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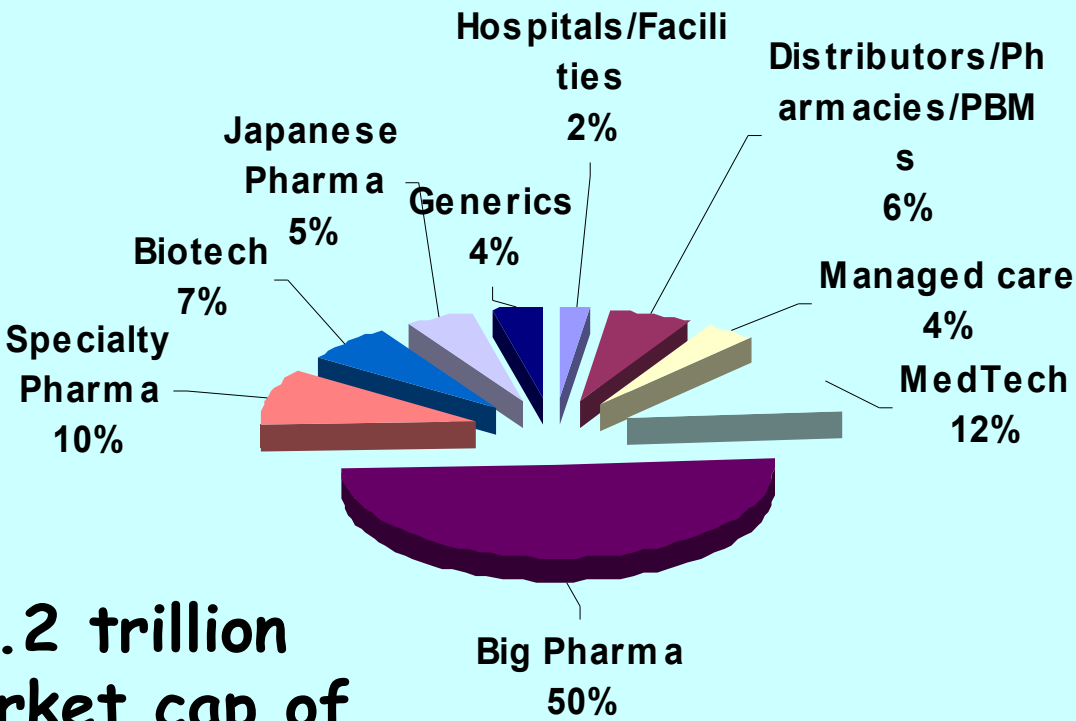
The Future of the Pharmaceutical Industry

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Global Healthcare Market Capitalisation



\$2.2 trillion
market cap of
which Pharma is
\$1.7 trillion

Discussion Topics Today

- The Environment
- Products vs Patients
- Specialty vs Primary Care
- Three seismic shifts
 - Demographic
 - Geographic
 - Technology
- The stock market consequences of slowdown
- Cost drivers
- Metrics for competitive advantage

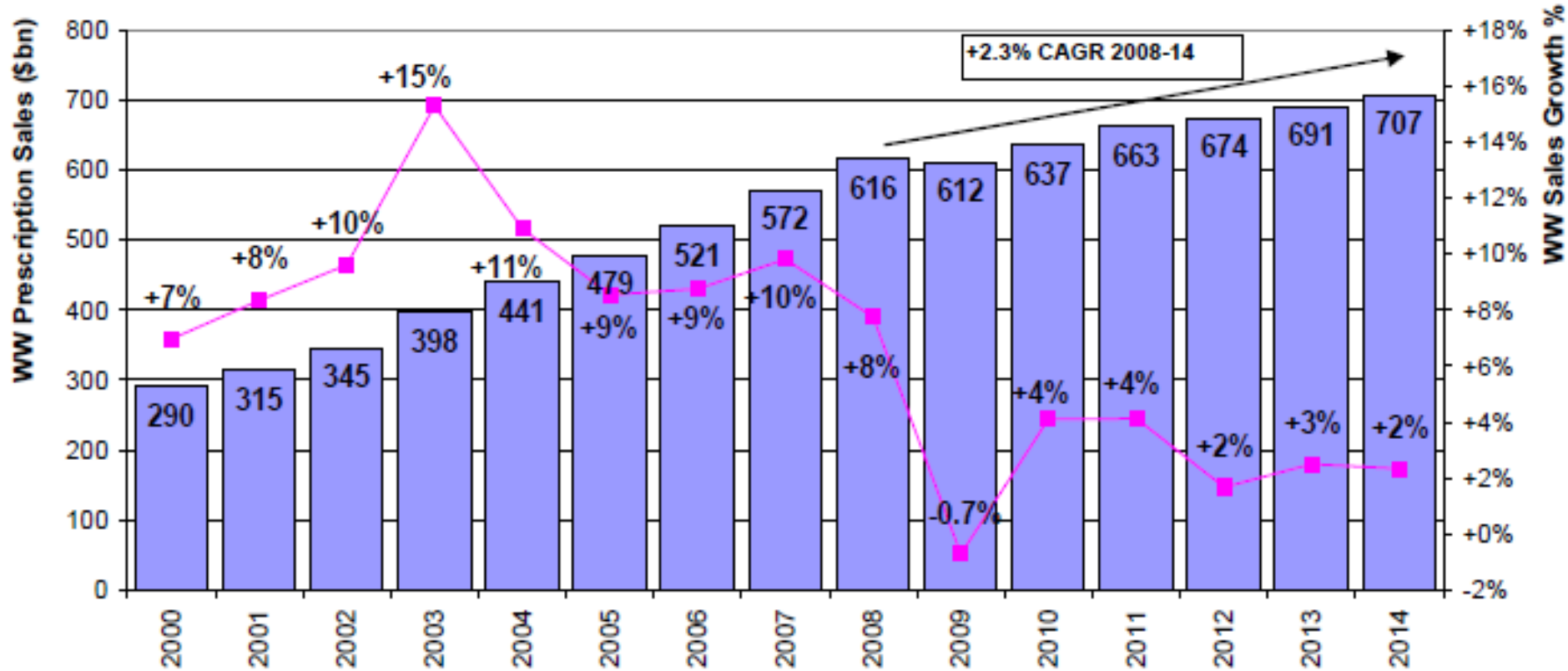
Global Pharmaceutical Market Has Been Slowing Down



Industry Growth Rate Continues to Decline

Worldwide Total Prescription Drug Sales 2000-14

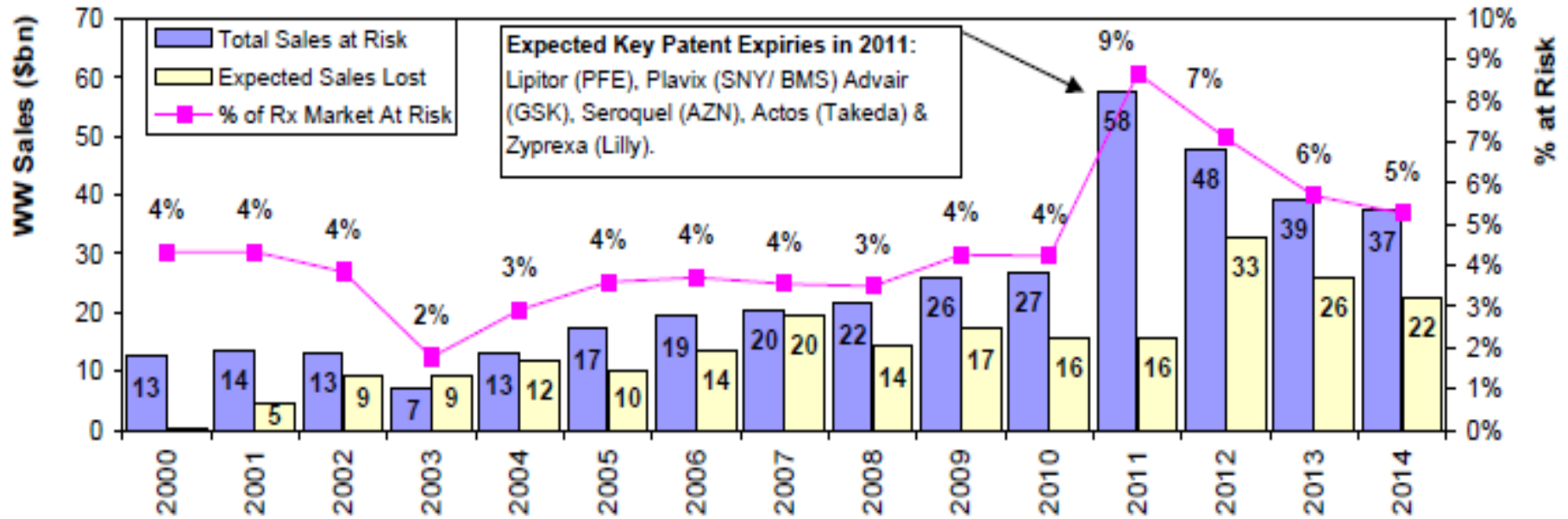
Source: EvaluatePharma® (12 MAY 2009)



Source: Evaluate

35% of Global Sales Off Patent 2009-2014

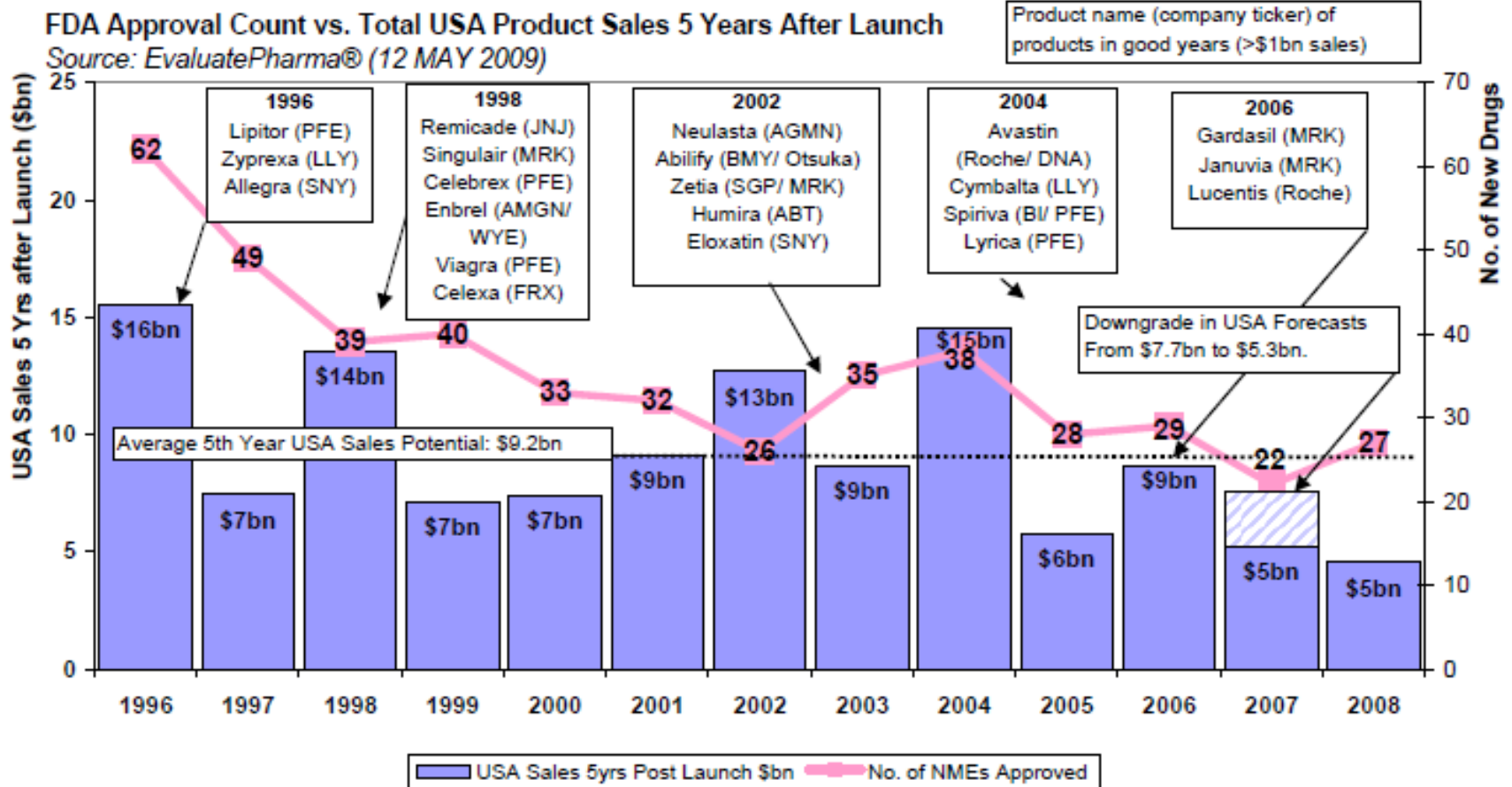
Worldwide Sales At Risk from Patent Expiration 2000-14



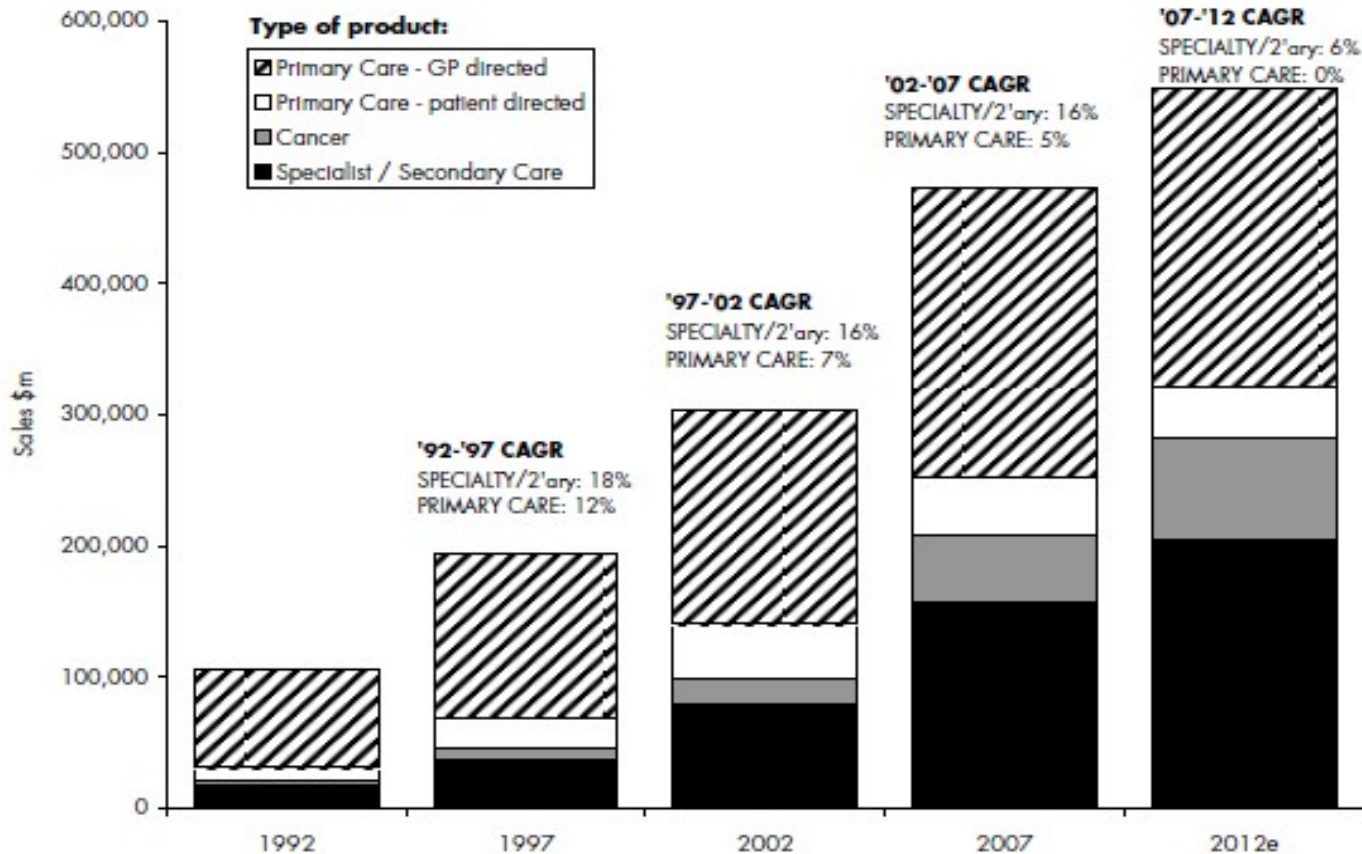
Patent Analysis: Sales represent the worldwide product sales in the year prior to patent expiry but allocated to the year of expiry. E.g. Lipitor is forecast to sell \$11.6bn in 2010, this shown above as 'at risk' in 2011.

