SIMI
The Future of the Pharmaceutical Industry

Stewart Adkins

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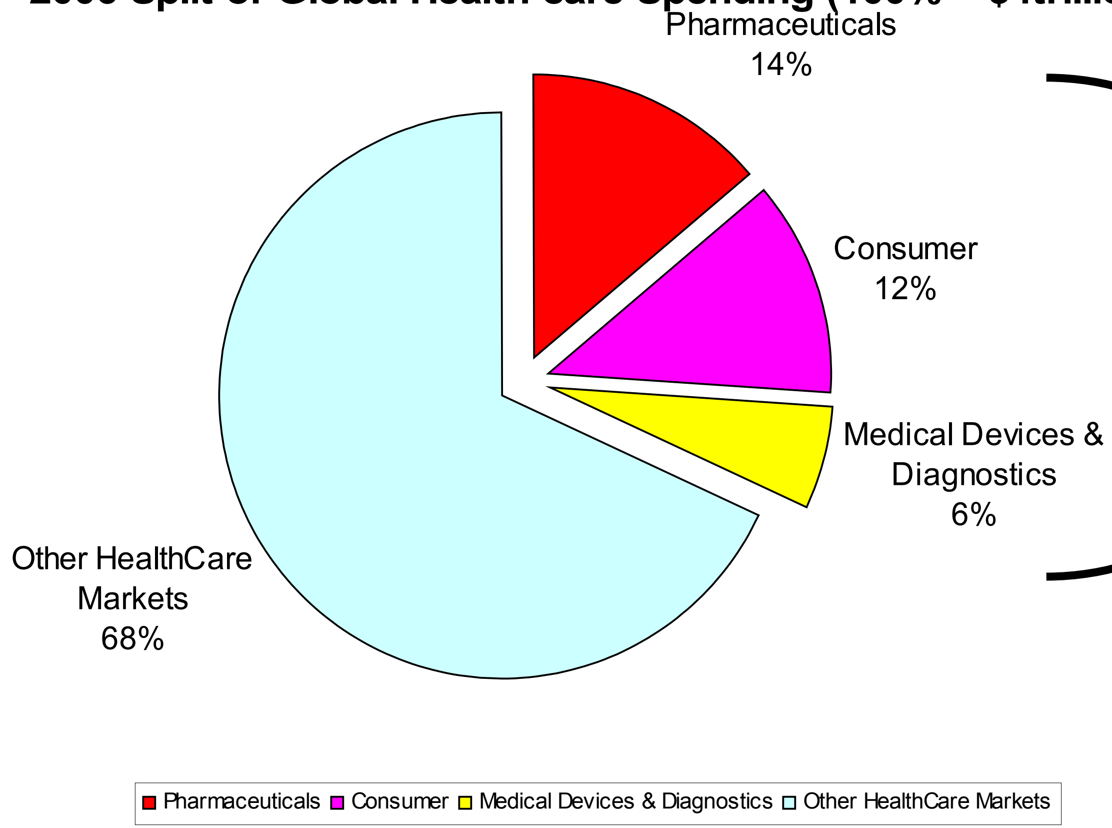
Discussion Topics Today

- Medtech vs Pharmaceuticals
- Pharma at the Crossroads
- Sales and Marketing changes needed
- Metrics for competitive advantage

Pharmaceuticals and MedTech Represent 20% of Global Healthcare Market

2006 Split of Global Health care Spending (100% = $4trillion)



Pharma + MedTech = $800bn or estimated $1trillion in 2008

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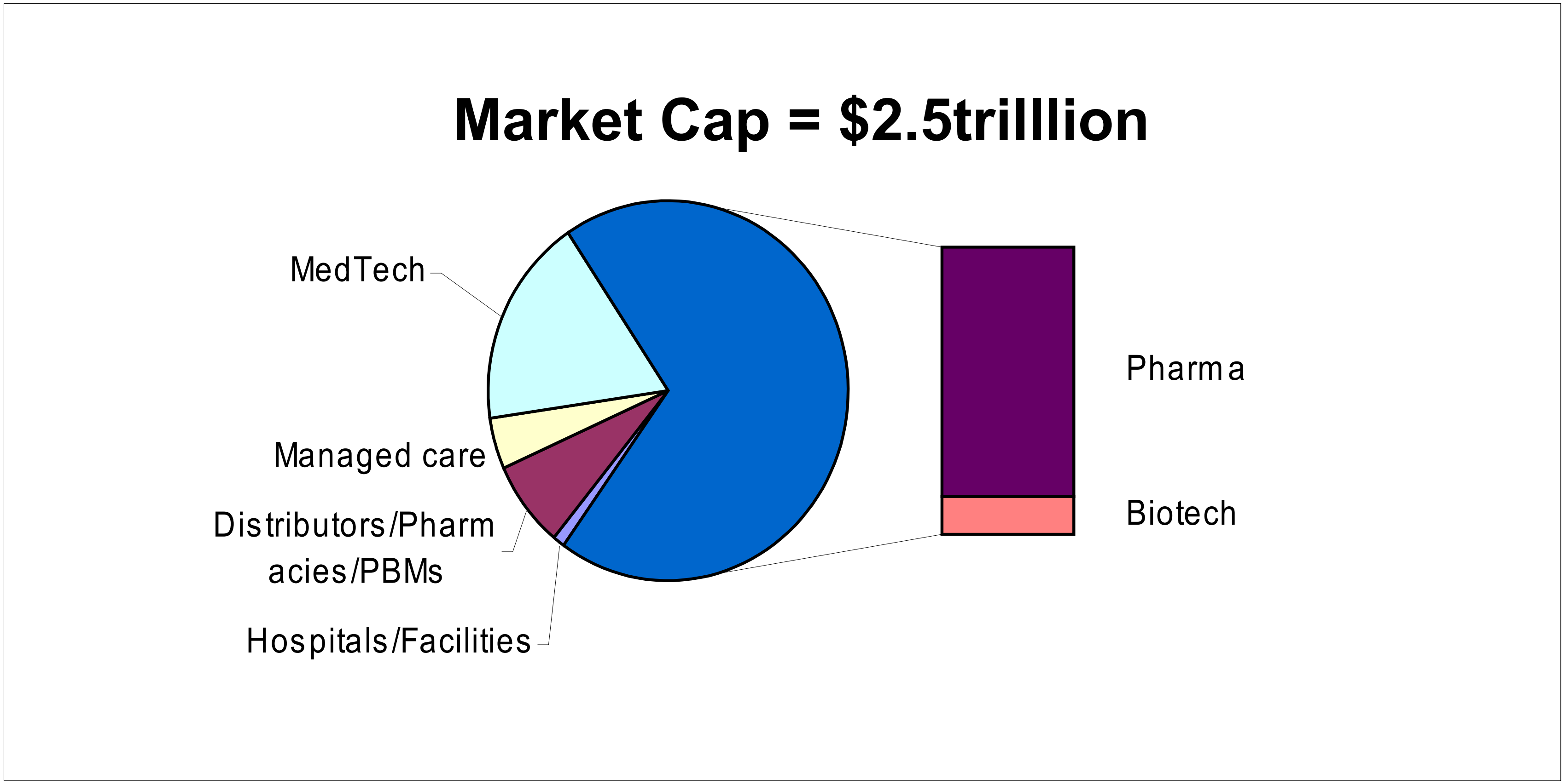
But Represent 87% of Global Healthcare Market Capitalisation



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Market Cap/Sales Ratio

Med Tech =1.5

Pharmaceuticals = 2.5

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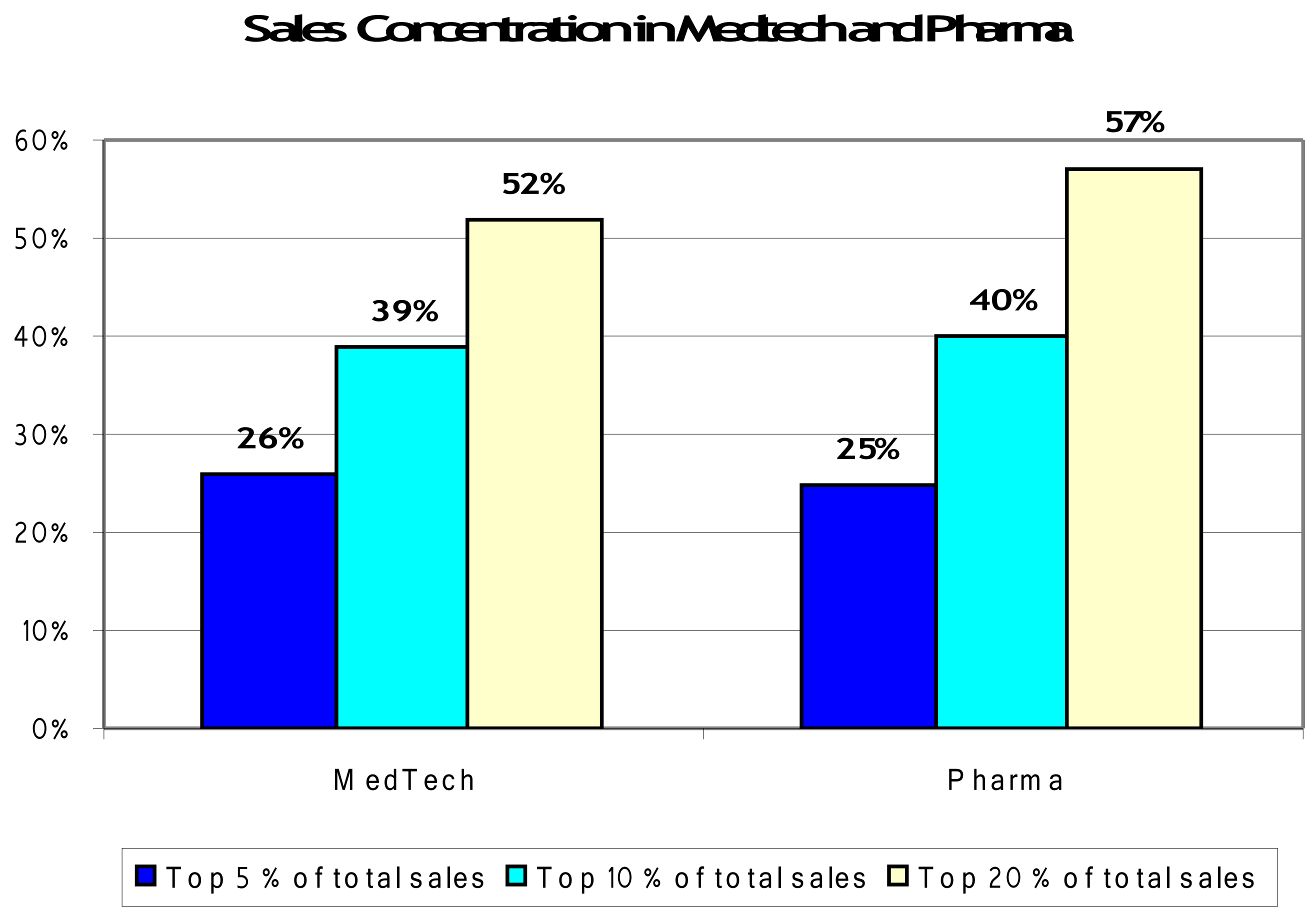
Sales Concentration Similar in Both Industries



