



# ***Capturing Business Opportunities through Green Chemistry***

June 4, 2015

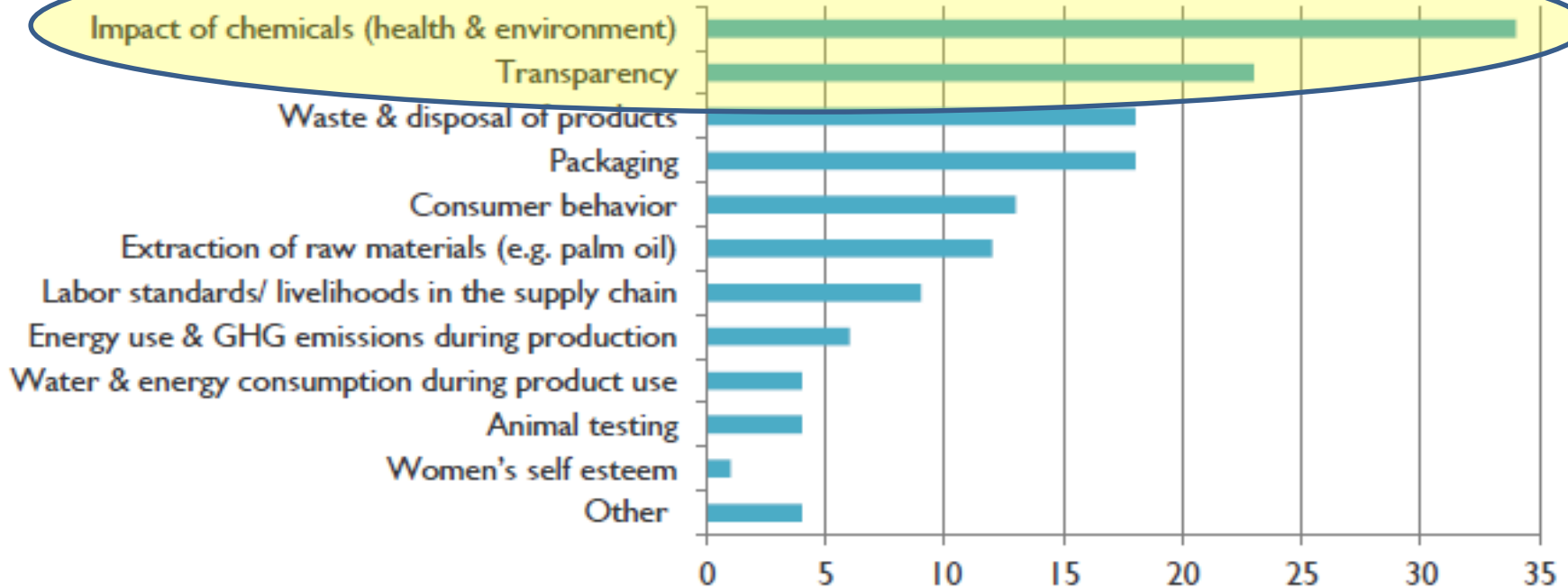
Mark S. Rossi, PhD







# Beauty and Personal Care Products Sustainability Summit



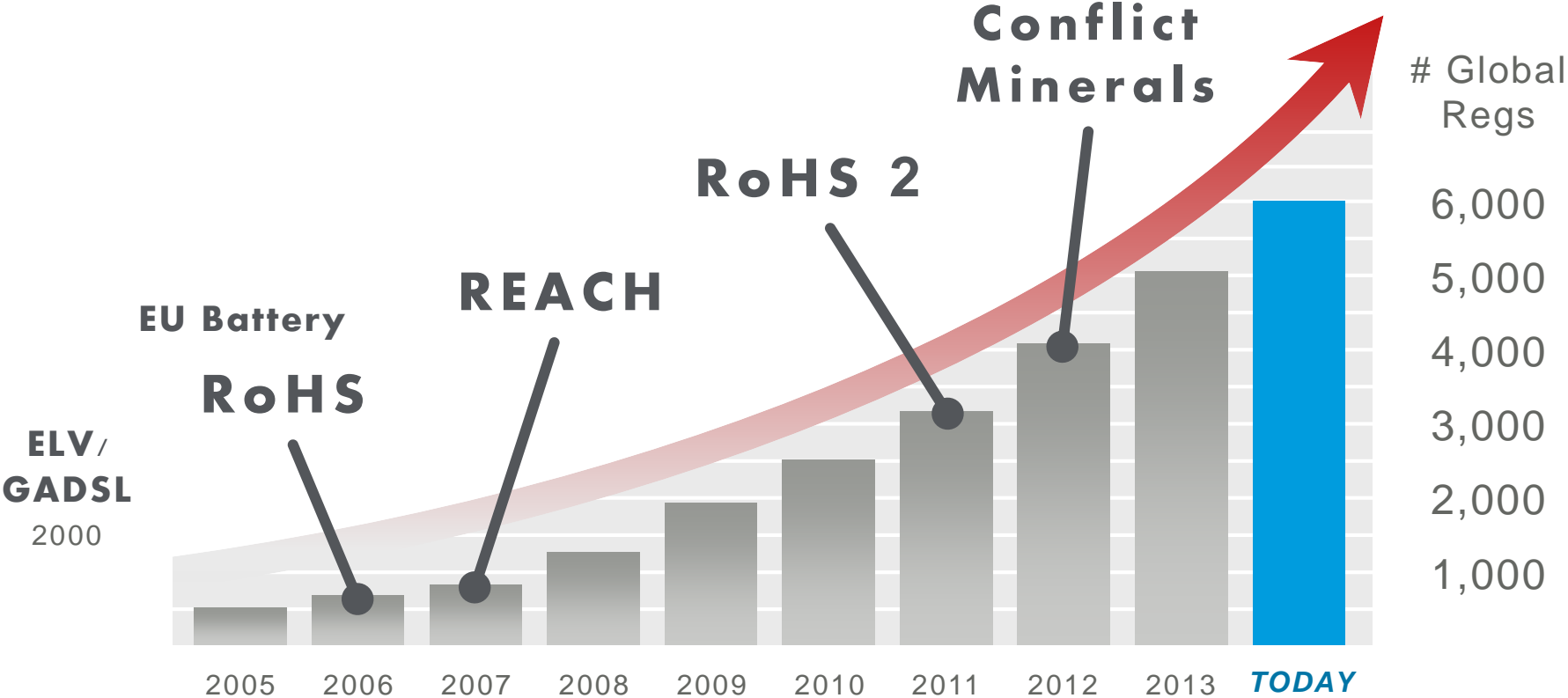
Source: Forum for the Future, [http://www.forumforthefuture.org/sites/default/files/%23BPC\\_Summit\\_Summary\\_Report.PDF](http://www.forumforthefuture.org/sites/default/files/%23BPC_Summit_Summary_Report.PDF)

Companies facing increasing ...