Source: Evaluate

Number of NME/BLA Approvals Picking Up But Sales Potential Low

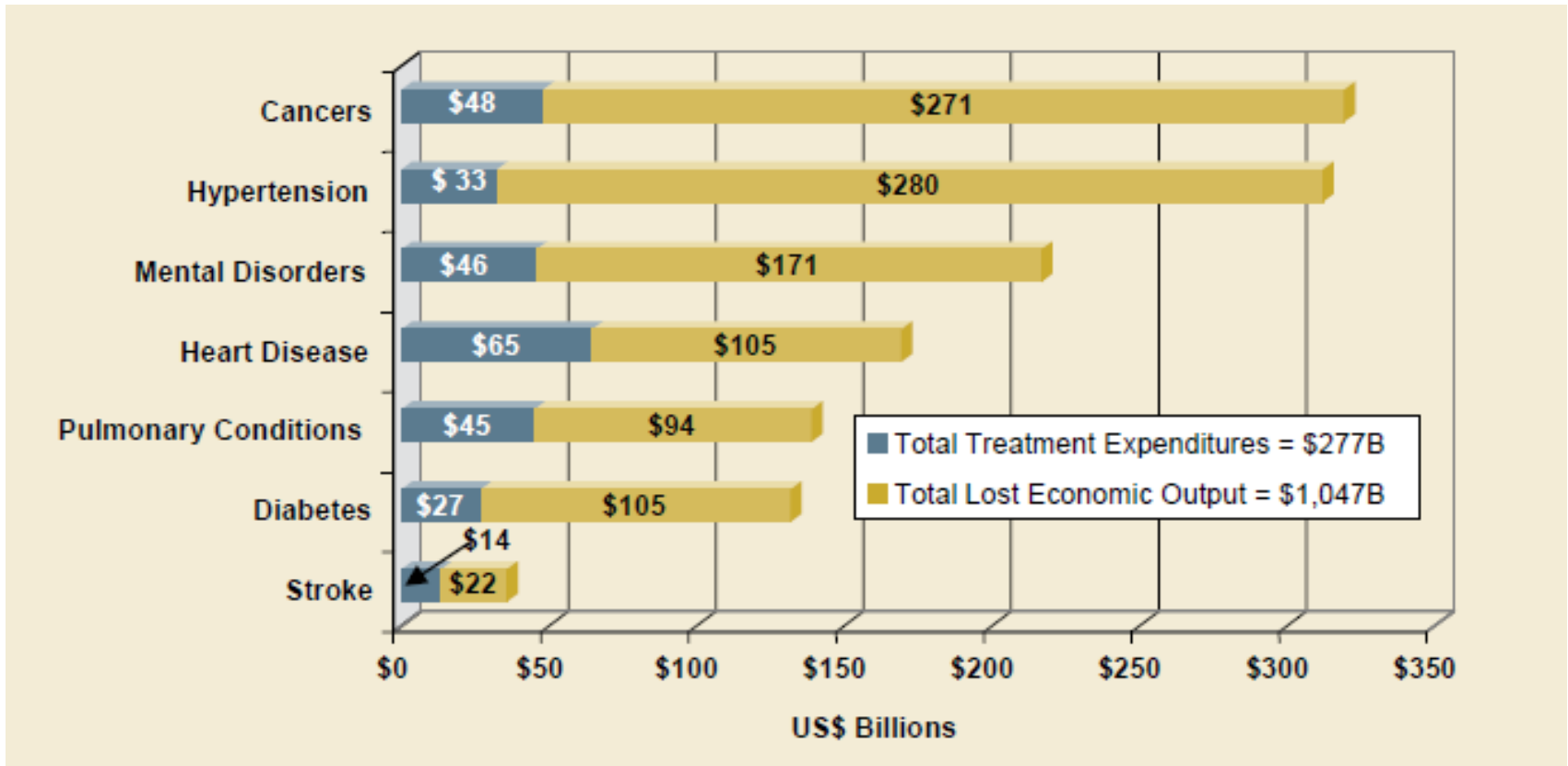


Specialty/Secondary Care is Key Driver of Growth



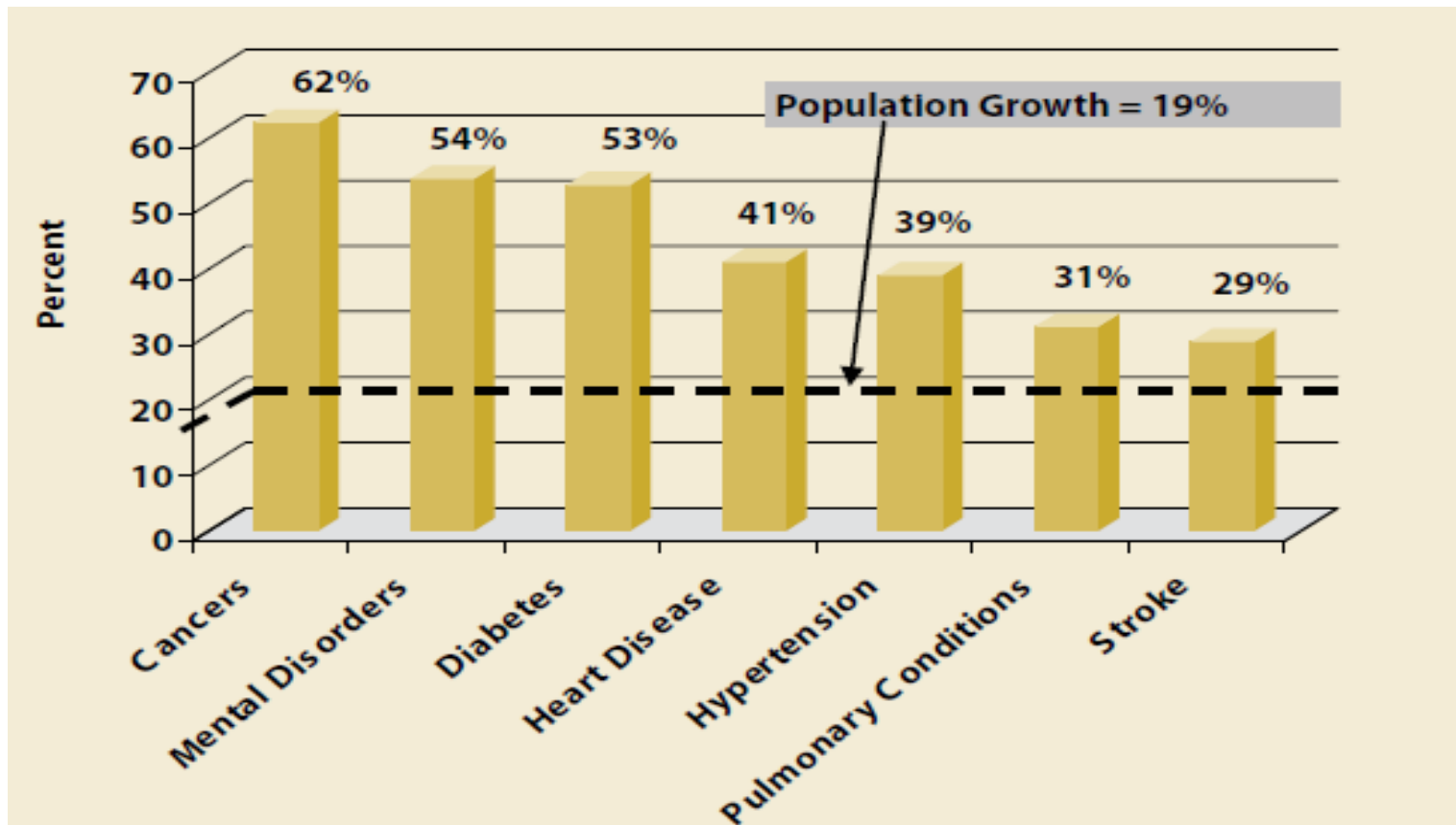
Source: Lehman Brothers PharmaPipelines analysis

Chronic Diseases Have Huge Economic Impact (US, 2003 data)



Source: An Unhealthy America
(Oct 2007) Milken Institute

Projected Rise in Chronic Diseases (US, 2003-2023)

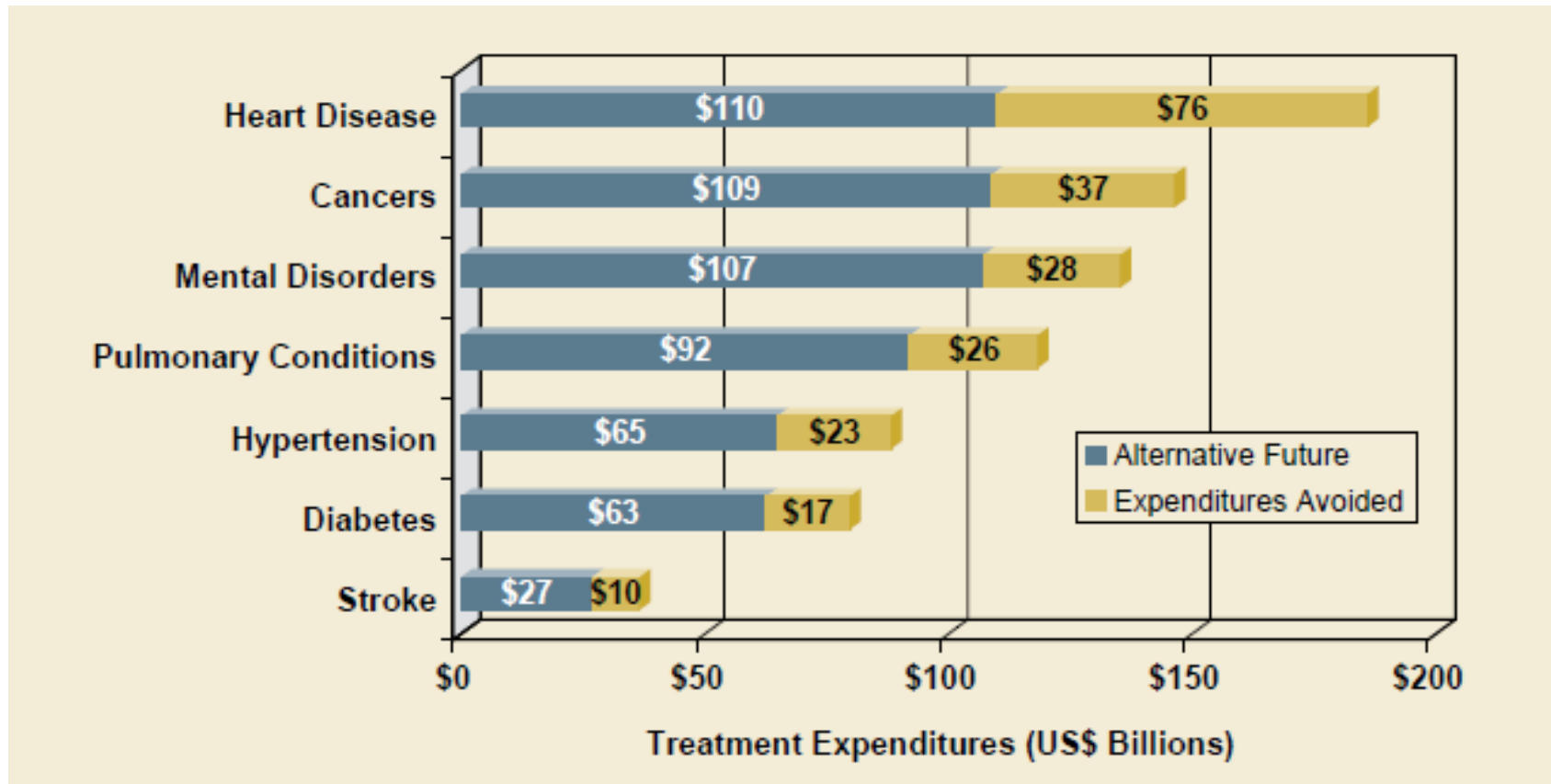


Source: An Unhealthy America
(Oct 2007) Milken Institute 10



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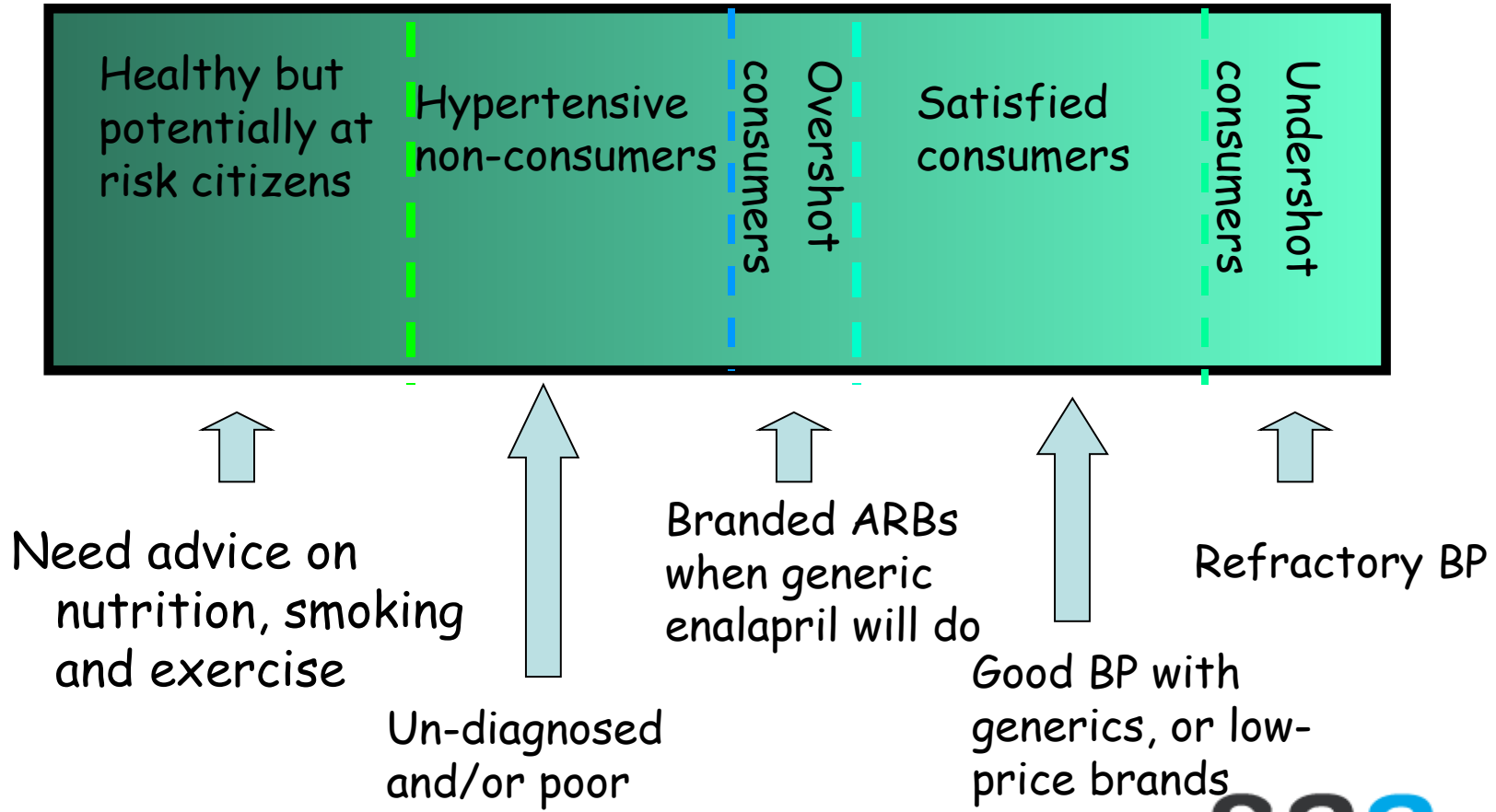
Behavioural Change Could Save ca \$200bn pa Treatment Cost in 2023



