



Chemical Strategies Partnership

A Project of the Trust for Conservation Innovation

# Chemical Management Services: a supply-chain approach to reducing chemical use

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# What is the Chemical Strategies Partnership?

- The Chemical Strategies Partnership (CSP) is a non-profit project funded by foundations, government, and private companies
- CSP is helping to promote the economic and environmental benefits of chemical management services (CMS)

## CSP Mission

**To reduce chemical use, waste, and cost through transformation of the chemical supply chain**

# Chemical Strategies Partnership (CSP)

## Funders

- Foundations
- Government
- CMS Forum companies

CSP

## CSP Pilot companies

- Raytheon Company
- Nortel
- Seagate Technology
- Analog Devices
- SLAC-Stanford/DOE lab
- Dartmouth College
- UC Merced
- Hyundai Motor Company
- Metal-working co's.

## CMS Forum

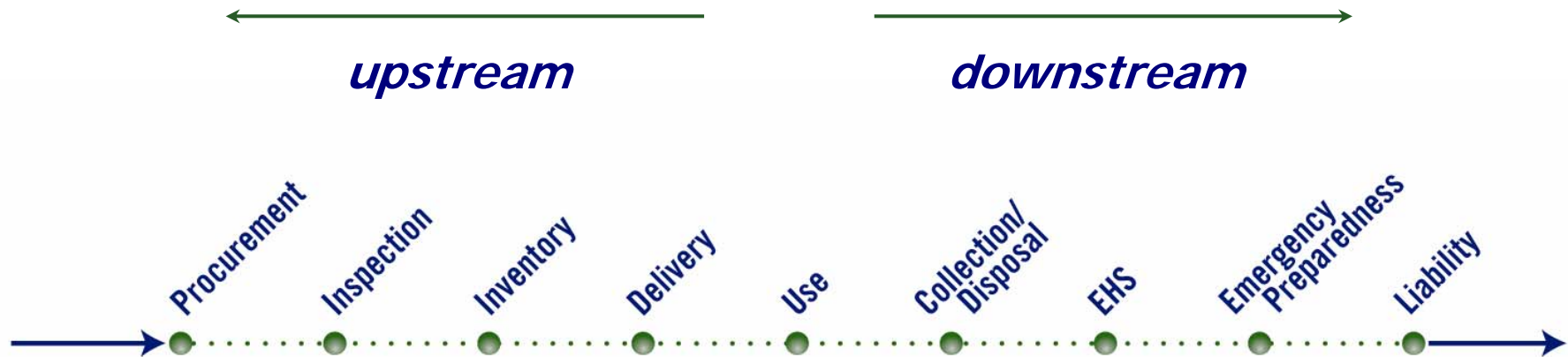
- Tier I CMS Providers
- Tier II suppliers
- Customer Co's
- Other stakeholders

## Chemical Management Services (CMS) is a market-based approach to reducing chemical use and costs

- A strategic, long-term relationship in which a customer contracts with a service provider to supply and manage the customer's chemicals and related services
- The provider's compensation is tied primarily to quantity and quality of services delivered, not chemical volume
- Goes beyond invoicing and delivering product; CMS optimizes processes and continuously reduces chemical lifecycle costs, risk, and environmental impact
- These chemical services are often performed more effectively and at a lower cost than companies can do by themselves