**Regulatory Complexity**

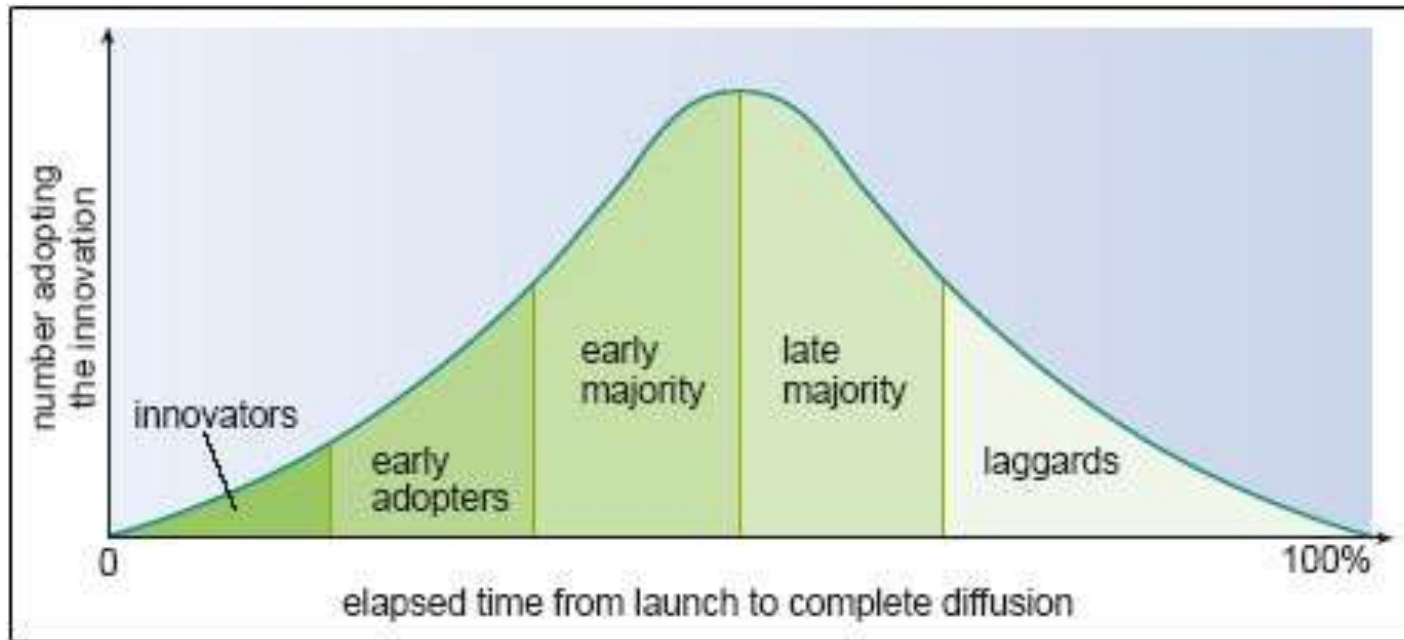
**Effort to Fulfill Obligations**

**Customer Demands**



Source: Compliance and Risks 2014

# Trends in Chemicals Safety



- Regulations
- Restricted Substance Lists (beyond compliance)
  - Supply Chain Management
  - Market & Advocacy Demands
    - Transparency
