

3E Company Best Practices Web Seminar Series

Maximizing EH&S Value Creation Through Integration

**3E Company is the trusted global provider of
chemical, regulatory and compliance
information services**

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Jeff Gibbons – Director of Professional Services, 3E Company

- Responsible for Professional Services (East Region) for Ariel Managed Services
- Extensive experience in the process industry (Oil & Gas, Chemical Manufacturing) including the design, development and delivery of several EH&S systems projects.
- Previous Experience includes:
 - Accenture – Experienced Manager in Accenture’s Chemicals Client Group
 - Woodward-Clyde Consultants – Senior Staff Engineer with the environmental consulting firm
- BA in Applied Science and BS in Mechanical Engineering – LeHigh University
- Masters of Engineering Degree in Civil Engineering – University of Virginia

Richard Cervin – Director of Professional Services, 3E Company

- Responsible for Professional Services (West Region) for Ariel Managed Services
- Brings 16+ years experience in providing business and technology services to companies in the process industry (Oil & Gas, Chemical Manufacturing).
- Previous Experience includes:
 - Accenture – Associate Partner in Accenture’s Chemicals Industry Practice
 - Clients included: Dow Chemical, Exxon Chemical, Clariant, Monsanto, Halliburton and Compliant
 - Oracle Corporation – Oil & Gas Industry Director and Senior Practice Director for EH&S
 - Enron Corporation – Manager of Financial Analysis for their Treasury and Corporate Finance Departments
- BA in Economics – University of Texas at Austin
- Masters Degree in Economics – Michigan State University

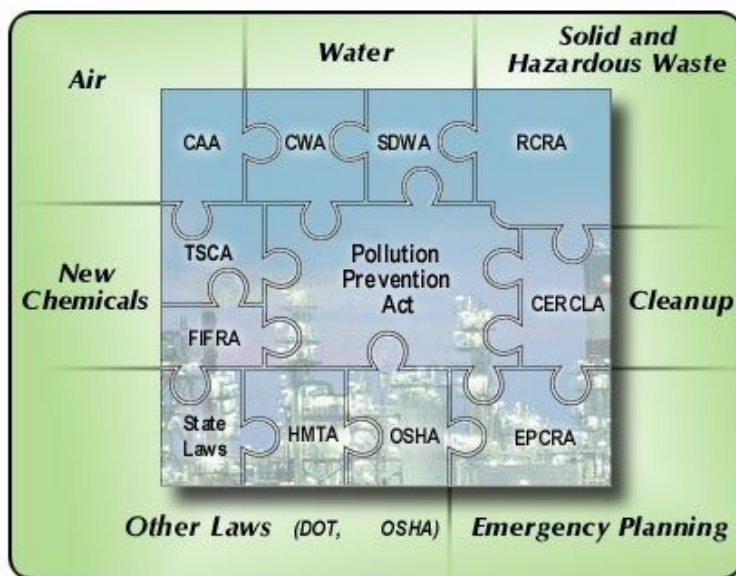
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Value Creation: A Discussion of Opportunities within EH&S

**3E Company is the trusted global provider of
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- **EH&S Challenges: Past and Present**
- **Common Issues inside the EH&S Function**
- **Our View of EH&S & Value Creation**
- **Opportunities in EH&S**
- **Case Studies**

Within the United States and the European Union, EH&S laws have created a puzzle of regulatory requirements which need to be pieced together to understand not only what a company needs to comply with, but also how they and their industries are affected.



USA EH&S regulatory framework



Main components of EU chemicals control and regulation strategy

Evidence over the last 25 years suggests that diverse regulatory measures can and do influence changes in industry structure, differences in cost of compliance; rate, and type of innovation; availability of opportunities, and evolution of certain industries.

Why Should We Focus On Environment, Health & Safety?

Across industrialized countries, the past six decades have seen the emergence of environmental laws that have grown in number and complexity over this time.

Year	Germany	United Kingdom	European Union	Japan	United States
1950's		<ul style="list-style-type: none"> • Clean Air Act • Pesticide Safety Precautions Scheme 			
1960's	<ul style="list-style-type: none"> • Detergent Law • Pesticides Law 	<ul style="list-style-type: none"> • Clean Air Act (amendment) 	<ul style="list-style-type: none"> • Directive on Dangerous Substances 	<ul style="list-style-type: none"> • Basic Law for Environmental Pollution Control • Air Pollution Control Law 	<ul style="list-style-type: none"> • Clean Air Act
1970's	<ul style="list-style-type: none"> • Environmental Program • Waste Disposal Law 	<ul style="list-style-type: none"> • Comprehensive Policy Statement • Deposit of Poisonous Waste Act • Control of Pollution Act 	<ul style="list-style-type: none"> • Directive on PCB 6th Amendment 	<ul style="list-style-type: none"> • Water Pollution Control Law Examination & Regulation of Chemical Laws • Air Pollution (amend) 	<ul style="list-style-type: none"> • Clean Water Act • FIFRA • RCRA • TSCA
1980's	<ul style="list-style-type: none"> • Chemicals Law 	<ul style="list-style-type: none"> • Control of Industrial Major Accident Hazards • Control of Substances Hazardous to Health • Water Act 	<ul style="list-style-type: none"> • Directive on Prevention of Major Accidents • Directive on Waste 	<ul style="list-style-type: none"> • Basic Law for Environmental Pollution Control (amend) • Protection of Ozone Layer 	<ul style="list-style-type: none"> • CERCLA • RCRA (amendment) • SARA
1990's		<ul style="list-style-type: none"> • Environmental Protection Act • Water Resources Act 	<ul style="list-style-type: none"> • Directive on Air Quality • Water Framework Dir. • Directive on Integrated Pollution Prevention and Control • Directive Hazard.Waste 	<ul style="list-style-type: none"> • Basic Law on the Environment 	<ul style="list-style-type: none"> • Clean Air Act (amendment)
2000's	<ul style="list-style-type: none"> • GHS • REACH 	<ul style="list-style-type: none"> • GHS • REACH 	<ul style="list-style-type: none"> • GHS • REACH 	<ul style="list-style-type: none"> • GHS • REACH 	<ul style="list-style-type: none"> • GHS • REACH • Homeland Security

We also see the opposite effect -- significant evidence exists of the business impacts of environmental regulation on industry...

Environmental Regulatory Requirements Impacts on Industry

“Industry Impacts”

- Industry Structure
- Differences in Cost of Compliance
- Rate and Type of Innovation
- Availability of Opportunities
- Evolution Rates of Industries



Categories of Evidence of Effects from Environmental Regulatory Requirements

“Evidence of Impacts”

- Environmental liability impacts on M&A decisions; entry deterrent effects of pollution abatement standards
- Cost of compliance decreases with firm size; smaller manufacturers incapable of installing expensive sunk-cost pollution control equipment; cost of environmental liability & cleanup could surpass the value of assets of small companies
- New products; cross-functional cooperation on entry into new markets
- Industry sectors with diminishing markets more likely to relocate or invest abroad when faced with greater regulation
- Differences in national and regional approaches to regulation have affected the performance of individual sectors in the US, Germany, United Kingdom and Japan

The rise of the regulatory governance grew out of the impacts to the environment associated both with manufacturing operations and with ‘downstream’ use of the finished products.

For example, the major classes of processes typically carried out by refineries can be categorized as follows:

- Desalting
- Distillation
- Reforming and extraction (a wide variety of operations)
- Waste recovery and treatment

EH&S Impacts associated with these manufacturing operations include:

<p>Air:</p> <p>Volatile hydrocarbons from crude oil</p> <p>SOx from crude oil and process heat</p> <p>NOx and particulates from process heat</p> <p>H2S from sulfur recover operations</p> <p>About 75% of total TRI emissions by weight is released to air</p>	<p>Water:</p> <p>Process wastewater from desalting, distillation, cracking, and reforming operations</p> <p>Large quantities of cooling water</p> <p>About 24% of total TRI emissions is released to wastewater</p>	<p>Solids:</p> <p>Desalter sludges</p> <p>Spent catalysts</p> <p>Other process sludges</p> <p>Storage tank bottoms</p>	<p>Global Warming:</p> <p>Refining is an energy-intensive operation;</p> <p>most of the energy is consumed as process heat generated from refining by-products</p> <p>Little prospect for replacement of process energy by renewable or non-CO2-intensive sources</p>
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Other: Hydrocarbon spills from leaking storage tanks and pipes, and during receiving and shipping operations

... and the business impact from new regulatory initiatives has yet to be determined.