Source: An Unhealthy America
(Oct 2007) Milken Institute

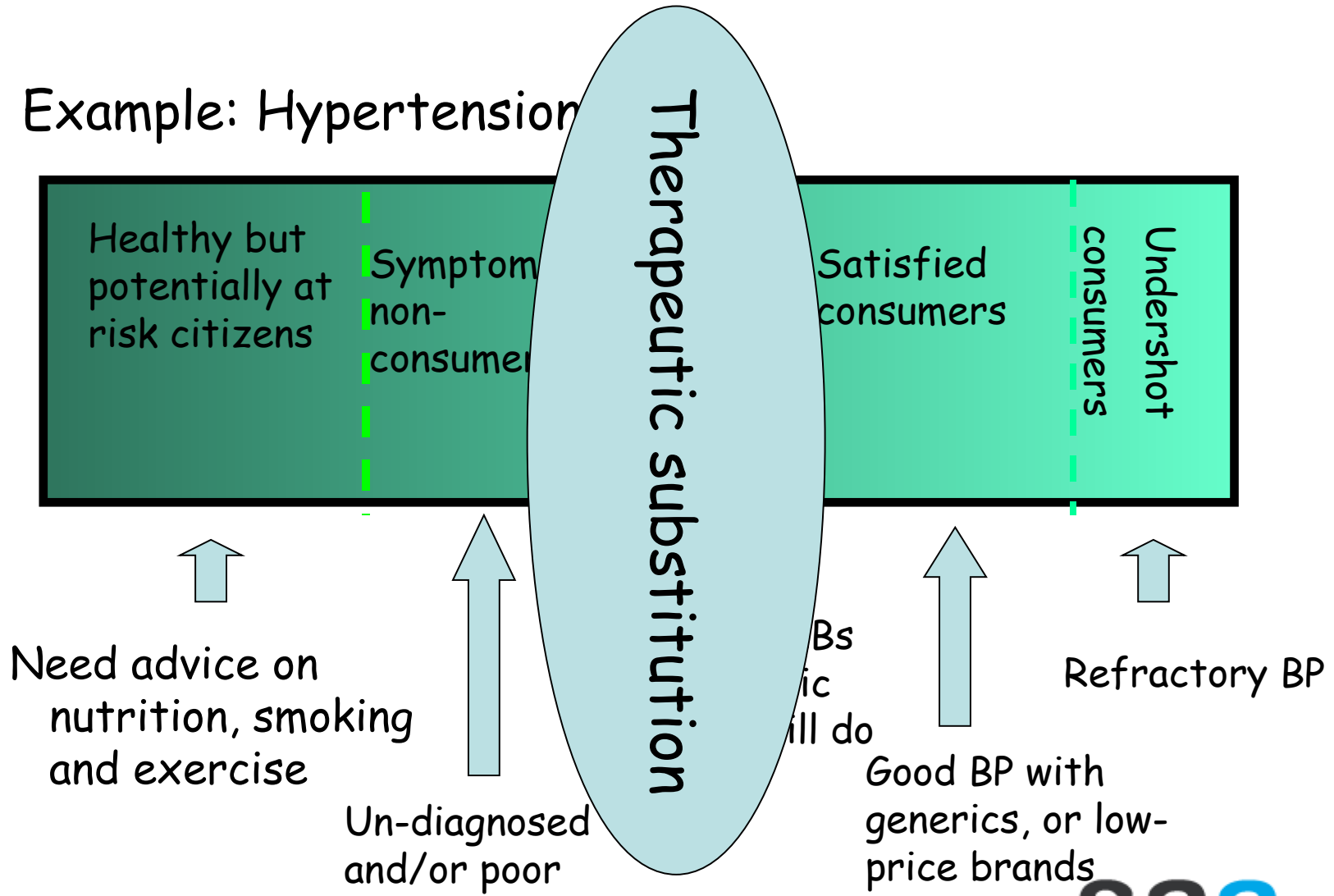
Consumers and non-consumers

Example: Hypertension



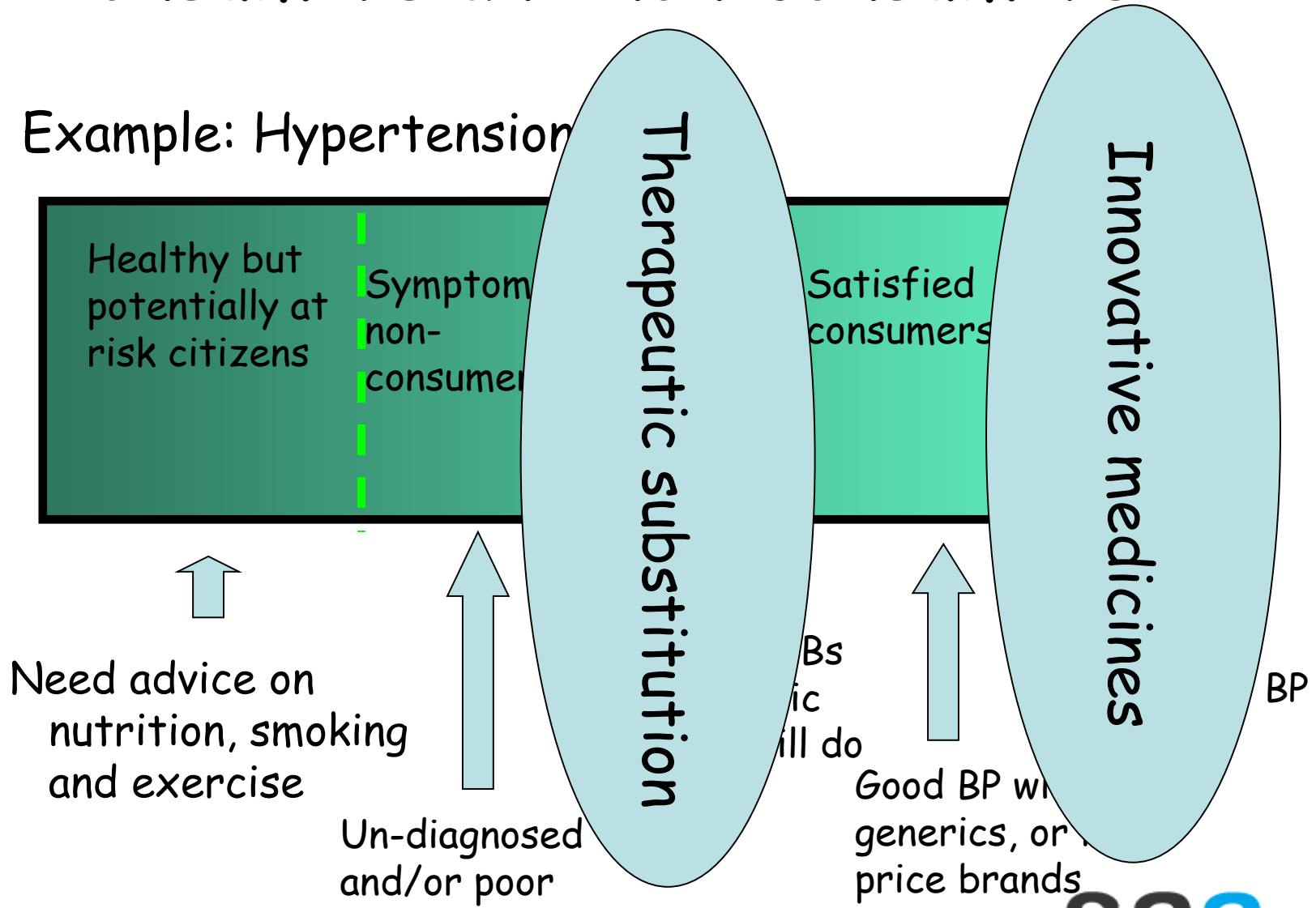
Consumers and non-consumers

Example: Hypertension

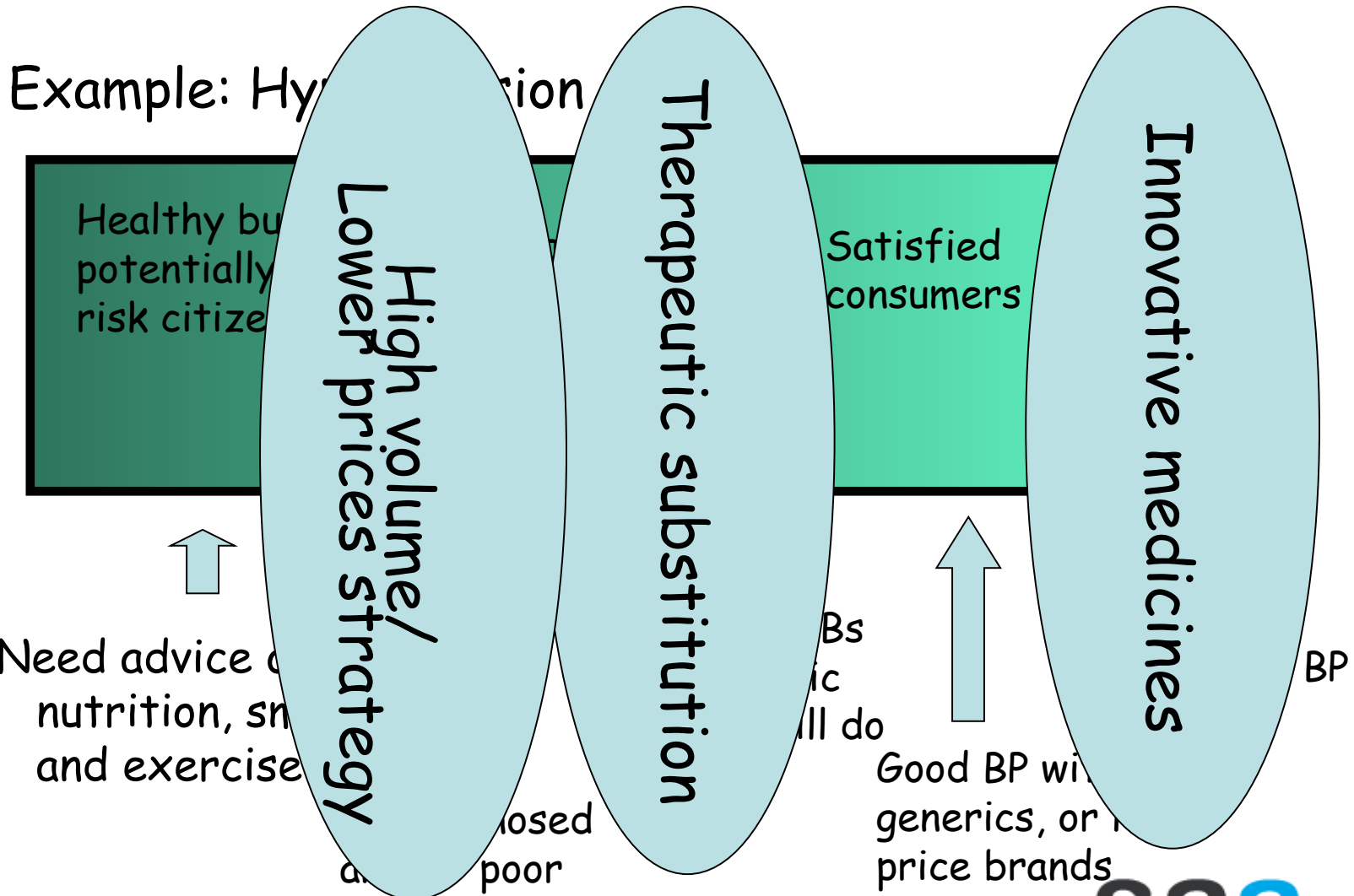


Consumers and non-consumers

Example: Hypertension



Consumers and non-consumers



Is Pharma's Social Contract Inhibiting Strategic Thinking?

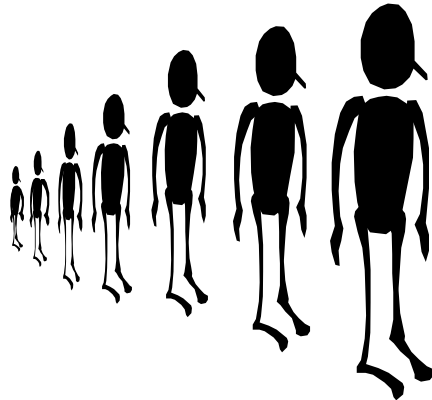
Society Grants Pharma

- Market exclusivity via IP protection
- Some pricing freedom
- Freedom to influence demand

Society Expects

- * Innovative products via R&D
- * Accessible and affordable products
- * Significant health benefits

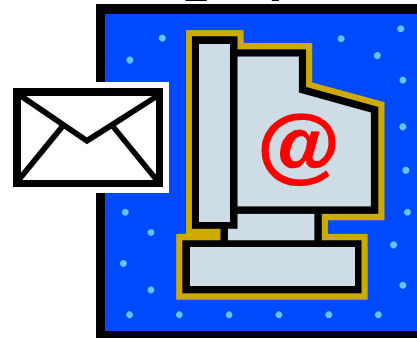
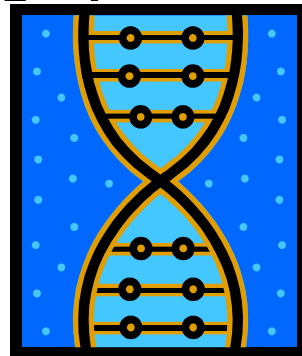
Three Seismic Shifts Are Changing Dynamics for Many Industries



Demographic shift



Geographic shift



Technology/Information Flow Shift **saa**

Where are the Growth Opportunities?

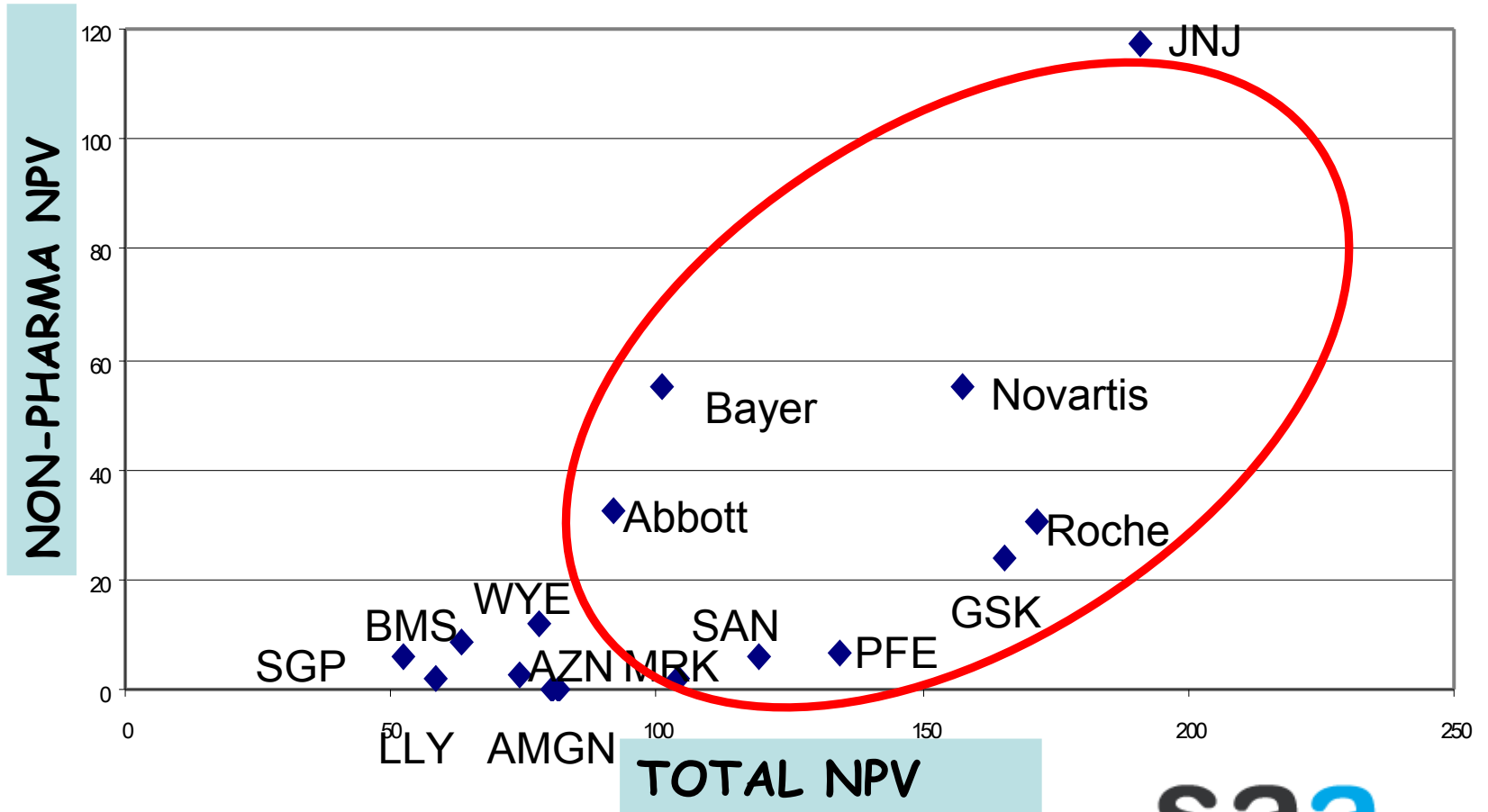


Sources of Growth

- New products
 - Must meet medical need and offer value for money
- New geographies
 - Emerging markets but must earn license to operate
- Vertical integration
 - Direct distribution, Insurance (Disease Management/Risk sharing)?
- Horizontal integration/diversification
 - Generics, OTC, Animal Health, Vaccines, Diagnostics, Medtech?

Diversification Requires Scale

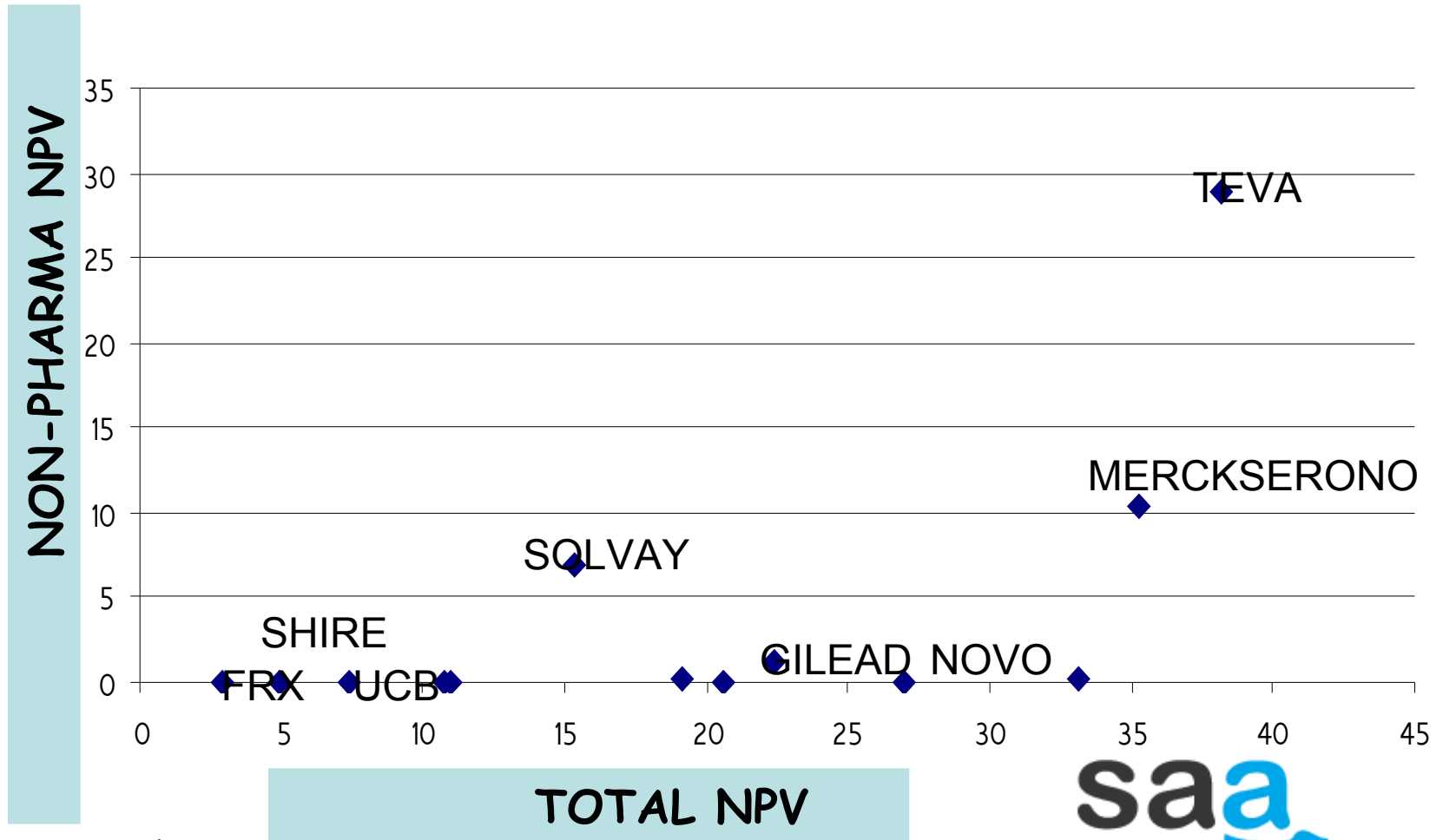
Total NPV vs NPV of Non-Pharma



Source: Credit Suisse

Mid-size Pharma Mostly Has to Focus

Total NPV vs NonPharma NPV



Source: Credit Suisse

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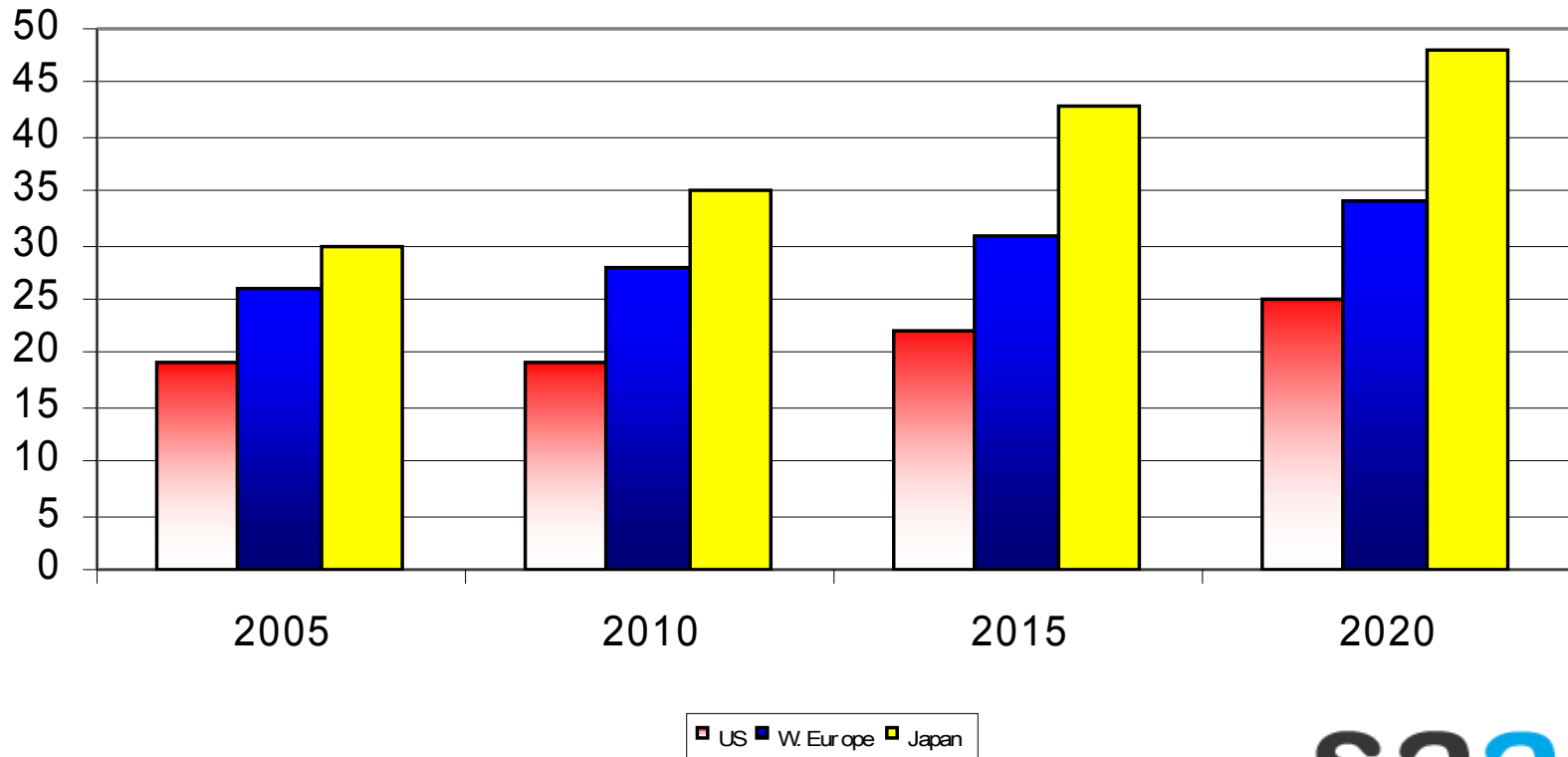
Many Pipeline Winners From Specialty Companies

Rank	Product	Company	Phase (Current)	Pharmacological Class	WW Product Sales (\$m)	
					2014	Today's NPV (\$m)
1	Denosumab (AMG 162)	Amgen	Filed	Anti-RANKL MAb	4,449	15,389
2	VX-950	Vertex Pharmaceuticals	Phase III	Hepatitis C protease inhibitor	2,661	8,441
3	SYR-322	Takeda	Filed	Dipeptidyl peptidase IV (DPP-IV) inhibitor	2,095	4,752
4	Pprevnar 13	Wyeth	Filed	Pneumococcal vaccine	1,189	4,695
5	Numax	AstraZeneca	Filed	Anti-RSV MAb	1,117	4,624
6	SCH 530348	Schering-Plough	Phase III	Thrombin inhibitor	901	4,112
7	Bapineuzumab (AAB-001)	Elan	Phase III	Anti-beta amyloid MAb	-	3,775
8	FTY720	Novartis	Phase III	Sphingosine 1-phosphate receptor agonist	827	2,635
9	Multaq	Sanofi-Aventis	Filed	Anti-arrhythmic	1,037	2,590
10	Taspoglutide	Roche	Phase III	Glucagon-like peptide 1 (GLP-1) agonist	1,531	2,540
11	Afresa	MannKind	Filed	Insulin	401	2,272
12	Byetta LAR	Amylin Pharmaceuticals	Phase III	Glucagon-like peptide 1 (GLP-1) agonist	1,801	2,227
13	Axitinib (AG-13,736)	Pfizer	Phase III	VEGFR kinase inhibitor	594	2,204
14	Arzerra	Genmab	Filed	Anti-CD20 MAb	-	2,193
15	Xarelto	Johnson & Johnson	Filed	Factor Xa inhibitor	1,215	2,084
16	MK-0974	Merck & Co	Phase III	Calcitonin gene-related peptide (CGRP) receptor antagonist	872	2,039
17	M-Enoxaparin	Momenta Pharmaceuticals	Filed	Heparin, low molecular weight	-	1,942
18	Boceprevir	Schering-Plough	Phase III	Hepatitis C protease inhibitor	507	1,869
19	ABT-874	Abbott Laboratories	Phase III	Anti-IL-12 & IL-23 MAb	635	1,842
20	Urocidin	Bioniche Life Sciences	Phase III	IL-12 receptor agonist	-	1,791
Top 20					21,833	74,015
Other					52,379	147,383
Total					74,211	221,397

