document is provided without a warranty of any kind, either express or implied, including but not limited to the implied warranties of merchantability, fitness for a particular purpose, or non-infringement.

SAP shall have no liability for damages of any kind including without limitation direct, special, indirect, or consequential damages that may result from the use of these materials. This limitation shall not apply in cases of intent or gross negligence.

The statutory liability for personal injury and defective products is not affected. SAP has no control over the information that you may access through the use of hot links contained in these materials and does not endorse your use of third-party Web pages nor provide any warranty whatsoever relating to third-party Web pages

Weitergabe und Vervielfältigung dieser Publikation oder von Teilen daraus sind, zu welchem Zweck und in welcher Form auch immer, ohne die ausdrückliche schriftliche Genehmigung durch SAP AG nicht gestattet. In dieser Publikation enthaltene Informationen können ohne vorherige Ankündigung geändert werden.

Einige von der SAP AG und deren Vertriebspartnern vertriebene Softwareprodukte können Softwarekomponenten umfassen, die Eigentum anderer Softwarehersteller sind.

SAP, R/3, xApps, xApp, SAP NetWeaver, Duet, SAP Business ByDesign, ByDesign, PartnerEdge und andere in diesem Dokument erwähnte SAP-Produkte und Services sowie die dazugehörigen Logos sind Marken oder eingetragene Marken der SAP AG in Deutschland und in mehreren anderen Ländern weltweit. Alle anderen in diesem Dokument erwähnten Namen von Produkten und Services sowie die damit verbundenen Firmenlogos sind Marken der jeweiligen Unternehmen. Die Angaben im Text sind unverbindlich und dienen lediglich zu Informationszwecken. Produkte können länderspezifische Unterschiede aufweisen.

Die in diesem Dokument enthaltenen Informationen sind Eigentum von SAP. Dieses Dokument ist eine Vorabversion und unterliegt nicht Ihrer Lizenzvereinbarung oder einer anderen Vereinbarung mit SAP. Dieses Dokument enthält nur vorgesehene Strategien, Entwicklungen und Funktionen des SAP®-Produkts und ist für SAP nicht bindend, einen bestimmten Geschäftsweg, eine Produktstrategie bzw. -entwicklung einzuschlagen. SAP übernimmt keine Verantwortung für Fehler oder Auslassungen in diesen Materialien. SAP garantiert nicht die Richtigkeit oder Vollständigkeit der Informationen, Texte, Grafiken, Links oder anderer in diesen Materialien enthaltenen Elemente. Diese Publikation wird ohne jegliche Gewähr, weder ausdrücklich noch stillschweigend, bereitgestellt. Dies gilt u. a., aber nicht ausschließlich, hinsichtlich der Gewährleistung der Marktgängigkeit und der Eignung für einen bestimmten Zweck sowie für die Gewährleistung der Nichtverletzung geltenden Rechts.

SAP übernimmt keine Haftung für Schäden jeglicher Art, einschließlich und ohne Einschränkung für direkte, spezielle, indirekte oder Folgeschäden im Zusammenhang mit der Verwendung dieser Unterlagen. Diese Einschränkung gilt nicht bei Vorsatz oder grober Fahrlässigkeit.

Die gesetzliche Haftung bei Personenschäden oder die Produkthaftung bleibt unberührt. Die Informationen, auf die Sie möglicherweise über die in diesem Material enthaltenen Hotlinks zugreifen, unterliegen nicht dem Einfluss von SAP, und SAP unterstützt nicht die Nutzung von Internetseiten Dritter durch Sie und gibt keinerlei Gewährleistungen oder Zusagen über Internetseiten Dritter ab.

Alle Rechte vorbehalten.

Agenda

Energy Industry Highlights – & Value Drivers

Oil & Gas – Best Business Practices

Best Business Practice – Baseline Scenarios

SAP INDUSTRY BLUEBOOK : Oil & Gas

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

APPROACH WHITE PAPER

BUSINESS TRANSFORMATION SERVICES

28th June 2011

Author .

UJJAL CHAKRABORTY

PRINCIPAL

SAP BUSINESS CONSULTING

INDIA SUB-CONTINENT. BANGALORE

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

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

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

Planning, Building, and Commissioning Assets Involves Complex Interactions

Capital expenditure tidal wave is approaching	Coping with risk and fluctuating market conditions	Asset Information is becoming a key enabler of ROA
The global energy infrastructure requires investments in the order of $20 trillion in the next 20 years	Companies in capital-intensive industries face incredibly complex investment decisions	Having the right information to make the right decisions is the way to outperform the competition

Industry data ...
Challenges for Operational Readiness

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. Continous collaboration with partners and suppliers ensures operational readiness on time and on budget.

Budget Adherence

Structured budgeting leads to realistic estimates. Continual oversight ensures that targets are met.

Engineering & Construction Partners

Optimal Portfolio Management and Project Governance

Complete visibility into the capital projects and structured decision support enhances project performance and serves company strategy

Operational Readiness

Good project oversight and collaboration ensures operational readiness on time and on budget

Efficient Operations and Maintenance

Complete and accurate asset information enhances maintenance performance and increases equipment uptime.

Continual Data Handover and Preparation

Asset information is electronically collected and prepared during the project. EAM and production system are ready when the project is completed

Equipment Suppliers

MRO Suppliers

Efficient MRO Supply

Detailed and accurate MRO parts information eliminates redundancies and provides clarity to order efficiently.

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

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

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

Asset Portfolio Management

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
COO, CFO Controlling	Long-term Planning Capital Budgeting Program Governance		
Engineering Plant / Maintenance Engineering		Development Collaboration	Electronic Import of Eng. Data Transformation and OEM collaboration
Capital Projects Project Manager	Initiate Project	Project Planning / Estimation Project Execution Project and Investment Controlling	
Maintenance Maintenance Manager	Plan Asset Replacements / Additions	Collaborative Construction	Document Management Technical Assets Management
Supply Chain VP, Supply Chain		General Contracts MRO and Services Procurement	Technical Parts 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
▪ Lack of objective selection criteria (risk, value, cost, …) for capital spend decisions ▪ Time, costs & effort associated with decision-making process ▪ Lack of governance and audit trail of decisions ▪ Cost over-runs due to deviation between forecast cash flow and actual spend ▪ Better governance and an increased audit trail of decisions	▪ Evaluation, simulation and scoring models ▪ Structured risk evaluation, gated approval process supported by workflow ▪ Improved communication & visibility during the project lifecycle ▪ Governance tool set including dashboards and reporting based on operational processes and data from ERP and non-ERP systems	▪ Reduced risk of failure and overruns ▪ Efficient and streamlined planning process ▪ Reduced overall project cost due to better usage of critical resources ▪ Better contract terms with external contractors, through visibility of spend ▪ Real-time visibility into project portfolio performance

Asset Portfolio Management

SAP Solution

SAP Solution

- Strategy Management to define, communicate, and monitor business goals
- Integrated tool set for full project life-cycle from idea stage to project closing
- Flexible phase gate process with risk evaluation and ranking capabilities
- Integration with operations project management for full visibility of progress and status across the portfolio
- Operationalized governance across the portfolio
- Integrated contract lifecycle management

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

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

1 Define Strategy

- Define and communicate strategy and goals
- Setup common KPIs
- Establish scorecard
- Enter top-down initiatives

2 Identify Investment Opportunities

- Plan asset replacements or additions based on strategy, capacity requirements and maintenance needs
- Initiate opportunities manually or automatically
- Enter basic data and dependencies
- Assess risk, feasibility

3 Analyze Risk and Rank Opportunities

- Review the portfolio top-down & bottom up
- Merge baseline with planning data
- Rank and score opportunities
- Balance strategy, finance and feasibility
- Determine optimum of capital investments

4 Create and Approve Budgets

- Initiate budget planning from project planning
- Detail financial planning & forecasts
- Derive financial plan from capacity demand
- Aggregate, simulate and create versions

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

1 **Initiate Project**

- Initiate projects and programs
- Formalize scope, time and budget
- Setup Phases, Gates and Deliverables
- Execute pre-project phases (e.g. feasibility studies)

2 **Program Governance**

- Gate control governance
- Use aggregated project dashboards to track performance
- Track portfolio value and indicators
- Track compliance against strategy
- Initiate reviews
- Manage Escalations, Reporting, Thresholds

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
▪ Lack of control regarding progress, cost and outgoing payments ▪ Deviations between budget, commitments and actuals go unnoticed for too long ▪ Material and equipment are received and installed without reference to the plan details ▪ Collaboration with engineering and construction partners depends on emails and individuals	▪ Post planned cost, commitments and actuals against the same project structure ▪ Continuous progress monitoring, status and cash flow control of the project ▪ Logistical postings against the same project structure ▪ Structured and traceable collaboration with external parties	▪ Ability to easily compare plan, commitments, and actuals in a meaningful structure ▪ Ability to react to issues when they occur ▪ All encompassing visibility of cost categories and cashflow ▪ No loss of information, duplication of work of ambiguities in terms of engineering and construction related information

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

1 Structure Project

- Set up the work breakdown structure (WBS) for financial planning and control
- Assign relevant documents like contracts, specs, and drawings.
- Use networks for detailed scheduling of project tasks and critical path analysis

2 Plan Cost and Budget

- Use costing methods specific to business context: overall planning, detailed planning, easy cost planning, network costing, unit costing
- Allocate budgets for the project and individual project parts
- Set up availability control to prohibit budget overruns

3 Plan Commitments and Cash Flows

- Plan commitments, invoices, and cash flows related to the general EPC (*) contractor
- Use network milestones for detailed planning of cash flows, etc.
- Plan procurement of services and material items not handled by the general contractor

4 Obtain General Contract

- Use scorecard to review past supplier performance
- Create RfP from template using questionnaires to specify conditions to comply to
- Utilize library of contractual clauses
- Evaluate proposals and award contract

Project Collaboration

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

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

Process Steps

1 Structure Collaboration Folders

- Set up hierarchy to structure collaboration
- Define user access authorization based on detailed requirements, e.g. object fields
- Define templates
- Automate integration point via APIs and SOAP technology
- Define own XML based object types

2 Collaborate with General Contractor

- Exchange structured and unstructured information
- Conduct discussions and online sessions
- Use check-in and check-out uploads / downloads, file transfers
- Use embedded 2D/3D viewer with redlining capabilities

3 Collaborate with Individual Suppliers

- Manage procurement of items not handled by the engineering and construction partner
- Optionally: use Supplier Relationship Management (SRM) or Supply Network Collaboration (SNC) for confirmations, shipping notifications, etc.

Project Execution

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

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

1 Procure MRO materials and Services

- Procure items not handled by the general contractor
- Reservations and requisitions can be automatically created
- Purchase orders can be based on info records, outline agreements or service specifications
- Items can be picked from catalogs

2 Collect actual cost

- Confirm completion of work on appropriate work package level
- Actual cost are automatically posted against the project
- Use individual or collective confirmations, the integrated cross-application time sheet, or interfaces to external systems

3 Monitor Progress and Control Budget

- Monitor commitments, actual cost and outgoing payments
- Check budget availability automatically
- Use progress tracking or progress analysis which provides several methods and interfaces to determine, analyze, and forecast progress (POC, and other metrics)

4 Period-end Closing

- Use the schedule manager to plan, carry out and control closing activities
- Calculate overheads, interest, etc.
- Settle actuals against cost collectors like asset under construction or fixed assets

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
▪ Asset information becomes only available at project completion creating enormous time pressure ▪ Engineering information is not directly usable for operations and maintenance ▪ High effort to collect and structure information for operative EAM system ▪ Limited time and resources to deal with data handover lead to incomplete, redundant, and inconsistent data	▪ Continual electronic handover during project execution ▪ Easy transformation and enrichment of data before deployment to target systems ▪ Collaboration with EPCs* and OEMs** to collect information relevant for operations and maintenance ▪ Synchronization of asset information into target ERP and Document Management systems	▪ No delays in start-up because information can be prepared during project ▪ Easy manipulation and collaboration features minimize effort for data handover ▪ Best possible information foundation for operations, maintenance, and purchasing ▪ Up-to-date asset information for future projects

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 manufactures 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 created 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 synch, 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

1 Define Environment

- Define project scope, tasks, reports and templates
- Define collaboration partners
- Set-up system connection to ERP, once available
- Synchronize data dictionary
- Synchronize existing master data

2 Collect Information

- Load source data from plant design system or conduct plant / warehouse audits in case of existing facility
- Use collaboration requests to receive information from equipment OEMs or company internal
- Assess information and stage in Asset Center

3 Transform Information

- Filter and structure information for maintenance and operations purposes
- Use simple drag & drop techniques to manipulate staged data
- Associate additional media content with the assets
- Create illustrated parts books by 'hot-spotting' drawings

Electronic Import of Eng. Data	Transformation and OEM collaboration
Document Management	Technical Assets Management
	Technical Parts Management

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

1 Deploy Information

- Incremental or bulk synchronization of master data to EAM
- Full maintenance program definition
- Synchronization of informational content to SAP or 3rd party DMS
- Synchronized information is locked in Asset Center and can only be manipulated following EAM processes

2 Sustain Information

- Data can be visualized via SAP VIP by NRX for Operations and Maintenance
- Operative data changes are replicated into Asset Center
- Synchronization is automatic and can be done near real-time
- New capital projects can rely on up-to-date and accurate information

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

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

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

- **Operations and maintenance cannot rely on "experience" (I've done it this way and it works")**
- **Defined processes and IT systems needed to ensure reliability targets.**
- **Can't waste precious wrench time.**

Experienced planners and supervisors retire

- **Not enough experienced and qualified technicians to replace them.**
- **Informal processes based on personal knowledge about equipment.**
- **Poor planning and supervision hurt maintenance effectiveness.**

Hard to cope with sophisticated equipment

- **Assets not maintained and run in the optimal way.**
- **Quality issues and frequent unplanned downtime waste precious machine capacity.**
- **Equipment does not yield the returns it is designed for.**

Maintenance services are outsourced

- **Contractors must be found and contracted appropriately.**
- **Buyers have to deal with an increasing number of complex bids for services.**
- **Difficult to manage, monitor & control an increasing number of services.**

Equipment changes not documented

- **Inaccurate master data lead to obsolete or redundant stock.**
- **Lack of planning leads to reactive maintenance and stock outages.**
- **Orders cannot be completed in time because of inventory stock-outs.**

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

COO

Engineering

Maintenance

Procurement

Operations

Optimized Operations and Maintenance	Asset Planning and Scheduling	Operations and Maintenance	Service Procurement	Spare Parts Management
Key Issues				
How do I maximize the return of my assets?	How do I optimize maintenance resources?	How do I make sure my assets are up and running?	How do improve service delivery and reduce service costs?	How do I ensure the right supply of parts without keeping excessive stock?
Typical KPI's				
▪ Minimize Downtime ▪ Keep Assets Profitable ▪ Enforce Service Levels ▪ Efficient Maintenance Activity ▪ Contain Maintenance Cost	▪ Business planning ▪ MTTR (Mean Time to Repair) ▪ Maximize Wrench Time ▪ Stay in Budget	▪ MTBF (Mean Time Between Failure) ▪ Schedule Compliance ▪ OEE (Overall Equipment Effectiveness)	▪ Reduce request and order cycle time ▪ Percentage of compliant transactions with services contracts ▪ Increase transparency and minimize errors for procure-to-pay	▪ Number of spare part stock outages ▪ Spares Inventory turnover ▪ Percentage of equipment with parts list

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.

COO

Engineering

Maintenance

Procurement

Operations

Optimized Operations and Maintenance	Asset Planning and Scheduling	Operations and Maintenance	Service Procurement	Spare Parts Management
	Business Planning & Budgeting; Maintenance Cost Budgeting	Asset and Maintenance Reporting; Initiating Maintenance; Production Planning		Inventory Management
	Technical Asset Management; Document Management; Asset Performance Management	**Engineering**		Master Data Management
	Shutdown Management; Maintenance Planning & Scheduling	Work Clearance Management; Preventive & Corrective Maintenance; Sub-contracting	Demand Planning & Creation; Service Delivery Confirmation	Refurbishment Processing; Consumption Driven Planning
		Procurement	Operational Sourcing; Operational Procurement	Catalog Management; Parts Procurement
		Service Provider	Order Collaboration; Service Entry; Invoice Collaboration	

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 ar source.

Issues	Key business capabilities	Benefits
▪ Frequent equipment breakdowns due to improper or no preventive maintenance. ▪ Ineffective maintenance processes and resource availability lead to delays in work order closure. ▪ Poor maintenance program leads to unplanned downtime and diminished equipment condition ▪ Equipment downtime disrupts production ▪ Insufficient or manual log-out / tag-out procedures cannot ensure safe execution of maintenance	▪ Proactive maintenance minimizes occurrence of breakdowns, so MTBF is maximized. Auto calculation of MTBF based on downtime recording. ▪ Appropriate planning, clear procedures, visible resource availability and easy access to information lead to timely closure of tasks. ▪ Optimized maintenance minimizes unplanned downtimes ▪ Integrated production and maintenance planning ▪ Integrated Work Clearance Management	▪ Increase equipment reliability ▪ Reduced work backlog ▪ Better utilization of assets ▪ Minimized impact on production ▪ Safe execution of maintenance

Operations and Maintenance

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 mainteanance**

Maintenance Initiation

Asset and Maintenance Reporting	Initiating Maintenance	Production Planning
Work Clearance Management	Preventive & Corrective Maintenance	Sub-contracting

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

Process Steps

1 Identify Technical Problems

- Monitor asset condition
- Monitor production quality and yield
- Trigger workflow alerts or visualize on dashboards

2 Trigger Corrective Action

- Create maintenance notification
- Specify technical object, urgency, and symptoms

3 Coordinate Operations and Maintenance

- Review planned downtimes with production shift planners
- Schedule both corrective and preventive tasks that require equipment shutdown
- If necessary adjust production plan to unplanned downtime

Work Clearance Management

Asset and Maintenance Reporting	Initiating Maintenance	Production Planning
Work Clearance Management	Preventive & Corrective Maintenance	Sub-contracting

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

1 Permit Master Data

- Define for which technical objects (Functional Locations, Equipments) is a safety process required.
- Create a Work Clearance Document (WCD) template for these technical objects (one or many WCDs)

2 Work Approval Application

- Conduct Risk analysis for work order
- Assign additional documents like drawings
- Designate WCM related tasks and assign WCM application

3 Work Preparation

- Create operational Work Clearance Document (WCD) based on template
- Execute conflict checks
- Print tags and tagging list or start mobile tagging process
- Start and confirm isolation
- Work authorization and acceptance

4 Execution & Tag Removal

- Execute maintenance according to work order
- Start test cycle with temporary untagging / tagging
- Final confirmation of work
- Untagging process including confirmation
- Close maintenance order

Maintenance Execution

Asset and Maintenance Reporting	Initiating Maintenance	Production Planning
Work Clearance Management	Preventive & Corrective Maintenance	Sub-contracting

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.

Process Steps

1 Work Execution

- Asses asset condition
- Access all necessary documentation
- Retrieve required parts and tools
- Execute work and put equipment back into operation if necessary

2 Subcontracting

- Externally processed line item triggers a purchase requisition
- After processing by purchasing, the fulfillment is documented via service entry sheet and the order operation updated

3 Work Completion

- Actual work hours and used parts are recorded
- In case of corrective action, the notification is updated with the found cause
- The order is first technically completed and after complete processing of all postings commercially completed, as well.

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
▪ Inefficient supplier bidding, selection and PO processing for maintenance services	▪ Fully integrated and standardized service procurement capability: Streamlined service bidding and procurement activities	▪ Speedy supplier selection, spot bidding and purchasing process. Shorten cycle-times for service delivery
▪ Delays in service delivery	▪ Online supplier collaboration for service request specification, quoting, order confirmation and status	▪ Enable efficient collaboration. Increase contract utilization to realize negotiated savings
▪ Higher asset repair costs as contracts are not used	▪ Schedule compliance	▪ Reduce repair costs and increase equipment utilization

Service Procurement

SAP solution

- Demand Planning and Creation
- Service Delivery Confirmation
- Operational Sourcing
- Operational Procurement
- Order Collaboration
- Service Entry
- Invoice Collaboration

- **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

Demand Planning and Creation	Service Delivery Confirmation	
Operational Sourcing	Operational Procurement	
Order Collaboration	Service Entry	Invoice Collaboration

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

Process Steps

1 Create Maintenance Order

- Corrective maintenance orders are created based on asset condition
- Preventive maintenance orders are typically created automatically through maintenance plans

2 Designate External Order Operation

- All maintenance order types can have operations (line items) that are to be processed externally
- The control key for external processing can be set manually or can be derived from master data (task list)
- The service description can be derived from a service master record which may be structured (complex services)

3 Generate Service Requisition

- Externally processed order operations trigger the creation of a purchase requisition
- The requisition will inherit the service specification structure from the order item
- Depending on the settings, the requisition will be transferred to SRM or processed in ERP

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

1 Create Shopping Cart

- The buyer works in a unified portal role that accesses both ERP data (requisitions) as well as SRM objects
- Requisitions with hierarchical service structure, behind a single line items are transferred from ERP to SRM
- Shopping cart is approved

2 Execute Sourcing Event

- The buyer uses the SRM sourcing cockpit to identify the right source of supply
- Create 'Rfx' to invite bids from potential vendors
- Rfx can be based on master data templates
- Hierarchical service structure are transferred so that the vendor can review and price the detailed services

3 Collaborate with Supplier

- The supplier log onto the supplier portal to review and respond to the bid invitation
- Supplier collaboration for service definition can be done by Response Modification
- In case of a complex service specification this means multiple entries for one bid line item
- Once the bid is accepted the supplier is notified

4 Evaluate Bids and Award

- Compare bid responses and negotiate additions the vendor may have added
- Award one supplier
- Transmit Purchase Order to Supplier
- Transfer into individual purchase order or contract in ERP

Order Fulfillment

Demand Planning and Creation	Service Delivery Confirmation	
Operational Sourcing	Operational Procurement	
Order Collaboration	Service Entry	Invoice Collaboration

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

1 Record Service Fulfillment

- The fulfillment of the services by the contractor are documented via Service Entry Sheets
- Service Entry can be done via the SRM supplier portal and is then transferred to ERP
- Supplier can enter planned and unplanned services

2 Confirm Service Delivery

- The maintenance supervisor confirms the delivery of the services in ERP
- There is no need to fill in the service entry sheets as they have been transferred from SRM
- The status is updated in SRM

3 Reconcile Invoices

- Invoices can be entered through the SRM supplier portal
- The invoice is based on the confirmed Service Entry Sheet
- The invoice is transferred to ERP

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
▪ Erratic demand and the attempt to reduce spares inventory lead to missing parts situations. ▪ Inflated spare parts inventory due to obsolete / redundant parts and inappropriate requirements planning. ▪ Spare parts in inventory but not on a parts list: obsolete parts. ▪ Repairs and installation of expensive spares not reflected in asset value	▪ History based safety stock calculation and automated replenishment. ▪ Identify obsolete and redundant spare parts. Reduce inventory levels based on forecast requirements. ▪ Use of Task Lists and Bills of Materials (BOM's) ▪ Flexible settlement of incurred cost, e.g. against asset (capitalization of repair cost)	▪ Saves time and prevents the delays and errors that can occur with manual purchasing processes. ▪ Reduction of capital tied-up in spare parts holding. ▪ Enables quicker selection of spare parts; can be allocated to maintenance schedule. ▪ Asset register reflects current value

Spare Parts Management

SAP solution

- Inventory Management
- Master Data Management
- Refurbishment Processing
- Consumption Driven Planning
- Catalog Management

- 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

1 Material Master Data

- Define part number, manufacturer info., serialization, etc. on enterprise level
- Define forecasting, MRP parameters, storage data on plant level
- Use SAP NetWeaver MDM to identify duplicates and obsolete parts.
- Optionally, use IHS Intermat to classify parts

2 Inventory & Warehousing

- Receive parts into stock, based on purchase order, or plant maintenance work order (dismantling serialized parts)
- Issue parts against maintenance work orders and refurbishment orders
- Optionally, use warehouse mgmt. for advanced stowing and picking procedures

3 Forecasting & Planning

- Use forecasting models in material master to determine reorder point and safety stock level
- Execute Material Requirements Planning (MRP) run to automatically trigger replenishments
- Convert into purchase orders, stock transfer orders, production or refurbishment orders to replenish stock

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

1 Manage Parts Condition

- Designate special storage locations and valuation types for unserviceable parts (in need of repair)
- Exclude unserviceable stock from MRP and ATP (availability check)
- Receive serialized or unserialized parts into userviceable stock
- After refurbishment, receive back into serviceable (normal) stock

2 Internal Refurbishment

- Create refurbishment order. Optionally, use MRP to create planned order first and convert after checking availability of repairable parts
- Use two-step transfer when issuing unserviceable parts to keep track of work in process
- After refurbishment, settle cost against material (moving average price), asset, or other cost collector

3 Subcontracted Refurbishment

- Create purchase requisition for external refurbishmen or repair. Optionally, requisition can be linked to maintenance work order line item.
- Create purchase order based on master data like BOM, service master definition, etc..
- Use subcontracting monitor to maintain visibility into status and post deliveries, and receipts

Catalog Management

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

Process Steps

1 Assign External Catalogs

- Use the SAP's Open Catalog Interface (OCI) to link in external catalogs, like Illustrated Parts Catalogs (IPC)
- Optionally, use NRX Asset Center to build own parts books, by 'hot-spotting' drawings

2 Define MDM Catalog

- Use NetWeaver MDM to define your own specific parts catalog
- Leverage pre-delivered SRM MDM repository
- Import supplier content into MDM and map field data

3 Pick Parts from Catalog

- When planning a work order operation, pick required parts directly from catalog
- Alternatively, pick parts from catalog in purchase requisition or order
- Use keyword search or navigate catalog structure

Best Practice Value Scenario

O&G Fuel Replenishment and Terminal Operations Automation

Reliance Industries Limited

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	Distribution Excellence & Customer Satisfaction	Build Customer Loyalty & Increase Customer Satisfaction
Providing the visibility to manage costs and sense and respond to market volatility	Optimizing fleet, fuels delivery, transportation processes, and fuel inventory levels	Exceptional reliability, high fulfillment rates, competitive pricing, and top-notch service

Downstream Marketing & Retailing
Disruptive Growth

Cost, Revenue & Margin

- High number of incorrect invoices and high Days Sales Outstanding
- High transportation cost due to poor utilization of fleet
- High fuel purchasing cost
- Disconnected or non-existing price management processes

Distribution Planning & Customer Management

- High error rates due to poor inventory accuracy
- Disconnect between replenishment and transportation planning
- Transportation inefficiencies
- Customer service requirements (e.g. VMI)
- Constant expediting to meet terminal demand
- Channel allocation & margin management
- Disconnect with haulier companies

Business Process Platform

- Heterogeneous applications with disparate data models
- Inflexibility in dealing with business changes (i.e. M&A, business relationships, etc.)
- Compliance issues
- Transparency & growth limitations

Terminal Management & Automation

- Missing visibility into terminals
- Missing integration of existing terminal systems
- Paper based and manual processes
- Lack of supplier integration

Fuel and Convenience Retailing

- Disconnect between fuel and dry goods business
- High cost of operations
- Loss of margins
- Low profit per customer visit

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

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

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

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

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**

Head of Distribution

Fuel Distribution

How do I achieve fuels distribution excellence?

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

Head of Terminal Management

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**

CFO /
Head of Accounting

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

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

Fuel Distribution

Terminal Management

Reconciliation, Accounting & Billing

Fuel Distribution

Objectives, Issues, Capabilities and Benefits

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
▪ Poor visibility causes danger of run-outs leading to lower service levels & customer dissatisfaction ▪ Difficult to maximize/optimize utilization of fleets and minimize transportation costs ▪ Sub-optimal fuel sourcing ▪ Missing automation of business processes (order-to-cash, procure-to-pay, reconciliation)	▪ 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 ▪ Automated reconciliation and posting of all required transactions in SAP	▪ Reduced transportation costs; reduced truck fleet up to 12% ▪ Reduced fuel cost through agile response to market volatility ▪ Reduced replenishment costs up to 30% ▪ Reduced stock-outs up to 15% ▪ Improved operational productivity

Fuel Distribution

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

1 Strategize

- Develop quantitative scenarios, apply competitor modeling, simulation & analytics to refine
- Market/ customer analysis
- Define objectives
- Document goals

2 Determine

- Translate strategy to rules, targets, constraints
- Optimized prices
- Consistent tactics clearly linked to strategy

3 Execute

- Execute pricing in order-to-cash cycles
- Price by exception
- Manage exception
- Rapid response
- Automation

4 Monitor

- Continuous KPI monitoring, fast issue resolution, quantified justification for strategy change
- Alerts, exceptions
- Role-based analytics
- Feedback loop to update strategy

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

1 Manage contracts

- Long-term agreements for particular customers
- Pricing agreements
- Releasable products
- Validity dates
- Target quantities

2 Manage sales orders

- Receive orders from retailers or commercial customers
- Telesales with CTI integration
- Truck pre-scheduling during order taking
- Credit Control
- Customer history

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

1 Load data through POS interface

- Load sales data, inventory data (dipping) and pricing data

2 Calculate required quantities

- Real time planning
- Manage site inventories by tank
- Take into account tank characteristics (e.g. bottom safety, capacity) and site restrictions (e.g. opening hours)
- Consider sales profile (e.g. seasonality)

3 Create auto replenishment order

- Create must-go orders where delivery is required to prevent run-out of fuel
- Create can-go orders where delivery is optional

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

1 Manual Orders and ASR Orders

- Create order list including manual orders and automatically generated orders from Auto Stock Replenishment (ASR)

2 Trip Planning and Optimization

- Trip planning based on orders, load terminals, trucks, drivers
- Auto compartment allocation and truck stabilization
- Truck/ customer (gas station) and product/ compartment compatibility checks
- Trip cost calculation
- Load terminals determination
- Optimization (optional)

3 Transportation Execution

- Truck loading
- Truck discharge
- Manage left-on-board quantities
- Manage gains/ losses
- Manage in transit stock
- On-board truck computing

4 Update Transportation Plan

- Actually delivered quantities are taken into account for next cycle of transportation planning
- Auto Stock Replenishment and transportation plan are updated real-time

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
▪ Missing integration leading to information silos and disconnect from partners ▪ No up-to-time data and poor data quality due to manual processes ▪ Poor visibility into and control of business processes ▪ Heterogeneous & incompatible processes in acquired sites ▪ Difficult to adapt to changing regulations & to handle different regulations in different regions	▪ 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	▪ Improved operational efficiency and productivity ▪ Improved data quality ▪ Reduced labor costs up to 25% ▪ Reduced maintenance costs up to 10% ▪ Reduced administrative costs up to 20%

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**

Terminal Automation Systems (TAS)

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

1 Send Relevant Data to Terminal Automation System

- **Send data to terminal automation systems including contract data, order data, shipment data, customer data, credit information, product data, vehicle and driver information**

2 Terminal Automation System Receives Data

- **Terminal System receives data for further processing and operations**

Terminal Security Control

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

Process Steps

1 Authorization Control

- Authorization management: identification of trucks and drivers including legal requirements
- Driver identification through biometric data

2 Product Checks

- Check of allowed products and product quantities
- Allow driver to load products based on available contracts

3 Vehicle and Compartment Check

- Driver to assign the products to the compartments of the truck
- Vehicle maximum volume restriction
- Axle weight restrictions and vehicle stability restrictions
- Compatibility checks (e.g. top loading / bottom loading)
- Safety restrictions

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

1 Assign Products to Compartments

- Dynamically display the available meters
- The driver chooses meter and compartment combinations for the loading

2 Load Truck

- Product is filled into the truck's compartments
- Meters record the loading quantity

3 Print Documents & Send Data for Booking and Reconciliation

- Print loading documents/ transport papers for driver at terminal
- Send loading data to ERP for transportation execution; subsequent reconciliation with delivered/ lost / on-board quantities

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

1 Assign Products to Compartments

- Dynamically display the available meters
- The driver chooses the meters for loading

2 Load Truck

- Product is filled into the truck's compartments
- Meters record the loading quantity

3 Print Documents & Send Data for Booking and Reconciliation

- Print loading documents/ transport papers for driver at terminal
- Send loading data to ERP for subsequent posting of product movements

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
▪ Manual data entry leading to incorrect and incomplete data ▪ Billing delays ▪ High number of incorrect invoices and high Days Sales Outstanding (DSO)	▪ 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	▪ Reduce efforts for manual data entry and reconciliation ▪ Real-time inventory and product movement data ▪ Lower Days Sales Outstanding ▪ Tighten planning & scheduling cycles ▪ Improve customer service levels ▪ Increase data integrity and ensure compliance

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

Process Steps

1 Reconciliation

- Actual load and discharge quantities are transferred to and recorded in ERP
- Quantity conversions
- Calculate left-on-board quantities and gains and losses
- Determine prior-to-load quantities
- All quantities are reconciled before trip can be closed

2 Automatic Postings/ Data Collation

- Automated postings of material movements and sales/ purchasing documents based on pre-defined business processes
- Postings follow general quantity accounting principles
- Financial accounting

Billing

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

Process Steps

1

Billing

- **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

Reliance Industries Limited

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

Pain: Weak or loose controls & lack of audit trail hinder satisfaction of regulatory compliance and legislation leading to financial and/or PR risks. Lack of coordination with other compliance standards increases admin burden

Pain: Tactics inconsistent with strategy results in missed opportunities, conflicts & reactive instead of proactive pricing

Pain: Effectively adapting strategy to address new competition, market cost/price volatility & margin pressure

Pain: Manual processes result in pricing errors, volume/margin leakage and slow response to market/competitor changes

Pain: Delays identifying performance issues and limited kpi analysis means strategy no longer optimal and loss of margin/volume

Pain: Interfaces costly to develop & maintain. Integration effort slows implementation. Data duplication, poor quality & inefficient access severely affect pricing effectiveness

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

Solution: Auto generate price proposals, price by exception & optimize prices

Result: Faster response to market/competitor changes, focus on urgent issues & increase margin

Solution: Alerts to performance exceptions, role-based analytics, dashboards, auto-generated & distributed reports

Result: Continuous kpi monitoring, fast issue resolution, quantified justification for strategy change

Solution: SAP-endorsed integration, consistent data definitions, efficient/timely access

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

CEO

Head of Sales/
Head of Marketing
(by LoB)

Pricing Analyst
(by LoB)

Sales
Representative

Optimize Costs & Margins	Sales Management	Price Management	Sales Deal Execution
How do I control costs and maximize profit margins and how can I sense and respond to market volatility?	**How can I prevent broken pricing processes? How can I set and execute efficiently my pricing strategy?**	**How do I analyze the market and set new prices efficiently and effectively?**	**How do I negotiate my deals most profitably and consistent with strategy? Which approval levels do I need to take into account?**
▪ Cross Channel Visibility ▪ Strategy Review ▪ Financial Performance ▪ Enterprise Growth	▪ Revenue / Margin ▪ Customer Satisfaction ▪ Consistent Approval Workflows	▪ Review Key Performance Indicators ▪ Adjust Goals & Tactics ▪ Competitor Analysis ▪ Define New Prices ▪ Approve & Implement	▪ Deal Profitability ▪ Customer Satisfaction

Price Management & Optimization
a Closed-Loop Process

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

CEO

Head of Sales/
Head of Marketing
(by LoB)

Pricing Analyst
(by LoB)

Sales
Representative

Optimize Costs & Margins

Sales Management

Price Management

Sales Deal Execution

Sales Analysis → **Define Sales Strategy** → **Pricing Goals & Strategy**

Price Determinat — **Pricing Tactics, Optimization & Approval**

Price Executio — **Post Rack / Retail Prices / Deal Guidance** → **Deal Negotiation and Closing**

Price Monitorin — **Identify Performance Issues**

Sales Management

Objectives, Issues, Capabilities and Benefits

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
▪ Unable to effectively adapt strategy to address new competition, market cost/ price volatility & margin pressure ▪ No means to quantitatively challenge strategy: difficult to deal with new competition, tendency towards status quo and reliance on intuition/ gut feel ▪ Cost/ price volatility: costs changing rapidly, price change frequency increasing, margin pressure ▪ Missing insight into performance across channels	▪ Alignment of pricing strategy and tactics ▪ 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 ▪ Performance alerts help to focus on exceptions ▪ Cross channel executive dashboards	▪ Improved pocket margins through quicker price adoption ▪ Margin improvement opportunities by addressing negative margin customers ▪ Corrected strategy to address strongest competitors by location ▪ Eliminated unnecessarily constraining strategies such as fixed grade spreads ▪ Validated strategic goals as achievable & consistent with desired price image

Sales Management

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**

Sales Analysis

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

Process Steps

1 Customer & Product Segmentation

- Identify profit potential and business risk across segments
- Make segmentation transparent and manageable
- Capture differential value locked in each segment

2 Customer & Product Profitability Analysis

- Use data from every transaction to drive better performance on future deals
- Ensure ongoing alignment of pricing strategy and tactics
- Identify and take advantage of pricing opportunities

3 Opportunity & Sales Pipeline Analytics

- Analyze sales opportunities
- Bottom-up and top-down planning and analysis

Define Sales Strategy

Define sales strategy by line of business

Process Steps

1 Corporate Strategy

- Corporate goals and objectives defined by CEO and senior management
- Guidelines for subsequent steps

2 Assess Market Conditions

- Develop quantitative scenarios, apply competitor modeling, simulation & analytics to refine
- Alerts, exceptions
- Market/ customer analysis

3 Set Strategy

- Quantified justification for strategy change
- Define objectives
- Document goals

4 Communicate Strategy

- Communicate strategy and strategy changes to sales force

Price Management

Objectives, Issues, Capabilities and Benefits

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
▪ No means to quantitatively challenge strategy ▪ Tendency towards status quo and reliance on intuition/gut feel ▪ Strategy not clearly documented: potential for analyst bias ▪ Lack of clear, enforced pricing rules, manual intervention needed to resolve ▪ Manual pricing processes ▪ No feedback loop to adjust strategy based on observed results ▪ Inefficient reporting processes due to lack of analytic tools ▪ Lack of audit trail, limited approval workflow	▪ Quickly & quantitatively evaluate scenarios for strategy changes ▪ Customer demand & competitor modeling: simulate impact on volume & margin ▪ Role-based analytic tools enable clear translation of strategy to tactics, eliminating bias ▪ KPI assessments ▪ Pricing process automation ▪ Price optimization ▪ Flexible reporting tools to generate ad hoc or custom reports, exception alerts ▪ Price-change & other authority limits ▪ Compliance reports	▪ Strategy addresses key competitors by location/ channel/ product ▪ Validated strategic goals as achievable & consistent with desired price image ▪ Eliminated unnecessarily constraining strategies ▪ Eliminating analyst bias ▪ Faster, “by-exception” resolution of pricing conflicts ▪ Focus analyst time on value-adding activities ▪ Margin and / or volume growth ▪ Rapid assessment of & response to performance issues ▪ Full audit trail to demonstrate compliance at all times

Price Management

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

Process Steps

1 Market & Competitor Analysis

- Market & competitor modeling to validate corporate goals
- Document revenue, volume, margin goals
- Define price image and desired price position with respect to competition

2 Define Detailed Strategy

- Allocate volume and revenue goals by customer segment, region, channel, product
- Translate price constraints into rules and limits

3 Communicate Strategy

- Communicate goals and objectives to pricing personnel
- Manage authority limits and tactical boundaries within pricing processes
- Identify clear authorization routes and protocols

Pricing Tactics, Optimization & Approval

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

Process Steps

1 Configure Pricing Tactics

- Configure pricing system according to pre-defined tactical goals and constraints
- Run off-line scenarios on live data to validate alignment with strategic goals (sense check)
- Define authorization levels

2 Price Optimization

- "What-if" scenarios to compare pricing options
- Optimization to propose profit-maximizing or volume-maximizing prices

3 Approve & Submit

- Select price scenario
- Seek approval and adjust if necessary
- Schedule for implementation

Post Rack / Retail Prices / Deal Guidance

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

Process Steps

1 Approval Clearance

- Audit trail captures new price, price triggers, adjustments and approvals
- Compliance data archived for reporting purposes

2 Implementation

- New prices implemented to customer or location
- Price guidance to sales personnel
- Support for customer portal, email, web publishing, direct-to-site update and other mechanisms

3 Confirmation

- Confirm new price implemented
- Monitor delays, errors or non-compliance
- Exception alerts to implementation issues

Identify Performance Issues

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

Process Steps

1 Monitor Continuously

- Configure role-based dashboards and other tools to monitor KPIs
- Update KPIs on regular basis as data becomes available
- Publish updates via email, web, hand-held device

2 Exception Alerts

- "Push" alerts to relevant personnel to advise of issues
- Provide drill-down capability to identify root-causes
- Ad-hoc analysis tools

3 Strategy Adaptation

- Analyze KPI variance as basis for strategy adjustment
- "What-if" scenarios on key tactics
- Approval for strategy change
- Feedback loop to overall sales strategy

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
▪ Sales lacks contextual insight into customer behavior and similar deals ▪ Sales does not have the right price and discount guidance ▪ Lack of controls and enforcement to ensure compliance with policies (spreadsheet environment) ▪ Service costs not understood	▪ 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	▪ Increases consistency of negotiation by delivering the right information at the right time ▪ Reduced margin leakage across every deal with segment-based policies, guidance and workflow ▪ Improved invoice accuracy through tight integration with enterprise systems

Sales Deal Execution

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

Deal Negotiation and Closing

Deal Negotiation and Closing

Process Steps

1 Inquiry Processing

- Flexible and dynamic pricing during inquiry processing through tight integration
- Increase sales user adoption through role-based application that gives sales teams what they need

2 Price Guidance & Approval

- Increase consistency of negotiation by delivering the right information at the right time
- Align prices and guidance with business objectives and strategy

3 Quotation Processing

- Increase margins by calculating optimal prices and guidance across segments
- Improve pricing consistency and control during quotation process with systematic data-driven approach

4 Deal Closing

- Reduce margin leakage across every deal with segment-based policies, guidance and workflow
- Ensure ongoing alignment of pricing strategy and tactics
- Price execution

Best Practice Value Scenario

O&G Strategic Sourcing & Procurement Optimization

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

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

Best-In-Class Procurement Organizations

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	GOALS
Ensuring lean, compliant procurement operations	Freeing up time and resources
Automating compliance to contracts and policies	Improving operational execution and savings realization
Efficiency driven savings through integrated process	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

How do I maximize cost savings?

- Reduce supply risk
- Maximize negotiated savings
- Ensure contract compliance
- Reduce operational costs

Head of Supplier Mgt

Supplier Management

Supplier Management

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

Strat. Sourcing Manager

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

VP of Procurement

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

VP of Procurement

Operational Procurement

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

CPO

Head of Supplier Mgt

Strat. Sourcing Manager

VP of Procurement

VP of Procurement

	Supplier Management		Central Sourcing			Central Contract Management			Operational Procurement		
Strategic Purchasing Head of Procurement	Supplier Qualification		Source of Supply Tracing	Demand Aggregation	Define Sourcing Guidance	Contract Negotiation and Creation	Contract Distribution	Contract Monitoring	Supplier Compliance Analysis		
Operational Purchasing Head of Procurement	Supplier Evaluation	Catalog Management	Source Assignment	RFX Processing and Awarding		Contract Execution	Contract Repository		Source Assignment	Purchase Order Processing	Financial Settlement *
Demanding Unit Head of Demanding Unit			Demand Creation	Track Demand Satisfaction	Goods and Service Confirmation				Demand Planning and Creation	Goods Receipt and Service Entry	
Supplier Key Supplier Contact	Supplier Data Administration	Order Collaboration	Create and Submit Bids			Contract Negotiation			Order Collaboration	Service Entry	Invoice Collaboration

*** 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
▪ Missing supplier quality management and missing supplier evaluation measures leading to reduced supplier performance and cloudiness about cost reduction potentials ▪ Lack of system integration with suppliers leading to time-consuming workload and increasing inefficiency	▪ Perform timely supplier evaluations across complete procurement cycle ▪ Integrate suppliers in procurement cycle and automate procurement processes (e.g. purchase order management, shipping notification, invoice handling)	▪ Supplier evaluations increase transparency into supplier quality and supplier performance and supports the enforcement of performance improvement measures ▪ Supplier Integration accelerates cycle time of procurement documents and increases procurement productivity and efficiency

Supplier Management

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
▪ Inconsistent use of best practices and non-compliance with sourcing process across all spend categories and group ▪ Limited ability to locate suppliers and compare best offerings aligned with procurement needs and savings objectives ▪ No consistent view of all demands across group ▪ Multiple sources of supply with different prices and conditions for same product across the group	▪ Define and apply a sourcing best-practice; track key tasks and milestones; collaborate with key stakeholders using a common system ▪ Enrich supplier discovery capabilities and increase competition among suppliers with online bidding, RFQs and auctions ▪ Provide common central view of group demands ▪ Conduct sourcing events for aggregated demands across the group to achieve better prices	▪ Ensure compliance with sourcing process that results in the ability to meet savings and spend under management objectives ▪ Development of a qualified supply base to generate further negotiated savings and allow more strategic engagement with strategic suppliers ▪ Ability to leverage negotiated savings faster with shorten cycle-times ▪ Opportunity to achieve savings by aggregating demands in sourcing events

Central Sourcing

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
▪ Negotiated savings are often not leveraged in operational procurement due to the lack of integration with the contract repository ▪ Lack of visibility and transparency into contract spend across the group ▪ Contract creation and approval processes are cumbersome and time consuming ▪ Different local contracts with different prices and conditions exist for same category	▪ Transfer negotiated terms and conditions seamlessly into operational procurement ▪ Unify and automate contract negotiation, creation and execution processes ▪ Negotiate centrally volume discounts on group level spend ▪ Central Transparency of all contract releases across entire group ▪ Monitor contract compliance and maverick buying	▪ Negotiated contracts can be utilized in operational procurement to deliver savings ▪ Ensure negotiated terms and conditions are applied and used consistently in operational procurement to really deliver on savings objectives ▪ Accelerated cycle time decreases maverick buying and speeds up contract utilization ▪ Global terms and conditions ensure overall group savings

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
▪ Non-standardized procurement processes and disconnected systems ▪ Non-integrated requisitioning, purchase order processing and approval processes ▪ Disconnect between contract and operational procurement cycles leading to non-compliance with corporate policies and contracts ▪ Mainly manual and paper-based procurement tasks with poor end-user adoption of existing systems	▪ Integrate and standardize the entire Procure To Pay process ▪ Unify and automate operational procurement process ▪ Automate source-of-supply determination ▪ Leverage easy-to-use procurement system using new technologies and ensure easy access to procurement knowledge	▪ Efficient procurement operations with automated processing of requisitions and online access to catalogs that reduce operating costs ▪ Ability to deliver savings negotiated and captured in sourcing and contract cycles ▪ Increase contract utilization and avoid maverick buying ▪ Optimize procurement tasks focused on value-adding activities and improve overall employee productivity

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

Reliance Industries Limited

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	Fuel Management	Convenience Retail	Settlement with Partners
How do I make best use of retail network at controlled costs to best serve our end customers?	**How do I best manage working capital in our network while best serving our customers?**	**How do I ensure right products offering within limited space and avoid out-of-stock situations?**	**How do I ensure fast cash flow with minimal manual interventions?**
▪ **Revenue Growth** ▪ **Operating margin** ▪ **Customer Satisfaction**	▪ **Manage fuel inventories** ▪ **Optimize fuel prices**	▪ **Merchandising & Assortment Planning** ▪ **Automated Sourcing** ▪ **Promotion Handling**	▪ **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

Fuel Management

Objectives, Issues, Capabilities and Benefits

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
Inability to respond to competitor price changes or increase of purchase costs	Implementation of a fuel pricing strategy and consistent application across the network	Increased sales margin while keeping ability to respond to competition
No timely update about fuels sold at sites	Near real-time view at head quarter on fuels sold at the sites	Updates sales data available for market analysis
Missing view of differences of book vs. physical fuel stock	Timely overview of fuel stock differences at all sites	Fast identification of gains and losses of fuel stock at sites

Fuel Management

SAP Solution

- **Provides best practice and workflows for fuel pricing including strategy, determination, execution and monitoring**
- **Near real-time updates of book stock and upload of tank dips enable fast reconciliation and root-cause analysis of gains or losses**
- **Fast and reliable update of metered fuel sales uploaded from sites of retail network**

SAP Differentiators

Integration: **Seamlessly integrate pricing information and inventory data to provide single view on working capital deployed in retail network**

Fast response: **Flexible tool to allow for easy spotting of fuel gains or losses at sites across the whole retail network**

Always up-to-date: **Near real-time tank dips availability enable accuracy of book stocks and fuel meter reading processing provide view on latest fuel sales in network**

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
Inaccurate and late sales figures from POS	Have 'one version of truth' on sales for all involved	Accurate and timely response to customer buying patterns
Increase sales and margin to drive profitability	Sales plans are based on consumer insight	Increased speed of products to shopper
Consistent and timely in-store execution with inventory to support the promotion	Provide best product, price and offer mix with a view to overall profitability and consumer price perceptions	Deliver a better shopping experience and increase customer loyalty
High inventory and storage costs due to limited space	Optimize purchase orders based on shopper demand and inventory position	Reduce lost sales and increase shopper loyalty

Convenience Retail

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
▪ High volume of payment card transaction with errors ▪ Many claims from dealers due to inaccurate invoices ▪ Overpaying suppliers due to wrong quantities or prices in invoices ▪ Missing purchase cost saving potential	▪ Verification of card transactions against set of rules before posting ▪ Billing based on accurate and verified sales data ▪ Ability to match supplier invoices against ordered and/or received quantities and listed prices ▪ Agree on rebates with vendors based on e.g. sales volumes	▪ Minimize charge-backs and re-invoicing with banks ▪ Realize fast cash flow w/o manual interventions ▪ Minimize costly manual interventions and avoid overcharges ▪ Realize vendor rebates to lower overall purchase costs

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

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

Main Challenges in Oil & Gas Venture Partnerships

Fluctuating costs impede the economic decisions	Complex ownership structures	Upstream Project Funding
Exponential cost increase from suppliers challenges the operator	Economic conditions are squeezing Governments and O&G producers to increase the ROI	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

Venture Partner Billing

- Inability to handle multiple currency billings
- Difficulty to ensure correct billings
- Insufficient Cash Call and Invoice statement handling

Land Management

- Unable to determine available lease acreage
- Late ore missed obligations

Legal & Regulatory Compliance

- Insufficient compliance of Production Sharing Agreements
- Missing government royalty reporting compliance
- Insufficient compliance of Production Revenue Agreements
- Late & missed obligations

Production Allocation

- Insufficient visibility to non-operators of production information
- Missing knowledge of non-operator lifting schedule
- Contractual and revenue owner allocations
- Responsibility for payment of royalty and tax obligations

Venture Accounting

- Difficulty to manage changes in operatorship
- Difficulty to manage equity participation
- Missing support of calculation overhead burdens
- Providing Cash Calls as provided by the JOA
- Insufficient cost entitlement calculation

Cost Transparency

- Lack of visibility to Joint Venture related expenses
- Difficulty to properly categorize costs for CAPEX and OPEX
- Ensuring of billable cost recovery
- Minimizing non-billable costs

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

Land Management

- Efficient management of any type of lease
- Automated lease management process

Legal & Regulatory Compliance

Benefits

- Compliance of Production Sharing Agreements
- Compliance of government royalty reporting
- Compliance of Production Revenue Agreements

Production Allocation

Benefits

- Compliant with all units of measure
- Complete measurement and allocation capabilities
- Complete ownership and revenue accounting capabilities
- Integrated compliance reporting

Venture Accounting

Benefits

- Better management of changes in operatorship
- Efficient equity change handling
- Integrated overhead calculation support
- Cash Call management as provided by the JOA

Cost Transparency

Benefits

- Better visibility to Joint Venture related expenses
- Better information on category of costs for CAPEX and OPEX
- Easily identify and handle both billable and non-billable JOA costs

Aligning stakeholders
... Key to effective Venture Partnerships

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

JV Board	Financial Committee	Production Committee	Venture Management
C-level executives	**Venture Accounting (Operator)**	**Production Allocation**	**Venture Revision (Operator & Partners)**
How do I reduce financial risks and exposures?	**How do I ensure an accurate and timely accounting and compliant government royalty reporting?**	**How do I better manage production entitlements and revenue?**	**How do I improve transparency on Venture related expenditures and contract compliance?**
▪ Costs ▪ Royalty ▪ Production & Revenue ▪ Profit Margin	▪ Venture Cost Capturing ▪ PSC* Accounting ▪ Partner Billing ▪ Project Funding ▪ Production sharing contract	▪ Production Data Capturing ▪ Production Valuation ▪ Contractual Allocation ▪ Production Distribution	▪ Balanced Venture ▪ Production Reporting ▪ Royalty Reporting ▪ Contract Compliance

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.