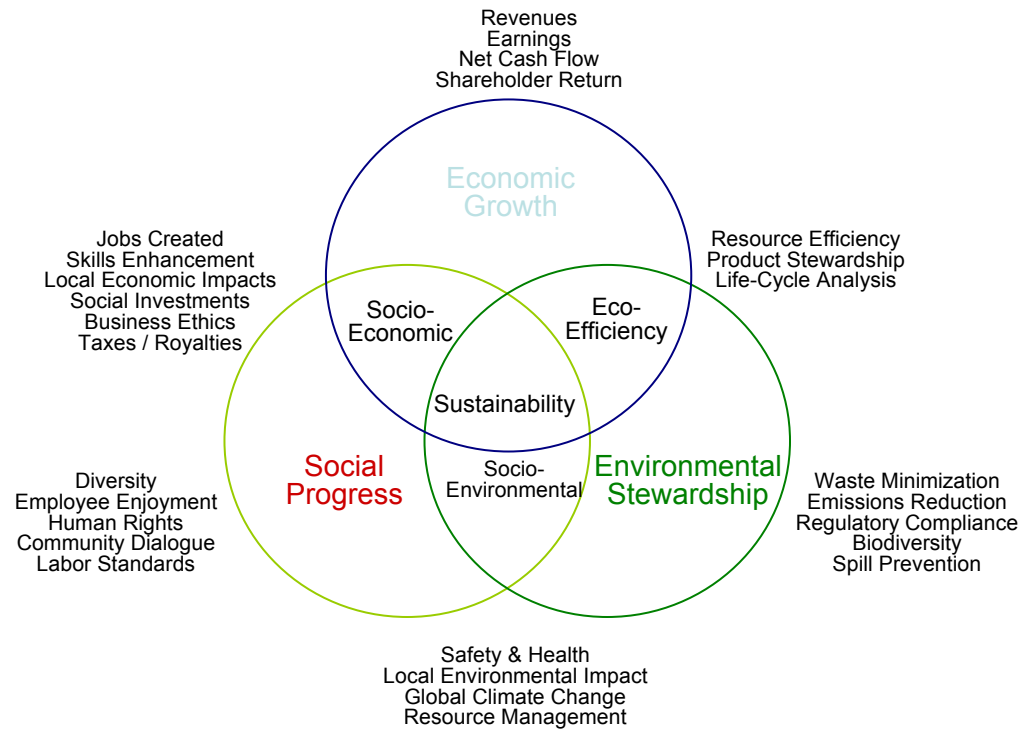
- Looming programs with global impact:
 - New Regulatory Requirements: GHS and REACH
 - Track and trace of hazardous substances
- Homeland Security:
 - Increase in transportation enforcements
 - Heightened security and monitoring at border crossings
 - Tighter partnership between US Customs and EPA



EPA and environmental agencies from Arizona and Mexico demonstrated state-of-the-art technologies for estimating truck emissions at the Border 2012 National Coordinators Meeting

There are key challenges ahead for Oil & Gas Companies *

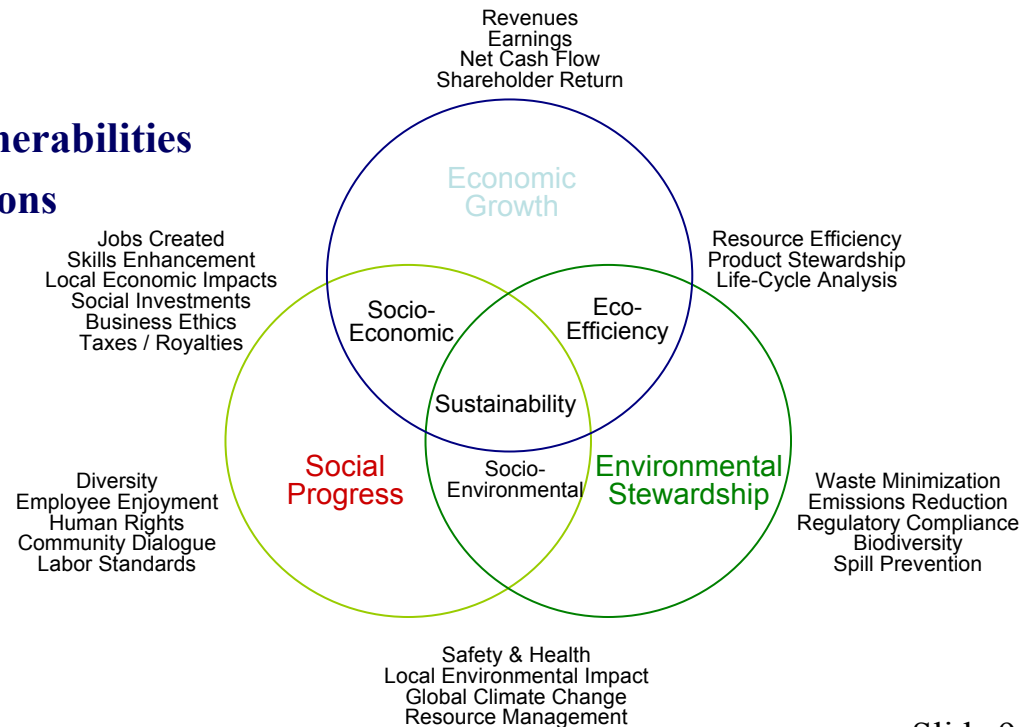
- **Loss of Biodiversity from Oil & Gas operations**
- **Impact on Global Climate**
- **Health Management**
- **Oil Spill Prevention & Response**
- **Product Stewardship**
- **Safety**
- **Urban Air Quality**
- **Waste Management**
- **Water Management**



* IPICA, OGP - 2002

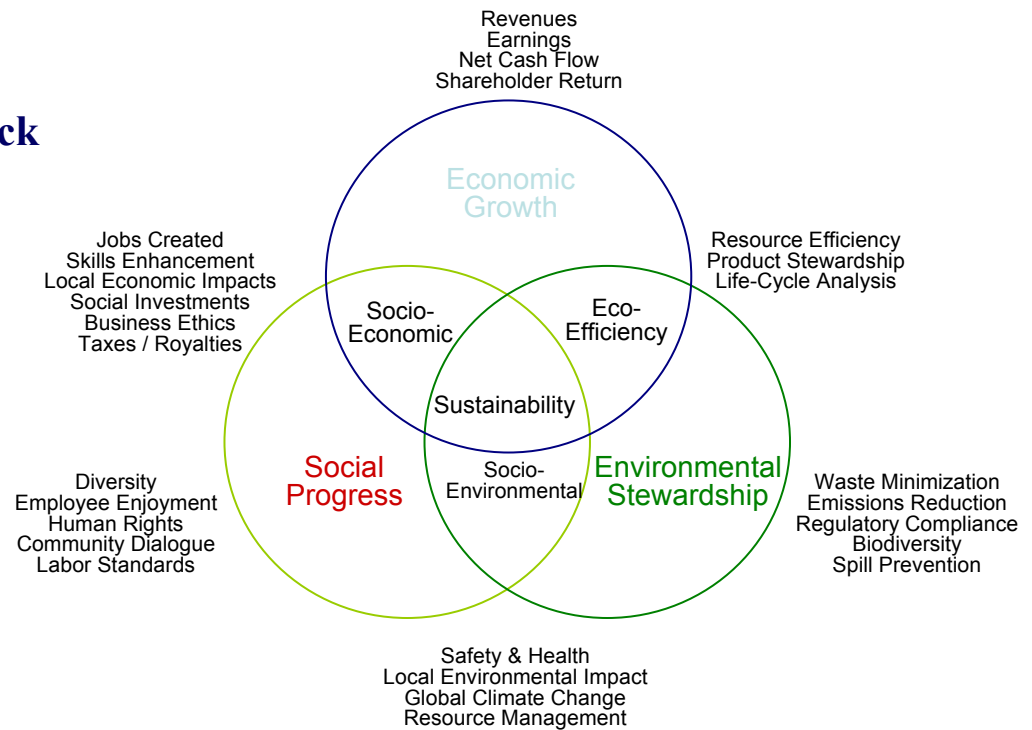
There are key challenges ahead for Chemical Companies

- **Loss of Expertise / Knowledge from Aging Workforce**
- **Responding to New Regulatory Requirements**
- **Efficient Product Stewardship**
- **Safety**
- **Security & Chemical Terrorism Vulnerabilities**
- **Supporting Raw Material Introductions**
- **From/In Developing Regions**
- **Urban Air Quality**
- **Waste Management**