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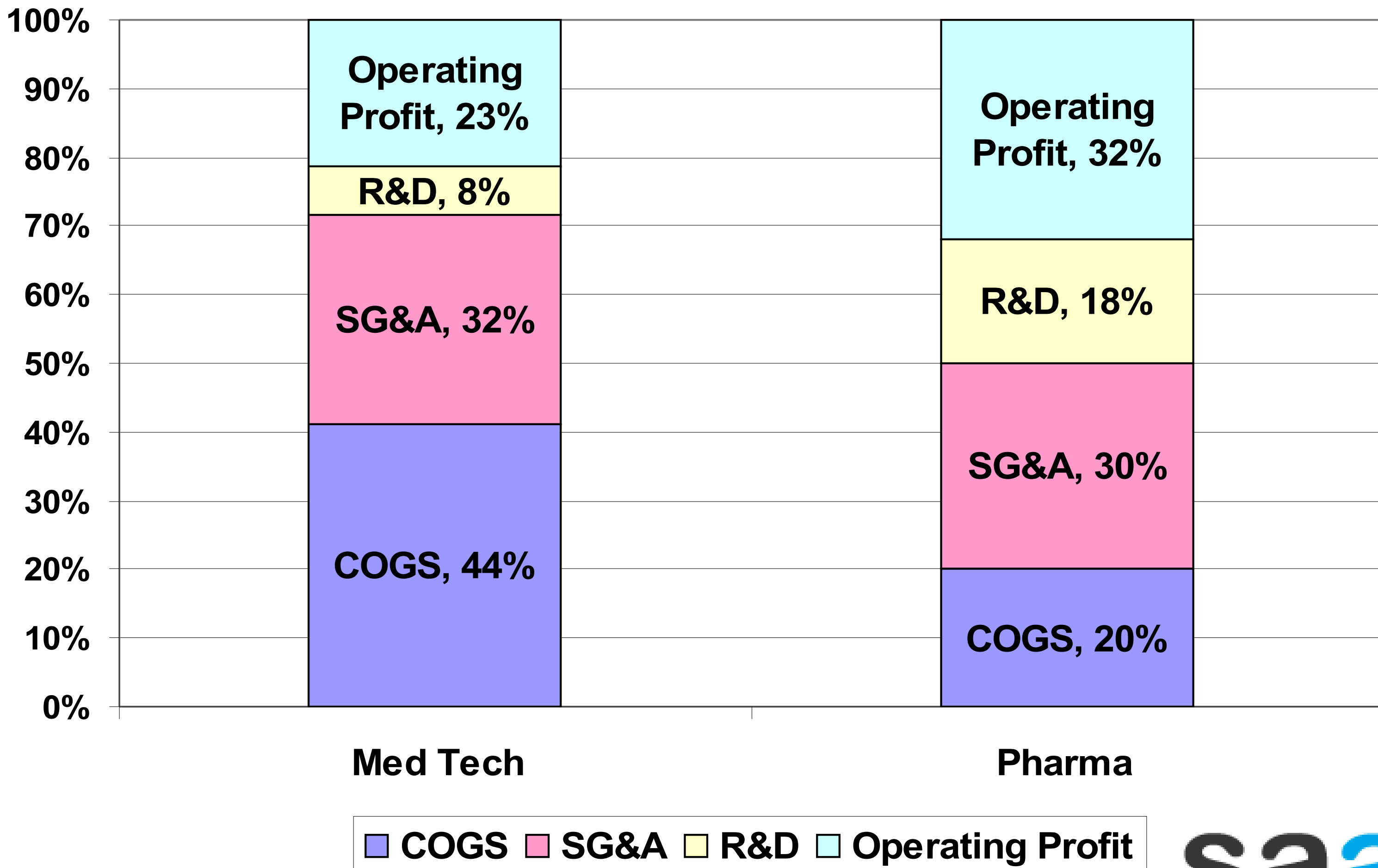
Sales and Marketing Key but High COGS Impacts MedTech Profits



Source: Annual Reports for Top 10 Medtech and Pharma companies

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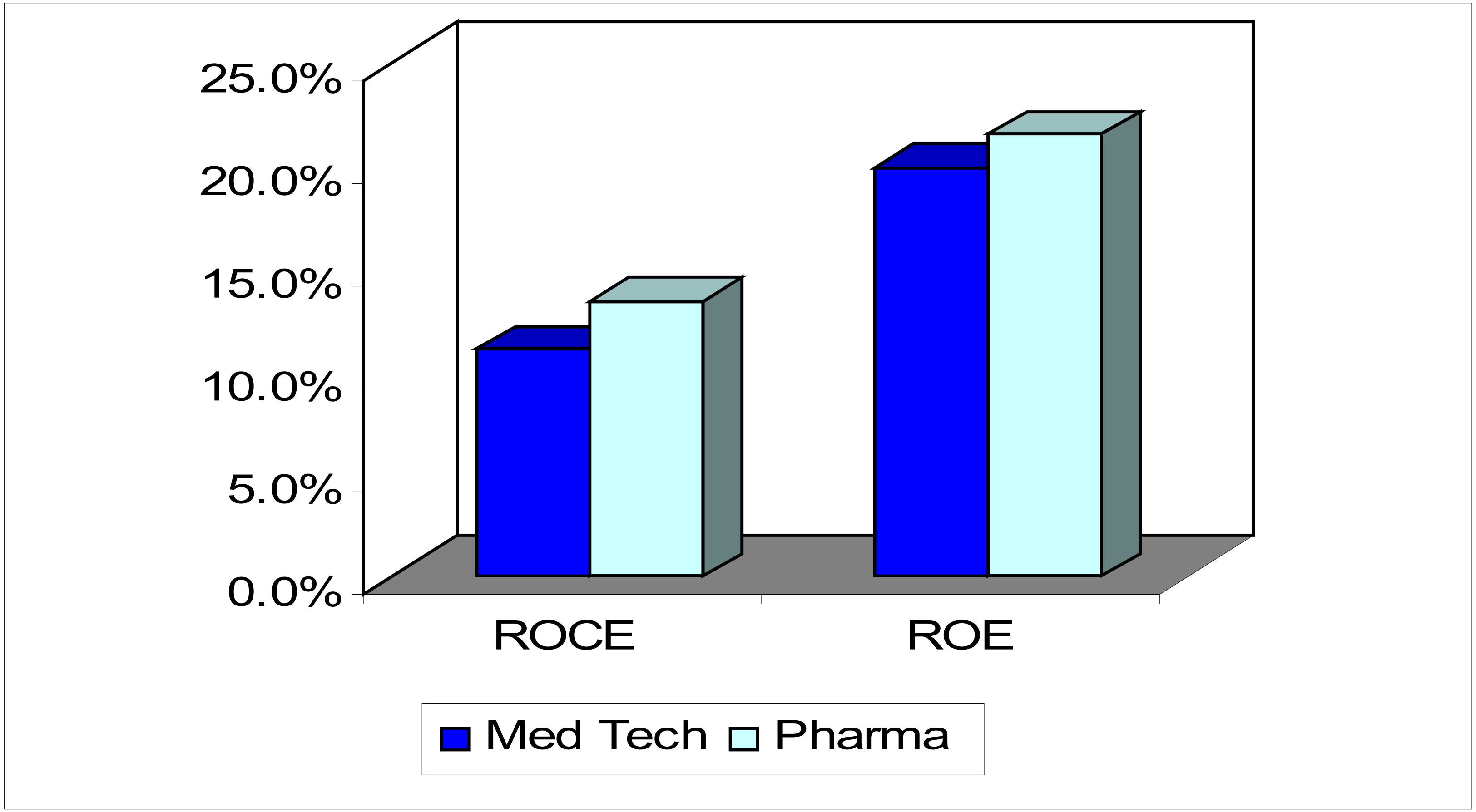
But Returns on Capital Employed and Equity Very Similar



Key Differences Between MedTech and Pharma

- Fragmented Product Range and Business Models
- High volume consumables to low volume high ticket implantables or standalone kit
- In vitro and in vivo; invasive and non-invasive
- Development pathways tend to be shorter than pharma
- Regulatory pathways tend to be shorter than pharma
- Decision-makers tend to be more varied and fragmented

- Pills, injectables, liquids, creams etc
- Pill volumes often in billions
- Acute use can be 10 days; chronic use can be years
- Most drugs work systemically
- Development pathways – 10 years?
- Regulatory pathways tend to be 1-2 years
- Decision-makers tend to be fewer and more concentrated

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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