- Measuring Chemical Footprint

# The Business Case for Knowing Chemicals in Products and Supply Chains



## UNEP NEWS CENTRE

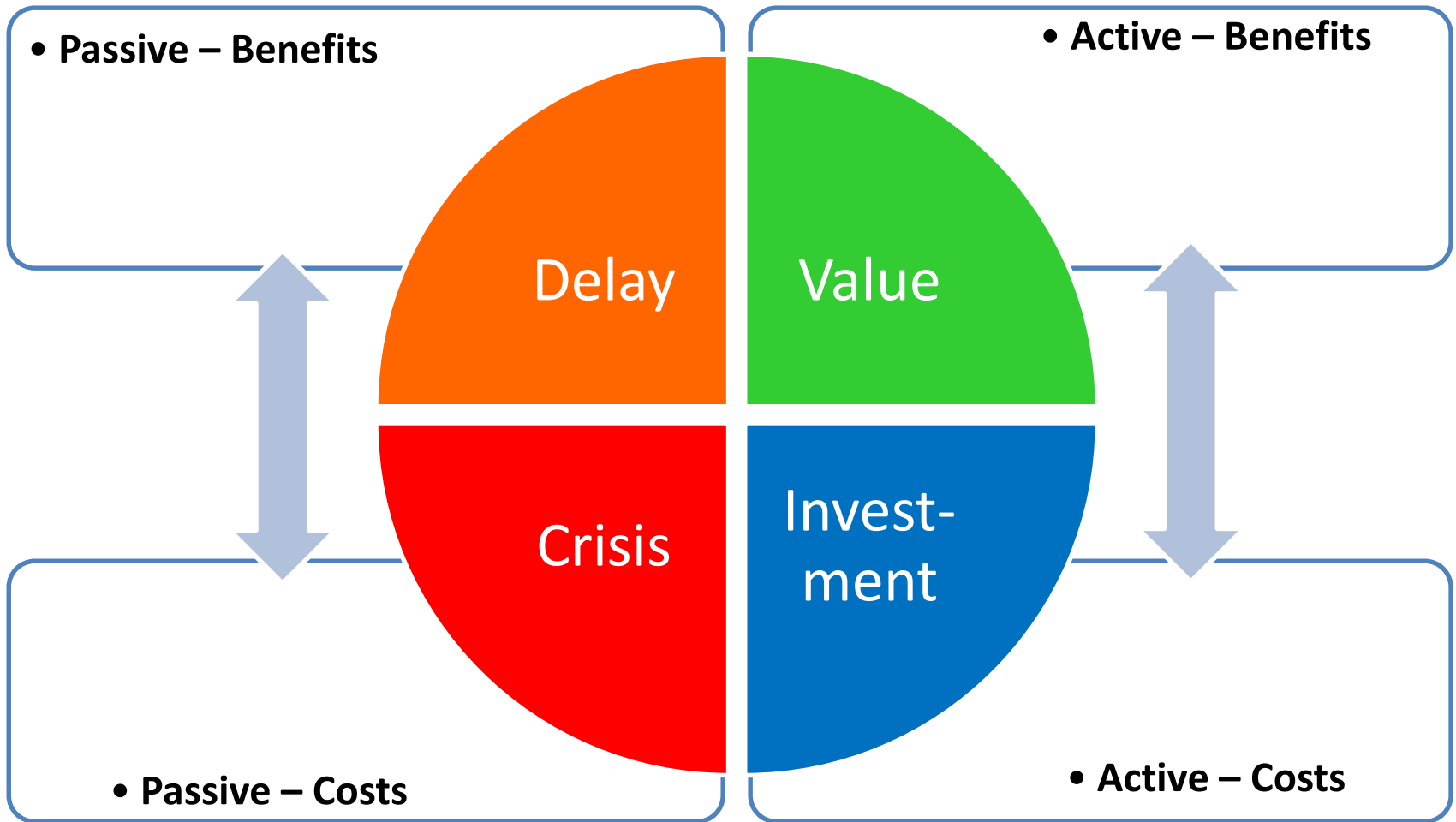
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### **New Report Makes Strong Business Case for Using Safer Chemicals in Products and Supply Chains**