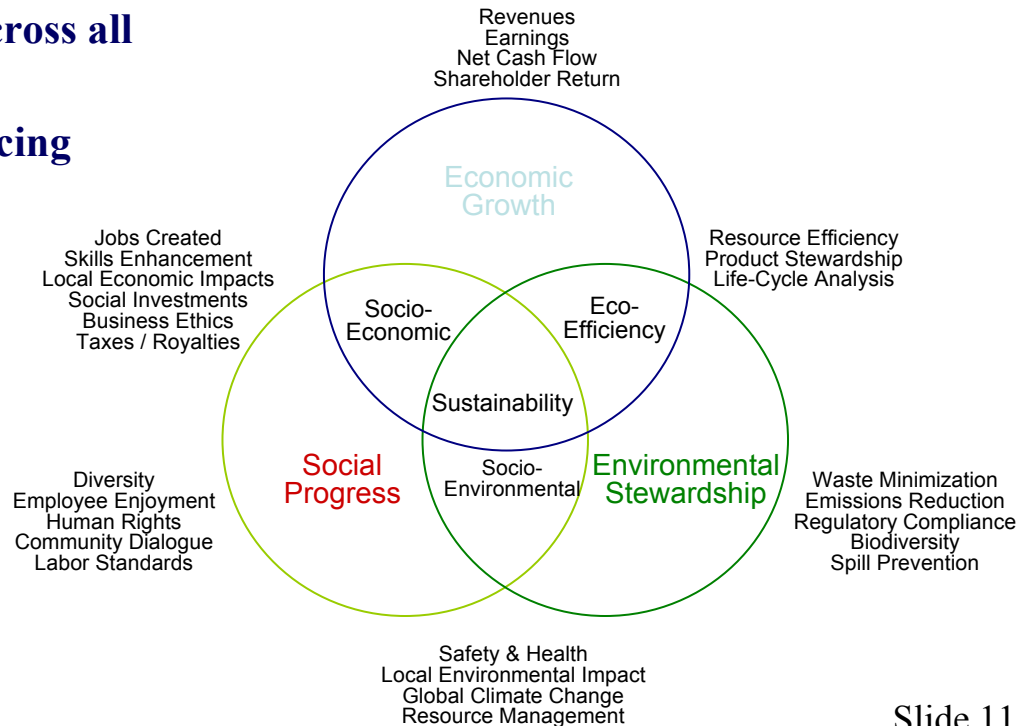
There are key challenges ahead for Utility Companies

- **Large Chemical Volumes with Multiple Hazards**
- **Regulatory Pressure**
- **Decentralization of Operations (Lack of Technical & Process Expertise)**
- **Aging Workforce (Loss of Knowledge Base)**
- **Current Security Concerns with Heightened Requirements**
- **Internal Competition for Dollars**



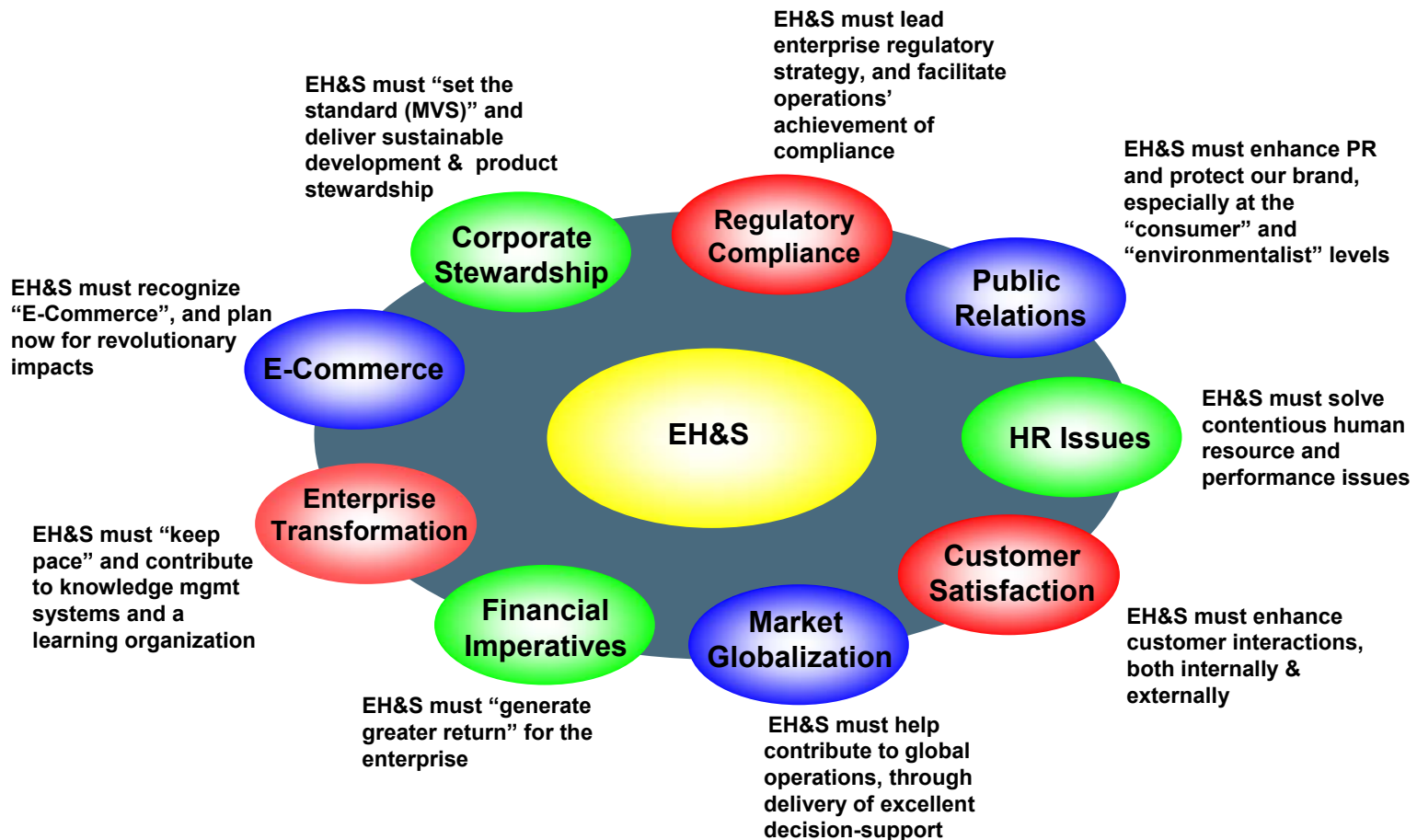
There are key challenges ahead for Retailers and Distributors

- **Media Attention of Significant Incidents**
- **Brand Damage**
- **Understanding of Requirements Across all Locations**
- **Efficient EH&S execution (outsourcing EH&S activities to 3rd parties)**
- **Lack of Requisite EH&S Expertise**
- **Increased Regulatory Burden for Transportation**



- **EH&S Challenges: Past and Present**
- **Common Issues inside the EH&S Function**
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A large number of EH&S stakeholders means the potential for numerous issues, and many opportunities for improvement.