JV Board	Financial Committee	Production Committee	Venture Management
C-level executives	Venture Accounting (Operator)	Production Allocation	Venture Revision (Operator & Partners)

Operator's AP

- Venture related Procurement

Accounting

- Manage Equity Group → Cost Capturing & Splitting → Partner Billing → Billing Documents & Venture Audit Reports
- Cost Capturing & Splitting → PSC* Accounting → PSC* Entitlement Reports

Production Allocation

- Field Data Capturing → Volumetric Allocation & Valuation → Revenue Accounting → Production Entitlement Report

Operator's AR

- Venture Partner Management for Billing & Cash Call

*Production Sharing Contract

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
▪ Lack of visibility to venture and partner related expenses ▪ Difficulty to manage changes in operatorships and equity participation ▪ Cash Call handling and timely reimbursement by partners ▪ Difficulty to ensure correct billings and government royalty reporting compliance	▪ Capture of venture related cost object information and allocation to ventures and partners according to equity entitlement ▪ Flexible venture master data model and equity change management ▪ Integrated Cash Call management ▪ Standard reporting on venture and partner level with flexible forms including government royalty reporting	▪ Transparency on all venture and partner related expenses ▪ Flexible and easy handling of changes in operatorships and equity participation ▪ Cash Call Management streamlined with operator's AP process ▪ Accurate and compliant venture accounting which meets partner and government reporting demands

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**

Venture Accounting (Operator)

SAP Solution

*Production Sharing Contract

- 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
▪ Contractual and revenue owner allocations ▪ Responsibility for payment of royalty and tax obligations ▪ Insufficient visibility to non-operators of production information ▪ Missing knowledge of non-operator lifting schedule	▪ Include volumetric contractual allocation of extracted products like, Natural Gas and Crude Oil, back to the originating well completions ▪ Royalty and tax calculation ▪ Complete measurement and allocation capabilities ▪ Support of international unit of measure capability	▪ Complete ownership and revenue accounting capabilities ▪ Integrated compliance reporting ▪ Better compliance with all units of measure ▪ Permits employees throughout the company to work with the same data, thus eliminating unnecessary data re-entry and improving data consistency

Production Allocation

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
▪ Lack of visibility to venture and partner related expenses and payments	▪ Standard reporting and audit support on venture and partner level with flexible billing forms	▪ Transparency on all venture and partner related expenses and project funding (Accruals and Cash Calls)
▪ Difficulty to ensure correct government royalty reporting compliance	▪ Compliant government royalty and revenue reporting according Production Sharing Agreements	▪ Accurate and compliant venture and PSC* accounting which meets partner and government reporting demands
▪ Missing effective production information management reporting on contractor's production volume and revenue entitlement	▪ Production volume and revenue entitlement calculation and reporting including real time Field Data Capturing	▪ Effective production information that enables companies to adhere to strict compliance regulations and timely reporting requirements

***Production Sharing Contract**

Venture Revision - Operator & Partners

SAP Solution

Billing Documents & Venture Audit Reports

PSC* Entitlement Reports

Production Entitlement Report

- 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

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

Roadmap to Operational Sustainability

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…

THE WALL STREET JOURNAL.

Corporate Compliance Costs Rise to All-Time High…

DIE ZEIT

Green, Green, GREEN !

FT.com FINANCIAL TIMES

Growing List of Regulations Haunt Manufacturers…

INTERNATIONAL Herald Tribune

What Is Environmental Sustainability?

WSJ.com THE WALL STREET JOURNAL. ONLINE

Spending on global regulation and compliance to double by 2011 to over $70B USD

May 14, 2008

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.

Losses continue to occur across many industries

2 Percentage of Loss Type

Types of incidents are catastrophic

3 Loss by Cause (MM$)

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

Gaps in ability to provide the infrastructure for risk, performance and HSE

- Driving integration of information across the enterprise
- Continuous process improvement / business improvement

Gaps in ability to manage risk, performance, and HSE to desired levels

- Supporting / managing / mitigating enterprise risk
- Measuring / monitoring business performance
- Health, Safety, Environmental (HSE) - operations

Performance **Importance**

1 is "ineffective" and 5 is "very effective"

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

GOVERN
- Trade Secrets
- Employee participation

REVIEW
- Compliance Audits

MONITOR
- Incident Investigation

DELIVER
- Operating Procedures
- Training
- Contractor
- Mechanical integrity
- Hot Work Permits

PLAN
- Process Hazard Analysis
- Emergency Planning and Response
- Pre-Startup Safety reviews
- Management of Change

INTEGRATE
- Process Safety Information

Example OSHA 1910

Same Model Works for Number of other Risks and Standards

OHSAS 18001

GOVERN
- 4.1 General Requirements
- 4.2 OH&S Policy

REVIEW
- 4.5.4 Audit
- 4.6 Management Review

MONITOR
- 4.5.1 Performance Measurement and Monitoring
- 4.5.2 Accidents, Incidents, Non-conformances, and Corrective and Preventive Action
- 4.5.3 Records and Records Management

DELIVER
- 4.4.1 [Define] Structure and Responsibility
- 4.4.2 Training, Awareness and Competence
- 4.4.3 Consultation and Communication
- 4.4.4 Documentation
- 4.4.6 Operational Control
- 4.4.7 Emergency Preparedness and Response

PLAN
- 4.3.1 Planning for Hazard Identification, Risk Assessment and Risk Control
- 4.3.2 [Review] Legal and Other Requirements
- 4.3.3 [Set] Objectives
- 4.3.4 [Establish] OH&S Management Program(s)

INTEGRATE
- 4.4.5 Document and Data Control

ISO 14001

GOVERN
- 4.1 General Requirements
- 4.2 Environmental Policy

REVIEW
- 4.5.4 Internal Audit
- 4.6 Management Review

MONITOR
- 4.5.1 Monitoring and Measurement
- 4.5.2 Evaluation of Compliance
- 4.5.3 Non-conformances, Corrective and Preventive Action
- 4.5.4 Control of Records

DELIVER
- 4.4.1 [Define] Structure and Responsibility
- 4.4.2 Competence, Training and Awareness
- 4.4.3 Communications
- 4.4.4 EMS Documentation
- 4.4.6 Operational Control
- 4.4.7 Emergency Preparedness and Response

PLAN
- 4.3.1 Environmental Aspects
- 4.3.2 [Review] Legal and Other Requirements
- 4.3.3 [Set] Objectives, Targets, & Programs

INTEGRATE
- 4.4.5 Control of Documents

ISO 9000

GOVERN
- Management Responsibility
- Quality System

REVIEW
- Corrective and Preventive Action
- Internal Quality Audits
- Statistical Techniques

MONITOR
- Product Identification and Tractability
- Inspection and Testing Control of Inspection, Measuring, and Test Equipment
- Inspection and Test Status

DELIVER
- Purchasing
- Order Entry
- Handling, Storage, Packaging, and Delivery
- Training
- Servicing

PLAN
- Design Control
- Process Control
- Control of Customer Supplied Products
- Control of Nonconforming Products

INTEGRATE
- Document and Data Control
- Control of Quality Records

CEC EMS

GOVERN
- Environmental Policy
- Organizational Decision-making and Planning

REVIEW
- Continuous Evaluation and Improvement

MONITOR
- Corrective and Preventive Action and Emergency Procedures

DELIVER
- Structure, Responsibility and Resources
- Operational Control
- Training, Awareness and Competence

PLAN
- Environmental Requirements and Voluntary Undertakings
- Objectives and Targets

INTEGRATE
- Document Control

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

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

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

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

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....

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

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

Visibility increases recognition of dangerous processes and reduces abnormal operations

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

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.

Chief Compliance Officer

COO or VP Manufacturing

Plant Manager, Environmental Engineer

Plant Manager, Industrial Hygiene and Safety Officer

Plant / Maintenance / Engineering Manager

Keep the Stakeholders Informed and Involved

Keep the Environment Safe

Keep the People Safe

Keep the Assets Safe

EHS Risk Mgmt

EHS KPI Monitoring and Compliance Reporting

Audit Mgmt

COO, Chief Risk/ Compliance Officer

Environmental Permits & Requirements Mgmt

Emissions & GHG Inventory Mgmt

Health and Safety Mgmt

Occupational Health Mgmt

Maintenance Mgmt

Asset Information Management

Action, Deviation and Response Planning

Data Collection

Standard Operating Procedures

Certificates and Safety Training

Work Permits, Lockout / Tagout

Reliability-Based Maintenance Strategy

Environmental Engineer **Industrial Hygiene and Safety Officer** **Maintenance / Engineering Manager**

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

- Accidents or incidents show unforeseen risks and lead to short term safety programs
- Lack of transparency and standardization of local EHS activities and high manual efforts
- External and internal audits create huge efforts
- Costly collection of local data, lack of comparability, inconsistent KPI´s
- Risk of severe incidents that could harm people, damage image and lead to be called to account

Key business capabilities

- Closed loop risk management including risk mitigation and prevention
- Consolidate information and processes on an integrated, scalable and flexible platform
- Auditable business processes and audit management solution that meet ISO 19011 standard
- Visibility into operational performance metrics, enabling drill down to specific data
- Effective management and control of risks, processes and preventive measures.

Benefits

- Effective anticipation of risk leads to improved prevention of incidents.
- Safe time and money for inefficient Ad hoc activities as “firefighting”
- Reduce cost of compliance and best practices can be shared
- Ensure with moderate effort that internal and external standards are met
- Easy to use monitoring to ensure compliance objectives are being met
- Improve corporate EHS standards and prevention to minimize risks

Stakeholders
... keep them Informed and Involved

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.

Corporate EHS Risk Mgmt	Corporate EHS KPI Monitoring and Compliance Reporting	Audit Mgmt

Process overview

1 Risk Planning	2 Risk Identification and Analysis	3 Risk Response	4 Risk Monitoring
■ makes sure that the right people are involved in the risk management process ■ comes with a set of workflow-driven scenarios	■ option to send risk surveys to gather quick feedback from assessment participants ■ offers generic web services that allow integration into SAP and Non-SAP applications ■ automatic risk alerts ■ qualitative and quantitative analysis methods	■ guided activities to allow non-risk management experts to work with the application ■ status tracking and analysis	■ dashboard reporting ■ keeps track of event losses to review the effectiveness of the risk responses ■ offers set of standard reporting options tailored to the individual target audience.

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

1 Overall EHS KPI Monitoring

- SAP NetWeaver BI offers EHS business content and easy reporting tool
- Business Objects offers extended value with Business Intelligence Solutions like Xcelsius
- Xcelsius is a tool for rapid development of visualizations and highly interactive dashboards

2 Environmental KPI Monitoring & Reporting

- Form based reporting allows data output on any government form, versioning and electronic submittal
- Analytical query for Ad hoc reporting
- Integration with SAP NetWeaver BI with out of box data extraction and sample business content

3 Health and Safety KPI Monitoring & Reporting

- Configurable list-based SAP reports with substantial search capabilities offering E-mail and export
- WWI Reports - Form-based reports due to legal requirements
- MS-Word
- SAP NetWeaver BI: easy reporting tool

4 Asset Safety KPI Monitoring & Reporting

- List-based SAP reports as powerful Ad hoc reporting tool
- SAP NetWeaver BI drill-down reports
- Out of box data extraction
- Sample business content e.g. for Financial, Efficiency & Effectiveness and Corporate Indicators

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

Process overview

1 Audit Planning Program & Criteria

- Audit planning according to chronological, functional or organizational aspects
- Scheduling via Microsoft Project possible
- Master data for audit question lists can be reused for different audits

2 Auditing & Grading

- Assignment of question list to audit per drag & drop
- Offline and online results recording is supported
- Grading of the audit object and acceptance or rejection of the audit depending on a preset limit value

3 Corrective Action

- Triggering fulfillment of corrective actions
- Send an e-mail with action item attached or create an inbox entry
- Create Quality Notification in SAP ERP if necessary

4 Analysis

- Selection of data objects via standard SAP analysis
- Overview lists & graphical representation
- Analysis via SAP NetWeaver BI by extracting operational data

Environment Safety

Objectives, Issues, Capabilities & Benefits

Objective:

Run business operations in accordance with environmental laws and company policies to avoid or reduce pollution, safe 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
■ Complexity of regulation frameworks and frequency of change ■ Unable to easily fulfill required regulations (state, federal, and international) ■ High cost of compliance due to manual efforts and disparate systems ■ Lack of early warning system for deviations and critical issues ■ Direct operational and financial impacts	■ Integrated database and company-wide transparency regarding compliance with relevant regulations ■ Consistent, auditable and transparent business processes ■ Integration into SAP ERP and 3rd party systems ■ Flexible early warnings and alerts ■ Emissions and Energy Management ■ Basis for trading with emissions certificates	■ Improved processes and lower total cost of compliance ■ Reduce workload ■ Enables total compliance achievement ■ Reduced energy costs ■ Create revenue by selling free capacities of certificates ■ Reduced risk of incidents and fines

Environment Safety

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

Environment Safety

Environmental Permits and Requirements Management

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.

Environmental Permits and Requirements Mgmt	Emissions & GHG Inventory Mgmt
Action, Deviation and Response Planning	Data Collection

Process overview

1 Define Permits and Master Data

- Flexible definition of permits and requirements including limits, expiration dates
- Proactive early warning system
- Integration with SAP EH&S substance database (material)

2 Define Assets and Hierarchies

- Organize company assets in a hierarchy
- Integration to maintenance (equipment, technical object)
- Reporting hierarchies
- Define data sources and integration

3 Define Tasks

- Recursive tasks, workflows, e-mail notifications and escalation mechanism to get e.g. compliance activities conducted
- Integration to maintenance notifications

4 Collect Data

- Manual collection via tasks, workflow and entry sheets and proof of data plausibility
- Automatic collection via integration with ERP and Shop Floor Systems (MII, web services)
- Consumptions, measurements and emissions

5 Manage Deviations and Incidents

- Manage deviations and incidents and appropriate activities to minimize risks
- Reporting in required time and manner to authorities and internal stakeholders

6 Perform Reporting

- Reporting on any government form and electronic report submittal, and report versioning
- Ad hoc reporting tool
- Integration with SAP BI and delivery of sample business content

Environment Safety

Emissions & GHG Inventory Management

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_2 and GHG emissions reporting and management of allowances according to the European or Australian GHG trading schemes.

Environmental Permits and Requirements Mgmt	Emissions & GHG Inventory Mgmt
Action, Deviation and Response Planning	Data Collection

Process overview

1 Define Emissions Planning & Monitoring

- Definition of all emission source, facility or process scenarios including parametric definitions
- Scenarios for actual and forecast emissions
- Integration to maintenance (equipment, technical object)

2 Define Tasks

- Recursive tasks, workflows, e-mail notifications and escalation mechanism to get e.g. compliance activities conducted
- Integration to maintenance notifications

3 Collect and Calculate Data

- Manual collection via tasks, workflow and entry sheets
- Automatic collection via integration with ERP and Shop Floor Systems (MII, web services)
- Calculate emissions e.g. CO_2 based on consumptions and emission factors

4 Monitoring Plan/Actual and Credits

- Monitoring of planned emissions versus actual emissions
- Monitoring of emissions versus credits/ allowances of GHG emissions
- Manage deviations or incidents and reporting to authorities

5 Manage Emissions Credits

- Flexible definition of accounts to manage emissions credits and their validity periods
- Track transactions e.g. internal transfers and give an overview of credits stock at any time

6 Perform Reporting

- Reporting on any government form and electronic report submittal, and report versioning
- Ad hoc reporting tool
- Integration with SAP BI and sample business content

People Safety

Objectives, Issues, Capabilities & Benefits

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, heath surveillance, incident management.

Issues

- Lack of integration and process control
- High risk of non compliance and personal reliability for workers
- Need to ensure details like:
  - What are the exposures?
  - What measures have been taken?
  - Have the necessary preventive medical check-ups been carried out?
  - Did employees follow the right trainings?
- Need to protect maintenance workers e.g. against electricity or radiation.

Key business capabilities

- Streamlines collaboration between IHS professional, first-aider, asset management, HR department, and external authorities
  - Health and safety management incl.
  - Risk and exposure management
  - Accident Management
  - System-controlled tracking of safety measures
- Medical management
- Automated generation of SOPs and safe handling of hazardous substances
- Safety trainings and certificates
- Lockout/tagout and work permits

Benefits

- Streamlined processes
- Reduced effort for investigation
- Standardized capture of legally required information
- Complete documentation of all processes
- Reduced time and costs
- Guarantee that each employee receives the necessary health surveillance protocols
- Assure health of all employees and contractors

People Safety

SAP Solution

SAP ERP

- SAP Environment, Health & Safety (SAP EH&S)
- SAP Enterprise Learning (SAP ERP HCM)
- Work Clearance Management

- Managing industrial hygiene and safety; including risk assessment, incident/ accident logs, exposure profiles
- Occupational health management incl. health surveillance protocols
- Standard Operating Procedures for safe handling of hazardous substances
- Execute and manage safety courses, briefings and certificates
- Lockout/tagout and work permits to protect maintenance workers

SAP Differentiators

"SAP EH&S replaces the maze of stand-alone country-specific solutions that are like small country lanes – and provides us with a fast, multilane highway for the integrated environment, health, and safety business."

Dr. Peter Schmidt, Sanofi-Aventis

People Safety

Health and Safety Mgmt.

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

Process overview

1 Start Risk Assessment

- Direct access to real time information, e.g. Hazardous Substance Inventory, Incidents / Accident Notification to initiate Risk Assessment

2 Risk Analysis and Rating

- Complete measurement management with planning and recording functionality
- Exposure related analysis methods

3 Safety Measures Based on Rating

- Triggering and tracking of technical measures as notifications in SAP EAM, QM and SM
- Gathering of safety measure related costs
- Direct assignment of responsible persons

4 Monitoring & Reporting

- Status tracking reports
- Form-based accident reporting
- Comprehensible risk assessment reporting
- Detailed measurement reporting

People Safety

Occupational Health Management

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

Process overview

1 Trigger Health Surveillance

- Direct access to HCM master data and EH&S IHS data
- Proposal of health surveillance protocols based on employee specific exposure situation (risk assessment) by avoiding needless examinations
- First Report of Injury

2 Execute Medical Examination

- Planning cockpit with access to SAP calendar
- Complete recording of medical information
- Possible access to related information in injury log, accident management and person specific exposure log

3 Documentation and Triggering of Tasks

- Total medical history
- Form-based reporting for medical certificates (results and medical restrictions)

4 Reporting

- Preventive aspects can easily be identified based on medical data
- KPI reporting for critical items e.g. overdue date of health surveillance protocols

People Safety

Hazardous Substance Management

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

Process overview

1 Gather and Verify Hazardous Substance Data

- Centralized hazardous substance database
- Automatic update of information with interface to content providers
- Support of check-in and verification of supplier MSDS

2 Block of Hazardous Substances/ Materials

- Based on risk assessment rating material can be blocked for purchase

3 Standard Operating Procedure

- Automated update of Standard Operating Procedure based on real time information from substance database and work area information

4 Create Hazardous Substance Inventory

- Hazardous Substance Inventory can automatically be created based on MM data
- SARA 311, 312 Tier 1 and II reports can also be created automatically

People Safety

Certificates and Safety Trainings

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

1 Get to Know Missing Qualifications

- Employees can be alerted of expiring certifications or missing qualification well in advance, before the actual expiry date.

2 Find and Book Appropriate Course

- SAP Enterprise Learning can recommend appropriate courses that can be taken to regain expiring certifications or to attend necessary safety briefings.

3 Take the Course

- SAP Enterprise Learning helps quick and fast consumption of e-learning courses.
- Learners can take an e-learning course readily from the Learning Portal.

4 Update Qualification Profile

- Based on successful completion of courses, qualifications/ certifications can be automatically updated to employee's profile.
- Compliance with legal required qualifications and certifications can easily be proved

Asset Safety

Objectives, Issues, Capabilities & Benefits

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
▪ Risk of incidents caused by assets or incorrect maintenance ▪ Keep maintenance and follow-on costs to a minimum ▪ Provide safety relevant documentation and instructions ▪ Ensure the safety of maintenance employees	▪ Integrated, end-to-end capabilities for enterprise asset management ▪ Suitable maintenance and safety strategies ▪ Reliability centered maintenance ▪ Mobile Asset Mgmt. ▪ Flexible assignment of safety documents ▪ Seamless Integration with other SAP solutions	▪ Manage all phases of the asset life cycle under safety aspects ▪ Balance of performance, risk and cost to achieve maintenance excellence ▪ Process efficiency and transparency e.g. safety measures

Asset Safety

SAP Solution

- SAP ERP (Enterprise Asset Management, Work Clearance Management)
- SAP Mobile Asset Management
- RCMO by Meridium

Maintenance Management:

- Preventive and predictive maintenance
- Maintenance planning and scheduling
- Work order management
- Mobile asset management

Asset Information Management

- Document Management
- Technical asset management

Reliability-Based Maintenance Strategy

Work Clearance Management to perform Lockout/tagout & work permits

SAP Differentiators

- Best of breed functions in a suite of integrated solutions
- Safe working environment and reliable assets
- Proactive versus reactive maintenance
- Reduced maintenance expenditures to raise company profits
- Meet increasing compliance and regulatory requirements

People Safety

Maintenance Management

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

1 Plan Work Orders

- Work orders are typically created based on a maintenance notification which indicates the technical object and the failure or preventive task
- The work order is used to plan all required resources, i.e. skills, required parts, tools, etc..

2 Schedule Work Orders

- The work is scheduled based on the urgency of the task and the availability of resources
- If the technical object has to be taken out of operation, the schedule needs to be coordinated with operations

3 Dispatch Technicians

- Once the order is due for execution it is assigned to the technician who will execute the job
- The planner or supervisor will attempt to best utilize the available capacity and avoid overtime and delays

4 Execute Work

- Assess asset condition
- Access all necessary documentation
- Retrieve required parts and tools
- Execute work and put equipment back into operation if necessary

5 Complete Work

- Actual work hours and used parts are recorded
- In case of corrective action, the notification is updated with the found cause
- The order is first technically completed and after complete processing of all postings commercially completed, as well.

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).

Process overview

1 Define Technical Objects

- Definition of functional location structure representing the facility from an operations and maintenance point of view.
- Definition of all equipments installed in this hierarchy, including all necessary technical attributes

2 Plan Master Data

- Define fundamental master data like material masters, work centers, etc.
- Define inspection and maintenance cycles in maintenance plans
- Define required activities and resources in the form of maintenance task lists and BOM's

3 Create Informational Documents

- Define document types relevant for maintenance and operations, e.g. manuals, technical drawings, safety sheets, etc.
- Define location and access for documents (Document Info Records), e.g. in SAP DMS, external DMS, File-Server, CAD/PDM systems

Reliability based ...

Maintenance Strategy

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).

- Maintenance Management
- Asset Information Management
- Work Permits, Lockout/ Tagout Mgmt
- **Reliability-Based Maintenance Strategy**

Process overview

1 Define System

- Identify Critical Assets and Failure Modes using RCMO by Merdium.

2 Evaluate Risk

- Apply the Appropriate Methodology based on Risk (FMEA or RCM).
- Conduct system-based RCM analysis as well as equipment based FMEA analysis.
- Configure failure effect/risk evaluation using criticality matrix

3 Define Strategy

- Package Optimal Maintenance & Monitoring Tasks in RCMO.
- Link SAP RCMO recommendations to SAP Maintenance Plans.

4 Evaluate Strategy

- Evaluate Strategy Performance Based on Maintenance History via SAP BI.
- Refine strategies when RCM-driven maintenance strategies are not effective.

Asset Safety

Work Permits, Lockout/ Tagout Mgmt

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

1 Define Permit Master Data

- Define for which technical objects (Functional Locations, Equipments) is a safety process required.
- Create a Work Clearance Document (WCD) template for these technical objects (one or many WCDs)

2 Approve Work Order

- Conduct Risk analysis for work order
- Assign additional documents like drawings
- Designate WCM related tasks and assign WCM application

3 Prepare Work

- Create operational WCD based on template
- Execute conflict checks
- Print tags and tagging list or start mobile tagging process
- Start and confirm isolation
- Work authorization and acceptance

4 Execute Work & Remove Tag

- Execute maintenance according to work order
- Start test cycle with temporary untagging / tagging
- Final confirmation of work
- Untagging process including confirmation
- Close maintenance order

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...

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?

- 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

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

- 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

- 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

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

- 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

Reliance Industries Limited

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

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

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

Complex System Environments
- Ineffective and costly management of access
- Lack of proactive activity monitoring to prevent fraud
- Audits are manually intensive and prohibitively expensive

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.

CFO

Head of Risk Management

Head of Compliance / Internal Audit

Head of Internal Audit / Chief Security Officer

Vice President Tax / Head of Compliance

How do I maximize corporate performance while managing risk and ensuring compliance?

- **Increase visibility**
- **Reduce costs**
- **Manage risk**

Enterprise Risk Management

How do I proactively mitigate risk, maintain a proper balance of risk and reward, and gain a competitive advantage?

- **Reduce losses / risk exposure and improve profitability**
- **Increase success rate of new initiatives/strategies**
- **Reduce risk mitigation costs & insurance premiums**

Risk-Based Internal Controls

How do I ensure continuous compliance with regulatory requirements and company policies?

- **Enforce accountability**
- **Enable continuous control monitoring through automation**
- **Reduce cost of compliance**

Access Management

How do I prevent the unauthorized access into sensitive and key corporate assets?

- **Reduce cycle time to manage and maintain accounts in a compliant manner**
- **Reduce audit, remediation and resolution costs**
- **Automate entire account management life cycle**

Duty Reduction & Trade Compliance

How do I fully comply with complex trade regulations and maximize trade value by reducing duties, taxes, fines and delays?

- **Ensure trade compliance**
- **Minimize financial risk by avoiding costly fines and penalties**
- **Maximize trade benefits by reducing trade-related duties, taxes**

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

CFO

Head of Risk Management

Head of Compliance / Internal Audit

Head of Internal Audit / Chief Security Officer

Vice President Tax / Head of Compliance

	Enterprise Risk Management	Risk-Based Internal Controls	Access Management	Duty Reduction & Trade Compliance
Strategy / Planning	Risk Planning			Trade Policy Planning
Risk Management	Risk Identification; Risk Analysis			
Business Operations	Risk Response	Document Compliance Initiatives: Plan & Perform Assessments and Tests; Remediate Issues and Certify Results	Access Planning: Access Analysis & Response; Access Monitoring	Minimize Duty, Taxes, Fines, Penalties; Import / Export Compliance Monitoring
Internal Audit	Risk Monitoring			

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

1 Strategic objective setting

- Identify key business objectives and initiatives
- Assign Key Performance Indicators to monitor each objectives and initiatives

2 Align strategic objectives to organizational entities

- Assign business objectives to organizations
- Define organization structure for risk reporting
- Set up risk appetite and threshold levels
- Assign risk managers

3 Define risk classification system

- Activity categories
- Risk / opportunity categories
- Impact / benefit categories
- Key Risk Indicator templates

4 Define risk relevant business activities

- Processes
- Products / Services
- Assets

Risk Identification

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

Process Steps

1 Identify risks and opportunities

- Identify risks and opportunities
- Use surveys for collaboration
- Achieve consensus

2 Identify drivers and impacts

- Identify one or more drivers for the risks
- Identify one or more impacts of the risks

3 Assign Key Risk Indicators

- Forward-looking and predictive indicators
- Assign KRIs for continuous risk monitoring in operational systems
- Assign KRIs to be manually updated

4 Document risk inter-relationships

- Define how risks influence one another
- Consolidate similar risks

Risk Analysis

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

Process Steps

1 Analyze risks using qualitative or quantitative methods

- Assess risk event likelihood
- Assess timeframe for risk event occurrence
- Assess risk event impact
- Includes risks of non-compliance with regulations and policy

2 Build risk scenarios and determine exposure

- Define business risk scenarios and assumptions
- Determine risk exposure

3 Perform Monte Carlo simulations

- Perform what-if analyses
- Perform Monte Carlo simulations

4 Prioritize risks based on risk level

- Use risk heat maps to view risk levels
- Ability to define custom heat maps

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

1 Document preventive and recovery responses for risks

- Select the most appropriate type of risk response (Accept, Avoid, Control, Mitigate, or Transfer)
- Create new risk responses
- Propose new controls

2 Assign response ownership and actions

- Assign response ownership
- Document and implement action plans

3 Perform control assessments and tests

- Evaluate and implement controls
- Plan assessments and test controls

4 Plan re-assessment and approval cycles

- Ongoing re-assessments of risks
- Update responses
- Validate key risks

Risk Monitoring

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

Process Steps

1 Monitor Key Risk Indicators

- Configurable role-based dashboards
- Continuously monitor key risk indicators
- Track trends and changes in risk level
- Respond proactively to prevents risks from occurring

2 Monitor response effectiveness and completeness

- Continuously monitor response effectiveness and completeness
- Manage changes in overall risk exposure

3 Update risk exposure for strategic objectives

- Strategic objectives / initiatives reflect enterprise risk exposure
- Prevent KPIs from going off-track by proactively mitigating risks
- Enhance risk culture and governance

4 Document occurred incidents and losses

- Capture incidents
- Document potential and actual losses
- Analyze incidents database for emerging risks

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 though 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

1 Define Processes That Align with Business Initiatives

- Maintain organizations
- Maintain indirect entity-level controls
- Maintain account groups
- Maintain control objectives
- Maintain process and control catalog

2 Identify Top Compliance Risks

- Identify risks associated with regulations and policies
- Identify impacted organizations and business processes

3 Perform High-Level Scoping

- Maintain compliance initiatives
- Assign processes and controls to organizations
- Identify organizations and processes in-scope through materiality analysis or enterprise risk assessment.

4 Identify Business Owners and Users

- Organization owner
- Internal control managers
- Process owners
- Subprocess owners
- Control owners
- Audit manager

5 Maintain Assessment and Testing Catalogs

- Define and document question and survey library for assessments.
- Define test plans for manual testing

Plan and Perform
... Assessments and Tests

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

1 Identify Controls & Map to Risks
- Review control proposals
- Implement proposed controls
- Perform control-risk assessment
- Determine required level of evidence

2 Plan Assessments and Tests
- Plan assessments, tests and monitoring
- Perform assessments and tests
- Raise issues for remediation

3 Access Remediation
- Review automated access test results
- Determine / perform appropriate remediation

4 Monitor control effectiveness
- Continuously monitor control effectiveness
- Report on effectiveness and completeness of risk response

5 Update risk exposure
- Automatically update risk exposure
- Reprioritize investments and add new risk responses

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

1 Review and Remediate Issues

- Review proposed actions, responsibilities and timing
- Conduct remediation
- Perform reassessments and retesting

2 Report and Analyze Compliance Results

- Monitor and review the status of the compliance cycle
- Perform aggregation of deficiencies
- Escalate issues
- Summarize and report on results of the compliance cycle

3 Sign-Off and Audit

- Certify all tests and execute sign-off
- Review results with external auditors, as required

Access Management

Prevent Unauthorized Access

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.

- Access Risk Identification
- Plan & Perform Assessments and Tests
- Access Analysis & Response
- Access Monitoring

Process Steps

1 Identify Control Objective and Risks

- Select and determine risks to be monitored according to organization policies, procedures, and regulations
- Select risk owners and gain approval

2 Classify Risks

- Classify risks as Critical, High, Medium, or Low

3 Establish Technical Rules

- Identify new risks and conditions that should be monitored
- Establish technical rules to monitor risk

4 Verify Rules

- Verify rules against test cases (Users/Roles).

Access Analysis & Response

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

Access Risk Identification

Plan & Perform Assessments and Tests

Access Analysis & Response

Access Monitoring

Process Steps

1 Plan Assessments and Tests

- Plan assessments, tests and monitoring
- Perform assessments and tests
- Raise issues for remediation

2 Identify Access Risk

- Review automated access test results
- Determine / perform appropriate remediation

3 Align Role and Access

- Remove internal role conflicts
- Ensure critical access is restricted to few roles
- Remove unnecessary and unintentional access from roles

4 Remediate Access Risk

- Remove unnecessary and unintentional access from users
- Identify super users and activity monitors

5 Mitigate Access Risk

- Design mitigating controls
- Gain control owner approval
- Assign monitors to users

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

1 Design Access Rules and Policies

- Define process for role maintenance
- Define process for new users and changes
- Define process for changes to risks
- Define process for exceptions

2 Test, Approve, and Enable Access

- Perform 'what if' analysis prior to changing access
- Gain approvals from business owners prior to changes
- Access provisioning

3 Mitigate Access Risk

- Add or assign mitigating controls
- Create new super users
- Approve new roles

4 Prevent Access Risk

- Establish and perform periodic monitoring for access risks and controls
- Complete access reviews
- Complete mitigation control reviews
- Complete sign-off and audit as required

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.**

Trade Policy Planning

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

Process Steps

1 Establish Trade Policies to Support Business Strategy

- Identify trade policy elements necessary to support business strategy, e.g. markets, products, trading partners...
- Establish trade policy required to support business strategy*

2 Identify Import/Export Trading Partners in Impacted Markets

- Analyze strategy implications on Trading Partners in Impacted Markets
- Identify impacted trading partners for later screening, compliance, trade-agreement impacts

3 Identify Import/Export Materials/Goods/ Services

- Analyze strategy implications on Organization's Materials, Goods, Services
- Identify impacted materials/goods/ services for later screening, compliance, trade-agreement impacts

4 Identify Applicable Trade Regulations, Agreements

- Analyze Regulatory Requirements & Free-Trade Implication of Enterprise Trade Policies
- Activate regulations and agreements for later use in screening, compliance, trade-agreement analysis

Duty, Taxes, Fines, Penalties

… Minimize

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

Process Steps

1 Screen Business Partners

- Apply trade-related information to business partners transferred to GTS from feeder systems
- Screen business partners against sanctioned-parties lists
- Repeat periodically as required to support business strategy

2 Screen Materials, Goods, End-Uses

- Classify goods / materials transferred to GTS according to free-trade agreements and trade regulations
- Screen goods / materials for compliance issues
- Repeat periodically as required to support business strategy

3 Mitigate Compliance Risks

- Apply for the appropriate import/export licenses or renewals*
- Block or release denied / sanctioned business partners as required
- Monitor and mitigate compliance issues on and ongoing basis

4 Enable Applicable Duty Reductions

- Capture Vendor Origin Declarations
- Calculate materials' / goods' eligibility for duty-free and reduced-duty treatment per free-trade agreements
- Declare duty-reduction eligible materials/goods to customers, authorities

Import / Export

... Compliance

Continuous monitoring of import and export processes assures ongoing compliance.

Process Steps

1 Ensure Compliance for Order-to-Cash and Purchase-to-Pay Processes

- Ensure ongoing compliance by checking each Sales Order, Outbound Delivery, Purchase Order, Inbound Delivery, and underlying data change in real-time for adherence to embargoes, denied party list, licenses, and regulations

2 Claim Applicable Duty Reductions

- Claim reduced import duties on free-trade-agreement eligible materials/goods
- Enable business partners to claim reduced duties on free-trade-agreement eligible goods

3 Ensure Proper Declarations to Authorities / Business Partners

- Demonstrate compliance and product-eligibility for preferential duties and taxes to customers and authorities on an ongoing basis

4 Monitor Key Risk Indicators

- Monitor for non-compliance of sanctioned party list and embargo screening activities

Thank you !

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

Copyright 2011 SAP AG
All rights reserved

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP AG. The information contained herein may be changed without prior notice.

Some software products marketed by SAP AG and its distributors contain proprietary software components of other software vendors.

SAP, R/3, xApps, xApp, SAP NetWeaver, Duet, SAP Business ByDesign, ByDesign, PartnerEdge and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and in several other countries all over the world. All other product and service names mentioned and associated logos displayed are the trademarks of their respective companies. Data contained in this document serves informational purposes only. National product specifications may vary.

The information in this document is proprietary to SAP. This document is a preliminary version and not subject to your license agreement or any other agreement with SAP. This document contains only intended strategies, developments, and functionalities of the SAP® product and is not intended to be binding upon SAP to any particular course of business, product strategy, and/or development. SAP assumes no responsibility for errors or omissions in this document. SAP does not warrant the accuracy or completeness of the information, text, graphics, links, or other items contained within this material. This document is provided without a warranty of any kind, either express or implied, including but not limited to the implied warranties of merchantability, fitness for a particular purpose, or non-infringement.

SAP shall have no liability for damages of any kind including without limitation direct, special, indirect, or consequential damages that may result from the use of these materials. This limitation shall not apply in cases of intent or gross negligence.

The statutory liability for personal injury and defective products is not affected. SAP has no control over the information that you may access through the use of hot links contained in these materials and does not endorse your use of third-party Web pages nor provide any warranty whatsoever relating to third-party Web pages

Weitergabe und Vervielfältigung dieser Publikation oder von Teilen daraus sind, zu welchem Zweck und in welcher Form auch immer, ohne die ausdrückliche schriftliche Genehmigung durch SAP AG nicht gestattet. In dieser Publikation enthaltene Informationen können ohne vorherige Ankündigung geändert werden.

Einige von der SAP AG und deren Vertriebspartnern vertriebene Softwareprodukte können Softwarekomponenten umfassen, die Eigentum anderer Softwarehersteller sind.

SAP, R/3, xApps, xApp, SAP NetWeaver, Duet, SAP Business ByDesign, ByDesign, PartnerEdge und andere in diesem Dokument erwähnte SAP-Produkte und Services sowie die dazugehörigen Logos sind Marken oder eingetragene Marken der SAP AG in Deutschland und in mehreren anderen Ländern weltweit. Alle anderen in diesem Dokument erwähnten Namen von Produkten und Services sowie die damit verbundenen Firmenlogos sind Marken der jeweiligen Unternehmen. Die Angaben im Text sind unverbindlich und dienen lediglich zu Informationszwecken. Produkte können länderspezifische Unterschiede aufweisen.

Die in diesem Dokument enthaltenen Informationen sind Eigentum von SAP. Dieses Dokument ist eine Vorabversion und unterliegt nicht Ihrer Lizenzvereinbarung oder einer anderen Vereinbarung mit SAP. Dieses Dokument enthält nur vorgesehene Strategien, Entwicklungen und Funktionen des SAP®-Produkts und ist für SAP nicht bindend, einen bestimmten Geschäftsweg, eine Produktstrategie bzw. -entwicklung einzuschlagen. SAP übernimmt keine Verantwortung für Fehler oder Auslassungen in diesen Materialien. SAP garantiert nicht die Richtigkeit oder Vollständigkeit der Informationen, Texte, Grafiken, Links oder anderer in diesen Materialien enthaltenen Elemente. Diese Publikation wird ohne jegliche Gewähr, weder ausdrücklich noch stillschweigend, bereitgestellt. Dies gilt u. a., aber nicht ausschließlich, hinsichtlich der Gewährleistung der Marktgängigkeit und der Eignung für einen bestimmten Zweck sowie für die Gewährleistung der Nichtverletzung geltenden Rechts.

SAP übernimmt keine Haftung für Schäden jeglicher Art, einschließlich und ohne Einschränkung für direkte, spezielle, indirekte oder Folgeschäden im Zusammenhang mit der Verwendung dieser Unterlagen. Diese Einschränkung gilt nicht bei Vorsatz oder grober Fahrlässigkeit.

Die gesetzliche Haftung bei Personenschäden oder die Produkthaftung bleibt unberührt. Die Informationen, auf die Sie möglicherweise über die in diesem Material enthaltenen Hotlinks zugreifen, unterliegen nicht dem Einfluss von SAP, und SAP unterstützt nicht die Nutzung von Internetseiten Dritter durch Sie und gibt keinerlei Gewährleistungen oder Zusagen über Internetseiten Dritter ab.

Alle Rechte vorbehalten.

SAP INDUSTRY BLUEBOOK : Oil & Gas

Volume – 2 (PART – B)
Oil & Gas – Best Business Practices

APPROACH WHITE PAPER

BUSINESS TRANSFORMATION SERVICES

28th June 2011

Author .

UJJAL CHAKRABORTY

PRINCIPAL

SAP BUSINESS CONSULTING

INDIA SUB-CONTINENT. BANGALORE

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

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 – UPSTREAM , A BATTLE FOR NEW RESOURCES

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

Outlook for Energy – A View to 2030

- **Oil & Gas will continue to lead among the different forms of energy supply**

- **Robust energy demand growth will continue through 2030**
  - Energy demand will grow by about 50% mainly driven by developing countries

The Future Supply of Resources is a Massive Challenge for Energy Companies

Supply Challenges in Oil & Gas

Energy Security Shapes Policy

- Increased risks of supply disruption
- Policy impacts on regulations & taxes
- Unconventional resource incentives
- Sustainable and responsible development

National Oil Companies Expand

- Control of future energy supplies through strategic direct investments
- Leverage reserve control for consumer access
- Cooperate to share risk and gain access to proven technology

Leading to:

- Fierce competition for reserves
- Pressure on F&D and lifting costs
- Compliance burden
- Structural innovation

Growing Limits on Reserve Access

- Increasingly remote opportunities
- Governments Limiting Access
- Entrance of Advanced Technology Providers

Globalization Drives Change

- Global operating models
- Concentration of portfolio into strategic plays
- Talent pool is aging, tightening, and shifting

Energy Demand and Industry Trends driving the Market in Upstream towards a Battle For New Resources

A Closer Look to the Future Market Model

NOCs are pushing the Center of Gravity - Challenge for all Market Players to align

Basis for Competition is different for each model

- Integrated Majors

Business	Efficient End-to-End Processes
Energy Policies & Regulations	Influence AND Comply
Partnerships	Preferred NOC Development Partner
Technology	Win Industry Technology Battle (Turn Resources into Reserves)
Cross-industry impact	Value Chain Integrator; Portfolio Optimization

Basis for Competition is different for each model

- National Oil Companies

Business	Efficient JV Managers
Energy Policies & Regulations	Protect AND Control
Partnerships	Partner w/ Integrated Majors, Independents and Technology Leaders
Technology	Secure Access to Leading Industry Technology
Cross-industry impact	Operators of the National Infrastructure

Basis for Competition is different for each model
- Independents

Impact on Differentiators in the Upstream Business

... resulting in Business Requirements
for Integrated Majors : Technology Approach

Business Requirements for NOCs – Business Collaboration

Business Requirements for Independents – Business Agility

Conclusions for Business Requirements in Upstream

Supply Chain Integration varied based on Business Model

End-to-End Supply Chain Integration supports the Best in Class Technology Proposition

Value Chain Integration drives Cost Efficiency

All Business Models require the Integration of Business Execution for Business Decision Support

SAP provides one Oil & Gas Platform for the Integration of Business Execution

IT Challenge of Integrated Majors

Achieving Excellence with Harmonization requires Inter-operability

Enable Digital Oil Field

Realtime & Selective Information based on Roles

Across the Chain Inter-Company Collaboration

Connecting People

Smart Information & Process Distribution

Role based, intuitive User Interface

Define E&P Best Practice

Standardization & Harmonization Intra- & Inter-Company Processes

Standardization through IT Infrastructure
International Compliance
Consolidation

Flexible IT Infrastructure

IT Challenge of NOCs

Managing Relationships & Governance requires Inter-operability

Integrated Reporting

Robust & Compliant Reporting
Information based on Roles

Adopt Standards

Tech. & Bus. Integration
Flexible & Collaborative

Business Process Mgmt

BPM Concept & IT Enablers
Hetero. IT with Auditable points

JV Process Orchestration

Transparent & Efficient Process
Governmental & Internat. Regulation

Flexible IT Infrastructure

JV Governance though IT Infrastructure
International Compliance
Consolidated & Standardized

IT Challenge of Independents

Combining Cost Efficiency with Innovation requires Inter-operability

Knowledge Management

Collaborative IT Environment
Talent & Knowledge Database

Introducing new Technology

Across the Value Chain
Inter-Company Collabor.

Cost Efficiency by Standardization

Smart Information & Process Distribution
Role based, intuitive User Interface

Innovation via Composition

Process Composition
Intra- & Inter-Company Processes

Flexible IT Infrastructure

Optimized Landscape
International Compliance
Consolidation

Flexibility for Future Collaboration between Companies

Key trends
driving change in the Upstream Industry

Increasing customer demands and environmental complexity are driving the need for constant innovation

New policy focused on Energy Security

- Increased risks of supply disruption
- Policy impacts on regulations & taxes
- Unconventional resource incentives
- Sustainable and responsible development

National Oil Companies Expand

- Control of future energy supplies through strategic direct investments
- Leverage reserve control for consumer access
- Cooperate to share risk and gain access to proven technology

Global strategic moves

- Global operating models
- Concentration of portfolio into strategic plays
- Talent pool is aging, tightening, and shifting

Diminishing access to reserves

- Increasingly remote opportunities
- Governments Limiting Access
- Entrance of Advanced Technology Providers
- Increased M&A activity as part of central strategy

Need for constant innovation
... affecting industry business models

Customers are demanding more flexible business models and companies are innovating to support them

Energy Security Shapes Policy	■ **Assessing and quickly responding to a constant set of changing risks and regulations** ■ **Accurately model scenarios under different risk-related events** ■ **Able make the right decisions**
National Oil Companies Expand	■ **Collaborate with National Oil Companies and partners** ■ **Winning competitive bids for production sharing contracts, exploration licensing rights.** ■ **Right information for accurately assessing the portfolio**
Global strategic moves	■ **Companies restructure to better position themselves in the fast changing market.** ■ **Execution of environmentally sound practices around offshore seismic** ■ **Incorporating global operating models and processes.**
Diminishing access to reserves	■ **Greater commercialization of oil sands, LNG and GTL markets** ■ **Logistical challenges in monitoring operations and manage people movements**

Barriers to achieving both profitability and sustainability in the Upstream Oil & Gas

SAP enables to better balance profitability vs. sustainability by providing …

Assess, Design, Build and Commission Assets

Integrated Process for Design/Build/Buy/Commission

Assess, Design Build and Commission Assets

- Optimizing and managing complete lifecycle of capital portfolio and project management processes.
- Handover of assets to operating owner from construction /engineering company.
- Master data is ready on day 1 to efficiently operate and maintain the assets

Solution enabled by SAP

- **Manage Asset Portfolio**
  - Plan and oversee investments
  - Balance high-level resource allocation
  - Manage portfolio of capital projects
- **Manage Capital Projects**
  - Collaborate with design partners
  - Monitor project execution
  - Ensure milestone achievements
  - Manage purchasing, progress payments
- **Manage Asset Master Data**
  - Building and sustaining the asset master data foundation
  - Collaboration owner/operator with EPC and equipment manufacturers
- **Operational Readiness**
  - No delay in operational start-up
  - Minimize errors & reduce training
  - Keep information in sync for future capital projects

Key benefits

- Standardized, Integrated and transparent capital and project management process
- Earlier sustainable returns from investments
- Accelerated time to service
- High quality of asset information and safe and reliable asset operations
- Role-based delivery of information to workers
- Smooth Collaboration with engineering and equipment partners

Asset Visibility & Performance

Operations are Visible, Allowing Rapid Response & Drill-Down

Asset Visibility and Performance

- **Provide a single, real time view of plant & ERP data for managers to take action.**
- **Maximize returns on a network of assets through optimization**

Solution enabled by SAP

- **Connect operating systems & Business Applications to dashboards with real time alerts. Asset performance is monitored and events are triggered automatically.**
- **Bring together data from Operations and Maintenance into unified reporting and KPIs**
- **Standardize work processes and easy adoption. "Sharing of best business practices between site/plants"**
- **EAM processes are optimized, balancing efficiency with effectiveness, with all asset content available in a single source**
- **SAP® ERP, EH&S, Manufacturing Dashboard (MII), and Plant Mobility Solutions**

Key benefits

- **Stakeholders gain visibility across operations. Data leveraged from the source; No need to change core systems**
- **Managers and LOB's roll up results and look across sites/plants – benchmark best practices and drive results**
- **Increasing uptime, reducing overall process costs and enabling faster reaction to changing business requirements**
- **Optimization of maintenance spend**

Optimized Asset Operations and Maintenance

Maximum Uptime

Optimized Asset Operations and Maintenance

- Maximize asset uptime, ensuring assets run at their optimum performance levels.
- Management of facilities and suppliers to ensure SLAs are enforced.
- Management of high investment in spare parts.

Solution enabled by SAP

- Planning and Scheduling
  - Technical asset management, business planning and budgeting, workforce management, and maintenance planning and scheduling
- Operations and Maintenance
  - Preventive and Corrective Maintenance, Maintenance order processing, Subcontracting, Mobile Asset Management
- Service Procurement
  - Fully integrated plant maintenance service request, spot bidding and procurement process
- Spare Parts Management
  - Seamlessly integrated Maintenance and Materials Management.