Source: EvaluatePharma® (12 MAY 2009)

The Greying of the Developed World will Drive Strong Healthcare Demand

Old age dependency ratio in US, W.Europe and Japan

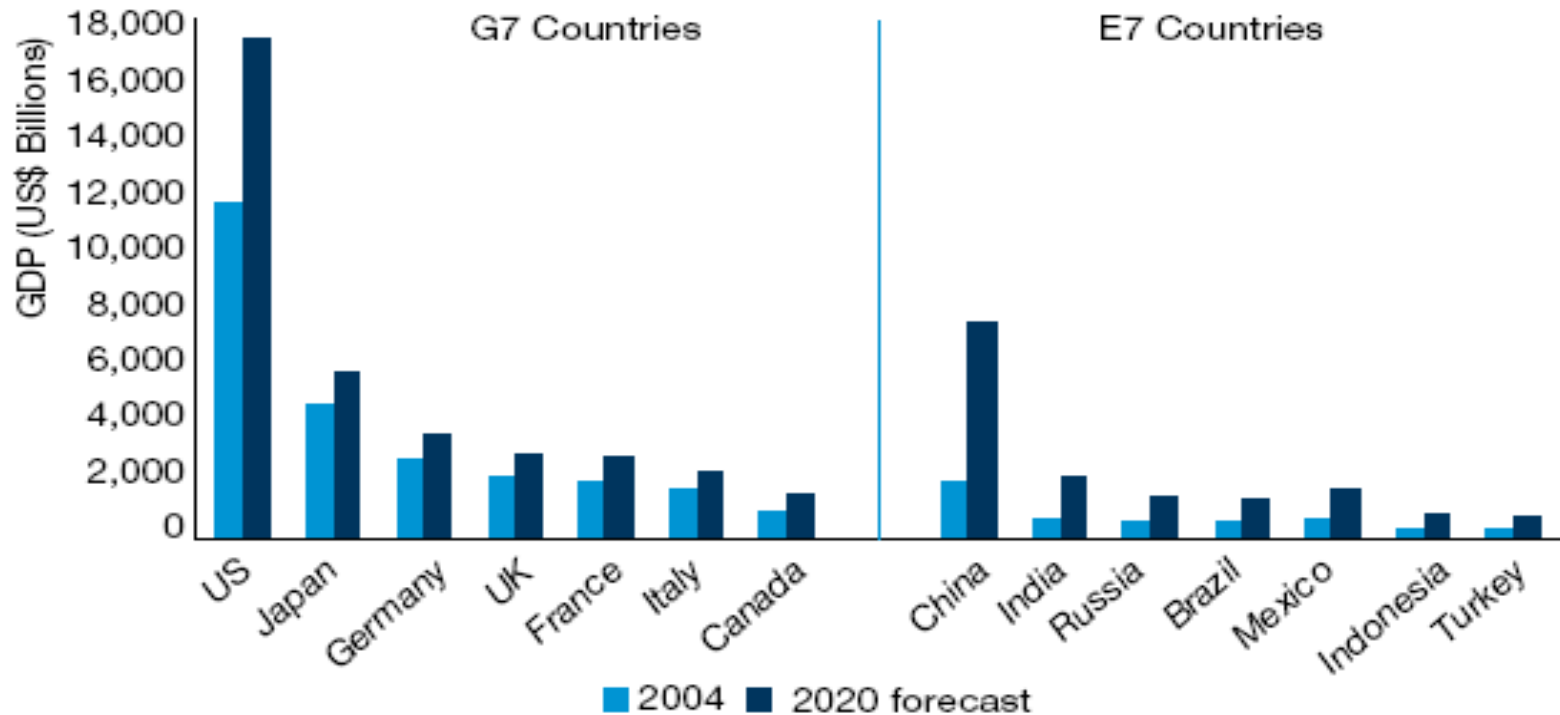


Source: UN: Population Database

Consequences of Demographic Shift

- Huge increase in demand for healthcare
- Reduced ability to pay for demand
- Greater budgetary pressures
 - Price pressures on commoditized products
 - Value for money product offering
 - Higher co-pays
 - Greater patient involvement
 - Real world outcomes data

E7 GDP as % of G7 GDP Could Rise From 20% to 43% by 2020



Source: PricewaterhouseCoopers Macro Economic Consulting Group

Notes: 2004 estimates based on World Bank World Development Indicators database (except China, which was adjusted for a later large data revision); 2020 projections based on our model

However Industry Cannot Pursue Traditional Business Model Without Risk

Drug Safety	Understating the adverse reactions associated with a drug	Exaggerating the dangers involved in importing drugs	Failing to monitor the safety of marketed drugs adequately
Clinical Trials	Failing to disclose the full results of clinical trials	Making improper financial arrangements with trial sites	Manipulating trial data to maximise sales
Drug Prices	Charging prices that are perceived as too high	Ignoring social responsibilities in pricing for the developing world	Spending excessively to protect patents
Sales Practices	Promoting products for off-label indications	Providing physicians with financial incentives to prescribe products or write favourable articles about them	Inventing new lifestyle diseases
Investor Relations	Over-managing price/earnings and earnings per share ratios	Remunerating senior management exorbitantly	Ignoring negative publicity
Innovation	Spending R&D funds to develop "me-too" drugs	Spending too much on sales & marketing, and diverting funds from R&D	Developing drugs on the basis of sales potential rather than medical need

Source: PricewaterhouseCoopers

Did Novartis Pick the Right Issue to Fight about in India?

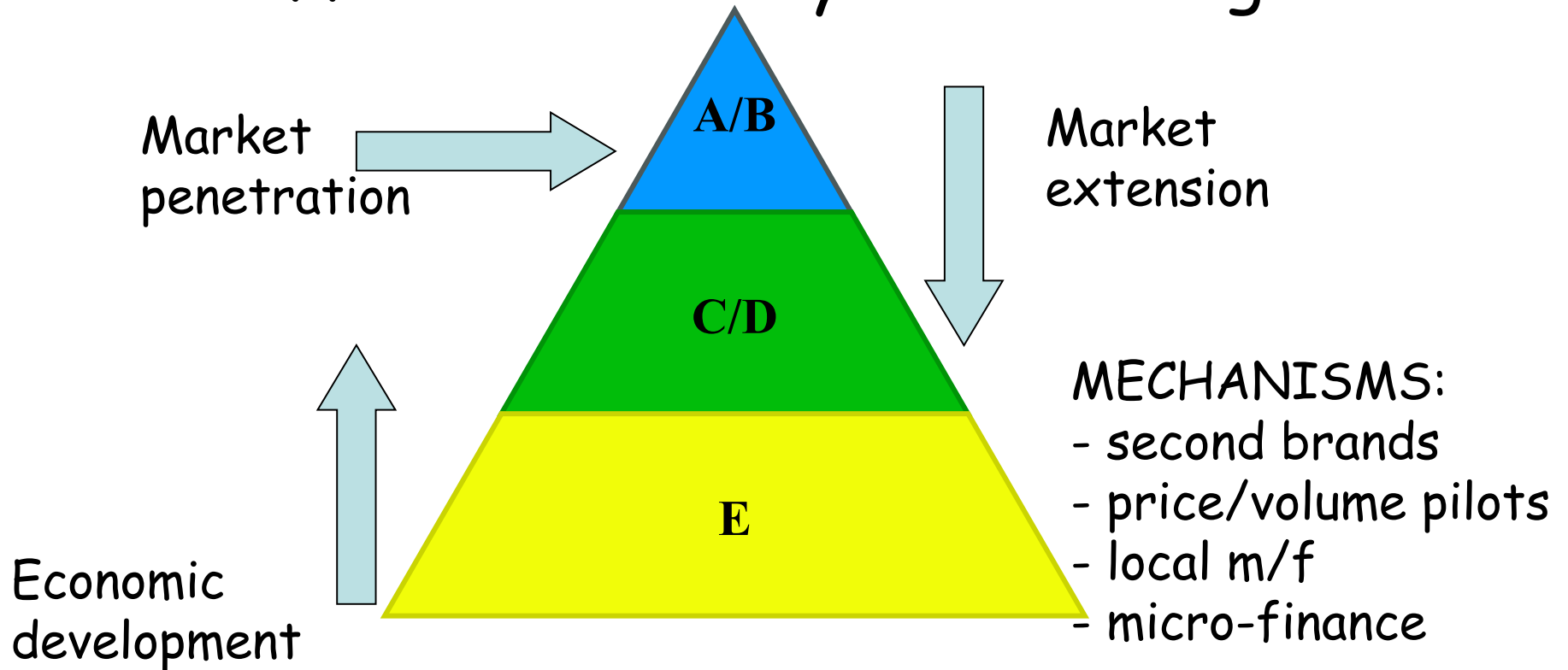
[**More than 200 000 people ask Novartis to drop its challenge on drug patent**

British Medical Journal. By Sally Hargreaves
3 February, 2007

Pharma Must Not Take its Licence to Operate for Granted



Emerging Market Dynamics Will Drive Different Delivery Methodologies

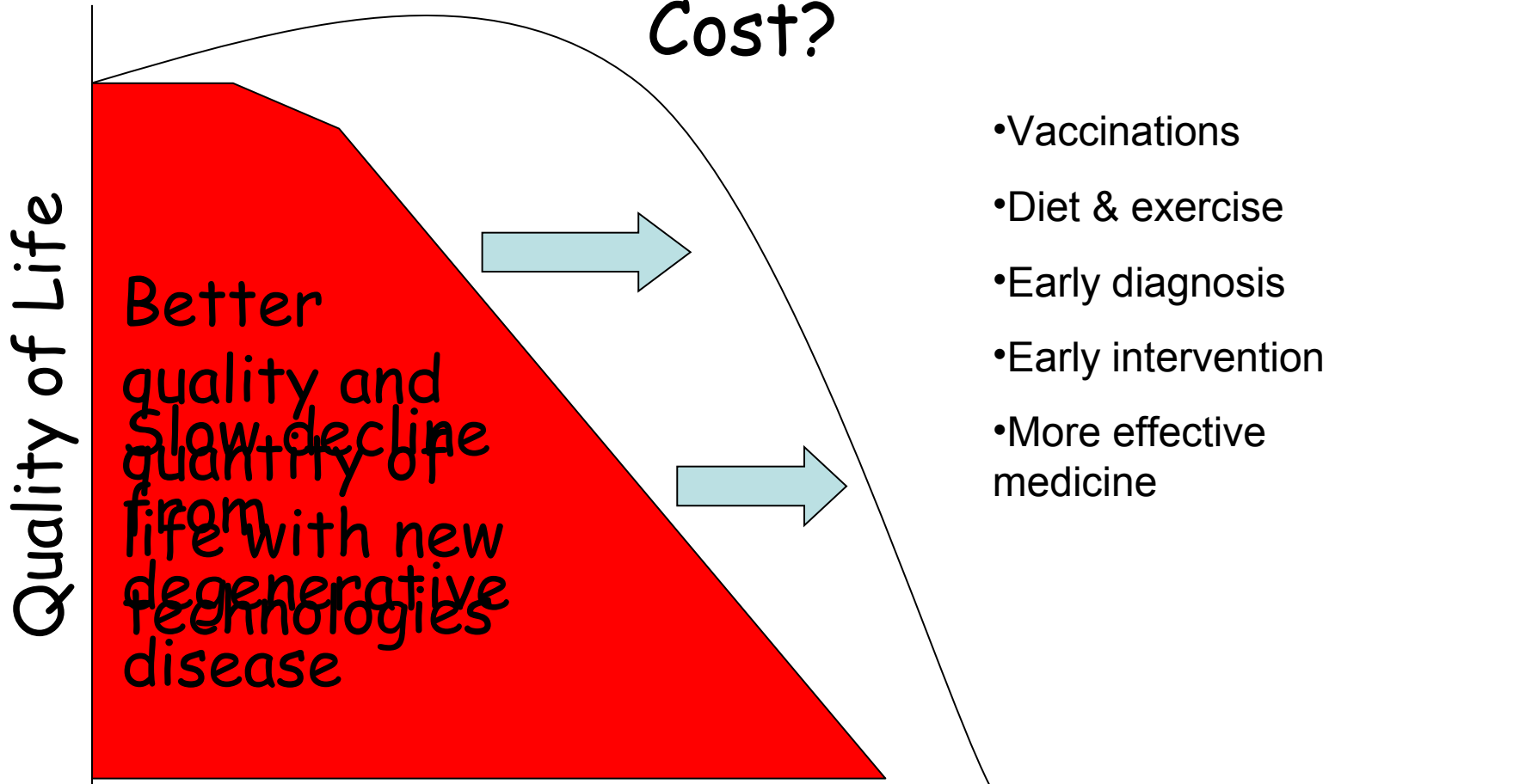


SOME ISSUES

- market segmentation/diversion
- infrastructure investment
- political commitment
- reference pricing
- additional resources

Source: GSK

Technology Raises Expectations ...And Cost?



Lifespan

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The Impact of New Technologies (including Information/Data) on Pharma

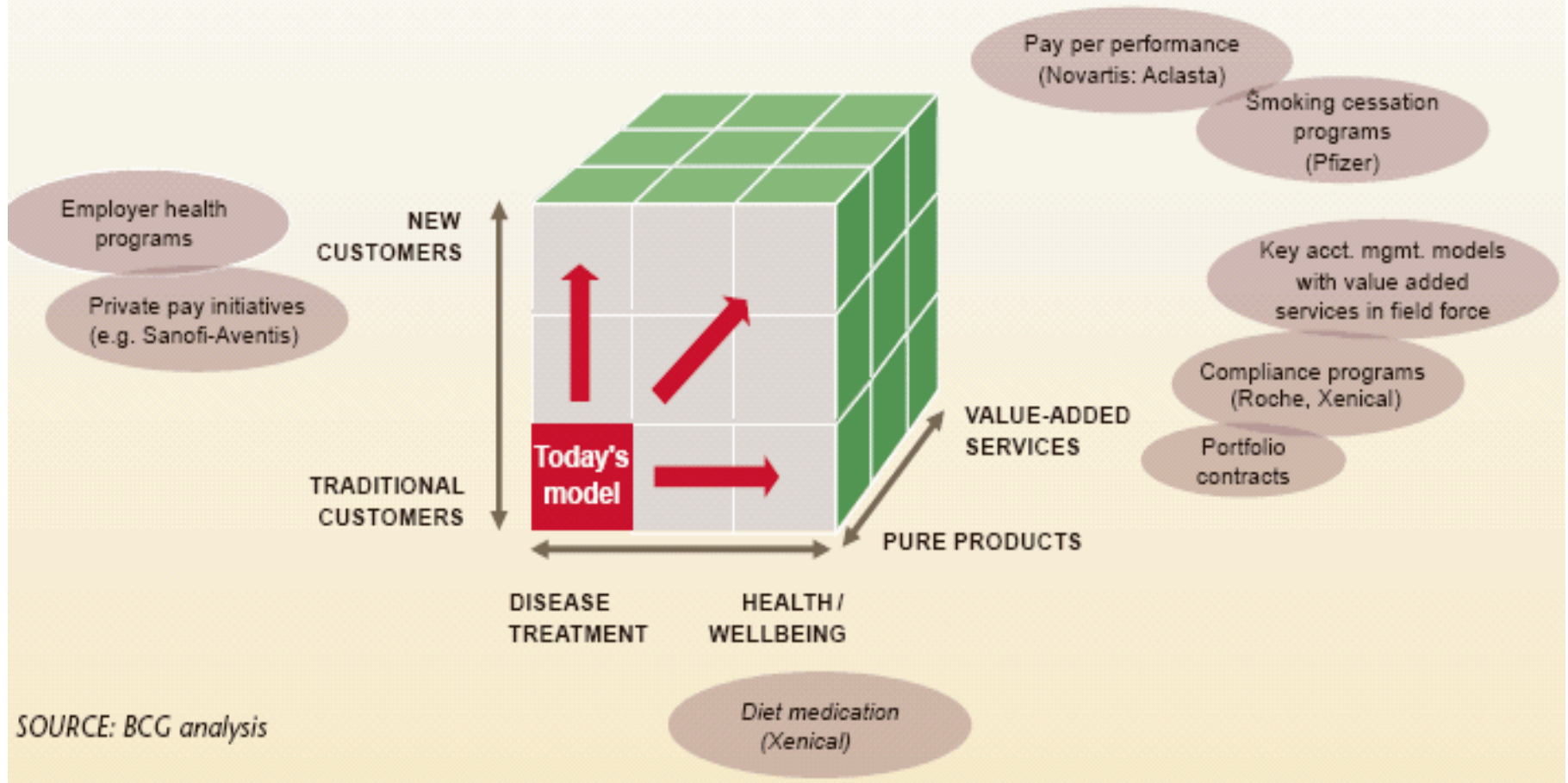
- Other stakeholders taking share of total value
- Disruption of established treatment pathways
- True understanding of contribution to clinical outcome

Pharma Loses
Influence to
Other
Stakeholders

What Must Pharma Consider Changing?