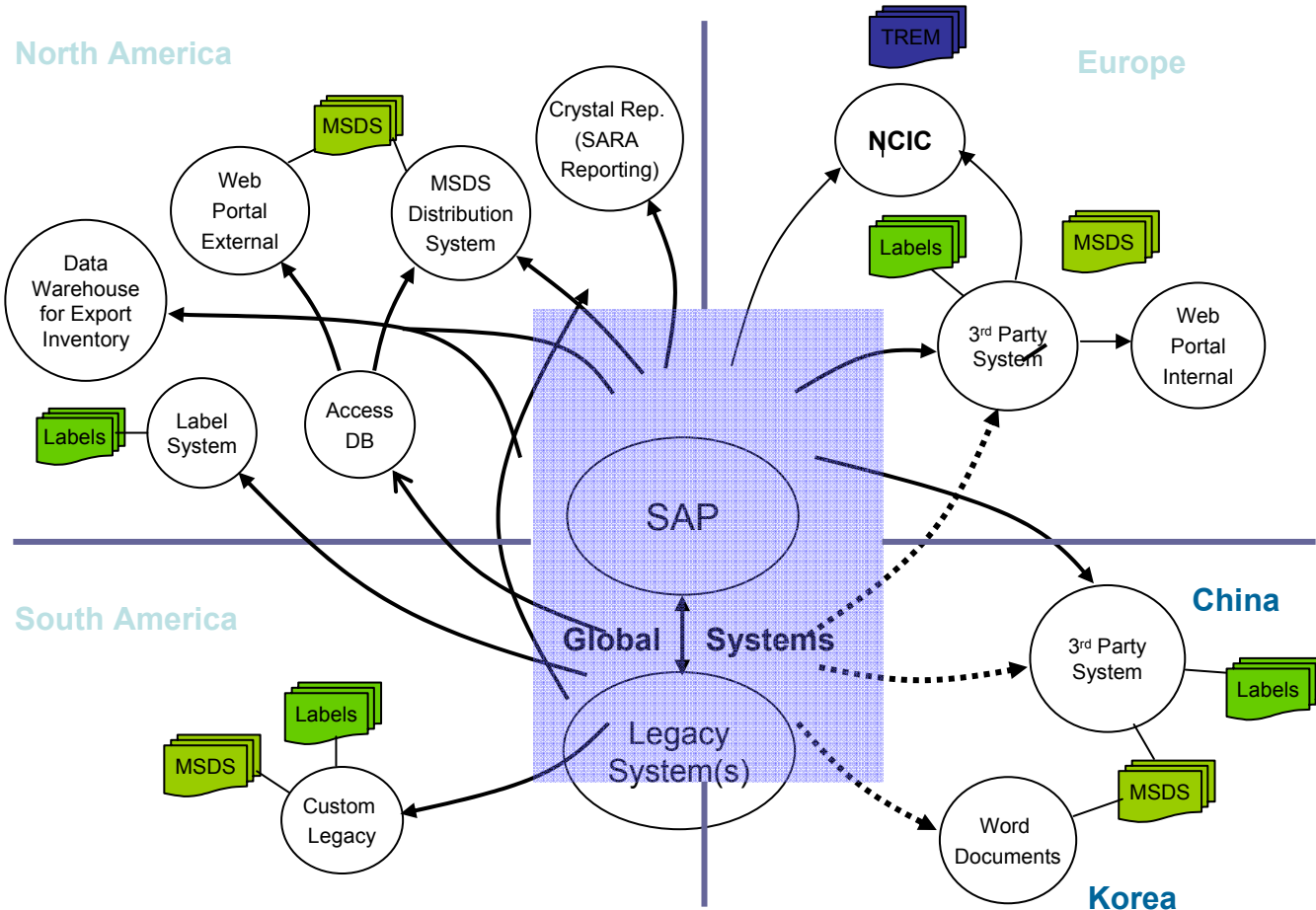
Given the issues which EH&S organizations have experienced and categorized, our perspective is that these challenges can be best viewed against the seven primary components that comprise a business capability.

Component	Example Issue	Reason for Issue
Strategy	Consideration of sustainable development, EH&S risk, and opportunities are disconnected from the core business planning process	<ul style="list-style-type: none"> • Lack of board discussion on the implications of sustainable development for the business • Reluctance to go beyond regulatory compliance • No EH&S elements to strategic sourcing initiatives
Process	Many EH&S processes are not standardized within or across geographical regions	<ul style="list-style-type: none"> • Resources performing functions in EH&S areas are not dedicated to these tasks; focus is reactive, as opposed to proactive • Business drivers affect how often certain processes are executed • Business Units and corporate EH&S do not agree on extent of standardization of EH&S processes across geographies
Organization	High loss of knowledge and skills of current EH&S workforce	<ul style="list-style-type: none"> • Skilled EH&S professionals are retiring from the workforce • Effective knowledge management processes are not in place • Materials that are globally applicable are not developed in a style or format that facilitates efficient localization
Technology	Medium-term to long-term EH&S System Architectures do not exist	<ul style="list-style-type: none"> • Existing systems tend to be fragmented and standalone • The current crop of EH&S software vendors is too small and under-funded to support complex authoring, reporting, content and material-tracking needs of global corporations

Given the issues which EH&S organizations have experienced and categorized, our perspective is that these challenges can be best viewed against the seven primary components that comprise a business capability.

Component	Example Issue	Reason for Issue
Culture	More than one 'face' for corporate behavior	<ul style="list-style-type: none">• Lack of a corporate policy signed by CEO and agreed at board level• Reluctance to go beyond regulatory compliance• EH&S is a 'necessary evil'• Strong objections to increasing requirements for broader risk disclosure
Performance Measures	A lack of non-financial performance information	<ul style="list-style-type: none">• Reluctance to use 'soft' measures• Performance measures have not been updated beyond tangible metrics (to reflect emphasis on sustainability and risk management; use of environmental management systems as benchmarks of environmental performance)
Location	Facilities were acquired with unknown environmental, asbestos and other liabilities	<ul style="list-style-type: none">• EH&S considerations are not reflected in strategic sourcing• EH&S professionals were not engaged in specific acquisition and due diligence processes

Regional requirements and Business Unit autonomy has resulted in considerable challenges from a global IT perspective.



IT Challenges

- “Home Grown” Systems
- Vendor Point Solutions
- Products not Matured to be True Management Systems
- New Technologies Require Supporting Infrastructure / Technical Architectures
- Content Management
- Data Privacy Concerns vs Global Applications
- Enterprise Integration is Key (Process & I/T)

1

Yo! Can I get a couple drums of that Blue Stuff? And can you ship that directly to my plant in Brazil, by next Friday?

Sure thing, dude. Let me just key that into my SAP system here. I'll source that from Texas...OK man, your order has been confirmed.

Yeah, baby! Another sale...

Customer **CSR**

3

...or, even worse...

What is this doing here? Somebody get the manufacturer on the phone and get 'em down here to pick this stuff up...Blue Stuff is not registered in Brazil.

Customs - Brazil

2

Meanwhile, back in the enabling business function of Regulatory Compliance...

Yikes! We haven't registered Blue Stuff in Brazil! No way the customer's getting that shipment by next Friday.

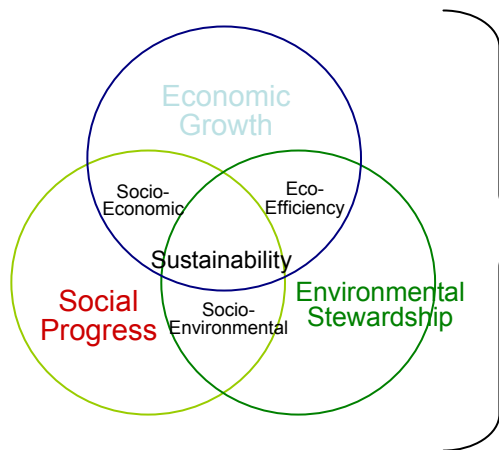
What?! I can't make that much Blue Stuff here without modifying our local and state permits.

Regulatory - Corporate **Regulatory - Site (Texas)**

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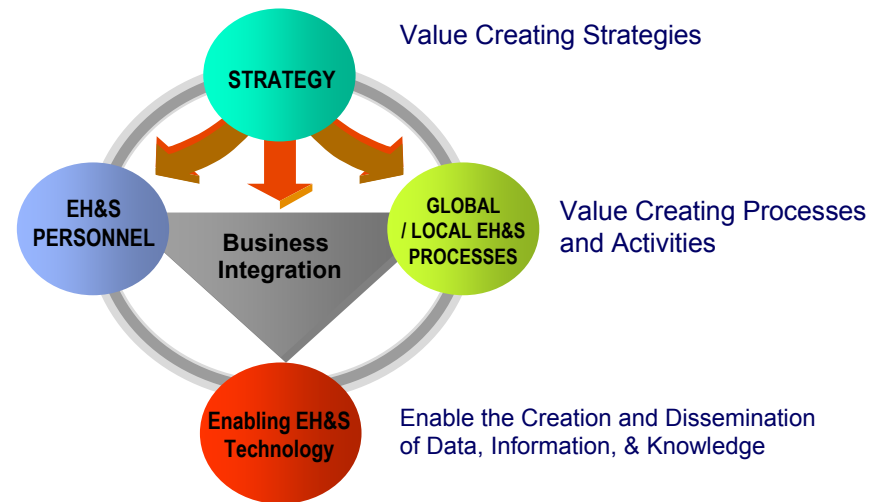
EH&S can respond by creating *value* for the organization through the execution of activities that are aligned with, and support, the overall strategies of the company.

Successful companies use appropriate value drivers to efficiently execute these strategies.