# CMS...managing the entire chemical lifecycle

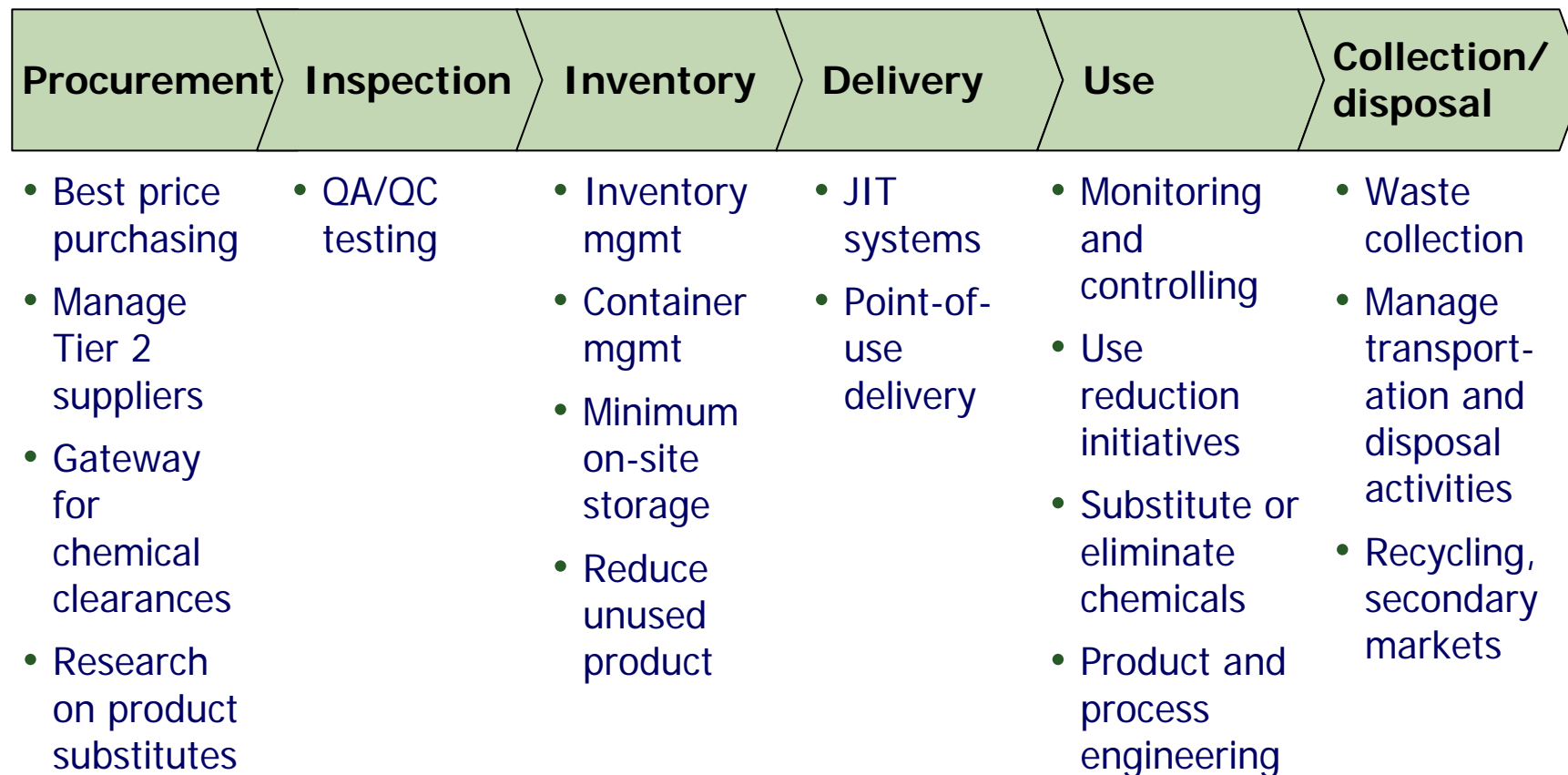
## The Chemical Lifecycle



Chemical management can cost up to \$3 for every \$1 of chemical purchased.

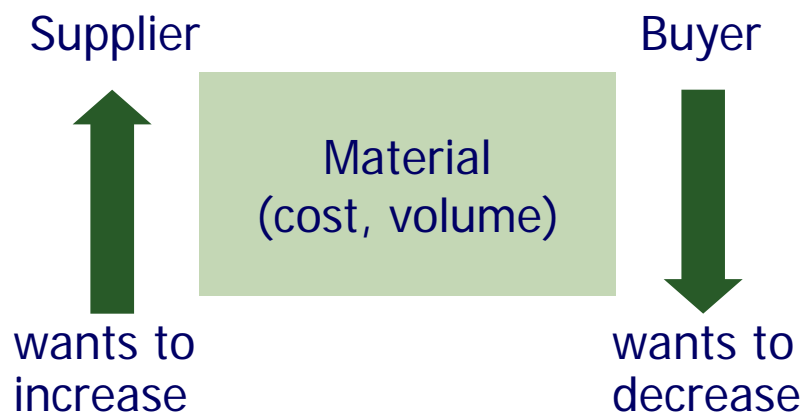
# CMS can encompass a range of activities