Key benefits

- Integrated asset management solution from planning through performance management
- Higher quality and profitability, decreased workforce and maintenance costs, increased production and more opportunities to meet customer demand
- Less unplanned maintenance, shorter turnaround times
- Ensures contract compliance
- Spare parts inventory that is effectively managed leads to reduced costs and improved optimization

Operational Risk Management

Enabling Business Process Safety & Compliance

Operational Risk Management

- Operational Risk Management connects the stakeholders with the operational management of safety for the environment, the people and the assets.
- This enables you to move beyond compliance and create a proactive risk management strategy and realize it in daily operations

Solution enabled by SAP

- Keep the Stakeholders Informed and Involved
  - Closed loop risk management including risk mitigation and prevention
  - Auditable business processes and audit management solution
- Keep the Environment Safe
  - Integrated database and company-wide transparency regarding compliance with relevant regulations
  - Emissions and Energy Management
- Keep the People Safe
  - Health and safety management
  - Safety trainings and certificates
  - Incident Management
- Keep the Assets Safe
  - Reliability centered maintenance
  - Safe Systems of work: Lockout/tagout and work permits

Key benefits

- Operational Risk Management will support companies on their way to operational sustainability
- Mitigate strategic, operational, financial and personal risks
- Clear defined processes for monitoring and reporting conformity to regulatory requirements and corporate policies
- Reduced risk of incidents and fines. Assure health of all employees and contractors
- Safe operations and mechanical integrity through cost effective maintenance and reliability programs

Operational Excellence
Integrated Sourcing and Procurement

Strategic sourcing and collaboration

A Closed Loop between Sourcing and Procurement, Enables Critical Transparency into the End-to-end Process From Savings Identification to the Delivery of Realized Savings

Solution enabled by SAP

- **Sophisticated spend analytics provides data aggregation and enrichment**
- **Sourcing analysis, project management, RFx and award**
- **Manage contract activities from – strategy, creation, negotiation, and finalization**
- **Automated procure to pay process – delivering compliance, supplier collaboration, and increased adoption and productivity**

Key benefits

- **Actionable spend visibility to maximize spend under management and savings opportunities**
- **Compliance with sourcing and Development of a qualified supply base to generate further negotiated savings**
- **Accelerated cycle time to decrease maverick buying and speed-up contract utilization**

Financial Excellence
Manage Effective Venture Partnerships

Manage Effective Venture Partnerships

- **SAP streamlines the business processes for the production, land, gas control, and financial functions of an upstream production company.**

Solution enabled by SAP

- **Joint Venture Accounting**
  - **Cash calls to/from partners**
  - **Partner billing for venture expenses and revenues**
  - **Allocations of billable and non-billable costs**
  - **Multi-currency processing**
- **Production and Revenue Accounting**
  - **FDC to contractual allocation**
  - **Valuation, Rev. Distribution & Regulatory Management**
- **Production Sharing Accounting**

Key benefits

- **Accurate and timely accounting - streamlined cash call and joint interest billing processes**
- **Increased customer/partner satisfaction with fewer incorrect billings**
- **Lower overhead costs – time savings with greater automation**
- **Greater efficiency in billing partners- shortening the cash flow cycle**

Financial Excellence
Enterprise Performance Management

Enterprise Performance Management

- **SAP Business Objects provides the leading solution to unlock information, enable insight, manage performance, and govern compliance regardless of the underlying business applications and data stores.**

Solution enabled by SAP

- **Management Accounting**
- **Financial and Management Reporting**
- **Financial Planning, Budgeting and Forecasting**
- **Profitability Analytics**
- **Product and Service Cost Analytics**
- **Payment Behavior Analytics**
- **Corporate Investment Management**
- **Legal and Management Consolidation**
- **Business Objects Financial Consolidation**
- **Business Planning and Consolidation**

Key benefits

- **Monitor results and measure performance**
- **Reduce budget cycle times**
- **Visibility into budgets & actual**
- **Minimizes business and compliance risk through a transparent, fast close and full audit trail**
- **Visibility into factors that drives costs**
- **Maximize Profitability – Know exactly where profit is made**
- **Power – Accelerate processing and reporting for a faster close**

Best People and Talent
Developing Human Capital

Developing Human Capital

- **Link committed and future demand with talent supply (recruiting, training, partners)**
- **Improve resource utilization**
- **Use subcontractors more strategically to…**
  - ***Increase resource utilization***
  - ***Improve margin on subcontractors***

Solution enabled by SAP

- **E-recruitment**
- **Employee master data mgmt & skills tracking**
- **Employee administration, payroll & time management**
- **Education integrated with development plans**
- **Self service career development**
- **Performance management**
- **Legal reporting**

Key benefits

- **Create Talent Pool of highly skilled individuals**
- **Train Employees to elevate their profitability**
- **Compensate High Performers to increase longevity**
- **Use Analytics to understand profitability and realization**

SAP Supports Business Network Transformation

Companies are moving beyond internal execution to optimize performance across a network of partners and realizing value at each step to fund further transformation

IT for Efficiency, Flexibility and Insight

The SAP Business Suite enables companies to drive flexibility and insight without reducing efficiency

Harmonized UI increases end user productivity

Embedded analytics for business insight

SOA enablement for process flexibility and business agility

End-to-End processes improve business effectiveness and IT efficiency

Enhancement Packages provides non-disruptive innovation with lower TCO

Continuous innovation results in improved performance for all lines of business

Built in industry best practices improves core process performance

Enhanced application and identity management improves TCO and control

Best Practice Value Scenario

O&G – DOWNSTREAM MARKETING & RETAILING

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

Key trends are driving change in Downstream Marketing and Retailing industry

Changing supply and demand side dynamics are driving the need for constant innovation

Increasing Governmental regulation

- Sarbanes Oxley
- Environmental safety & employee safety
- Sanction Party compliance
- Hedging laws – IAS 39, FAS133

Demand Side Pressures

- Maturing markets, competition in retail market
- Increased customer power & intelligence
- Additional demands for services
- Hyper competitive channels
- Distributor Consolidation

Supply Side Pressures

- Reduced number of exclusive brands
- Supplier rationalization
- Vendor globalization
- Increased risks of supply disruption
- Price volatility

Operational Efficiency

- High cost of operation
- New technologies (VMI, on-board computing, RFID)
- Inflexible and heterogeneous infrastructure
- Inability to provide one version of truth
- High degree of manual processing

The need for constant innovation is affecting industry business models

The Market is demanding more flexible business models and companies are innovating to deliver them

Increasing Government Regulation	▪ Single business platform to address reporting and compliance needs ▪ Reusable enterprise services and process components that support rapid change
Demand Side Pressures	▪ Providing exceptional reliability and high fulfillment rates ▪ Active management of prices and margins throughout all business channels
Supply Side Pressures	▪ Improved and automated communication to suppliers, visibility in contracts ▪ Improved sourcing decisions and better utilization of resources
Operational Efficiency	▪ Automation and integration of business processes and integration of existing systems ▪ Fast access to accurate data in order to reduce cycle times

Downstream Marketing & Retailing: Disruptive Growth

Cost, Revenue & Margin

- High number of incorrect invoices and high Days Sales Outstanding
- High transportation cost due to poor utilization of fleet
- High fuel purchasing cost
- Disconnected or non-existing price management processes

Distribution Planning & Customer Management

- High error rates due to poor inventory accuracy
- Disconnect between replenishment and transportation planning
- Transportation inefficiencies
- Customer service requirements (e.g. VMI)
- Constant expediting to meet terminal demand
- Channel allocation & margin management
- Disconnect with haulier companies

Business Process Platform

- Heterogeneous applications with disparate data models
- Inflexibility in dealing with business changes (i.e. M&A, business relationships, etc.)
- Compliance issues
- Transparency & growth limitations

Terminal Management & Automation

- Missing visibility into terminals
- Missing integration of existing terminal systems
- Paper based and manual processes
- Lack of supplier integration

Fuel and Convenience Retailing

- Disconnect between fuel and dry goods business
- High cost of operations
- Loss of margins
- Low profit per customer visit

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

Distribution Excellence & Customer Satisfaction

- Streamlined forecasting and real-time requirements planning result in more accurate 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

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

Business Process Platform

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

Terminal Management & Automation

Terminal Management & Automation

- SAP helps its customers to optimize & automate logistic and administrative business processes in terms of terminal management in order to reduce time, costs and manpower.
- Establish highly integrated data communication – internally and with partners.
- Provide full visibility into terminals.
- Integrate existing terminal systems into SAP.

Terminal Management & Automation

- Fully scalable and modular IT architecture
- Supports integration and 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

Key benefits

- Improved operational productivity
- Improved data quality
- Reduced labor costs up to 25%
- Reduced administrative costs up to 20%
- Reduced maintenance costs up to 10%

Distribution Excellence & Customer Satisfaction

Distribution Excellence & Customer Satisfaction

- SAP helps to manage truck fleets, inventory, replenishment and truck dispatch processes more efficiently.
- Streamlined forecasting and real-time requirements planning result in more accurate forecasts
- Integrated replenishment and transportation planning leads to reduced cycle times
- Better service levels result in higher customer satisfaction
- Integrated onboard computers increase driver productivity

Distribution Excellence

- Optimal sourcing based upon product availability, existing contracts and costs
- Integrated automatic stock replenishment, truck dispatch planning and optimization
- Dispatching: Handle must go and can go orders, dangerous goods, optimize trailer compartment utilization and consider axle weight restrictions
- Tele-Sales with integrated pre-scheduling
- Optimization of single and multi drop scenarios
- Automated reconciliation and posting of all required transactions in SAP

Key benefits

- Reduced transportation costs
- Reduced inventories
- Reduced fuel cost
- Improved operational productivity
- Reduced truck fleet up to 12%
- Reduced replenishment costs up to 30%
- Reduced stock-outs up to 15%

Integrated Fuel & Convenience Retailing

Integrated Fuel & Convenience Retailing

- SAP's integrated solution provides seamless information flow and powerful functions for all business aspects within the retail network, helping to manage the wet and dry side of the business.
- Automated and standardized business processes and virtual back office functionality result in reduced cost of operation
- Customer loyalty programs result in higher customer retention.
- Sophisticated price management capabilities help manage and optimize margins

Fuel & Convenience Retailing

- Convenience retailing for dry goods including store management, assortment planning, merchandising, retail pricing and promotions
- Fuels inventory management and reconciliation based on sales meter readings and tank dip readings
- Settlement of payment card transactions and invoicing of dealers
- Loyalty management to plan and execute closed loop loyalty programs, such as preferred shopper programs
- Price management and optimization in order to meet volume goals at maximum achievable margin

Key benefits

- Improved profitability through optimization of each customer visit "basket"
- End-to-end solution of wet and dry value chain
- Lower operational costs through automated and standardized processes
- Increased customer retention
- Closed-loop price management and optimized fuels and dry goods profit-volume balance

Cost Control and Profit Margin Maximization

Cost Control and Profit Margin Maximization

- SAP provides the visibility customer need to manage costs and margins and sense and respond to market volatility.
- Only SAP and partners provide a fully integrated, closed loop price management and optimization solution for all channels of trade from refinery gate to retail pump
- SAP's logistics solution for terminal management, marketing and distribution helps to increase operational efficiency and decrease costs

Cost Control & Margin Maximization

- Price management and optimization for all channels of trade: lubricants, aviation, marine, bitumen, wholesale/ rack fuels, retail fuels, retail dry goods
- Best pricing practice & workflows (strategize, determine, execute, monitor and govern price decisions)
- Executive dashboards (analytics and dashboard applications to aggregate and visualize data)
- Operational excellence through integration of terminals, fleet, retail stations and scheduling department

Key benefits

- Margin increase through integrated price management:
- Chemicals: 1 to 3% return on gross revenue
- Lubes, marine, aviation, bitumen: 0.5 to 2% return on gross revenue
- Rack/ wholesale fuels: 0.2 to 0.5 cpg gross margin uplift and 8% improvement in ratability
- Retail fuels: 0.5 to 1.4 cpg gross margin uplift at current volumes or 8 to 12% volume increase without margin loss
- Retail dry goods: 1 to 2% return on gross revenue
- Cost benefits through distribution excellence:
- Short billing cycles
- Reduced purchasing & transportation cost
- Reduced replenishment costs

Flexible Business Process Platform Integrated IT

Flexible Business Process Platform:

- SAP helps organizations establish their unique business process platforms based on enterprise SOA by delivering:
- Flexible and agile platform for addressing business needs
- Lower TCO from integrated solution

Solution enabled by SAP

- Ready-to-execute software that enables industry-rich business processes
- Reusable enterprise services and process components that support rapid change
- A unified technology foundation for running business processes efficiently
- Innovative business processes enabled by service-enabled applications
- Vibrant ecosystem

Key benefits

- Faster and more flexible business innovation
- Strategic alignment between business and IT. Reduced operating costs
- Reduced total cost of ownership
- Improved user productivity, collaboration, and business insight

Operating Areas in a Downstream Oil and Gas Company

Oil & Gas – Down Stream ...
Best Practice Solution Map

SAP's Solution for the Oil & Gas Downstream Marketing Business

Secondary Distribution Solution

- **SAP Oil & Gas Secondary Distribution Add-on**

ISV Partner Integration

- **Out-of-the-Box and endorsed**
- **eSOA/ Netweaver based**

Enterprise Services

- **Tech. & Bus. Integration**
- **Flexible & Collaborative**
- **Cost Efficient**

ISV Partner Solutions

- **Complementing SAP's Oil Downstream Solution Portfolio**
- **Resold by SAP or SAP Endorsed**

Rich Industry Specific Functionality

- **SAP Oil & Gas Downstream**
- **SAP Retail**

Service Station
Fuel Retailing and Convenience Retailing

Service Station Fuel Mgt.

Example business processes:

- **Fuel inventory**
- **Fuel Pricing**
- **Payment Card Handling**
- **Dealer Settlement**

Convenience Retailing

Example business processes:

- **Assortment Planning**
- **Merchandising**
- **Retail Pricing**
- **Promotions**

Service Station
Fuel Retailing and Convenience Retailing

Convenience Retailing (incl. Store Management)

- Assortment Planning
- Merchandising
- Retail Pricing
- Promotions

Fuels Management

- Fuel inventory
- Fuel Pricing
- Payment Card Handling
- Dealer Settlement

Site and Headquarter Accounting

- Rebate Management
- Payment Card Processing
- Site Settlement
- Site Expense Invoice

Business Analysis and Reporting

- Sales Analysis
- Vendor Performance
- Loyalty Card Processing
- Franchisee Support

SAP's Solution for Oil & Gas Downstream – Secondary Distribution Solutions

Secondary

Distribution Solutions

SAP Oil & Gas Secondary Distribution

- Telesales including Best Buy Analysis
- Tour Planning
- Data Collation (Fuel Volume Reconciliation)
- Interfaces of External Systems (TAS Systems, On-board Truck Computers, Geographical Information Systems, etc.)

SAP Oil & Gas Secondary Distribution – Integrated Systems Landscape

SAP Oil & Gas Secondary Distribution – Key Functionality

Telesales and Pre-scheduling

Tour Planning

Data Collation (automated Reconciliation)

Effective Customer Interaction

- Telephony integration
- Display all key information on one screen
- Credit Control
- Detailed customer history
- Transportation Pre-Planning
- Best buy Analysis

Effective Utilization of truck Fleet

- Tour planning with graphical visualization
- Integrated tour planning & scheduling
- Fully customizable easy to use screens

Reduced Administrative Overhead

- Business Process Control uses Defined Identifiers
- Manual data input or automatic data feed
- Automated posting of all required transactions

SAP OGSD + OpenTAS by Implico – Further Integration and Automation Options

SAP's Solution for Oil & Gas Downstream – Price Management Solution

Price Management Solution

SAP PMM by Vendavo

- Managing contract profitability in lubricants, aviation, marine, bitumen, fuels
- Price analysis, setting and policy management
- Interactive price negotiation

KSS RackPrice

- Meet volume objectives at the maximum achievable margin at terminal/ rack
- Pricing and performance analytics
- Price setting – via manual entry, pricing rules, formulae and/or optimization
- Price execution

KSS PriceNet

- Retail pump pricing
- Price strategy, setting, execution, monitoring

SAP and its Partners Provide the ONLY Price Management and Distribution Solution that Addresses ALL Channels from Refinery to End Use

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

Best Practice Pricing – Assets and Workflow

GOVERN
- Audit trails
- Authority levels
- Compliance Reports
- Integration with broader governance & risk compliance

MONITOR
- Alerts, exceptions
- KPI assessment
- Role-based analytics
- Feedback loop to update strategy

EXECUTE
- Price by exception
- Manage exception
- Rapid response
- Automation

DETERMINE
- Translate strategy to rules, targets, constraints
- Optimized prices
- Consistent tactics

STRATEGIZE
- Market/customer analysis
- Define objectives
- Document goals

INTEGRATE
- Fully integrated with front and back-office systems
- Standardized, service based integration (i.e. not custom)
- Consistent data definitions (customers, products, metrics)
- Efficient maintenance & persistence of new info

Typical Challenges in the Pricing Process

Only SAP, KSS and Vendavo provide Fully Integrated, Closed Loop Price Management and 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, optimized prices, 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

Solution: Auto generate price proposals, price & manage by exception & optimize prices

Result: Faster response to market/competitor changes, focus on urgent issues & increase margin

Solution: Alerts to performance exceptions, role-based analytics, dashboards, auto-generated & distributed reports

Result: Continuous KPI monitoring, fast issue resolution, quantified justification for strategy change

Solution: SAP-endorsed integration, consistent data definitions, efficient/timely access

Result: Good quality, efficient data platform fully SAP-supported with lowest TCO

Best Practice Value Scenario

O&G – OIL TERMINAL AUTOMATION

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

The Business Challenge -

- **Tank Truck Entry System**
  - **Planning & scheduling**
  - **Access control**
- **TT filling**
  - **Bay Assignment**
  - **Filling & Confirmation**
- **Tank Farm Management**
  - **Receipt & dispatch**
  - **Level & MOV operation**

The Business Challenge – Current TAS Architecture

The Business Challenge – TAS - Pain Areas

- Site specific customized software solutions
- Different Operating Systems from one vendor
- Hard coded interfaces with no expandability – can't replace different field equipment
- Customized SAP interface
- No or limited technical support at site
- High dependency on vendor for any customization due to limited access /training
- No common pool of Customer resource for managing TAS
- No bird's view of Terminal at State Office /Head Office
- No standard or common front end available to Customer
- No business analytics
- Multi-vendor management and multidimensional issues

SAP xMII Solution Architecture

Implementation for Oil Terminal Automation

A flexible / easy to maintain system, capable of handling even multiple Hardware vendors at one location….

Integrating disparate components of Automation system within an Oil terminal – Tank Lorry Loading / Tank Management / PLCs and interfacing with the backend ERP system where applicable leading to overall reduction in the TCO

Transforming Pain to Gain…..

- From a Terminal specific solutions to enterprise wide universal web solution.
- A solution which is scalable & easy to manage by the internals reducing the Vendor dependency on sustenance & future expansions
- Rationalisation of Hardware
- Standardisation of interfaces.

Implementation for Oil Terminal Automation

Approach/Activities

1. Business Functionality

- Fit with current requirement
- Fit with future requirements
- Options for process flexibility
- Ease of use
- Audit trail

2. Technology

- Performance throughput
- Scalability
- Fit with hardware and network plan
- Technical design of the product
- Integration
- Ease of deployment

3. Futuristic approach

- Clear Road map with support

Results/Deliverables

1. Business Functionality

- Meets Business requirements
- Easily configurable & expandable solution with proper controls by managed by customer.

2. Technology

- Library of interfaces will help the customer to deploy any new location with ease
- Technical requirements of redundancy, web-enabled, centralised control, integration with any thirdpary device are met
- SAP support

Business Benefits and Value Proposition

Business benefits -

- Universal solution for customer and enabling customer to have complete control on the automation
- End-to-end solution integrating all field systems to business system using one solution.
- Reduce TCO in terms of hardware management and single layer of software solution across organization

The value propositions are -

- Unified solution across organization
- Leveraging existing assets
- deliver "*a single version of the truth"* across the enterprise
- *Seamlessly synchronizes* enterprise business processes (ERP) and real-time field systems.
- Delivers *Integration, Intelligence and control* in one layer
- Reduced costs, errors and latency associated with manual data entry of plant data into ERP

Best Practice Value Scenario

O&G – TSW

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

The Business Challenge

- Managing the bulk supply chain can represent as much as 80% or more of your business, analysts and companies believe a 50 cents per barrel saving can be achieved with SCM – that's $35 million per day for the industry!
- Today there is a fierce competition for energy reserves & supply.
- Balance supply and sustainability
- Increased risks of supply disruption
- The "glue" that cements the whole process together is the Operations and Scheduling stage – dealing with the Real World and performing the business there.

Implementation for SAP Trader's and Scheduler's Workbench (TSW)

- The design and implementation of TSW is a complex task, highly integrated in the ERP processes.
- Our service utilizes the capabilities of SAP NetWeaver and the functional strength of the Traders and Schedulers Workbench to create a single platform to manage scheduling activities.
- If this a new implementation or a Scheduling solution that is put on top of existing ERP processes – the final result will be a tightly integrated Scheduling and Operations system.
- Also a "stand-alone" scheduling hub system can be implemented leveraging SAP technology.
- From designing, to prototyping – up to a full-scale implementation: this service is scalable.

Results with Implementation for SAP TSW

Example of a Global Oil Company

Key Challenges

- Refinery reporting systems are at the end-of-lifecycle
- No Visibility on global inventory; redundant data entry

Project Objective

- Replacement of end-of-lifecycle legacy refinery reporting systems
- Visibility of global oil movements and global inventory
- Elimination of manual, redundant data entry
- Automated refinery transaction processing
- Connection of legacy ERP- and the various refinery process control systems

Why SAP Service?

- Using up-to-date SAP applications
- Utilizing the full network of Consulting, Solution Management, Custom Development and GDC

Key Benefits

- Single nomination created with updates automatically available to all
- Inventory actuals & projections available to crude / product optimization in ‘real time‘
- Bookings generated automatically in SAP – no recycle due to errors
- Architectural approach will enable all Lines of Business across all verticals (e.g. Chemicals, Gas, Upstream, Downstream) to utilize this platform as their single business process platform for all bulk movements.

Integrated Supply Chain - Benefits

Tangible Benefits	Enabler	% Impact *
Revenue		
❑ Improved risk management	❑ Real-time supply chain data	5-8 %
Lower operating costs		
❑ Reduction in transportation costs	❑ Real-time visibility across entire supply chain	5-9 %
❑ Improved scheduling	❑ Integrated scheduling tools	1-5 %
❑ Improved forecast accuracy	❑ Central supply chain master data	3-5 %
❑ Product blending	❑ Integrated scheduling tools	2-6 %
❑ Reduced manual admin. work	❑ One-time entry, consistent, transparent data	15-20 %
Lower working capital requirement		
❑ Reduction in inventory levels	❑ Integrated planning/execution tools	6-10 %
❑ Reduction in outstanding payments	❑ Expedite contract to cash cycles, eliminate invoicing errors	10-20 %

*** Benchmarks from SAP Value Engineering**

Tangible Benefits of an Integrated SCM Solution

Tangible Benefits	Enabler
Greater revenue	
▪ Improved risk management	**Real time supply chain data**
Lower operating cost	
▪ Reduction in transportation costs	**Real time visibility across entire supply chain**
▪ Improved scheduling	**Integrated scheduling tools**
▪ Improve Forecast accuracy	**Central supply chain master data**
▪ Reduced TCO	**Eliminate legacy systems, reduce interfaces**
▪ Reduction in manual administrative work	**One-time entry, consistent, transparent data**
Lower working capital requirement	
▪ Reduction in inventory levels	**Integrated planning/execution tools**
▪ Reduction in outstanding payments	**Expedite contract to cash cycles, eliminate invoicing errors**

Overview Summary

Key Takeaways

- For many Oil & Gas companies, managing the bulk supply chain can represent as much as 80% or more of their business
- Analysts and companies believe a 50 cents per barrel saving can be achieved with SCM – that's $35 million per day for the industry !
- The "glue" that cements the whole process together is the Operations and Scheduling stage – dealing with the Real World and performing the business there
- Having complete visibility of supply chain activity and staying on top of Real World events are the keys to successful Operations
- Driving excellence in Operations into Execution and Settlement in a one-step process enables fast revenue realization

➢ **SCM Success = <u>Bottom Line</u> Success !!**

Quantifiable Benefits of Integration

SAP SCM solution is delivered with 65+ interfaces "out of the box". This shows the significance and the challenge of the integration issue.

Integrated Business Function	No. of interfaces
Trading	5+
Contract Management & Pricing	5+
Supply & Demand Planning	10+
Distribution Scheduling	10+
Analytics	20+
Inventory Management	15+
Total	65+

Strategic Benefits of an Integrated Supply Chain

- **Enable business performance improvements**
- **Ability to integrate new business/acquisitions**
- **Standardized data & reporting across organization**
- **Speed up the planning process and offer high level of predictability, particularly the budget**
- **Reduction in processing errors and reconciliation efforts**
- **Improve response time**
- **Confidence in the integrity of the data**
- **Simplified IT landscape**
- **Ability to drill down to transaction levels of detail**

Competitive Framework for Process Industries

	Laggards	Industry Average	Best in Class
Organization	Silo-based supply chain operations with little synchronization and collaboration across departments; moving toward more business unit or regional oversight	Moving toward a more centralized supply chain management organization but most activity is still decentralized into business units and regions	Central supply chain management organization established with executive who has end-to-end supply chain responsibility; strong cross-functional metrics in place
Knowledge	No budgeted projects for visibility improvement	Actively working to improve end-to-end and plant floor to top floor visibility	End-to-end supply chain visibility in place with strong strides being made toward plant floor to top floor visibility
Technology	Spreadsheets and home-grown Access database solutions are common for supply chain planning; legacy or heavily customized supply chain execution applications	Advanced supply chain technology solutions deployed for a handful of key supply chain management functions; lack closed-loop integration between planning and execution	Extensive use of advanced supply chain technology with closed-loop integration between planning and execution
Performance Metrics	Forecast accuracy at the product family level is below 61% Perfect order percentage is 85% or less Logistics costs as a % of sales is greater than10%	Forecast accuracy at the product family level is 61%-71% Perfect order percentage is 86%-90% Logistics costs as a % of sales is 7%-10%	Forecast accuracy at the product family level is 71% or better Perfect order percentage is 91% or better Logistics costs as a % of sales is 6% or less

Source: *AberdeenGroup*, March 2007

TSW Implementation with Trading Integration (Triple Point)

Keep TSW implementation in first phase as slim as possible.

Add TSW functionality in a second phase (could start even after first phase is productive)

TSW and TPT need to start working with each other as early as possible.
→identify, at what point of time TPT requires the TSW masterdata

Masterdata and Movement scenarios should be defined in TSW and uploaded into TPT → start with definition of TSW masterdata and gathering of Movement scenarios with Business groups as soon as possible

From than on TSW and TPT can move more independently, until the integration is set up (mainly via GTM deal and TSW Nomination).

TPT – GTM interface is via PI → predefined structures for this interface are already part of the purchased package

EhP3 is a prerequisite to use GTM/TSW integration

Best Practice Value Scenario

O&G – SCHEDULING COCKPIT

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

The Business Challenge

- Managing the bulk supply chain can represent as much as 80% or more of your business, analysts and companies believe a 50 cents per barrel saving can be achieved with SCM – that's $35 million per day for the industry!
- The "glue" that cements the whole process together is the Operations and Scheduling stage – dealing with the Real World and performing the business there.
- Currently the daily work of a scheduler is spread over several instance and screens - or even worse: different systems.
- Since scheduling is a complex task, multiple transactions need to be supervised and executed.
- Slow decision making process, tracking and avoiding mistakes

Design and Implementation for Scheduling Cockpit

The Scheduling Cockpit offers tailor-made portal access for a Scheduler of an Company that has to plan bulk movements; the screen covers the daily business requirements that a scheduler is facing

- The Design and Implementation Service for Scheduling Cockpit as a tool will help your schedulers to do their work more efficiently.
- Access scheduling functions via a tailor-made Portal makes the daily work for a scheduler much easier - faster decision making, tracking and avoid mistakes!
- Our service utilizes the capabilities of SAP NetWeaver and the functional strength of the Traders and Schedulers Workbench to create a single platform to manage scheduling activities.
- From designing, to prototyping and up to a full-scale implementation: this service is scalable.
- Does not compete with any functionality in the SAP Standard releases.

Business Benefits and Value Proposition

- SAP TSW is the world's No. 1 scheduling application for Oil, Gas and Mining Industry
- Access scheduling functions via a tailor-made Scheduling cockpit makes the daily work for a scheduler much easier
- This service can be combined with a TSW implementation which enables integration among Operative and Commercial areas
- TSW will already give you a unique source information – the scheduling cockpit simplifies it
- It can be adapted / enhanced for various business processes, e.g. marine scheduling, laytime & demurrage handling, Vetting, Event handling, etc.
- TSW function Dynamic Scheduling can be fully integrated and incorporated into the existing solution

Design and Implementation of Scheduling Cockpit

Key Challenges

- Complex daily bulk movement activities and huge information workload managed by a scheduler
- Slow decision making process, tracking and avoiding mistakes

Project Objective

- Provide an introduction workshop on scheduling functions via a tailor-made portal to simplify the daily work for a scheduler
- From designing, to prototyping and up to a full-scale implementation the delivered service is scalable

Key Benefits

- Tailor-made service delivery and customer specific introduction of the Scheduler's Cockpit
- Visibility of daily bulk movement information on one single screen
- Single portal-based access of all functionality and data required for scheduler's daily work
- Integration with SAP TSW. Upcoming TSW functions (e.g. Dynamic Scheduling) can be flexibly incorporated
- Profile-based view and functionality
- Third party and customer access
- Quicker scheduling process

Design and Implementation for Scheduling Cockpit

Welcome Oleksandr Prus

Help | Log Off

Scheduling Cockpit

Scheduling View | Three Way Pegging | Stock Projection | User Profile

Scheduling View

History Back Forward

User Profile: D048803 Execute

Worklist Items

Edit Item

Alert	Nomtk	Matnr	Location	T. Syst
Nom item qty is out c	1825	ULTRA LS I	RLINGEN	BARGE_D
Nom item qty is out c	1826	ULTRA LS I	RLINGEN	BARGE_D
Location partner for	1828	ULTRA LS I	PGELSEN	RAIL_DE
Location partner for	1829	HEATING_C	PGELSEN	RAIL_DE
A ticket error occure	1819	ULTRA LS I	DBOTT	BARGE_D
Line item is incomple	1819	ULTRA LS I	DBOTT	BARGE_D
Line item is incomple	1819	ULTRA LS I	DBENDORF	BARGE_D

Available Stock in Location

Nominations

Edit Extend

Nom. Key	N
1817	A
1819	B
1821	G
1822	A
1823	H
1824	A
1825	L
1826	L

Tr.Mode	Nominationsenddate	Status
11		1
11		1
11		1
11		1
11		1
11		1
11		1
11		1

Edit Nomination

Nominationnumber Sap	0000000000000001817
Nomination type	
Transportsystem	BARGE_DE
Vehicleid	EILTANK30
Carrier	
Shipper	

Update

Nomination Items

Locationid	Schedulemate	Scheduleddate	Nominatedquantit	Quantityunit Sap
SAMSDAM	HEATING_OIL_	12/09/2008	1.000	L
SAMSDAM	HEATING_OIL_	12/09/2008	1.000	L
DHUENXE	HEATING_OIL_	12/11/2008	1.000	L
DHUENXE	HEATING_OIL_	12/11/2008	1.000	L

Close

Nomination It

Itemnr.	Item
10	O
10	O
20	D
20	D

date	Nom.Qty.	Qty.Unit	Tol.Unit	Date to
	1.000	L	L	0
	1.000	L	L	0
	1.000	L	L	0
	1.000	L	L	0

Available Cap

Vehicle	T
CORONA	P
RAILCAR	R
APOLLONIA	VLCC

								Uom	Veh Maxwgt
									73.593
									0
		22,5	333,28	0	2.000.000	0	L		309.064

© 2011 SAP AG

Best Practice Value Scenario

O&G - PIPELINE VISUALIZATION

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

The Business Challenge

- Pain Points
  - Since scheduling is a complex task, multiple transactions need to be supervised and executed in real time.
  - Complex nomination processes put a huge data and workload on a scheduler's desk.
  - Pipeline networks require sophisticated allocation processes and up-to-date inventory information – batches needed to be located time, quality and quantity wise.

- Goals/Needs
  - Managing the bulk supply chain can represent as much as 80% or more of your business, Analysts and companies believe that up to 50 cents per barrel of savings can be achieved with efficient Supply Chain Management – that’s $35 million per day for the industry!
  - Front end scheduling functions should have an intuitive GUI allowing easy access to data and functionality to optimize that data.
  - Scheduling functions should be tightly coupled with back end realizations to enable a fast and error free translation of plans to actions.

Design and Implementation for a Pipeline Visualization Tool

The Pipeline visualization tool designed and implemented by our service is a tailor-made "add-on" that takes the usability and comfort within the nomination process to a higher level

- Seamless integration in existing *SAP for Oil & Gas* solution
- The graphical display of transportation scheduling documents (nominations) in the pipeline network supports the scheduler with his daily work
- A range of functionalities including viewing pipeline batches, switching batches between nodes to achieve operational optimization, and validations and plausibility checks on operations based on capacities and physical constraints are delivered.
- Easier and faster hands-on experience for new colleagues
- Puts the "cream" on top of the world's No.1 Scheduling solution: TSW

Architecture – Components

The Pipeline Visualization is based on:

- 2-Tier architecture with a Client/Server
- Adobe Flex 3 runs inside the client's web browser (any)
- Service Oriented Architecture (SOA). Communication takes place via Web-services.
- Elements of the graph theory (algorithms, data model) used to prepare data in the backend.
- Data storage, enhancement, and business logic in the SAP ERP Backend
- The Adobe Flex application is delivered from SAP Backend to the client via Business Server Pages, located in the Backend which also provides the Web-services.

Business Benefits and Value Proposition

- SAP TSW is the world's No. 1 scheduling application for Oil & Gas
- Using graphical ways to display highly complex nominations makes scheduling and related activities much easier
- This service can be combined with a TSW implementation which enables integration among Operative and Commercial areas
- TSW will already be a unique source of information for you – the visualization of the pipeline network simplifies it!
- It can be adapted / enhanced for various business processes, e.g. for base chemical pipelines.
- Since this is not a "product" but a scalable service we make it fit to your business – in line with future SAP strategies for SCM for the Oil, Gas and Mining industry.

Example –

How the network looks like

SAP for Oil & Gas - Pipeline Visualization

Example – Viewing nominations and paths

SAP for Oil & Gas - Pipeline Visualization

Graph control bar

Graph

00000000000000006607

Properties

Key	Value

1. Select starting node: RAUNHEIM

2. Select nomination:

Key	Value	
0000006609	05.03.2010 O	1.050,000 M3
0000006606	05.03.2010 D	2.100,000 M3
0000006607	06.03.2010 D	1.890,000 M3

3. Select target node:

Assign Cancel

Example – Mouse overs and node switch selection

SAP for Oil & Gas - Pipeline Visualization

Example -
... after the switch and the new path

SAP for Oil & Gas - Pipeline Visualization

Proposal

Multiple loads and discharges

Scenario – Multiple discharges

Graph control bar

Graph

00000000000000006607

Properties

Key	Value

1. Select starting node: RAUNHEIM

2. Select nomination:

Key	Value	
0000006609	05.03.2010 O	1.050,000 M3
0000006606	05.03.2010 D	2.100,000 M3
0000006607	06.03.2010 D	1.890,000 M3

3. Select target node:

Assign Cancel

Example Scenario – Multi Product Pipeline

Best Practice Value Scenario

O&G – REFINING & MANUFACTURING

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

Key trends are driving change in the Downstream Refining & Manufacturing Industry

Increasing supply volatility and environmental complexity are driving the need for operational flexibility

High focus on operational reliability

- Reliability Centered Maintenance Operations
- Integrated safety procedures
- Tight crude supply market and feedstock variation impacting operations

Workforce Management

- Aging and tightening industry talent pool
- Difficulty to attract, train and retain right people
- Cross company management of skills needed for business

Regulations and Compliance

- Stricter product specifications on benzene, sulfur, etc.
- Increasing consequences for HSE violations
- Tightening air, water, and waste regulations

Focus on operational transparency

- Lack of visibility into cross plant real-time performance
- Closing the loop of strategy with execution
- Understand refining value chain contribution

The need for constant innovation is affecting industry business models

Customers are demanding more flexible business models and companies are innovating to support them

Operational Reliability	▪ **Consistent, streamlined processes for asset management across asset network** ▪ **Maximize asset utilization** ▪ **Improve visibility for better business planning and decision support**
Workforce Management	▪ **Recruiting new staff as well as training and development of workforce** ▪ **Knowledge retention through training and mentoring programs supported with knowledge management systems**
Regulations and Compliance	▪ **Compliance with emission regulations (US Clear Air Act, Kyoto Protocol)** ▪ **New product specification regarding sulfur content and biofuel mix**
Focus on Operational Transparency	▪ **Tracking Business Performance** ▪ **Integration of multi location assets** ▪ **Need for analytics.**

kde4

Volatility Affecting Refining Operations

kde4

Modified Slide to remove enterprise platform

Ken Evans, 12/12/2008

kde5

Operational Visibility helps Refineries address Market and Supply Volatility

Slide 439

kde5 Modifified to show addition of enterprise wide platform with SAP, solid integration, improved charts, etc.
Ken Evans, 12/12/2008

High Performing Assets

Assess, Design, Build and Commission Assets

Assess, Design Build and Commission Assets

- Optimizing and managing complete lifecycle of capital portfolio and project management processes.
- Handover of assets to operating owner from construction /engineering company.
- Master data is ready on day 1 to efficiently operate and maintain the assets

Solution enabled by SAP

- **Manage Asset Portfolio**
  - Plan and oversee investments
  - Balance high-level resource allocation
  - Manage portfolio of capital projects
- **Manage Capital Projects**
  - Collaborate with design partners
  - Monitor project execution
  - Ensure milestone achievements
  - Manage purchasing, progress payments
- **Manage Asset Master Data**
  - Building and sustaining the asset master data foundation
  - Collaboration owner/operator with EPC and equipment manufacturers
- **Operational Readiness**
  - No delay in operational start-up
  - Minimize errors & reduce training
  - Keep information in sync for future capital projects

Key benefits

- Standardized, Integrated and transparent capital and project management process
- Earlier sustainable returns from investments
- Accelerated time to service
- High quality of asset information and safe and reliable asset operations
- Role-based delivery of information to workers
- Smooth Collaboration with engineering and equipment partners

High Performing Assets

Operational Risk Management

Operational Risk Management

- Connects the stakeholders with the operational management of safety for the environment, the people and the assets.
- This enables you to move beyond compliance and create a proactive risk management strategy and realize it in daily operations

Solution enabled by SAP

- **Keep the Stakeholders Informed and Involved**
  - Closed loop risk management including risk mitigation and prevention
  - Auditable business processes and audit management solution
- **Keep the Environment Safe**
  - Integrated database and company-wide transparency regarding compliance with relevant regulations
  - Emissions and Energy Management
- **Keep the People Safe**
  - Health and safety management
  - Safety trainings and certificates
  - Incident Management
- **Keep the Assets Safe**
  - Reliability centered maintenance
  - Safe Systems of work: Lockout/tagout and work permits

Key benefits

- Operational Risk Management will support companies on their way to operational sustainability
- Mitigate strategic, operational, financial and personal risks
- Clear defined processes for monitoring and reporting conformity to regulatory requirements and corporate policies
- Reduced risk of incidents and fines. Assure health of all employees and contractors
- Safe operations and mechanical integrity through cost effective maintenance and reliability programs

High Performing Assets

Optimized asset operations and maintenance

Optimized Asset Operations and Maintenance

- Maximize asset uptime, ensuring assets run at their optimum performance levels.
- Management of facilities and suppliers to ensure SLAs are enforced.
- Management of high investment in spare parts.

Solution enabled by SAP

- **Planning and Scheduling**
  - Technical asset management, business planning and budgeting, workforce management, and maintenance planning and scheduling
- **Operations and Maintenance**
  - Preventive and Corrective Maintenance, Maintenance order processing, Subcontracting, Mobile Asset Management
- **Service Procurement**
  - Fully integrated plant maintenance service request, spot bidding and procurement process
- **Spare Parts Management**
  - Seamlessly integrated Maintenance and Materials Management.

Key benefits

- Integrated asset management solution from planning through performance management
- Higher quality and profitability, decreased workforce and maintenance costs, increased production and more opportunities to meet customer demand
- Less unplanned maintenance, shorter turnaround times
- Ensures contract compliance
- Spare parts inventory that is effectively managed leads to reduced costs and improved optimization

High Performing Assets

Asset Visibility & Performance

Asset Visibility and Performance

- Provide a single, real time view of plant & ERP data for managers to take action.
- Maximize returns on a network of assets through optimization

Solution enabled by SAP

- Connect operating systems & Business Applications to dashboards with real time alerts. Asset performance is monitored and events are triggered automatically.
- Bring together data from Operations and Maintenance into unified reporting and KPIs
- Standardize work processes and easy adoption. "Sharing of best business practices between site/plants"
- EAM processes are optimized, balancing efficiency with effectiveness, with all asset content available in a single source
- SAP® ERP, EH&S, Manufacturing Dashboard (MII), and Plant Mobility Solutions

Key benefits

- Stakeholders gain visibility across operations. Data leveraged from the source; No need to change core systems
- Managers and LOB's roll up results and look across sites/plants – benchmark best practices and drive results
- Increasing uptime, reducing overall process costs and enabling faster reaction to changing business requirements
- Optimization of maintenance spend

Operational Excellence

Integrated Sourcing and Procurement

Strategic sourcing and collaboration

- A Closed Loop between Sourcing and Procurement, Enables Critical Transparency into the End-to-end Process From Savings Identification to the Delivery of Realized Savings

Solution enabled by SAP

- Sophisticated spend analytics provides data aggregation and enrichment
- Sourcing analysis, project management, RFx and award
- Manage contract activities from – strategy, creation, negotiation, and finalization
- Automated procure to pay process – delivering compliance, supplier collaboration, and increased adoption and productivity

Key benefits

- Actionable spend visibility to maximize spend under management and savings opportunities
- Compliance with sourcing and Development of a qualified supply base to generate further negotiated savings
- Accelerated cycle time to decrease maverick buying and speed-up contract utilization
- Maximize savings delivery, reduce operational costs, increase contract compliance, avoid maverick buying, and improve productivity

Responsive Supply Networks

Bulk Transportation Management

Bulk Transportation Management

- Oil and Gas companies need to react fast on reliable data from all their assets and modes of transportation, along the whole supply and distribution network
- Bulk Scheduling covers all processes from High-level long-term planning of oil down to detailed scheduling and execution

Solution enabled by SAP

- Forecast demand and Optimize replenishment
- Match demand and supply
- Proposals for Nominations and assignment of available vessels
- Mid-term forecasting on all locations
- Match demands, supplies, and transport avails (vessels)
- Schedule bulk movements (nominations)
- Manage detailed load / discharge scheduling
- Consider specific legal requirements in the oil industry (like multiple UoM's, etc.)

Key benefits

- The books are always correct, physical = book once tank data are uploaded
- Take direct actions, alerts are recognized on time
- Best decision support through common real-time data visibility across the landscape
- All scheduling operations are in synch
- Employees are all in line with company goal, no silos in the business

Financial Excellence

Enterprise Performance Management

Enterprise Performance Management

- SAP Business Objects provides the leading solution to unlock information,
enable insight, manage performance, and govern compliance regardless of the underlying business applications and data stores.

Solution enabled by SAP

- Management Accounting
- Financial and Management Reporting
- Financial Planning, Budgeting and Forecasting
- Profitability Analytics
- Product and Service Cost Analytics
- Payment Behavior Analytics
- Corporate Investment Management
- Legal and Management Consolidation
- Business Objects Financial Consolidation
- Business Planning and Consolidation

Key benefits

- Monitor results and measure performance
- Reduce budget cycle times
- Visibility into budgets & actual
- Minimizes business and compliance risk through a transparent, fast close and full audit trail
- Visibility into factors that drives costs
- Maximize Profitability – Know exactly where profit is made
- Power – Accelerate processing and reporting for a faster close
- Deliver reliable and timely data to stakeholders

Best People and Talent

Talent Management

Talent Management

- Talent management with SAP ERP HCM integrates processes to identify, develop, compensate, and retain talents.
- It supports end-to-end processes for recruiting, employee performance management, talent review, succession management, enterprise learning management, and compensation management.

Solution enabled by SAP

- E-recruitment
- Employee master data mgmt & skills tracking
- Employee administration, payroll & time management
- Education integrated with development plans
- Self service career development
- Performance management
- Legal reporting

Key benefits

- Create Talent Pool of highly skilled individuals
- Train Employees to elevate their profitability
- Compensate High Performers to increase longevity
- Use Analytics to understand profitability and realization

Strategic Information Technology

Business Process Platform

Business Process Platform

SAP helps organizations establish their unique business process platforms based on enterprise SOA by delivering:

- Flexible and agile platform for addressing business needs
- Lower TCO from integrated solution

Solution enabled by SAP

- Ready-to-execute software that enables industry-rich business processes
- Reusable enterprise services and process components that support rapid change
- A unified technology foundation for running business processes efficiently
- Innovative business processes enabled by service-enabled applications
- Vibrant ecosystem

Key benefits

- Faster and more flexible business innovation
- Strategic alignment between business and IT. Reduced operating costs
- Reduced total cost of ownership
- Improved user productivity, collaboration, and business insight

Continued ...
Volume (2) PART-C

Thank you !

Q E D : Volume-(2) PART-B

Copyright 2011 SAP AG
All rights reserved

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP AG. The information contained herein may be changed without prior notice.

Some software products marketed by SAP AG and its distributors contain proprietary software components of other software vendors.

SAP, R/3, xApps, xApp, SAP NetWeaver, Duet, SAP Business ByDesign, ByDesign, PartnerEdge and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and in several other countries all over the world. All other product and service names mentioned and associated logos displayed are the trademarks of their respective companies. Data contained in this document serves informational purposes only. National product specifications may vary.

The information in this document is proprietary to SAP. This document is a preliminary version and not subject to your license agreement or any other agreement with SAP. This document contains only intended strategies, developments, and functionalities of the SAP® product and is not intended to be binding upon SAP to any particular course of business, product strategy, and/or development. SAP assumes no responsibility for errors or omissions in this document. SAP does not warrant the accuracy or completeness of the information, text, graphics, links, or other items contained within this material. This document is provided without a warranty of any kind, either express or implied, including but not limited to the implied warranties of merchantability, fitness for a particular purpose, or non-infringement.

SAP shall have no liability for damages of any kind including without limitation direct, special, indirect, or consequential damages that may result from the use of these materials. This limitation shall not apply in cases of intent or gross negligence.

The statutory liability for personal injury and defective products is not affected. SAP has no control over the information that you may access through the use of hot links contained in these materials and does not endorse your use of third-party Web pages nor provide any warranty whatsoever relating to third-party Web pages

Weitergabe und Vervielfältigung dieser Publikation oder von Teilen daraus sind, zu welchem Zweck und in welcher Form auch immer, ohne die ausdrückliche schriftliche Genehmigung durch SAP AG nicht gestattet. In dieser Publikation enthaltene Informationen können ohne vorherige Ankündigung geändert werden.

Einige von der SAP AG und deren Vertriebspartnern vertriebene Softwareprodukte können Softwarekomponenten umfassen, die Eigentum anderer Softwarehersteller sind.

SAP, R/3, xApps, xApp, SAP NetWeaver, Duet, SAP Business ByDesign, ByDesign, PartnerEdge und andere in diesem Dokument erwähnte SAP-Produkte und Services sowie die dazugehörigen Logos sind Marken oder eingetragene Marken der SAP AG in Deutschland und in mehreren anderen Ländern weltweit. Alle anderen in diesem Dokument erwähnten Namen von Produkten und Services sowie die damit verbundenen Firmenlogos sind Marken der jeweiligen Unternehmen. Die Angaben im Text sind unverbindlich und dienen lediglich zu Informationszwecken. Produkte können länderspezifische Unterschiede aufweisen.

Die in diesem Dokument enthaltenen Informationen sind Eigentum von SAP. Dieses Dokument ist eine Vorabversion und unterliegt nicht Ihrer Lizenzvereinbarung oder einer anderen Vereinbarung mit SAP. Dieses Dokument enthält nur vorgesehene Strategien, Entwicklungen und Funktionen des SAP®-Produkts und ist für SAP nicht bindend, einen bestimmten Geschäftsweg, eine Produktstrategie bzw. -entwicklung einzuschlagen. SAP übernimmt keine Verantwortung für Fehler oder Auslassungen in diesen Materialien. SAP garantiert nicht die Richtigkeit oder Vollständigkeit der Informationen, Texte, Grafiken, Links oder anderer in diesen Materialien enthaltenen Elemente. Diese Publikation wird ohne jegliche Gewähr, weder ausdrücklich noch stillschweigend, bereitgestellt. Dies gilt u. a., aber nicht ausschließlich, hinsichtlich der Gewährleistung der Marktgängigkeit und der Eignung für einen bestimmten Zweck sowie für die Gewährleistung der Nichtverletzung geltenden Rechts.

SAP übernimmt keine Haftung für Schäden jeglicher Art, einschließlich und ohne Einschränkung für direkte, spezielle, indirekte oder Folgeschäden im Zusammenhang mit der Verwendung dieser Unterlagen. Diese Einschränkung gilt nicht bei Vorsatz oder grober Fahrlässigkeit.

Die gesetzliche Haftung bei Personenschäden oder die Produkthaftung bleibt unberührt. Die Informationen, auf die Sie möglicherweise über die in diesem Material enthaltenen Hotlinks zugreifen, unterliegen nicht dem Einfluss von SAP, und SAP unterstützt nicht die Nutzung von Internetseiten Dritter durch Sie und gibt keinerlei Gewährleistungen oder Zusagen über Internetseiten Dritter ab.

Alle Rechte vorbehalten.

SAP INDUSTRY BLUEBOOK : Oil & Gas

Volume – 2 (PART – C)
Oil & Gas – Best Business Practices

APPROACH WHITE PAPER

BUSINESS TRANSFORMATION SERVICES

28th June 2011

Author .

UJJAL CHAKRABORTY

PRINCIPAL

SAP BUSINESS CONSULTING

INDIA SUB-CONTINENT. BANGALORE

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

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

Agenda

Energy Industry Highlights – & Value Drivers

Oil & Gas – Best Business Practices

Best Business Practice – Baseline Scenarios

Best Practice Value Scenario

O&G – SUPPLY , TRANSMISSION & TRADING

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

Key trends are driving change in the Oil&Gas Midstream business

Increasing customer demands and environmental complexity are driving the need for constant innovation

Increasing Government Regulation

- Sarbanes Oxley
- Sanction Party compliance
- Hedging laws – IAS 39, FAS133
- Excise taxes
- Environmental controls

Volatile market dynamics

- Tight Supply – Demand Balance
- Geo-political uncertainties
- Shifting global demand patterns

Emerging market scenario

- Expansion of NOC's
- Demand increases in China, India and Eastern Europe
- Change in supplier World Order – diverging supply sources

Intense Competition

- Regional / National Oils play major roles in their geography
- Market consolidation and rationalization
- Global market dominated by "Super Majors" and key "Nationals"

The need for constant innovation affecting industry business models

Customers are demanding more flexible business models and companies are innovating to support them

Increasing Government Regulation	■ **Minimize interactions between core business processes and the environment** ■ **Develop or utilize techniques, procedures and technologies to minimize the impact on the environment.**
Volatile market dynamics	■ **Increasing trend of strategic investments to control and access resources.** ■ **Adopting global operating models**
Emerging market scenario	■ **Increasing strategic investments to acquire new resources** ■ **Partner network gaining high importance**
Intense Competition	■ **Continuous structural innovation** ■ **Fierce competition for reserves**

Challenges in Oil / Bulk Transportation Management

Oil companies need to have complete visibility to react fast in a rapidly changing global environment.

Global oil movements

Source: BP Statistical Review of World Energy 2007

New emerging demand regions

Source: OPEC, World Oil Outlook 2007

Challenges in Oil&Gas Trading / Risk Management

Oil companies need to be able to manage the risks of the changing market.