Mon, Dec 15, 2014

Product Recalls Cost Companies Millions; While Companies Responding to Market Demand for Safer Products Are Seeing Growth in Sales

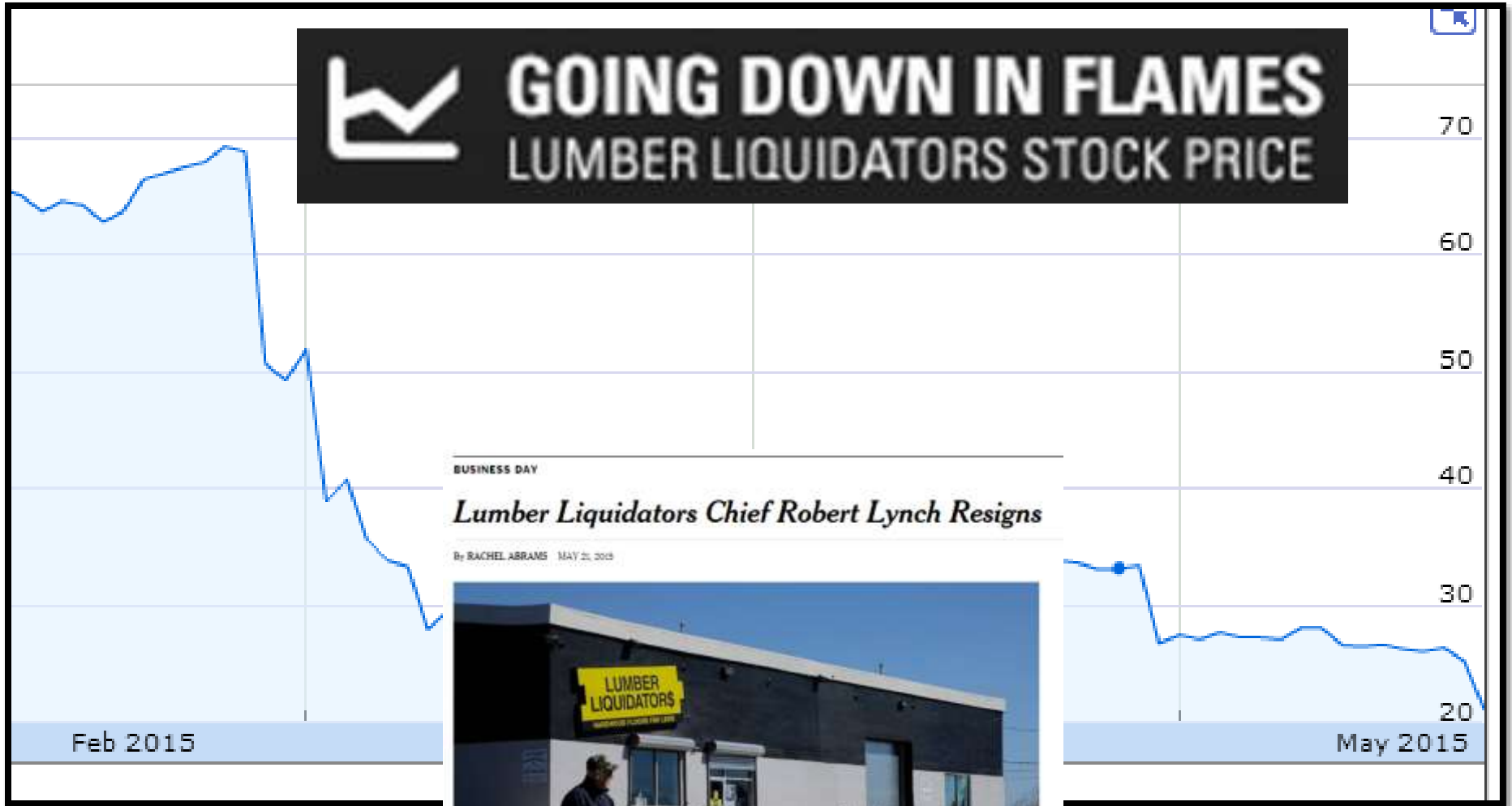
# PASSIVE TO ACTIVE





# Chemical Risks

## GOING DOWN IN FLAMES LUMBER LIQUIDATORS