## Information management



# Under the CMS model, formerly conflicting incentives are now aligned

**Traditional relationship:**  
Conflicting incentives



**CMS model:**  
Aligned incentives



**Changing the supply chain model results in potential costs savings and environmental gains**

# CMS is a growing trend in the US

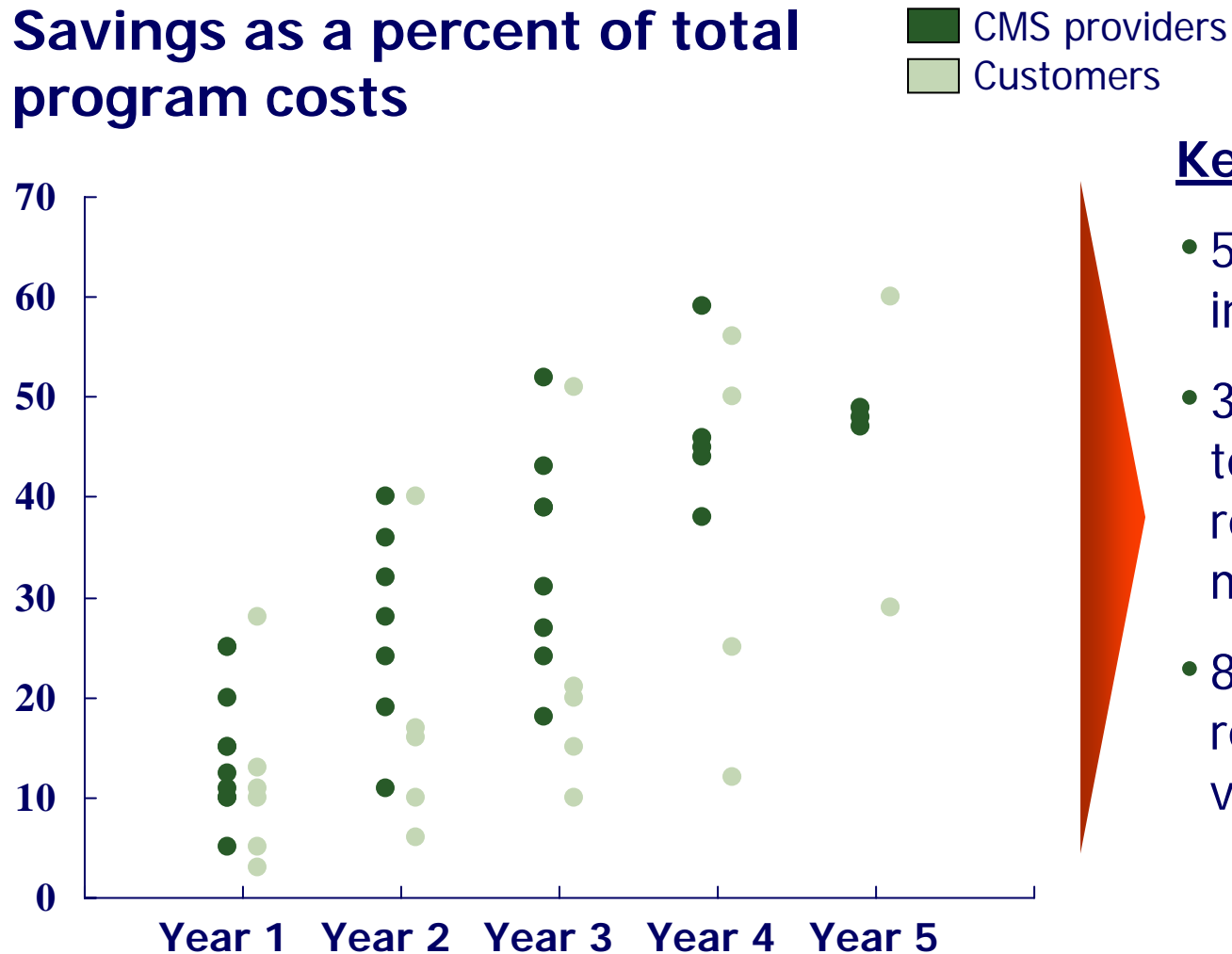
Sector	Provider Estimates of CMS Penetration 2004	Provider Estimates of CMS Penetration 2000
Automotive	75-80%	50-80%
Automotive Suppliers	30-40%	Included in automotive estimate
Heavy Equipment	15-25%	15-25% (formerly metalworking)
Aerospace Manufacturing	25-30%	5-15%
Air Transport Maintenance	40-50%	10-20%
Electronics	30-40%	30-40%
Steel Manufacturers	20-30%	---
Energy/Utilities	Under 10%	---
Misc. Manufacturing	Under 10%	---
Food/Beverage	Under 10%	---
Research/Laboratory	Under 10%	---