- Big pharma needs to address the following issues:
 - Payor Funding/Affordability to Patient
 - Guarantee of Treatment Outcome/Value Proposition
 - Alignment of Industry Objectives with Societal/Patient Objectives

Business Model Opportunity Space Largely Unexploited



SOURCE: BCG analysis

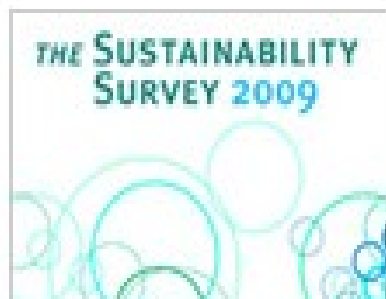
SustainAbility

"We in big pharma should never take for granted our right to exist; our business model is not written into any country's constitution. So we should be turning up to work every day with the mindset that we are earning the right to exist. We are earning it by meeting the expectations of society. When you start to think like this, you see the world differently."
Andrew Witty - CEO, GlaxoSmithKline

About SustainAbility ▼

Consulting Services ▼

Research & Advocacy ▼

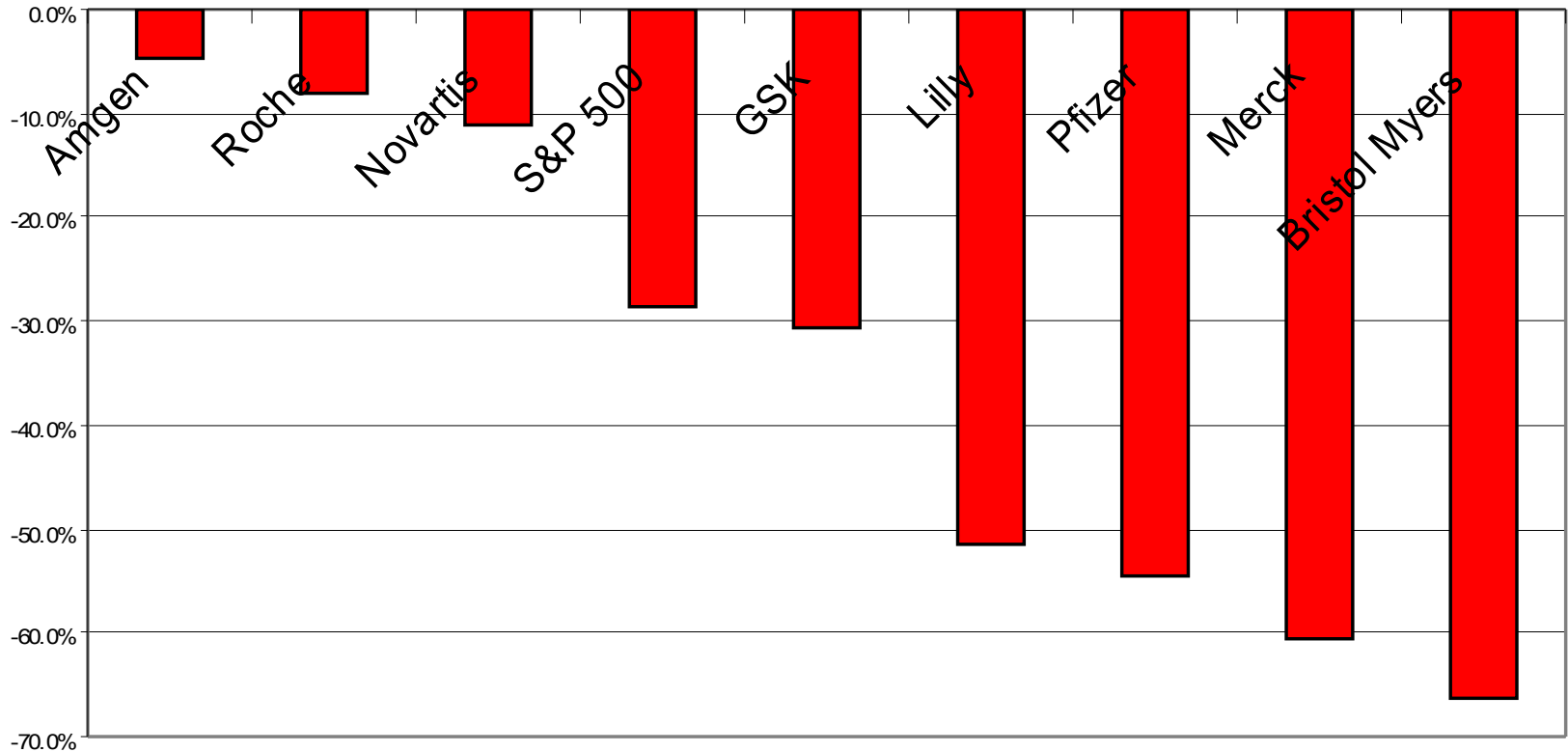


Stock Market Consequences of Industry Slowdown



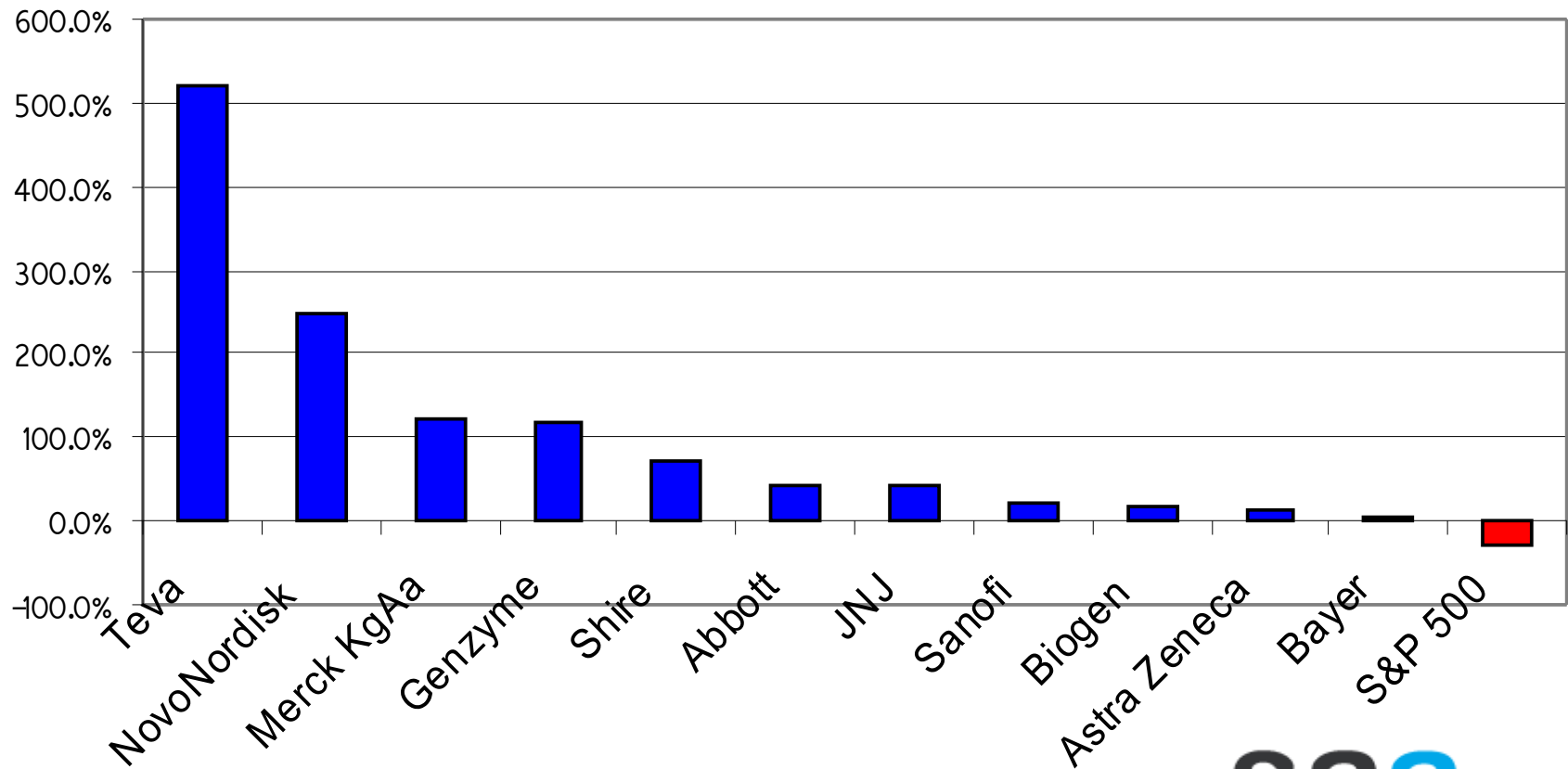
Big Pharma - Worst Performance

Share Price Performance Jan 1 2000 - Sept 24 2009

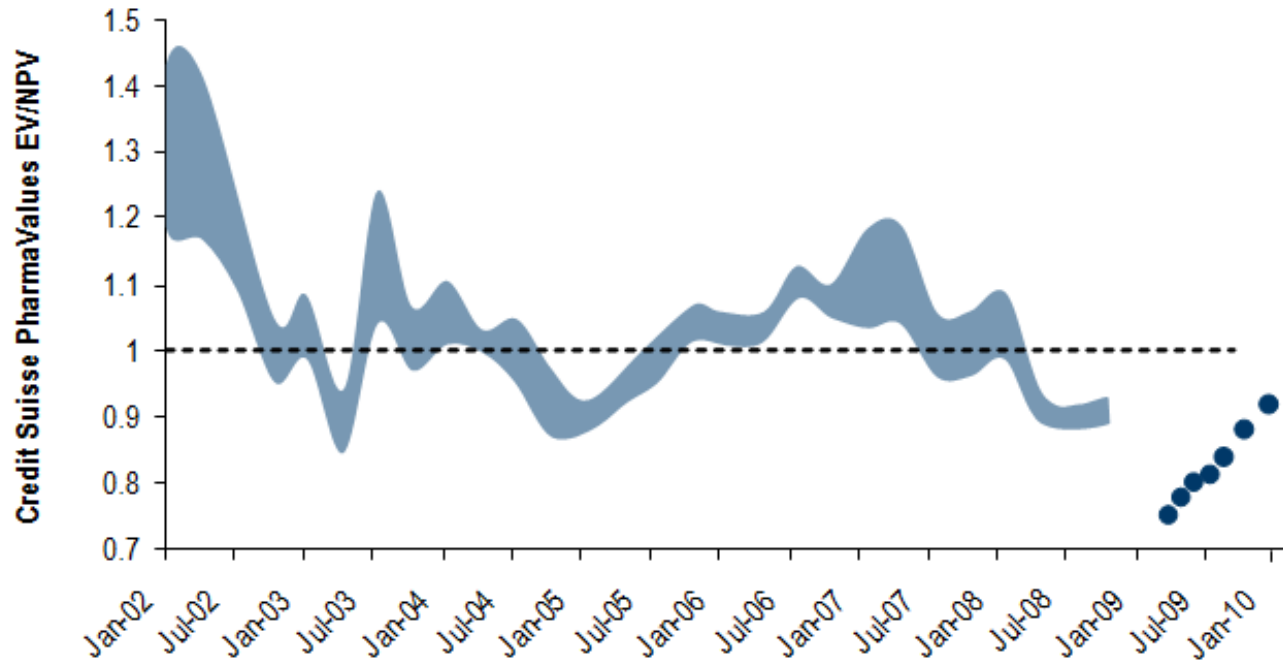


Best Performers - Specialty and Diversified Pharmas

Share Price Performance Jan 1 2000-Sept 24 2009



Pharma Sector is Cheap



CREDIT SUISSE

Source: Credit Suisse estimates 9

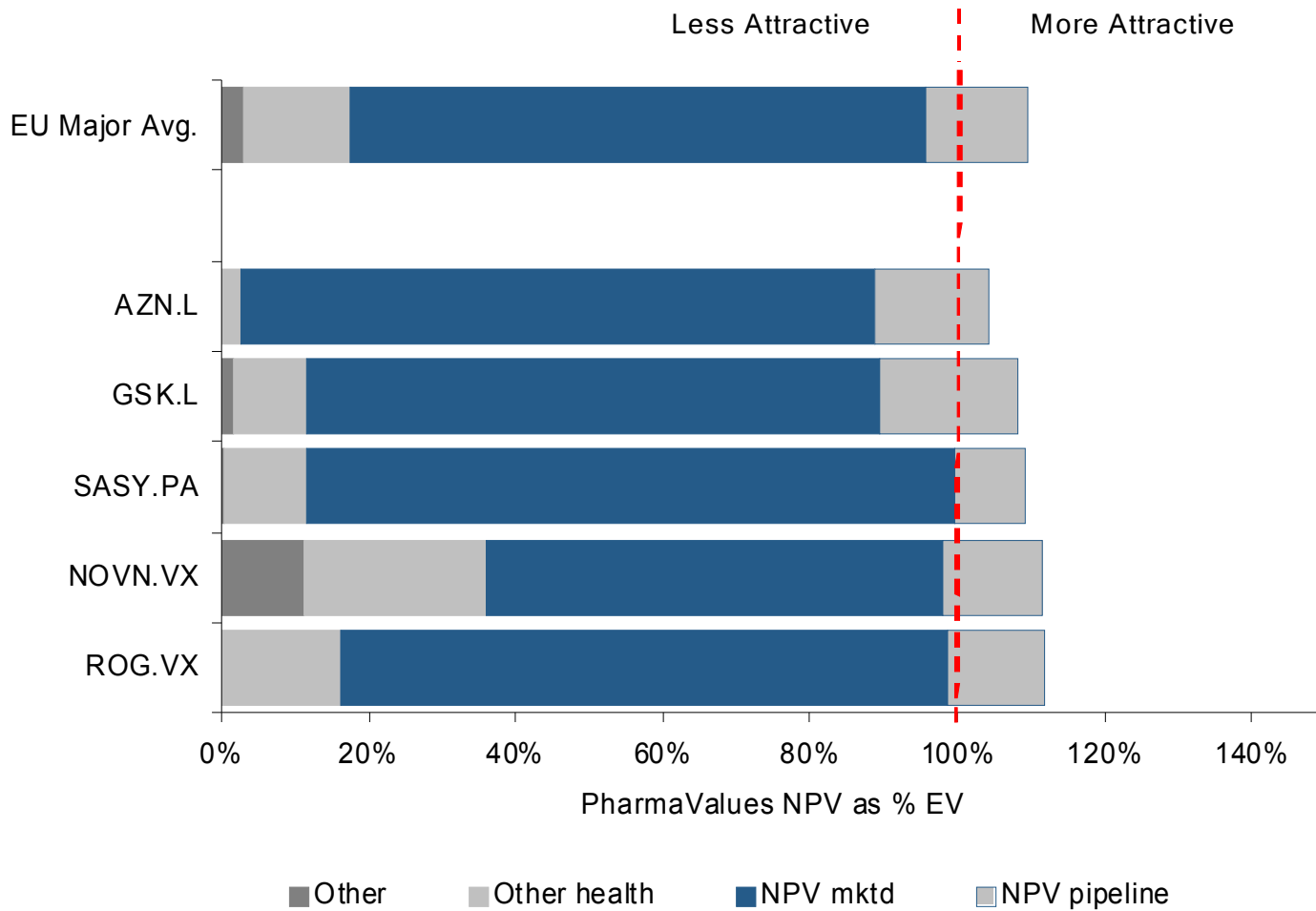
Source: Credit Suisse PharmaValues

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European Pharma is Cheap

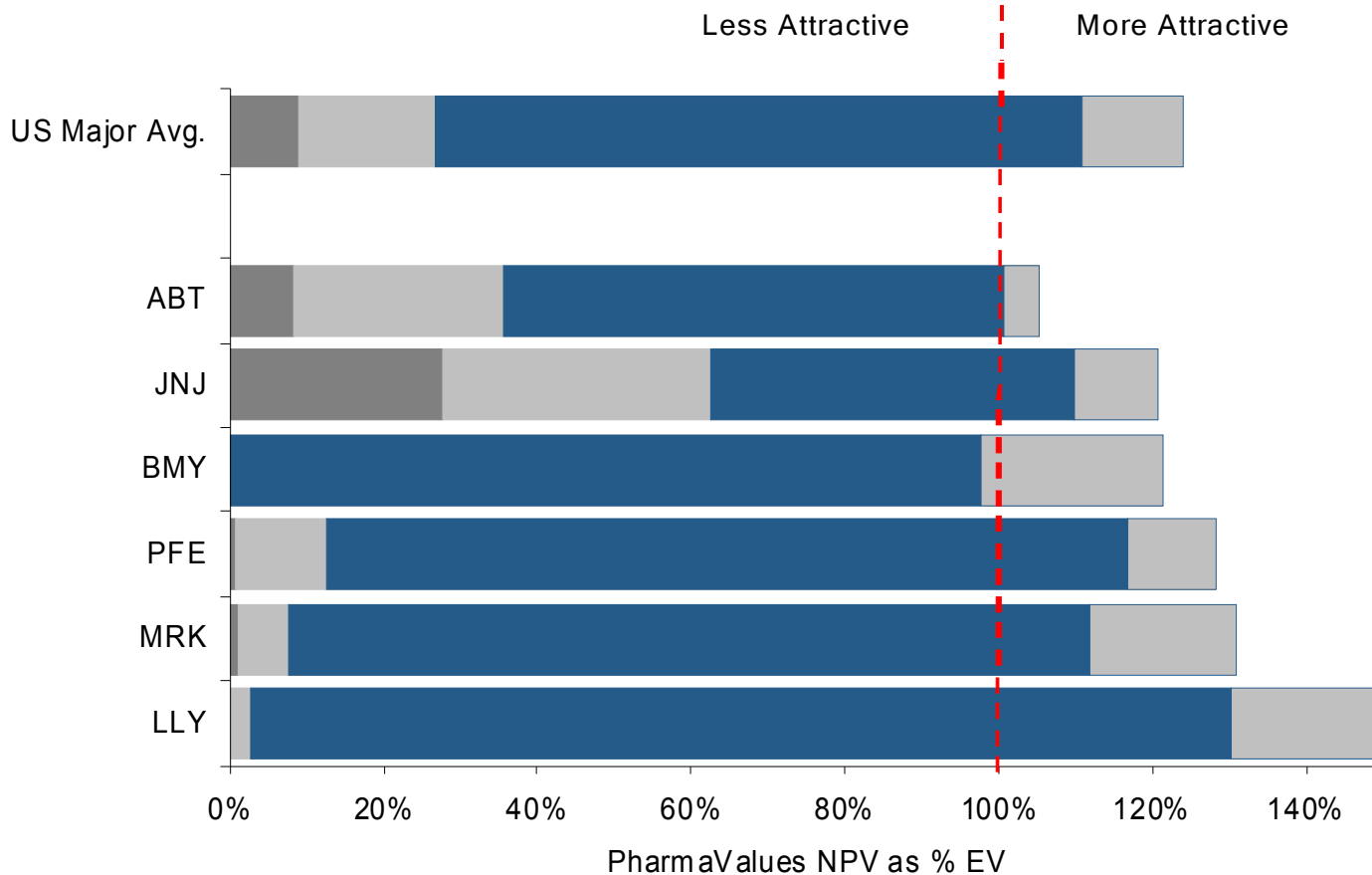


Source: Credit Suisse estimates



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US Pharma is Cheaper_



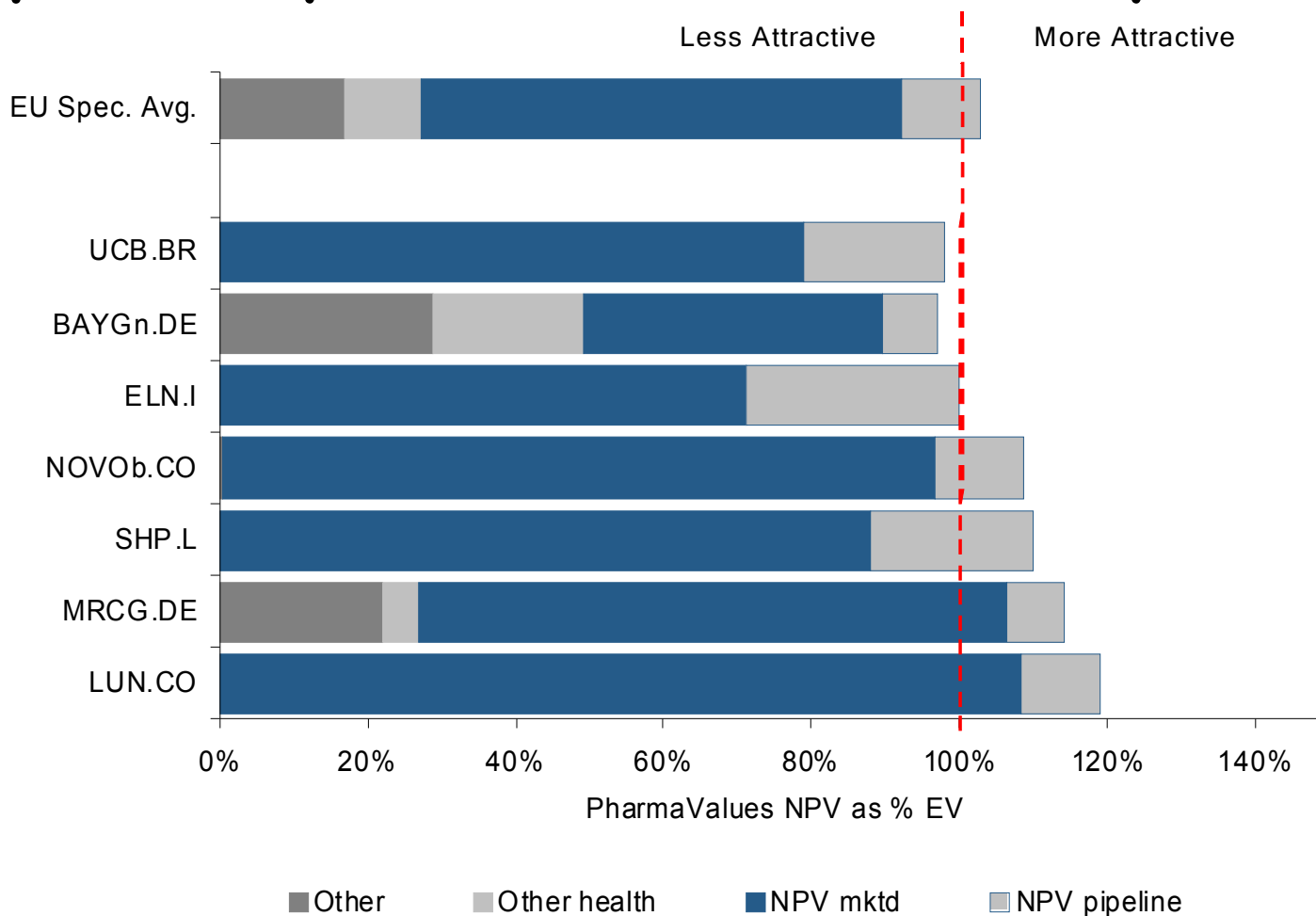
■ Other ■ Other health ■ NPV mkt ■ NPV pipeline