High volatility of Oil market prices

Projected oil demand vs. production

Sources: www.bbc.com www.oil-price.net

Source: ConocoPhillips Projection Based on IEA World Energy Outlook 2005

Challenges in Oil Procurement & Refining

High volatility makes refinery margin management risky.

Reducing Excess Refining Capacity

Volatile Nymex 3-2-1 Crack Spread

Sources: BP Statistical Review-2008

Key Strategic Imperatives for Supply, Transmission and Trading

Increase Revenue	▪ Obtain real-time supply chain data ▪ Optimization of supplies to the most profitable markets and segments ▪ Utilize integrated trading and supply positions to take advantage of market opportunities.
Lower Operational Costs	▪ Real-time visibility across entire supply chain ▪ Integrated scheduling tools ▪ Central supply chain master data ▪ Seamless data capture ▪ Process Automation ▪ Accurate forecasting tools
Lower Working Capital	▪ Integrate planning and execution ▪ Expedite contract to cash cycles ▪ Eliminate invoicing errors
Increase flexibility	▪ Have one single platform ▪ Increase the flexibility of designing new business processes
Compliance	▪ Need real-time integrated positions (physical = book) ▪ Need to link deals to hedges

Issues in Supply & Trading...

Inaccurate and time consuming management of *custody transfer and billing* in highly manual and batch processes

Inability to effectively collaborate with customers and *provide the visibility* and services they are demanding *on a profitable basis*

Can't effectively *monitor and manage compliance* and associated *risks* on an integrated basis *with business operations*

Issues with reliability and cost despite efficient work processes *due to lack of interoperability* between operations, maintenance management, and RCM systems

Challenged to keep *physical and financial operations* and books *synchronized*

...and how SAP solves the issues in Supply & Trading

Integrated front and back office with 360º customer perspective with self service

Result: Superior customer service & profitability

Consistent HSE processes and standards across the enterprise

Result: Improved employee and environmental safety with reduced legal liability

Integrated order to cash management with volume reconciliation

Result: Improved productivity, reduced DSO, and improved customer satisfaction

Interoperable processes and data across full asset lifecycle, from top floor to shop floor

Result: Increased safety, productivity and asset integrity from comprehensive operations management system

Integrated paper and physical trading system

Result: Accurate, compliant and profitable trading operations with less market and operational risks

Bulk Transportation Management

Bulk Transportation Management

- Oil&Gas companies need to react fast on reliable data from all their assets and modes of transportation, along the whole supply and distribution network
- Bulk Scheduling covers all processes from High-level long-term planning of oil down to detailed scheduling and execution

Solution enabled by SAP

- Integrated system landscape
- All users accessing the same reliable data
- Automated processes
- User role assignment
- Real-time update of physical tank data
- Up-to-date information on inventory levels

Key benefits

- The books are always correct, physical = book once tank data are uploaded
- Take direct actions, alerts are recognized on time
- Best decision support through common real-time data visibility across the landscape
- All scheduling operations are in synch
- Employees are all in line with company goal, no siloes in the business

Integrated Trading & Scheduling

Integrated Trading & Scheduling

- Streamlined trading, logistics and business processes increase transparency and reduce operational complexity
- Effective Integrated Trading & Scheduling connects processes across departments to increase efficiency along the whole supply chain

Solution enabled by SAP

- Greater visibility into overall position
- Effectively coordinate portfolio, logistics, trading and financial execution
- Transparency across business processes
- Ability to manage risk, compliance, audits, reporting for corporation
- Automated processes
- Integrated operations
- Shorter cycles for transaction reconciliation

Key benefits

- Reduced TCO through integrated scheduling, trading & execution
- Better decision support through complete inventory visibility and P&L reporting in real-time
- Increased profits by taking advantage of market opportunities
- Increased revenue through higher scheduling effectiveness
- Reduced risk and increased compliance from single physical and financial book

Managing Risk & Compliance

Managing Risk and Compliance

Enable visibility across the enterprise and ensure transparency for optimal portfolio management.

Reduce risk, increase financial execution and enable compliance for all trading related transactions.

Solution enabled by SAP

- Market analysis and trade strategies for better decision support
- Greater visibility into overall position (P&L reporting)
- Ability to manage and reduce risk through integrated physical and paper trading (hedging)
- Enable compliance, audits, reporting for corporation

Key benefits

- Reduced compliance risk through consistent set of data of overall company positions
- Increased revenue by higher visibility
- Integration: Consistent and real-time data in front-office and back-office (unify operations and execution)
- Transparency, compliance, corporate governance, and business insight

Collaborative Demand and Supply Planning

Demand Planning & Supply Network Planning

- It is necessary to overcome inflexible and unbalanced supply.
- Synchronizing demand and supply will improve customer responsiveness, resulting in supply chain operations as a competitive advantage at lower overall costs.

Solution enabled by SAP

- Synchronized demand and supply plan
- Accurate demand forecast
- Maximize and / or optimize the throughput
- Timely and profitable response to customer demand
- Ensure target & safety stock levels
- Match actual & projected demand

Key benefits

- Increased demand visibility
- Maximized operating margin
- Increased revenue through accurate forecasts
- Improved customer service through higher delivery performance
- Reduce inventory levels
- Meet revenue targets

Logistics and Fulfilment Management

Operations & Scheduling

- Executing within an integrated Logistics and Fulfillment network allows companies to ensure the right product is the at the right place at the right time for the right cost.
- These factors are associated with increasing top line revenue and minimizing overall costs associated with inventory, transportation and labor.

Solution enabled by SAP

- Visibility into transportation resources and capacity requirements
- End-to-end process integration and automation beyond company boundaries (partner integration)
- Enhanced exception handling through event management driven by alerts and automated workflows
- Capabilities to manage and meet all safety, regulatory and compliance requirements for imports and exports

Key benefits

- Manage & reduce risks
- Increase customer service
- Maximize asset utilization and reduced stocks
- Increase revenue through better decision making and increased throughput
- Reduce operational costs
- Ensure compliance with latest government regulations and policies

Integrating and Adapting Processes

Flexible Business Process Platform

SAP helps organizations establish their unique business process platforms based on enterprise SOA by delivering:

- Flexible and agile platform for addressing business needs
- Lower TCO from integrated solution

Solution enabled by SAP

- Ready-to-execute software that enables industry-rich business processes
- Reusable enterprise services and process components that support rapid change
- A unified technology foundation for running business processes efficiently
- Innovative business processes enabled by service-enabled applications
- Vibrant ecosystem

Key benefits

- Faster and more flexible business innovation
- Strategic alignment between business and IT. Reduced operating costs
- Reduced total cost of ownership
- Improved user productivity, collaboration, and business insight

Integrated Sourcing and Procurement

Strategic Sourcing and Procurement

Strategic sourcing and collaboration

A Closed Loop between Sourcing and Procurement Enables Critical Transparency into the End-to-end Process From Savings Identification to the Delivery of Realized Savings

Solution enabled by SAP

- **SAP E-Sourcing: RFx Module, End User Bidding and Contract Management**
- **Sophisticated spend analytics** provides data aggregation and enrichment
- **Sourcing analysis, project management, RFx and award**
- **Manage contract activities from** – strategy, creation, negotiation, and finalization
- **Automated procure to pay process** – delivering compliance, supplier collaboration, and increased adoption and productivity

Key benefits

- Actionable spend visibility to maximize spend under management and savings opportunities
- Compliance with sourcing and Development of a qualified supply base to generate further negotiated savings
- Accelerated cycle time to decrease maverick buying and speed-up contract utilization
- Maximize savings delivery, reduce operational costs, increase contract compliance, avoid maverick buying, and improve productivity

Asset Visibility & Performance

Operations are Visible, Allowing Rapid Response & Drill-Down

Asset Visibility and Performance

- Provide a single, real time view of plant & ERP data for managers to take action.
- Maximize returns on a network of assets through optimization

Solution enabled by SAP

- Connect operating systems & Business Applications to dashboards with real time alerts. Asset performance is monitored and events are triggered automatically.
- Bring together data from Operations and Maintenance into unified reporting and KPIs
- Standardize work processes and easy adoption. "Sharing of best business practices between site/plants"
- EAM processes are optimized, balancing efficiency with effectiveness, with all asset content available in a single sourceSAP® ERP, EH&S,
- Manufacturing Dashboard (MII), and Plant Mobility Solutions

Key benefits

- Stakeholders gain visibility across operations. Data leveraged from the source; No need to change core systems
- Managers and LOB's roll up results and look across sites/plants – benchmark best practices and drive results
- Increasing uptime, reducing overall process costs and enabling faster reaction to changing business requirements
- Optimization of maintenance spend

Operational Risk Management

Enabling Business Process Safety & Compliance

Operational Risk Management

- Operational Risk Management connects the stakeholders with the operational management of safety for the environment, the people and the assets
- This enables you to move beyond compliance and create a proactive risk management strategy and realize it in daily operations

Solution enabled by SAP

- **Keep the Stakeholders Informed and Involved**
  - Closed loop risk management including risk mitigation and prevention
  - Auditable business processes and audit management solution
- **Keep the Environment Safe**
  - Integrated database and company-wide transparency regarding compliance with relevant regulations
  - Emissions and Energy Management
- **Keep the People Safe**
  - Health and safety management
  - Safety trainings and certificates
  - Incident Management
- **Keep the Assets Safe**
  - Reliability centered maintenance
  - Safe Systems of work: Lockout/tagout and work permits

Key benefits

- Operational Risk Management will support companies on their way to operational sustainability
- Mitigate strategic, operational, financial and personal risks
- Clear defined processes for monitoring and reporting conformity to regulatory requirements and corporate policies
- Reduced risk of incidents and fines. Assure health of all employees and contractors
- Safe operations and mechanical integrity through cost effective maintenance and reliability programs

Best Practice Value Scenario

O&G - SUSTAINABILITY

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

Typical Areas of Concern

- Greenhouse Gas Emissions Data Capture / Tracking
  - Maintenance and reporting of a corporate-wide environmental emissions inventory.
    - Greenhouse Gases (GHG)
      - Carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF6).
  - Emissions from "direct" (on-site combustion and vented) and "indirect" (imported electricity or imported steam) sources.
  - Data compilation of other reportable emissions/pollutants (e.g. air, water, waste).
  - Computation and forecasting for GHGs and other pollutants.
  - Integration with internal and external systems (plant mntnc., inventory, process controls).
  - Air, water and waste compliance management and reporting for Upstream.
  - Interface with production reporting systems in Upstream.
- Maintenance and support of “calculations library”

Types of Greenhouse Gas (GHG) Emissions

Scope 2: Emissions from purchased energy/utilities

Scope 1: Emissions from direct on-site sources

Scope 3: Indirect emissions from supply chain or services

SUSTAINABILITY

… FOR OIL & GAS

Sustainability Performance Mgt	Assured Reporting	Benchmarking & Analytics	Strategy & Risk	Financial Performance		
Energy and Carbon	Energy-efficient Assets	Energy Management	Carbon Management	Smart Grids		
Product Safety and Stewardship	Product Compliance	Material & Product Safety	Recycling & Re-Use	Recall Management	Product Footprint	Sustainable Design
Sustainable Supply Chain	Procurement	Traceability	Commodity Trade & Risk Management	Resource Optimization	Supply Chain Optimization	
Environment, Health and Safety	Environmental Compliance	Occupational Health	Industrial Hygiene & Safety	Emergency Management		
Sustainable Workforce	Labor Compliance & Rights	Diversity	Talent Management			
IT Infrastructure	Availability, Security, Accessibility & Privacy	Green IT				

SAP Sustainability

… for Oil & Gas

Upstream

Midstream

Refining

Primary Distribution

Secondary Distribution

Service Station & Convenience Retailing

Sustainability Performance Management

- Assured Reporting
- Benchmarking & Analytics
- Strategy & Risk
- Financial Performance

Energy and Carbon

- Energy-efficient Assets
- Energy Management
- Carbon Management

Product Safety and Stewardship

- Product Compliance
- Material & Product Safety
- Recycling & Re-Use
- Product Footprint

Environment Health and Safety

- Environmental Compliance
- Occupational Health
- Industrial Hygiene & Safety

Sustainability Solutions

… Support Oil & Gas

- Carbon Impact
  - Immediate and robust data capture / transformation
  - Enhance and automate voluntary reporting
  - Facility energy management
- EHSM
  - Track and manage employee healthy & safety
  - Track emissions to permit limits
  - Land, Air, Water, Waste, Recycling compliance
- Business Objects
  - Robust and flexible reporting across the organization
  - Dashboards to proliferate content and results
- Sustainability Performance Management
  - Embed Carbon/GHG in corporate KPIs
  - Executive 'Sustainability/ Carbon Dashboard'
  - Communicate carbon content to suppliers & customers
- Manufacturing Integration and Intelligence
  - Accelerate data acquisition
  - Energy management in operations

Best Practice Value Scenario

O&G - HIGH PERFORMANCE ORGANISATION MANAGEMENT

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

Macro Changes Drive A Continued War For Talent Trends & Consequences

Globalization & Industry Consolidation

- **Global competition for talent**
- **Adapt workforce with globalization strategies**

Demographic Changes

- **Engage multi-generational workforce**
- **Retain skilled employees**
- **Manage succession in a global workforce**

Innovation & Growth

- **Enable employees to innovate faster and up-skill continuously**
- **Maintain speed of innovation in an aging workforce**

Evolving End-User Expectation

- **Evolving from a knowledgeable workforce to a "knowledge-able" workforce**
- **Easy access to experts and knowledge**

Industry Data Confirms Talent Challenges

Figure 6. What do you see as the primary workforce-related issues facing the organization?

What does this mean for your business?

Top Executive Issues

- **How do I align my workforce with the organizational objectives?**
- **How do I identify and prepare future leadership?**
- **How do I develop my talent?**
- **How do I create a ready-now workforce?**

Untapped Employee Potential

Without clear processes to identify and develop top performing individuals and prospective successors, organizations risk talent and leadership gaps, resulting in potential business disruptions and poor business performance

Maximize Workforce Potential

Organizations have insight into their global workforce with the ability to tap into the potential of every employee ensuring leadership continuity and alignment with key business objectives.

Oil&Gas Talent Management

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 2007 – Cambridge Energy Research Associates

Today's Oil&Gas business challenges

- **managing an aging workforce**
- succession planning for retiring workers
- documentation of knowledge for succession management
- attracting specific types of labour
- sourcing new talent to meet the growing needs
- **managing a global workforce**
- retention of key talent
- offer more training and development options

Developing High Performing Organizations
Key Stakeholders & Objectives

Developing a High Performing Organization is best achieved through aligning business stakeholders and HR programs.

How do I create a ready-now workforce?	Employee Performance Management	Succession Planning	Employee Development
How do I align my workforce with the organizational objectives?	How do I identify and prepare future leadership?	How do I develop my talent?	
▪ Employee retention ▪ Employee engagement ▪ Workforce productivity	▪ Employee goal achievement ▪ Employee satisfaction ▪ Reward for performance ▪ Organization performance	▪ Vacancies filled by internal candidates ▪ Bench strength ▪ Quality of successors	▪ Impact of training programs on workforce productivity ▪ Development plan progress ▪ Regulatory training compliance

How do I prepare to address the internal and external factors that impact my workforce?

Developing High Performing Organizations

Developing High Performing Organizations connects Employee Performance Management, Succession Planning and Employee Management to maximize workforce potential.

	Employee Performance Management			Succession Planning			Employee Development		
LOB **Employe**	*Enter Self-Assessment*	Conduct Appraisal Feedback Discussion		Maintain Talent Profiles			Book Training	*Participate in classroom & e-learning training*	
LOB **Line Manager**	Review Objectives and Achievement	*Appraise Performance & Assess EE's*	Conduct Appraisal Feedback Discussion	Identify Potential Successors	Conduct Talent Review Meeting		Recommend Trainings	Approve Booking Activities	Monitor learning progress
HR **HR Specialist/HR Business Partner**	Start Central Appraisal Process	Calibrate Appraisals		Identify Key Position	Create Talent Review Meeting	Identify Potential Successors	Define Training Opportunities for Top Performers		
HR or Training **Training Administrator**							Integrate External Training	Create, Manage & Publish Training Catalog and Development Planning	

Customers drive value with Developing High Performing Organizations

	Customer Benefits Achieved
StatoilHydro	▪Greater employee satisfaction ▪Greater productivity with performance management
Auckland Regional Council	▪Reduced workload and greater productivity ▪Improved employee motivation
Confiserie Leonidas S.A.	▪Optimum use of talent pool and new recruits ▪Increased productivity
Rio Tinto	▪**Identify high-potential employees for key positions** ▪**Ensure employees have the correct competencies**
OfficeMax Inc.	▪**Greatly enhance ability for knowledge transfer** ▪**Roll out new products, services, and processes more efficiently**

SAP customers improved employee performance by 44% compared to non-SAP customers who improved by 33%.

Aberdeen Research Brief: Best-in-Class Organizations use Integrated HCM

Employee Performance Management
Objectives, Issues, Capabilities & Benefits

Objective: Global Internal Talent Pool

Best Practice Solution: Aligning employee objectives with corporate objectives and provide a consistent view across the organization of employee performance results.

Issues

- Inability to measure employee performance.
- Inability to link employee objectives to organizational objectives.
- Employee turnover
- Limited transparency of top performers

Key Business Capabilities

- Monitor workforce performance against corporate goals
- Ensure goal-setting is completed
- Standardize appraisals
- Ability to reward for performance
- Identify top performers

Benefits

- Transparency into high potentials, top performers and potential successors.
- Increase workforce performance.
- Employee retention

Employee Performance Management
SAP Solution

SAP Solution

Employee Performance Management
- **Goal and Objective Management including Cascading Goals**
- **Competency Management**
- **Multi-rater Feedback, Calibration Tools…**

Compensation Management
- **Plan and program administration**
- **Administer Long-Term Incentives**
- **Create and maintain monetary and non-monetary budgets…**

SAP Differentiators

- **Global solution supporting 34 languages**
- **Tight and delivered integration between all the Talent Management applications and SAP ERP HCM.**
- **Integration of the overall technology platform driven by NetWeaver.**
- **Cascading Goals support with multiple levels of organizational goals (PS will not offer until late 2009)**

Succession Planning
Objectives, Issues, Capabilities & Benefits

Objective: Visibility of Key Talent Demand & Supply Needs

Best Practice Solution: Ensure key performers are identified and developed to fill key roles within the company

Issues

- Inability to retain key talent
- No transparency for positions where successors are needed
- Inability to define competencies for key positions
- Inability to create and track development plans for top talent and successors

Key Business Capabilities

- Create and monitor development opportunities
- Identify and safeguard key positions
- Identify qualified potential successors
- Provide career plans for key performers

Benefits

- Avoid loss of key talent
- Preserve knowledge within the organization.
- Reduce recruiting costs.
- Reduce time to fill key positions
- Place talent where it will have the greatest impact.

Succession Planning

SAP Solution

SAP Talent Visualization by Nakisa

- Job architecture and talent pools
- Assignment of successors to key positions and top talents to talent pools
- View succession and top talent analytics and information based on organizational charts

Succession Management

- Competency management
- Employee potential and readiness assessment
- Consolidated Employee Profile
- Talent Review meeting
- "9-box" Calibration

SAP Differentiators

- Functionality for talent review meetings and cross organizational top talent calibration.
- Tight integration into the entire Talent Management process
- Utilize one dbase for all people related management process.

Employee Development
Objectives, Issues, Capabilities & Benefits

Objective: Highly Skilled Workforce

Best Practice Solution: Ensure top talent and potential successors are prepared to assume future roles when needed.

Issues

- Turnover
- Inability to create and track career development plans
- Inability to measure competencies
- Skill gap
- Inability to track regulatory training requirements

Key Business Capabilities

- Improve employee's job skills
- Define competencies and up-skill workforce
- Measure the impact of training on workforce productivity
- Track regulatory training and certification requirements

Benefits

- Retain key talent and increase employee satisfaction
- Employees achieve long-term development goals and career opportunities
- Increase workforce productivity
- Increase transparency of employment readiness
- Reduce risk of non-compliance and related incidents, accidents and fines.

Employee Development

SAP Solution

SAP Enterprise Learning

- Administer and track training-related activities
- Track regulatory training; e-records

Career Development Management

- Identify target position
- Establish development needs and track achievement and career readiness

SAP Business Intelligence

- Align training objectives with business objectives
- predefined business content includes 170 preconfigured reports and 250 key figures that can be mapped to other key data points to establish a correlation between workforce performance and organizational financial performance

SAP Differentiators

- One set of cross-ERP analytics to plan, measure, and link strategies and learning initiatives with business outcomes and strategy.
- Tight integration between all the Talent Management applications with the underlying HR data model, including employee master data, organizational structures, and competency information.
- Utilize one dbase for all people related management process.
- Administrative support for expatriates.

SAP ERP HCM
Comprehensive & Integrated Human Capital Mgmt

- Recruiting
- Performance Management
- Succession Management
- Enterprise Learning
- Compensation Management

- **Employee Administration**
- **Organizational Management**
- **Global Employee Management**
- **Benefits Management**
- **Time and Attendance**
- **Payroll & Legal Reporting**

- **Workforce Planning**
- **Workforce Cost Planning & Simulation**
- **Workforce Benchmarking**
- **Workforce Process Analytics & Measurement**
- **Talent Management Analytics & Measurement**

- **Manager Self-Services**
- **Employee Self-Services**
- **Employee Interaction Center**
- **Business Roles**
- **Duet**

End-to-end Enterprise Processes

Integrated Processes to Develop the Workforce

Talent Management

Consolidated Processes, Integrated to Core HR

Within Organization

- HR Department
- Workforce
  - Managers
  - Employees
  - Executives

Outside Organization

- Candidates
- External Service Providers

End-to-end processes

- Performance
- Career
- Top talent
- Compensation
- Learning
- Succession
- Recruiting
- Planning

Shared components and building blocks

Performance goals	Potential assessment	Performance appraisal	Compensation adjustment
Career plan	Talent profile	Workforce plan	On-board
Development plan	Calibration	Global internal talent pool	Succession plan
Training opportunities	Course enrollments	Global external talent pool	Job requisition

Employee data

- Personal information
- Experience
- Competencies
- Career history
- Mobility & aspirations

Company foundation

- Organizational structure
- Job architecture
- Key positions
- Competency catalog
- Goal catalog

Best Practice Value Scenario

O&G - HR OPERATIONS

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

Flexibility and Growth to Survive Today's Global Challenges

Globalization

- Accommodate multiple languages
- Comply with legal & tax requirements locally and globally
- Ensure data formats

Economic Uncertainty

- Increase efficiency
- Reduce cost of HR & FI
- Increase transparency

Mergers and Acquisitions

- Standardize and automate multiple versions of processes
- Consolidate disparate IT systems
- Comply with business and governance models

World-Class Organizations:
Cost Reductions through Process Automation

Source: Hackett 2007

Proven Value of Shared Services

Reduced Costs, Increased Effectiveness

Stages of Maturity

Typical Profile

- Fragmented
- Varying Processes

- Centralized
- Mostly Standard Processes
- Varying Service Levels

- Automated Transactions
- Consistent Service Levels
- Efficiency Metrics

- Highly Automated
- Highly Integrated
- System Consolidation
- Comprehensive Metrics
- Governance

Shared Services

Significant Cost Savings

Shared Services Reduces HR Costs

HR Costs per Employee depending on Shared Services Adoption

Degree of Integration Reduces HR Costs

HR Costs per Employee by Number of HR Applications in addition to ERP system

Employee Self Services Reduces HR Costs

HR Costs per Employee depending on Self Service Usage

2008

*** **Shared Services Best Practice Survey*****

What Does This Mean for your Business?

Top executive issues

- How do I improve efficiency within my HR organization?
- How do I reduce the administrative workload of my HR professionals enabling them to support the business strategy?
- How do I prove the value of HR operations with hard facts and figures?
- How do I ensure compliance concerning HR policies and procedures?
- What is the smartest sourcing strategy for HR?

HR Costs are High
... Strategic Contribution Hindered

Inefficiency of HR process delivery leads to high cost, low quality, low employee satisfaction, risk of non-compliance and lack of strategic business support.

Efficient HR Operations Reduce Costs
... Enable HR as a Strategic Partner

Unified solutions and a flexible technology platform help organizations achieve HR service excellence while maximizing resources and lowering costs

People and Talent Solutions

End-to-end processes across HR and the Enterprise

Build the Workforce	■ Plan and Budget ■ Find and hire the right people quickly ■ Effectively onboard to reduce time to productivity
Develop a High Performing Organization	■ Calibrate/Assess performance and gauge potential ■ Identify key positions, key skills, and talents ■ Develop successors and key contributors
Drive Efficient HR Operations	■ Enable and empower employees ■ Automate HR processes through shared services ■ Increase transparency of HR delivery programs
Optimize Workforce Scheduling	■ Plan optimal workforce levels ■ Manage shifts, rosters, crews ■ Track employee schedules, absences
Automate Global HR and Payroll	■ Standardize local and global HR processes ■ Track benefit plans and enrollments ■ Ensure compliance with ever-changing legal regulations

SAP Platform for
... Efficiency, Automation, and Transparency

Operations and Governance Cockpit

Service Requests

Functional Areas

- Financials
- HCM
- Procurement
- Corporate Services

Intranet portal

Self Services

Communication and Interaction

- Generalist
- Specialist
- Center of Excellence

Multi back-end capability

SAP Provides...

Access and Delivery for all Users in Their Comfort Zone

Phone
Voice recognition

Available

Portal
Extend the process to casual users

Available

Kiosk
Enable self-services on kiosk systems

Available

Duet and "Atlantic"
Access to SAP software through Microsoft Office

Duet: Available
Atlantic: Planned

SAP Interactive Forms software by Adobe
End-to-end process support

Available

Mobile
Platform and applications for mobile field enablement

Available
(in ramp-up)

Widgets

Available
(in ramp-up)

SAP Provides...

The Right Solution to *Drive Efficient HR Operations*

How do I enable HR to support the business strategy?

Service Delivery	Shared Services Framework	Operations and Governance Cockpit
How do I increase HR service delivery efficiency?	How can I get to the next level in HR operations?	How do I prove value of HR operations?
▪ Time spent to complete process ▪ Cost to complete process ▪ Customer Satisfaction	▪ HR costs per FTE served ▪ Error rate ▪ Reduction in cycle time ▪ First call resolution	▪ Fulfillment of service level agreements ▪ Overall cost of processes ▪ Employee satisfaction

Integrated, Automated Collaboration Between Employees and HR Drives Excellence in Service Quality

Service Delivery | **Shared Services Framework** | **Operations and Governance Cockpit**

mployee
- Select service from employee self-service (portal or kiosk)
- Initiate request with Adobe interactive form
- Initiate call or email to service center

elf-service manager
- Approve employee request via MSS
- Request information from shared service center

Shared Service Center
- Verify employee identification
- View contact history
- Categorize request via service catalogue
- Resolution of issue

Shared Service Center s l 2
- Received opened ticket from level 1 and resolved issue
- Contact COEs for resolution

Operations and Governance Cockpit Head of HR
- Review shared services dashboard
- Monitoring peaks in work load
- Monitoring SLA fulfillment

Service Delivery

Effective service delivery increases customer satisfaction

Objective:

Increase efficiency of HR Operations

Best practice solution:

Empower employees to manage their personal information and free up HR professionals to drive business strategy and improve data quality

Issues	Key Business Capabilities	Benefits
▪ Lack of standardized, automated processes lead to disruption in process completion ▪ Manual, paper-based processes lead to duplicate transactions and need for exception handling ▪ Lack of consistency and accuracy of responses	▪ Standardized and user-centric processes based on best practices ▪ Automated and integrated processes ▪ Consistency and accuracy in responses ▪ Lean HR	▪ Employees freed up to focus on core business ▪ HR organization able to focus on strategic objectives ▪ Contribution to bottom line ▪ Improved employee engagement and productivity

Service Delivery
SAP Solution

SAP Solution

- Select service from employee self-service (portal or kiosk)
- Initiate request with Adobe interactive form
- Initiate call or email to service center
- Approve employee request via MSS
- Request information from shared service center

- **HCM Processes and Forms based on Interactive Forms by Adobe - review existing processes and agree and implement standardized global processes**
- **Employee and manager portals, Duet, Kiosk - use standardized and pre-configured services (ready to run)**
- **SAP Shared Services Framework - fully automated service delivery model in place**

SAP Differentiators

- **Flexible deployment options**
- **Integrated with HR processes**
- **Multiple access channels**
- **Most extensive country specific service offering and language**

Shared Services Framework

State-of-the-art shared services provides a safe strategy for savings

Objective:

Automate HR Processes

Best practice solution:

One global, integrated shared services automation platform that offers clear governance, scalability for growth, both geographical and multi-functional (HR, finance, IT, real estate, procurement)

Issues

- Low level of integrated and automated processes in service management
- Duplicate data entry in multiple systems
- Redundant, manual processes run on non-integrated, disparate, and siloed systems
- Service experts lack access to information needed to respond

Key business capabilities

- HR experts shifted from administrative to strategic tasks
- HR administrative staff able to handle more employees
- Service experts have access to all data needed to serve their customers
- Standardized, automated, integrated processes delivered and supported by shared services organization
- Availability of solution database and access to all relevant processes

Benefits

- Higher business value and HR-employee satisfaction
- Lower TCO
- Consistency of response to employees
- Faster response to employee
- High first-level resolution rate

Shared Services Framework

SAP Solution

Verify employee identification	View contact history	Categorize request via service catalogue
Received opened ticket from level 1 and resolved issue	Contact COEs for resolution	

SAP Shared Services Framework:

- **Leverage the successful implementation of HR shared services into other corporate functions**
- **In and out-bound communication, service catalogue directly linked to appropriate teams in shared services organization with integrated service level agreements**
- **Case management, customer history and centralized solution database in place; access to all necessary processes in back-end**

SAP Differentiators

- **Functionality to support multi-functional shared services**
- **Competitors offer no support for multi-functional shared services – no shared services automation platform**
- **SAP offers integrated solution versus non-integrated home-grown systems**

Operations and Governance Cockpit

Measuring effectiveness supports strategic business decisions

Objective:
Increase transparency

Best practice solution:
Leverage technology to measure and manage service quality and cost as basis for improvement

Issues

- **Quality and quantity of service levels delivered are not measured**
- **HR lacks ability to track cost of HR services delivered**
- **Lack of insight into how services from HR are perceived by their employees and insight to needed improvements**

Key business capabilities

- **Operation cockpit offers insight into fulfillment of contractual service level agreements**
- **Ability to analyze inquiry volumes, types, and costs**
- **Operation cockpit for visibility into customer satisfaction**

Benefits

- **Increased quality and reduced costs**
- **Improved service delivery**
- **Improved employee engagement and image of HR function**

Operations and Governance Cockpit

SAP Solution

Review shared services dashboard	Monitoring peaks in workload	Monitoring SLA fulfillment

- **BOBJ & Digital Fuel Service Flow - one overview of internal and external fulfillment of service level agreements (BPO providers)**
- **SAP BI - Measure time spent on HR processes**
- **SAP Shared Services Framework - survey customers and use results to improve service offerings**

SAP differentiators

- **Holistic view of all necessary shared services analytics**
- **Analytical capabilities to control quality and cost of HR service offering**
- **Governance cockpit ensures compliance**

WITH…

Fully integrated Human Capital Management

- Performance Management
- Succession Management
- Competency Management
- Compensation Management

- Recruiting
- Onboarding

- Classroom Training
- E-Learning

- Manager Portal
- Employee Portal
- Shared Services Framework
- SAP Interactive Forms by Adobe
- Duet

- Workforce Analytics & Measurement
- Workforce Planning

- Employee Administration
- Organizational Management
- Global Employee Management
- Benefits Management
- Payroll & Legal Reporting

- Time and Attendance
- Shift/Roster Planning
- Scheduling Optimization

AND...

A Platform for Multi-functional Shared Services

Multifunctional Shared Services Organizations

HR
- Org. Change
- HR Admin
- Time Mgt
- Payroll
- Pensions
- Expatriate Mgmt
- Recruitment

Finance
- Accounts Payable
- Accounts Receivable
- Travel& Expense
- Vendor Requests
- General Ledger

IT
- Incident Mgmt.
- Infrastructure Mgmt
- Application Mgmt

Procurement
- Fleet Mgmt
- Purchase
- Logistics
- Supply Mgmt
- Event Mgmt
- Sourcing

Facility
- Office Mgmt
- Property Mgmt
- Restaurant & mail services
- Relocation
- Infrastructure and technical facility Mgmt

Shared Services Framework

Shared Services Solution Map Combines Best Practices from Customers with Solutions from SAP

Reference model for best practices in shared services organizations

SAP Software Solutions for Shared Services

Shared services process mgmt.	Financial shared services	HCM shared services	Procurement shared services	Corporate services
● Shared Service Framework	● Accounting interaction center	● Employee interaction center	● Procurement interaction center	● Travel management
▶ Process flow analytics	● General ledger	● Payroll and legal reporting	● Requisitioning	● Real estate management
Ⓟ▶ Service level mgmt. cockpit	● Accounts payable	● Time and attendance	● Purchase request processing	● Enterprise asset mgmt., spec. IT help desk
Ⓟ▶ OCR inbound doc handling	Ⓟ Invoice management	● HCM processes and forms	● Purchase order processing	● Environment, health, and safety compliance management
Ⓟ▶ Outbound doc. handling	● Supplier enabling (biller direct pay-side)	● Benefits management	● Trading contract management	● Global trade services
Ⓟ SAP Interactive Forms	● Accounts receivable	● Employee administration	● Receiving	
Ⓟ Duet (information worker)	● Credit management	● Recruiting	● Financial settlement	
● SAP NetWeaver Master Data Management.	● Collections management	● Enterprise learning	● Manage catalog content	
● SAP NetWeaver Exchange Infrastructure	● Dispute management	● SAP Employee Self-Service and SAP Manager Self-Service	● Managing compliance	
● Bus. comm. mgmt. (CTI and WICOM)	● Customer enabling (biller direct sell-side)	● Kiosk Systems	● Supplier collaboration	
● Document mgmt.	▶ Intercompany reconciliation	▶ SSC dashboard analytics	▶ SSC dashboard analytics	
Ⓟ SAP Productivity Pack by RWD	◉ Intercompany processing			
● SAP NW Identity Mgt	● In-house cash			
● SAP Business Workflow	● Inventory accounting			
◉ Resource mgmt.	● Fixed asset accounting			
	● Tax accounting			
	● Treasury			
	● Financial Closing cockpit			
	● Financial statements			
	▶ Tax management			
	▶ SSC dashboard analytics			
	Ⓟ Supplier connectivity			

● SAP product available
▶ SAP product available with future releases
◉ Future focus

Ⓟ Partner product available
Ⓟ▶ Partner product available with future releases
Ⓒ Collaborative business map available

Sxx, Vxx, Bxx SAP product and service
Pxx Partner product
For more information see: http://www.sap.com

Best Practice Value Scenario

O&G - CORE HR & GLOBAL PAYROLL

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

Business Challenges

Turbulent Times Call for a Strong HR Foundation

Globalization & Industry Consolidation

- Multi-cultural capabilities
- Mergers and acquisitions
- Compliance with global and local legal requirements

Demographic Changes

- Engage multi-generational workforce
- Retain skilled employees
- Manage succession in a global workforce

Innovation & Growth

- Enable employees to innovate faster and up-skill continuously
- Maintain speed of innovation in an aging workforce

Organizational Restructuring

- Deploy employees to best-fit positions
- Create "what-if" organization scenarios
- Gain transparency into workforce

SAP Beat Practices Delivers … People and Talent Solutions

Build and Onboard the Workforce	▪ **Plan and Budget** ▪ **Find and hire the right people quickly** ▪ **Effectively onboard to reduce time to productivity**
Develop the Workforce	▪ **Calibrate/Assess performance and gauge potential** ▪ **Identify key positions, key skills, and talents** ▪ **Develop successors and key contributors**
Drive Efficient HR Operations	▪ **Enable and empower employees** ▪ **Automate HR processes through shared services** ▪ **Increase transparency of HR delivery programs**
Optimize Workforce Scheduling & Deployment	▪ **Plan optimal workforce levels** ▪ **Manage shifts, rosters, crews** ▪ **Track employee schedules, absences**
Automate Global HR and Payroll	▪ **Standardize local and global HR processes** ▪ **Track benefit plans and enrollments** ▪ **Ensure compliance with ever-changing legal regulations**

Core HR

… Foundation for All HR Processes

Time & Attendance

- Planning, managing & evaluating working times
- Centralized or decentralized
- Self-service capabilities
- Leave data
- Employee deployment

Employee Administration

- Master data
- Employee transfers
- Status change

Benefits Management

- Benefits administration
- Self-service capabilities

Organizational Management

- Org structures
- Reporting lines
- Planning & simulation

Global employment

- International transfers & assignments
- Global reporting

CORE HR

Employee Administration

Master Data

Allowances

Working times
Absences

Address/
Personal data
- **Localized information**

Tax and Social
Security information

Salary
information

Work center
Cost center
Position

CORE HR

Employee Administration

KEY FUNCTIONALITIES

- Master data for all HR relevant employee processes
- Extensible infotype framework
- Automation of data entry steps for standard processes (e.g. hiring)
- All records are consistency checked real-time and stored with time stamp

BUSINESS BENEFITS

- Automation of all basic personnel processes
- Global reach (languages, currencies, regulatory requirements...)
- Consistent real-time data for all basic HR processes

CORE HR

Organizational Management

Basic Structures Within SAP Data Model

Personnel Structure

Enterprise Structure

Organizational Structure

Person

CORE HR

Organizational Management

KEY FUNCTIONALITIES

- Allows modeling of complex organizational structures and multiple views (e.g. matrix)
- Automatically checks data for consistency in real-time
- Contains powerful reporting and analytics
- Organizational structure is basis for

BUSINESS BENEFITS

- Flexibly plans and maps the organizational levels of your company to control and simplify processes
- Creates transparency and supports decision making e.g. for reorganizations
- Is the foundation for process excellence using workflow and authorizations enterprise-wide

CORE HR

Benefits Management

KEY FUNCTIONALITIES

- Flexible plan categories
- Enrollment & termination
- Participation & insurability monitor
- Data transfer to providers
- Employee self-service (ESS)

BUSINESS BENEFITS

- Allows efficient management of complex benefits programs, including third party providers
- Provides full integration to payroll
- Ensures legal compliance
- Localized benefits for multiple countries

CORE HR

Time & Attendance

Clock in/out

Cross-Application Time Sheet

Self-Service / Inter-/Intranet

Time Manager's Workplace

Mobile

Time Evaluation

Payroll

CORE HR

Time & Attendance

Key Functionalities

- Plan Shifts
- Maintain and record time data
- Clock in/out
- Manage time accounts
- Generate wage types for payments & deductions
- Calculate incentive wages
- Use data in other business processes

Business Benefits

- State-of-the-art planning and data-entry Technologies
- Easy-to-use mechanisms for monitoring time management
- Record data once and reuse across your enterprise
- Intuitive user interfaces tailored to the individual needs

CORE HR

Management of Global Employees

Global Employee

Person ID: Valid within the enterprise & for the lifetime of the employee

CORE HR

Management of Global Employees

KEY FUNCTIONALITIES

- Supports full lifecycle (assignment planning, payroll transfer, repatriation).
- Central person ID allows tracking global employees during all international transfers.
- Authorizations ensure that different HR users can only access data relevant for them.
- Assignments are planned in alignment

BUSINESS BENEFITS

- Single point of information for all involved parties, supporting efficient negotiation and transfer management.
- Automatic information transfer from home to host country and vice versa.
- Reduces communication times and transaction costs.
- Provides consolidated data and training history for employees, critical for talent management processes.

SAP Payroll

Processing Flow

Payroll

Summary

SAP
US Pre-Configured Client
3999 West Chester Pike
Newtown Square, PA 19073

Company Code 3000	Personnel Area 3000
Cost Center	Personnel Subarea 0001

Name	Mr. Timmy Tabasco	Payroll Area	US
Social Security No.	376-89-8766	Pay Period	Oct 16, 2008
Personnel No.	00100209	Period No.	2008/20

US:Semi-Monthly - US
Oct 31, 2008

Check Date	Check Number	Net Pay	=	Earnings	-	Taxes	-	Deductions
Oct 31, 2008	01432631	3,891.74				1577.85		358.84

Earnings		Rate	Number	Amount	Year To Date
1002	Salary		78.67	5,290.44	105,808.82
1251	Vacation pay	67.25	8.00	537.99	5,917.89
Total Earnings				5,828.43	111,726.71

Taxes		Authority	Amount	Year To Date
/401	TX Withholding Tax	FED	1,237.96	25,051.39
/401	TX Withholding Tax	PA	178.98	3,579.41
/401	TX Withholding Tax	PABT	72.88	1,457.41
/405	TX EE Medicare Tax	FED	84.53	1,690.64
/420	TX EE Unemployment Tax	PA	3.50	69.96
Total Employee Tax			1,577.85	31,848.81

Deductions		Amount	Year To Date
2010	Std Medical EE pre-tax	6.17	123.40
2017	Dental EE pre-tax	2.96	59.20

Key Functionalities

- Payroll process model
- Rules-based
- Date effective
- Retro calculations for pay & benefits
- Integration with Financials and Logistics
- Payroll simulation capability
- Complete year-end processing

Business Benefits

- Flexibility – customer-specific rules
- Scalability – pay unlimited number of employees
- Global payroll on one system
- Process driven – automated and error reduction
- Integration – lower TCO, fewer interfaces

SAP HCM

Globalization with Localization

SAP delivers HCM processes for 49 countries based on
<u>Globalization with Localization</u>

- Including payroll, legal reporting, benefits, and time management
- Global processes for worldwide standardization of company business processes
- Local best practices and legal compliance
- A single database instance for multiple countries
- Local “look and feel”
- Languages (over 30)

SAP and Partner Country Versions

HCM Payroll

SAP Country Versions

SAP Country Versions (49)

- Argentina
- Australia
- Austria
- Belgium
- Brazil
- Bulgaria
- Canada
- Chile (EhP5)
- China
- Colombia
- Croatia
- Czech Republic
- Denmark
- Finland
- France
- Germany
- Greece
- Hong Kong
- Hungary
- India
- Indonesia
- Ireland
- Italy
- Japan
- Malaysia
- Mexico
- Netherlands
- New Zealand
- Norway
- Philippines
- Poland
- Portugal
- Romania
- Russia
- Singapore
- Slovakia
- Slovenia
- South Africa
- South Korea
- Spain
- Sweden
- Switzerland
- Taiwan
- Thailand
- Turkey
- Ukraine
- United Kingdom
- United States (incl. Puerto Rico)
- Venezuela

Country Versions provided by Partner Solutions (22)

- Angola (Arinso)
- Bolivia (Arinso)
- Botswana (EPI-USE)
- Cameroon (Arinso)
- Chad (Arinso)
- Chile (Performance HR, BCTS, Soluziona, ERP Sistemas))
- Ecuador (Arinso)
- Iceland (Applicon)
- Israel (Hilan-tech, Sapir-tech)
- Kenya (planned) (EPI-USE)
- Luxembourg (Arinso)
- Morocco (Arinso)
- Mozambique (EPI-USE)
- Namibia (EPI-USE)
- Nigeria (Arinso, EPI-USE)
- Peru (BCTS)
- Tanzania (EPI-USE)
- Rwanda (EPI-USE)
- Uganda (EPI-USE)
- Uruguay (Conex, Soluziona)
- Zimbabwe (EPI-USE)

Globalization/Localization

Summary

Example: Singapore

Key Functionalities

- Supports multiple languages, currencies, time zones
- Local best practices / legal compliance for 49 countries
- Delivery of legal changes
- Consolidated reporting
- One source of global data integrated in other business processes

Business Benefits

- True global business insight
- Ease of use
- Delivery of information in native language
- Compliance with country-specific requirements, both legal and cultural
- Single instance for multiple countries - lower cost of ownership

Automating Global HR and Payroll

Business Benefits

HR Process Efficiency and Compliance

- **Automation of paper-intensive and time-consuming processes**
- **Standard processes and workflows**
- **Regulatory support for 49 countries**

> **"A typical 10,000-employee company handles over one million employee-related transactions annually, each costing 10–50 U.S. dollars."**
>
> ASUG Benchmarking Program
> May 2007

SAP HCM

Comprehensive & Integrated Human Capital Mgmt

- **Recruiting**

- Competency Management
- Performance Management
- Succession Management

- **Talent Review Management**
- **Enterprise Learning**
- **Compensation Management**

- **Manager Portal**
- **Employee Portal**
- **Employee Interaction Center**
- **Duet**

- **Workforce Analytics & Measurement**
  - **Workforce Planning**

- **Employee Administration**
- **Organizational Management**
- **Global Employee Management**
- **Benefits Management**
- **Payroll & Legal Reporting**

- **Time and Attendance**
- **Shift/Roster Planning**
- **Scheduling Optimization**

Best Practice Value Scenario

O&G - ENERGY DATA MANAGEMENT

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

Bad Master Data hinders process innovation

since every department has a different version of it

YOUR VALUE CHAIN

Master Data Today

- **Inaccurate and duplicate**
- **Inaccessible, stored in various silos**
- **Incomplete**

M & A's are worsening the problem

Costs and Complexity worsen over time

As business events continue to impact the data

57% of marketing content work was to mitigate errors

40 % orders getting blocked due to master data problems

$6 billion Maytag merger

Managing Master Data Actively

Is Imperative to ensuring process innovation is not hindered

Consolidation
Ensure consistent master data across systems

Harmonization
Cleanse and distribute across entire landscape

Central Management
Create consistent master data from the start, centrally

SAP Helps CIOs Meet These Challenges

Consolidate & Govern IT

Align business strategy with IT execution

Consolidate on a single **ecosystem** of solutions based on a common platform

Empower & Connect People

Best practice business processes across 26 industry solutions

Delivered in the right **user context**

Run and Optimize

Run and Optimize

Run and Optimize

Run and Optimize

Manage & Deliver Information

Harmonization of information across business processes

Built-in **analytics** for performance and governance

Integrate & Adapt Processes

Pre-integrated with standard processes

Composition / BPM by using **productized** service-oriented business process steps

SAP NetWeaver Master Data Management

Consolidate and Centrally Manage Data Across Enterprise

- Compose cross-application processes in SOA with consistent master data
- Manage data using a flexible data model
- Support consolidation, harmonization, central management
- Take advantage in pre-packaged IT and business usage scenarios
- Use SAP Strategic Data Services for SAP NetWeaver MDM for optimal design and implementation
- Use SAP Services for Master Data Management for faster implementation
- 800+ customers

Ensure Data Quality

During Consolidation with Matching & Merging

Matching

- Locates duplicate records for consolidation within an MDM repository
- Supports interactive, strategy-based matching and is exposed in the MDM Data Manager*
- Allows you to:
  - Define matching strategies
  - Apply these strategies to a set of records and view the matching results

Merging

- Uses the matching score to decide which of the potential duplicates to merge
- Collapses duplicates into a single record

Records

[Count]	[Class]	[Score]	MDM Partner	Name 1/Last Name
2	High	86	18029	Panorama
2	High	89	18030	Panorama St.
2	High	89	18028	Panorama Studios

Matches | **Merge** | Transformations | Rules | Strategies | Workflows | Search Selections

	[Merged Record]	18028	18029	18030
Name 1/Last Name	**Panorama Studios**	**Panorama Studios**	Panorama	Panorama St.
Name 2/First Name	**Bob Buyer**	**Bob Buyer**	B. Buyer	Mr. Buyer
Name 3/Middle Name				
Name 4/Birth Name				
House Number	**178**			**178**
Street	**Morning Drive**	**Morning Drive**	**Morning Drive**	Morning Dr.
Apartment				
Postal Code		91602		91602
City		Hollywood	Hollywood	Hollywood
Region		California	California	California
Country		United States	United States	United States
Full Name		Company Panorama	Company Panorama	Company Panorama

*** Also available via APIs**

Rich Product Content Management

One view of product information anytime anywhere

Publish

Benefits:

- **Complex product and relationship management**
- **Print/web publishing including layout and production**

Example: Product information is consolidated and enriched and published internally or externally

Supplier/Vendor Data Integration

One view of Vendor information anytime anywhere

Analysis

- **Identify and categorize suppliers**
- **Utilize external validation such as D & B's Duns Number**
- **Leverage one view of suppliers to gain supplier visibility and negotiate better procurement contracts**

Customer Data Integration

One view of customer information anytime anywhere

- **Extensive matching framework**
- **Provides web services to customer data access**
- **SAP & Non-SAP integration**

Improved Business Intelligence

Deliver unique insights with an integrated platform

BUSINESS INSIGHT

- **Understand your most profitable products, best customers and cheapest/reliable vendors**
- **Gain insights by integrating transactional data from heterogeneous systems with master data for analysis**

CONSOLIDATING HAS NEVER BEEN EASIER

Consolidate, harmonize and centrally manage master data

Extract

- **Instance Consolidation from R/3 and other sources**
- **Direct ODBC System Access, extract flat files, 3rd party application data, XML sources, many more..**
- **Single pass data transformation, Auto-mapping, Validation Rules, Exception handling**

Cleanse

- **Business Users can define matching rules, complex matching strategies, conduct data profiling, enrich data**
- **Data Enrichment Controller to use 3rd party sources like Trillium, D & B and other partners for address completion, company validation and enriching data**

Consolidate

- **Search and compare records, identify sub-attributes for consolidation in sub-second response times**
- **Merge Records seamlessly, tracking source systems with built in key mappings**
- **Leverage out of box data models for consolidated data**

CONSOLIDATING HAS NEVER BEEN EASIER

Consolidate, harmonize and centrally manage master data

Create

- **Centrally manage master data**
- **Leverage validation rules to enforce data integrity**
- **Manage rich content set and relationships associated with master data record**

Distribute

- **Syndicate master data in XML or to any SAP or non-SAP applications**
- **Works with SAP and non-SAP distribution technologies for easy fit in heterogeneous environments**

Govern

- **Leverage built in workflow to manage compliance process, ensure administrators can validate imported records**
- **Enforce data governance through user roles, security, workflow, audits to prevent future data problem**

Best Practice Value Scenario

O&G – IDENTITY MANAGEMENT

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

SAP NetWeaver Identity Management

Helps companies grant and manage users' access to heterogeneous applications securely & efficiently while meeting audit and compliance requirements.

SAP's solution provides a central mechanism for provisioning users in accordance with their business roles, and supports related processes like password management, self-service and approvals workflow.