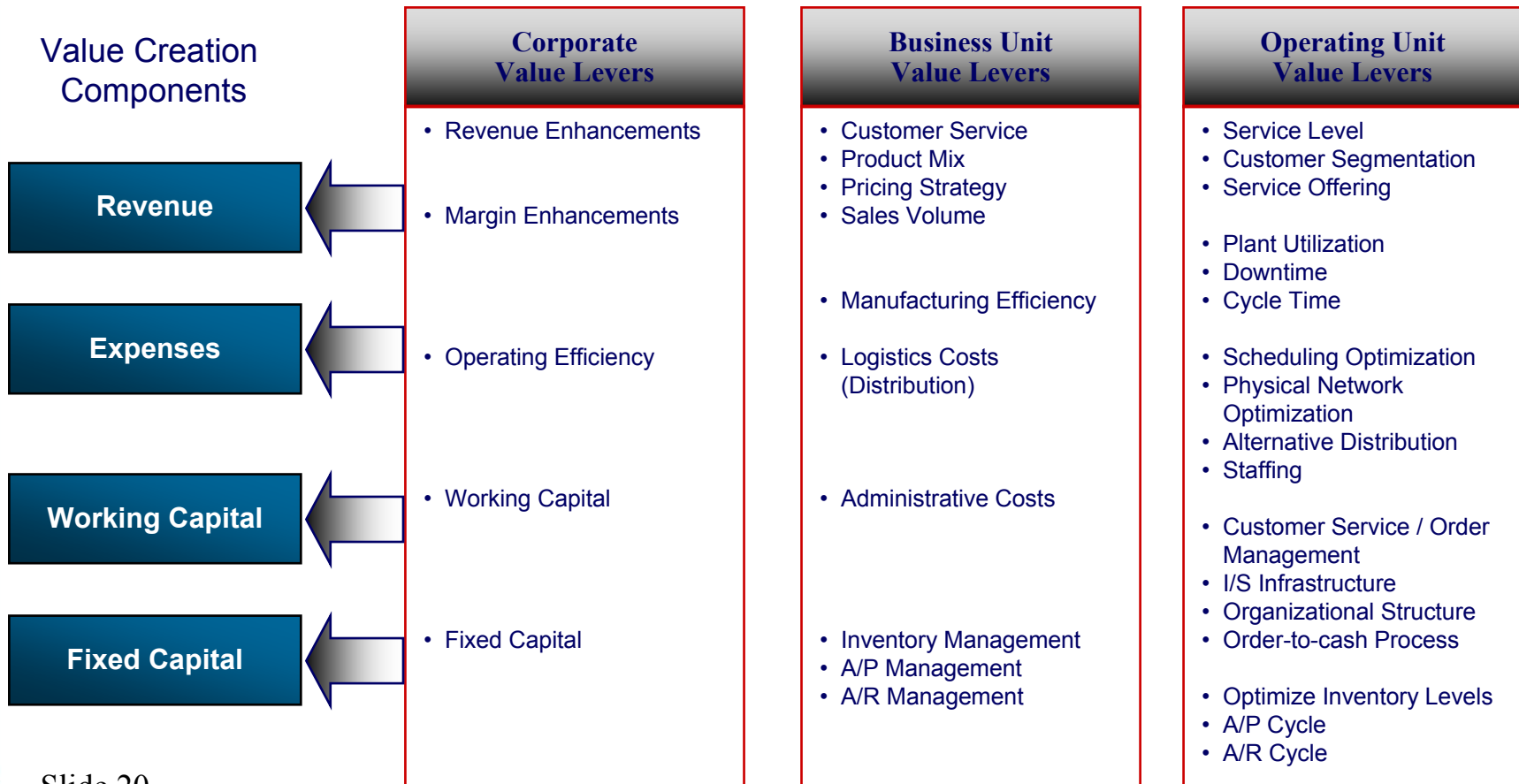


External & Internal Goals

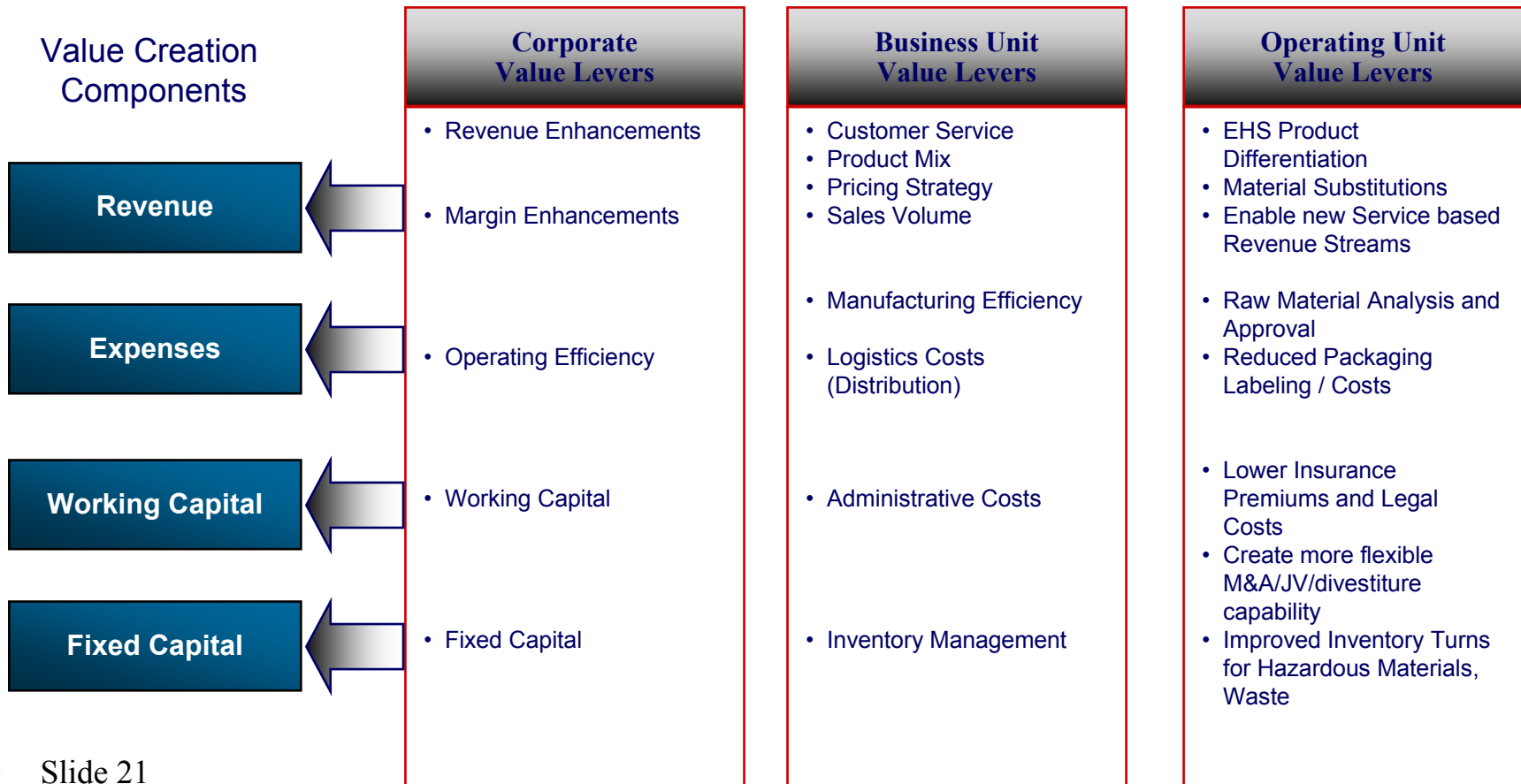
A Skilled, Learning Organization Which Reflects the Company's Values



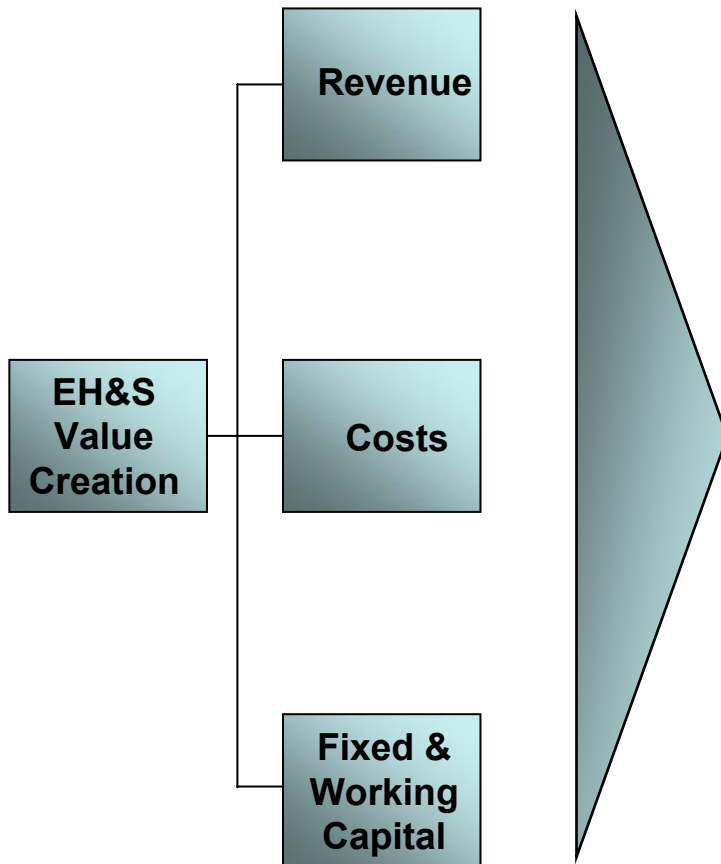
Value creation components (revenue, expenses, working capital, fixed capital) can be impacted considerably by focusing on key value levers.