STOCK PRICE

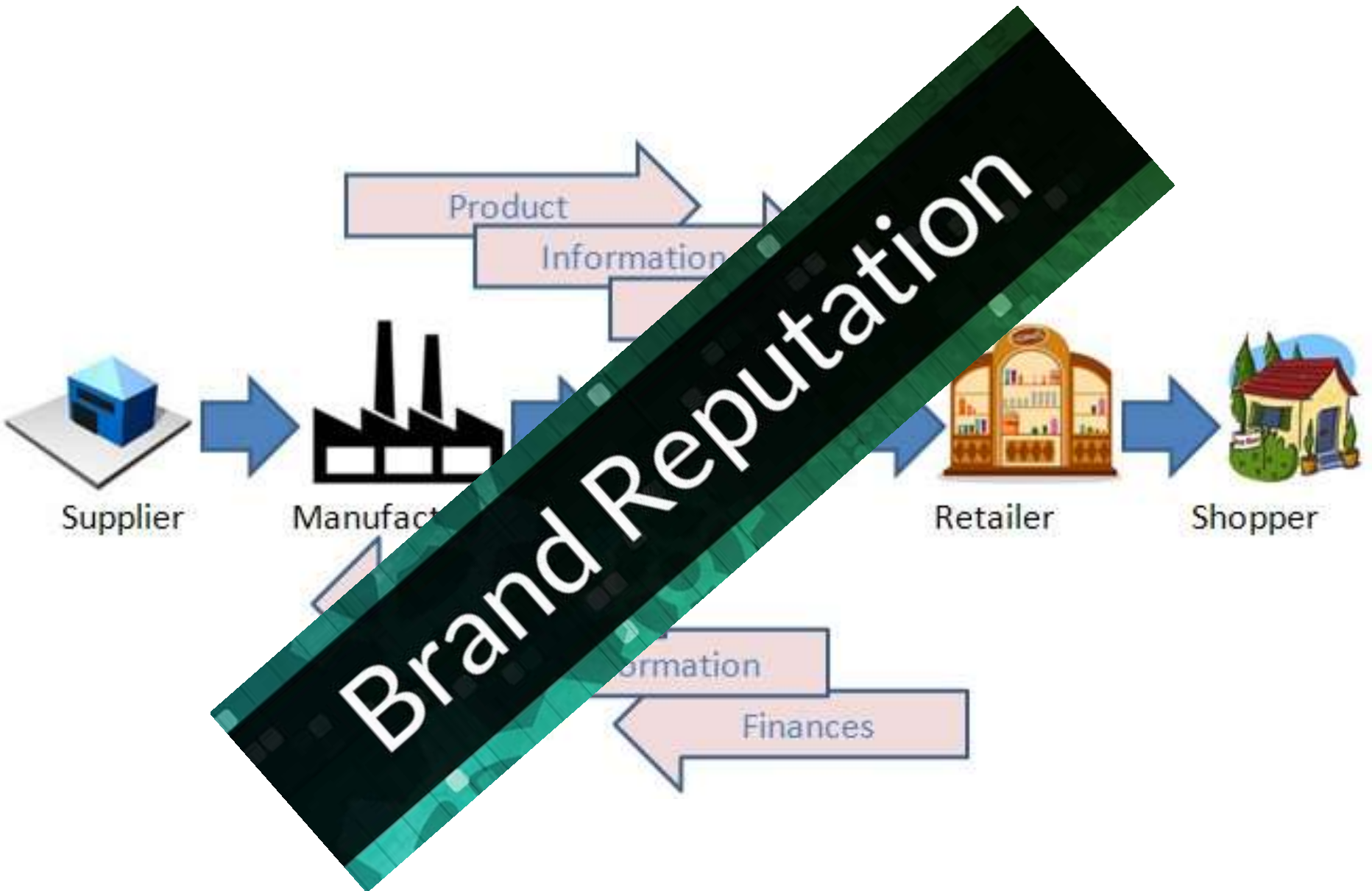


A Lumber Liquidators store in Philadelphia. The company is battling accusations that it sold laminate flooring, manufactured in China, with unacceptably high levels of formaldehyde. *Matt Stawron/Associated Press*