Unlike competing products, it provides standards-based integration with HR, GRC and other business processes and offers Identity Services for support in SOA environments

Business Drivers for Identity Management

Increasing operational costs

- Maintenance of multiple sources of identity data
- Manual user provisioning by helpdesk delaying on/off boarding and change in positions
- Labor-intensive paper-based approval systems
- Users dependent on helpdesk response times

Changing business processes

- Constant changes in business processes to align with changing business objectives
- Market consolidation with mergers and acquisitions
- Cross-enterprise transactions with increasing business partner process participation
- Industry specific user provisioning requirements

Compliance requirements

- No record of who has access to which IT resources
- Inability to de-provision user access rights on termination
- Identify and manage business & IT controls
- Provide auditors with complete audit trail
- Prevention of un-authorized access in multi-enterprise environment

CIO Challenges

Security makes the big issues bigger

IT operations silos

Maintenance of multiple sources of identity data

Manual user provisioning by helpdesk

Complex management; expensive to operate; inconsistent user data

Manual processes

Labor-intensive paper-based approval systems

Inconsistent and informal processes proliferate

Poor levels of user satisfaction; excessive levels of helpdesk utilization

Error-prone; subject to loss, and delays; subject to abuse

Unresponsive services

Users dependent on helpdesk response times

Delays due to absence or workload of approvers

Poor security controls; high costs of audit; potential for IT security audit failure

Poor accountability

No record of who has access to which IT resources

Inability to de-provision user access rights on termination

Addressing IT and Business Needs

Identity management is a key addition to the platform

Optimized IT

Single point of control for all user management

Automation of manual, repetitive tasks

Centralized control across heterogeneous IT estate

Adaptable processes

Consistent hire to retire processes enterprise-wide

Re-use of investment in SAP business processes across entire SOA

"Best practice" for user management

Centralized policies for user management

Empowered users

Self-service delivers fast service and reduces helpdesk load

IT access gives access to systems from day one

Centralized audit meets compliance requirements

Trusted information

Enforcement of centralized user access rights policies

Centralized audit of user access rights and administrative actions

Typical User Lifecycle Management

Date of Hiring:

Chuck Brown joined the company

3 weeks later:

Chuck Brown is able to work in Accounting

1 year later:

Chuck Brown transfers to Sales

7 years later:

Chuck Brown was promoted: Vice President Sales

8 years later:

Chuck Brown resigns

10 years later:

Chuck Brown still accesses the system

Issues in this scenario:

- Long time to become productive
- Manual steps to get access
- No de-provisioning of authorizations

SAP NetWeaver Identity Management – Value Proposition

Operational Costs

Efficiency

- Central management of user identities
- Lower cost of administration

Enabled by …

- Standards based technology platform
- Leverage NetWeaver management and administration capabilities
- Rule driven workflow / approval process

Changing business processes

Flexibility

- Business driven Identity Management
- Responsive to business change

Enabled by …

- Standards based integration with Business Suite
- Identity Services enabling tightly aligned loosely coupled integration

Compliance requirements

Insight

- Regulatory compliance
- Governance model for policy management

Enabled by …

- Extensive audit trail, logging and reporting capabilities
- Integration with SAP Suite and GRC for end-to-end, compliant, role-based control

SAP NetWeaver

Identity Management

Provisioning, synchronization and process integration

- Provision access by role
- Open integration
- Synchronization
- Reporting and audit
- Easy administration
- Self-service for users
- Standards based technology platform

Business Driven, Compliant Identity Management

Identity Services Model to deliver service enabled identity management for SOA environments, enabling tightly aligned and loosely coupled integration

Business driven identity governance model and sustainable prevention of segregation of duties violations to deliver compliant identity management

Service enabled and standards based Identity Management to simplify integration and customization across heterogeneous landscapes

Integration with the Business Suite to enable true business process driven identity management

SAP's vision is to provide an integrated, business driven, compliant* identity management solution on a standards based technology platform

***Provided by SAP Solution for GRC**

SAP NetWeaver
Identity Management in the Enterprise

Compliant Identity Management
... Integration with SAP GRC

CIO

SAP NetWeaver Identity Management

Provide the reduced TCO and increased security required by the CIO

CFO

SAP GRC Access Control

Satisfies the requirements of the CFO to ensure that IT business application controls are compliant

Compliant Identity Management

- **Provides compliant Identity Management across SAP and heterogeneous landscape in one integrated solution**
- **Standards based integration creates tightly aligned, loosely coupled solution from complementary components**
- **Gives a consistent view on current and historic access rights, approvals and policy violations**

Business Process Driven
... Compliant Identity Management

- **Need automated position-based role management while ensuring compliance**

- **Reduce TCO by simplifying assignment of roles and privileges to users, starting from HCM events**
- **Reduce risk by compliance check and remediation**
- **Automate manual processes by integration with SAP Business Suite**

Identity Services
SOA Based Identity Management

- **Need ability to create a tight integration with SAP applications**
- **Need ability to integrate 3rd party applications**

- **Identity Services as a standards-based single access point for querying and managing identity information in the complete system landscape**
- **'Tightly aligned, loosely coupled' integration with SAP and heterogeneous applications based on Industry standards**

Best Practice Value Scenario

O&G - OPERATIONAL FINANCIALs

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

Managing Working Capital Today

Too little focus, too much complexity

Perspectives on Working Capital Mgmt.

Lack of Insight [1]

- Average companies spend 51% of their time gathering information and only 49% of their time analyzing it
- High performing companies spend 13% of their time on information gathering and 87% analyzing it

Internal Inefficiency

- A $10 B firm could save approximately $110 million annually by employing an in-house bank[1]
- Average time to collect open accounts receivables in the 1960's: 45 – 60 days[2]
- Average time to collect open accounts receivables today: 45 - 60 days[2]

Inhibitors of Managing Working Capital

Fragmented processes, poor visibility, very inefficient

Reactive Approach to Risk

- Lack visibility into exposure across portfolio
- Poor insight inhibits risk mitigation actions
- Hedging strategies based on "guesswork"

High Cost of Operations

- Labor-intensive cash management processes
- Manual forecasting and data re-keying
- High bank fees from borrowing and transfers

Tied-up Cash

- High DSO, weak cash flow
- AR tied up in disputes / collections

Poor Liquidity Mgmt.

- Lack timely insight into cash balances across multiple banks
- Inability to accurately forecast cash and liquidity requirements

Weak IT Infrastructure

- Multiple systems, no data integrity
- Extensive use of spreadsheets
- No integration with GL for reporting
- Multiple non-standard bank interfaces

Inefficient Collections

- Collections driven by aging spreadsheets
- Long dispute resolution times
- Slow processes and lack of accountability

Inconsistent credit policies, manual collections and dispute handling drives up costs and DSO. Poor visibility into cash flows, cash balances and inaccurate forecasts results in unnecessary borrowing and missed opportunities to earn interest on invested cash.

What does this mean for your business?

Top Executive Issues

- **How do I streamline finance processes and decrease the overall cost of Finance department operations?**
- **How do I improve cash flow, reduce DSO and reduce bad debt risk?**
- **How do I improve cash and liquidity management and forecasting?**

Working Capital Management Best Practices

Process automation, end-to-end visibility, collaboration between teams

Balance Risk with Performance

- Timely insight into risks across portfolio
- Robust risk management systems

Efficient Treasury Operations

- AR, AP and treasury activities streamlined through automation and workflow
- Integrated treasury systems and GL ensure accurate reporting and compliance

Robust Cash Flow

- Low days-sales-outstanding
- Surplus cash invested

Optimized Liquidity Mgmt.

- Complete visibility into global liquidity
- Low banking costs and higher returns on cash

Integrated IT Systems

- Integrated risk, cash and liquidity management
- Natively integrated with general ledger
- Single point of connectivity to multiple banks

Integrated AR Management

- Integrated dispute, collections and AR systems
- Workflow and collaboration driven resolutions
- Analytics drive accountability

Automation and workflow streamlines collections and dispute handling to reduce costs, improves cash flow and lower DSO. Complete visibility across cash sources and global bank accounts improves liquidity management, decreases costs and improves returns on cash.

Optimize Working Capital

Key Stakeholders & Objectives

Optimizing Working Capital requires alignment across multiple processes, internal departments and external partners to ensure liquidity and robust cash flow

Manage Receivables and Customer Credit

How do I reduce DSO, bad debt risk and the cost of managing receivables?

- **Days Sales Outstanding (DSO)**
- **Dispute/Collections Resolution time**
- **Cost of Finance as % of Revenue**
- **Bad Debt as % of Receivables**

Manage Treasury (Cash Management)

How do I ensure strong cash flow and more effectively manage enterprise liquidity

- **Working Capital ratio**
- **Free cash flow**
- **DSO**
- **Returns on invested Cash**
- **Bank interest and fees expense**

Two Essential Steps to Optimize Working Capital Management

Two strategies to improve working capital management processes involve managing receivables and customer credit more effectively, and managing the sources and uses of cash – in treasury – as an integrated process

	Manage Receivables and Customer Credit			Manage Treasury (Cash and Liquidity)			
Credit Management	Credit management						
Accounts Receivable	Electronic Bill Presentment and Payment	Collections Management	Dispute Management				
Financial Analysis	Customer Credit Risk Analysis	Receivables Aging Analysis		Cash and Liquidity Analysis and Forecasting	Bank to Book Reconciliation		
Treasury and Cash Management				Manage Cash	Manage Financial Risk	Manage Liquidity	Bank Communications Management

Manage Receivables and Customer Credit

Objectives, Issues, Capabilities & Benefits

Objective: Robust Cash Flow

Best Practice Solution: Streamline Receivables and Collections Management

The SAP FSCM suite of applications provide robust process automation and collaboration workflow that enables more accurate and faster credit evaluations, accelerated dispute and collections case resolutions and streamlined customer billing.

Issues

- Slow paying customers and reduce cash flow velocity and increase risk of bad debt write offs
- Billing disputes and collections negatively impact cash flow and drive up DSO
- Disputes and collections require a high degree of manual intervention thereby driving up operating costs
- Uncollectible receivables must be written off as an expense. Chronic bad debt increases allowance for doubtful accounts.

Key Business

- Automation, collaboration and workflow capabilities streamline dispute and collections processing and accelerate resolution
- Case management and workflow improve information sharing across functions
- Rigorous credit analysis and exposure management reduce bad debt risk
- Online billing and dispute management for your customers

Benefits

- Increased cash flow velocity, reduced DSO and improved cash flow
- Lower risk of bad debt write off and subsequent profitability impact.
- Lower cost of finance through decreased resource requirements
- Online invoice management eliminates payment or dispute filing delays

Manage Receivables and Customer Credit

SAP

- SAP Financial Supply Chain Management provides workflow-based, collaborative dispute and collections resolution
  - SAP Biller Direct (Electronic Invoicing)
  - SAP Dispute and Collections Management
  - SAP Credit Management
- SAP ERP Financials – Accounts Receivable
- SAP Analytics drive accountability

SAP Differentiators

- Complete integration between SAP ERP Financials and SAP FSCM applications. Robust workflow and collaboration capabilities speeds problem resolution. Online AR invoicing, payments and dispute resolution.
- Workflow, collaboration and case management functionality improves dispute and collections handling times. Rules-based escalations ensure accountability.
- Comprehensive analytics provide visibility into root causes and helps ensure cross-functional accountability.
- Comprehensive credit management application uses rules-based decisions based on internal and external data. Provides comprehensive view of global risk exposure.

Accounts receivable cycle

Managing the AR cycle involves evaluating customer credit, managing trade credit limits, resolving billing disputes and collections of overdue accounts to ensure timely receipt of payments and healthy operating cash flow.

Process steps

1 Customer Credit Analysis

- Define corporate customer credit policy
- Real-time automatic credit worthiness check of sales order
- Evaluate credit blocked sales orders (exception handling)
- Evaluate customer credit risk exposure across all geographies

2 Analyze Receivables

- Produce aging reports, identify overdue accounts and calculate DSO
- Ensure timely recording of payments and management of past-due accounts
- Automatic creation of disputes for invoice underpayments

3 Manage disputes and collections

- Automatic, strategy based prioritization of accounts for collections
- Automatic allocation of collection worklists to processors / teams
- Execute collection activities
- Monitoring success, of collection activities
- Timely processing and resolution of disputes: workflow based, auditable, automated

4 Process Payments

- Automatic processing of electronic bank statements
- Automatic check processing

Manage Treasury (Cash and Liquidity)

Objectives, Issues, Capabilities & Benefits

Objective: Manage Treasury (Cash and Liquidity)

Best Practice Solution: Real time Global Cash insight and Better Forecasting

Ability to pull real-time, reconciled data from AR and AP systems improves cash forecasting. Comprehensive visibility into global cash positions and risk ensures adequate liquidity and protects profitability

Issues

- Business need to balance their sources and uses of cash to ensure they have enough liquidity to meet current liabilities and expenses
- Multi-national companies maintain bank accounts in multiple countries. Moving cash between banks to meet payment obligations in one location drives up costs
- Finance departments, like any cost center, must control their resource costs
- Exogenous market factors can increase financial risk, constrain liquidity and destroy profits

Key Business

- Centralized cash management and robust forecasting enables greater transparency into global cash needs and balances
- Central in-house control over cash reduces the dependency on banks and the need to transfer cash to regions where it is needed
- Complete automation of cash and liquidity management processes. In House cash center reduces resource demands and bank costs
- Comprehensive risk analysis, hedge effectiveness testing and transaction execution
- Standard software for bank communication and payments

Benefits

- Robust cash and liquidity to fund operations, reduce dependency on external financing
- Ensure timely funds available when and where needed. Higher profitability through reduced bank fees and borrowing costs
- Lower resource costs and improved profitability
- Improved risk management reduces overall risk profile, ensures liquidity and protects profitability
- Reduce corporate to bank process costs

Manage Treasury (Cash and Liquidity)

SAP

- **SAP Treasury and Risk Management**
- **SAP In-House Cash**
- **SAP Cash and Liquidity Management**
- **SAP Bank Communication Management**
- **SAP Integration Package for SWIFT**
- ***SAP GRC Risk Management (Optional Extension)***

SAP Differentiators

- **Complete integration between SAP Treasury applications and core accounting systems results in up to date liquidity management and treasury accounting and compliance.**
- **Integration between In House cash, banks and SAP General Ledger provides reconciled intra-day cash positions.**
- **Utilize standardized electronic communications with banks for complete straight-through processing.**
- **Natively integrated SAP Cash and Liquidity and Financial Supply Chain applications provide more accurate cash flow forecasting and more effective liquidity management.**

Cash and Liquidity Management

Cash and Liquidity management provides visibility into and control over sources and uses of cash, manages cash flows and forecasts and manages cash to ensure the enterprise has sufficient liquidity to fund its operating activities

Process steps

1 Forecast Cash and Liquidity

- Capture data from multiple systems – sales orders, SRM, AR, AP and bank ledgers
- Create and update forecasts

2 Manage Receivables

- Monitor receivables
- Create aging reports and DSO analysis - update forecast

3 Process inbound / outbound payments

- Consult forecast—assess cash requirements
- Process incoming payments—credit internal accounts
- Approve payments for release, process payments on behalf of subsidiaries

4 Manage and Invest Cash

- Daily "bank-to-book" reconciliation
- Assess cash requirements—update forecasts
- Pool cash and invest to maximize interest income
- Tap revolving credit line to fund payment mismatch

Optimize Collections and Cash Management

Sell-Side Cash Flow Optimization

SAP's solutions map to industry best practices to improve cash flow and receivables management

Improve operating cash flow and receivables management

SAP Best Practice

Two Steps to Optimize Sell-Side Cash Flow

- Native integration:
  - Across the business functions that impact working capital
  - With all other SAP and partner applications
- Enables better decision-making and reduces cost and risk
- Significantly Reduces TCO
  - Estimated cost for custom bank interfaces: $50,000 each
  - Transaction settlement times reduced over 80%
  - Resource costs of over 50%

*

Best Practice Value Scenario

O&G – FINANCIAL CLOSURES

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

Inefficient Finance Processes

Drive Up Costs, Cycle Times and Errors

Executive Management
- Poor data and process transparency
- Nagging concern about accuracy
- Sign off with lack of confidence

Foreign Subsidiaries
- Multiple financial reporting standards
- Currency translation issues
- Local and corporate COA* not in synch

CFO/Controller
- No high-level control and status view
- Lack documented and systematic closing schedule
- Crisis-driven management

Auditors and Shareholders
- Not enough time for validation
- Weak audit trails, poor internal controls documentation
- Lack confidence in the numbers

Finance Systems
- Multiple ledgers, inconsistent Chart of accounts
- High manual effort to reconcile data
- Spreadsheets lead to data errors

Inter-Company Transactions
- Manual reconciliation/elimination
- Time consuming and error-prone

Complex organizations, disparate systems and poor coordination hamper reporting cycle

Compliance	Transparency	Efficiency
Must meet strict filing deadlines, conformance with financial reporting standards while ensuring effectiveness of internal controls	Accurate and auditable accounting transactions, centrally managed close process and more accurate financial reports.	Streamline close cycle, reduce errors and execute it with greater automation, fewer resources and lower costs

***COA=Chart of accounts**

Why Focus in Finance Department Efficiency?

Lower costs, cycle times and resource demands

Finance departments still struggle with resource-intensive and high cost processes such as managing receivables, payables and the periodic financial reporting cycle.

The Difference Is Clear

Total cost of finance as a percentage of revenue at world-class organizations is 45 percent lower than at typical companies.

Source: The Hackett Group

Closing the Books

While 12 percent of all typical companies close their books in three days or less, 16 percent of world-class firms achieve this goal.

Source: The Hackett Group

World-class companies *spend 45% less* on their closing and reporting efforts than other companies and *save $5.5 million for every $1B in revenue*. Source: The Hackett Group

Increased reliance and process efficiency results in potential reduction of close cycle up to 20% Source: IDC

Streamlined and Flexible Financial Processes

Greater Accuracy, Faster Cycle Times, and Lower Costs

Executive Management

- Standardized process engenders confidence
- Key insights into calculations, methods and divisional results
- Full cycle compliance monitoring

Foreign Subsidiaries

- Ledgers support multiple reporting standards and currencies
- Standard COA *rolls up to corporate

CFO/Corp. Controller

- Complete cycle visibility and control
- Standard chart of accounts
- "Lead" ledger serves as single source of truth

Auditors and Shareholders

- XBRL provides full transparency
- Complete audit trails and automatic IC documentation

Financial Systems

- Unified "lead" ledger, standard Chart of accounts
- Integrated systems, automatic data sharing
- Reconciled data, minimal errors

Inter-company transactions

- Automated reconciliation
- Alerts identify exceptions
- Standard COA eases matching

***COA=Chart of accounts**

SAP enables a faster, more compliant enterprise financial close cycle by harmonizing people, systems and processes. Through robust automation, workflow, visibility and control and enhanced collaboration we help you reduce resource costs, enhance compliance and achieve greater reporting accuracy.

Organizational Inefficiencies

Redundancy and Misalignment Drive Up Costs

HQ/ Finance Department

- **Non-standard processes and systems inhibit closing times**
- **Inefficiency drives up costs**

Foreign Subsidiaries

- **Non-standard processes and systems**
  - **Duplicate functions parallel HQ**
    - **Redundancy drives up costs**

Drive Efficiency, Cost Reductions and Responsiveness

Business Service Delivery via Shared-Services

HQ/ Finance Department

- Standard processes and systems streamline closing times
- Corporate-wide standardization of finance functions

Foreign Subsidiaries

- Served by single shared service center
- Ledgers support multiple reporting standards and currencies
- Standard COA rolls up to corporate

Gaining Efficiency in Finance
Key Stakeholders & Objectives

Gaining Efficiency in Finance is achieved through aligning people and processes to achieve greater efficiency across key functions, lower costs and shorter cycle times

	Accelerate Global Financial Closes	Operate Financial Shared Services
How can I achieve greater efficiencies across my finance department?	How do I streamline my financial reporting cycle and decrease resource demands?	How do I improve consistency, compliance and service levels while lowering costs?
▪ Length of close cycle ▪ Cost of finance as a % of revenue ▪ Staffing level per $ billion in revenue ▪ Process quality	▪ Close cycle time (for annual, quarterly, or monthly close) ▪ Cost of Finance (as % of total revenue) ▪ Error rates (late filing, restatements, etc)	▪ Cost of Finance (as % of total revenue) ▪ Process efficiency (# invoices, collections, etc) processed per FTE ▪ Process quality (keeping SLA targets)

Goal: streamline financial processes and lower the cost of finance

Gaining Efficiency in Finance

Involves streamlining finance processes to make them more efficient, less time intensive and less costly to operate. Shared service deployment option enables further efficiency gains through economies of scale.

	Accelerate Global Financial Closes			Operate Financial Shared Services			
Local Finance Dept.	Scheduled local close	Inter-company reconciliations	Automated period-end accruals	Synchronized Local Close			
Controlling (Corporate HQ)	IFRS and GAAP standards	Close monitoring and scheduling	Automated consolidations		Accounting Interaction Center		
Accounts Receivable				Electronic Bill Presentment and Payment	Collections Management	Collaboration-driven Dispute Management	Accounts Receivable (w/Dispute and Collections)
Credit Department				Credit Management (Centralized)			
Accounts Payable				Accounts Payable	Invoice Management		
Treasury and Cash Mgmt.		Bank reconciliation and interest posting	Valuation and hedge accounting	Cash and Liquidity Management	Treasury and Risk Management	In-House Cash Management	Bank Communications Management

Accelerated Global Financial Closes

Objectives, Issues, Capabilities & Benefits

Objective: Faster, reliable and more efficient financial close

Best Practice Solution: Increased automation and coordination of close cycle

Greater automation, collaboration and control help dramatically reduce the length of the closing cycle resulting in more time to review and validate data, greater accuracy, strengthened compliance, lower costs and resource demands and increase confidence in financial reports.

Issues

- Companies must manually combine data from multiple operating units and disparate applications
- Lack of standardized closing process all across operating units or reporting cycles
- Lack of collaboration and transparency slows down the process and negatively effects quality
- Lack easy-to-use and integrated financial consolidation and reporting applications

Key Business Capabilities

- Flexible financial sub-ledgers that support unique needs of business units and roll up to a single, lead general ledger
- Repeatable, controlled, standardized and auditable closing process. Highly automated to improve collaboration and control
- Integrated, robust, enterprise scale consolidations and reporting solution which is designed for business users

Benefits

- Improved cycle time, reduced time spent, gathering and reconciling data, coordinating tasks, correcting errors and number of auditing tasks
- Lower resource costs, compliance costs and lower audit fees
- Fewer manual errors and increased transparency to fix problems as early as possible in cycle

Accelerated Global Financial Closes

SAP Solution

- Reconciliation of multiple sub-ledgers
- Collaborative inter-company reconciliations
- Automated accruals and journal entries
- Multiple international reporting standards
- Graphical closing task scheduling and monitoring
- Robust enterprise consolidations and reporting
- Automated internal controls monitoring
- Financial instrument valuation and hedge accounting

- SAP ERP Financials
- SAP General Ledger
- SAP Inter-Company Reconciliation (local close)
- SAP Closing Cockpit and Central Process Scheduler
- SAP Business Objects Process Control
- SAP Business Objects Financial Consolidations
- SAP Business Objects Inter-Company Reconciliation (group close)
- SAP Business Planning and Consolidation
- Master Data Governance for SAP

SAP Differentiator: Coordinated Methods to Accelerate Financial Closes, Across All Your Systems

- Flexibility to support multiple system environments, flexible deployment option by region or process
- Ability to support multiple special ledger to lead ledger configuration which reduces reconciliation effort
- Automate period-end closing tasks such as accruals, closing entries and intra-company reconciliations
- Ability to run a standardized, repeatable close process and provide close cycle monitoring via web UI
- Ability to schedule and automate system and event-based tasks across SAP and non-SAP systems
- Robust, business user configurable enterprise financial consolidation and reporting capabilities
- Manage and enforce internal controls throughout cycle

Financial Close Cycle

Comprehensive close cycle management provides all stakeholders a complete picture of individual tasks and dependencies to prepare financial transaction data for consolidated financial statement preparation

Process steps

Close Cycle Scheduling and Process Monitoring

1 Closing Preparation

- Enforce system-wide transaction cutoff
- Reconcile account data across systems
- Perform inter-company reconciliations

2 Local Close

- Perform period end valuations
- Perform accruals and closing journal entries
- Produce local financial statements
- Balance carry forward

3 Group Close

- Collect accounting data system wide
- Check inter-company reconciliations
- Perform group valuations
- Perform inter-company consolidation and elimination

4 Report Preparation and Filing

- Produce "flash" reports and validate
- Perform internal audits and internal control checks
- Executive review of consolidated statements
- File reports

Monitor and Enforce Internal Controls

End-to-end Financial Close Cycle Management

Automation, Control and Visualization

End-to-end best practices to streamline financial closes; coordinated processes across SAP and non-SAP systems

Financial Shared Services

Objectives, Issues, Capabilities & Benefits

Objective: Better quality at lower costs, greater process flexibility and business agility

Best Practice Solution: Optimize operations via shared-service centers
Shared service operations enable businesses to lower their operating costs, both by economy of scale as well as labor arbitrage. Consolidating support functions via shared service centers enables "Centers of Excellence" and better development and deployment of internal expertise and talent.

Issues

- High costs of finance due to redundant functions across the enterprise.
- Shared service centers the do not provide expected pay-off because of inefficient processes
- Economies of scale are not realized because of missing process standardization
- Inability to measure the value provided by the shared services organization
- "Gut feeling" in subsidiaries that everything worked better before transformation to shared services organization

Key Business Capabilities

- Centralized services and consistent processes
- Internal "customer / provider" relationship with clear service level agreements and measurements
- Centralizing skills across the enterprise in "Centers of Expertise"
- Leveraging economies of scale by developing and applying best-practices across the organization
- Leveraging economies of scope by resource pooling and flexible sharing across the organization
- Maximizing return on IT investment by providing automated services to the whole enterprise

Benefits

- Lower finance department operating costs. (wage-rate advantages, resource pooling, and economies of scale)
- Fully measurable quality of service delivery
- Professional development of business process expertise
- Improved quality of finance processes due to sharing of best-practices

Financial Shared Services

SAP Solution

- Optimize cost and pool resources globally to support business functions
- Central IT platform with open interfaces to local ERP systems
- Automation of inter-unit or inter-company accounting processes
- Streamlined collaboration and sharing of workload within the shared service center organization
- Analytics for financial and operational processes

SAP Differentiators

- End-to-end Integration: Seamlessly integrate all relevant processes across system boundaries on a single platform
- Maximum efficiency: Best-practice standards for all process automation in all areas of Finance
- Support for growing and global organizations: Infrastructure to run 24 X 7, 365 day global shared-service organization

Efficiently
Operate Global Finance Organizations

SAP Enables Financial Shared Services

Save costs, use best practices and manage complex global financial organizations via shared-services

Best Practice Value Scenario

O&G – FINANCIAL ANALYTICS

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

Lack of Accurate Insight
Impairing Business Performance

Lack of timely, accurate financial information, analysis and alignment of strategy negatively impacts corporate performance and shareholder value

Executive Management
- Inability to cascade strategy across organization
- Concern about information accuracy and timeliness
- Impeded speed of decision-making

CFO / Finance
- Fragmented planning and forecasting inhibits alignment, accuracy and transparency
- Lack of visibility into true cost impacts profitability
- Long cycles inhibit forward-looking analysis

Procurement
- Fragmented buying data
- Multiple purchasing groups
- Limited insight into spend cost

Marketing Management
- Concerns around profitability of markets, customers and products
- Misalignment of resources against corporate strategy
- Lack of analysis leads to poor decision-making

Production / Operations Management
- Inaccurate planning and forecasting
- Cost-to-serve and procurement costing issues
- Misalignment of resources against corporate strategy

Industry Data Confirms CFO Challenges

Source: CFO Europe Research Services 2008

Source: IBM Global Business Services, The Global CFO Study 2008.

"Defects and breakdowns in planning and execution cited as primary contributing factors to value destruction".

-Harvard Business Review: "Turning Great Strategy into Great Performance"

- ***Average companies*** **spend more than half (51%) of all time gathering and re-keying data in a typical planning environment.**
- ***Average companies*** **spend only 16% of their time in the value added activities of explaining the "why," and exploring the "what if."**
- ***High performing companies*** **spend 13% of their time on information gathering and 87% analyzing it**

-The Hackett Group

- **Nearly 90% of respondents in a recent IDC survey cited the need for improved profitability reporting and accuracy as an urgent issue.**

-IDC

What does this mean for your business?

Top executive issues

- **How do I cascade strategy across all levels of the organization?**
- **How do I overcome my lack of accurate costing information and grow profitability?**
- **How do I accelerate the speed of decision making within our organization?**
- **How do I improve accuracy and reduce inefficient and time-consumptive forecasting and planning cycles?**

Improved Insight Drives Smart Decisions

Accurate insight into costing, improved financial planning and forecasting, timely finance reporting and analysis and the ability to link strategy to execution drives strategy and growth.

Executive Management

- **Cascading strategy throughout organization**
- **Accurate, timely, pertinent information**
- **Accelerated decision-making**

CFO/Corp. Controller

- **Accurate collaborative forecasting and planning**
- **Visibility and transparency into cost drivers and profitability**
- **Time for forward-looking business analysis and recommendations**

Procurement

- **Single view of purchase data**
- **Increased procurement efficien**
- **Rationalize suppliers & spenc**

Marketing Management

- **Focus on profitable markets, customers and products**
- **Resources aligned with strategy and profitable targets**
- **Rapid, logical decision-making**

Production / Operations Management

- **Collaborative planning and forecasting**
- **Understanding of cost drivers and profitability**
- **Alignment of resources with corporate**

Aligning stakeholders
Drive Strategy and Profitable Growth

CFO

Driving Strategy and Growth requires alignment across the organization and is led by Finance

CFO

How do I overcome a lack of accurate insight?

- Cascade strategy across the organization
- Grow profitability
- Accelerate speed of decision making
- Improve accuracy and reduce inefficient forecasting and planning cycles

Profitability Management

How do I overcome inaccurate costing and grow profitability?

- Increase profitability in markets, channels and customers
- Improve cost drivers of cost-to-serve processes
- Drive profitable resource allocation
- Improve margin & market valuation

Planning and Forecasting

How do I improve my forecast accuracy and time for forward-looking analysis?

- Drive improvement in collaborative year-over-year accuracy.
- Reduce budget cycle times
- Reduce historic reporting cycle times

Profitability Management

Objectives, issues, capabilities and benefits

Objective:

Action-oriented insight into costs and profitability

Best practice solution:

Companies have better insight into the drivers of costs and profitability and can rapidly assess the impact of various scenarios to improve their financial performance.

Issues	Key business capabilities	Benefits
■ Poor insight into costs and profitability leads to uninformed decisions ■ Companies lacking accurate cost-to- serve driver costs	■ Regular, detailed and reliable reporting of cost and profitability ■ Accurate costing of processes, markets, customers and product investments and shared services allotments and allocations	■ Improved and quicker decision making ■ Insight into how possible decisions impact present and future costs via "what-if" scenarios
■ Misalignment of resources ■ Companies with lower profitability have lower market capitalization and shareholder value	■ Scenario modeling involving products, customers, channels and resources ■ Accurate costing and allocation of resources	■ Maximize corporate profitability that maximize market capitalization and shareholder value

Profitability Management

SAP Solutions

- **Business Objects Profitability and Cost Management**
- **SAP Strategy Management**
- **SAP Spend Analytics**
- **SAP ERP Financials – Profitability Analysis**

SAP Differentiators

- **Rapid model building with minimum input for maximum output - with web based data entry that minimizes the cost of collecting non-system driver data**
- **Fully integrated services costing and cross charging for costing shared services and invoicing**
- **Ability to deploy driver-based or activity-based planning models for "What-if" scenario modeling**
- **Comprehensive procurement analytics provides visibility purchasing and drives alignment with procurement goals**
- **Cascade and align strategy across the organization**

Product, Market and Customer Profitability Analysis

Product, Market and Customer Analysis provides insight into profitability, creation of strategy to improve unprofitable situations and enabling strategy resource alignment.

Process overview

1 Collect Costing Data

- Data sourced from multiple disparate systems
- Web-enablement allows for remote manual data entry
- Improved accuracy and transparency by providing a "Single version of the Truth"

2 Run Analysis Models

- Business-user friendly models allow for support of views across multiple dimensions
- Drill down capabilities for root cause analysis
- Supports multiple costing methodologies (ABC, Lean Accounting

3 Run "What-If" Scenarios

- Conduct scenario testing to determine methods to improve profitability
- Keep scenarios for further review and recommendation support

4 Provide Insight & Recommendations

- Easily configured reporting and report / information distribution
- Decisions can be made quickly in support of strategic resource alignment

Spend / Procurement Analysis

Spend / Procurement Analysis helps procurement personnel realize measurable cost savings and align sourcing strategies with organizational.

Process overview

1 Collect Procurement Data

- Aggregate purchasing data across (heterogeneous) systems landscapes
- Enable single view on purchasing details
- De-duplicate supplier information, enrich information and categorize records
- Improved data accuracy

2 Run Analysis Models

- Business-user friendly models allow for support of views across multiple dimensions
- Uncover savings potential
- Identify maverick spend

3 Run "What-If" Scenarios

- Conduct scenario testing to determine methods to increase procurement efficiencies
- Keep scenarios for further review and recommendation

4 Provide Insight & Recommendations

- Easily configured reporting and report / information distribution
- Decisions can be made quickly in support of strategic sourcing strategies

Align & Cascade Strategy across Organization

Aligning and Cascading Strategy empowers business users at all levels to rapidly align resources to execute on strategies, understand risk, and drive effectiveness

Process overview

1 Define Strategy

- Define corporate initiatives around profitability and growth
- Create key performance indicators (KPIs)
- Easily implemented with performance-monitoring alignment scorecards and dashboards

2 Assign Initiatives

- Clearly communicate business goals across the organization
- Ensure individuals understand how they can impact strategic goals and how they impact others
- Focus on the initiatives that will have most impact and allocate resources appropriately

3 Monitor Results

- Enable scorecards and dashboards at all levels to monitor progress and identify areas requiring attention
- Easy-to-use drilldown enables root cause analysis
- Easily configured reporting and report / information distribution

4 Measure Performance

- Live operational reviews ensure alignment with goals while managing resource and exceptions.
- Gain greater visibility into and control over the factors that affect your organization's performance

Planning and Forecasting

Objectives, issues, capabilities and benefits

Objective:
Increased forecasting accuracy and reduced planning cycle times

Best practice solution:
Allow companies to better manage resources and adjust to changing market conditions so as to maximize business opportunity.

Issues	Key business capabilities	Benefits
▪ Poor alignment of financial and operational goals with strategic business objectives	▪ Identify and adjust resources to capitalize on areas of profitability	▪ Improves balance sheet and drives growth
▪ Long process that cuts into company productivity	▪ Quicker information allowing resources to add value	▪ Drives additional margin to the bottom line
▪ Accuracy and transparency issues can lead to restatement	▪ Unified application with high data quality and transparency	▪ Reduction in audit conflict/cost and faster delivery of required reporting
▪ Time-consumptive transactional and reporting activities	▪ Identify and capitalize on growth opportunities	▪ Better insight and corporate financial performance

Planning and Forecasting

SAP Solutions

- SAP Business Planning and Consolidation
- SAP Strategy Management
- SAP ERP Financials

SAP Differentiators

- Cross-organization planning that is based on financial and operational business
- Enables logical planning process with input for all departments for top-down and bottom up planning
- Customizable business flow follows process and accelerates completion
- Unified integrated applications provide improved data integrity.
- Predictive analytics warn of variances against stated KPIs
- Planning and consolidation unified in a single solution
- Cascade and align strategy and resources across the organization

Collaborative Planning

Collaborative Planning improves productivity by streamlining the bottom-up and top-down financial and operational planning process.

Process overview

1 Construct Budget

- Configurable business process flows guide users and drive process consistency
- Facilitates collaboration with built-in discussion threads and unstructured data sharing
- Unified application reduces input errors and improves accuracy

2 Approve Budget

- Transparency across planning from all divisions accelerates understanding and approval
- Reduces gamesmanship in planning

3 Forward-Looking Analytics

- Predictive analytics that proactively warn of negative variances
- Automated variance and root cause analysis so users don't have to search for answers
- Model the impact of taking corrective action without an intensive, bottom-up process

4 Provide Insight & Recommendations

- Reduced planning cycle time and analytics provides more time for business analysis
- Unified application provides for more rapid and accurate reporting

Rolling Re-forecasting

Rolling Re-forecasting provides the agility to rapidly adapt budget resources to take advantage of changes market conditions and business opportunities.

Process overview

1 Analyze Position

- Predictive analytics that proactively warn of negative variances
- Provides an early-warning system for KPIs at risk of underperforming in the future

2 "What If "Analysis

- Model the impact of taking corrective action without an intensive, bottom up process
- Enable more calculated decision making by incorporating risk-adjusted planning

3 Provide Insight & Recommendations

- Easily provide critical information on current status and potential impact to business

4 Reforecast Resources

- Configurable business process flows guide users and drive process consistency
- Rapidly re-align resources to address market conditions

Improve Consolidation and Compliance

Improve Consolidation and Compliance allows Finance to improve management reporting cycle times for the enterprise, driving compliance with regulatory and financial standards, helping reduce external audit costs.

Process overview

1 Close the Books

- Unified application with Consolidation capability
- Accelerated inter-company reconciliation based around exceptions
- Close the books faster and with greater accuracy

2 Compliance & Reporting

- Improve compliance by automating manual processes
- Provide a full audit trail
- Enable complete visibility from budgets to actuals
- Drive management roll-ups

3 Review & Sign-Off

- Drive compliance with regulatory and financial standards
- Reduce external audit costs
- Instill confidence and reduce business risk

4 Use Results as Business Driver

- Monitor results for better business performance
- Information serves as driver for support of re-alignment for future planning and budgeting

Align & Cascade
Strategy across Organization

Aligning and Cascading Strategy empowers business users at all levels to rapidly align resources to execute on strategies, understand risk, and drive effectiveness

Process overview

1 Define Strategy

- Define corporate initiatives around profitability and growth
- Create key performance indicators (KPIs)
- Easily implemented with performance-monitoring alignment scorecards and dashboards

2 Assign Initiatives

- Clearly communicate business goals across the organization
- Ensure individuals understand how they can impact strategic goals and how they impact others
- Focus on the initiatives that will have most impact and allocate resources appropriately

3 Monitor Results

- Enable scorecards and dashboards at all levels to monitor progress and identify areas requiring attention
- Easy-to-use drilldown enables root cause analysis
- Easily configured reporting and report / information distribution

4 Measure Performance

- Live operational reviews ensure alignment with goals while managing resource and exceptions.
- Gain greater visibility into and control over the factors that affect your organization's performance

Best Practice Value Scenario

O&G – CONSOLIDATION & STRATEGIC IT GOVERNANCE

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

The Role of IT is Becoming More Complex

IT and Business Alignment is a Top Concern

- Accumulated systems and applications have led to complex heterogeneous, distributed IT landscapes
- IT increasingly needs to address business and stakeholder requirements to maximize profitability and mitigate business and compliance risk

What Does This Mean for Your Business?

How Does this Impact IT?

Top issues

- How do I simplify operations and reduce cost?
- How do I improve business insight and decision making?
- How do I ensure IT execution aligned with strategic business objectives?
- How do I implement compliance, maintain security, and manage risk?

Highly Complex IT Environments

Impede Business Performance and Agility

Misaligned and inflexible processes

- Lack of alignment between business needs and IT resources
- Struggle to maintain existing business processes and innovate new ones at the same time

Fragmented and manual GRC processes

- Lack of system-wide governance and security
- True risk is being obscured

Huge investments in disjointed technology and business processes

- Costly to integrate & maintain systems
- Resources tied up to manage the complex environment

Unreliable information

- Incomplete or out-of-date data; data from multiple non-integrated systems of record
- Unreliable tracking of IT spend

Consolidate and Govern the IT Environment

With a unified Business Process Platform

End-to-end process optimization

- Improved business agility and speed of innovation
- Improved execution of critical business processes
- Increased competitive responsiveness

Simplified IT environment

- Improved process Integration
- Lower cost
- Better resource utilization

Clear, governance, risk, and compliance plan

- Better process control across the value chain
- Greater security and protection of assets
- Increase stakeholder value

Improved performance and information management

- Improved business insight and decision making
- More effective use of IT resources
- Improved delivery of IT services

Strategic IT:

Consolidate & Govern IT

Consolidate the system landscape and accelerate adoption of business innovation	Consolidate and harmonize enterprise data	Implement IT governance to enhance visibility and ensure business alignment	Strengthen enterprise governance to ensure compliance, maintain security and manage risk
Reduced cost and improved competitive responsiveness and innovation	Ensure reliable data to deliver business insight and support effective decision making	Effective IT management and delivery of strategic objectives	Effective management of risks to ensure compliance and increase stakeholder value

System Landscape Optimization

Business Scenarios for Consolidation

As-is situation

Vision

SAP R/3 SAP CRM/SRM

SAP BW SAP APO

SAP System Landscape Optimization (SLO)

Pre-defined services for typical business scenarios

Methodology and best practices

- Standardized project approach (templates, plans)
- Project guidance
- Full service packages (from planning to implementation)
- Long-standing project experience
- Extensive knowledge base delivered via content packages
- Configurable, extendable solutions for new requirements

SLO technologies

- SLO content warehouse
- Conversion technology
- Migration technology
- Upgrade technology

SAP NetWeaver
Adaptive Computing Controller (ACC)

Adaptive Computing Controller

- Integrates IT-infrastructure components on all levels
- Operate virtual and physical IT- resources
- Hide complex landscapes with the help of the Adaptive Computing Controller

Features and Functions:

- SAP System management (start / stop / relocate application services)
- Resource management of physical and virtual servers
- Mass operations
- Observing
- Soon available: mgmt. integration of 3rd party hypervisor virtualization

Enhancement Packages from SAP

Ensure Stability, While Innovating at Your Own Pace

INNOVATION

- Easy introduction of new processes
- Fast, tailored support of processes, when required
- Support new user groups

STABILITY

- Stay compliant
- Support core processes
- Use a stable technology platform
- Standardized maintenance schedule

The answer: SAP enhancement packages

Business Driven Enhancements by **CHOICE**:

- Flexibility to implement new and enhanced processes and scenarios
- Switch framework provides the flexibility to activate only the needed functionality
- Support packages contain only corrections and legal changes

SAP Business Transformation Services

Adapting Business Requirements and IT Capabilities

CEO challenges

- Adapt to changing market requirements
- Identify and pursue growth opportunities in emerging markets
- Foster innovation
- Increase customer orientation
- Maintain tight control on cost
- Attract and retain the right talent

CIO challenges

- Integrate and improve systems and processes
- Align IT strategy with business objectives
- Increase business efficiency through IT-enabled process improvement
- Re-design and streamline the IT architecture
- Control and reallocate IT cost
- Business Network Transformation

SAP Business Transformation Consulting Service Focus

SAP's Open Platform

Optimize Efficiency Across an open business process platform

Driving convergence of semantics across and within industries

BUSINESS STANDARDS

Reduce the cost of building business networks

Solutions that give SAP customers choice

OPEN SOURCE

Flexibility in IT infrastructure
Leverage community innovation

Enabling platform Interoperability

TECHNOLOGY STANDARDS

Agile SOA development
Lower TCO

Allows enterprise readiness through optimized IT, adaptable processes, scalability, and reliability

SAP Business Objects BI and IM Solutions

Integrate Data from SAP and Non-SAP Sources

Intelligence platform

Business intelligence

- Query, reporting, and analysis
- Dashboards and visualization
- Search and navigation
- Advanced analytics

Information management

- Data integration
- Data quality management
- Master data management
- Metadata management
- Text analysis

Business applications and structured data

Unstructured data

Cloud data

SAP NetWeaver Master Data Management

Consolidate, harmonize and manage data across systems

Consolidation
Ensure consistent master data across systems

Harmonization
Cleanse and distribute across entire landscape

Central Management
Create consistent master data from the start, centrally

SAP BusinessObjects Metadata Management
Consolidate, integrate, audit and trust metadata

SAP BusinessObjects Metadata Management overcomes the difficulties of managing metadata from various data sources, technologies and systems.

It consolidates and integrates metadata into an open, relational repository, bringing it all together to lower project costs and provide trusted data and analysis.

- **Consolidate and integrate metadata from various data sources**
- **Get informed on data usage, data lineage and audit history**
- **Perform end-to-end change impact analysis**

SAP NetWeaver Information LifeCycle Management

Manage system redundancy and legacy data

Shut-down Redundant Legacy Systems

- Consolidate data in retention warehouse
- Generate tax and audit reports on data from decommissioned systems

Set Business Rules to Govern Data Retention

- Set retention rules to keep data for different time periods in compliance with regulatory rules
- Ensure compliance with multiple regulatory regimes

Manage Legal Cases

- Apply holds on business records to prevent data destruction or deletion
- Collect and deliver all records related to specific legal cases

SAP Enterprise Architecture Framework (EAF)
Providing Traceability from Strategy to Execution

How do you get from strategy to execution?

...Through a Framework Based on Standards

Describe Enterprise & Meet Stakeholder Requirements

Apply & Scale using SAP Enterprise Modeling application by IDS Scheer

SAP Business Objects Strategy Management

Deliver on IT Strategy in Alignment with Enterprise-wide Objectives

Clearly communicate IT goals

- Help IT improve performance and align execution with strategy by connecting goals, initiatives, and metrics

Prioritize initiatives based on strategy

- Focus on initiatives that will have most impact and allocate resources appropriately

Cascade strategy across the IT organization and intelligently manage resources

- Increase understanding of how to impact strategic goals, ensure accountability, and manage exceptions

SAP Business Objects
Profitability and Cost Management

Optimize Costs and Manage Financial Performance

- "What-if" scenario planning
- Capacity planning
- Driver-based budgeting
- Activity-based budgeting

- Key performance indicators
- Performance metrics
- Benchmarking

- IT Services Costing and Cross Charging

- All functionality provided in a single user interface
- All data accessible to any type of model
- Change any data item once only
- On demand "what-if" analysis and calculation

SAP Business Objects
Spend Performance Management

Monitor and Control IT Spending

Complete data...	Accurate & standardized…	Easy to understand, and actionable!

Process

Technolog

Complete data...	Accurate & standardized…	Easy to understand, and actionable!	
▪ SAP extractors ▪ SAP Business Objects Data Integrator ▪ Self-service data management portal	Acquired IP ▪ Supplier Business Compendium ▪ 'Predictive Coding'	▪ SAP NetWeaver BI 7.0 ▪ Flex-based application layer	▪ Web browser with Adobe Flash Player ▪ Integrated with E-Sourcing

Governance, Risk and Compliance

Key Stakeholder Objectives

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

How do I maximize corporate performance while managing risk and ensuring compliance?

- Increase visibility
- Reduce costs
- Manage risk

Enterprise Risk Management

- Reduce losses / risk exposure and improve profitability
- Increase success rate of new initiatives/strategies
- Reduce risk mitigation costs & insurance premiums

Risk-Based Internal Controls

- Enforce accountability
- Enable continuous control monitoring through automation
- Reduce cost of compliance

Access Management

- Reduce cycle time to manage and maintain accounts in a compliant manner
- Reduce audit, remediation and resolution costs
- Automate entire account management life cycle

Duty Reduction & Trade Compliance

- Ensure trade compliance
- Minimize financial risk by avoiding costly fines and penalties
- Maximize trade benefits by reducing trade-related duties, taxes

SAP Business Objects

GRC Solutions

SAP Business Objects Process Control
Demonstrate Compliance with Regulatory Requirements

- Implement operational controls to improve business process management
- Reduce cost without compromising compliance
- Enable lines of business to effectively mitigate risks

SAP Business Objects Access Control
Prevent Segregation of Duties Violations

- Protect information and prevent fraud
- Optimize operations
- Minimize time and cost for financial compliance

SAP Business Objects Risk Management
Implement Collaborative Risk Management Processes

- Protect Existing Value
- Create New Value
- Increase Enterprise Transparency

SAP NetWeaver Identity Management

Centralized management of users and access across the landscape

- Lower TCO through centralized identity management across heterogeneous landscape
- Increased productivity through automated provisioning and self-support
- Integrated solution with GRC for compliant role-based control with extensive audit and reporting capabilities
- Support for flexible execution of business through integration with the business suite and identity services in a SOA environment

SAP provides an integrated, business driven, compliant* identity management solution on a standards based technology platform

Consolidate & Govern IT

A Powerful and Integrated Portfolio

SAP Services & Support

- SAP System Landscape Optimization
- SAP Enterprise Architecture Framework
- SAP Business Transformation Services
- SAP Services for SAP Business Suite 7.0
- SAP Services for SAP BusinessObjects GRC solutions
- SAP Enterprise Support
- SAP Enhancement Packages
- SAP Education

SAP Ecosystem

- Open Standards based on ITIL/TOGAF
- Expert Communities
- Largest Network of Channel, Service and Technology Partners

SAP Solutions

- SAP Business Suite 7.0
- SAP BusinessObjects GRC solutions
- SAP BusinessObjects Strategy Management
- SAP BusinessObjects Profitability and Cost Management
- SAP BusinessObjects Spend Performance Management
- SAP BusinessObjects Metadata Management

SAP Technology Platform

- SAP NetWeaver
- SAP NetWeaver Identity Management
- SAP NetWeaver Master Data Management
- SAP Adaptive Computing Controller
- SAP NetWeaver Information Lifecycle Management

Best Practice Value Scenario

O&G – INTEGRADED TRADE SCHEDULING

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

Main challenges in the Oil Trading business

Complex & volatile markets	Globalization	Compliance & Governance
Uncertainty & rapidly changing market factors	Global markets have effects on Trade & Transportation business	Sarbanes Oxley, Hedging laws

World Energy Markets continue to be Stretched and Volatile

As Supply Continues to Tighten

Any Disruption Leads to Volatility

Managing these Dynamics Continues to be a Challenge for Energy Companies

This Stretch and Volatility is the Result of

Dynamic Market Environment

- Increased risks of supply disruption
- Geo-political uncertainties
- Emergence of alternative fuels
- Shifting global demand patterns

Increasing Government Regulations

- Sarbanes Oxley
- Sanction Party compliance
- Hedging laws – IAS 39, FAS133
- Excise taxes
- Environmental controls

- Reluctance to invest new capital
- Downward Margin Pressure
- Reduced Operating Efficiency
- Increased risk of non-compliance

Increased Market Complexity

- NOC supply dominance
- Increased number of joint ventures
- Increased Price & Volume Transparency
- Organizational flattening
- Changing regulatory environment

Intense Competition

- Market consolidation and rationalization
- Increased market globalization
- Hypermarket entry and maturity

Challenges in Oil&Gas Trading / Risk Management

Oil companies need to be able to manage the risks of the changing market.

High volatility of Oil market prices

Projected oil demand vs. production

Sources: www.bbc.com www.oil-price.net

Source: ConocoPhillips Projection Based on IEA World Energy Outlook 2005

Trends in Commodity Trading and Scheduling

Main Business Drivers

- Volatile commodity prices
- Regulatory response to global economic crisis
- Climate change
- Development of cap and trade markets in U.S.
- Growth of electronic trading and (new) exchanges
- (Marine) logistics and delivery risk are increasingly important in a global business

Market Response

- Recognized need to integrate trading with shipping functionality
- Global Super Majors and NOC's are looking to meet new requirements and reduce TCO by replacing in-house development by packaged solutions
- National and regional oil companies in emerging countries looking for software solution to address this increasingly complex environment

Trends in ETRM* Software

- 6 % annual growth rate of market
- High and volatile oil price, U.S. credit crisis, climate change, and growth of electronic trading and (new) exchanges are the main business drivers
- Global Super Majors and NOC's are looking for packaged ETRM solutions
- National and regional oil companies in emerging countries looking at application software
- (Marine) logistics and delivery risk are increasingly important in a global business
- Development of cap and trade markets in U.S.

Major directions:

- Reduce TCO by replacing in-house development by packaged solutions
- Integrate shipping functionality

*ETRM: Energy Trading & Risk Management

What does this mean for your business?