There are key value creating levers for EH&S to drive change and improve business performance.



Within EH&S, there are several trends in value creating opportunities that companies are beginning to undertake.

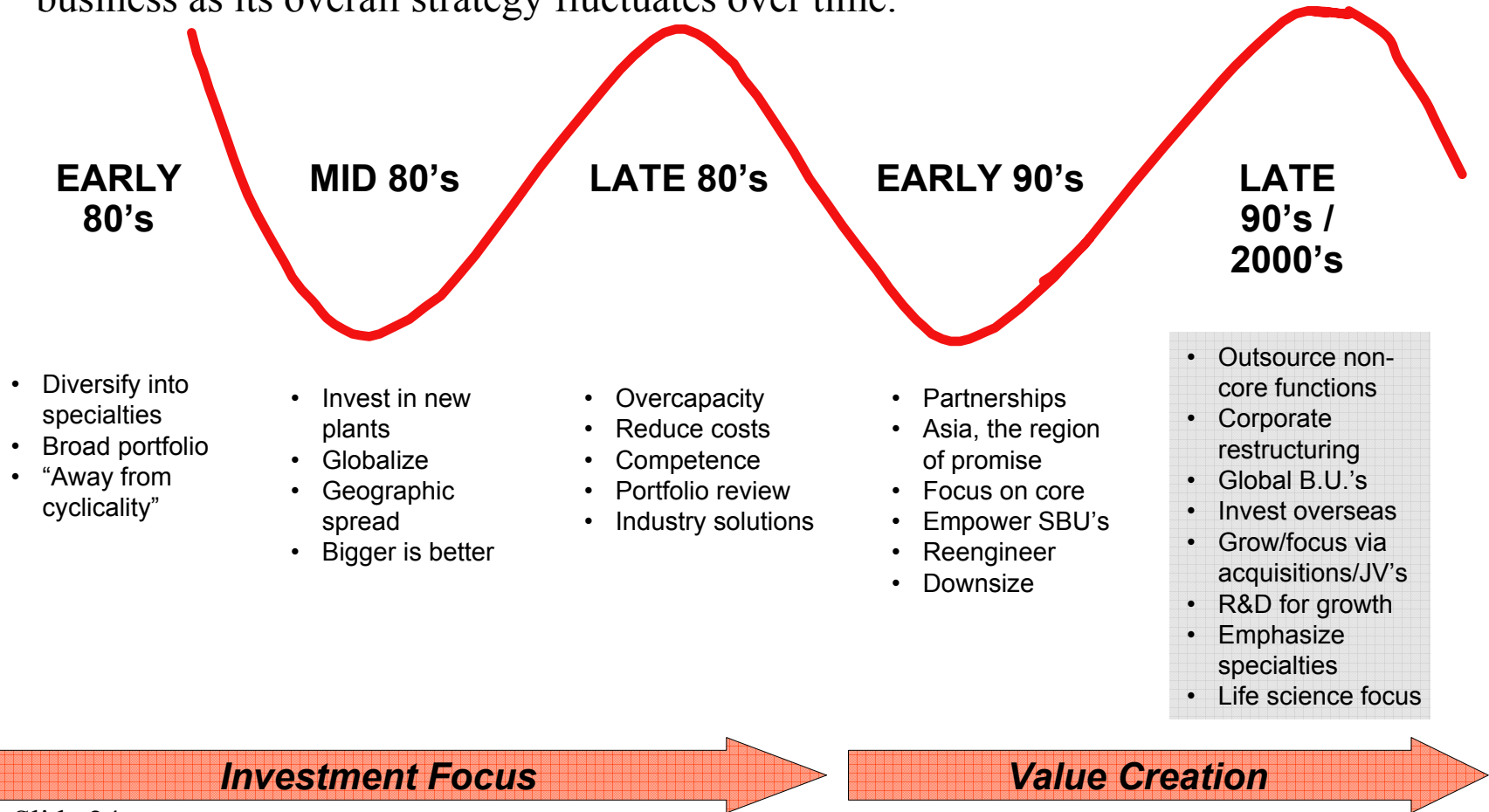


- **Establish Global EH&S Management Systems & Operating Models**
- **Improve integration and proactive engagement of EH&S into Core Business Processes**
- **Increase standardization of risks, data, systems, and processes into consistent EH&S IT & Process Architectures**
 - Facility Level Air, Water, Waste & Chemicals Management
 - Regulatory Requirements & Compliance
 - Product Stewardship & HazCom
 - Personnel Related, IH, OH
- **Inbound Materials Management & Hazard Classification**
- **Laboratory Chemical Information Management Systems**
- **“Total Chemical Management” Services**
- **Organizational Economies of Scale & Outsourcing**
- **Material substitution to minimize the use of hazardous materials, and their time in the supply chain**

For example, the value levers which chemical manufacturers execute will vary depending on the business model chosen by that company in a given industry segment.

- **A business model chosen for a specialty chemical company will stress those levers which are more relevant than others. Potential business models for a specialty chemical company include:**
 - New Product Developer
 - Applications Developer
 - Systems / Solutions Provider
 - Process Technologist
 - Value-chain Integrator
 - Low-cost Producer
- **For example, a ‘New Product Developer’ will develop innovative chemicals or formulations that provide additional product performance benefits, or that are lower cost-in-use than the current alternatives. In this case, EH&S can be involved in identifying appropriate material substitutions and relevant information to help product pricing strategies (‘greener products’).**
- **A ‘Low-cost Producer’ will produce ‘specialty’ chemicals at the lowest cost and provide those chemicals to customers at attractive prices. EH&S organizations may focus on those activities which lower energy usage; lower disposal costs; and participation in the execution of exit strategies for less profitable plants.**

EH&S capabilities and programs will need to adjust and align with the core business as its overall strategy fluctuates over time.



Focusing on key EH&S levers typically require close and formal business integration.

Example: [Raw Material Introductions](#)

Stakeholders	Issues	Desired Outcomes
<ul style="list-style-type: none">▪ Sales▪ Formulators▪ Purchasing▪ Product Compliance (EHS)▪ Plant EHS▪ Supplier	<ul style="list-style-type: none">▪ Formulator perceived as only resource to obtain raw material information from supplier▪ Entry and exit criteria for Purchasing and EHS involvement is not defined▪ Data requested of suppliers varies across SBU and geography▪ Supplier may not be capable or unwilling to provide all requested information▪ Indexing, scanning and data entry is perceived to be a corporate responsibility that was pushed out to the sites▪ Elapsed cycle time is not being measured and / or reported▪ Clear process owner not established	<ul style="list-style-type: none">▪ Formalized process with identified owner▪ Greater and Earlier Participation By Purchasing & EHS▪ Full review of formulator's desire to use a new raw material▪ Multiple potential suppliers are identified and reviewed▪ Early communications to stakeholders that a new raw material is being requested for specific purposes▪ Centralized Indexing and Scanning of Raw Material Documents – Possible Outsourced▪ Plant Environmental will review the MOC and identify any concerns. Similarly, Health/Medical and Safety will perform their own review

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Many organizations have identified opportunities where EH&S can provide or increase business value to organizations.