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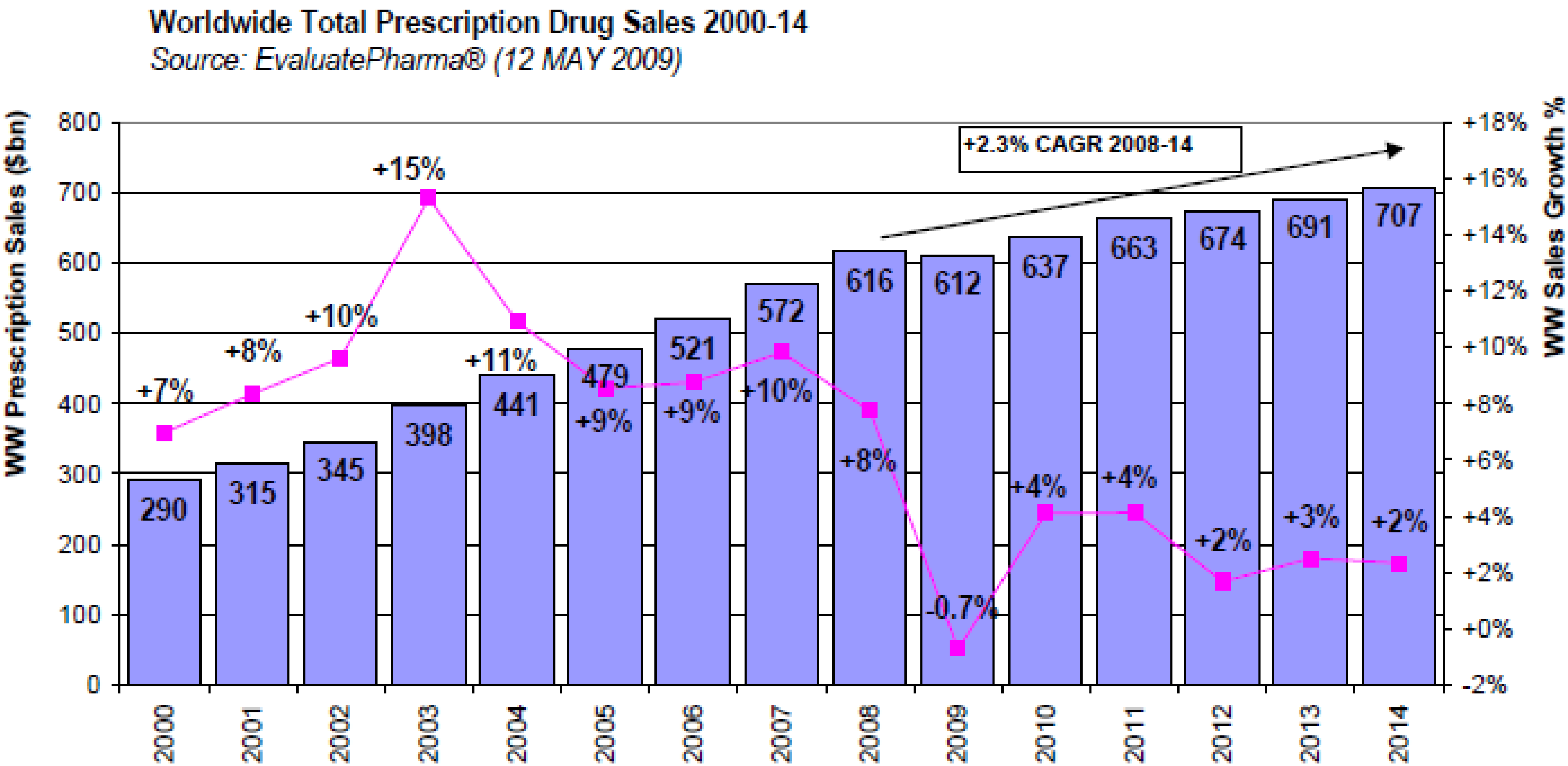
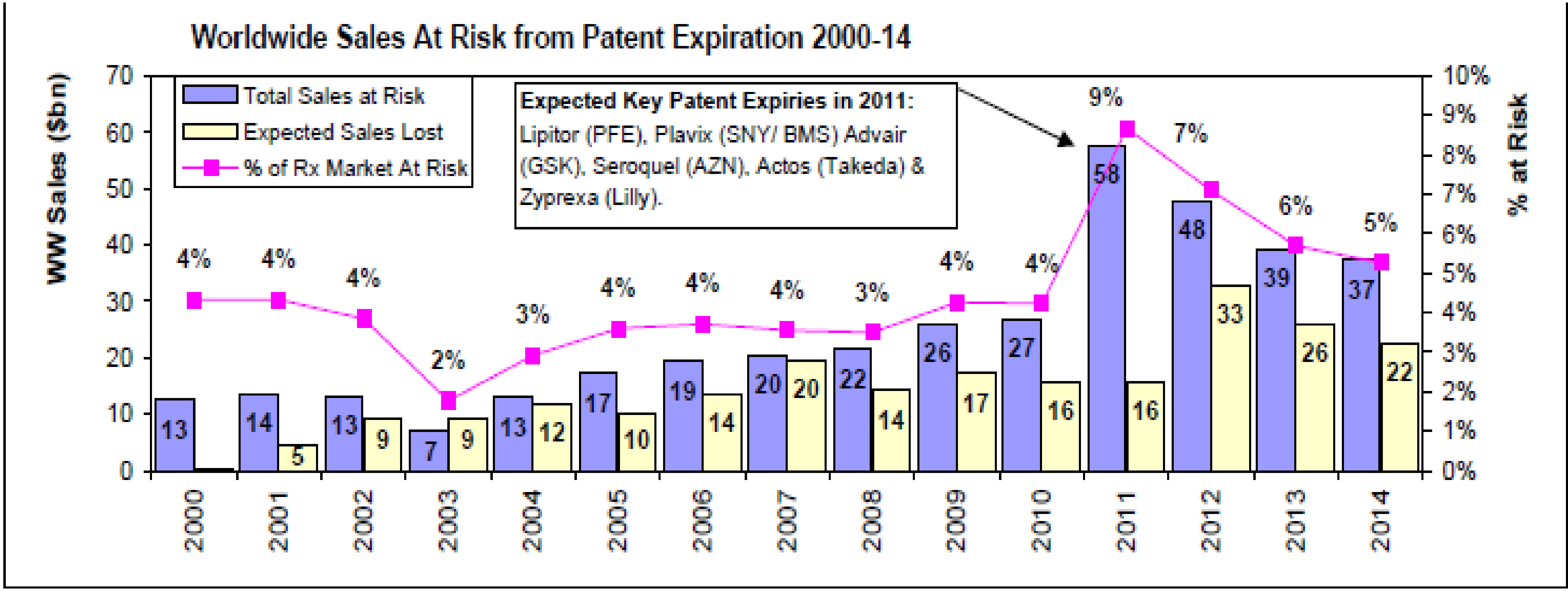
Industry Growth Rate Continues to Decline



Source: Evaluate

35% of Global Sales Off Patent 2009-2014



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

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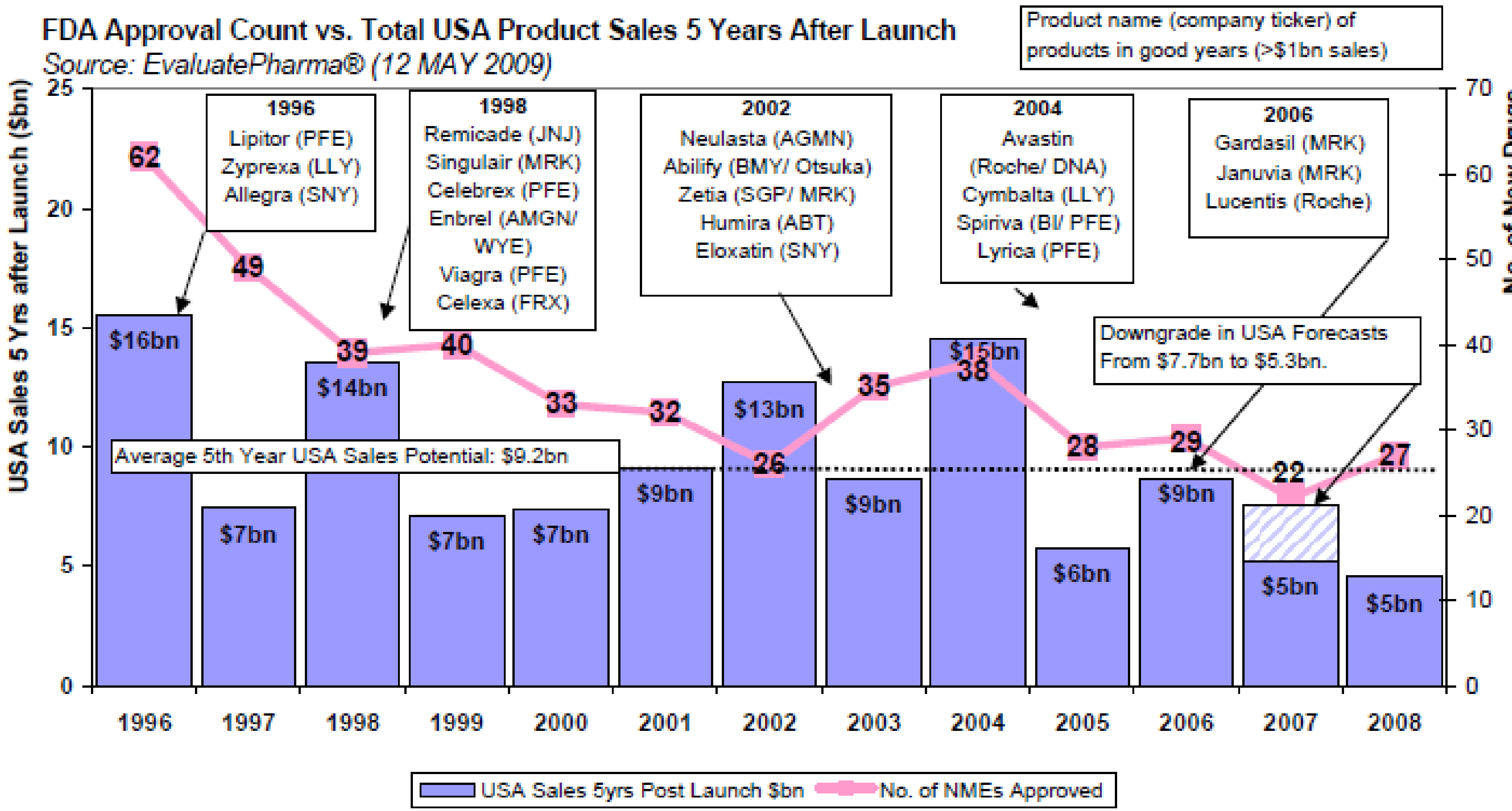
Number of NME/BLA Approvals Picking Up But Sales Potential Low



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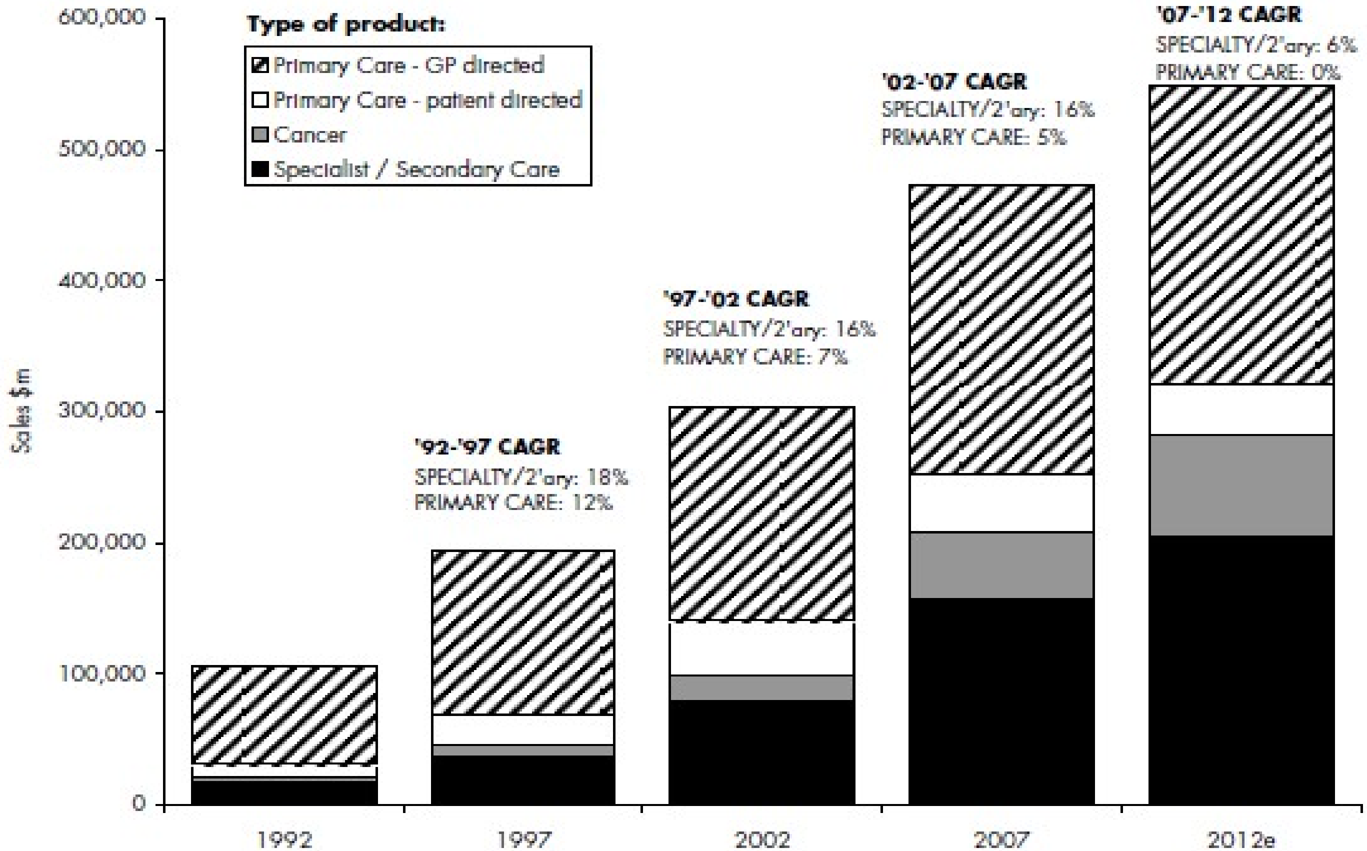
Specialty/Secondary Care is Key Driver of Growth