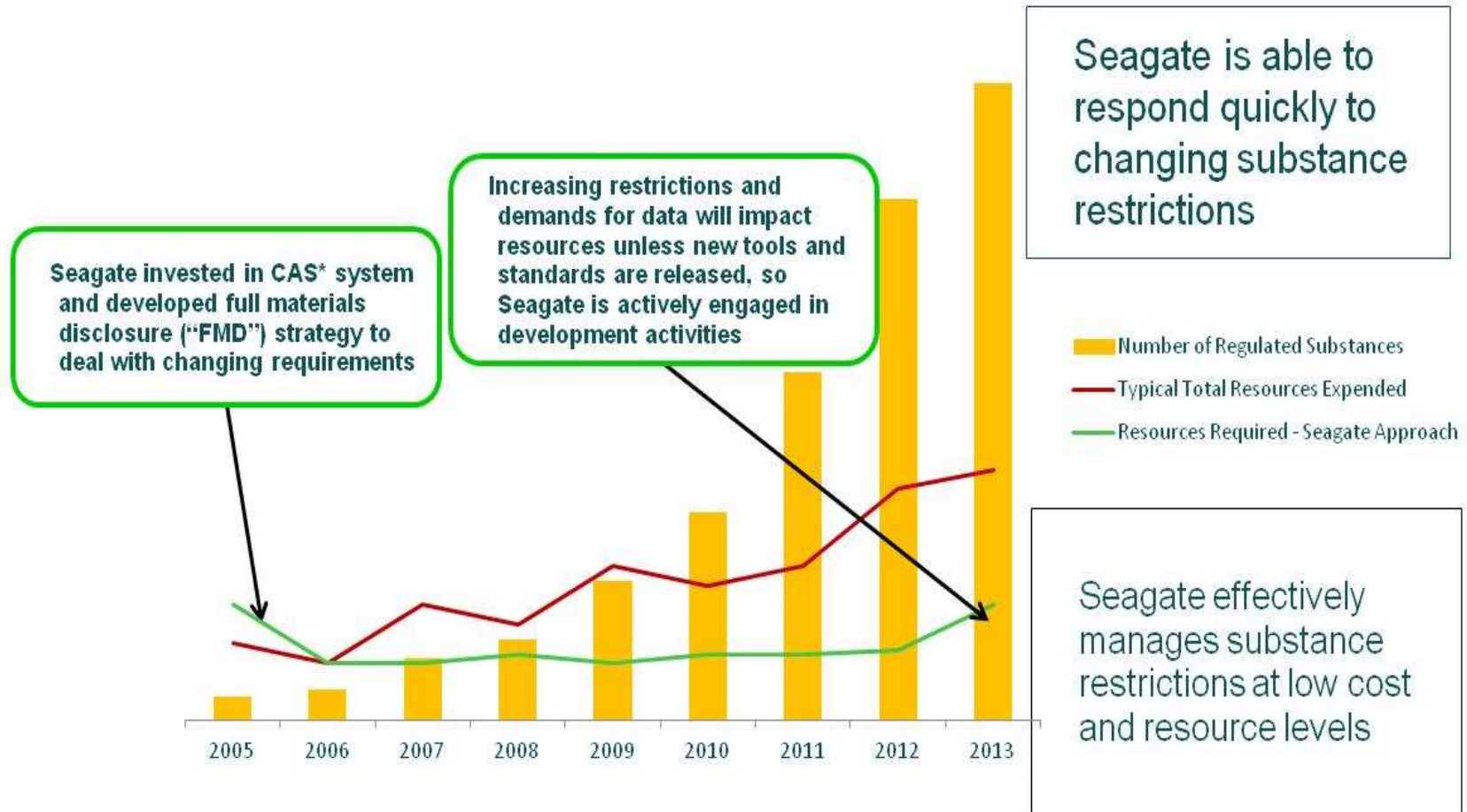
# Chemical Risks: Johnson & Johnson

- U.S. NGO: formaldehyde, 1,4-dioxane in baby care products (2009)
- Chinese consumers react (2009)
  - consumers stop buying J&J: survey 75% of ~120,000
  - retailers remove J&J baby products, including 3,500 NGS Supermarket Group stores
  - ↓ market share for baby products from 64.3% (2009) to 55.9% (2010)
- Reformulation
  - \$10's of millions in R&D
  - baby products (2013)
  - adult products (2015)



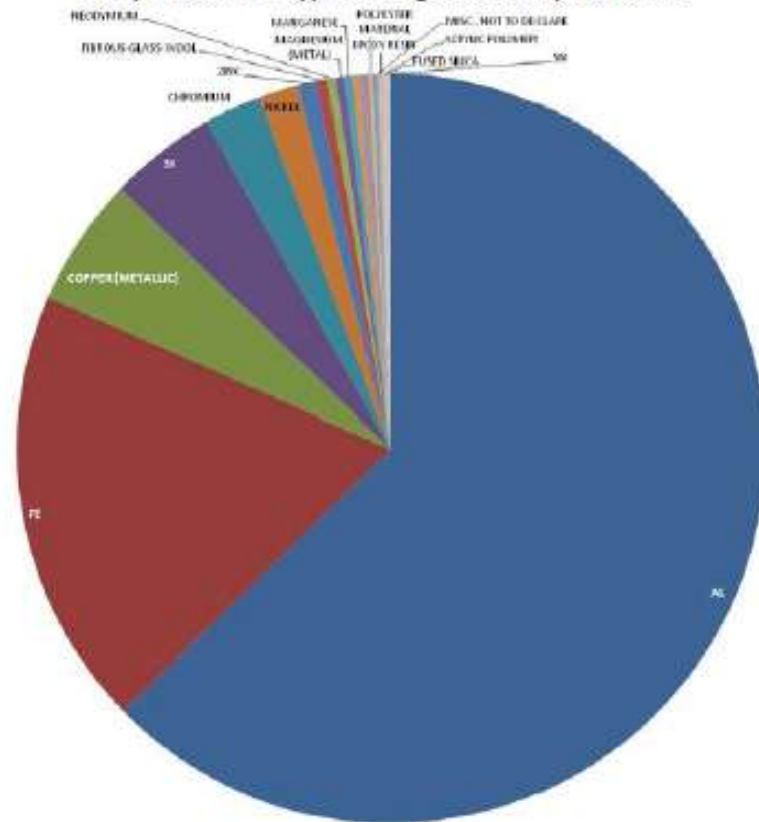


# Seagate Costs of Managing Full Material Disclosure and Conflict Mineral Data



# Using data compiled from supplier FMD, Seagate can assemble a bill of substances for our products

Composition of a typical Seagate desktop disk drive



Substance	CAS Number	Cumulative Concentration