Source: *CMS Industry Report 2004*, Chemical Strategies Partnership



# Overall cost savings reported by CMS customers are significant

## Savings as a percent of total program costs



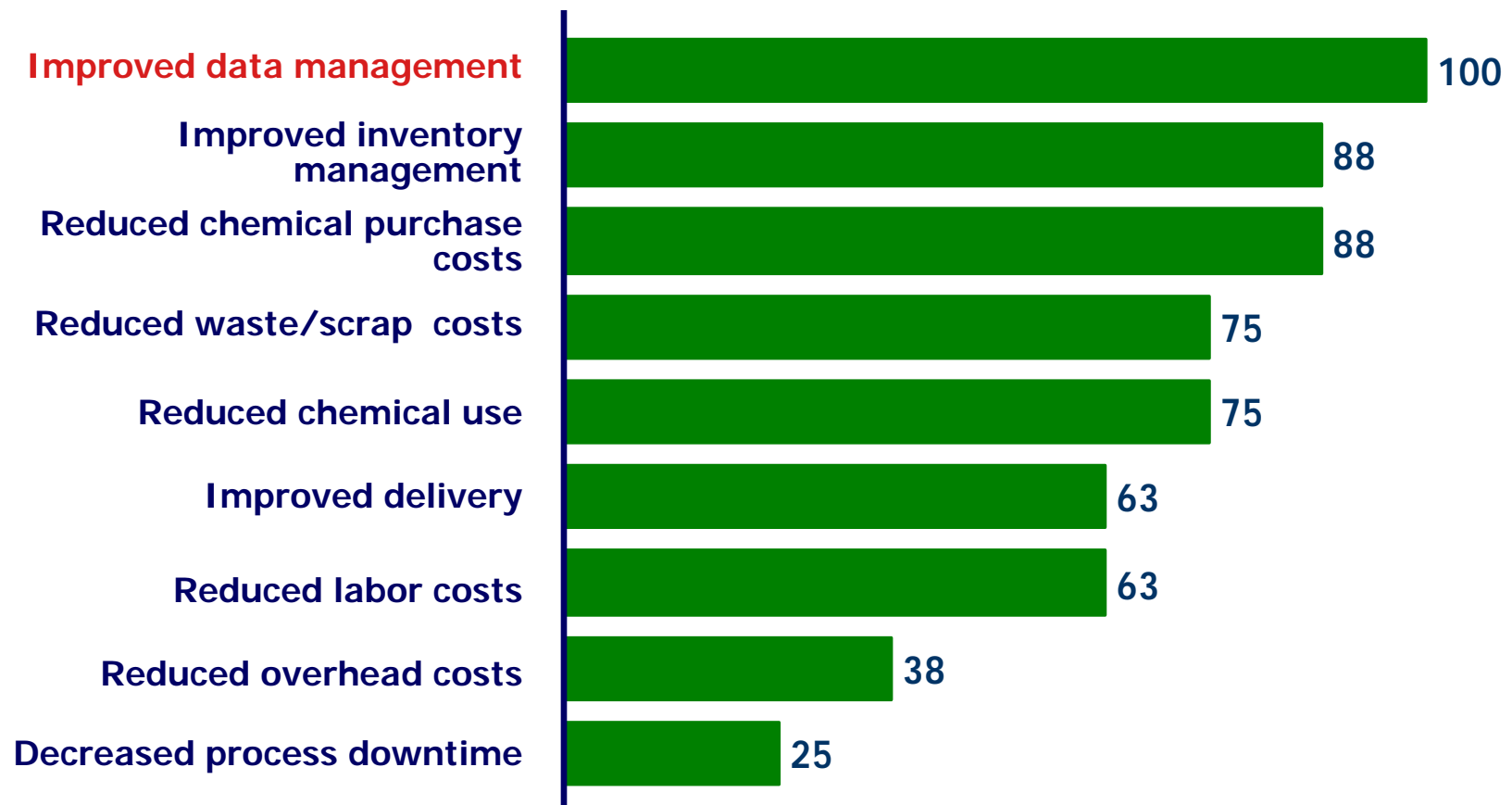
## Key results

- 5-25% total savings in first year
- 30-80% of long-term savings from reducing management costs
- 80% of customers report chemical volume reduced