Source: Lehman Brothers PharmaPipelines analysis

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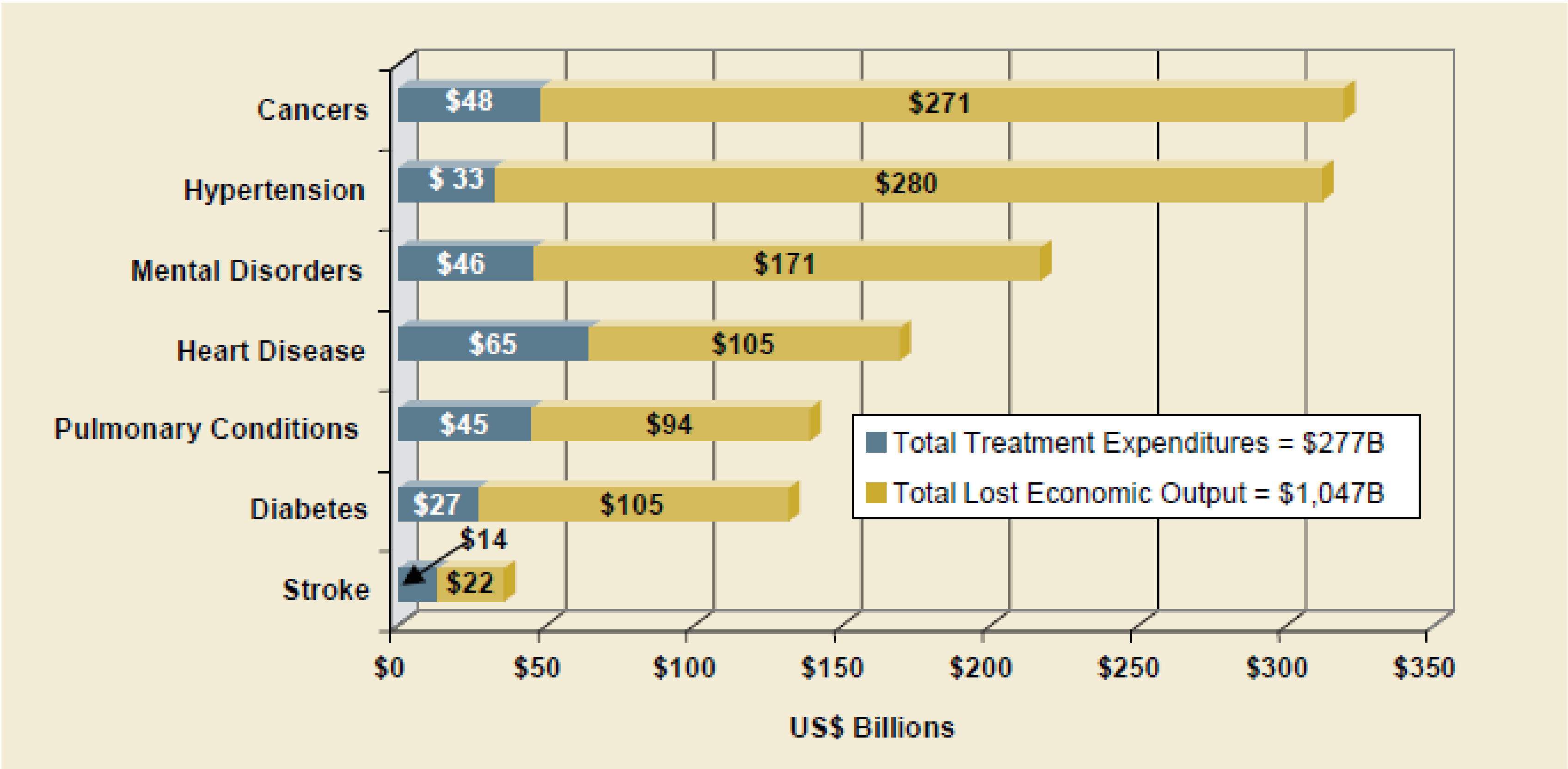
Chronic Diseases Have Huge Economic Impact (US, 2003 data)



Source: An Unhealthy America
(Oct 2007) Milken Institute

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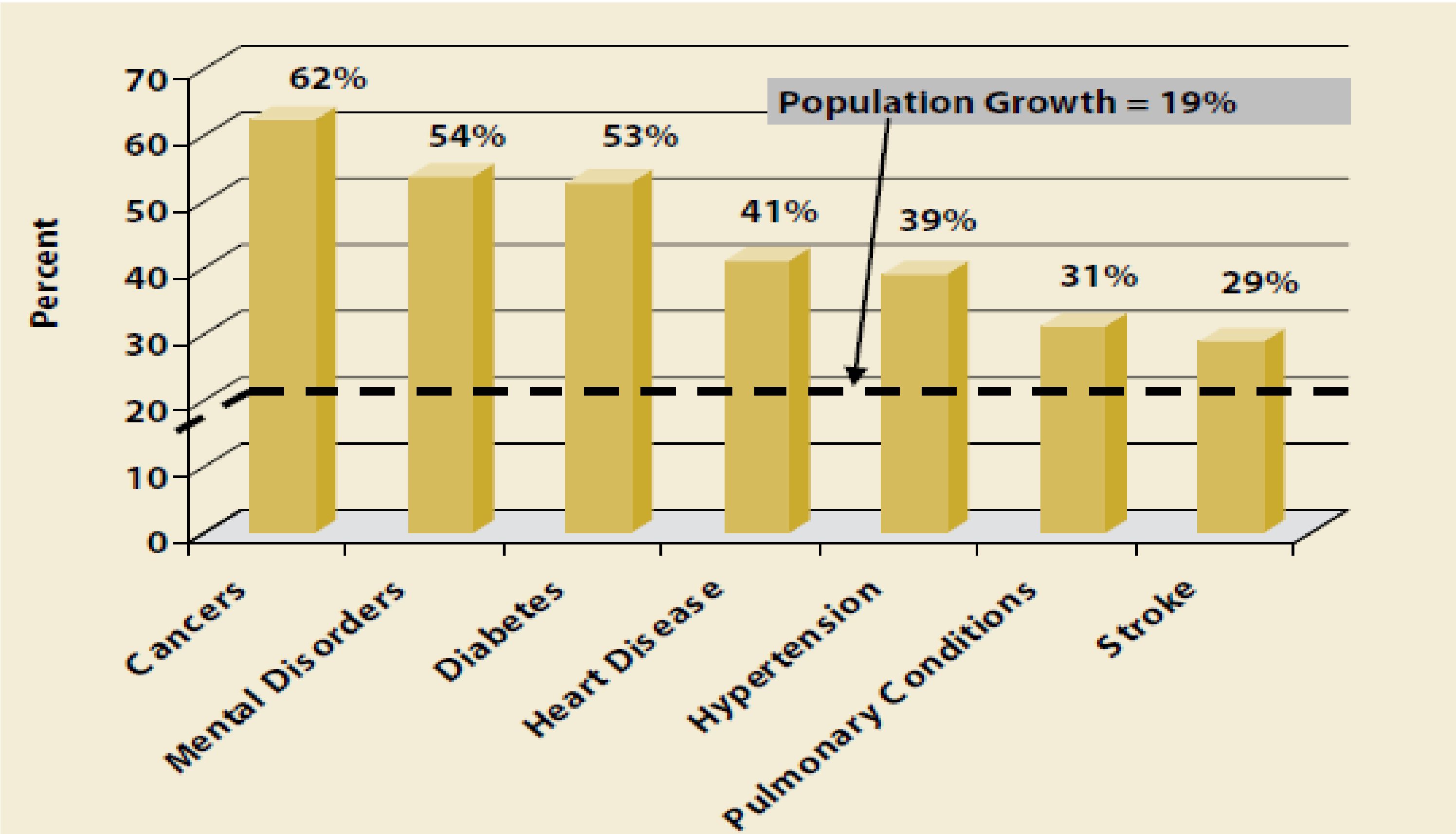
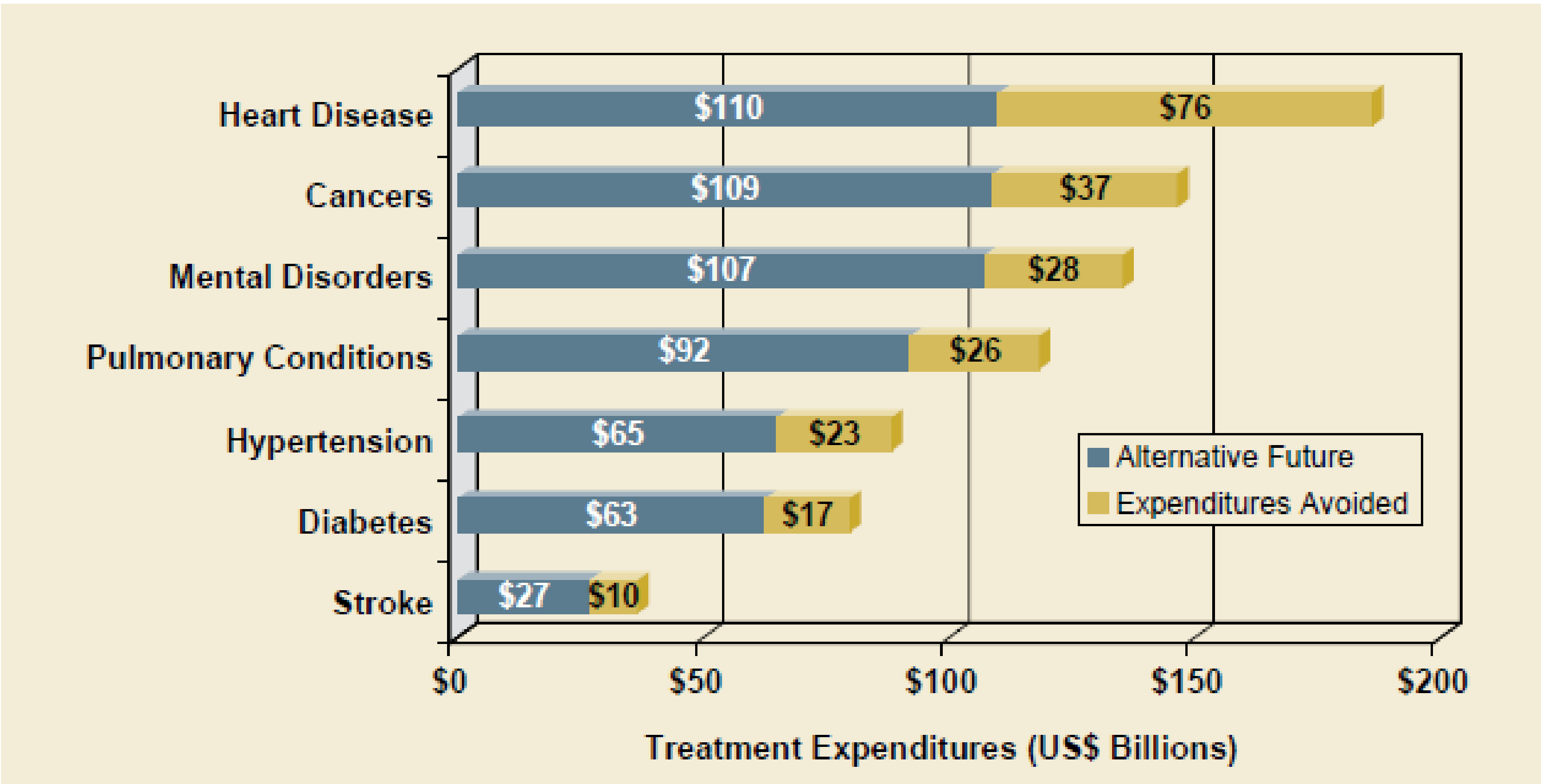
Projected Rise in Chronic Diseases
(US, 2003-2023)