AL	7429-90-5	61.9451
FE	7439-89-6	80.5984
COPPER (METALLIC)	7440-50-8	86.12
SI	7440-21-3	90.705
CHROMIUM	7440-47-3	93.1778
NICKEL	7440-02-0	94.862
ZINC	7440-66-6	95.6614
FIBROUS-GLASS-WOOL	65997-17-3	96.141
NEODYMIUM	7440-00-8	96.5053
MAGNESIUM	7439-95-4	96.8692
MANGANESE	7439-96-5	97.1983
LCP polymer	147310-94-9	97.5019
POM, Polyoxymethylene copolymer	24969-26-4	97.7305
"DOPO" halogen free flame retardant	35948-25-5	97.9132
POLYESTER MATERIAL	79-14-1	98.086
ACRYLATE URETHANE OLIGOMER	73324-00-2	98.2507
PROPRIETARY SYSTEM		98.3749
EPOXY RESIN	129915-35-1	98.4961
ACRYLIC POLYMER	37325-11-4	98.6128
FUSED SILICA	60676-86-0	98.7214
SN	7440-31-5	98.8116

- Listed phthalates\* ("phthalate free") (Homogeneous Material level)
- JIG/IEC 62474 restricted chemicals (over limits)
- REACH SVHCs over 1000 ppm (Article)
- ODCs