Source: *CMS Industry Report 2000*, Chemical Strategies Partnership

# Improved data management is the benefit most widely cited by customers

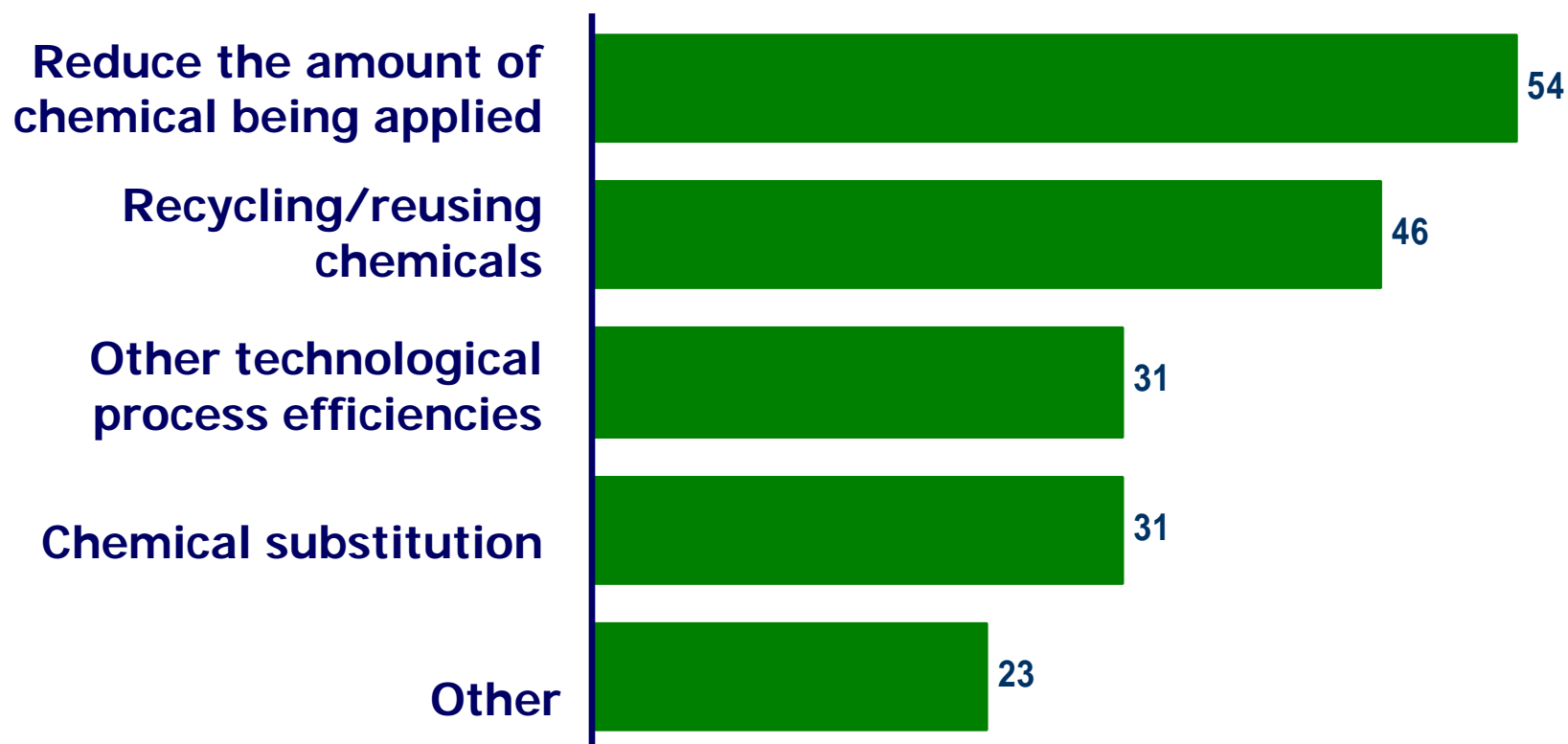
## Benefits cited, percent of customer respondents