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

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



Source: An Unhealthy America (Oct 2007) Milken Institute

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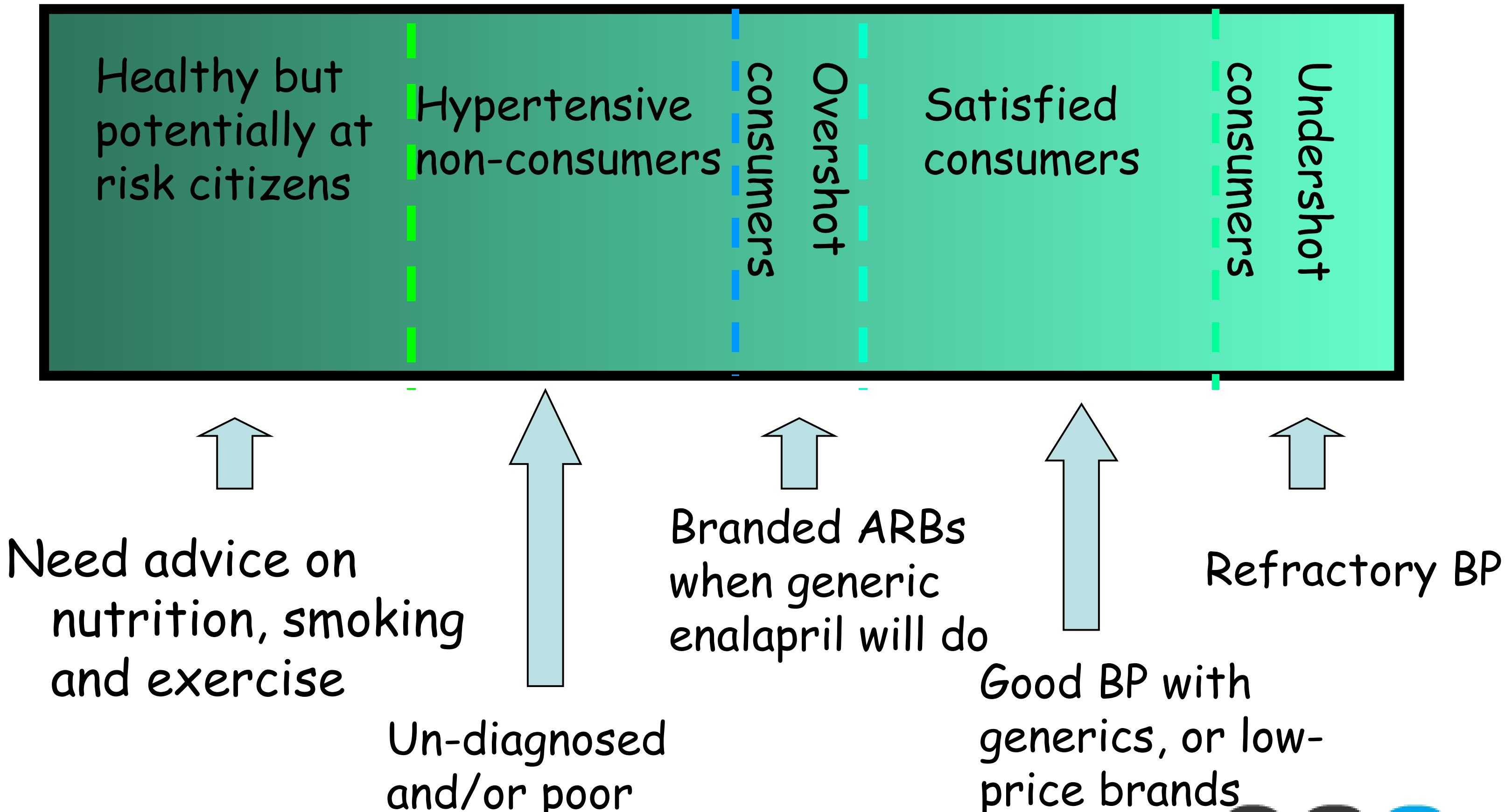
Consumers and non-consumers

Example: Hypertension



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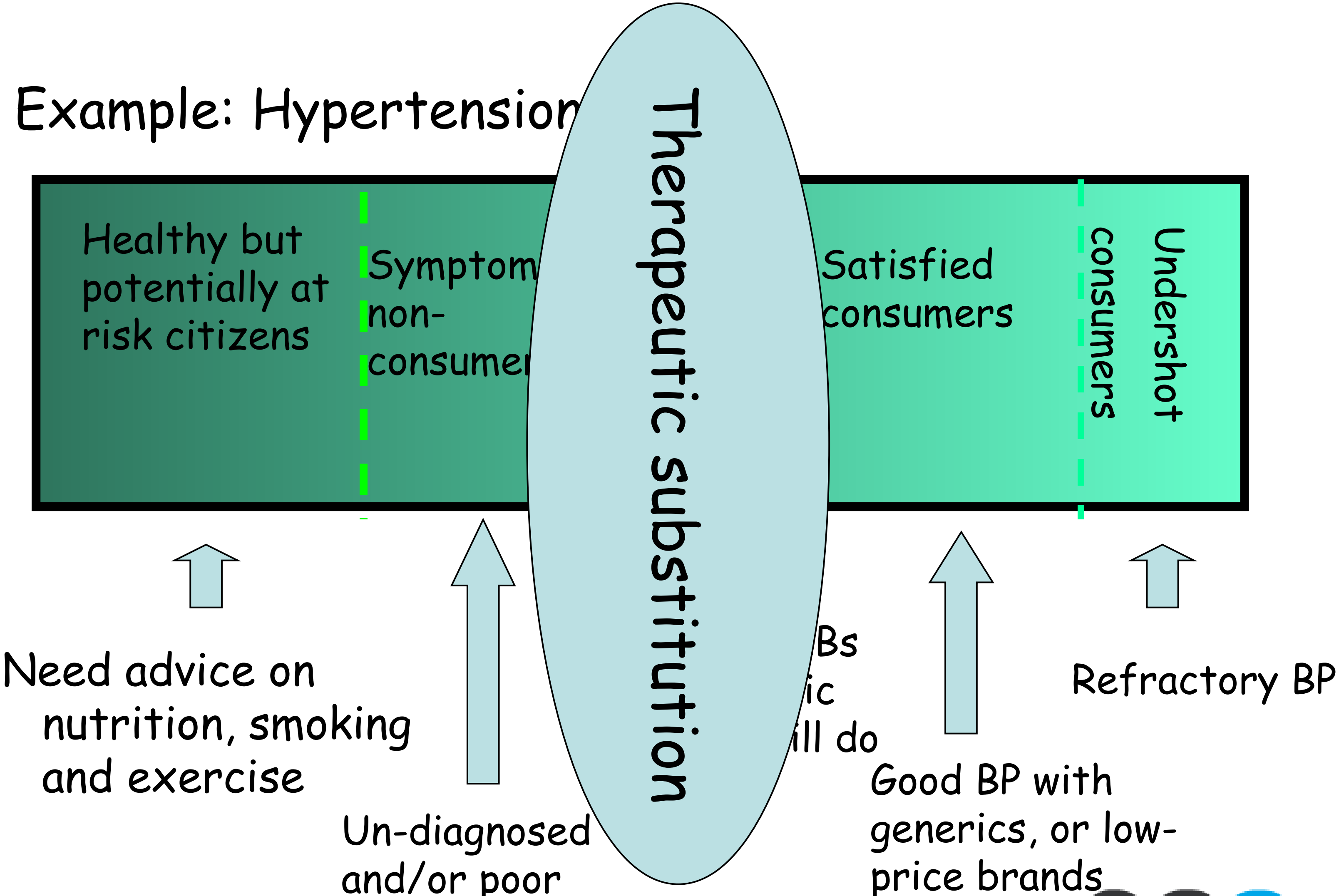

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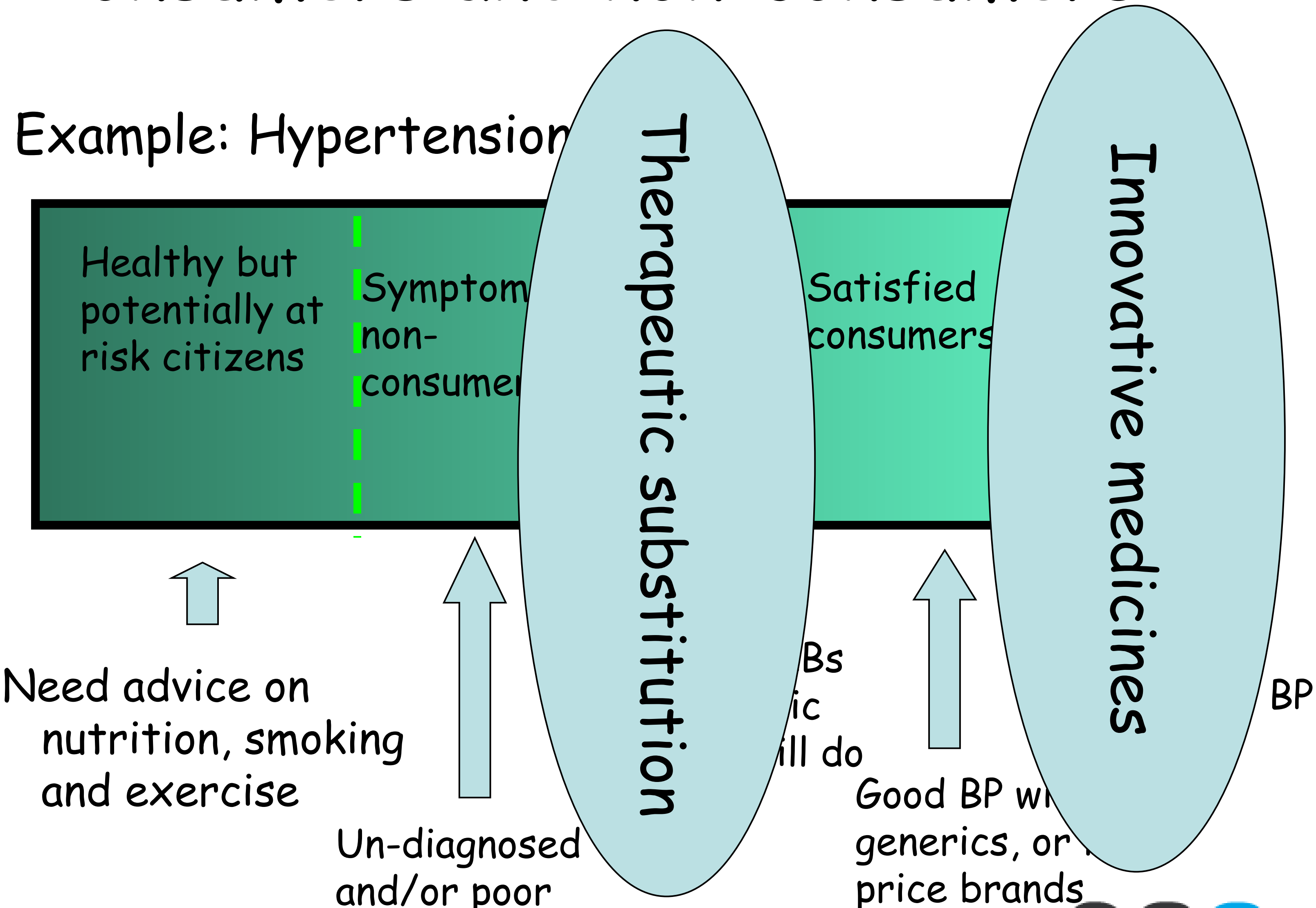