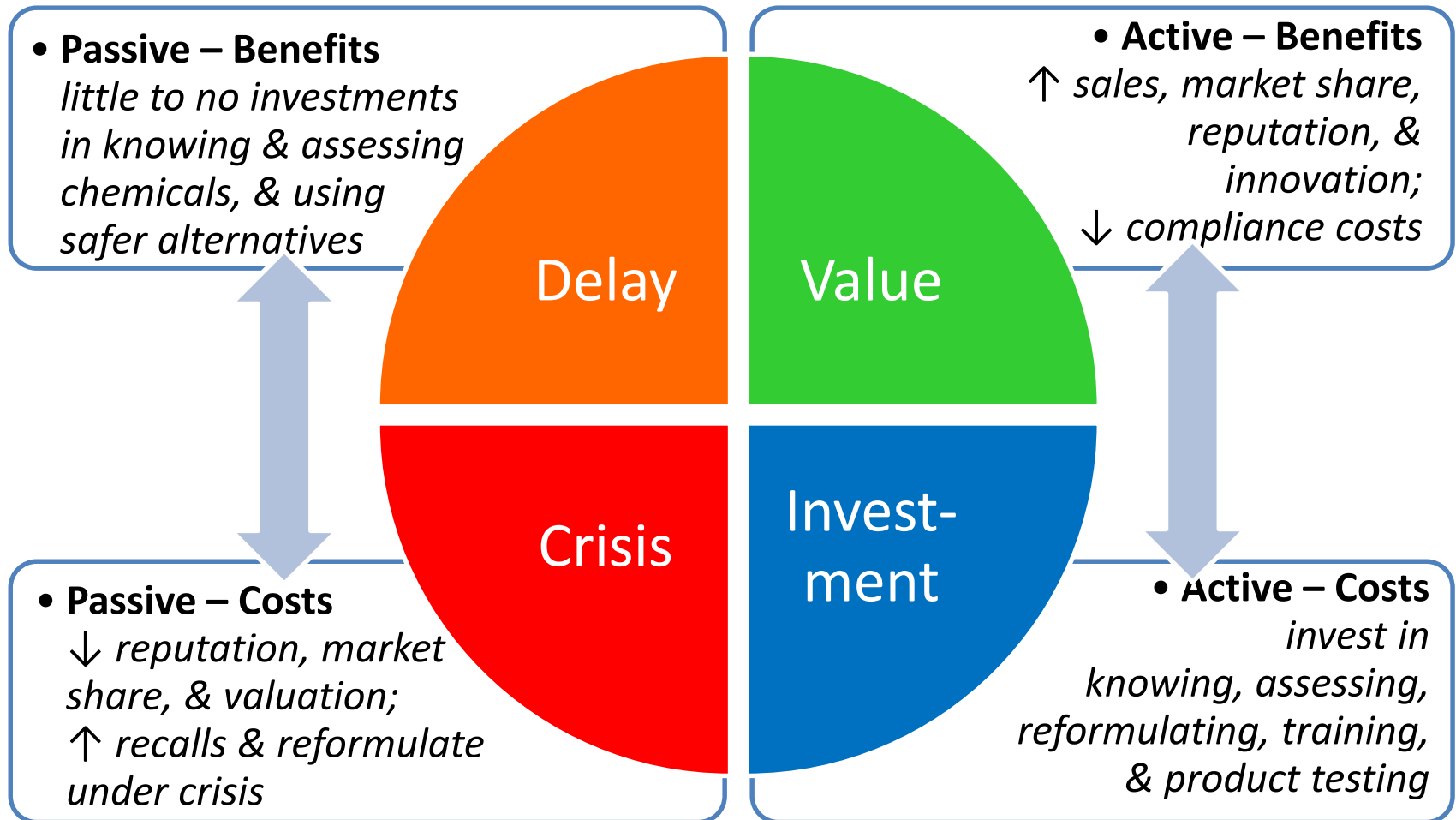
*The Seagate supplier specification restricts almost 2000 CAS numbers*

# Coastwide Labs (Staples) – Sustainable Earth Product Line

- New product line based on green chemistry – “Sustainable Earth”
- Worked with suppliers to find new chemistries
- Primarily due to Sustainable Earth Product line:
  - Net operating income averaged double to triple the industry norm
  - Sales rose 8% largely
  - Market share grew to about 16% of the regional market
  - New customers rose 35% in 2005



# PASSIVE TO ACTIVE





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