Source: *CMS Industry Report 2004*, Chemical Strategies Partnership

# Reduced chemical use is the top source of emissions reductions

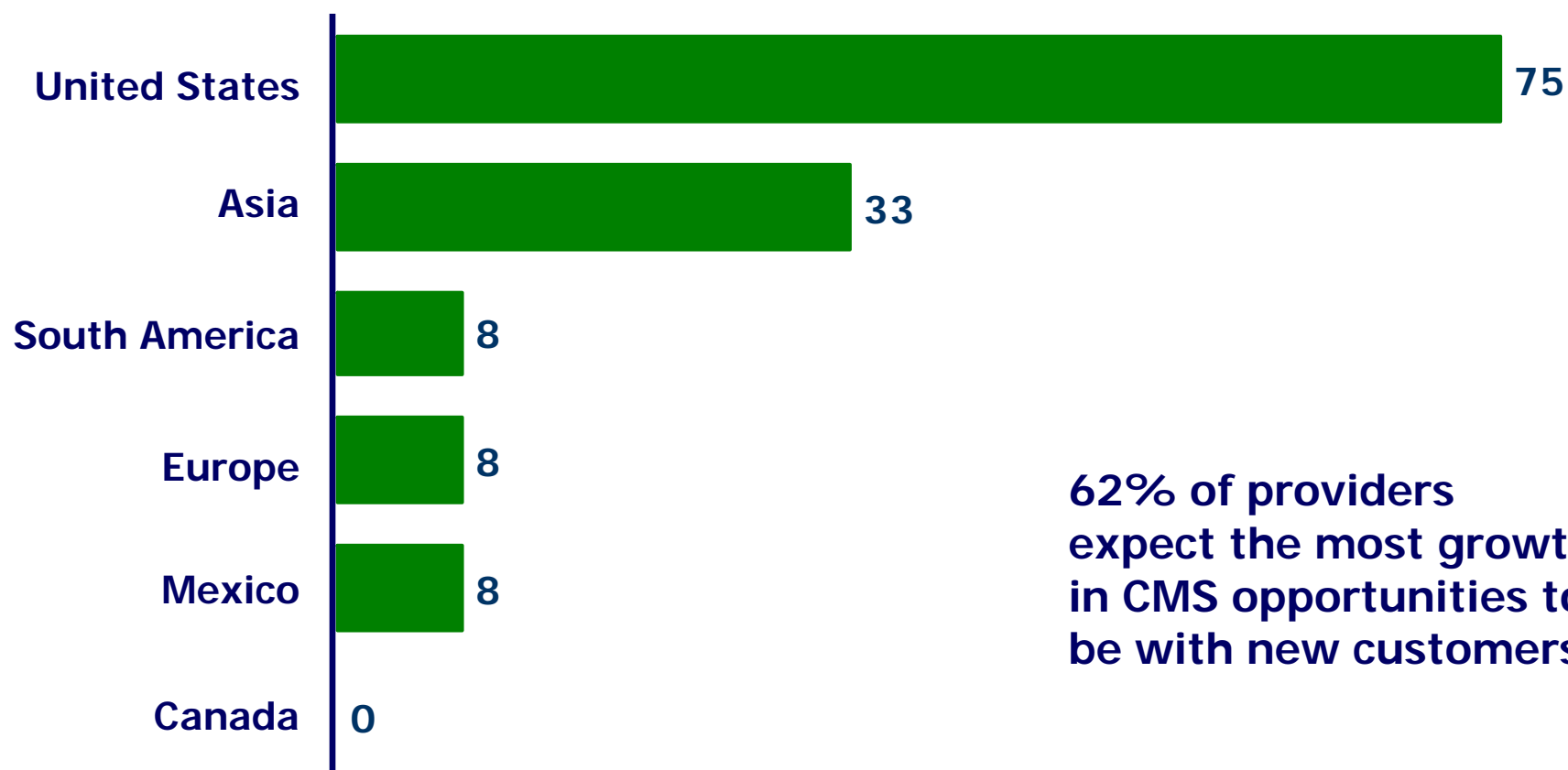
Emissions reductions, percent of customer respondents



Source: *CMS Industry Report 2004*, Chemical Strategies Partnership

# Providers expect to see most growth with new customers

Growth expectations, percent of provider respondents



62% of providers expect the most growth in CMS opportunities to be with new customers.