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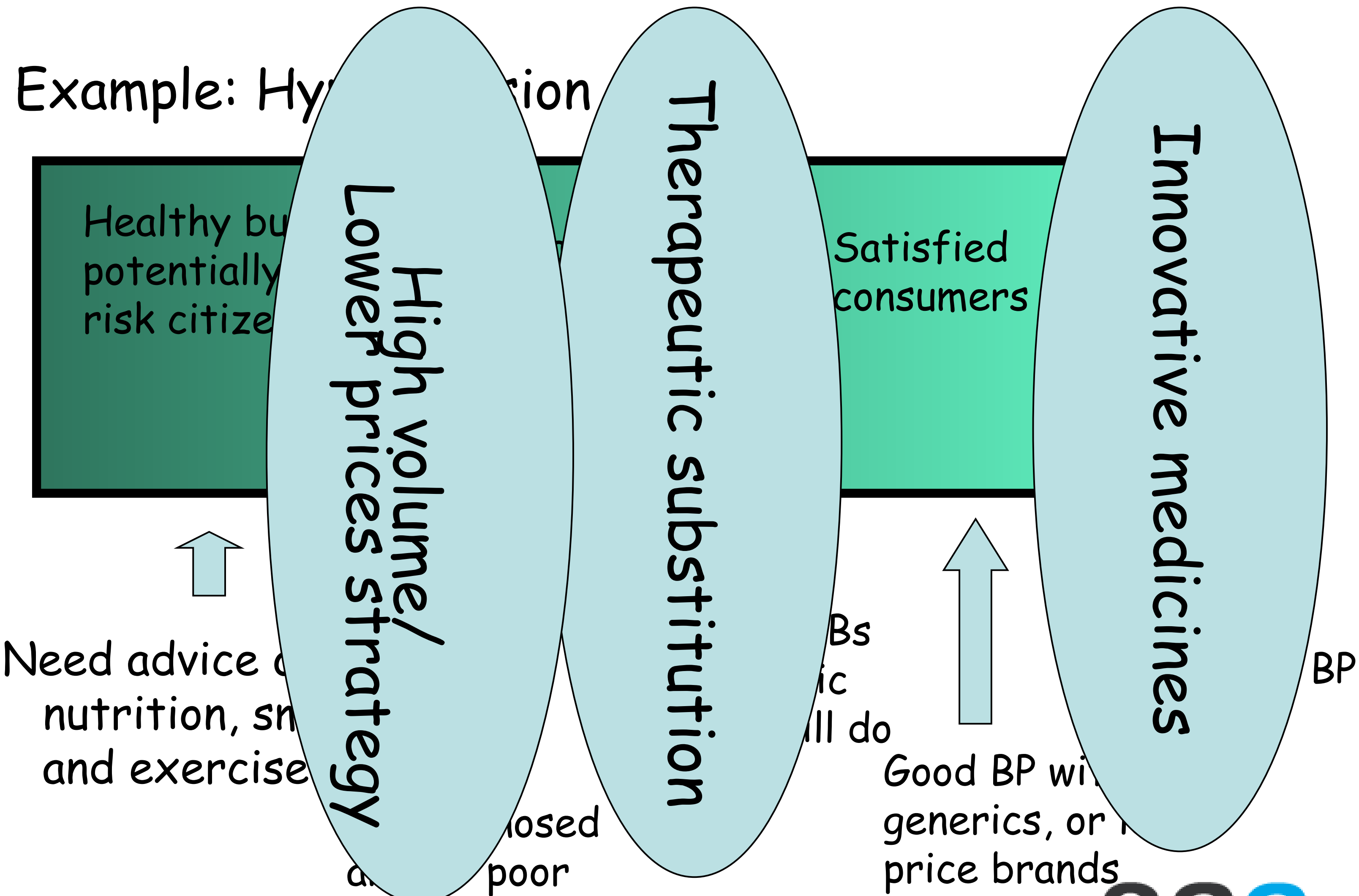

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Consumers and non-consumers

Exa yp n

Satisfied consumers

Education/Incentives

Lower prices

Innovative Marketing

Therapeutic substitution

Innovative medicines

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Good BP w
generics, or
price brands

BP

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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

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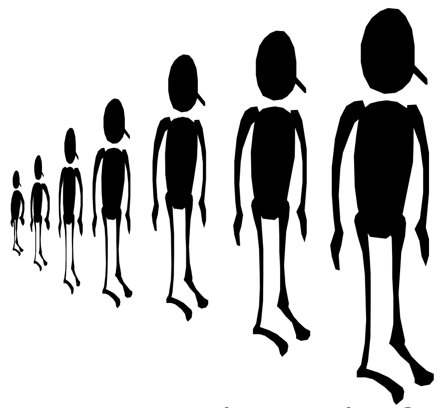
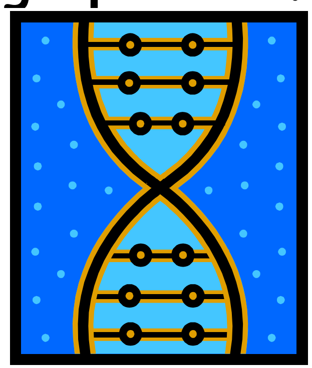
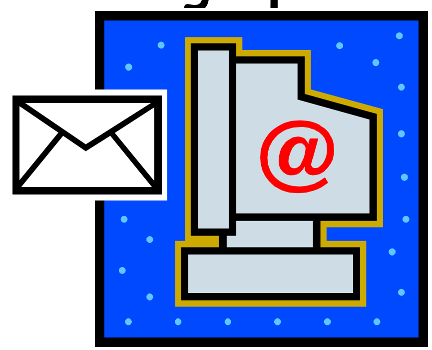
Three Seismic Shifts Are Changing Dynamics for Many Industries