Top executive issues

- **Are my deals consistent with contracts and inventory ?**
  (Issue: No transparency across business processes)
- **Where are we long and where are we short ?**
  (Issue: Lack of visibility into overall position)
- **Is my risk exposure aligned real-time with operations ?**
  (Issue: Align risk exposure with volumes)
- **Are my demands and supplies balanced across the whole supply chain ?**
  (Issue: Lack of real-time visibility into inventories and in-transit movements)
- **Are my books correct at the end of the month ?**
  (Issue: Manual processes, siloed operations)
- **Are we compliant to regulatory requirements ?**
  (Issue: No ability to manage risk, compliance, audits, reporting for corporation)

Main issues in Oil Trading & Logistics business

...and how SAP solves the issues in Oil Trading & Logistics business

Solution: Effectively coordinate portfolio, logistics, trading and financial execution

Solution: Transparency across business processes

Solution: Ability to manage risk, compliance, audits, reporting for corporation

Solution: Automated processes, integrated operations

Solution: Greater visibility into overall position

Solution: Shorter cycles for transaction reconciliation

Global Exchange
- NYMEX WTI
- ICE Futures (IPE)

Counter-Parties
- Banks
- Brokers
- Vendors
- Customers

Logistics providers
- Pipelines
- Vessels

Financial partners
- Banks
- Exchanges (Monetary)
- Governments
- Joint Ventures

Governance and Compliance
- Governments
- States
- Exchanges
- M&A's

How IT meets the business challenges

Market pressure

Complex & Volatile Markets

Uncertainty & rapidly changing market factors

Globalization

Global markets have effects on Trade & Transportation business

Compliance & Governance

Sarbanes Oxley, Hedging laws

IT Consolidation & Standardization

Decision support

Provide a consistent set of data of overall company positions

Transparency

Support of legal requirements

Integration

Consistent data in operations & execution

Aligning stakeholders to achieve Integrated Trading & Scheduling

Effective Integrated Trading & Scheduling requires alignment between several stakeholders with differing objectives.

COO

Chief Operating Officer

Are we profitable and compliant ?

- **Revenue**
- **Operating margin**

Trading Front-Office

Trading & Risk Management

Where are we long and where are we short ?
Are my deals consistent with contracts and inventory ?

- **Revenue**
- **Margin**
- **Customer satisfaction**

Operations / Mid-Office

Logistics

Are my demands and supplies balanced across the whole supply chain ?

- **Inventory levels**
- **Transportation costs**
- **Contractual agreements**
- **Customer satisfaction**

Back-Office

Accounting

Are my books correct at the end of the month ?

Are my physical books reconciled to mark-to-market ?

- **Accounting**
- **Regulatory Requirements**

Integrated Trading & Scheduling
an end-to-end, cross-functional process

Effective Integrated Trading & Scheduling connects processes across departments to increase efficiency along the whole supply chain.

Trading & Risk Management

SAP Solution

- **Provide all relevant demand and supply information with complete visibility for all stakeholders in real time**
- **Enable real-time access to data for timely decision-making**
- **Manage pricing risks**

SAP Differentiators

Integration: **- Real-time data availability across the entire value chain. Integration of trader's front office with operations / mid-office and back-office.**
- Real-time data availability across the entire value chain

Scalability: **Architecture enables scalable and integrated processes**

Bulk Logistics / Scheduling

Objectives, issues, capabilities and benefits

Objective:

Plan demands, supplies and freight avails in a most efficient and integrated manner

Best practice solution:

The Scheduler uses SAP TSW (Trader's & Scheduler's Workbench) to plan and schedule deals and bulk transports

Issues	Key business capabilities	Benefits
▪ View present and future inventories per location / tank ▪ View all unscheduled deals ▪ Include SAP contracts and orders in scheduling application, real-time ▪ Track and maintain all in-transit transports	▪ Plan and schedule deals and bulk movements ▪ Communicate with customers and service providers ▪ Ensure stability of inventories	▪ Decision support: View all real-time supply chain data, including all in-transit movements ▪ Automation: Automate processes ▪ Integration: All documents and processes in one central instance

Bulk Logistics / Scheduling

SAP Solution

- Mid-term forecasting on all locations
- Match demands, supplies, and transport avails (vessels)
- Schedule bulk movements (nominations)
- Manage detailed load / discharge scheduling
- Communicate to all involved parties

SAP Differentiators

Integration: **All scheduling relevant demand data and processes across enterprise and functional boundaries**

Flexibility: **Any movement scenarios to model real business movements (sales, purchases, transfers, in-tank transfers, etc.)**

Back-Office / Accounting

Objectives, issues, capabilities and benefits

Objective:

Ensure on-time booking of all movements and FI documents

Best practice solution:

The Accountant / Clerk is using SAP TSW to initiate all follow-up (after-the-fact) ERP bookings

Issues	Key business capabilities	Benefits
▪ Timely booking of invoices etc. ▪ Be able to track all movements ▪ Have consistent data at end-of-month reporting	▪ Book movements ▪ Check invoices and invoice verification ▪ Ensure correct (compliant) books	▪ Flexible, automatic and real-time after-the-fact processing ▪ Track in-transit inventory and value in ERP ▪ Automation: Automate processes ▪ Books = Physicals

Back-Office / Accounting

SAP solution

- **Create ticket manually or automatically**

  (via inbound BoL)

- **Flexible and automated after-the-fact processing in ERP**

- **Ability to reverse or correct tickets**

SAP differentiators

Flexibility: **Customizing of any movement scenarios**

Automation: **Full automation of after-the-fact booking processes**

Integration: **Full integration into ERP**

Best Practice Value Scenario

O&G – BULK TRANSPORTATION

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

Unreliable data from various systems reduce efficiency of the value chain

Oil&Gas companies need to react fast on reliable data from all their assets and modes of transportation.

Complex & volatile markets	Globalization	Tight Demand/Supply situation
Uncertainty & rapidly changing market factors	Global markets have effects on Trade & Transportation business	Low inventories, restricted refinery capacities and tight demand/supply balancing

Challenges in Oil / Bulk Transportation Management

Oil companies need to have complete visibility to react fast in a rapidly changing global environment.

Global oil movements

Source: BP Statistical Review of World Energy 2007

New emerging demand regions

Source: OPEC, World Oil Outlook 2007

Majority in Process & Manufacturing Industries is redesigning SCM

Cost pressures, escalating customer service demands, & restructuring requirements in the Process Industries lead to ...

An ARC benchmark Study on Manufacturing Industries IT Spending ranked Supply Chain Performance (Time, Service Levels) and better Transportation Planning and Execution as top priorities where to focus investments.

Source: ARC Advisory Group – Manufacturing IT Benchmarking Analysis Report, April 2008

What does this mean for your business?

Top executive issues

- **How can I ensure that everyone works with the same information ?**
  (Issue: No common data, disparate system landscape)
- **Are there any extraordinary situations along our supply chain ? How to react as early as possible ?**
  (Issue: Alerts are often recognized too late)
- **Are my demands and supplies balanced across the whole supply chain ?**
  (Issue: Lack of real-time visibility into inventories and in-transit movements)
- **Are my books correct at the end of the month ? (Compliance)**
  (Issue: Manual processes, siloed operations)
- **Break down silos in the company (Do all business units work to the same company bottom line goal ?)**
  (Issue: Siloed operations)

Main issues in the Oil Logistics business...

Discrepancies between physical, trading and accounting books

- Siloed organizatio
- Manual processes
- Impact to working capital

Alerts recognized too late

- No real-time data feed
- No role assignment

Siloed operations

- Employees may not have one common goal
- No communication among employees

Lack of real-time visibility

- No up-to-date information on inventory levels
- Lack of In-transit details
- Inability to take advantage of market opportunities

No Common data

- Disparate system landscape
- No real-time update of physical tank data

...and how SAP solves the issues in the Oil Logistics business

Correct books

- Automated processes
- All users accessing the same reliable data
- Reconciled books

Alerts recognized on time

- Real-time data feed
  - User role assignment

Operations in synch

- Employees all in line with company goal
- No siloes in the business

Common data

- Integrated system landscape
- Real-time update of physical tank data

Real-time visibility

- Up-to-date information on inventory levels
- In-transit details (Vessels, Pipeline)

Aligning stakeholders to achieve Bulk Transportation Management across the network

Effective Bulk Transportation Management requires alignment between several stakeholders with differing objectives.

COO

Chief Operating Officer

How can I ensure that everyone works with the same data ?

- **Revenue**
- **Operating margin**

Planning

Demand / Supply Planning

Are my demands and supplies balanced across the whole supply chain ?

- **Contractual Agreements**
- **Network constraints**

Operations

Scheduling

Are there any extraordinary situations along our supply chain ?

- **Inventory levels**
- **Transportation costs**
- **Freight agreements**
- **Customer satisfaction**

Back-Office

Execution

Are my books correct at the end of the month ?

- **Accounting**
- **Regulatory Requirements**

Bulk Transportation Management

Bulk Scheduling covers all processes from High-level long-term planning of oil down to detailed scheduling and execution.

Demand & Supply Planning

Objectives, issues, capabilities and benefits

Objective:

Balanced and Profitable Demand and Supply

Best practice solution:

Use APO SNP and DP to optimize inventories and transportation

Issues	Key business capabilities	Benefits
▪ Planning system not really integrated with SAP ERP ▪ Results of optimization need to feed back to the scheduler's desks	▪ Optimize and plan sourcing of demand locations ▪ Forecast on demand ▪ Balance the whole network ▪ Schedule vessels & ships	▪ One fully integrated optimization and planning system ▪ Push results into the scheduling application ▪ Full network visibility

Demand & Supply Planning

SAP Solution

- **Forecast demand**
- **Optimize replenishment**
- **Match demand and supply**
- **Proposals for Nominations**
- **Assignment of available vessels**

SAP Differentiators

Integration: **Seamlessly integrate all relevant planning data and processes across functional boundaries on a single platform**

Scalability: **Architecture enables scalable and integrated processes**

Real-time: **Real-time data availability across the entire supply chain**

Scheduling

Objectives, issues, capabilities and benefits

Objective:

Plan, schedule and execute demands, supplies and freight avails in a most efficient and integrated manner

Best practice solution:

The Scheduler uses SAP TSW (Trader's & Scheduler's Workbench) to plan and schedule stock transfers, deals and bulk transports

Issues	Key business capabilities	Benefits
▪ View present and future inventories per location / tank ▪ View all unscheduled deals and available stock for later scheduling ▪ Include SAP transfer orders, contracts and orders in scheduling application, real-time ▪ Track and maintain all in-transit transports	▪ Plan and schedule stock transfer orders, deals and bulk movements ▪ Communicate with customers and service providers ▪ Ensure stability of inventories	▪ Decision support: View all real-time supply chain data, including all in-transit movements ▪ Automation: Automate processes ▪ Marine scheduling: Reduce / eliminate demurrage ▪ Integration: All documents and processes in one central instance

Bulk Scheduling

SAP Solution

- Mid-term forecasting on all locations
- Match demands, supplies, and transport avails (vessels)
- Schedule bulk movements (nominations)
- Manage detailed load / discharge scheduling
- Communicate to all involved parties
- Laytime / demurrage calculation

SAP Differentiators

Integration: **Seamlessly integrate all relevant scheduling data and processes across functional boundaries on a single platform**

Real-time: **Real-time data availability across the entire value chain for primary bulk logistics**

Execution

Objectives, issues, capabilities and benefits

Objective:

Execute plan and schedule into the backend system.

Best practice solution:

Use the TSW Ticketing component to execute all after-the-fact follow-up activities in ERP.

Issues	Key business capabilities	Benefits
■ Mismatch of physical and legal readings on one side and the backend figures on the other ■ Manual work to process pipeline tickets or BoL's (Bill of Lading) ■ Mismatch of book and physical at month end reporting	■ Generate all required backend documents (delivery, invoice, etc.) ■ Verify consistency of all numbers ■ Consider specific legal requirements in the oil industry (like multiple UoM's, etc.)	■ Execute plan after-the-fact, with option to correct or reverse ■ Consider legal requirements and regulations ■ Consistency of all data related to movements and inventories, across planning, scheduling & execution layers

Execution

SAP solution

- **Create ticket manually or automatically (via inbound BoL)**
- **Flexible and automated after-the-fact processing in ERP**
- **Ability to reverse or correct tickets**

SAP differentiators

- Flexibility: **Flexibility of follow-up processing**
- Automation: **Automation of follow-up processing**
- Integration: **Full integration of Scheduling component into ERP via TSW Ticketing application**

Best Practice Value Scenario

O&G – WORKFORCE SCHEDULING

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

Macro Changes
Drive a Continued War for Talent

Greying of the Workforce

By 2011 24 million baby boomers will have left labor pool

Global Nature of Competition

Complex economy demands talent with global acumen, multi-cultural fluency, technological literacy

Skills Shortage

Get the best before your competition does

Employee Retention

Up to 90% of new hires make decision to stay or leave in first 6 months

Oil&Gas - Talent Management

Today's Oil&Gas business challenges

- **managing an aging workforce**
- succession planning for retiring workers
- documentation of knowledge for succession management
- attracting specific types of labour
- sourcing new talent to meet the growing needs
- **managing a global workforce**
- retention of key talent
- offer more training and development options

The Best People & Talent

Plan the Workforce

- Combine external trends with business strategy
- Plan and model responses
- Build action plans and measure results

Build and Onboard the Workforce

- Plan and Budget
- Find and hire the right people quickly
- Effective onboarding to reduce time to productivity

Develop the Workforce

- Influence performance and gauge potential
- Identify key positions, key skills, and top talents
- Develop successors and key contributors

Create a Collaborative Work Environment

- Formal learning opportunities
- Knowledge capture and sharing
- Collaboration and communication

Deliver services that support the Workforce

- Self-services and shared services
- Workforce deployment, Time Management
- Core HR services

Decision-making in service management is complex

Is inefficient workforce scheduling holding you back?

Ever-increasing Costs

- Increased effort and reduced efficiency
- Inconsistent scheduling
- Too many resources, not enough work

Lack of Visibility and Control

- No visibility across systems to identify areas for improvement
- Cannot respond real-time to events and status changes
- Difficulty tracking and complying with policies and regulations

Need to Increase ROI

- Reducing service costs to increase profitability
- Optimizing workforce utilization for efficiency
- Improving service to retain customers - and acquire new ones

Optimizing your workforce provides significant benefit

Significant Cost Savings

- Reducing costs to increase profitability
- Optimizing workforce utilization for efficiency
- Improving service to retain customers – and acquire new ones

Visibility and Control

- Organization-wide visibility of workload and capacity to meet current needs and demand
- Regulatory compliance
- High-quality service for each contract

Increased Revenues

- Servicing more customers per week
- Getting the job done on time, the first time, every time
- Improving customer loyalty and retention with higher quality service

What does this mean for your business?

Top Executive Issues

- **How do I ensure I have the engaged and committed workforce necessary to compete and grow my business?**
- **How do I source the best talent from a shortage of skilled workers?**
- **How do I improve the engagement level and retention of new employees?**
- **How do I determine if my staffing processes are successful?**

Productivity and innovation disruption

Lack of visibility into process success or failure

- No transparency to performance drivers
- Missed opportunities
- Ineffective staffing and onboarding processes

Reduced employee engagement and increased turnover

- High cost to replace newly hired employee
- Lost productivity
- Lack of innovation

Lack of, & competition for, available talent

- Shortage of skills for continued competitive advantage
- Business slowdown
- Lack of organizational growth

Mis-hires and turnover disrupt business by causing the costly and time-consuming need to repeatedly recruit, interview, hire and train.

Workforce agility leads to business value

Transparency and tools to find and hire the best people faster

- Reduce sourcing time
- Less business disruption and possible economic loss
- Lower cost for better hire

Improved employee contribution to business value

- Heterogeneous mix of skills, knowledge and abilities
- Better business decisions
- Workforce aligned with business strategy

Optimize time-to-productivity and reduce new hire turnover

- Decrease business disruption
- Organization readiness for new hire
- Faster time to productivity

Hire the best people, improve retention and time-to-productivity, and quantify the performance of your workforce = an agile workforce geared up to tackle future challenges and business disruptions

Build the Workforce by Aligning Stakeholders

Build the Workforce requires alignment between several stakeholders with differing objectives

How do I create a ready-now workforce?

- Quality of Hire*
- Time to Productivity
- Analysis of Terminations

Recruiting

How do I source the best talent from a shortage of skilled workers?

- Time to Fill
- Cost per Hire*
- Key position staffing

Onboarding

How do I improve the retention of new employees?

- Time to Productivity*
- Completion Rate of Tasks*
- New Hire Turnover Rate

Measuring

How do I determine if my staffing processes are successful?

- Quality of Hire*
- Diversity ratio of new hires
- Analysis of Terminations

Build the Workforce by Connecting Processes and Functions

Build the Workforce is an end-to-end, cross-functional process to create an agile workforce and avoid business disruption

	Recruiting			Onboarding				Measuring
Recruiting Recruiter	Create requisition	Search for suitable candidate	Schedule Interviews	Initiate hiring action				Transfer Data to BI to Analyze and React
Core HR HR Administrator				Complete hiring	Initiate System Access			
Self-Service Employee				Benefits enrollment	Order office material	Book training		
Self-Service Line Manager	Request requisition	Rate and rank candidates	Select candidates	Approve System Access	Approve training	Order equipment	Start objective setting	

Recruiting
Objectives, Issues, Capabilities & Benefits

Objective: Hire the best people faster

Best Practice Solution: Link people, technology and processes for recruitment success

Standardize and automate each step in the recruiting process - requisition management, sourcing, candidate screening, assessment, and selection

Issues

- Competition for available skilled talent
- Lack of one integrated system to automate and link major steps in recruiting process
- Non-standardized, non-automated processes
- No measurement of process effectiveness and quality of new hires so can't determine best hiring source
- No view of overall candidate pool

Key Business Capabilities

- Find, hire, retain qualified employees
- Increase speed of hire with consistent, scalable, automated processes, and better technology tools
- Ability to measure and determine best source of quality candidates
- Access one global internal and external candidate pool

Benefits

- Less business disruption
- Reduced sourcing time
- Reduced process costs
- ASUG – when best practice is fully adopted, reduce time-to-hire from 80 days to 48
- ASUG – when best practice is fully adopted 15-25% decrease in cost-per-hire

Recruiting

SAP Solution

- SAP E-Recruiting with its tools to locate talent and support efficiently staffing procedures, including intelligent electronic screening, filtering, sorting, and ranking
- Manager Self-Services for requisition requests, rating and ranking as well as candidate selection
- Duet capabilities* as an optional user interface for scheduling interviews
- SAP Business Intelligence with analytical tools to analyze the staffing process

SAP Differentiators

- Integration with SAP ERP, SAP HCM, SAP Talent Management
- Single, global, candidate (internal and external) candidate pool
- Support for multiple languages, currencies and multilingual job postings
- Process definition and tracking functionality
- Integration with Adobe Forms (ex. Hiring manager creating requisitions)
- Integration with BI allows user to aggregate data from all sources
- Certified interface for service providers for resume parsing and background-check services

Onboarding
Objectives, Issues, Capabilities & Benefits

Objective: Increase new employee retention

Best Practice Solution: Set up a holistic onboarding process to ensure engagement

Establish onboarding as a strategic business process to successfully immerse every new employee into the organization, its culture, and business and use standardization and automation for greatest effectiveness

Issues

- Lack of a defined onboarding strategy that provides the new hire with the tools, the network and the development activities they need to become productive fast
- No clear definition of who is doing what in the onboarding process
- The organization is not "ready" for the new hire
- Managers lack core competency to assimilate new employees

Key Business Capabilities

- Socialized, engaged, productive employee contributing to the business
- Increased time to productivity through automation and structured access to self-services
- Manager access to career planning, learning, performance management and workflow tools to support assimilation of new employees

Benefits

- New hires become productive much faster which leads to accelerated organizational productivity, innovation and quality, employee engagement
- Investment protection, lower recruiting costs, decreased business disruption
- Reduced administrative cost; organizational readiness; transparency
- Reduced new hire turnover

Onboarding

a1

SAP Solution

- SAP E-Recruiting
- SAP Employee Self-Services, Manager Self-Services
- SAP HR Administrative Services
- SAP Netweaver Identity Management
- SAP GRC Access Controls
- SAP SRM
- SAP Enterprise Asset Management
- SAP BI
- SAP Performance Management
- SAP Enterprise Learning

SAP Differentiators

- SAP delivers integration beyond HCM with Identity Management, SRM, Asset Management, GRC Access Controls, EH&S
- SAP delivers customizable portals for socialization and efficient delivery of relevant information
- Automated and compliant identity management and access controls
- Self-services for managers and employees with workflows help to organize and track the process

a1 I made the changes as agreed in the VS-Review meeting. Please have a look, if it makes sense. THX
D041137, 9/17/2008

Measuring
Objectives, Issues, Capabilities & Benefits

Objective: Ensure transparency for improvement of staffing and onboarding processes

Best Practice Solution: Consistent measurement refines practices and improves satisfaction

Consistent measurement refines practices, identifies gaps, provides clear and actionable data and improves both employee and organizational satisfaction

Issues

- **Lack of standardized, measurable processes**
- **Lack of analytical tools**
- **Lack of transparency to kpis to measure against**

Key Business Capabilities

- **Standardized, automated, measurable processes**
- **Access to analytical tools with flexible deployment options for different business users**

Benefits

- **Monitor progress and success of processes**
- **Identify gaps and derive actions to improve effectiveness and efficiency of process**
- **Ensure transparency and hit kpis – more results-oriented & efficient**

Scheduling Challenge:
Delivering high quality service

Questions:

- What time to promise the customer?

Issues:

- Resources availability and skills
- Parts and priorities

Business Requirement Fulfilled:

- Fulfil promised appointments
- Meet regulations and SLAs
- Exceed competition
- Provide high-quality schedules

Scheduling Challenge:

Responding real-time to dynamically changing events

Questions:

- How can we get this information in real-time?

Issues:

- Real-time traffic updates
- Understanding impact of event
- Mobile devices/synchronization

Business Requirement Fulfilled:

- Move from ‘fire-fighting’ to agile, effective response
- Maintain high utilization and efficiency even with constantly changing events
- Reduce paperwork

Scheduling Challenge:
Making the right decisions based on real-time information

Questions:

- How is my region performing?
- What are the tasks with the most exceptions?
- Where do I need to develop employee skills?

Issues:

- Reporting
- Drill-down analytics
- Instant KPI measurement; exception alerts

Business Requirement Fulfilled:

- Real-time information for excellent decisions
- Mobile workforce-specific reports and analytics
- Quality data for future forecasting
- Risk management

Scheduling Challenge:

Recruiting the right workforce for the short-term and long-term

Questions:

- Do we have the right capacity with the right skills at the right locations for this week and next quarter?
- Should we resolve any gaps through subcontracting, hiring, training, overtime?

Issues:

- Forecasting using history as well as operational plans
- Planning/'what-if'
- Linking plans to execution

Business Requirement Fulfilled:

- Just right' capacity to match changing demand
- Controlling demand to match available capacity
- Deliver on customer SLA

Scheduling Challenge: Optimizing workforce productivity while juggling several projects

Questions:

- Who does what when?
- Can we take a resource out of a crew for an hour to handle a nearby emergency?

Issues:

- Crews/multi-stage tasks
- Idle time
- Complex business rules
- Workforce convergence/subcontractors

Business Requirement Fulfilled:

- Maximize productivity
- Fulfill obligations and safety policies
- Perform urgent tasks - and meet longer range commitments
- Reduce employee fatigue

Scheduling Challenge: Building the right schedules to meet the right demand

Questions:

- What is the ideal allocation of resources to shifts to best meet anticipated workload?

Issues:

- Shift planning in order to balance demand coverage, employee preferences and cost
- Who should work on what day/shift and when is the right time for vacations and days off?

Business Requirement Fulfilled:

- Automate planning
- Optimize coverage and shift schedules
- Satisfy engineers within/without the bounds of working rules and regulations
- Synchronize planning decisions across organization

SAP Workforce Scheduling and Optimization by ClickSoftware Solution

Enables customers to:

1 **Anticipate varying customer demand…**

ClickForecast

2 **Ensure just enough resources to meet the demand…**

ClickPlan

3 **…Allocated to the right shift with the right skills…**

ClickRoster

4 **At the right place and the right time.**

ClickSchedule

ClickLocate

ClickAnalyze

Covering the full spectrum of decision support for service organizations

Decision Timeframe

W6 Paradigm: A powerful, rich framework for human resource management

Scheduling: In a given day: who is scheduled to do what, for whom, where, when, and with what (W6)?

- **Who – The required resource, professional**
- **What – Type of job (duration, complexity, priority)**
- **Where – Onsite, remote office**
- **When – How quickly does the job have to be done? SLA's?**
- **For Whom – Business or consumer, special requirements/preferences**
- **With What – Parts required to complete the job**

Schedule Comparison

Optimization is what drives the value

7. With the exact same number of tasks, the optimal schedule utilizes virtually no overtime.

2. Travel time metric - on the Scheduling Monitor - is now within the organization's guidelines.

5. Reduction in overall utilization produces additional capacity using the same number of engineers.

6. Automatic planning of engineer lunch breaks ensuring compliance with relevant legislation.

4. Greater concentration of workload during earlier parts of day increases resource availability for additional workload.

1. Considerable reduction in travel times.

3. Cluster workload based on geographical location to reduce travel times

8. The best schedule quality – reductions in travel and utilization thus increase the capacity of existing resources.

SAP service and maintenance scheduling

Satisfy customers with optimal field service

ClickSchedule → ClickLocate → ClickAnalyze

Day of Service

Monitor and manage daily schedule of technicians on a minute-to-minute basis

Location-Based Services

Reflects the real-time location of technicians and takes it into account when scheduling tasks

Post Service Analysis

Gain insight and analyze service performance allowing proactive departmental management

ClickAnalyze historical information is input to ClickForecast to facilitate future forecasts built on actual scheduling data

SAP forecasting and rostering

Optimize employee productivity

ClickForecast → ClickPlan → ClickRoster → ClickAnalyze

Years/months/days before day of service

Years/months/days before day of service

Months/weeks/days before day of service

Post Service Analysis

Develop Future work demand forecasts for months/years in advance

Align resource capacities with future work demand forecasts – years/months in advance

Plan shifts in order to balance demand coverage, employee preferences, regulations and cost

Gain insight and analyze service performance allowing proactive departmental management

ClickAnalyze historical information is input to ClickForecast to facilitate future forecasts built on actual scheduling data

Solution architecture

Best Practice Value Scenario

O&G – ASSET SAFETY & COMPLIANCE

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

Today's Realities for Managing Asset Safety and Compliance

The New York Times

Industry Fines Increase for Safety Violations…

THE WALL STREET JOURNAL.

Corporate Compliance Costs Rise to All-Time High…

DIE ZEIT

Green, Green, GREEN !

FT.com FINANCIAL TIMES

Growing List of Regulations Haunt Manufacturers…

INTERNATIONAL Herald Tribune

What Is Environmental Sustainability?

WSJ.com THE WALL STREET JOURNAL. ONLINE

Spending on global regulation and compliance to double by 2011 to over $70B USD

May 14, 2008

AMR Forecasts 8% growth in compliance spending for 2009 approaching $35 B USD / yr

Ap r 2, 2008

Baker Report: PSM

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

1 Losses by Industry (MM$)

Source: J&H Marsh & McLennan, Inc.

Losses continue to occur across many industries

2 Percentage of Loss Type

Types of incidents are catastrophic

3 Loss by Cause (MM$)

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

Gaps in ability to provide the infrastructure for risk, performance and HSE

- Driving integration of information across the enterprise
- Continuous process improvement / business improvement

Gaps in ability to manage risk, performance, and HSE to desired levels

- Supporting / managing / mitigating enterprise risk
- Measuring / monitoring business performance
- Health, Safety, Environmental (HSE) - operations

Performance **Importance**

1 is "ineffective" and 5 is "very effective"

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

What does this mean for your Business?

- **How do I meet all external and internal environmental, health and safety (EHS) requirements and prevent serious incidents or catastrophes?**
- **How do I gain visibility to EHS risks and performance and manage local processes having no integrated solution?**
- **How do I manage environmental compliance effectively and avoid negative impact to the companies image?**
- **How do I execute and track a health, safety and certification program?**
- **How do I ensure safe operations through cost effective maintenance and reliability programs?**

Aligning Stakeholders to Achieve Asset Safety and Compliance

Asset Safety and Compliance 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

Asset Safety and Compliance

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

Asset Safety and Compliance is an 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.

Keep the Stakeholders 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

- Accidents or incidents show unforeseen risks and lead to short term safety programs
- Lack of transparency and standardization of local EHS activities and high manual efforts
- External and internal audits create huge efforts
- Costly collection of local data, lack of comparability, inconsistent KPI´s
- Risk of severe incidents that could harm people, damage image and lead to be called to account

Key business capabilities

- Closed loop risk management including risk mitigation and prevention
- Consolidate information and processes on an integrated, scalable and flexible platform
- Auditable business processes and audit management solution that meet ISO 19011 standard
- Visibility into operational performance metrics, enabling drill down to specific data
- Effective management and control of risks, processes and preventive measures.

Benefits

- Effective anticipation of risk leads to improved prevention of incidents.
- Safe time and money for inefficient Ad hoc activities as “firefighting”
- Reduce cost of compliance and best practices can be shared
- Ensure with moderate effort that internal and external standards are met
- Easy to use monitoring to ensure compliance objectives are being met
- Improve corporate EHS standards and prevention to minimize risks

Keep the Stakeholders Informed and Involved

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.

Keep the Stakeholders 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.

- Corporate EHS Risk Mgmt
- Corporate EHS KPI Monitoring and Compliance Reporting
- Audit Mgmt

Process overview

1 Risk Planning

- makes sure that the right people are involved in the risk management process
- comes with a set of workflow-driven scenarios

2 Risk Identification and Analysis

- option to send risk surveys to gather quick feedback from assessment participants
- offers generic web services that allow integration into SAP and Non-SAP applications
- automatic risk alerts
- qualitative and quantitative analysis methods

3 Risk Response

- guided activities to allow non-risk management experts to work with the application
- status tracking and analysis

4 Risk Monitoring

- dashboard reporting
- keeps track of event losses to review the effectiveness of the risk responses
- offers set of standard reporting options tailored to the individual target audience.

Keep the Stakeholders 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

1 Overall EHS KPI Monitoring

- SAP NetWeaver BI offers EHS business content and easy reporting tool
- Business Objects offers extended value with Business Intelligence Solutions like Xcelsius
- Xcelsius is a tool for rapid development of visualizations and highly interactive dashboards

2 Environmental KPI Monitoring & Reporting

- Form based reporting allows data output on any government form, versioning and electronic submittal
- Analytical query for Ad hoc reporting
- Integration with SAP NetWeaver BI with out of box data extraction and sample business content

3 Health and Safety KPI Monitoring & Reporting

- Configurable list-based SAP reports with substantial search capabilities offering E-mail and export
- WWI Reports - Form-based reports due to legal requirements
- MS-Word
- SAP NetWeaver BI: easy reporting tool

4 Asset Safety KPI Monitoring & Reporting

- List-based SAP reports as powerful Ad hoc reporting tool
- SAP NetWeaver BI drill-down reports
- Out of box data extraction
- Sample business content e.g. for Financial, Efficiency & Effectiveness and Corporate Indicators

Keep the Stakeholders 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

Process overview

1 Audit Planning Program & Criteria

- Audit planning according to chronological, functional or organizational aspects
- Scheduling via Microsoft Project possible
- Master data for audit question lists can be reused for different audits

2 Auditing & Grading

- Assignment of question list to audit per drag & drop
- Offline and online results recording is supported
- Grading of the audit object and acceptance or rejection of the audit depending on a preset limit value

3 Corrective Action

- Triggering fulfillment of corrective actions
- Send an e-mail with action item attached or create an inbox entry
- Create Quality Notification in SAP ERP if necessary

4 Analysis

- Selection of data objects via standard SAP analysis
- Overview lists & graphical representation
- Analysis via SAP NetWeaver BI by extracting operational data

Keep the Environment Safe

Objectives, Issues, Capabilities & Benefits

Objective:

Run business operations in accordance with environmental laws and company policies to avoid or reduce pollution, safe 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
▪ Complexity of regulation frameworks and frequency of change ▪ Unable to easily fulfill required regulations (state, federal, and international) ▪ High cost of compliance due to manual efforts and disparate systems ▪ Lack of early warning system for deviations and critical issues ▪ Direct operational and financial impacts	▪ Integrated database and company-wide transparency regarding compliance with relevant regulations ▪ Consistent, auditable and transparent business processes ▪ Integration into SAP ERP and 3rd party systems ▪ Flexible early warnings and alerts ▪ Emissions and Energy Management ▪ Basis for trading with emissions certificates	▪ Improved processes and lower total cost of compliance ▪ Reduce workload ▪ Enables total compliance achievement ▪ Reduced energy costs ▪ Create revenue by selling free capacities of certificates ▪ Reduced risk of incidents and fines

Keep the Environment Safe

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

Keep the Environment Safe

Environmental Permits and Requirements Management

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.

- Environmental Permits and Requirements Mgmt
- Emissions & GHG Inventory Mgmt
- Action, Deviation and Response Planning
- Data Collection

Process overview

1 Define Permits and Master Data

- Flexible definition of permits and requirements including limits, expiration dates
- Proactive early warning system
- Integration with SAP EH&S substance database (material)

2 Define Assets and Hierarchies

- Organize company assets in a hierarchy
- Integration to maintenance (equipment, technical object)
- Reporting hierarchies
- Define data sources and integration

3 Define Tasks

- Recursive tasks, workflows, e-mail notifications and escalation mechanism to get e.g. compliance activities conducted
- Integration to maintenance notifications

4 Collect Data

- Manual collection via tasks, workflow and entry sheets and proof of data plausibility
- Automatic collection via integration with ERP and Shop Floor Systems (MII, web services)
- Consumptions, measurements and emissions

5 Manage Deviations and Incidents

- Manage deviations and incidents and appropriate activities to minimize risks
- Reporting in required time and manner to authorities and internal stakeholders

6 Perform Reporting

- Reporting on any government form and electronic report submittal, and report versioning
- Ad hoc reporting tool
- Integration with SAP BI and delivery of sample business content

Keep the Environment Safe

Emissions & GHG Inventory Management

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_2 and GHG emissions reporting and management of allowances according to the European or Australian GHG trading schemes.

- Environmental Permits and Requirements Mgmt
- Emissions & GHG Inventory Mgmt
- Action, Deviation and Response Planning
- Data Collection

Process overview

1 Define Emissions Planning & Monitoring

- Definition of all emission source, facility or process scenarios including parametric definitions
- Scenarios for actual and forecast emissions
- Integration to maintenance (equipment, technical object)

2 Define Tasks

- Recursive tasks, workflows, e-mail notifications and escalation mechanism to get e.g. compliance activities conducted
- Integration to maintenance notifications

3 Collect and Calculate Data

- Manual collection via tasks, workflow and entry sheets
- Automatic collection via integration with ERP and Shop Floor Systems (MII, web services)
- Calculate emissions e.g. CO_2 based on consumptions and emission factors

4 Monitoring Plan/Actual and Credits

- Monitoring of planned emissions versus actual emissions
- Monitoring of emissions versus credits/ allowances of GHG emissions
- Manage deviations or incidents and reporting to authorities

5 Manage Emissions Credits

- Flexible definition of accounts to manage emissions credits and their validity periods
- Track transactions e.g. internal transfers and give an overview of credits stock at any time

6 Perform Reporting

- Reporting on any government form and electronic report submittal, and report versioning
- Ad hoc reporting tool
- Integration with SAP BI and sample business content

Keep People Safe

Objectives, Issues, Capabilities & Benefits

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, heath surveillance, incident management.

Issues

- Lack of integration and process control
- High risk of non compliance and personal reliability for workers
- Need to ensure details like:
  - What are the exposures?
  - What measures have been taken?
  - Have the necessary preventive medical check-ups been carried out?
  - Did employees follow the right trainings?
- Need to protect maintenance workers e.g. against electricity or radiation.

Key business capabilities

- Streamlines collaboration between IHS professional, first-aider, asset management, HR department, and external authorities
  - Health and safety management incl.
  - Risk and exposure management
  - Accident Management
  - System-controlled tracking of safety measures
- Medical management
- Automated generation of SOPs and safe handling of hazardous substances
- Safety trainings and certificates
- Lockout/tagout and work permits

Benefits

- Streamlined processes
- Reduced effort for investigation
- Standardized capture of legally required information
- Complete documentation of all processes
- Reduced time and costs
- Guarantee that each employee receives the necessary health surveillance protocols
- Assure health of all employees and contractors

Keep People Safe

SAP Best Practice Solution

SAP ERP

- SAP Environment, Health & Safety (SAP EH&S)
- SAP Enterprise Learning (SAP ERP HCM)
- Work Clearance Management

- Managing industrial hygiene and safety; including risk assessment, incident/ accident logs, exposure profiles
- Occupational health management incl. health surveillance protocols
- Standard Operating Procedures for safe handling of hazardous substances
- Execute and manage safety courses, briefings and certificates
- Lockout/tagout and work permits to protect maintenance workers

SAP Differentiators

"SAP EH&S replaces the maze of stand-alone country-specific solutions that are like small country lanes – and provides us with a fast, multilane highway for the integrated environment, health, and safety business."

Dr. Peter Schmidt, Sanofi-Aventis

Keep People Safe

Health and Safety Mgmt.

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

Process overview

1 Start Risk Assessment

- Direct access to real time information, e.g. Hazardous Substance Inventory, Incidents / Accident Notification to initiate Risk Assessment

2 Risk Analysis and Rating

- Complete measurement management with planning and recording functionality
- Exposure related analysis methods

3 Safety Measures Based on Rating

- Triggering and tracking of technical measures as notifications in SAP EAM, QM and SM
- Gathering of safety measure related costs
- Direct assignment of responsible persons

4 Monitoring & Reporting

- Status tracking reports
- Form-based accident reporting
- Comprehensible risk assessment reporting
- Detailed measurement reporting

Keep People Safe

Occupational Health Management

Sales forecast collaboration enables managers, sales executives, and planners to jointly deliver a sound sales forecast

Process overview

1 Trigger Health Surveillance

- Direct access to HCM master data and EH&S IHS data
- Proposal of health surveillance protocols based on employee specific exposure situation (risk assessment) by avoiding needless examinations
- First Report of Injury

2 Execute Medical Examination

- Planning cockpit with access to SAP calendar
- Complete recording of medical information
- Possible access to related information in injury log, accident management and person specific exposure log

3 Documentation and Triggering of Tasks

- Total medical history
- Form-based reporting for medical certificates (results and medical restrictions)

4 Reporting

- Preventive aspects can easily be identified based on medical data
- KPI reporting for critical items e.g. overdue date of health surveillance protocols

Keep People Safe

Hazardous Substance Management

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

Process overview

1 Gather and Verify Hazardous Substance Data

- Centralized hazardous substance database
- Automatic update of information with interface to content providers
- Support of check-in and verification of supplier MSDS

2 Block of Hazardous Substances/ Materials

- Based on risk assessment rating material can be blocked for purchase

3 Standard Operating Procedure

- Automated update of Standard Operating Procedure based on real time information from substance database and work area information

4 Create Hazardous Substance Inventory

- Hazardous Substance Inventory can automatically be created based on MM data
- SARA 311, 312 Tier 1 and II reports can also be created automatically

Keep People Safe

Certificates and Safety Trainings

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

1 Get to Know Missing Qualifications

- Employees can be alerted of expiring certifications or missing qualification well in advance, before the actual expiry date.

2 Find and Book Appropriate Course

- SAP Enterprise Learning can recommend appropriate courses that can be taken to regain expiring certifications or to attend necessary safety briefings.

3 Take the Course

- SAP Enterprise Learning helps quick and fast consumption of e-learning courses.
- Learners can take an e-learning course readily from the Learning Portal.

4 Update Qualification Profile

- Based on successful completion of courses, qualifications/ certifications can be automatically updated to employee's profile.
- Compliance with legal required qualifications and certifications can easily be proved

Keep Assets Safe

Objectives, Issues, Capabilities & Benefits

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
■ Risk of incidents caused by assets or incorrect maintenance ■ Keep maintenance and follow-on costs to a minimum ■ Provide safety relevant documentation and instructions ■ Ensure the safety of maintenance employees	■ Integrated, end-to-end capabilities for enterprise asset management ■ Suitable maintenance and safety strategies ■ Reliability centered maintenance ■ Mobile Asset Mgmt. ■ Flexible assignment of safety documents ■ Seamless Integration with other SAP solutions	■ Manage all phases of the asset life cycle under safety aspects ■ Balance of performance, risk and cost to achieve maintenance excellence ■ Process efficiency and transparency e.g. safety measures

Keep Assets Safe

SAP Solution

- SAP ERP (Enterprise Asset Management, Work Clearance Management)
- SAP Mobile Asset Management
- RCMO by Meridium

Maintenance Management:

- Preventive and predictive maintenance
- Maintenance planning and scheduling
- Work order management
- Mobile asset management

Asset Information Management

- Document Management
- Technical asset management

Reliability-Based Maintenance Strategy

Work Clearance Management to perform Lockout/tagout & work permits

SAP Differentiators

- Best of breed functions in a suite of integrated solutions
- Safe working environment and reliable assets
- Proactive versus reactive maintenance
- Reduced maintenance expenditures to raise company profits
- Meet increasing compliance and regulatory requirements

Keep People Safe

Maintenance Management

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

1 Plan Work Orders

- Work orders are typically created based on a maintenance notification which indicates the technical object and the failure or preventive task
- The work order is used to plan all required resources, i.e. skills, required parts, tools, etc..

2 Schedule Work Orders

- The work is scheduled based on the urgency of the task and the availability of resources
- If the technical object has to be taken out of operation, the schedule needs to be coordinated with operations

3 Dispatch Technicians

- Once the order is due for execution it is assigned to the technician who will execute the job
- The planner or supervisor will attempt to best utilize the available capacity and avoid overtime and delays

4 Execute Work

- Assess asset condition
- Access all necessary documentation
- Retrieve required parts and tools
- Execute work and put equipment back into operation if necessary

5 Complete Work

- Actual work hours and used parts are recorded
- In case of corrective action, the notification is updated with the found cause
- The order is first technically completed and after complete processing of all postings commercially completed, as well.

Keep People Safe

Asset Information Management

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

1 Define Technical Objects

- Definition of functional location structure representing the facility from an operations and maintenance point of view.
- Definition of all equipments installed in this hierarchy, including all necessary technical attributes

2 Plan Master Data

- Define fundamental master data like material masters, work centers, etc.
- Define inspection and maintenance cycles in maintenance plans
- Define required activities and resources in the form of maintenance task lists and BOM's

3 Create Informational Documents

- Define document types relevant for maintenance and operations, e.g. manuals, technical drawings, safety sheets, etc.
- Define location and access for documents (Document Info Records), e.g. in SAP DMS, external DMS, File-Server, CAD/PDM systems

Reliability-Based Maintenance Strategy

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).

- Maintenance Management
- Asset Information Management
- Work Permits, Lockout/ Tagout Mgmt
- Reliability-Based Maintenance Strategy

Process overview

1 Define System

- Identify Critical Assets and Failure Modes using RCMO by Meridium.

2 Evaluate Risk

- Apply the Appropriate Methodology based on Risk (FMEA or RCM).
- Conduct system-based RCM analysis as well as equipment based FMEA analysis.
- Configure failure effect/risk evaluation using criticality matrix

3 Define Strategy

- Package Optimal Maintenance & Monitoring Tasks in RCMO.
- Link SAP RCMO recommendations to SAP Maintenance Plans.

4 Evaluate Strategy

- Evaluate Strategy Performance Based on Maintenance History via SAP BI.
- Refine strategies when RCM-driven maintenance strategies are not effective.

Keep Assets Safe

Work Permits, Lockout/ Tagout Mgmt

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

1 Define Permit Master Data

- Define for which technical objects (Functional Locations, Equipments) is a safety process required.
- Create a Work Clearance Document (WCD) template for these technical objects (one or many WCDs)

2 Approve Work Order

- Conduct Risk analysis for work order
- Assign additional documents like drawings
- Designate WCM related tasks and assign WCM application

3 Prepare Work

- Create operational WCD based on template
- Execute conflict checks
- Print tags and tagging list or start mobile tagging process
- Start and confirm isolation
- Work authorization and acceptance

4 Execute Work & Remove Tag

- Execute maintenance according to work order
- Start test cycle with temporary untagging / tagging
- Final confirmation of work
- Untagging process including confirmation
- Close maintenance order

Asset Safety and Compliance is an 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.

Best Practice Value Scenario

O&G – PROCESS INTEGRATION(PI) & BUSINESS PROCESS MODELING(BPM)

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

Automating non-standard processes can be challenging

Because traditional applications are often too inflexible to change

Out-of-the-box software is well-suited to manage standard processes

- Best practices provided by standard software such as SAP Business Suite applications, e.g.
  - Payroll processing
  - Sell tangible goods from stock
  - Sell and manufacture to customer order
  - …

But what if you want to automate non-standard processes?

- To create innovative, differentiating, company-specific processes, e.g.
  - Specific approval processes
  - New hire processing
  - Negotiate new purchasing contracts with suppliers
- Traditional applications are often too inflexible for fast-changing business processes
- Implementing new processes takes too much time and is too costly

Standard versus differencing activities

Automation of differencing activities present the sweet-spots for BPM projects

End to End process spans manual and automated activities

Of the Automated Activities

Processes that deliver competitive advantage and evolve regularly (SOA –Candidates)

Processes that should be as cost effective as possible

Innovate new & adapt processes on top of a stable core

Building composite processes on top of the SAP Business Suite

Composite Business Processes

- Compose new **business processes**
- Extend **core business processes**
- Reuse **service-enabled application core processes**

Enterprise Service Repository

- 2,800+ ready-to-run **enterprise services**

Application Core Processes

- Best practices **for 24 industries**
- All applications **on SAP NetWeaver**
- Non-SAP applications **integrated with SAP NetWeaver**
- Innovation **delivered via Enhancement Packages**

SAP NetWeaver Business Process Management

Create and adapt business processes fast and flexibly

SAP NetWeaver Business Process Management

Direct path from business view to process execution

- **Model and execute composite business processes**
- **Graphical modeler based on business process modeling notation (BPMN)**
- **Combine human interaction and system integration in one model**
- **Support key process concepts (workflow, event, task, rules, context, roles, UI) throughout their life cycle**

SAP NetWeaver Business Rules Management

Integrate Business Rules into Your Processes

SAP NetWeaver Business Rules Management

Embedded rules in process to drive process agility

- **Robust tool for central business rules management**
- **Encapsulate rules as reusable services**
- **Integrated design of process and rules**
- **Allow business users with not coding skills to create and modify rules via decision tables**

Process integration

a strategic imperative

- Business context in an increasingly global and networked business necessitates control and visibility across extended enterprise and value chain
- Dispersed business processes need to be harmonized

System integration still complex and costly

Multiple integration technologies for different needs

- EDI Exchange
- EAI for system to system integration
- Application Server Based Integration for custom web applications
- B2B Integration

SOA architecture - unifies technology

Solves part of the traditional integration bottleneck

High Performance Infrastructure Services

How to quickly deliver business values with integration?

By leveraging pre-packaged integration scenario template

End-to-End Integration templates:
Orchestration of services across long running business processes

Pre-Built Business Processes:
Best practices for quick time-to-value and effectively integrated processes

Lifecycle Management:
Reusability through integrated SOA governance and lifecycle management

> **…through 2011, the biggest barriers to SOA adoption will be non-technical issues related to inadequate governance, lack of clear value metrics, poorly defined requirements and scope, and insufficient business involvement in project prioritization and service identification. ”**
>
> **Paolo Malinverno,**
> et al, Gartner, 2006

SAP NetWeaver PI 7.1

Single integrated product for business SOA

- Single middleware product for A2A, B2B integration across the business network
- High performance and secure end-to-end transactions supporting latest SOA standards
- Pre-integrated repository and registry for centralized service provisioning and governance
- Pre-packaged integration templates **significantly reduce integration project TCO**

Industry pre-packaged integration templates

Avoid integration bottleneck, focus on business needs

- **ONE Repository** to model and define all integration scenarios
- Modeling environment pre-delivered with reusable content to jumpstart implementation
- End to end modeling supporting reuse of assets at every level
- Pre-defined content for out-of-the-box integration and Global Data Types based on SAP methodology
- Content available for cross industry scenarios and industry-specific scenarios for **26 industries, delivered by both SAP and 100+ certified partners**

SAP's pre-packaged integration templates

Accelerated Time-to-business value

Integrated business process platform reduces integration cost throughout integration life cycle

Duration reduction by **20%**

Duration reduction by **25%**

Only possible with ESR/SR

Reduction of Integration effort by **30%**

Reduction of Deployment per service by **1 day**

> "Now we can provision new web services in a technologically independent way – and reduce our development and integration effort by **two-thirds** through re-use of enterprise services."
>
> **Gerald Elder**
> Project Manager, Swiss Post

Home Depot runs on SAP NetWeaver PI

High volume retail POS transaction and availability

Out of box processing was with SAP
Out of box transformation to retail industry ARTS Format

- **200** transactions/second
- **8.1** million transactions in a week to the retail stores
- **99.995%** availability POS integration
- Distributed location **165+** stores

Best Practice Value Scenario

O&G – ENTERPRISE PERFORMANCE MANAGEMENT(EPM)

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

Industry Data Confirms CFO Challenges

Source: CFO Europe Research Services 2008

Source: IBM Global Business Services, The Global CFO Study 2008.

"Defects and breakdowns in planning and execution cited as primary contributing factors to value destruction".

-Harvard Business Review: "Turning Great Strategy into Great Performance"

- ***Average companies*** **spend more than half (51%) of all time gathering and re-keying data in a typical planning environment.**
- ***Average companies*** **spend only 16% of their time in the value added activities of explaining the "why," and exploring the "what if."**
- ***High performing companies*** **spend 13% of their time on information gathering and 87% analyzing it**

-The Hackett Group

- **Nearly 90% of respondents in a recent IDC survey cited the need for improved profitability reporting and accuracy as an urgent issue.**

-IDC

What does this mean for your business?

Top executive issues

- **How do I cascade strategy across all levels of the organization?**
- **How do I overcome my lack of accurate costing information and grow profitability?**
- **How do I accelerate the speed of decision making within our organization?**
- **How do I improve accuracy and reduce inefficient and time-consumptive forecasting and planning cycles?**

Improved Insight Drives Smart Decisions

Accurate insight into costing, improved financial planning and forecasting, timely finance reporting and analysis and the ability to link strategy to execution drives strategy and growth.

Executive Management

- **Cascading strategy throughout organization**
- **Accurate, timely, pertinent information**
- **Accelerated decision-making**

CFO/Corp. Controller

- **Accurate collaborative forecasting and planning**
- **Visibility and transparency into cost drivers and profitability**
- **Time for forward-looking business analysis and recommendations**

Procurement

- **Single view of purchase data**
- **Increased procurement efficien**
- **Rationalize suppliers & spenc**

Marketing Management

- **Focus on profitable markets, customers and products**
- **Resources aligned with strategy and profitable targets**
- **Rapid, logical decision-making**

Production / Operations Management

- **Collaborative planning and forecasting**
- **Understanding of cost drivers and profitability**
- **Alignment of resources with corporate**

Aligning stakeholders to Drive Strategy and Profitable Growth

CFO

Driving Strategy and Growth requires alignment across the organization and is led by Finance

CFO

How do I overcome a lack of accurate insight?