Source: Credit Suisse estimates



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Specialty Pharma More Fully Valued



Source: Credit Suisse estimates

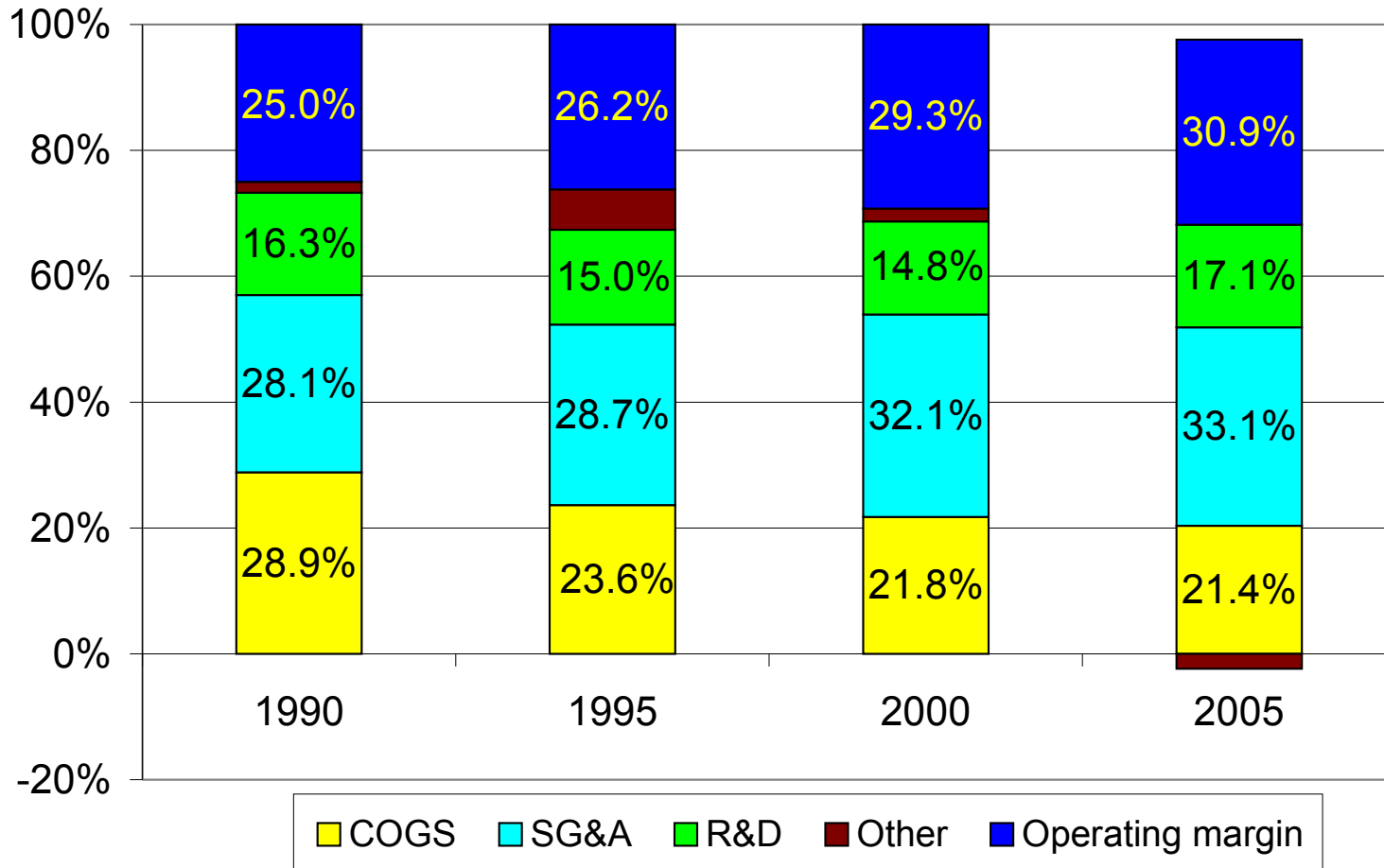


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Industry Must Take Better Care of its Cost Drivers



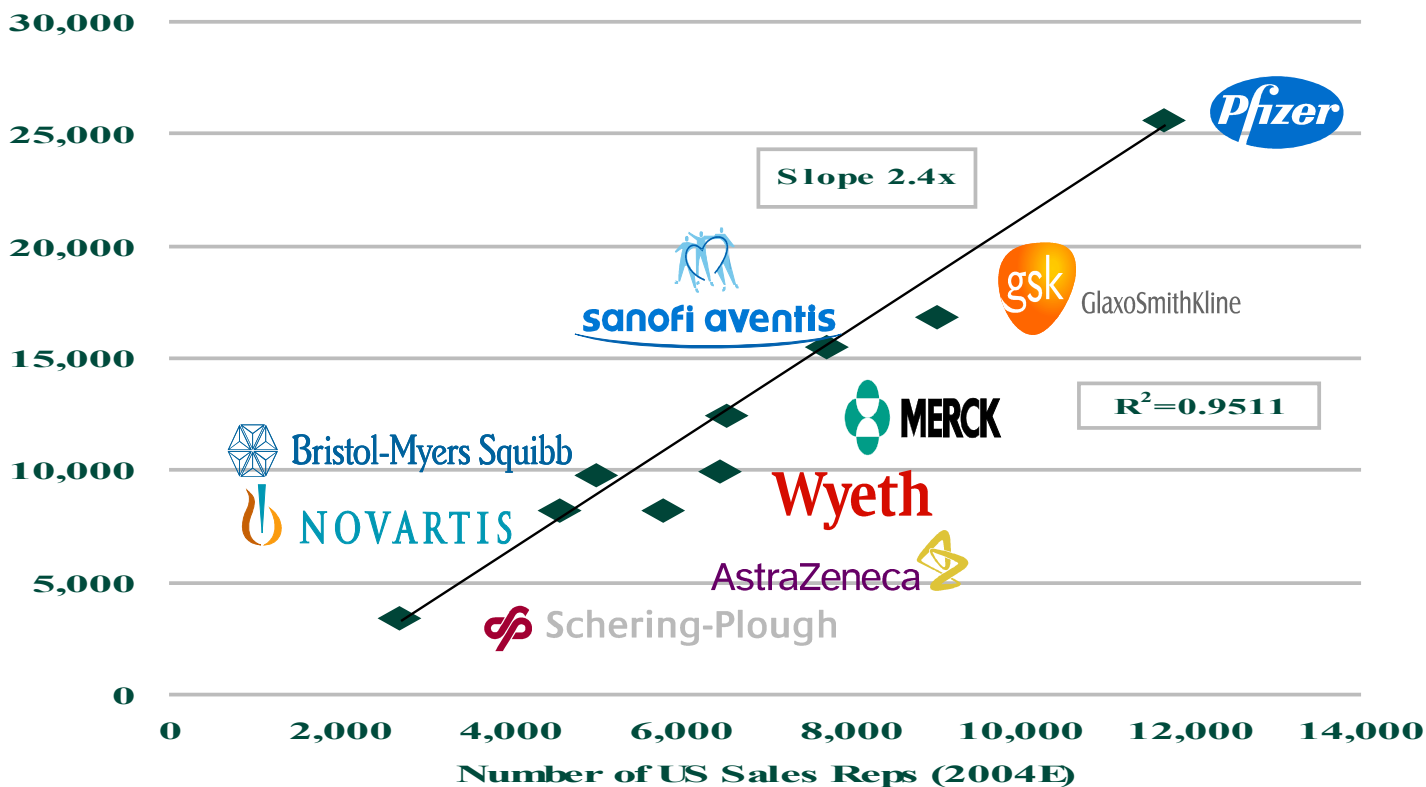
SG&A is the Biggest Cost Driver



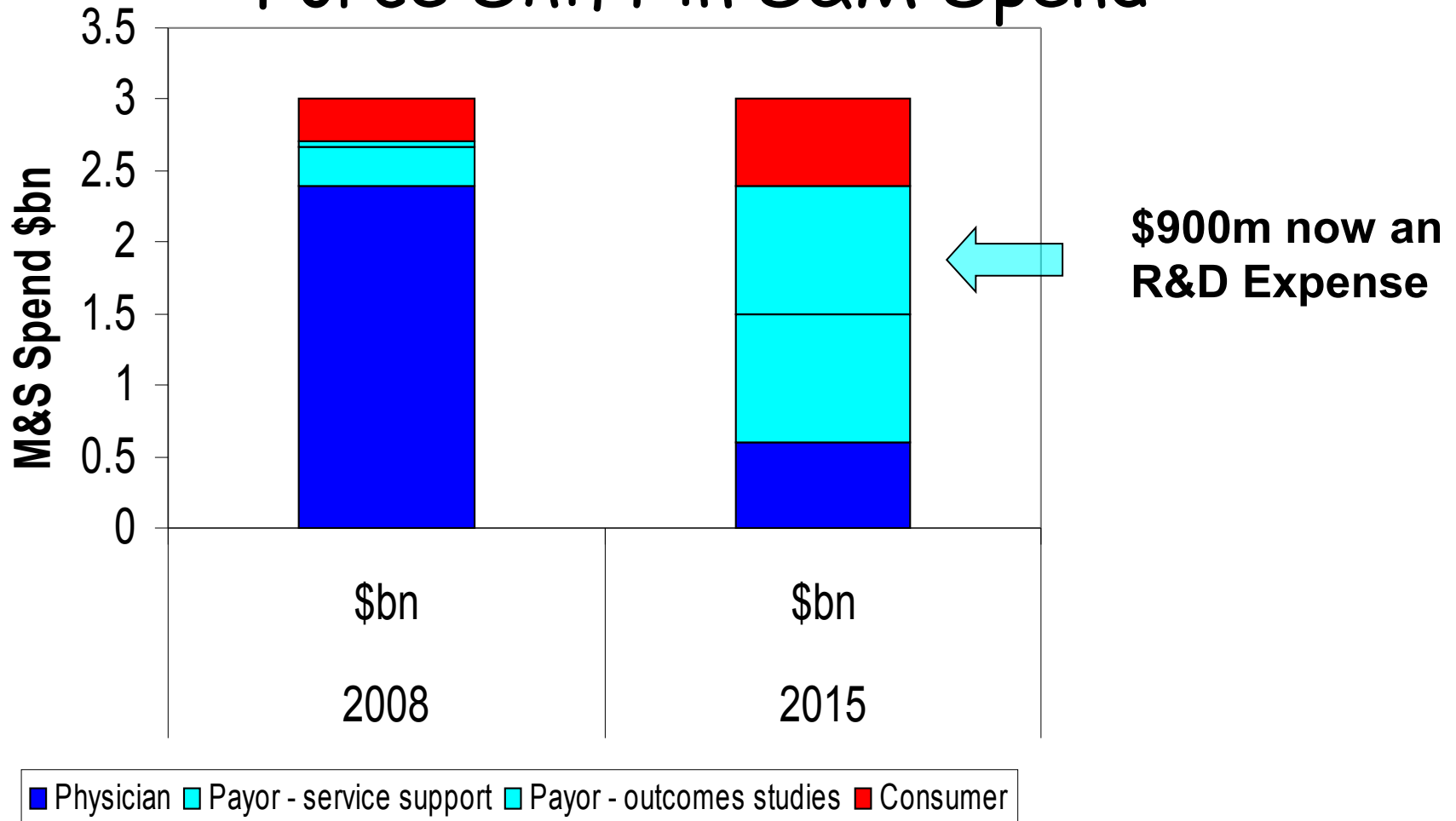
Does the Share of Voice Model Still Apply?