Demographic shift **Geographic shift**





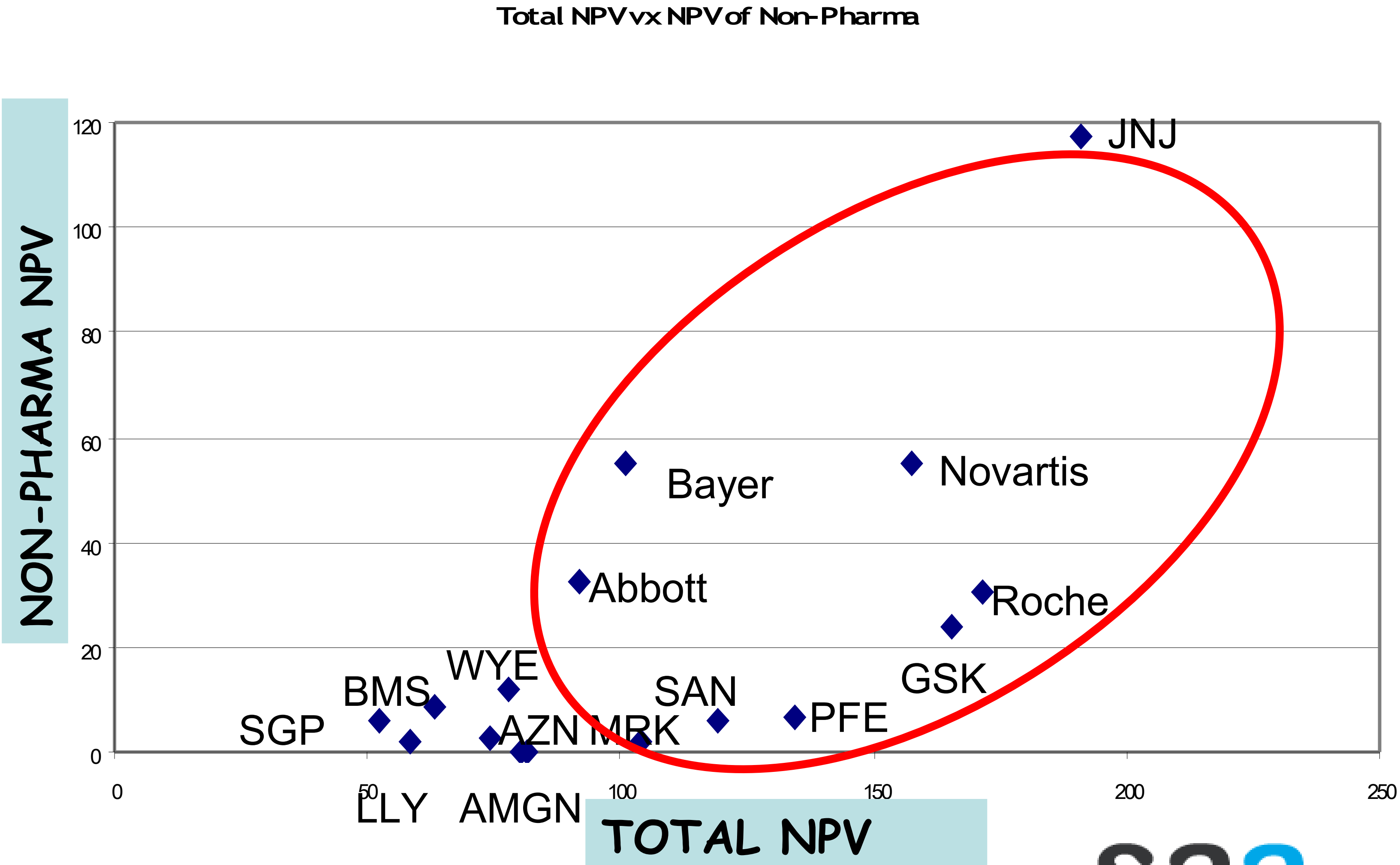
Technology/Information Flow Shift

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



Source: Credit Suisse

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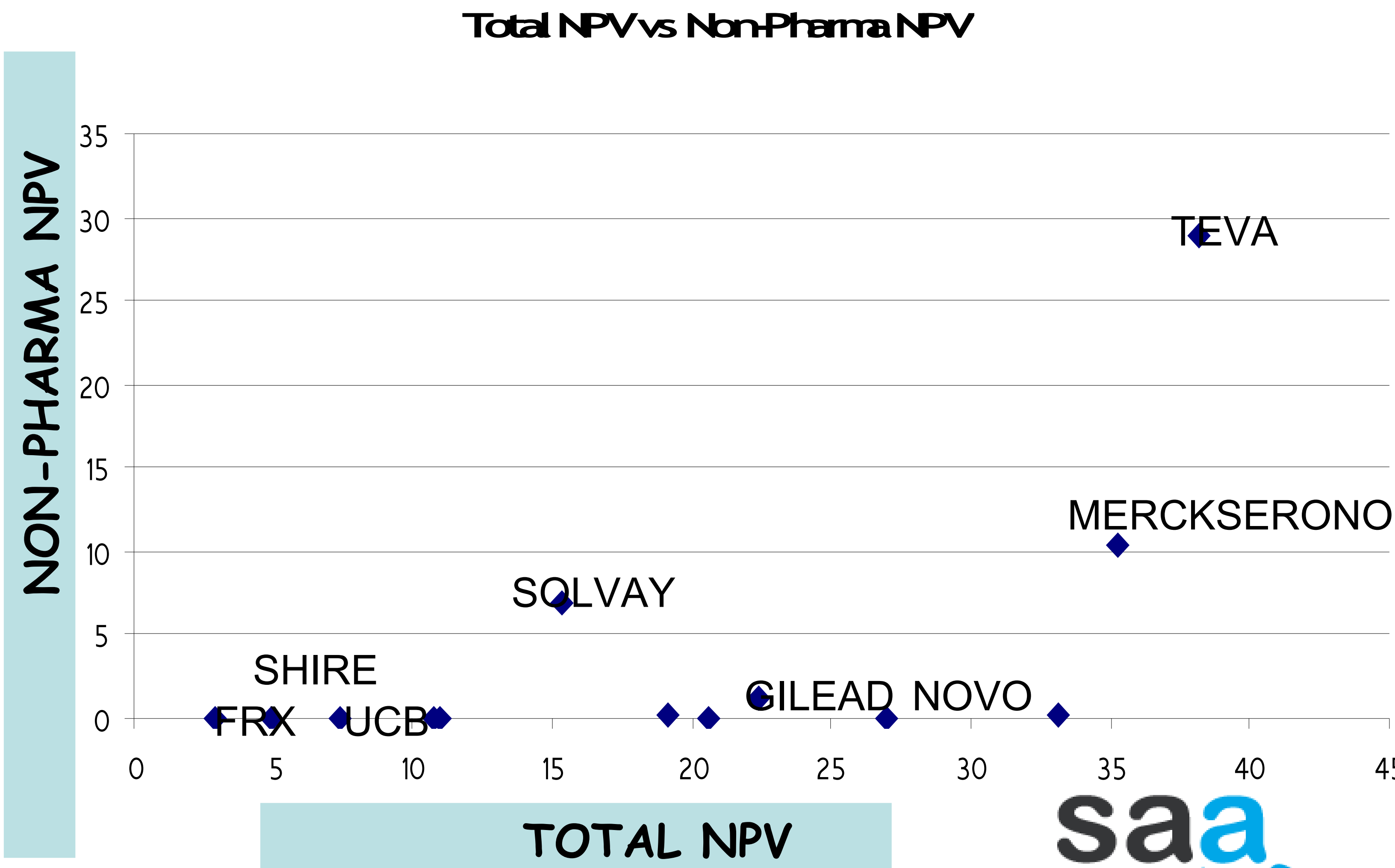
Mid-size Pharma Mostly Has to Focus



Source: Credit Suisse

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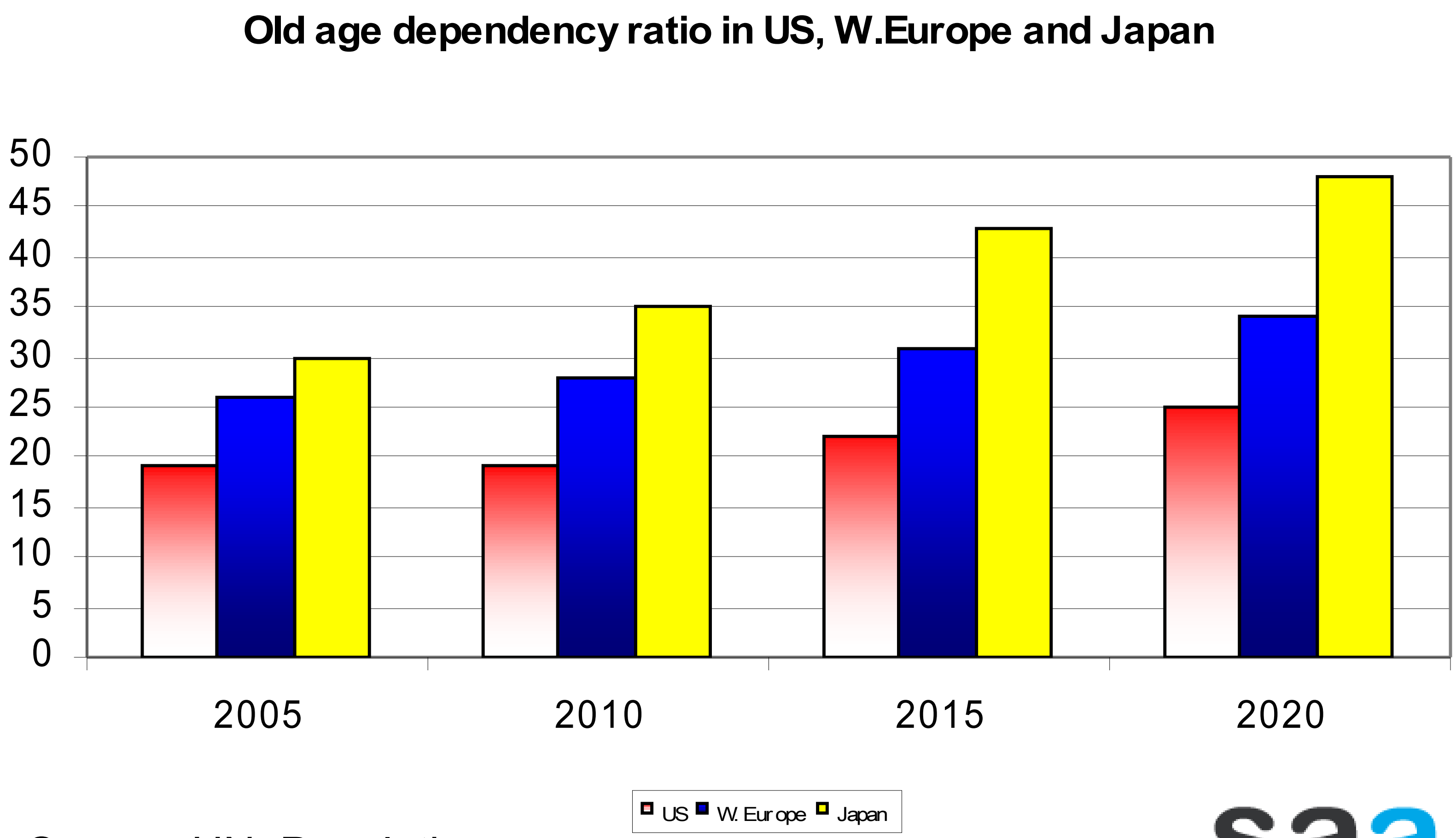
Many Pipeline Winners From Specialty Companies

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	Prevnar 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

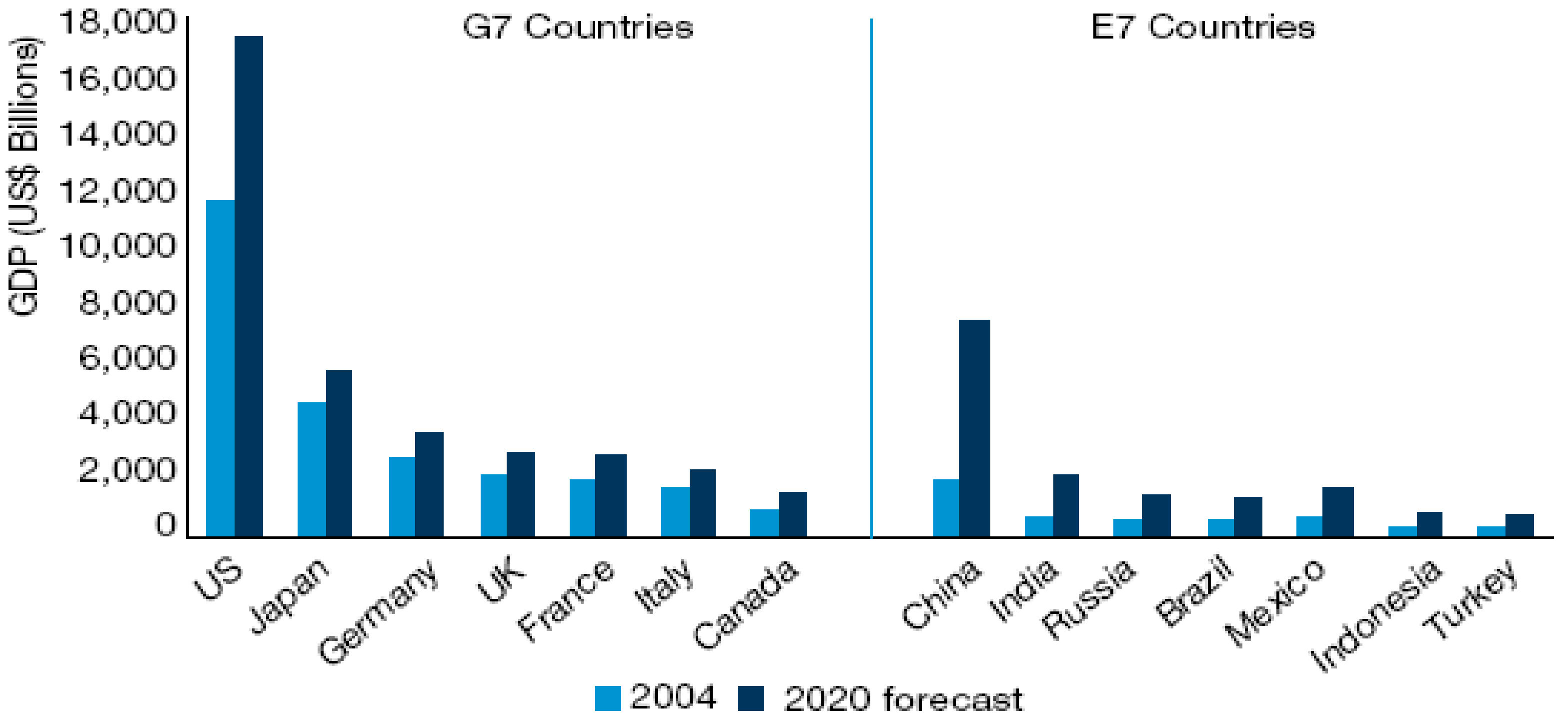


Source: UN: Population Database

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

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Strong Economic Growth Will Drive Healthcare Demand in Emerging Markets