- Cascade strategy across the organization
- Grow profitability
- Accelerate speed of decision making
- Improve accuracy and reduce inefficient forecasting and planning cycles

Profitability Management

How do I overcome inaccurate costing and grow profitability?

- Increase profitability in markets, channels and customers
- Improve cost drivers of cost-to-serve processes
- Drive profitable resource allocation
- Improve margin & market valuation

Planning and Forecasting

How do I improve my forecast accuracy and time for forward-looking analysis?

- Drive improvement in collaborative year-over-year accuracy.
- Reduce budget cycle times
- Reduce historic reporting cycle times

Profitability Management

Objectives, issues, capabilities and benefits

Objective:

Action-oriented insight into costs and profitability

Best practice solution:

Companies have better insight into the drivers of costs and profitability and can rapidly assess the impact of various scenarios to improve their financial performance.

Issues	Key business capabilities	Benefits
■ Poor insight into costs and profitability leads to uninformed decisions ■ Companies lacking accurate cost-to- serve driver costs	■ Regular, detailed and reliable reporting of cost and profitability ■ Accurate costing of processes, markets, customers and product investments and shared services allotments and allocations	■ Improved and quicker decision making ■ Insight into how possible decisions impact present and future costs via "what-if" scenarios
■ Misalignment of resources ■ Companies with lower profitability have lower market capitalization and shareholder value	■ Scenario modeling involving products, customers, channels and resources ■ Accurate costing and allocation of resources	■ Maximize corporate profitability that maximize market capitalization and shareholder value

Profitability Management
SAP Solution

SAP Solutions

- BusinessObjects Profitability and Cost Management
- SAP Strategy Management
- SAP Spend Analytics
- SAP ERP Financials – Profitability Analysis

SAP Differentiators

- Rapid model building with minimum input for maximum output - with web based data entry that minimizes the cost of collecting non-system driver data
- Fully integrated services costing and cross charging for costing shared services and invoicing
- Ability to deploy driver-based or activity-based planning models for “What-if” scenario modeling
- Comprehensive procurement analytics provides visibility purchasing and drives alignment with procurement goals
- Cascade and align strategy across the organization

Product, Market and Customer Profitability Analysis

Product, Market and Customer Analysis provides insight into profitability, creation of strategy to improve unprofitable situations and enabling strategy resource alignment.

Process overview

1 Collect Costing Data

- Data sourced from multiple disparate systems
- Web-enablement allows for remote manual data entry
- Improved accuracy and transparency by providing a "Single version of the Truth"

2 Run Analysis Models

- Business-user friendly models allow for support of views across multiple dimensions
- Drill down capabilities for root cause analysis
- Supports multiple costing methodologies (ABC, Lean Accounting

3 Run "What-If" Scenarios

- Conduct scenario testing to determine methods to improve profitability
- Keep scenarios for further review and recommendation support

4 Provide Insight & Recommendations

- Easily configured reporting and report / information distribution
- Decisions can be made quickly in support of strategic resource alignment

Spend / Procurement Analysis

Spend / Procurement Analysis helps procurement personnel realize measurable cost savings and align sourcing strategies with organizational.

Process overview

1 Collect Procurement Data

- Aggregate purchasing data across (heterogeneous) systems landscapes
- Enable single view on purchasing details
- De-duplicate supplier information, enrich information and categorize records
- Improved data accuracy

2 Run Analysis Models

- Business-user friendly models allow for support of views across multiple dimensions
- Uncover savings potential
- Identify maverick spend

3 Run "What-If" Scenarios

- Conduct scenario testing to determine methods to increase procurement efficiencies
- Keep scenarios for further review and recommendation

4 Provide Insight & Recommendations

- Easily configured reporting and report / information distribution
- Decisions can be made quickly in support of strategic sourcing strategies

Align & Cascade Strategy across Organization

Aligning and Cascading Strategy empowers business users at all levels to rapidly align resources to execute on strategies, understand risk, and drive effectiveness

Process overview

1 Define Strategy

- Define corporate initiatives around profitability and growth
- Create key performance indicators (KPIs)
- Easily implemented with performance-monitoring alignment scorecards and dashboards

2 Assign Initiatives

- Clearly communicate business goals across the organization
- Ensure individuals understand how they can impact strategic goals and how they impact others
- Focus on the initiatives that will have most impact and allocate resources appropriately

3 Monitor Results

- Enable scorecards and dashboards at all levels to monitor progress and identify areas requiring attention
- Easy-to-use drilldown enables root cause analysis
- Easily configured reporting and report / information distribution

4 Measure Performance

- Live operational reviews ensure alignment with goals while managing resource and exceptions.
- Gain greater visibility into and control over the factors that affect your organization's performance

Planning and Forecasting

Objectives, issues, capabilities and benefits

Objective:

Increased forecasting accuracy and reduced planning cycle times

Best practice solution:

Allow companies to better manage resources and adjust to changing market conditions so as to maximize business opportunity.

Issues	Key business capabilities	Benefits
■ Poor alignment of financial and operational goals with strategic business objectives	■ Identify and adjust resources to capitalize on areas of profitability	■ Improves balance sheet and drives growth
■ Long process that cuts into company productivity	■ Quicker information allowing resources to add value	■ Drives additional margin to the bottom line
■ Accuracy and transparency issues can lead to restatement	■ Unified application with high data quality and transparency	■ Reduction in audit conflict/cost and faster delivery of required reporting
■ Time-consumptive transactional and reporting activities	■ Identify and capitalize on growth opportunities	■ Better insight and corporate financial performance

Planning and Forecasting

SAP Solutions

- Cross-org planning
- Consolidation and reporting
- Rolling forecasting
- "What-if" scenario analysis
- Align & cascade strategy across the organization
- Resource planning and alignment

- SAP Business Planning and Consolidation
- SAP Strategy Management
- SAP ERP Financials

SAP Differentiators

- Cross-organization planning that is based on financial and operational business
- Enables logical planning process with input for all departments for top-down and bottom up planning
- Customizable business flow follows process and accelerates completion
- Unified integrated applications provide improved data integrity.
- Predictive analytics warn of variances against stated KPIs
- Planning and consolidation unified in a single solution
- Cascade and align strategy and resources across the organization

Collaborative Planning

Collaborative Planning improves productivity by streamlining the bottom-up and top-down financial and operational planning process.

Process overview

1 Construct Budget

- Configurable business process flows guide users and drive process consistency
- Facilitates collaboration with built-in discussion threads and unstructured data sharing
- Unified application reduces input errors and improves accuracy

2 Approve Budget

- Transparency across planning from all divisions accelerates understanding and approval
- Reduces gamesmanship in planning

3 Forward-Looking Analytics

- Predictive analytics that proactively warn of negative variances
- Automated variance and root cause analysis so users don't have to search for answers
- Model the impact of taking corrective action without an intensive, bottom-up process

4 Provide Insight & Recommendations

- Reduced planning cycle time and analytics provides more time for business analysis
- Unified application provides for more rapid and accurate reporting

Rolling Re-forecasting

Rolling Re-forecasting provides the agility to rapidly adapt budget resources to take advantage of changes market conditions and business opportunities.

Process overview

1 Analyze Position

- Predictive analytics that proactively warn of negative variances
- Provides an early-warning system for KPIs at risk of underperforming in the future

2 "What If "Analysis

- Model the impact of taking corrective action without an intensive, bottom up process
- Enable more calculated decision making by incorporating risk-adjusted planning

3 Provide Insight & Recommendations

- Easily provide critical information on current status and potential impact to business

4 Reforecast Resources

- Configurable business process flows guide users and drive process consistency
- Rapidly re-align resources to address market conditions

Improve Consolidation and Compliance

Improve Consolidation and Compliance allows Finance to improve management reporting cycle times for the enterprise, driving compliance with regulatory and financial standards, helping reduce external audit costs.

Process overview

1 Close the Books

- Unified application with Consolidation capability
- Accelerated inter-company reconciliation based around exceptions
- Close the books faster and with greater accuracy

2 Compliance & Reporting

- Improve compliance by automating manual processes
- Provide a full audit trail
- Enable complete visibility from budgets to actuals
- Drive management roll-ups

3 Review & Sign-Off

- Drive compliance with regulatory and financial standards
- Reduce external audit costs
- Instill confidence and reduce business risk

4 Use Results as Business Driver

- Monitor results for better business performance
- Information serves as driver for support of re-alignment for future planning and budgeting

Align & Cascade Strategy across Organization

Aligning and Cascading Strategy empowers business users at all levels to rapidly align resources to execute on strategies, understand risk, and drive effectiveness

Process overview

1 Define Strategy

- Define corporate initiatives around profitability and growth
- Create key performance indicators (KPIs)
- Easily implemented with performance-monitoring alignment scorecards and dashboards

2 Assign Initiatives

- Clearly communicate business goals across the organization
- Ensure individuals understand how they can impact strategic goals and how they impact others
- Focus on the initiatives that will have most impact and allocate resources appropriately

3 Monitor Results

- Enable scorecards and dashboards at all levels to monitor progress and identify areas requiring attention
- Easy-to-use drilldown enables root cause analysis
- Easily configured reporting and report / information distribution

4 Measure Performance

- Live operational reviews ensure alignment with goals while managing resource and exceptions.
- Gain greater visibility into and control over the factors that affect your organization's performance

Best Practice Value Scenario

O&G – BUSINESS INTELLIGENCE(BI) & PLATFORM

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

The Nature of Business is Changing

	FROM	TO
UNIFIED INFORMATION	Structured information generated within the four walls of organizations	Structured and unstructured and internal and external information
COLLABORATIVE DECISIONS	Individual contributors within functional silos	Teams collaborating and communicating across boundaries
BUSINESS NETWORK OPTIMIZATION	Point relationship with customers and suppliers	Dynamic network of partners

Achieving Strategic Agility is Key

Your business needs Efficiency, Insight, **and** Flexibility

2 **Improve insight and decision making for better collaboration**

3 **Flexibility to create new business processes that align operations to strategy**

1 **Drive process efficiency within and across your business**

Optimizing Business Performance Requires Closing the Gap

The Strategy-Execution Gap

95% of a typical workforce does not understand its organization's strategy

70% of organizations do not link middle management incentives to strategy

60% of organizations do not link strategy to budgeting

50% of individual goals and incentive comp are aligned with company strategy.

Source: Harvard Business Review

SAP Business objects
Business Intelligence Platform

Unified information

- Provides quantitative and qualitative insight
- Supports all data sources
- Delivers complete data quality

Collaborative decisions

- Supports what-if scenario analyses for collaborative decisions
- Shares insights, not just data

Business network optimization

- Shares content beyond corporate firewalls within security context
- Shares metadata on information
- Easily consumes third-party data

SAP NetWeaver + Business Objects

SAP NetWeaver

- Analysts
- Task Workers
- Portal
- Composition Environment
- Analytic Engine & In-Memory
- Data Warehouse
- Master Data Management
- Best connectivity to SAP

+

Business Objects

- Knowledge Workers & Business Users
- Enterprise Reporting, Dashboards
- Ad-hoc Query, Analysis & Reporting
- Text Analysis
- Semantic Layer
- Data Quality
- Data Integration
- Open to any Data Source

=

- All Employees
- All Views on Information
- Scalable Information Delivery
- Structured and unstructured
- Trusted Information Foundation
- Data Accuracy and Consistency
- Open - Any Source

The New Intelligence Platform

Value Added Within an SAP Landscape

Product Directions for BI Solutions

Richest Offering for All Business Users

Dashboards, Visualization

Web App Designer

Xcelsius

Enterprise Reporting

Report Designer

Crystal Reports

Ad-hoc Query & Reporting

Web Intelligence

Advanced Analysis

BEx Analyzer

Voyager

Predictive

Enterprise Data Warehousing & BI Platform

SAP NetWeaver BI and BIA

BusinessObjects Enterprise

Product Directions for BI Solutions

Richest Offering for All Business Users

Dashboards, Visualization

Web App Designer

Xcelsius

Enterprise Reporting

Report Designer

Crystal Reports

Ad-hoc Query & Reporting

Web Intelligence

Advanced Analysis

BEx Analyzer

Voyager

Predictive

Enterprise Data Warehousing & BI Platform

SAP NetWeaver BI and BIA

BusinessObjects Enterprise

And Much More…

Polestar

BI Widgets

Mobile BI

Web Services

SAP BusinessObjects BI Solutions

Dashboards, Visualization

Web App Designer

Xcelsius

Enterprise Reporting

Report Designer

Crystal Reports

Ad-hoc Query & Reporting

Web Intelligence

Advanced Analysis

Pioneer (OLAP Analysis)

Predictive

Enterprise Data Warehousing & BI Platform

SAP NetWeaver BI and BIA

BusinessObjects Enterprise

And Much More...

Polestar

BI Widgets

Mobile BI

Web Services

Advanced OLAP Analysis Client

High Performance

Optimized direct OLAP data access and built-in support for SAP NetWeaver BI Accelerator

SAP & Non-SAP environments

Key OLAP engines: SAP NetWeaver BI, MS Analysis Server, Essbase

Best TCO for SAP and Non SAP platforms

Pioneer
is a high-performance, componentized, next generation OLAP analysis client for SAP & Non-SAP environments.
It is adaptable to the needs of business analysts, embeddable into SAP business processes and designed to extend the reach of advanced analytics.

Adaptable

Available in a web 2.0 based and MS Office based flavor

Extend the Reach

Highly interoperable with tools such as WebIntelligence, Xcelsius, Crystal Reports, Polestar, Live Office

Embeddable

Embedded into core business processes of the SAP Business Suite, CRM & Business byDesign as well as POA applications

Advanced OLAP Analysis

- **Pioneer (code name for 2011 releases) provides a superset of capabilities from BEx Analyzer (Excel), BEx Analyzer (Web), and BusinessObjects Voyager**
- **BEx Analyzer (Excel & Web) will not be enhanced further. It will be available based on current SAP maintenance policy**
- **Seamless transition for Voyager customers to Pioneer. BEx Analyzer & BEx Web Analyzer customers transition to Pioneer**

Merge the Best of Both Worlds

- Tailored support for multiple user roles
- Focus on the Business Analysts (Excel/Web) but also extend the footprint of advanced analysis through ease-of-use & tool interoperability
- Easy migration for existing BEx Analyzer & Voyager customers
- Ability to fully leverage SAP in-memory analytic engine capabilities
- Best TCO for SAP on Non-SAP platforms
- Single architecture for both NetWeaver and Business Objects customers
- Runs with BusinessObjects Enterprise side-by-side with NetWeaver or with tighter integration with NetWeaver for TCO reduction
- Currently planned availability in 2011

Web Intelligence

Ad-hoc Query, Reporting, and Analysis Client

Out-of-the box ad-hoc capabilities: End-users can analyze data and answer their questions in a single environment

Easy to use application empowering end-users to get the information they need

Combine data from SAP NetWeaver BI and non-SAP data, including MS Excel, in a single report

Web Intelligence
Is the market-leading query, ad-hoc analysis and reporting tool enabling business users to ask iterative questions, on any data, so they can make decisions, communicate and share information with consumers no matter where they are

Intuitive free-form layout with extensive formatting and printing capabilities

Web Intelligence reports can be viewed online, offline, on mobile devices, in dashboards, in MSFT Office, and on the desktop

Same product, online or Offline, embeddable and customizable

SAP NetWeaver BI Data Warehouse

Enterprise Data Warehousing

Business Oriented Modeling

Fast, sustainable implementation through

- Modeling Patterns
- Business Content

Reliable Data Acquisition

Openness and data quality through

- Out-of-the box ETL capabilities
- Integrated BOBJ Data Services (Data Integrator and Data Quality)

EDW with SAP NetWeaver BI provides an integrated, scalable DW platform delivering best practice DW processes that comprise business oriented modeling, reliable data acquisition, streamlined operations and life cycle management.
This powers information consumption at the speed of thought.

Streamlined Operations

Efficient data management through:

- Management of data consistency

Security:

- Authorization handling
- High availability

Lifecycle Management

Enable sophisticated lifecycle management at different levels:

- System
- Meta Data
- Data (Nearline storage, archiving)

Information Consumption at the Speed of Thought

Support scalable business-oriented analytics

- Analytic engine
- SAP NetWeaver BI Accelerator

SAP NetWeaver BI Accelerator

High Performance and Low TCO BI

Query Performance

- Ready for high data volumes (retail, utilities, banking etc.)
- Challenging response time SLA
- Ad-Hoc reporting / stable response times
- Scalable blade server platform

Cost of Operation

- Save time to build and maintain aggregates
- Save disk space
- Take load off BI hardware
- Consolidate BI landscape

SAP NetWeaver BI Accelerator is a highly scalable in-memory solution to improve query performance by orders of magnitude while keeping the cost of operation at a minimum. It also cuts down time for development of new BI scenarios and facilitates shorter data latency. The power and flexibility even enables new business scenarios that have not been possible before.

Time for Development

- Less focus on performance aspects (aggregates, caching strategies, DB tuning etc.) → Faster development of new models and queries

Data Latency

- Extremely shortened roll-up and change run times
- Opportunity for more frequent data alignments
- Compression not always needed

New Business Scenarios

- Get more detailed insight into your business

Moving From SAP NetWeaver BI to SAP Business Suite

Pervasive BI

BI adopted by all Business Suite users

Smart Decisions

Business Processes Integration

Add relevant context to business processes

Actionable BI

User Empowerment

Insight to information like never before

Close the Gap

Thank you !

Q E D : Volume-(2) PART-C

Copyright 2011 SAP AG
All rights reserved

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP AG. The information contained herein may be changed without prior notice.

Some software products marketed by SAP AG and its distributors contain proprietary software components of other software vendors.

SAP, R/3, xApps, xApp, SAP NetWeaver, Duet, SAP Business ByDesign, ByDesign, PartnerEdge and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and in several other countries all over the world. All other product and service names mentioned and associated logos displayed are the trademarks of their respective companies. Data contained in this document serves informational purposes only. National product specifications may vary.

The information in this document is proprietary to SAP. This document is a preliminary version and not subject to your license agreement or any other agreement with SAP. This document contains only intended strategies, developments, and functionalities of the SAP® product and is not intended to be binding upon SAP to any particular course of business, product strategy, and/or development. SAP assumes no responsibility for errors or omissions in this document. SAP does not warrant the accuracy or completeness of the information, text, graphics, links, or other items contained within this material. This document is provided without a warranty of any kind, either express or implied, including but not limited to the implied warranties of merchantability, fitness for a particular purpose, or non-infringement.

SAP shall have no liability for damages of any kind including without limitation direct, special, indirect, or consequential damages that may result from the use of these materials. This limitation shall not apply in cases of intent or gross negligence.

The statutory liability for personal injury and defective products is not affected. SAP has no control over the information that you may access through the use of hot links contained in these materials and does not endorse your use of third-party Web pages nor provide any warranty whatsoever relating to third-party Web pages

Weitergabe und Vervielfältigung dieser Publikation oder von Teilen daraus sind, zu welchem Zweck und in welcher Form auch immer, ohne die ausdrückliche schriftliche Genehmigung durch SAP AG nicht gestattet. In dieser Publikation enthaltene Informationen können ohne vorherige Ankündigung geändert werden.

Einige von der SAP AG und deren Vertriebspartnern vertriebene Softwareprodukte können Softwarekomponenten umfassen, die Eigentum anderer Softwarehersteller sind.

SAP, R/3, xApps, xApp, SAP NetWeaver, Duet, SAP Business ByDesign, ByDesign, PartnerEdge und andere in diesem Dokument erwähnte SAP-Produkte und Services sowie die dazugehörigen Logos sind Marken oder eingetragene Marken der SAP AG in Deutschland und in mehreren anderen Ländern weltweit. Alle anderen in diesem Dokument erwähnten Namen von Produkten und Services sowie die damit verbundenen Firmenlogos sind Marken der jeweiligen Unternehmen. Die Angaben im Text sind unverbindlich und dienen lediglich zu Informationszwecken. Produkte können länderspezifische Unterschiede aufweisen.

Die in diesem Dokument enthaltenen Informationen sind Eigentum von SAP. Dieses Dokument ist eine Vorabversion und unterliegt nicht Ihrer Lizenzvereinbarung oder einer anderen Vereinbarung mit SAP. Dieses Dokument enthält nur vorgesehene Strategien, Entwicklungen und Funktionen des SAP®-Produkts und ist für SAP nicht bindend, einen bestimmten Geschäftsweg, eine Produktstrategie bzw. -entwicklung einzuschlagen. SAP übernimmt keine Verantwortung für Fehler oder Auslassungen in diesen Materialien. SAP garantiert nicht die Richtigkeit oder Vollständigkeit der Informationen, Texte, Grafiken, Links oder anderer in diesen Materialien enthaltenen Elemente. Diese Publikation wird ohne jegliche Gewähr, weder ausdrücklich noch stillschweigend, bereitgestellt. Dies gilt u. a., aber nicht ausschließlich, hinsichtlich der Gewährleistung der Marktgängigkeit und der Eignung für einen bestimmten Zweck sowie für die Gewährleistung der Nichtverletzung geltenden Rechts.

SAP übernimmt keine Haftung für Schäden jeglicher Art, einschließlich und ohne Einschränkung für direkte, spezielle, indirekte oder Folgeschäden im Zusammenhang mit der Verwendung dieser Unterlagen. Diese Einschränkung gilt nicht bei Vorsatz oder grober Fahrlässigkeit.

Die gesetzliche Haftung bei Personenschäden oder die Produkthaftung bleibt unberührt. Die Informationen, auf die Sie möglicherweise über die in diesem Material enthaltenen Hotlinks zugreifen, unterliegen nicht dem Einfluss von SAP, und SAP unterstützt nicht die Nutzung von Internetseiten Dritter durch Sie und gibt keinerlei Gewährleistungen oder Zusagen über Internetseiten Dritter ab.

Alle Rechte vorbehalten.

Reliance Industries Limited

Executive Board Presentation

BEST BUSINESS PRACTICES & MEASURES

SAP INDUSTRY BLUEBOOK : Oil & Gas

APPROACH WHITE PAPER

BUSINESS TRANSFORMATION SERVICES

28th June 2011

Author .

UJJAL CHAKRABORTY

PRINCIPAL

SAP BUSINESS CONSULTING

INDIA SUB-CONTINENT. BANGALORE

Reliance Industries Limited THE BEST-RUN BUSINESSES RUN SAP™

Agenda

Energy Industry Highlights – & Value Drivers

Oil & Gas – Best Business Practices

Best Business Practice – Baseline Scenarios

SAP INDUSTRY BLUEBOOK : Oil & Gas

Volume – 3
Best Business Practice – Baseline Scenario

APPROACH WHITE PAPER

BUSINESS TRANSFORMATION SERVICES

28th June 2011

Author .

UJJAL CHAKRABORTY

PRINCIPAL

SAP BUSINESS CONSULTING

INDIA SUB-CONTINENT. BANGALORE

Reliance Industries Limited

THE BEST-RUN BUSINESSES RUN SAP™

Content – Volume(3)

Best Practice Baseline - Accounting

Best Practice Baseline – A O P

Best Practice Baseline – Forecast to Sales

Best Practice Baseline – Order to Cash

Best Practice Baseline – Procure to Pay

Best Practice Baseline - Services

Best Practice Baseline – Hire to Retire

Best Practice Baseline – Time to Market

SAP Best Practice –

BASELINE STORY

Planning

1. You start the day with reviewing the current stock situation and determining that you do not have enough stock. As a result, you create planned independent requirements and execute material requirements planning.
2. Once you have done your MRP run, you convert the planned orders into production orders, and generate purchase requisitions.

Purchasing

3. Once you have the purchase requisitions, you assign them to vendors and create purchase orders.
4. The vendor has delivered the materials. Your next step is to enter a goods receipt based on the purchase order.
5. Lastly, enter the vendor invoice that will be paid later.

Production

6. You are now ready to manufacture the goods and allow production to start the manufacturing process.
7. After production, the goods are moved to the warehouse.

Selling

8. A customer wants to purchase goods, so the salesperson enters a sales order.
9. A delivery order is created, and the goods are picked and shipped to the customer
10. Once the goods are shipped, you bill the customer
11. The customer sends a payment, which you post to the system.

Services

12. The customer requests a spot consulting engagement.
13. You create a quotation as a formal offer of services to the customer.
14. You create a sales order as a service agreement between the service provider and the customer.
15. If the consultant is back from the customer, he records the time worked on a certain assignment using the cross-application time sheet (CATS).
16. In addition, the consultant can also enter the travel expenses

Analytics

Finally, you analyze the customer figures and the profitability.

Best Practice Scenarios

Scenarios in SAP BP (India):

- Time to Market
- Forecast to Sales
- Order to Cash
- Procure to Pay
- Services
- Accounting
- Annual Operating Plan
- Integration
- Analytics

Best Practice Scenarios

Forecast to Sales

Business Process:

- Logistic Planning
- Make to order production (without variant configuration)
- Make to order production (with variant configuration)
- Make to Stock Discrete Industry
- Make to Stock Process Industry
- Manufacturing cost center planning
- Production sub-contracting (External Processing)
- Repetitive manufacturing
- Rework Processing (Stock manufactured Material)
- Rework Processing (Work-in-process)
- Sales Operations Planning

Best Practice Scenarios

(O2C) Order to Cash

Business Process:

- Batch Management
- Batch Recall
- Credit Management
- Credit Memo Processing
- Cross-company sales order processing
- Customer consignment processing
- Debit memo processing
- Foreign trade export processing
- Free of charge delivery
- Lean warehouse management
- Quarterly plan sales quantity forecast with COPA
- Returnable processing

Best Practice Scenarios

(O2C) Order to Cash

Business Process:

- Returns Complaints
- Sales contract Fixed price and T&M Billing
- Sales of non stock item with order specific procurement
- Sales period end closing operations
- Sales processing with third party (with shipping notification)
- Sales processing with third party (without shipping notification)
- Sales quotations
- SO processing for prospect
- SO processing sale from stock
- SO processing with customer down payment

Best Practice Scenarios

(P2P) Procure to Pay

Business Process:

- Batch management
- Consumable purchasing
- External procurement of services
- External procurement of third party resources
- Internal procurement cross-company stock transfer
- Lean warehouse management
- Physical inventory counts and adjustments
- Procurement contract
- Procurement without QM
- Purchased material price planning
- QM for procurement with vendor evaluation
- Quotation for procurement
- Return to vendor

Best Practice Scenarios

Service Processes

Business Process:

- Depot repair
- External procurement of services
- External procurement of third party resources
- Internal maintenance
- Internal project
- Period end closing service orders
- Project with fixed price and T&M billing
- Sales contract with fixed price and T&M billing
- Sales of planned services
- Service contract with periodic billing
- Service with fixed price billing
- Service with T&M based billing
- Spot consulting with fixed price billing

Best Practice Scenarios

Financial Accounting

Business Process:

- Accounts payable
- Accounts receivable
- Activate document splitting
- Asset accounting
- Asset acquisition constructed assets (investment orders)
- Asset acquisition direct capitalization
- Cash management
- Cost of sales accounting
- Credit management
- General ledger
- Internal order marketing and other overheads - Planning
- Internal order marketing and other overheads - Actual

Best Practice Scenarios

Financial Accounting

Business Process:

- Internal order R&D actual
- Inventory valuation for year and closing
- Overhead cost accounting actual
- Period end closing general plant
- Period end closing in financial accounting
- Period end closing projects
- Period end closing service orders
- Sales period end closing operations
- Segment reporting
- Travel management

Best Practice Scenarios
(AOP) Annual Operating Plan

Business Process:

- General cost center planning
- Internal order marketing and other overhead actual
- Internal order marketing and other overhead planning
- Internal order R&D actual
- Internal order R&D plan
- Inventory valuation for year end closing
- Manufacturing cost center planning
- Overhead cost accounting actual
- Period end closing general plant
- Period end closing projects
- Period end closing service orders
- Purchased material price planning
- Quarterly plan sales quantity forecast with COPA

SAP Best Practice – (O2C) Order 2 Cash

Best Practice Buz. Scenario	Business Process
Order to Receipt (O2R)	Batch Management
	Batch Recall
	Credit Management
	Credit Memo Processing
	Cross-company sales order processing
	Customer consignment processing
	Debit memo processing
	Foreign trade export processing
	Free of charge delivery
	Lean warehouse management
	Quarterly plan sales quantity forecast with COPA
	Returnable processing
	Returns_Complaints
	Sales contract Fixed price and T&M Billing
	Sales of non stock item with order specific procurement
	Sales period end closing operations
	Sales processing with third party (with shipping notification)
	Sales processing with third party (without shipping notification)
	Sales quotations
	SO processing for prospect
	SO processing sale from stock
	SO processing with customer down payment

SAP Best Practice – (P2P) Procure 2 Pay

Best Practice Buz. Scenario	Business Process
Procure to Pay (P2P)	Batch management
	Consumable purchasing
	External procurement of services
	External procurement of third party resources
	Internal procurement cross-company stock transfer
	Lean warehouse management
	Physical inventory counts and adjustments
	Procurement contract
	Procurement without QM
	Purchased material price planning
	QM for procurement with vendor evaluation
	Quotation for procurement
	Return to vendor
	Self service procurement (procure 2 pay)
	Stock handling scrap and blocked stock
	Stock transfer with delivery
	Stock transfer without delivery
	subcontracting

SAP Best Practice – (F2S) Forecast 2 Sales / (H2R) / (T2M)

Best Practice Buz. Scenario	Business Process
Forecast to Sales (F2S)	Logistic Planning
	Make to order production (without variant configuration)
	Make to order production (with variant configuration)
	Make to Stock Discrete Industry
	Make to Stock Process Industry
	Manufacturing cost center planning
	Production sub-contracting (External Processing)
	Repetitive manufacturing
	Rework Processing (Stock manufactured Material)
	Rework Processing (Work-in-process)
	Sales Operations Planning
Hire to Retire (H2R)	OM - PayRoll - Time
Time to Market (T2M)	Internal Product Development

SAP Best Practice – Hire to Retire

Best Practice Buz.Scenario	Business Process
Human Resources	Manpower Planning & Budgeting
	Creation and change of organization structure
	Plan and manage adjustments to workforce capacity
	Manage Recruitment Channels
	Plan and Conduct Recruitment campaigns and Employee Referral Program
	Job requisition proposal and approval
	Job Posting in internal/external channels
	Job Offer and Closure Management
	Manage Unsolicited Application
	Track applicant data and Management of candidate relationships
	First Day Formalities generation of personnel file (Updation of employee master data)
	Probation Management
	Manage employee Movements
	Manage promotions and demotions
	Manage deployment of personnel
	Shift Planning
	Attendance Management
	Leave Management
	Leave Encashment

SAP Best Practice – Hire to Retire

Best Practice Buz.Scenario	Business Process
Human Resources	Manage payroll governance and Process payroll accounting activities
	Produce and distribute payroll statements
	Process end-of-period activities for payroll
	Employee claims management
	Apprentice and Trainee Management
	Plan and execute the employee global assignment
	Prepare global relocation of employees
	Repatriate from global assignment
	Manage voluntary and involuntary separations
	No dues clearance and recoveries, exit interview
	Full and final settlement
	Employee surveys
	Employee Performance management
	Training need identification
	Administration and delivery of training program
	Evaluate the training effectiveness
	Skills inventory management
	Succession planning
	Potential analysis and planning
	Individual development planning

SAP Best Practice – Hire to Retire

Best Practice Buz.Scenario	Business Process
Human Resources	Develop employee compensation plans
	Develop benefit plans and Administration of benefit enrollment
	Plan business trips using travel management
	Reimburse travel expenses to the employees

SAP Best Practice – Financial Accounting

Best Practice Buz. Scenario	Business Process
Accounting	Accounts payable
	Accounts receivable
	Activate document splitting
	Asset accounting
	Asset acquisition constructed assets (investment orders)
	Asset acquisition direct capitalization
	Cash management
	Cost of sales accounting
	Credit management
	General ledger
	Internal order marketing and other overheads - Planning
	Internal order marketing and other overheads - Actual
	Internal order R&D actual
	Inventory valuation for year and closing
	Overhead cost accounting actual
	Period end closing general plant
	Period end closing in financial accounting
	Period end closing projects
	Period end closing service orders
	Sales period end closing operations
	Segment reporting
	Travel management

SAP Best Practice – (AOP) Annual Operating Plan

Best Practice Buz. Scenario	Business Process
Annual Operating Plan (AOP)	General cost center planning
	Internal order marketing and other overhead actual
	Internal order marketing and other overhead planning
	Internal order R&D actual
	Internal order R&D plan
	Inventory valuation for year end closing
	Manufacturing cost center planning
	Overhead cost accounting actual
	Period end closing general plant
	Period end closing projects
	Period end closing service orders
	Purchased material price planning
	Quarterly plan sales quantity forecast with COPA
	Reference and simulation costing
	Revenue planning
	SOP through long term planning transfer to LIS_PIS_Capacity
	Standard cost calculation

Scenario Overview – ACCOUNTS

Accounts Payable

Purpose and Benefits:

Purpose

- This scenario deals with posting accounting data for vendors in Accounts Payable.

Benefits

- The Accounts Payable are also an integral part of the purchasing system.
- All postings in Accounts Payable are also recorded directly in the General Ledger.
- The payment program can automatically carry out bank transfers and down payments.

Key process flows covered

- Post Accounts Payable Documents
- Manual and automatic clearing of open items
- Post down payments using the payment program
- Post manual and automatic outgoing payments.

Process Flow Diagram

Accounts Payable

Scenario Overview – ACCOUNTS

Accounts Receivable

Purpose and Benefits:

Purpose

- This scenario deals with posting accounting data for customers in Accounts Receivable.

Benefits

- The Accounts Receivable is also an integral part of sales management.
- All postings in Accounts Receivable are also recorded directly in the General Ledger.
- The payment program can automatically carry out direct debiting and down payments.

Key process flows covered

- Post down payment request
- Post down payment manually
- Post customer invoice
- Post a credit note with invoice reference
- Posting payments using the payment program
- Posting manual payment
- Automatic clearing of open items in customer accounts
- Manual clearing of open items in customer accounts
- Manual bank statement processing
- Reprocessing an account statement
- Dunning
- Account balance interest calculation
- One-Time-Accounts postings
- Setting a credit limit
- Credit control reporting.

Process Flow Diagram

Accounts Receivable

Scenario Overview – ACCOUNTS

Accounts Split

Purpose and Benefits:

Purpose

- The online split is provided with the new General Ledger Accounting.
- Documents are enhanced with additional account assignment objects, or additional postings are done which split the original postings into lines referring to the account assignment objects.
- Account assignment objects can be defined according to selected dimensions. In SAP Best Practices the dimensions are profit centers and segments.

Benefits

- The postings are done in real time (online).
- It is possible to draw up complete financial statements for the selected dimensions at any time (segment reporting).

Key Points

- The online split is provided with the new General Ledger Accounting.
- The online split is based on segments.
- The online split must be activated before the start of postings in the client. Postings done before can cause subsequent online split errors (see also note 891144).

Process Flow Diagram

Activate Document Splitting

Scenario Overview – ACCOUNTS

Asset Accounting

Purpose and Benefits:

Purpose

- The *Asset Accounting* (FI-AA) component is used for managing and supervising fixed assets with the SAP System. In Financial Accounting, it serves as a subsidiary ledger to the General Ledger, providing detailed information on transactions involving fixed assets.

Benefits

- Entire lifetime of the asset from purchase order or the initial acquisition (possibly managed as an asset under construction) through its retirement.
- Calculate values for depreciation and interest
- Depreciation forecast

Key process flows covered

- Acquisition from purchase with vendor
- Acquisition with Automatic Offsetting Entry
- Retirement with revenue
- Asset Sale without customer
- Post-Capitalization
- Write-Ups
- Settlement Assets Under Construction
- Down Payment Request for Assets under Construction
- Depreciation Posting Run
- Posting Acquisition and Production Costs Values
- Depreciation Simulation/Primary Cost Planning

Scenario Overview – ACCOUNTS

Asset Accounting

Detailed Process Description:

Acquisition from purchase with vendor

- An external asset acquisition is a business transaction resulting from the acquisition of an asset from a business partner. The acquisition can post integrated with Accounts payable or without Accounts payable.

Acquisition with Automatic Offsetting Entry

- The asset can be posted automatically against the Clearing account fixed asset acquisition.

Retirement with revenue

- An asset is sold, resulting in revenue. The sale is posted with a customer.
- An asset is sold, resulting in revenue. The sale is posted against a clearing account.
- An asset had to be scrapped, with no revenue.

Asset Sale without customer

- Asset Sale with partial retirement without customer

Scenario Overview – ACCOUNTS

Asset Accounting

Detailed Process Description:

Post-Capitalization

- Post-capitalization represents subsequent corrections to the acquisition .

Write-Ups

- A *write-up* is generally understood to be a subsequent change to the valuation of an asset.

Settlement Assets Under Construction

- Assets under construction (AuC) are a special form of tangible asset.
- Assets under construction can be managed for summary settlement or by line item.

Down Payment Request for Assets under Construction

- Down payments for assets under construction are fixed asset acquisitions that have to be capitalized and reported as a separate item on the balance sheet.

Scenario Overview – ACCOUNTS
Asset Accounting

Detailed Process Description:

Depreciation Posting Run

- The depreciation posting should be run periodically because the depreciation accounts are not updated immediately.
- The system creates posting documents for each depreciation area and account group in accordance with the posting cycles specified in Customizing

Posting Acquisition and Production Costs Values

- In addition to the posting of depreciation (using the depreciation posting run), the most important periodic processing you perform is the posting of changes to asset balance sheet values. These changes consist of all postings that affect the APC of the asset, including acquisitions, retirements, and so on.

Depreciation Simulation/Primary Cost Planning

- You can also post the planned depreciation as planned costs to the cost centers or internal orders to which the individual fixed assets are assigned.

Process Flow Diagram

Asset Accounting - Overview

Process Flow Diagram

Asset Accounting – Asset Acquisition

Process Flow Diagram

Asset Accounting – Retirements

Process Flow Diagram

Asset Accounting – Asset under Construction

Process Flow Diagram

Asset Accounting – Periodic Processing

Scenario Overview – ACCOUNTS
Cash Accounting & Management

Purpose and Benefits:

Purpose

- The cash position overview provides information on the current financial state of the bank accounts.
- It is the starting point for cash concentration in which the balances from various bank accounts are concentrated in one target account, taking minimum balances and payment optimization into consideration.
- The example in this document shows a posting process that affects liquidity (customer invoice and incoming payment).
- It presents the main functions for retrieving information about the liquidity status.

Benefits

Cash Management in SAP ERP Financials provides three basic functions:

- Quickly and reliably transfers all cash-relevant information from internal and external sources into the cash management system (inbound data)
- Performs analysis and reporting of current and future cash flows to help you make cash management decisions (analysis and decision)
- Communicates with banks and other business partners based on the results of the decision process (outbound data).

Key process flows covered

- Cash Management Status Analysis and
- Cash Concentration.

Process Flow Diagram

Process Cash Management Status Analysis and Cash Concentration

Scenario Overview – ACCOUNTS
Cost of Sales Accounting

Purpose and Benefits:

Purpose

- You can create a profit and loss statement with cost of sales accounting. The profit and loss statement is organized according to the functional areas.

Benefits

- Operating expenses are often allocated differently in financial accounting than Cost of Sales Accounting.
- This is a flexible way to control the functional area by a hierarchic model.
- With this type of grouping, cost of sales accounting identifies where costs originate in a company.

Key process flows covered

- Functional area in chart of accounts
- Functional area in posting key
- Cost center categories
- Line item reporting (Cost object re-assignment)
- Balance Sheets and P&L Statements
- Cost of Sales Accounting - P&L Statements.

Process Flow Diagram

Cost of Sales Accounting

Scenario Overview – ACCOUNTS
Credit Management

Purpose and Benefits:

Purpose

- A credit limit check can be carried out when sales documents are created or changed.

Benefits

- Reduce risk of bad debt
- Focus on reliable and profitable customers
- Faster credit-worthiness check
- Fasten the process of checking a customer credit limit
- Identify the overall credit risk of your company

Key process flows covered

- Enter Sales Order
- Check Credit Limit
- Block Sales Order
- Release Sales Order
- Delivery Sales Order

Scenario Overview – ACCOUNTS
Credit Management

Detailed Process Description:

Sales Credit Management / Set Credit Limit

- The credit limit check is carried out within one credit control area. When changing a document, the check is repeated, if changes regarding quantity or value are made. A credit control area consists of one or more company codes. A sales document belongs to one credit control area depending on the allocation of the sales organization to a company code. The SAP System checks the credit limit which was granted to the customer in this credit control area. The credit control areas and the credit limit of a customer are defined in financial accounting and entered in the customer master record. During the check, the SAP System totals the receivables, the open items and the net value of the sales order for every item of a sales document. The open items take into account obligations bound by contract which are not recorded for accounting purposes but which involve expenses through diverse business transactions. The total is compared with the credit limit. If the limit is exceeded, the system responds in the way defined by you in the configuration menu.
- We are using 'simple' credit limit check in this solution. During the simple credit limit check, you can only configure one system reaction ('A' warning, 'B' error, 'C' delivery block) when the credit limit is exceeded, we have chosen to use option 'C' (delivery block).
- The system provides a transaction to list all of the sales documents that have been blocked for delivery, with information about what has caused the block. The Customer's current credit situation is manually reviewed by credit department, and when the sales order is approved, the delivery block is removed from the sales order. You go directly from the list to an individual sales document by placing the cursor on the relevant document and choosing Edit sales doc.

Process Flow Diagram

Credit Management

Scenario Overview – ACCOUNTS
General Ledger

Purpose and Benefits:

Purpose

- This scenario provides a comprehensive picture of external accounting and accounts.

Benefits

- Recording all business transaction ensures complete and accurate accounting data.

Key process flows covered

- Posting General Ledger Account Documents
- Displaying the Document Journal
- Displaying G/L Balances (List)
- Carrying Out Recurring Entries
- Account Maintainance: Automatic and Manual Clearing

Scenario Overview – ACCOUNTS
General Ledger

Detailed Process Description:

General Ledger

- The central task of G/L accounting is to provide a comprehensive picture of external accounting and accounts. Recording all business transactions (primary postings as well as settlements from internal accounting) in a software system that is fully integrated with all the other operational areas of a company ensures that the accounting data is always complete and accurate.
- The SAP FI General Ledger has the following features:
  - Free choice of level: corporate group or company
  - Automatic and simultaneous posting of all sub-ledger items in the appropriate general ledger accounts (reconciliation accounts)
  - Simultaneous updating of general ledger and cost accounting areas
  - Real-time evaluation of and reporting on current accounting data, in the form of account displays, financial statements with different financial statement versions and additional analyses.
- Essentially, the general ledger serves as a complete record of all business transactions. It is the centralized, up-to-date reference for the rendering of accounts. Actual individual transactions can be checked at any time in realtime processing by displaying the original documents, line items, and transaction figures at various levels such as:
  - Account information
  - Journals
  - Totals/transaction figures
  - Balance sheet/profit and loss evaluations

Process Flow Diagram

General Ledger

G/L = General Ledger

Scenario Overview – ACCOUNTS
Overhead Cost Planning

Purpose and Benefits:

Purpose

- Internal orders are used to plan, collect and settle costs for projects like marketing campaigns or other internal projects. The SAP system enables you to monitor your internal orders throughout their entire life-cycle; from initial creation, through the planning and posting of all the actual costs, to the final settlement and archiving.

Benefits

- The planned and actual costs of these projects can be tracked for various purposes such as cost control, return on investment calculations, tax reporting and so on.

Key process flows covered

- Creation of internal orders.
- Cost element planning on internal orders.
- Settlement of internal orders (planned costs).

Process Flow Diagram

Internal Order for Marketing and Other Overhead Planning

Scenario Overview – ACCOUNTS
Overhead Cost Control

Purpose and Benefits:

Purpose

- Entering and posting a G/L document

Benefits

- Transparent view for an account of a cost center

Key process flows covered

- Process a G/L document for various purposes
- Necessary steps for preparation of periodic and year end activities

Scenario Overview – ACCOUNTS
Overhead Cost Control

Detailed Process Description:

Actual posting for a cost center

- For primary costs the related cost center is posted
- Cost center update with the correct values
- Posting of statistical key figures

Periodic and year end activities

- Comparison between the actual and the planned costs for the cost center
- Allocation of primary and secondary costs using an assessment cost element
- Posting of accruals for payroll fringe costs on a monthly basis
- Maintaining the controlling version
- Lock period

Process Flow Diagram

Overhead Cost Controlling – Actual

Scenario Overview – ACCOUNTS
Inventory Valuation

Purpose and Benefits:

Purpose

- Within the inventory valuation at the year end, the valuation of the material has to be reviewed considering several valuation approaches. The single-level materials could be determined by lowest value on base of the market price. The produced materials should also be valuated with the lowest value by using the inventory costing with own setting for the valuation variant.

Benefits

- Valuation can consider the valuation request on the basis of local requirements for valuation approaches.

Key process flows covered

- Stock valuation for raw materials, packaging materials and trading goods on base of lowest possible value
- Inventory valuation for semi-finished and finished materials on base of local requirements for valuation approaches
- Stock value adjustment

Scenario Overview – ACCOUNTS
Inventory Valuation

Detailed Process Description:

- Stock valuation, using lowest value principle for raw materials, packaging materials and trading goods.
- Additional devaluations by movement rate.
- Inventory costing for finished and semi-finished products, in accordance with the lowest possible value principle.
- Stock value reporting in form of a comparison analysis.
- Manual stock value adjustment posting in the Financial Accounting component.
- and transfer them from one account to another.

Process Flow Diagram

Inventory Valuation for Year End Closing

Scenario Overview – ACCOUNTS
R&D Cost Planning

Purpose and Benefits:

Purpose

- **In manufacturing companies, various Research and Development projects are undertaken that consume resources and incur costs or expenses. These projects are usually undertaken for future development of products. The product lines are generally determinable for such projects. The costs of these projects need to be tracked for various purposes such as cost control, return on investment calculations, tax reporting and so on.**

Benefits

- Transparent view of outstanding orders, shipments and inventory
- Automated efficient processing

Key process flows covered

- Create R&D internal order
- Consumable purchasing
- Post goods issues to R&D internal order
- Settle internal order

Process Flow Diagram

Internal Order R&D Actual

CO-PA = Profitability Analysis

Scenario Overview – ACCOUNTS
Period End Closing

Purpose and Benefits:

Purpose

- The closing operations component helps you prepare and carry out the activities required for day-end, month-end and year-end closing.
- For this purpose, the system provides a series of standard reports that can be used to generate evaluations and analyses of the posted account balances directly.

Benefits

- The system helps you to carry out the following:
  - create the balance sheets and P&L statements and
  - document the posting data.

Key process flows covered

- day-end closing,
- month-end closing and
- year-end closing.

Scenario Overview – ACCOUNTS
Period End Closing

Detailed Process Description:

Month-end closing in Financial Accounting (I)

- Update Exchange Rates
- Gaps in Document Number Assignment
- Invoice Numbers Allocated Twice
- Open and Close Posting Periods
- Enter Recurring Entries
- Post Recurring Entries
- Run Batch Input Session
- Automatic Clearing of GR/ IR Account special process
- Analyze GR/ IR Clearing Accounts
- Automatic Clearing of GR/ IR Account
- Post Adjustment Entries

Scenario Overview – ACCOUNTS
Period End Closing

Detailed Process Description:

Month-end closing in Financial Accounting (II)

- Foreign Currency Revaluation
- Post Tax Payable
- Advance Return for Tax on Sales/ Purchases
- EC Sales List
- Foreign Trade Regulation Reports Z4
- Foreign Trade Regulation Reports Z5A
- Comparison Documents/ Transaction Figures
- Close Previous Accounting Period
- Balance Interest Calculation
- Display Document Journal
- Financial Statement.

Scenario Overview – ACCOUNTS
Period End Closing

Detailed Process Description:

Year-end closing in Financial Accounting

- Create Factory Calendar for New Year
- Carry Forward AP/ AR Balances
- Carry Forward GL Balances
- Re-grouping Receivables/ Payables
- Balance Confirmation Receivable
- Balance Confirmation Payable
- Final Close and Release Financial Reporting
- Close Previous Accounting Period
- Display Document Journal.

Process Flow Diagram

Process 1, Day-End Closing

Process Flow Diagram

Process 2, Month-End-Closing (I)

Process Flow Diagram

Process 2, Month-End-Closing (II)

Process Flow Diagram

Process 3, Year-End-Closing

GL = General Ledger

Scenario Overview – ACCOUNTS
Travel Management

Purpose and Benefits:

Purpose

- To provide fully integrated management of all incurred travel expenses

Benefits

- Record Travel Expenses

Key process flows covered

- Create Trip and Enter Receipts
- Approve and Settle Trip
- Transfer Costs to Accounting

Process Flow Diagram

Travel Management

Scenario Overview – ACCOUNTS
Segment Reporting

Purpose and Benefits:

Purpose

- The purpose of segment reporting is to make the profit and risk situation of individual enterprise areas (segments) transparent.
- Since segment reporting must be configured in accordance with specific customer requirements, this BPP describes the creation of an example report in that enables a balance sheet and profit and loss account to be drawn up for each segment.

Benefits

- The results from individual segments of the company are present.

Key process flows covered

- Posting G/L Account Documents with different segments
- Allocation of un-allocable segment at the period end
- Balance Sheets and P&L Statements
- Cost of Sales Accounting - P&L Statements
- Receivables and Payables by segment.

Scenario Overview – ACCOUNTS
Segment Reporting

Detailed Process Description:

Segment Reporting

In accordance with special accounting principles e.g. IAS/ IFRS, segment reporting is required for product-related enterprise areas.

The purpose of segment reporting is to make the profit and risk situation of individual enterprise areas (segments) transparent.

Since segment reporting must be configured in accordance with specific customer requirements, this BPP describes the creation of an example report in that enables a balance sheet and profit and loss account to be drawn up for each segment.

Process Flow Diagram

Segment Reporting

Scenario Overview – AOP
Cost Center Planning

Purpose and Benefits:

Purpose

- During the annual budgeting process, the managers of non-operational cost centers such as sales, marketing, administrative, research and development etc. plan the costs for various cost types/elements on their respective cost centers.

Benefits

- Possibility to compare planned and actual costs, monitoring of costs on cost centers.

Key process flows covered

- Check cost center masters
- Check version validity for current budget period
- Copy previous year's actual or budget as a basis for planning
- Transfer planned depreciation from assets
- Set planner profile
- Download cost elements to spreadsheet for income/expense budget
- Update budget values for income and expense excluding operations
- Upload cost elements for income and expense excluding operations
- Plan accrual costs, statistical key figures, assessments
- Confirm non-operating cost center budget
- Copy AOP version to actual version 0 and lock both versions for planning

Scenario Overview – AOP
Cost Center Planning

Detailed Process Description:

General Cost Center Planning

- After checking cost center master data and versions, you can copy the previous year's actual expenses for the cost centers into an AOP (annual operative planning) budget version in cost center accounting. As an alternative the previous year's budget data can also be used as a basis for planning.
- The planned fixed or variable depreciation per cost center is transferred to the AOP version separately.
- The data in this version is downloaded into spreadsheets by each cost element and cost center. The respective cost center managers review and update the budget values according to their requirements and plans. The revised figures are uploaded back into SAP.
- The cost center planning in SAP is reviewed and finalized (accrued costs, statistical key figures, assessments).
- The planned data of the AOP version is copied into active version 0. Planning is locked in both versions.