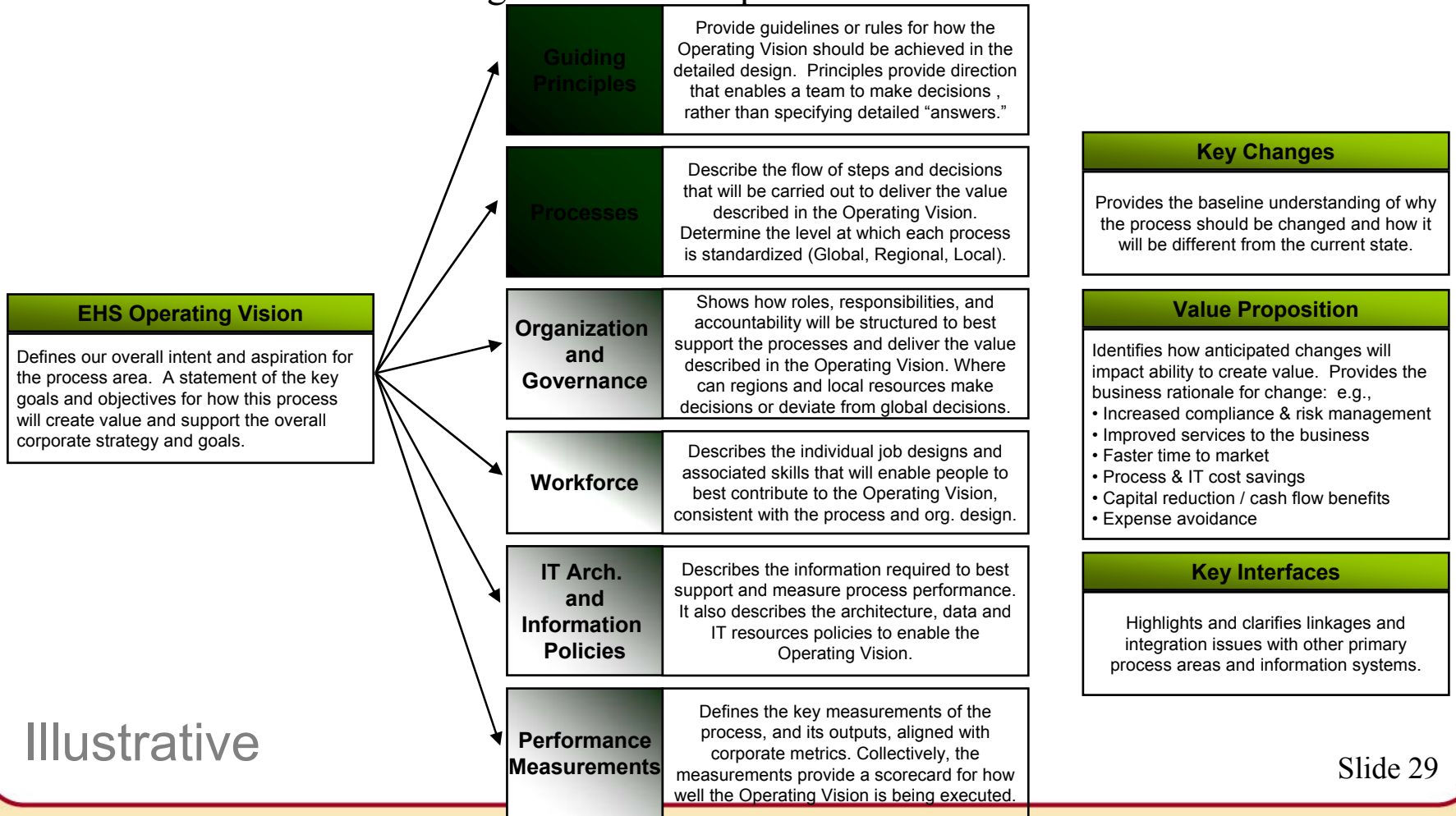
Strategic Direction	Product Mix, Redefinition and Expansion of Markets, Business Mission
Market Growth	Supplier Relationships, Enhancement of Environmental Attributes of Products, Corporate and Brand Image
Capital Investments	Reduction in the Uncertainty of Corporate Transactions, Reduced Time to Market, Encourage Sustainable Design in Construction, Affect Equipment Acquisition Decisions
Risk Management	Reduce the Costs of Emergency Response, Reduce Remediation Costs, Reduce Product Liability Costs, Reduce Insurance Premiums
Operations	Improve the Efficiency of Resource Use, Minimize Wastes, Reduce the Costs of Managing Hazards, Spur Process Innovation and Reduce Maintenance Costs, Boost Productivity
Compliance	Obtaining License to Operate, Avoidance of Penalties, Flexibility

Defining a Global EH&S Management System sets the vision, priorities, and scope for improvements.

Illustrative

Leadership and Management			
Leadership and Excellence	Management System Elements	Product Stewardship	Sustainable Development
General EH&S Programs			
EHS Risk Assessment & Management	Emergency Planning & Response	Operational Control	Audit Performance Monitoring & Reporting
Business Processes			
New Product Development & Supply	Facility, Engineering & Process Change	Procurement Contract Manufacturing	Loss Prevention Business, Product & Property Transactions
Employee Health <ul style="list-style-type: none"> • Food Services & Drinking Water • Health Surveillance • Ergonomics & the Workplace Environment • Drugs & Alcohol in the Workplace 	Environmental Risks <ul style="list-style-type: none"> • Waste Minimization & Recycling • Packaging of Products & Environmental Claims • Waste Management • Water Management • Management of Emissions to Air • Ozone depleting Substances 	Hazardous Activities <ul style="list-style-type: none"> • Process Risk Management • Transportation of Materials & Products • Storage of Materials • Use of Work Equipment • Use of PPE • Occupational Travel 	Hazardous Agents <ul style="list-style-type: none"> • Material Hazard Identification & Comm • Occupational & Environmental Exposure Limits • Chemical Agents • Biological Agents • Flammable Liquids & Gases & Combustible Dusts

The definition, alignment and execution of the appropriate Global EH&S Operating Model is critical to obtaining the desired improvements.



Illustrative

The strategic EH&S Operating Models for most global corporations can generally fit into one of the following three categories:

Loose Consortium Model

- Regional processes and technology
- Business Unit or Product Line focused processes and technology
- Regional / local budgets, resources, decision making
- ‘Global’ reporting via data warehouse and/or common portal