The Changing Role of Sales and Marketing

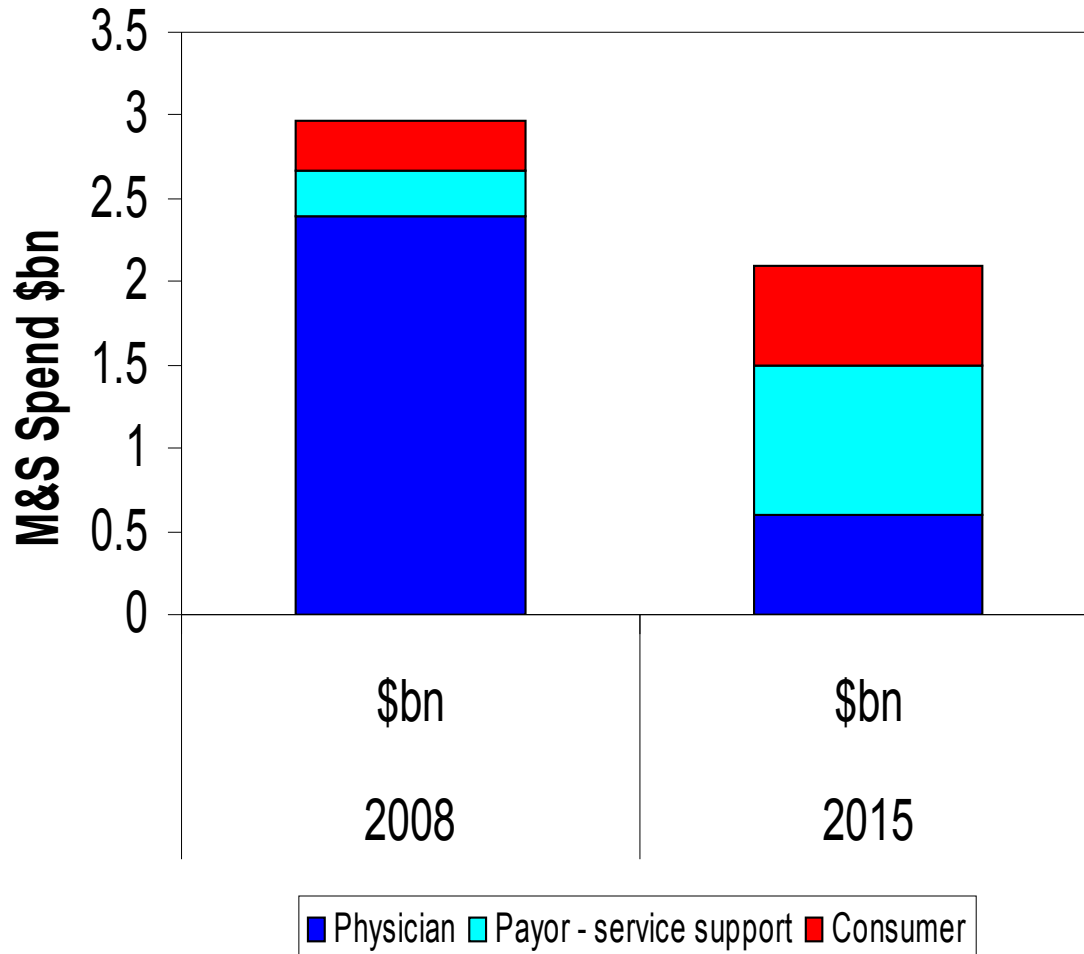
Total US Pharma Sales 2005E



Changing Influence Over Rx Decision Will Force Shift in S&M Spend



S&M Spending May Shrink Significantly

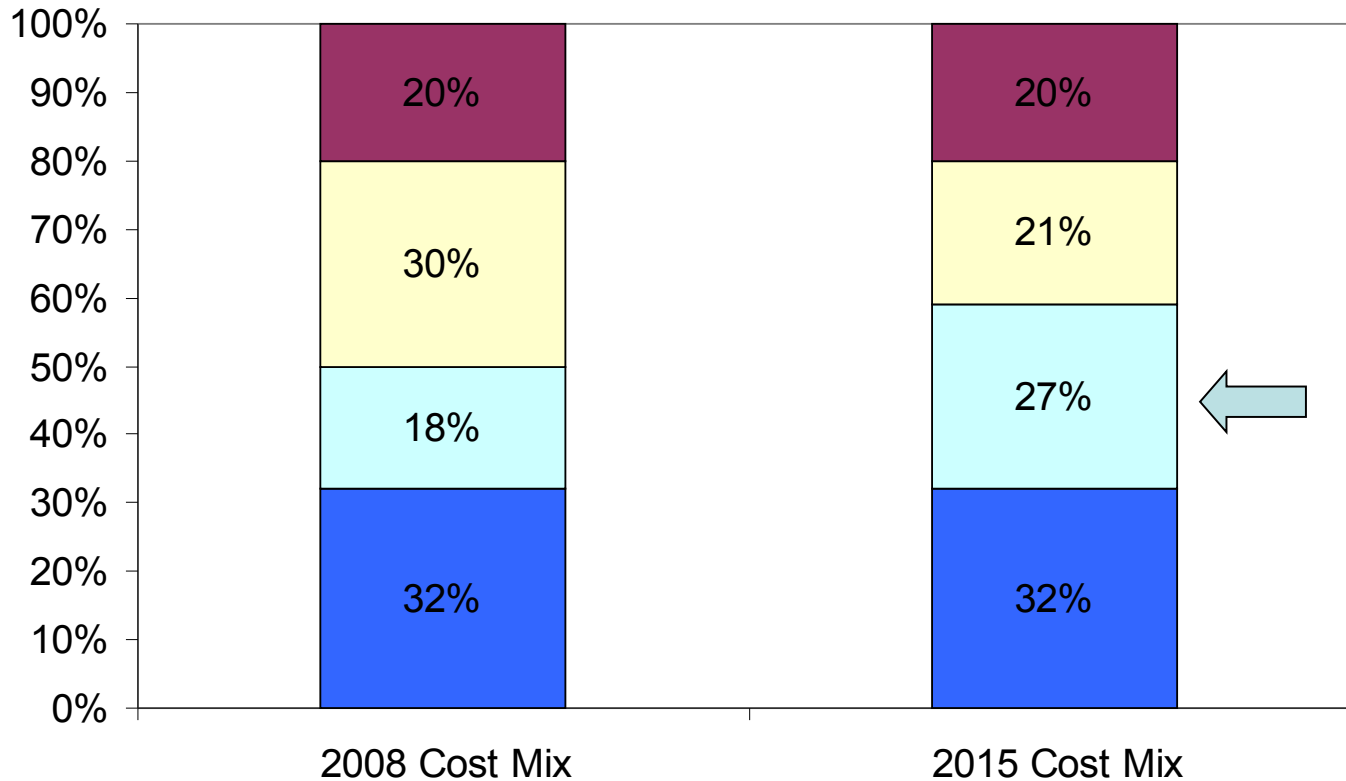


\$3bn S&M spend



\$2.1bn S&M spend

In This Model R&D is Greater than S&M



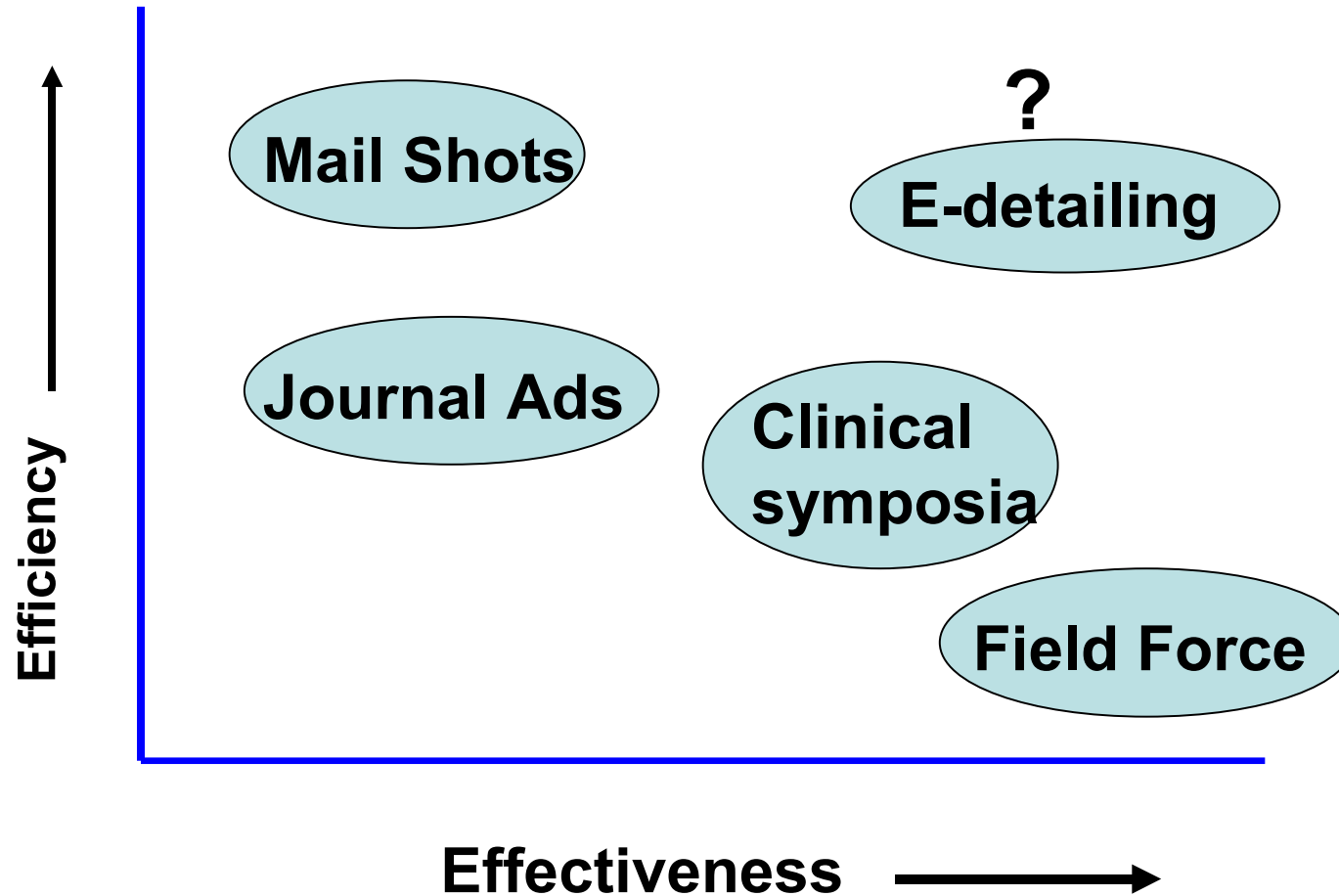
**Includes
\$0.9bn for
Outcome
studies**

■ Operating profit ■ R&D ■ S&M ■ COGS

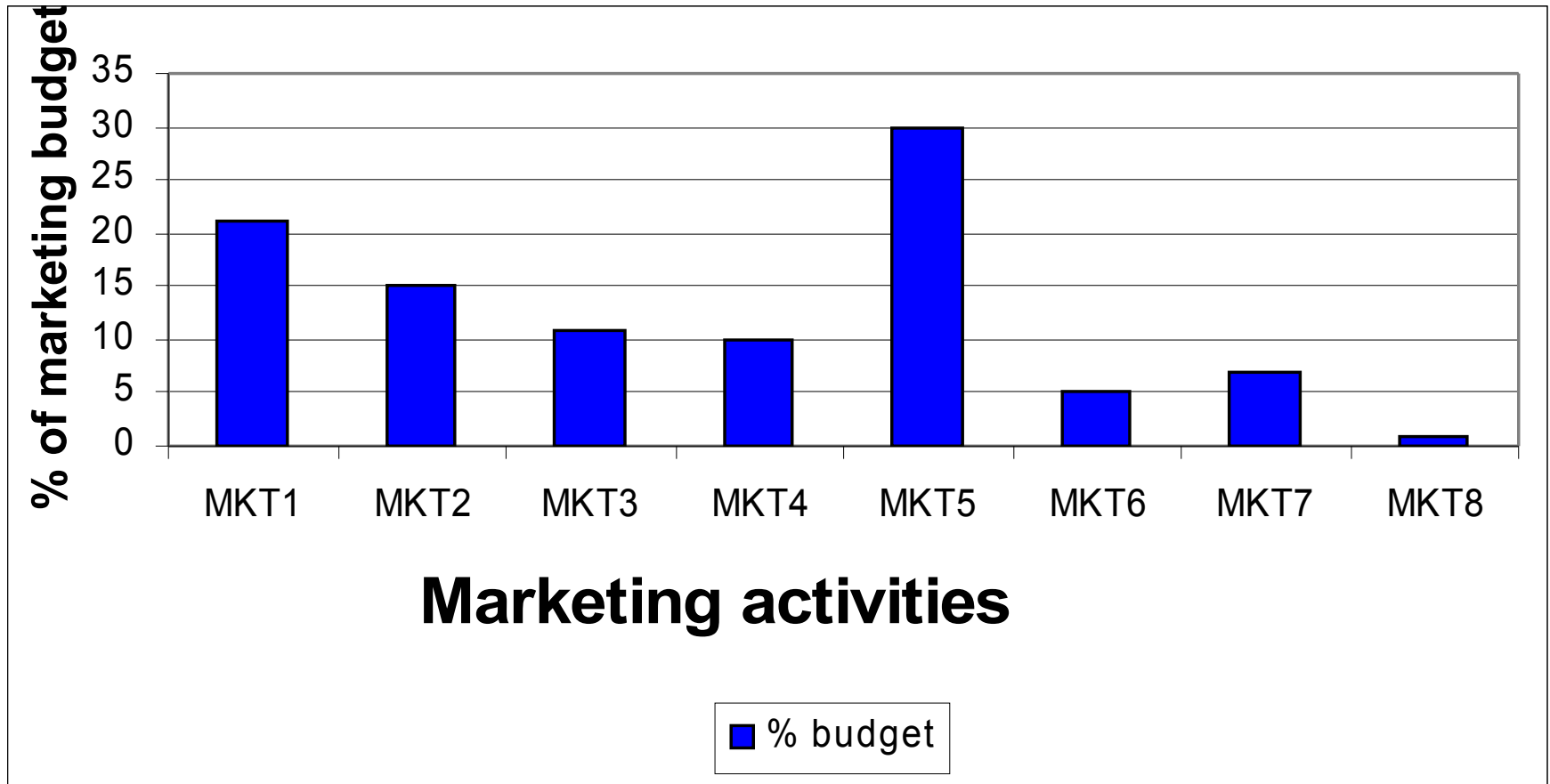
Metrics for Competitive Advantage



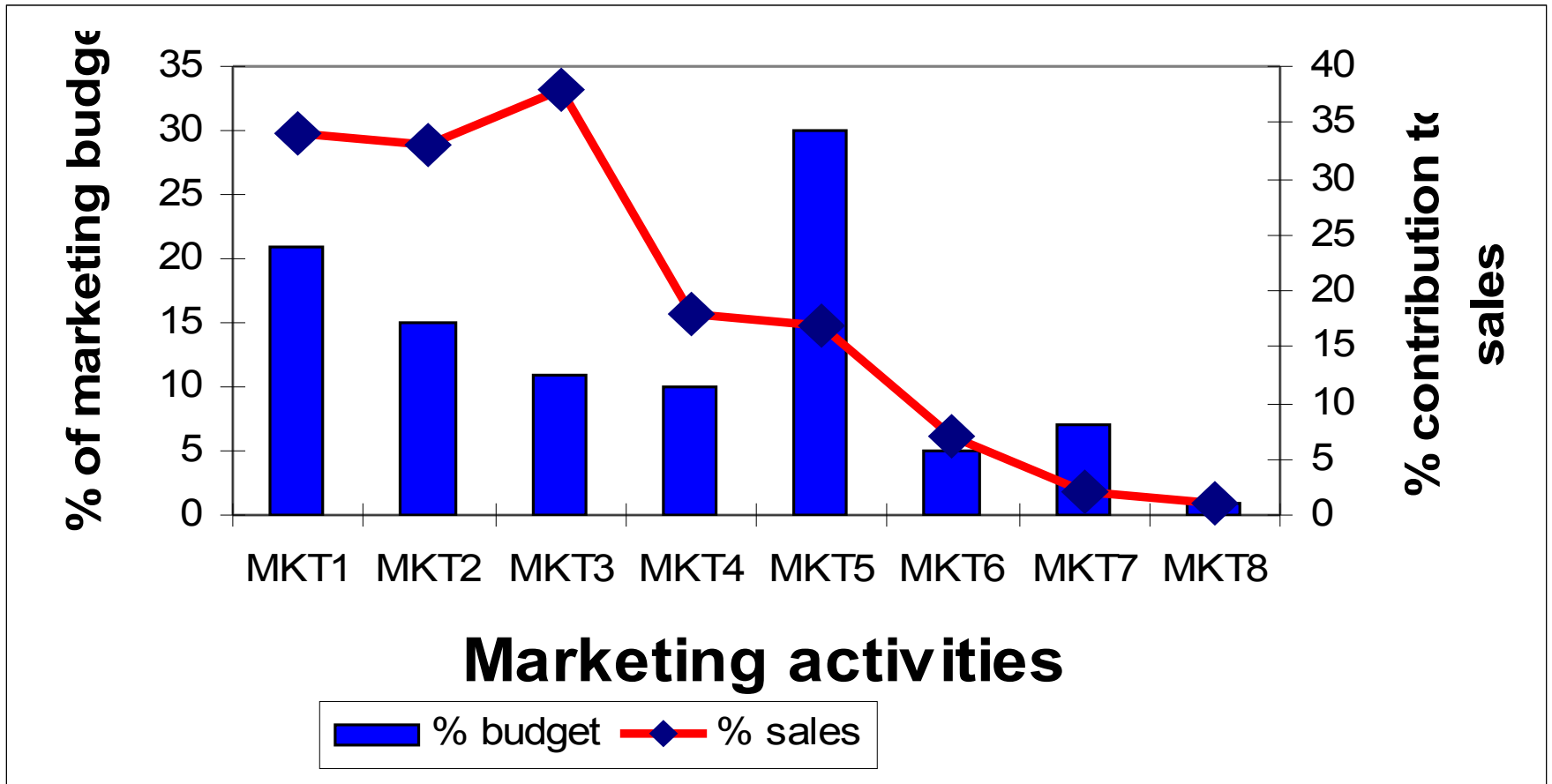
Efficiency vs Effectiveness



You (Should) Know Your Cost Breakdown

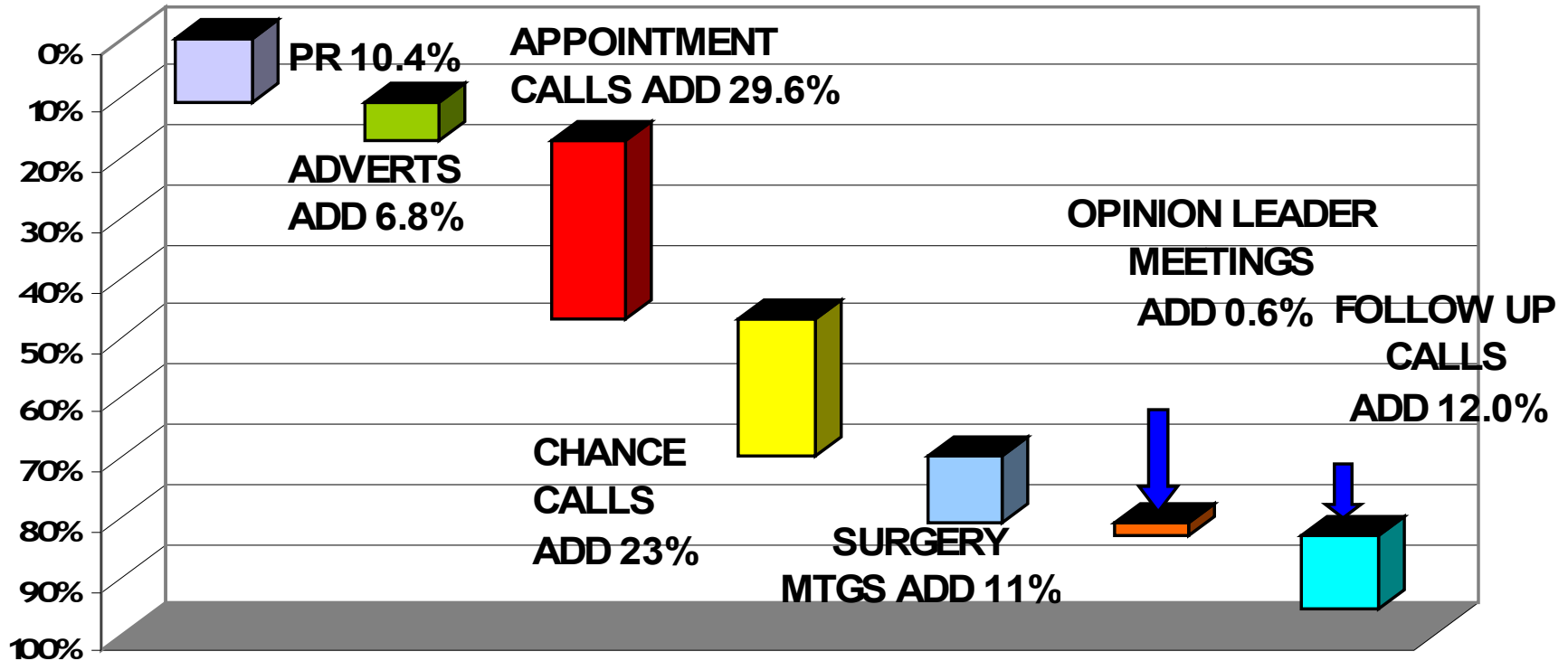


But Do You Know Their Contribution To Sales?