Process Flow Diagram

General Cost Center Planning

AOP= Annual Operating Planning

Process Flow Diagram

General Cost Center Planning

AOP= Annual Operating Planning

Scenario Overview – AOP
Sales Q Forecast with COPA

Purpose and Benefits:

Purpose

- Review the Sales forecast on a quarterly basis

Benefits

- Integration to Sales and Production
- Data could be planned in Spreadsheet

Key process flows covered

- Sales quantity planning on basis of actual data
- Transfer to SOP

Process Flow Diagram

Revenue Planning

Scenario Overview – AOP
Simulation Costing

Purpose and Benefits:

Purpose

- Reference and simulation costing is a tool for planning costs and setting prices for future products which do not have a material master in the system. Instead, you create a base planning object which is costed manually by entering the costing items in a spreadsheet form (unit cost estimate).

Benefits

- Transparent view of a base planning object

Key process flows covered

- Create and cost Base Planning Object
- Analyze Results
- Change Base Planning Object
- Report from Information System

Process Flow Diagram

Reference and Simulation Costing

Scenario Overview – AOP

Revenue Planning

Purpose and Benefits:

Purpose

- Plan the revenue and the costs on Product and customer level

Benefits

- Integration to Sales, Financials, Controlling and Production
- Use of automized functionality for planning
- Data could be planned in Spreadsheet

Key process flows covered

- Revenue planning on basis of historical data
- Cost calculation
- Transfer to SOP

Process Flow Diagram

Sales Qty Budget and Transfer to SOP (with CO-PA)

Scenario Overview – AOP
SOP & Long Term Planning

Purpose and Benefits:

Purpose

- Check if the budgeted sales quantities can be produced, assess material requirements and utilization of the manufacturing cost centers.

Benefits

- Avoid bottlenecks, over- and under-absorption in production. Material requirements planning as a basis for purchasing contracts.

Key process flows covered

- Create sales plan and transfer to SOP (Sales and Operations Planning).
- Rough matching of budgeted sales quantities and production resources in SOP.
- Create planning scenario in “Long Term Planning” to simulate production planning for the budgeted sales quantities.
- Based on simulated production and operative production data (bills of material, routings), work center capacity and material requirements are calculated.
- Use material requirements for AOP – purchase material price planning.
- Use work centers capacity in AOP – general cost center planning.

Scenario Overview – AOP
SOP & Long Term Planning

Detailed Process Description:

AOP – SOP through Long Term Planning Transfer to LIS/PIS/Capacity

- Please refer to specification *172 – AOP - Sales Quantity Budget and Transfer to SOP* for all steps concerning the planning of sales quantities.
- The current specification starts with the transfer of confirmed sales quantities to Sales and Operations Planning (SOP). In SOP rough cut capacity planning is carried out in order to verify whether the goods planned to be sold can run through the company's bottleneck resources needed for production.
- After the production plan has been proven feasible by SOP, it is passed on to a planning scenario in Long Term Planning module (LTP). In LTP, planned independent requirements (PIR) are created.
- Based on these PIRs, Materials Requirements Planning (MRP) is simulated to create and review planned requirements for all the materials (components, raw materials) and resources. Simulation of MRP also allows review of capacities of the plants. Capacity leveling can then be carried out to smooth out the bottlenecks.
- After having run MRP as described above, one of the key objectives of the logistics part of AOP is achieved: calculate the total utilization of the activity types assigned to the manufacturing work centers needed to produce the budgeted sales quantities. The utilization is based on the consumption of activity types indicated in the routings of the (semi finished and finished) products of the production plan.

Process Flow Diagram

SOP through Long Term Planning Transfer to LIS/PIS/Capacity

AOP= Annual Operating Planning
SOP= Sales and Operations Planning
LTP= Long Term Planning
MRP= Materials Requirements Planning

Scenario Overview – AOP
Standard Cost Calculation

Purpose and Benefits:

Purpose

- Reflect the changes in the prices of purchased parts, change in labor and overhead costs and change in bills of materials and operations needed to manufacture the semi-finished and finished goods.

Benefits

- Prices are updated as future planned costs in the respective material master records
- Revaluation of existing inventory to the new standard prices

Key process flows covered

- Create costing run
- Execute costing run
- Review errors
- Analyze proposed standard prices
- Repeat annual operating plan scenarios
- Edit cost run and execute
- AOP – revenue cost of sales transfer
- Create frozen costing run
- Execute costing run
- Mark as future planned price
- Release standard cost estimate and revalue stock at start of new fiscal year

Scenario Overview – AOP
Standard Cost Calculation

Detailed Process Description:

Standard Cost Calculation

- Annually, the standard costs for products are updated as part of the annual operations planning (AOP). This is necessary to reflect the changes in the prices of purchased parts, change in labor and overhead costs and change in bills of materials and operations needed to manufacture the semi-finished and finished goods.
- Once the planned prices for purchased parts are updated and planned activity prices are calculated, a costing run is done to calculate the new standard planned prices of the materials. The calculated standards are checked. The responsible persons are asked to make necessary corrections, e.g. in master data. Once the calculations are considered to be correct, the prices are updated as future planned costs in the respective material master records.
- When the current year is closed, the marked cost estimates are released. This results in a revaluation of existing inventory to the new standard prices.

Process Flow Diagram

Standard Cost Calculation

AOP= Annual Operating Planning

Scenario Overview – Forecast to Sales Forecast to LTP

Purpose and Benefits:

Purpose

- Check if the budgeted sales quantities can be produced, assess material requirements and utilization of the manufacturing cost centers.

Benefits

- Avoid bottlenecks, over- and under-absorption in production. Material requirements planning as a basis for purchasing contracts.

Key process flows covered

- Create sales plan and transfer to SOP (Sales and Operations Planning).
- Rough matching of budgeted sales quantities and production resources in SOP.
- Create planning scenario in “Long Term Planning” to simulate production planning for the budgeted sales quantities.
- Based on simulated production and operative production data (bills of material, routings), work center capacity and material requirements are calculated.
- Use material requirements for AOP – purchase material price planning.
- Use work centers capacity in AOP – general cost center planning.

Scenario Overview – Forecast to Sales Forecast to LTP

Detailed Process Description:

AOP – SOP through Long Term Planning Transfer to LIS/PIS/Capacity

- Please refer to specification *172 – AOP - Sales Quantity Budget and Transfer to SOP* for all steps concerning the planning of sales quantities.
- The current specification starts with the transfer of confirmed sales quantities to Sales and Operations Planning (SOP). In SOP rough cut capacity planning is carried out in order to verify whether the goods planned to be sold can run through the company's bottleneck resources needed for production.
- After the production plan has been proven feasible by SOP, it is passed on to a planning scenario in Long Term Planning module (LTP). In LTP, planned independent requirements (PIR) are created.
- Based on these PIRs, Materials Requirements Planning (MRP) is simulated to create and review planned requirements for all the materials (components, raw materials) and resources. Simulation of MRP also allows review of capacities of the plants. Capacity leveling can then be carried out to smooth out the bottlenecks.
- After having run MRP as described above, one of the key objectives of the logistics part of AOP is achieved: calculate the total utilization of the activity types assigned to the manufacturing work centers needed to produce the budgeted sales quantities. The utilization is based on the consumption of activity types indicated in the routings of the (semi finished and finished) products of the production plan.

Process Flow Diagram

SOP through Long Term Planning Transfer to LIS/PIS/Capacity

AOP= Annual Operating Planning
SOP= Sales and Operations Planning
LTP= Long Term Planning
MRP= Materials Requirements Planning

Scenario Overview – Forecast to Sales Manufacturing Cost center Plng

Purpose and Benefits:

Purpose

- During the annual budgeting process, the managers of manufacturing cost centers plan the costs for various cost types/elements for their respective cost centers. In addition, the quantities of activity types needed for production and their prices are determined.

Benefits

- Possibility to compare planned and actual costs, monitoring of costs on cost centers. Allocation of production and overhead costs to products (via activity types).

Key process flows covered

- Download of cost center budget into spreadsheets, revision by cost center managers, upload of revised data
- Transfer of planned activity requirements from production (SOP)
- Manual completion of planned data
- Calculation of planned activity prices (input for AOP Standard Cost Calculation)

Scenario Overview – Forecast to Sales
Manufacturing Cost center Plng

Detailed Process Description:

Manufacturing Cost Center Planning

- The following steps are described in Scenario *175 – General Cost Center Planning:* copy the previous year's actual expenses or budget data for the cost centers into an AOP (annual operative planning) budget version in cost center accounting, posting of planned depreciation, download of data into spreadsheets, review by cost center managers and upload back into SAP.
- The resource requirements in the form of planned activity quantities are transferred from Sales and Operations planning to the cost centers as planned activity consumption. Plan reconciliation between the SOP activity requirements and manually planned requirements on the operational cost centers is carried out. Once the activity quantities and budget amounts are finalized, planned activity prices are calculated in the system.
- The planned activity prices are used for the Standard Cost Calculation.

Process Flow Diagram

Manufacturing Cost Center Planning

AOP= Annual Operating Planning

SOP= Sales and Operations Planning

Scenario Overview – Forecast to Sales Production Subcontracting

Purpose and Benefits:

Purpose

- During the Manufacturing process, when a "Planned Order" for Production is converted to a "Production Order", the system will check to see if there are any routing/work-center operations which require external processing. External processing is when you have individual production steps, that are operations or sub-operations, which are performed outside of your company by a vendor. This type of processing is particularly important for subcontracting. It can also provide a company with a feasible alternative to in-house processing, if capacity bottlenecks occur.

Benefits

- An outline agreement can specify that a certain operation of the production order is executed by an external subcontractor on a regular basis
- In the case of capacity bottlenecks, the assembly procedure of the finished product can be assigned to a subcontractor

Key process flows covered

- Creating Purchase Order for External Processing
- Goods Receipt for “subcontracting” Purchase Order
- Enter Invoice
- Periodic Payment

Scenario Overview – Forecast to Sales Production Subcontracting

Detailed Process Description:

Production Subcontracting (External Processing)

- When a Production Order is scheduled, external operations need to be taken into account. The duration of an external operation is calculated either by using the planned delivery time or using the standard values. The system automatically creates a purchase requisition for the operation or sub-operation that requires external processing. The Production scheduler should inform the buyer they need to check the workload for requisitions that require external processing.
- When data is maintained for an external activity, a cost element is specified. The cost element determines how the external activity is to be valuated. A decision needs to be made as to whether an operation or sub-operation is processed externally via its control key. In the control key, it is determined whether externally processed operations are scheduled on the basis of their standard values or the planned delivery time. This information is needed to settle externally processed operations and sub-operations that have been marked as relevant for costing in their control keys.
- Purchasing should not convert the purchase requisition until the external processing is required. The reason for this is that any quantity changes on the production order will automatically update the requisition.
- Once the purchase order is created it is printed and sent to the vendor. The purchase order informs the vendor which service is required. The buyer/planner/scheduler creates a manual shipping document and provides the information to the shipping department on what components need to be gathered for the external processing and ships the components to the vendor.
- When the vendor has completed the external processing, the material is shipped back. The warehouse clerk receives the externally processed goods back into the warehouse. The vendor service is reflected on the production order via an operation confirmation. The purchase order and the production order show the quantity received.
- The goods receipt of an externally processed material causes the status of the operation to be updated: For a partial delivery of an external process operation, the status is: EOPD (External operation - partial delivery) and for final delivery of a external process operation the status is: EOFD (External operation - final delivery).

Process Flow Diagram

Production Subcontracting (External Processing)

PP = Production Planning, RFQ = Request for Quotation, PO = Purchase Order, GR/IR = Goods Receipt/Invoice Receipt, PPV = Purchase Price Variance

Scenario Overview – Forecast to Sales Logistics Planning

Purpose and Benefits:

Purpose

- The purpose of logistics planning is to make sure that future demand can be satisfied by your company's available resources and to point out situations where demand cannot be met in time or in the desired quantities.

Benefits

- Seamless Integration in complete planning cycle
  - CO-PA → SOP → LTP → Demand Planning

Key process flows covered

- Sales and Operation Planning
- Long Term Planning

Scenario Overview – Forecast to Sales
Logistics Planning

Detailed Process Description:

Logistics Planning

This process sometimes is called 'Sales and Operations Planning'. The process usually takes place in a simulative mode and at an aggregated (usually product group rather than end-item) level. Once a feasible production plan is found that satisfies demand it can be used as the basis for operational production planning (MRP and Detailed Capacity Scheduling).

The Best Practice scenarios in this section cover the following planning workflow:

- Planning/forecasting of future demand
- Aggregated production planning including capacity check in order to check at product group level if demand can be satisfied (using the SOP functionality)
- Transfer of results to Long Term Planning (using the LTP module) to enable simulation of material requirements, based on the production plan (s)
- Planning takes place in separate (simulative) planning versions within LTP
- Review and adjustments of planned requirements as needed
- Once the simulated requirements are accepted, the demand (independent requirements) is then transferred to active demand management for detailed MRP and Production Planning / Scheduling in the active version.

Process Flow Diagram

Logistics Planning

CO-PA = Profitability Analysis, SOP = Sales and Operations Planning, LTP = Long Term Planning, MRP = Material Requirements Planning

Scenario Overview – (O2C) Order 2 Cash Batch Management

Purpose and Benefits:

Purpose

- To explain the business process in detail; target groups are all logistics people

Benefits

- To change batch master data
- To find out where a batch was used, e.g. to perform a batch recall or government report
- To find out where a batch is used, e.g. in which stocks or inspection lots or material documents
- To have a single point of batch maintenance

Key process flows covered

- Maintain batch master record
- Batch information cockpit

Scenario Overview – (O2C) Order 2 Cash
Batch Management

Detailed Process Description:

Batch Management

Maintain Batch Master Record

- Change batch master data, e.g. batch status, production date, shelf live expiration date or batch characteristics

Batch Information Cockpit

- Top-down batch where-used list from selected batch, i.e. where did the batch come from
- Bottom-up batch where-used list from selected batch, i.e. where did the batch go
- Material documents linked to selected batch
- Inspection lots linked to selected batch

Process Flow Diagram

Batch Management

Scenario Overview – (O2C) Order 2 Cash Batch ReCall

Purpose and Benefits:

Purpose

- A defect batch is identified and must be recalled from customers and prospects who have received the batch.

Benefits

- Integrated follow-up process to the former delivered batch
- return stock managed separately from the rest of your stock

Key process flows covered

- Creation of direct mailing to customer
- Preparing follow-up process for the return of the batch
- Receiving of returned batch into return stock
- Decision of further usage of the returned stock
- Creation of credit memo for customer

Scenario Overview – (O2C) Order 2 Cash
Batch ReCall

Detailed Process Description:

Batch Recall

A program is executed to identify all customers who received a defect batch. The user then chooses the addresses of the appropriate contact persons, and the system prints a standard letter to each customer to inform them of the recall. The subsequent activities for each customer are stored in the system. Return deliveries are also entered and documented, if necessary.

To ensure that you contact all customers affected by a defect batch, you must identify if subsequent batches are affected by the defect batch. For this purpose, you can use the standard system function *"batch where-used list"* that is described in detail in the standard SAP ERP documentation. This scenario recalls a batch from a finished product or wholesale product. Therefore you can simply find all customers who received these products. However, a vendor could report that a raw, semi-finished, trading, or other material used in your production, does not meet quality standards. In this case, you must determine which finished or trading materials were produced with these defect batches.

Process Flow Diagram

Batch Recall

Scenario Overview – (O2C) Order 2 Cash Credit Management

Purpose and Benefits:

Purpose

- A credit limit check can be carried out when sales documents are created or changed.

Benefits

- Reduce risk of bad debt
- Focus on reliable and profitable customers
- Faster credit-worthiness check
- Fasten the process of checking a customer credit limit
- Identify the overall credit risk of your company

Key process flows covered

- Enter Sales Order
- Check Credit Limit
- Block Sales Order
- Release Sales Order
- Delivery Sales Order

Scenario Overview – (O2C) Order 2 Cash Credit Management

Detailed Process Description:

Sales Credit Management / Set Credit Limit

- The credit limit check is carried out within one credit control area. When changing a document, the check is repeated, if changes regarding quantity or value are made. A credit control area consists of one or more company codes. A sales document belongs to one credit control area depending on the allocation of the sales organization to a company code. The SAP System checks the credit limit which was granted to the customer in this credit control area. The credit control areas and the credit limit of a customer are defined in financial accounting and entered in the customer master record. During the check, the SAP System totals the receivables, the open items and the net value of the sales order for every item of a sales document. The open items take into account obligations bound by contract which are not recorded for accounting purposes but which involve expenses through diverse business transactions. The total is compared with the credit limit. If the limit is exceeded, the system responds in the way defined by you in the configuration menu.
- We are using 'simple' credit limit check in this solution. During the simple credit limit check, you can only configure one system reaction ('A' warning, 'B' error, 'C' delivery block) when the credit limit is exceeded, we have chosen to use option 'C' (delivery block).
- The system provides a transaction to list all of the sales documents that have been blocked for delivery, with information about what has caused the block. The Customer's current credit situation is manually reviewed by credit department, and when the sales order is approved, the delivery block is removed from the sales order. You go directly from the list to an individual sales document by placing the cursor on the relevant document and choosing Edit sales doc.

Process Flow Diagram

Credit Management

Scenario Overview – (O2C) Order 2 Cash Credit Memo Processing

Purpose and Benefits:

Purpose

- The Credit Memo process is used for applying a credit to a customer account once a determination has been made that a customer has been overcharged as a result of a pricing or sales tax rate error.

Benefits

- System integrated credit memo processing

Key process flows covered

- Create credit memo request
- Remove billing block (review credit memo request)
- Billing

Process Flow Diagram

Credit Memo Processing

AR = Accounts Receivable

Scenario Overview – (O2C) Order 2 Cash

Cross Company Sales Order Processing

Purpose and Benefits:

Purpose

- This scenario shows how sales are processed across company codes.

Benefits

- Sales organization and supplying plant can be in different company codes

Key process flows covered

- Create sales order with supplying plant from different company code than the sales organization
- Delivery from supplying plant
- Invoicing customer from sales organization
- Inter-company invoicing sales organization from the supplying plant

Scenario Overview – (O2C) Order 2 Cash

Cross Company Sales Order Processing

Cross-Company Sales Order Processing

Process Flow Diagram

Cross-Company Sales Order Processing

AR = Accounts Receivable

Scenario Overview – (O2C) Order 2 Cash

Consignment Processing

Purpose and Benefits:

Purpose

- Consignment goods are goods which are stored at the customer location but which are owned by your company. The customer is not obliged to pay for these goods until they remove them from consignment stock. Otherwise, the customer can usually return consignment goods which are not required.

Benefits

- Consignment stock managed separately for each customer
- Consignment stock managed separately from the rest of your stock

Key process flows covered

- Consignment Fill-Up
- Consignment Issue
- Consignment Pick-Up
- Consignment Return
- Pick and Ship
- Billing

Scenario Overview – (O2C) Order 2 Cash

Consignment Processing

Detailed Process Description:

Customer Consignment Processing

There are four main transactions for processing consignment stock in the SAP ERP System, all of which support separate management of stock:

- Consignment Fill-up

Consignment fill up is used to supplement the customer's consignment stock. Goods issue of the appropriate stock is posted from the unrestricted-use stock to consignment stock (special stock). The goods remain in the possession of the vendor.

- Consignment Pick-Up

Any consignment goods stored at the customer's warehouse that haven't been used can be reposted to your company's warehouse with a consignment pick-up.

If the customer returns consignment stock to you, you record the transaction in the system by creating a consignment pick-up order (order type KA). As a result, the system carries out the following actions:

When goods issue is posted, the relevant quantity is deducted from the customer's special stock and is added back into your regular stock at the plant where the goods are returned. Your total valuated stock remains the same since the returned stock was regarded as part of your own inventory even while it was at the customer's premises.

This transaction is not relevant for billing.

Scenario Overview – (O2C) Order 2 Cash

Consignment Processing

Detailed Process Description:

Customer Consignment Processing

- Consignment Issue

Consignment issue enables the customer to take consignment goods from the special stock for their use or to sell.

Consignment issue involves removing the goods from the special stock and making it the property of the customer.

When the customer removes consignment stock to use or sell, you record the transaction in the system by creating a consignment issue order.

- Consignment Return

Consignment returns are used for when your customer wants to return goods to the consignment stock.

If the customer wishes to claim on consignment goods which have already been issued, you can record this transaction by creating a consignment return order.

Process Flow Diagram

Customer Consignment Processing – Consignment Fill-Up

Process Flow Diagram

Customer Consignment Processing – Consignment Issue

Process Flow Diagram

Customer Consignment Processing – Consignment Pick-Up

Process Flow Diagram

Customer Consignment Processing – Consignment Return

Scenario Overview – (O2C) Order 2 Cash

Foreign Trade Export Processing

Purpose and Benefits:

Purpose

- SAP's Foreign Trade/Customs application (FT) provides the tools that you need to compete effectively in today's fast-paced market. It is designed to help you meet the rapidly changing foreign trade requirements of your business.

Benefits

- Lower import duties
- Comply with authorities demands
- Fulfill complex documentation requirements
- Drive Process efficiently

Key process flows covered

- Sales Order Entry
- Delivery Creation
- Create Pro Forma Invoice
- Print Customs Document
- Post Goods Issue
- Billing

Process Flow Diagram

Foreign Trade Export Processing

AR= Accounts Receivable, COGS = Cost of Goods Sold

Scenario Overview – (O2C) Order 2 Cash

F O C Processing

Purpose and Benefits:

Purpose

- This scenario describes the process of providing goods to a customer at no cost (Free of Charge Sales Order)

Benefits

- System integrated Free of Charge sales order processing

Key process flows covered

- Create sales order with free of charge items
- Pick and ship items
- Post goods issue

Process Flow Diagram

Free of Charge Delivery

Scenario Overview – (O2C) Order 2 Cash

Lean Ware House Processing

Purpose and Benefits:

Purpose

- Lean Warehouse Management is used to have a picking document in the shipping process.
- A picking document is printed when a delivery is created for a storage location which is assigned to a warehouse. This is done automatically. There is no need for a user to deal with transport orders from the warehouse management.

Key process flows covered

- Print a picking document automatically when a delivery for a Warehouse Management relevant storage location is created.

Scenario Overview – (O2C) Order 2 Cash

Lean Ware House Processing

Detailed Information: Lean Warehouse Management

Function list of the lean WM configuration delivered with the SAP Best Practices Baseline package:

- **Create and Assign Warehouse**
- **Define Control Parameters for Warehouse Number**
- **Spool Parameters for Transfer Order Printing**
- **Profile for Sorting during Transfer Order Print Processing**
- **Transfer Order Print Indicators**
- **Print Program per Warehouse Number**
- **Define Number Ranges**
- **Define Number Ranges for WM**
- **Define Storage**
- **Define Difference Indicators**
- **Define Transfer Types**
- **Define Movement Types**
- **Assign Picking Locations Lean-WM**
- **Create Output - Condition Records: Shipping**

Process Flow Diagram

Lean Warehouse Management

Scenario Overview – (O2C) Order 2 Cash

Returns Processing

Purpose and Benefits:

Purpose

- Standard pallets belong to the manufacturer and are handled either as returnable goods or as packaging material. This scenario shows the shipment of standard pallets and their returns.

Benefits

- The process comprises the management of returnables using the ERP returnable packaging logistics functions
- Tracking of returnables

Key process flows covered

- Sales order
- Pick and ship items and add returnable packaging
- Add returnable packaging to deliveries
- Returnable packaging return order
- Debit unreturned packaging
- Goods issue for unreturned packaging

Scenario Overview – (O2C) Order 2 Cash

Returns Processing

Detailed Process Description:

Returnables Processing

The initial activity is to create a standard sales order. A delivery will be created based on the initial sales order. A pallet (returnable packaging) will be added to the delivery during the pick and ship steps of the process. The last step within this sub process is billing.

Two options exits to return the pallets:

- Pallet return order with pallet return delivery and goods receipt
- Pallet return delivery w/o reference and goods receipt

A debit note request can be raised in case the customer does not return the pallets. Triggered by billing, the system will issue the debit note based on the debit note request.

The last step is to synchronize the consignment stock quantity and value. Therefore a manual goods issue must be posted for the unreturned pallets.

Process Flow Diagram

Returnables Processing

GR = Goods Receipt

Scenario Overview – (O2C) Order 2 Cash

3rd Party Sales Order Processing

Purpose and Benefits:

Purpose

- In third-party order processing, your company does not deliver the items requested by a customer. Instead, you pass the order along to a third-party vendor who then ships the goods directly to the customer and bills you. The standard sales order automatically creates a purchase requisition for the materials to be delivered by the third-party vendor.

Benefits

- Reducing stock and cost, increasing efficiency
- Handover of customer's requirements directly to external supplier
- Invoice from trader to customer bases on quantities from supplier invoice
- Fulfillment of customer's requirements despite material shortage

Key process flows covered

- Third Party Sales Order
- Convert Purchase Requisitions to Purchase Order
- Approval of Purchase Orders
- Post Statistical Goods Receipt
- Invoice verification
- Billing

Scenario Overview – (O2C) Order 2 Cash

3rd Party Sales Order Processing

Detailed Process Description:

Sales Processing Using Third Party (w. Shipping Notification)

- In this scenario, the vendor sends a shipping notification. The incoming invoice from the vendor updates the billing quantity, so that the customer-billing document is only possible after entering the invoice from the vendor.
- In this scenario, the vendor sends a shipping notification. After that a statistical goods receipt is posted. The incoming invoice from the vendor updates the billing quantity, so that the customer-billing document can only be created after entering the invoice from the vendor.

Process Flow Diagram

Sales Processing Using Third Party (w. Shipping Notification)

AP = Accounts Payable, COGS = Cost of Goods Sold, GR = Goods Receipt

Scenario Overview – (O2C) Order 2 Cash

Sales Order Processing for Prospects

Purpose and Benefits:

Purpose

- This scenario describes the process of creating a sales order without first looking up the customer details (create sales order with dummy customer)

Benefits

- Sales order processing without the customer's account number
- Sales Order entry with customer specific material

Key process flows covered

- Create sales order w/o having the customer's account number
- Assign customer account number (e.g. via incomplete sales order due list)
- Pick and ship items
- Post goods issue
- Billing

Scenario Overview – (O2C) Order 2 Cash

Sales Order Processing for Prospects

Detailed Process Description:

Sales Order Processing for Prospect

- A “dummy” customer is used when your sales order processors need to investigate an order without first looking up the customer’s account number. The sales order can be saved but remains incomplete until a valid customer account number has been entered in the sales order.
- This function is particularly useful for companies who accept orders by phone. A customer, for example, calls and requests pricing and information about a catalog item. The order processor can execute the entire order without needing the customer’s account number until the end. Once the customer’s account number has been entered, all of the customer-specific information is transferred from the customer master and other customer-specific records.

Process Flow Diagram

Sales order Processing for Prospect

Scenario Overview – (O2C) Order 2 Cash

Sales Order Processing with Customer Down payment

Purpose and Benefits:

Purpose

- Often in business, especially in a make-to-order environment, customers may be required to pay some amount in advance before delivery of goods.

Benefits

- System integrated sales order processing with Customer down payment

Key process flows covered

- Sales Order Entry
- Remove Billing Block
- Billing
- Post Down Payment
- Delivery Processing
- Post Goods Issue
- Billing
- Down Payment Clearing

Scenario Overview – (O2C) Order 2 Cash

Sales Order Processing with Customer Down payment

Detailed Process Description:

Sales Order Processing with Customer Down Payment

- This process is used to create requests for down payment, record the receipt of the down payment, create a final invoice after the deduction of the down payment received and a receipt of the final amount due on the invoice.
- The process makes use of the billing plan functionality in the Sales and Distribution module of SAP. The integrated process allows for a proper document flow to be maintained between the sales and financial transactions.

Process Flow Diagram

Sales Order Processing with Customer Down Payment

AR= Accounts Receivable

Scenario Overview – (P2P) Procure 2 Pay

External Procurement of Services

Purpose and Benefits:

Purpose

- The service provider is in need of a service from a 3rd party

Benefits

- Transparent view of outstanding orders, shipments and inventory
- Automated efficient processing

Key process flows covered

- Creating a purchase order
- Maintain a Service Entry Sheet
- Approve the Service Entry Sheet
- Invoice Verification

Process Flow Diagram

External Procurement of Services

Scenario Overview – (P2P) Procure 2 Pay

External Procurement of Third-Party Resources

Purpose and Benefits:

Purpose

- The service provider is in need of a service from a 3rd party

Benefits

- Purchase Order Management

Key process flows covered

- Creating a Purchase Order
- Confirming the Goods Receipt
- Entering the Invoice for External Maintenance

Process Flow Diagram

External Procurement of Third-Party Resources

Scenario Overview – (P2P) Procure 2 Pay

Batch Management

Purpose and Benefits:

Purpose

- To explain the business process in detail; target groups are all logistics people

Benefits

- To change batch master data
- To find out where a batch was used, e.g. to perform a batch recall or government report
- To find out where a batch is used, e.g. in which stocks or inspection lots or material documents
- To have a single point of batch maintenance

Key process flows covered

- Maintain batch master record
- Batch information cockpit

Process Flow Diagram

Batch Management

Scenario Overview – (P2P) Procure 2 Pay Consumable Purchasing

Purpose and Benefits:

Purpose

- Purchasing of consumable goods or services

Benefits

- Possibility of quick one-time-purchases: Material consumption is directly posted, no posting into storage
- Use of service entry sheets as inspection report of performed services

Key process flows covered

- Purchase order creation for consumable goods
- Approval of purchase orders for consumables
- Goods receipt of consumables
- Purchase order creation for services
- Service entry sheet creation
- Service entry sheet approval
- Invoice receipt by line item
- Period-end plant

Detailed Process Description:

Consumable Purchasing

This scenario deals with purchase order creation activities during the procurement process. Furthermore, it describes the additional process steps of a purchase order approval, goods receipt of consumables, approval of service entry sheets and invoice receipts by line item. The process also covers the related processing of outgoing payments and period-end plant and period-end closing.

Consumable items (goods or services) are entered without material number but rather a short text description as the main identifiable characteristic. The purchase order is subject to approval based on predefined parameters prior to being issued to a vendor.

For consumable goods, there is no inventory in the system. By posting a goods receipt the value of the goods is expensed to a cost center or another cost element.

Procurement of a consumable service follows the same general process. The difference is that the consumable service is not posted by means of a goods receipt, but with a service entry sheet. The invoice follows the same rules in both cases.

Process Flow Diagram

Consumable Purchasing

GR/IR Goods Receipt/Invoice Receipt, PPV = Purchase Price Variance

Scenario Overview – (P2P) Procure 2 Pay

External Procurement of Third-Party Resources

Purpose and Benefits:

Purpose

- The service provider is in need of a service from a 3rd party

Benefits

- Purchase Order Management

Key process flows covered

- Creating a Purchase Order
- Confirming the Goods Receipt
- Entering the Invoice for External Maintenance

Process Flow Diagram

External Procurement of Third-Party Resources

Scenario Overview – (P2P) Procure 2 Pay
Stock Transfer with Delivery

Purpose and Benefits:

Purpose

- Transfer material requested automatically by MRP or manually by a buyer from one plant to another plant. Both plants belong to the same organization but different company codes.

Benefits

- Transparent view of outstanding stock transfers, stock-in-transit
- Efficient Processing of internal stock transfers

Key process flows covered

- Stock transport requisition (with MRP)
- Changing stock transport purchase order (with MRP)
- Stock transport order (without MRP)
- Delivery for stock transport order
- Delivery due list
- Picking confirmation
- Goods Issue
- Receiving transferred material
- Inter-company billing
- Creation of excise invoice
- Invoices for delivery and purchase order

Scenario Overview – (P2P) Procure 2 Pay

Stock Transfer with Delivery

Detailed Process Description:

Internal Procurement Cross-Company Stock Transfer

The stock transfer process begins with a requirement to transfer material from one plant to another Plant. Both plants belong to the same organization but different company codes. This request, in the form of a stock transfer requisition, may be created in the procuring plant automatically by MRP or manually by a buyer.

The material master must exist in both the procuring (receiving) plant and the providing (shipping) plant. Also, stock transfer purchase orders are not subject to approval like other purchase orders. A buyer validates the accuracy of the stock transfer purchase requisition and converts it into a stock transfer purchase order.

A warehouse clerk at the shipping plant monitors the materials due to be shipped and creates deliveries as required. Once a delivery is created, a pick list is generated, a warehouse clerk gathers the materials and confirms the picked quantities. Once the delivery is complete, the delivery quantities are issued, appropriate documentation is generated, and the goods are shipped.

Goods are received at the receiving plant referencing the delivery number on the shipping documents.

At the shipping plant the accounts receivable clerk creates an invoice and sends it to the procuring plant. At the procuring plant the accounts payable clerk receives this invoice with reference to the purchase order.

Process Flow Diagram

Stock Transfer with Delivery

MRP = Material Requirements Planning, GR = Goods Receipt, Acc. Pay. = Accounts Payable Clerk

Scenario Overview – (P2P) Procure 2 Pay

Physical Inventory

Purpose and Benefits:

Purpose

- This scenario covers the periodic process of making necessary adjustments to stock on hand after a physical count

Benefits

- Transparent and actual stock on hand levels
- Efficient processing of inventory adjustments

Key process flows covered

- Create physical inventory documents
- Print physical inventory documents
- Execute physical count / recount
- Enter physical count
- List and post physical count differences

Process Flow Diagram

Physical Inventory

Scenario Overview – (P2P) Procure 2 Pay

Procurement & Consumption of Consigned Inventory

Purpose and Benefits:

Purpose

- The scenario shows the characteristics of consignment processing

Benefits

- Automatic posting of goods into vendor consignment stock
- Less manual FI postings required: Upon goods issue from consignment storage the relevant invoice data is transferred to FI. Periodic invoicing generates and releases the vendor invoices

Key process flows covered

- Goods receipt to vendor consignment stock
- Transfer posting of vendor consigned stock to own stock
- Invoice Verification
- Outgoing payment
- G/L: Period-end plant

Process Flow Diagram

Procurement & Consumption of Consigned Inventory

MRP = Material Requirements Planning, PPV = Purchase Price Variance

Scenario Overview – (P2P) Procure 2 Pay
Procurement Contract

Purpose and Benefits:

Purpose

This scenario deals with the use of contracts in procurement activities

Benefits

- Reduced procurement costs
- Securing of supplies
- Transparency of supplier agreements

Key process flows covered

- Creating a basic agreement (quantity contract)
- Creating a purchase requisition
- Assigning requisition and creating purchase order
- Approval of purchase orders
- Contract monitoring
- Goods receipt
- Invoice receipt by line item
- Outgoing payment

Process Flow Diagram

Procurement Contract

MRP = Material Requirements Planning, PO = Purchase Order

Scenario Overview – (P2P) Procure 2 Pay

AOP – Purchased Material Price Planning

Purpose and Benefits:

Purpose

- Standard costs for purchased materials need to be periodically reviewed and updated, if necessary, to match the current market conditions and negotiated prices.

Benefits

- Updated standard costs for purchased materials which can be used to update the standard prices for semi-finished and finished products.

Key process flows covered

- Transfer long term planning scenario to purchase information system
- Download purchased materials for budget purchase price update
- Review data and negotiate with vendors
- Change materials planned price1 (material master)

Process Flow Diagram

AOP – Purchased Material Price Planning

AOP= Annual Operating Planning

SOP= Sales and Operations Planning

Scenario Overview – (P2P) Procure 2 Pay

Quality Management for Procurement with Vendor Evaluation

Purpose and Benefits:

Purpose

- This scenario deals with quality inspection activities during the procurement process. A customer orders goods from a specified vendor. On goods receipt, an inspection lot is generated according to the defined material specification. A usage decision is then made as to whether to accept or reject the material, based on the inspection result (in this scenario, the rejection is made). Subsequent processes such as quality notification and vendor evaluation then follow.

Benefits

- Inspection lot creation at goods receipt

Key points

- Quality inspection
- Results recording / Usage decision
- Defects and returns
- Vendor evaluation

Scenario Overview – (P2P) Procure 2 Pay

Quality Management for Procurement with Vendor Evaluation

Detailed Process Description:

Quality Management for Procurement with Vendor Evaluation

- **Receive goods from vendor based on purchase order**
- **Inspection report / Inspection lot worklist**
- **Quality inspection at goods receipt / Defects recording**
- **Usage decision after inspection**
- **Quality Notification creation and completion**
- **Move of the amount of material to the appropriate stock - unrestricted or blocked quality stock**
- **Goods return to vendor and return delivery creation**
- **Vendor evaluation process**

Process Flow Diagram

Quality Management for Procurement with Vendor Evaluation

Scenario Overview – (P2P) Procure 2 Pay
Self Service Procurement

Purpose and Benefits:

Purpose

- In procurement departments, the purchasing of basic supplies and services is a routine activity.
- Self-Service Procurement enables purchasing employees to manage their own requisitions, freeing up purchasing department staff, increasing efficiency, and speeding up the procurement process.

Key process flows covered

- A web-based user interface allows employees to select items from supplier's catalogs and create shopping carts that correspond to a purchase requisition.
- The shopping carts are automatically routed for manager approval.
- Approved shopping carts create purchase orders (or reservations in case of available stock).

Scenario Overview – (P2P) Procure 2 Pay
Self Service Procurement

SAP Applications Required:

Required

- SAP ECC 6.0 EhP3
- SAP SRM Server 5.5
- SAP NETWEAVER 7.0 (2004S): Application Server Java
- Ensure that the following prerequisites are fulfilled:
  - The SAP Virtual Machine Container (VMC) which is part of SAP NetWeaver 7.0 has to be activated.
  - The system landscape directory (SLD) is up and running.
  - The installation client has to be maintained correctly as business system in connected SLD.
  - The entry in the SLD Cache table has to be updated by running SLDCHECK transaction.

Company roles involved in process flows

- Employee (SRM role)
- Manager (SRM role)
- Buyer (NWBC role)

Process Flow Diagram

Self Service Procurement (Procure 2 Pay)

Scenario Overview – (P2P) Procure 2 Pay
Stock Transfer with Delivery

Purpose and Benefits:

Purpose

- Transfer material requested automatically by MRP or manually by a buyer from one plant to another within the same company code

Benefits

- Transparent view of outstanding stock transfers, stock-in-transit
- Efficient Processing of internal stock transfers

Key process flows covered

- Stock transport requisition (with MRP)
- Changing stock transport purchase order (with MRP)
- Stock transport order (without MRP)
- Delivery for stock transport order
- Delivery due list
- Picking confirmation
- Goods Issue
- Creating Billing
- Creating Excise Invoice
- Receiving transferred material

Detailed Process Description:

Stock Transfer with Delivery

The stock transfer process begins with a requirement to transfer material from one plant to another within the same company code. This request, in the form of a stock transfer requisition, may be created in the procuring plant automatically by MRP or manually by a buyer.

There are no master data requirements beyond the material master to support the stock transfer process. The material master must exist in both the procuring (receiving) plant and the providing (shipping) plant. Also, stock transfer purchase orders are not subject to approval like other purchase orders.

A buyer validates the accuracy of the stock transfer purchase requisition and converts it into a stock transfer purchase order.

A warehouse clerk at the shipping plant monitors the materials due to be shipped and creates deliveries as required. Once a delivery is created, a pick list is generated for the materials. A warehouse clerk gathers the materials and confirms the picked quantities. Once the delivery is complete, the delivery quantities are issued, appropriate documentation is generated, and the goods are shipped, ending the process for the shipping plant.

Goods are received at the receiving plant referencing the delivery number on the shipping documents. Inventory is received into storage based on fixed parameters proposed from the material master which can be changed at time of transactional data capture i.e. purchase order creation or goods receipt.

Process Flow Diagram

Stock Transfer with Delivery

MRP = Material Requirements Planning, GR = Goods Receipt

Scenario Overview – (P2P) Procure 2 Pay Subcontracting

Purpose and Benefits:

Purpose

- The Subcontracting process involves sending raw components to a vendor for specific manufacturing processes and receiving the value-added finished material back into inventory.

Benefits

- BoM explosion triggers follow-on functions like delivery to subcontractor etc.
- Automatic posting of value flow
- Automatic posting of stocks into corresponding stock types

Key process flows covered

On goods delivery, the scenario focuses on the following activities:

- Purchase order creation based on a scheduled purchase requisition created by last MRP run
- Optional: manual purchase order creation
- Purchase order approval (if required)
- Transferring of components to subcontractor
- Creation of subcontracting challan

Process Flow Diagram

Subcontracting

MRP = Material Requirements Planning, PO = Purchase Order, GR/IR = Goods Receipt/Invoice Receipt, PPV = Purchase Price Variance

Scenario Overview – Services

Depo Repair

Purpose and Benefits:

Purpose

- This scenario covers the processing of a service case from the initial reporting of the problem by the customer up to billing the customer, when service activities are carried out at plant.

Benefits

- Customer Contract Management
- Customer Service and Order Management
- Repairs Processing
- Inventory Management
- Cross-Application Time Sheet
- Equipment Handling
- Resource-Related Billing

Key process flows covered

- Create a Customer Contract
- Create a Service Notification
- Change the Service Notification
- Display the Repair Order
- Create a Return Delivery with Reference to Sales Order
- Stock Overview
- Change a Repair Order – Starting Repairs
- Display the Service Order
- Change the Service Order
- Confirm the Materials Used
- Posting Goods Issues
- Displaying Serviceable Materials
- Time Recording (211)
- Check Planned/Actual Costs
- Close the Service Order Technically
- Display Equipment using Equipment List
- Display Status of Repair Order
- Creating a Billing Request
- Create the Billing Document

Scenario Overview – Services

Depo Repair

Detailed Process Description:

Repairs at Plant

- A service agent creates a service notification in the system. The service notification number is used as a return material authorization (RMA) number in the remainder of the repair process. The service agent carries out a warranty check on the service notification and then creates a service contract. The service center informs the customer that they must send the notebook to the central service center. The service notification number (RMA) must be specified on the shipping documents; otherwise the notebook is rejected by the service center. If the necessary spare parts are not in stock, they have to be ordered. A repair order is then created from the service notification so that the entire repair process can be controlled and settled. In the repair order, the damaged notebook is automatically assigned by the returns items created. A service order is automatically generated using an item proposal to enable the repairs to be carried out. Once the repairs have been carried out, the costs (for hourly fees and spare parts) are confirmed to the service order. The repaired notebook is delivered to the customer and the final repair status can be displayed. The service center creates a billing request. This appears in the repair order as an additional item and is not a separate document (unlike the billing request in the on-site service process). Subsequently, the repair order is billed. On a periodic basis the costs and revenues incurred on the service order are being settled to the repair order, where they can be evaluated.

Process Flow Diagram

Repairs at Plant

Scenario Overview – Services

Internal Asset Maintenance

Purpose and Benefits:

Purpose

- The business scenario deals with the internal maintenance of a piece of equipment processed by an employee.

Benefits

- Management of technical object
- Procurement of external services and materials
- Cross-Application Time Sheet

Key process flows covered

- Create a technical object, type "machines"
- Create internal repair order
- Create purchase order
- Confirm goods receipt
- Enter invoice for external procurement
- Record actual time worked (CATS)
- Display planned/actual costs
- Settle order to cost center
- Close internal order

Scenario Overview – Services

Internal Asset Maintenance

Detailed Process Description:

Internal Maintenance

- Create a technical object, type "machines"
- Create internal repair order
- Create purchase order
- Confirm goods receipt
- Enter invoice for external procurement
- Record actual time worked (CATS)
- Display planned/actual costs
- Settle order to cost center
- Close internal order

Process Flow Diagram

Internal Maintenance

Scenario Overview – Services

Sale of Planned Services

Purpose and Benefits:

Purpose

- A customer has signed a long-term contract with his service provider.

Benefits

- Customer Contract Management
- Maintenance Scheduling
- Service Order Management
- Purchasing
- Resource-Related Billing

Key process flows covered

- A customer contract is created
- A maintenance plan is created
- A service order is generated automatically
- The necessary material parts are ordered
- The costs are entered to the service order
- A billing document is created

Process Flow Diagram

Sales of Planned Services

Scenario Overview – Services

Services Contract with Periodic Billing

Purpose and Benefits:

Purpose

- A service provider has a service contract with a customer. The business process starts with a notification and a service order.

Benefits

- Customer Contract Management
- Customer Service Management
- Service Order Management
- Purchasing
- Periodic Billing

Key process flows covered

- Creating a Customer Contract
- Creating a Service Notification
- Changing the Service Notification
- Creating a Service Order
- Changing the Service Order
- Time Recording (211)
- Travel Management (191)
- Confirming the Materials Used
- Creating a Purchase Order
- Confirming the Goods Receipt
- Entering the Invoice for Purchase Order
- Displaying Planned/Actual Costs
- Closing the Service Order – Technical complete
- Creating the Billing of Contract

Process Flow Diagram

Service Contract with Periodic Billing

Scenario Overview – Services

Services Contract with Fixed Billing

Purpose and Benefits:

Purpose

- Documenting a customer RFQ for services, a notification is created in the system to document and classify the required work.

Benefits

- Customer Service Management
- Sales and Service Order Management
- Cross-Application Time Sheet
- Inventory Management
- Fixed Price Billing

Key process flows covered

- Creating a Service Notification
- Creating a Quotation (Service Request)
- Customer Decision
- Check the Task List
- Creating a Sales Order
- Check the Service Order
- Changing the Service Order
- Time Recording (211)
- Confirming Additional Time to the Service Order (optional)
- Goods Movement
- Creating the Billing for the Sales Order
- Closing the Service Order – Technical complete

Process Flow Diagram

Service with Fixed Price Billing

Scenario Overview – Services

Services Contract with T&M Billing

Purpose and Benefits:

Purpose

- Documenting a customer request for quotation (RFQ) for services, a notification is created in the system to document and classify the required work. An optional activity lets the service responsible call the customer again to complete the information required to prepare the quotation.

Benefits

- Customer Service Management
- Sales and Service Order Management
- Cross-Application Time Sheet
- Resource-Related Billing

Key process flows covered

- Creating a Service Notification
- Changing the Service Notification (Optional Step)
- Check the Task List
- Creating a Sales Order
- Change the Sales Order
- Changing the Service Order
- Time Recording (211)
- Confirming Time to the Service Order (Optional Step)
- Confirming the Materials Used
- Creating Resource-Related Billing Request
- Creating the Invoice for the Billing Memo Request
- Closing the Service Order – Technical complete

Process Flow Diagram

Service with Time and Material Based Billing

Thank you !

Q E D : Volume-3

Copyright 2011 SAP AG
All rights reserved

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP AG. The information contained herein may be changed without prior notice.

Some software products marketed by SAP AG and its distributors contain proprietary software components of other software vendors.

SAP, R/3, xApps, xApp, SAP NetWeaver, Duet, SAP Business ByDesign, ByDesign, PartnerEdge and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP AG in Germany and in several other countries all over the world. All other product and service names mentioned and associated logos displayed are the trademarks of their respective companies. Data contained in this document serves informational purposes only. National product specifications may vary.

The information in this document is proprietary to SAP. This document is a preliminary version and not subject to your license agreement or any other agreement with SAP. This document contains only intended strategies, developments, and functionalities of the SAP® product and is not intended to be binding upon SAP to any particular course of business, product strategy, and/or development. SAP assumes no responsibility for errors or omissions in this document. SAP does not warrant the accuracy or completeness of the information, text, graphics, links, or other items contained within this material. This document is provided without a warranty of any kind, either express or implied, including but not limited to the implied warranties of merchantability, fitness for a particular purpose, or non-infringement.

SAP shall have no liability for damages of any kind including without limitation direct, special, indirect, or consequential damages that may result from the use of these materials. This limitation shall not apply in cases of intent or gross negligence.

The statutory liability for personal injury and defective products is not affected. SAP has no control over the information that you may access through the use of hot links contained in these materials and does not endorse your use of third-party Web pages nor provide any warranty whatsoever relating to third-party Web pages

Weitergabe und Vervielfältigung dieser Publikation oder von Teilen daraus sind, zu welchem Zweck und in welcher Form auch immer, ohne die ausdrückliche schriftliche Genehmigung durch SAP AG nicht gestattet. In dieser Publikation enthaltene Informationen können ohne vorherige Ankündigung geändert werden.

Einige von der SAP AG und deren Vertriebspartnern vertriebene Softwareprodukte können Softwarekomponenten umfassen, die Eigentum anderer Softwarehersteller sind.

SAP, R/3, xApps, xApp, SAP NetWeaver, Duet, SAP Business ByDesign, ByDesign, PartnerEdge und andere in diesem Dokument erwähnte SAP-Produkte und Services sowie die dazugehörigen Logos sind Marken oder eingetragene Marken der SAP AG in Deutschland und in mehreren anderen Ländern weltweit. Alle anderen in diesem Dokument erwähnten Namen von Produkten und Services sowie die damit verbundenen Firmenlogos sind Marken der jeweiligen Unternehmen. Die Angaben im Text sind unverbindlich und dienen lediglich zu Informationszwecken. Produkte können länderspezifische Unterschiede aufweisen.

Die in diesem Dokument enthaltenen Informationen sind Eigentum von SAP. Dieses Dokument ist eine Vorabversion und unterliegt nicht Ihrer Lizenzvereinbarung oder einer anderen Vereinbarung mit SAP. Dieses Dokument enthält nur vorgesehene Strategien, Entwicklungen und Funktionen des SAP®-Produkts und ist für SAP nicht bindend, einen bestimmten Geschäftsweg, eine Produktstrategie bzw. -entwicklung einzuschlagen. SAP übernimmt keine Verantwortung für Fehler oder Auslassungen in diesen Materialien. SAP garantiert nicht die Richtigkeit oder Vollständigkeit der Informationen, Texte, Grafiken, Links oder anderer in diesen Materialien enthaltenen Elemente. Diese Publikation wird ohne jegliche Gewähr, weder ausdrücklich noch stillschweigend, bereitgestellt. Dies gilt u. a., aber nicht ausschließlich, hinsichtlich der Gewährleistung der Marktgängigkeit und der Eignung für einen bestimmten Zweck sowie für die Gewährleistung der Nichtverletzung geltenden Rechts.

SAP übernimmt keine Haftung für Schäden jeglicher Art, einschließlich und ohne Einschränkung für direkte, spezielle, indirekte oder Folgeschäden im Zusammenhang mit der Verwendung dieser Unterlagen. Diese Einschränkung gilt nicht bei Vorsatz oder grober Fahrlässigkeit.

Die gesetzliche Haftung bei Personenschäden oder die Produkthaftung bleibt unberührt. Die Informationen, auf die Sie möglicherweise über die in diesem Material enthaltenen Hotlinks zugreifen, unterliegen nicht dem Einfluss von SAP, und SAP unterstützt nicht die Nutzung von Internetseiten Dritter durch Sie und gibt keinerlei Gewährleistungen oder Zusagen über Internetseiten Dritter ab.

Alle Rechte vorbehalten.