Source: *CMS Industry Report 2004*, Chemical Strategies Partnership

# Case study: General Motors

## Programs in over 90% of plants worldwide

- Average total chemical use reduction of 30%
- Total cost savings above 30%
- Environmental benefits: Reductions achieved over 6 years in one CMS contract
  - 54% decrease in purge solvent
  - 77% decrease in paint stripper
  - 80% decrease in solvent masking
  - 75% decrease in VOC emissions
  - 83% reduction in detackification chemicals

# CSP pilot case study: Raytheon Company

## **Streamlined Operations** (~20,000 chemicals, 1000 waste profiles)

- Automated ordering, chemical gate-keeping, consolidated sourcing
- On-line MSDS and EHS data for reporting
- Chemical use and waste generation tracking
- Procurement and inventory management

## **Improved Service and Quality**

- On-time delivery rose from a base of 82% to an average of 91% in the first 5 months
- Scrap rate reduced by 250%

## **Reduced Costs**

- Payback of the program in the first 6 months.
- 10-20% net savings in the first 2 years,
- Expected savings over the 5 year contract is 30-40%

# CSP pilot case study: Seagate Technology

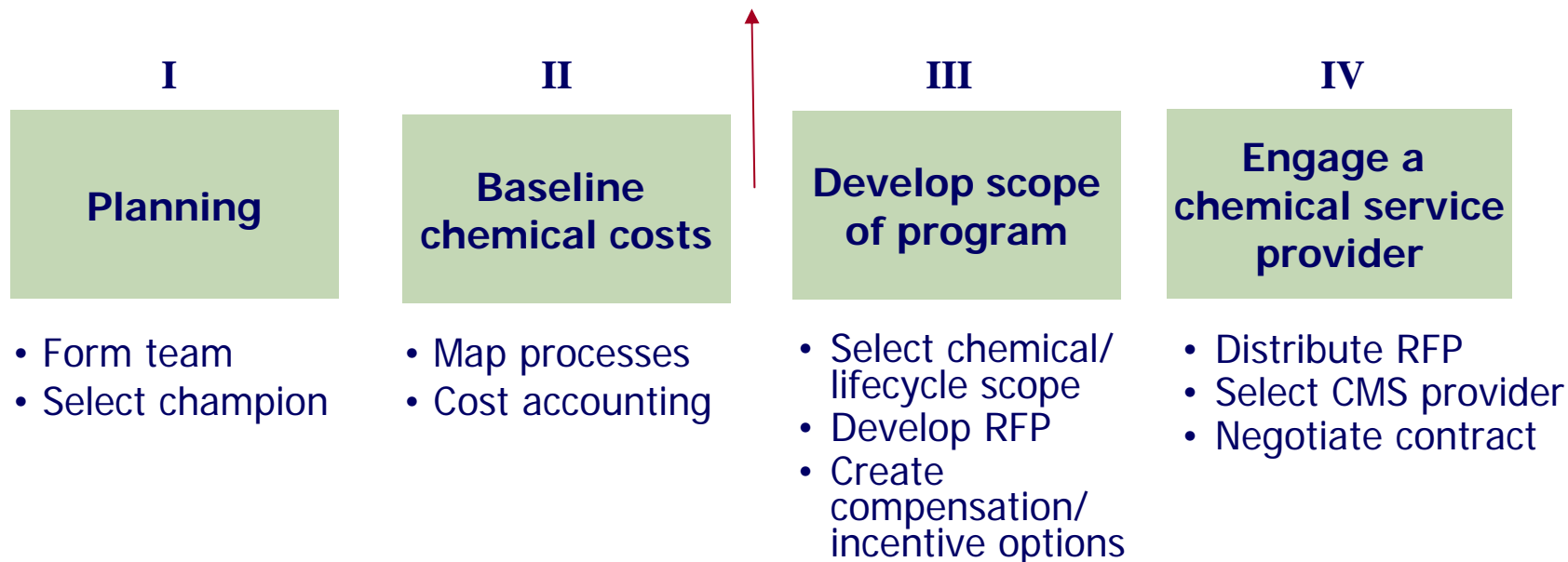
## Benefits realized in first twelve months at one facility

- Aligned incentives and guaranteed savings – supplier generates no profit from volume sales
- Reduced onsite chemical inventory/handling (JIT)
  - Reduced 10,000 sq. ft. of inventory by 50%
  - Reduced \$800,000 in carrying costs of chemicals
  - Eliminated chemical scrap – approx. 7% of inventory
- Improved chemical processes/shared best practices
  - Photo-resist process: substituted more benign product and extended bath life 3-5 times, resulting in savings of \$50,000/month
- Eliminated distributor markup on chemicals

# CSP approach...

CSP's Approach: conduct pilot programs to assist manufacturing companies in assessing their total chemical lifecycle costs and developing a CMS program