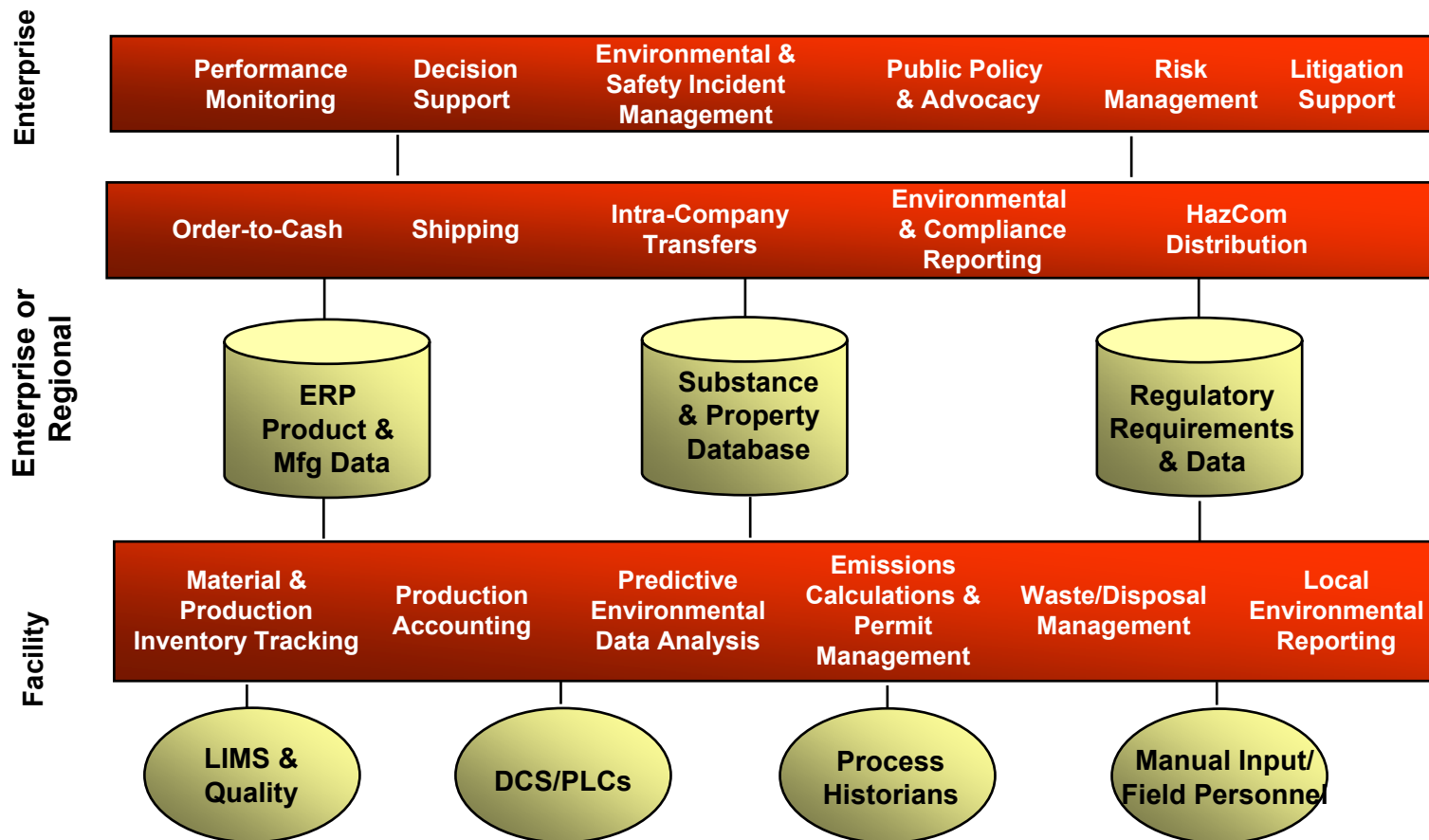
Federalist Model

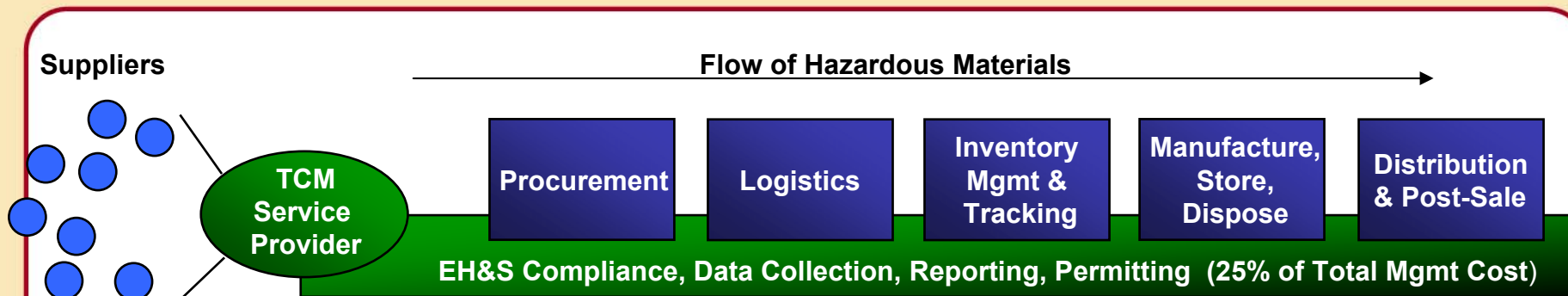
- Global standards (e.g., technology, phrase libraries, templates)
- Some level of global governance and cost management
- Regional / local execution and governance, empowered by corporate organization
- Potential global ‘Shared Services’ or ‘Center of Excellence’ EHS organization

True Global Model

- Standard, global business processes; deviations requiring approval, and only on exception basis, where critical to the business
- Standard, global technology enablers
- Global governance and enforcement

Defining and moving to a coherent and scalable IT architecture can drive 30%+ reductions in operating expenses.





- Supplier Selection & Performance Mgmt
- Supplier MSDS Mgmt
- Re-Classification of Hazards
- Convert Documents to Data
- Integrate Data into Customer Systems
- Validate Sales Orders for Compliance
- Ensure Safe Handling Procedures
- Identify Substitute & Alternative Materials
- EHS "Total-Cost-Of-Ownership" Determination
- Communicate "Downstream Use" Information
- Provide Audit Services
- Perform Customer Risk Assessments
- Obtain, Manage, Report on Product Registrations & Regulatory Requirements
- Import/Export Compliance
- Tank/Container Permitting
- Product/Container Compatibility & Safe Handling
- Security Enhancements
- Incident Management & Reporting
- Chemical Inventory Tracking & Reporting
- Exposure Tracking
- Sampling and Other Data Collection
- Air, Water, Waste Permitting & Reporting
- Disposal Planning & Coordination
- Decision Support for Yield Optimization
- EHS Cost Accounting
- Product Labeling
- Warehouse, Tank & Storage Permitting
- Finished Goods MSDS Authoring & Distribution
- Safe Handling procedures
- Litigation Support
- Recalls
- Recycling & End-of-Life Support
- Marketing, Advertising & Consumer-related Compliance

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A multi-national chemical manufacturer has committed to research initiatives that add business value while reducing its environmental footprint.

- Two scientists have announced their findings from developing an innovative process for converting hydrocarbons to fluorocarbons – without generating waste. In reducing environmental impact through an alternate synthesis route, the process generates water as the byproduct. The alternate synthesis process uses principles of inorganic chemistry to produce fluorinated aromatics in both environmentally – and economically – efficient manners (opening the door to industrial scale production of fluoroaromatics with minimal waste). Fluorinated aromatics are widely used in the synthesis of pharmaceuticals and agrochemicals
- The company is developing a bacterial fermentation process to produce aromatic monomers from dextrose derived from corn. The reaction is safer and has a yield equal to greater than traditional chemical routes *
- **This organization’s goal is to make 25% of its products using renewable materials by 2015 ***



A major manufacturer of industrial gases included safety and compliance as key value areas to be addressed with the implementation of a bar code based tracking application to improve the management of their fleet of compressed gas cylinders.

- Cylinder Tracking is a bar code based tracking application, integrated into the company's SAP Enterprise Resource Planning system. The purpose of Cylinder Tracking is to create visibility of pressurized cylinders as they are filled, stored, delivered, and returned throughout the supply chain. The solution also enhances safety and compliance in 2 key areas: Cylinder Testing Cycle and Gas Compatibility. The Cylinder Tracking database maintains a record, by date, of which cylinders need to be tested prior to being refilled. During the fill process as the cylinders are scanned, operators are alerted to 'expired' cylinders that need to be retested.
- The solution also monitors Gas Compatibility at the fill stations by comparing the previous contents of the cylinder with the new gas about to be introduced. If the new gas at the manifold does not match the previous contents of the cylinder, the manifold is automatically deactivated.

A major retailer established a standard, scalable Waste Management capability in order to deliver consistent and compliant Waste Management support through continued consolidation of the retail sector.

- From an EH&S perspective, the execution of the company's acquisition strategy resulted in disjointed and inconsistent hazardous and waste management processes across locations – and some locations did not implement any procedures at all.
- By defining and implementing standard processes to service needs across locations and business units, developing waste classification guidelines, and establishing accountability at each location, the company was able to:
 - Gain Consistency
 - Establish Standard Pricing
 - Achieve Uniform Compliance Across Locations
 - Minimize Long Term Liabilities
 - Minimize Fines & Penalties

Agricultural Products Manufacturer

Corporate EH&S partnered with the Ag Group to design the product labeling process along three dimensions: Business Process, People and Information Technology. Worked with Ag IS Team to design and implement a Lotus Notes-based solution to manage work, control priorities and organize documents/labels. As the implementation of the redesigned process and system was being completed, detailed knowledge regarding the system and processes was documented and transferred to key client personnel. Ownership for the process was passed to the users while the system ownership was given to Ag IS.

Electrical Utility Company

Lack of sourcing protocols contributed to inventory bulge, multiple suppliers of the same hazardous material, and increased the cost to manage compliance & safety. Through a strategic sourcing re-engineering program that included a rationalization of suppliers and facility-level enforcement, the company was able to reduce chemical inventories and costs, decrease costs associated with health and safety training, and lower their EH&S risk profile. EH&S played a key role in helping select and certify suppliers based on their EH&S performance, as opposed to just the cost of their products.

Specialty Polymer Producer

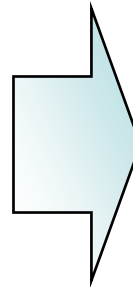
Implemented new business practices, procedures and technology to drive business benefits. Rollouts included implementation of Environment, Safety, Health and Training along with materials management and supervisory control functionality as one initiative over a 3-year time frame. The specific ESH&T functionality included a molecular substance database integrated with SARA reporting, label and MSDS generation, as well as tracking of OSHA recordables and medical surveillance information.

Background:

- Desire to optimize SAP-EHS implementation
- Estimated 4200 hrs & 21 months of work
- Required over 100 expert rules

Scope of Services:

- Compose, manage & maintain globally compliant documents for MSDS, Labels, and Hazardous Materials Transportation
- Update global Regulatory Databases on a Quarterly basis
- Manage and maintain Safety Phrases and Translation Libraries; perform requested document translations
- Manage & provide IT services to meet EH&S requirements (SAP).
- Begin assisting in Site Environmental Materials & Emissions Management



Results to Date:

- Recurring 30%+ cost savings by outsourcing of MSDS/Label/DG/Regulatory Update/ and Phrase Library management and maintenance
- Avoided \$1MM+ in cost by implementing Global Regulatory Rules in 25% less time than the organization had planned with their own internal resources
- Significant increase in Breadth of Coverage & Compliance in WEU, EEU, A-P, and LA.
- Significant increase in MSDS quality and consistency on a global basis
- MSDS & Label turn-around-time reduced by 70%+
- Commercialization Process Cycle Time:
Senior V.P and Chief Technology Officer:
"... the impact on our Commercialization Process Cycle time is the single, most significant improvement observed in the last 22 years associated with our organization's technology operations ...".

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