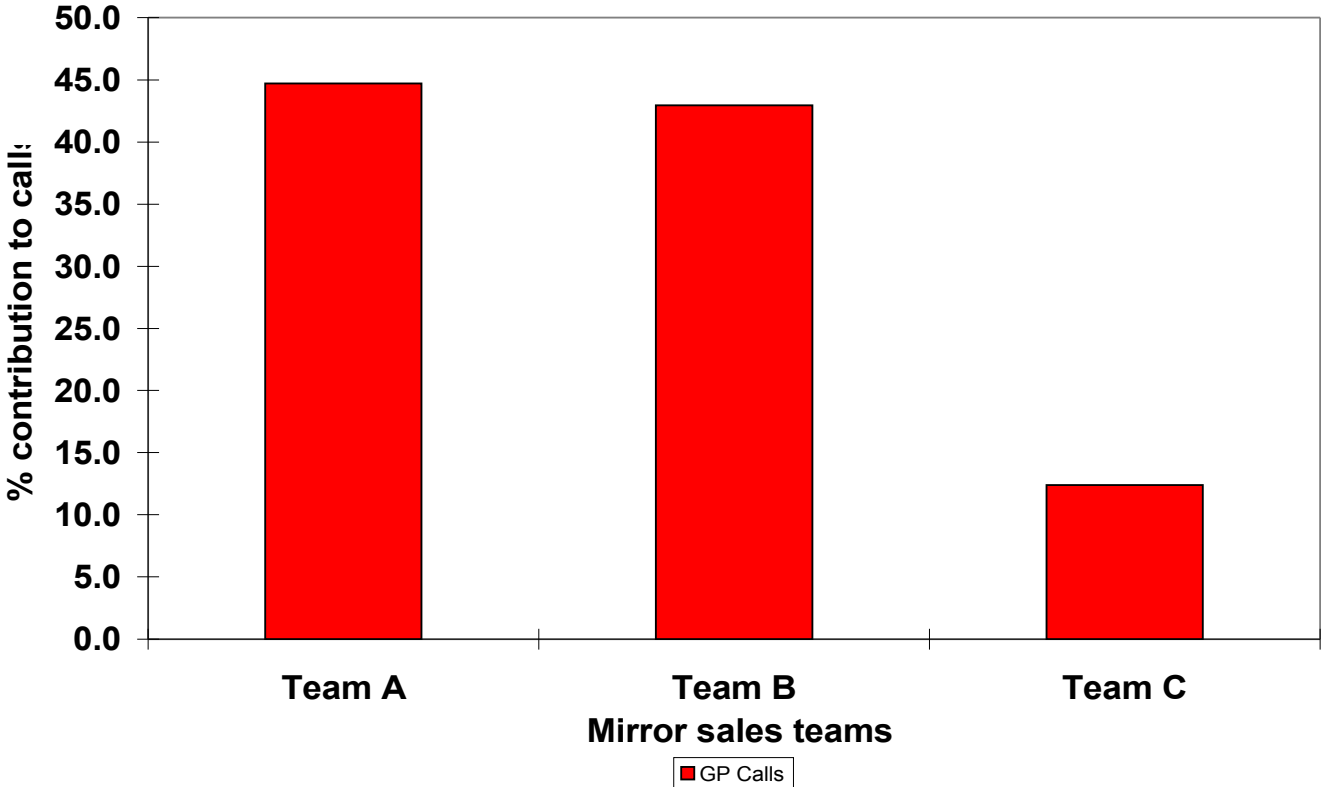
Build A Promotion Response Model

Typical promotion response model for chronic use primary care product



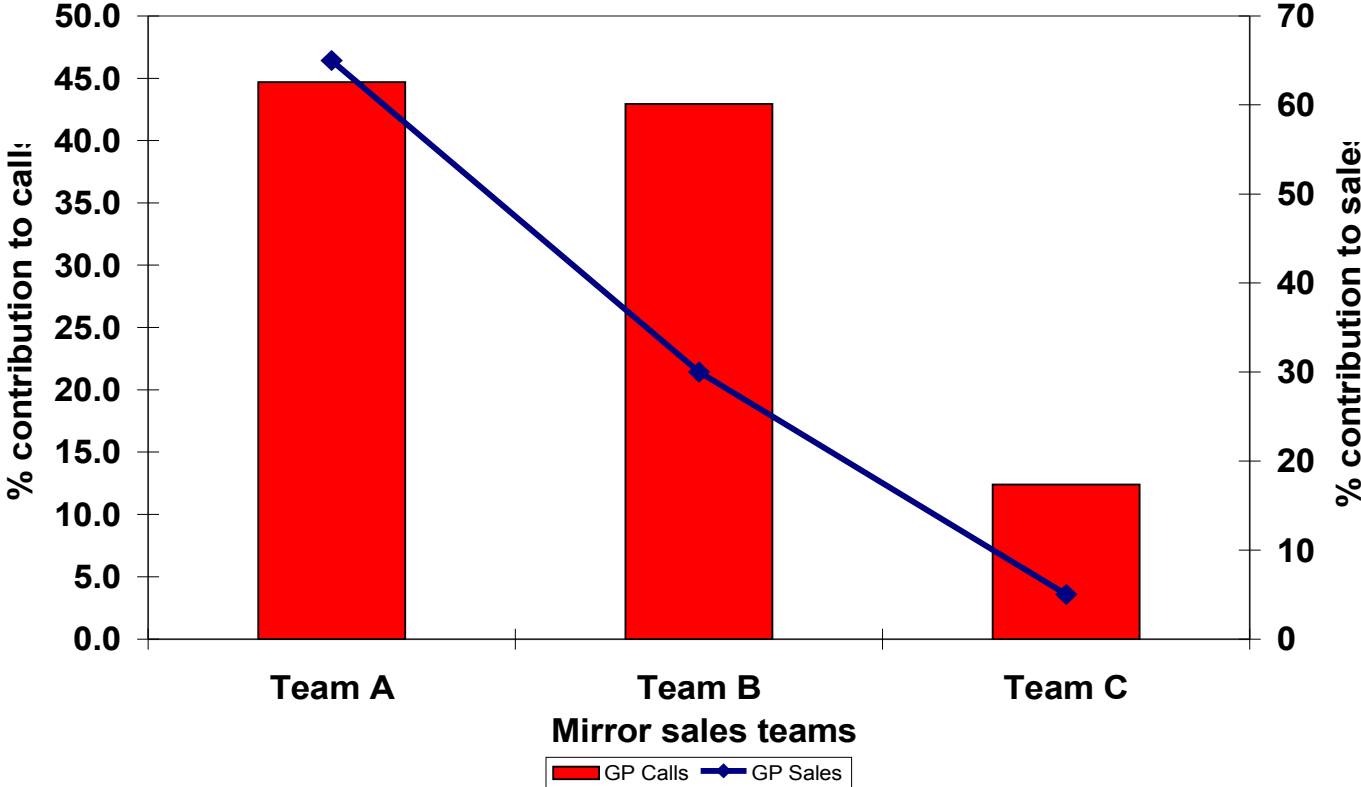
You Know Your Field Force Costs

Contribution of Mirror Teams to GP Calls



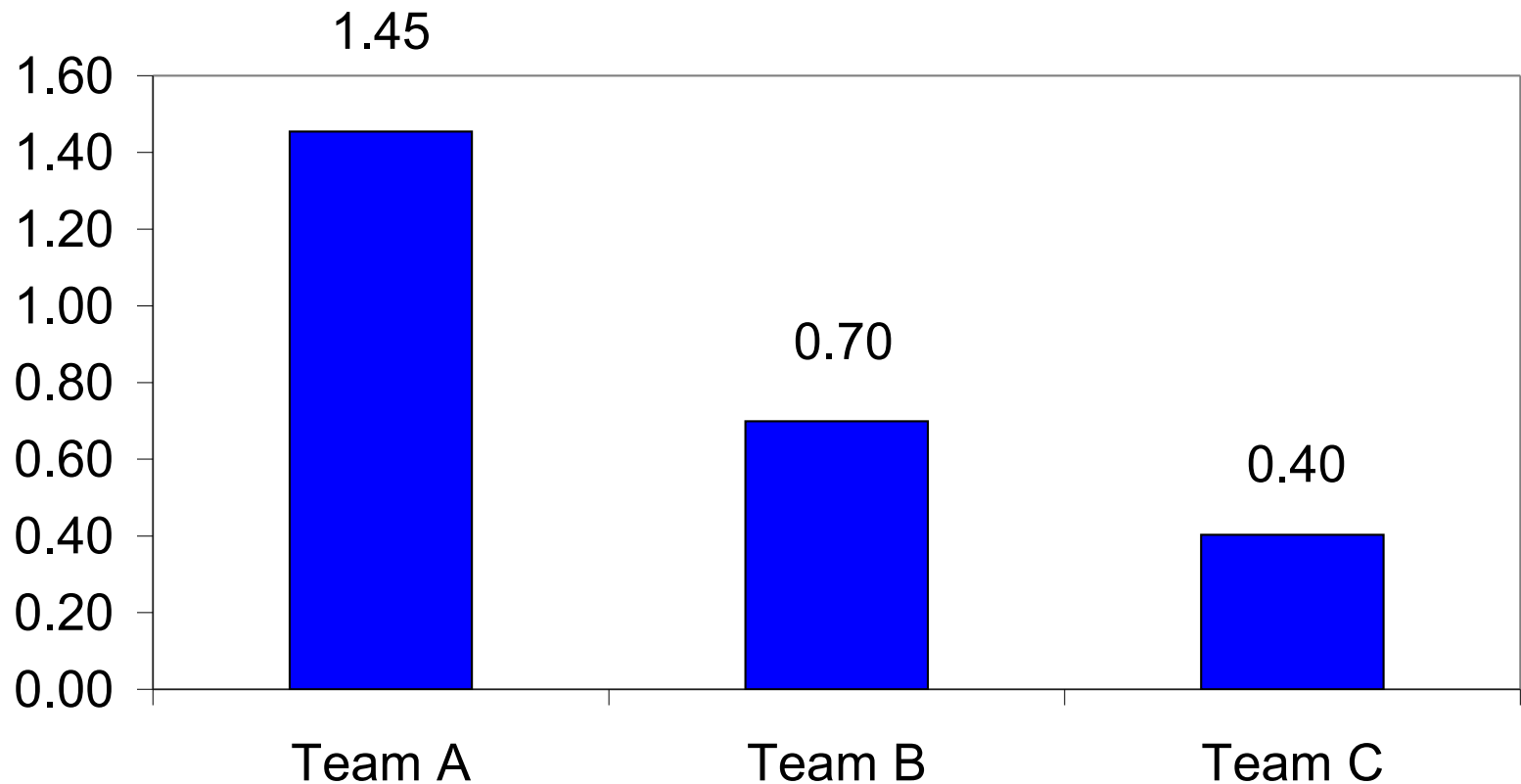
But Do You Know Their Relative Contribution To Sales?

Contribution of mirror teams to sales



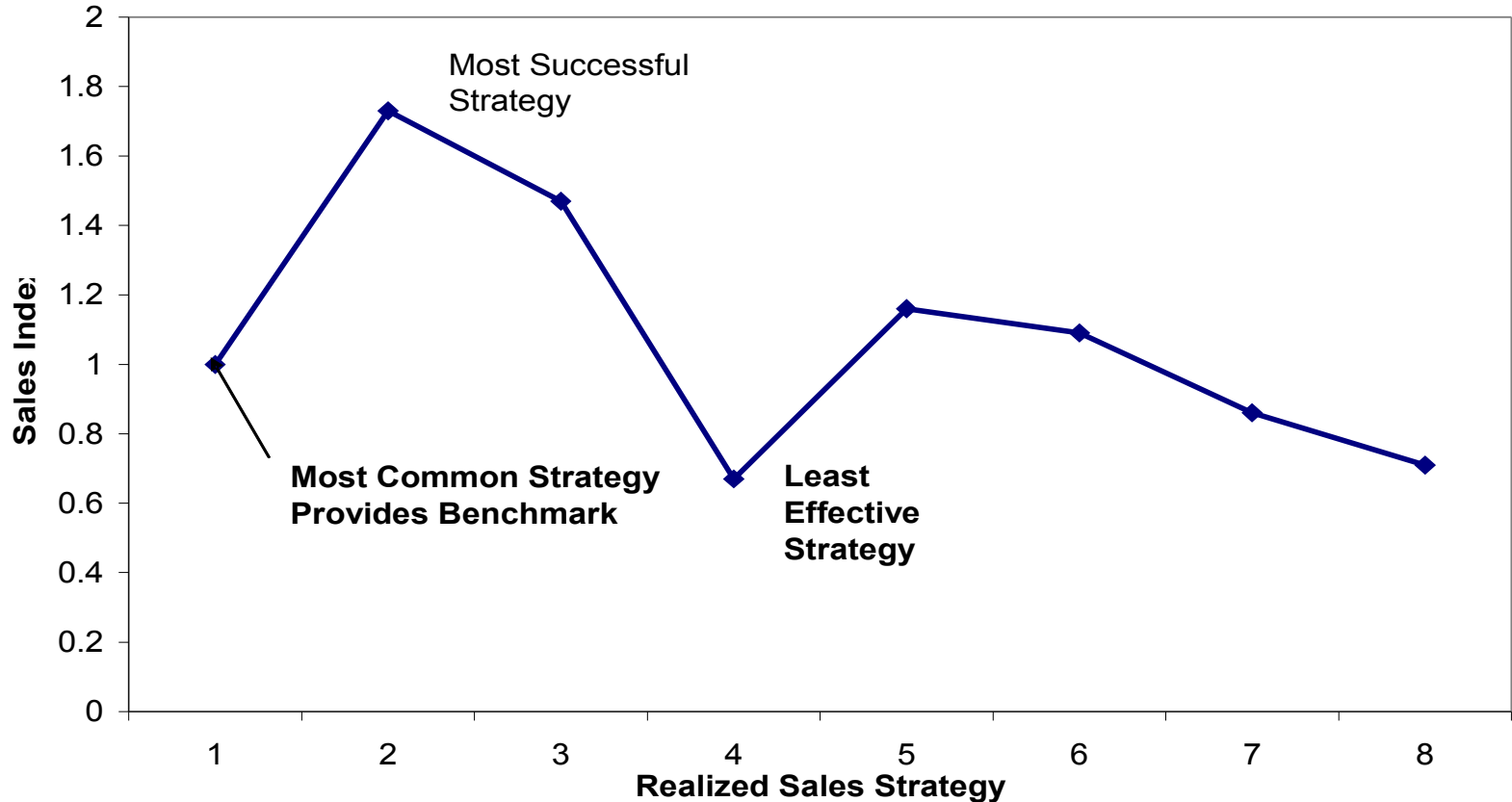
Some Field Forces Have Higher ROI Than Others

ROI for each team

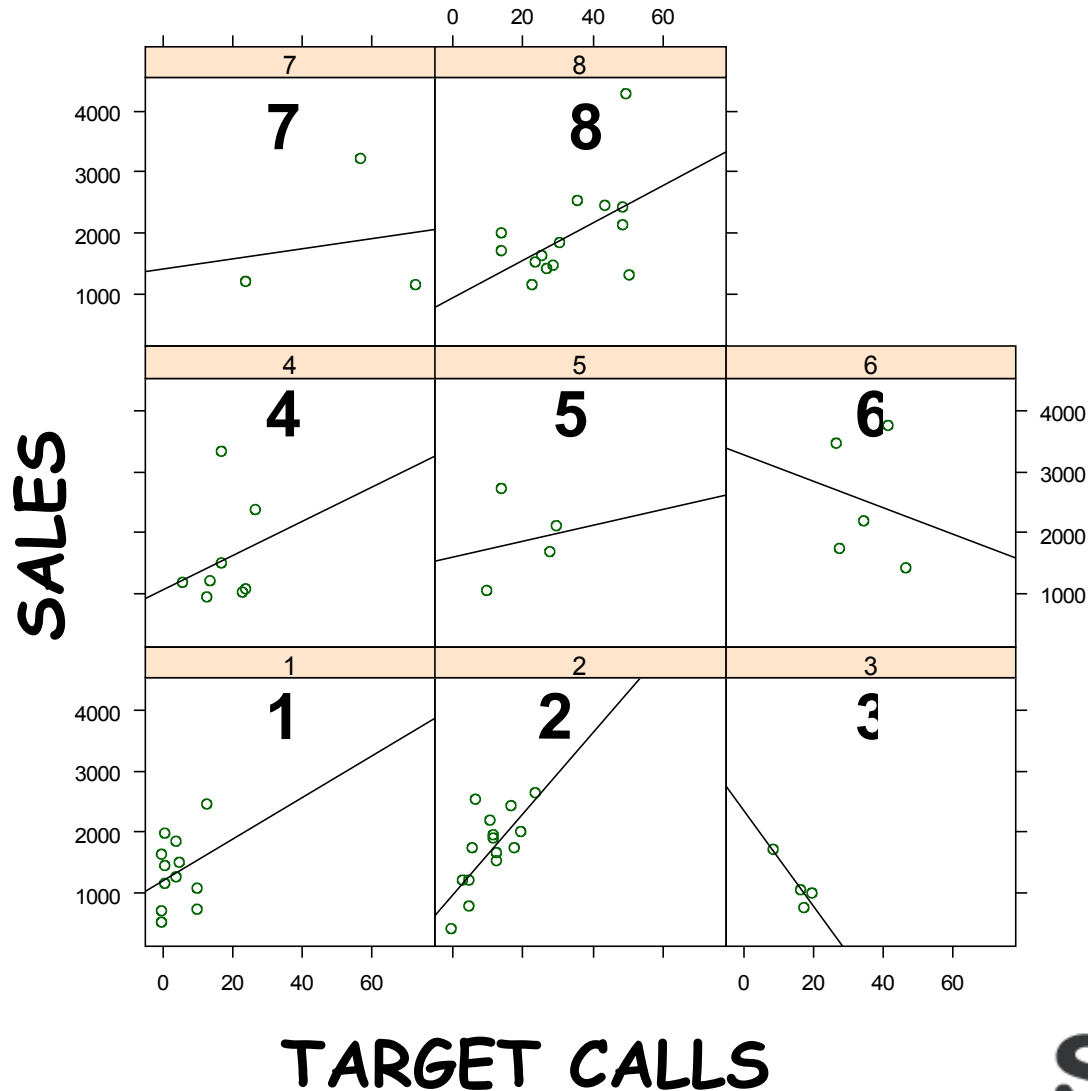


Why Do Sales Reps Adopt Different Strategies And Have Different Results?

Choice of Field Force Strategy Greatly Influences Results

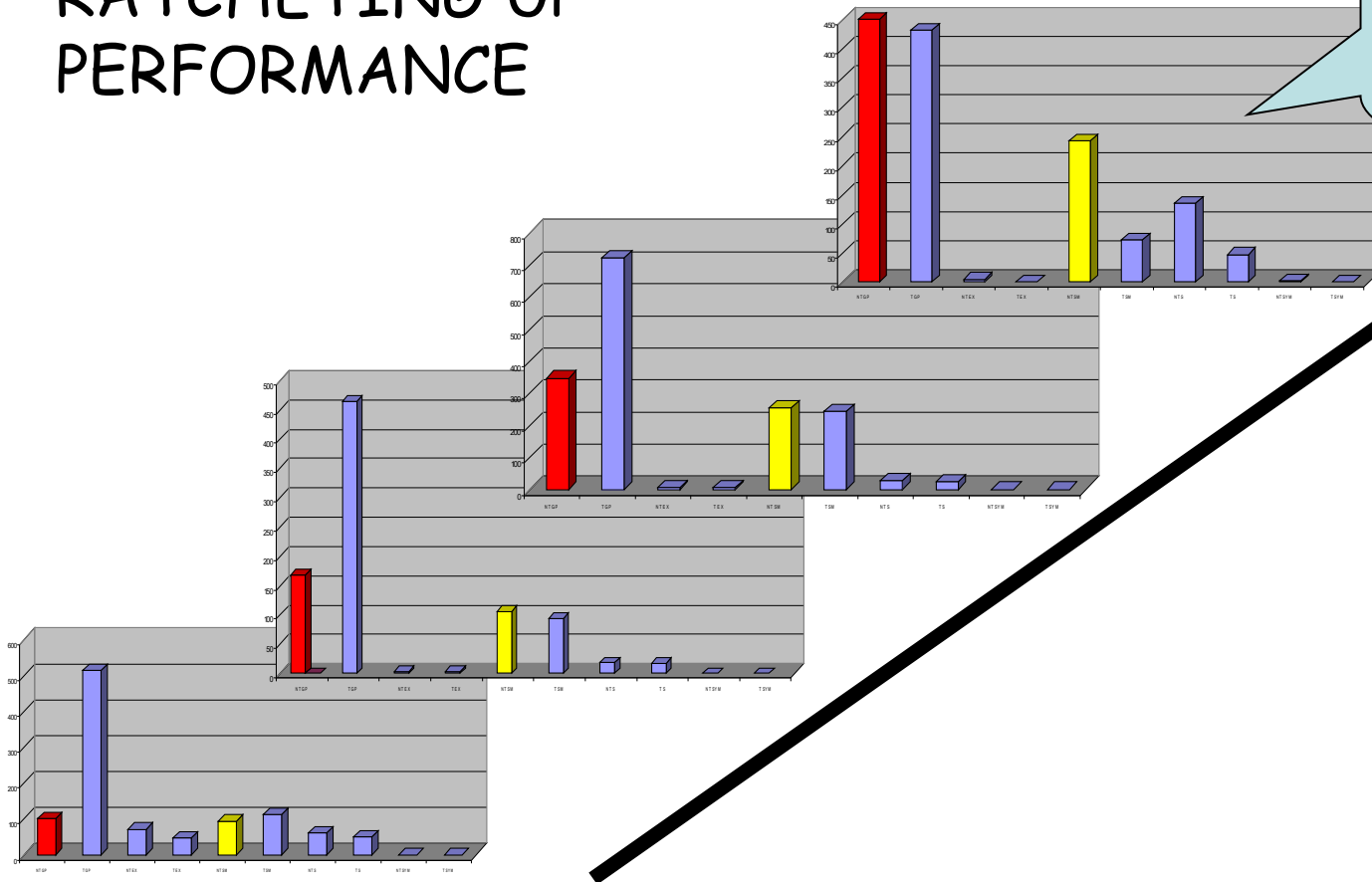


Examining Strategies in Detail

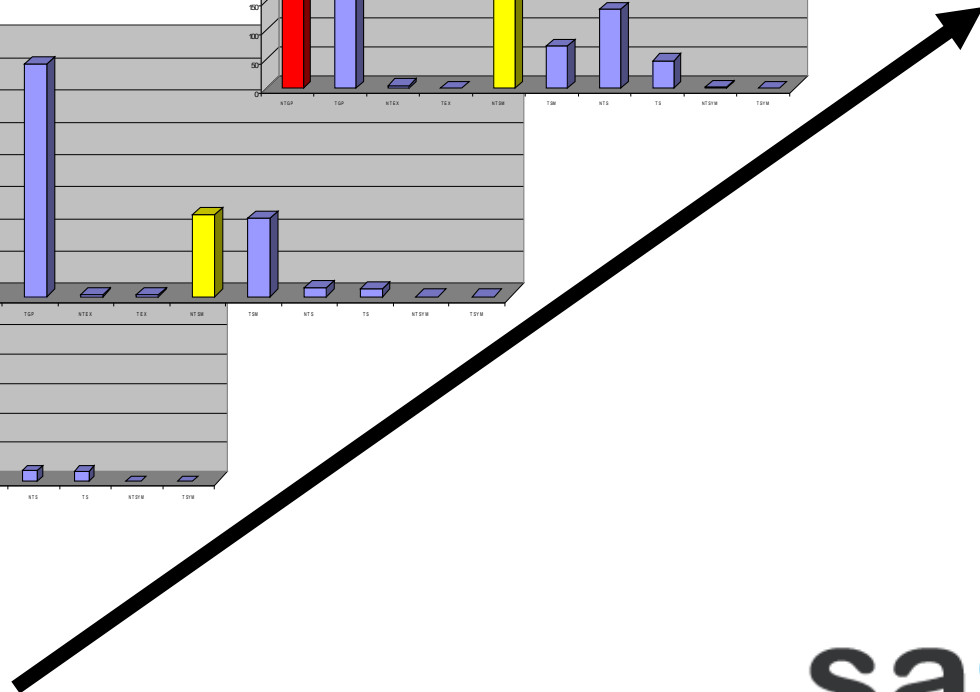


Strategy Templates Can Be Used To Improve Performance

RATCHETING UP PERFORMANCE



Strategy 2 is the winner!



Conclusions

- Pharma is NOT in control of the environment
- But it can control
 - Its organisational structure
 - Its relationship with shareholders
 - Analysis of sales and marketing metrics
 - Partnering strategies
- New/younger CEOs more likely to drive change