*Decision Point: Is CMS right for my company?*

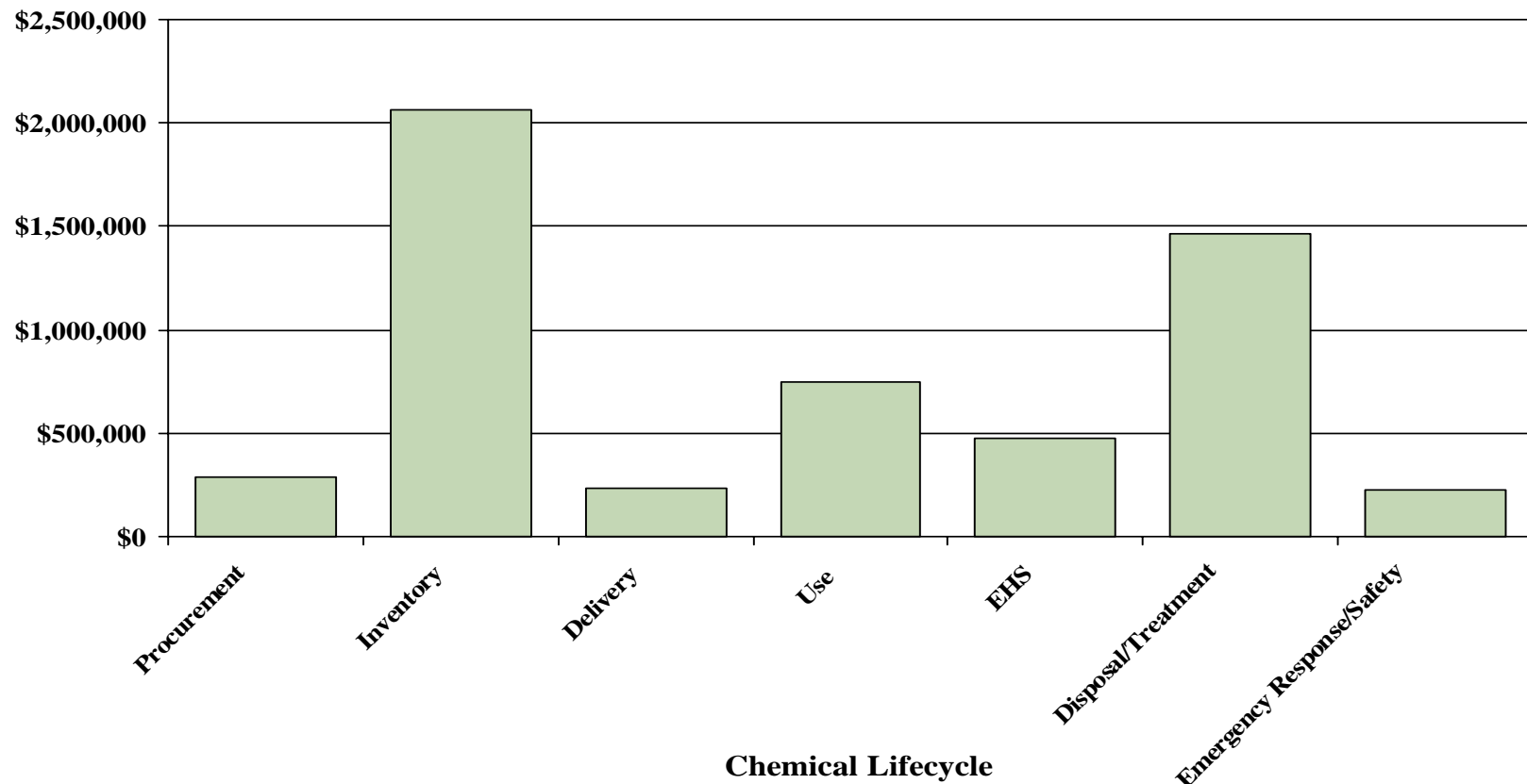




# Chemical use accounts for only a fraction of "true costs"

CASE STUDY

Based on chemical purchases of \$6.2 million



## CSP continues to address barriers and promote CMS

- Introduce CMS into new sectors with public/private funding (forest products, university/research labs, pharma/biotech)
- Assist in developing CMS programs to accelerate adoption in sectors already using CMS (electronics, aerospace)
- Develop tools (metrics, update manual, etc.)
- Disseminate information (workshops in SF, UK)
- Begin initiatives internationally (Asia, Europe)

*CSP conducts these activities with support from US EPA, state governments, foundations, and CMS Forum members*