	2003 Rank	2008 Rank	2013 Rank	
1	United States	United States	United States	1
2	Japan	Japan	Japan	2
3	Germany	France	China	3
4	France	Germany	Germany	4
5	Italy	China	France	5
6	United Kingdom	Italy	Spain	6
7	Spain	United Kingdom	Italy	7
8	Canada	Spain	Brazil	8
9	China	Canada	Canada	9
10	Brazil	Brazil	United Kingdom	10
11	Mexico	Mexico	Venezuela	11
12	Australia	Turkey	Turkey	12
13	India	India	India	13
14	Poland	South Korea	Mexico	14
15	Netherlands	Australia	South Korea	15
16	Belgium	Greece	Russia*	16
17	South Korea	Poland	Greece	17
18	Turkey	Netherlands	Poland	18
19	Portugal	Belgium	Australia	19
20	Greece	Russia	Netherlands	20

SOURCE: IMS Health

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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

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

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

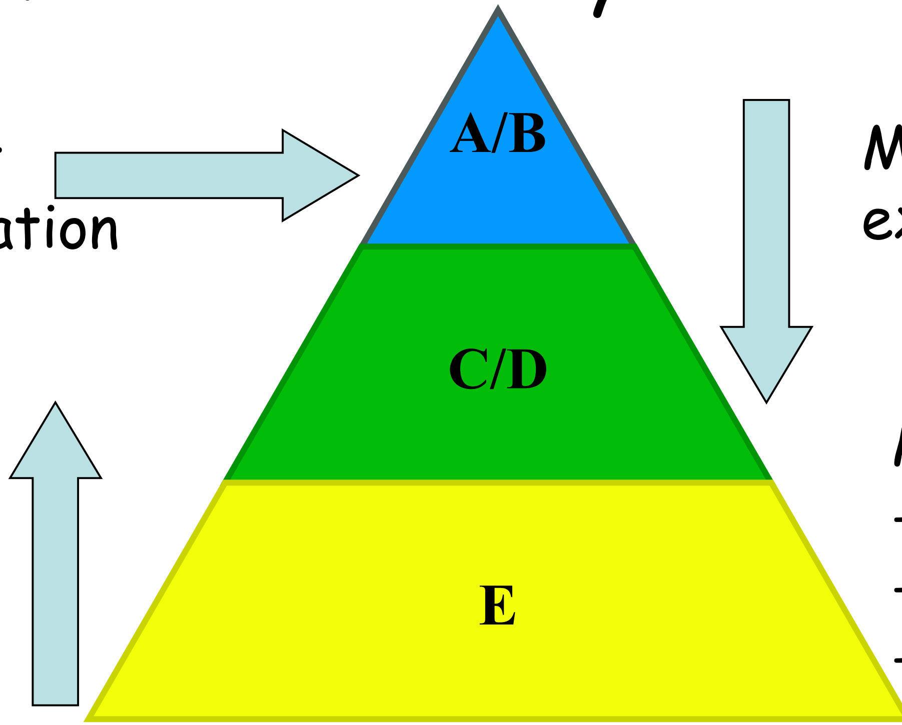
British Medical Journal. By Sally Hargreaves

3 February, 2007

Pharma Must Not Take its Licence to Operate for Granted

Emerging Market Dynamics Will Drive Different Delivery Methodologies

Market penetration



Market extension

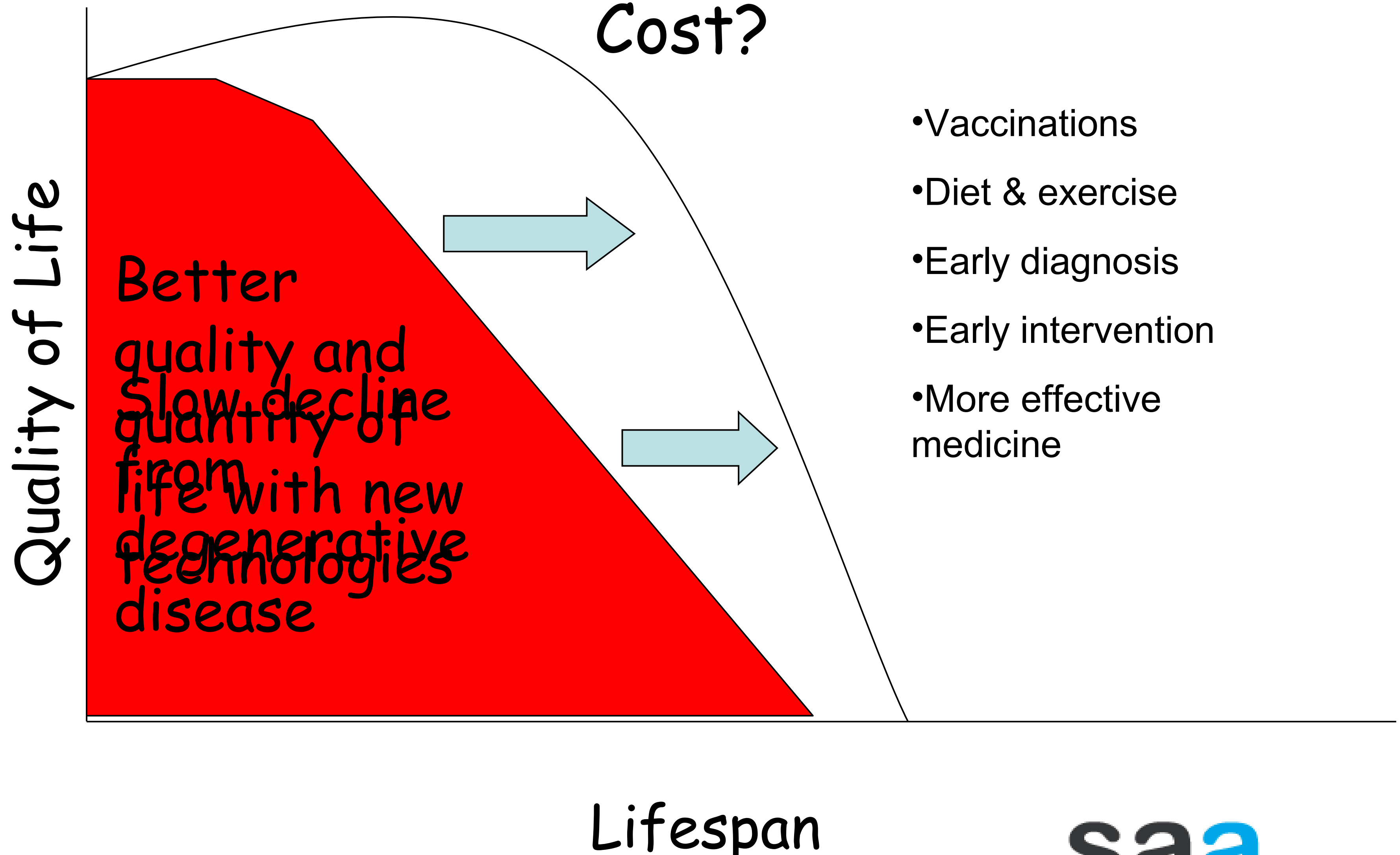
MECHANISMS:
- second brands
- price/volume pilots
- local m/f
- micro-finance

Economic development

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

Source: GSK

Technology Raises Expectations ....And Cost?



- Vaccinations
- Diet & exercise
- Early diagnosis
- Early intervention
- More effective medicine

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

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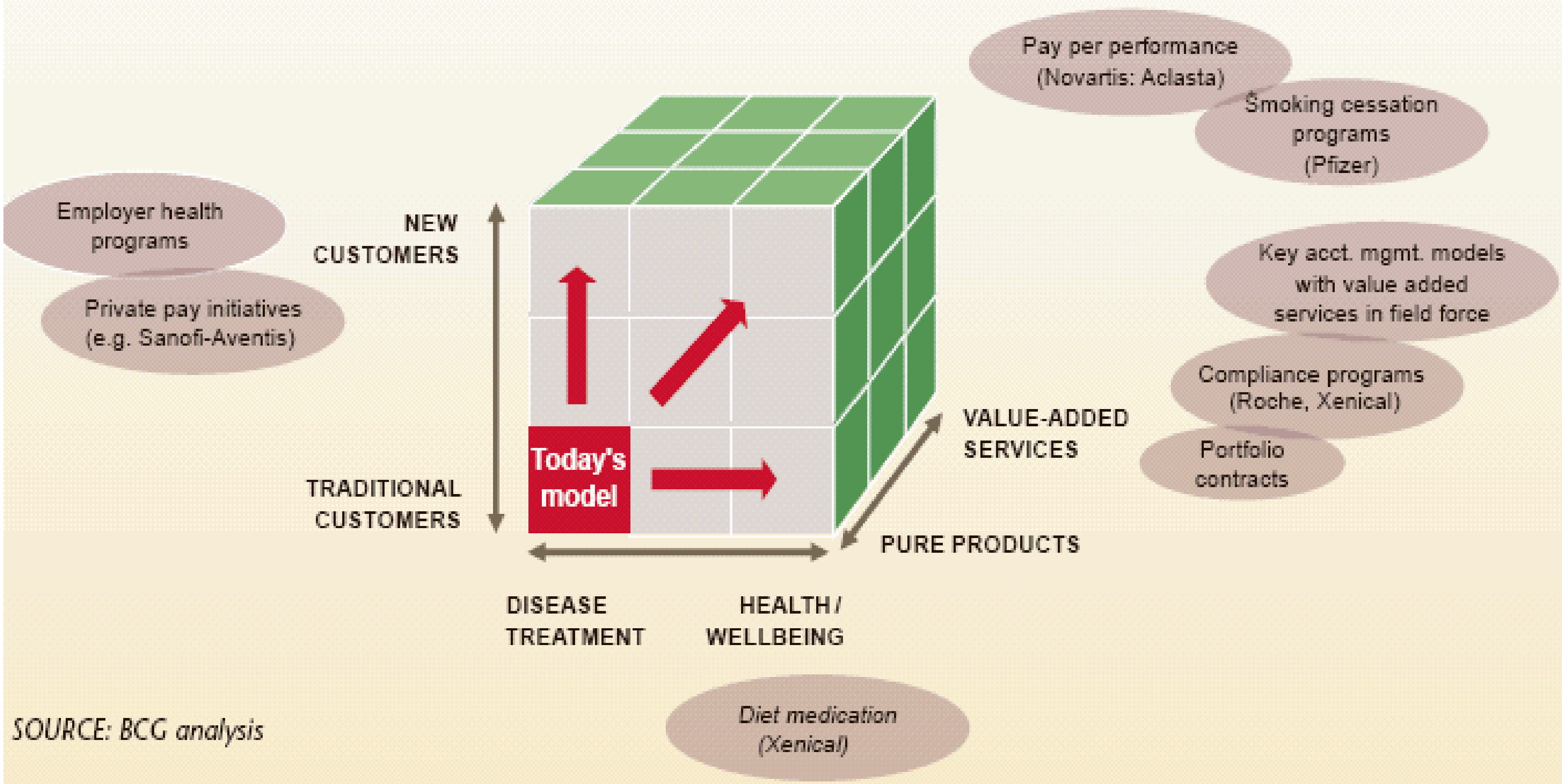
What Must Pharma Consider Changing?

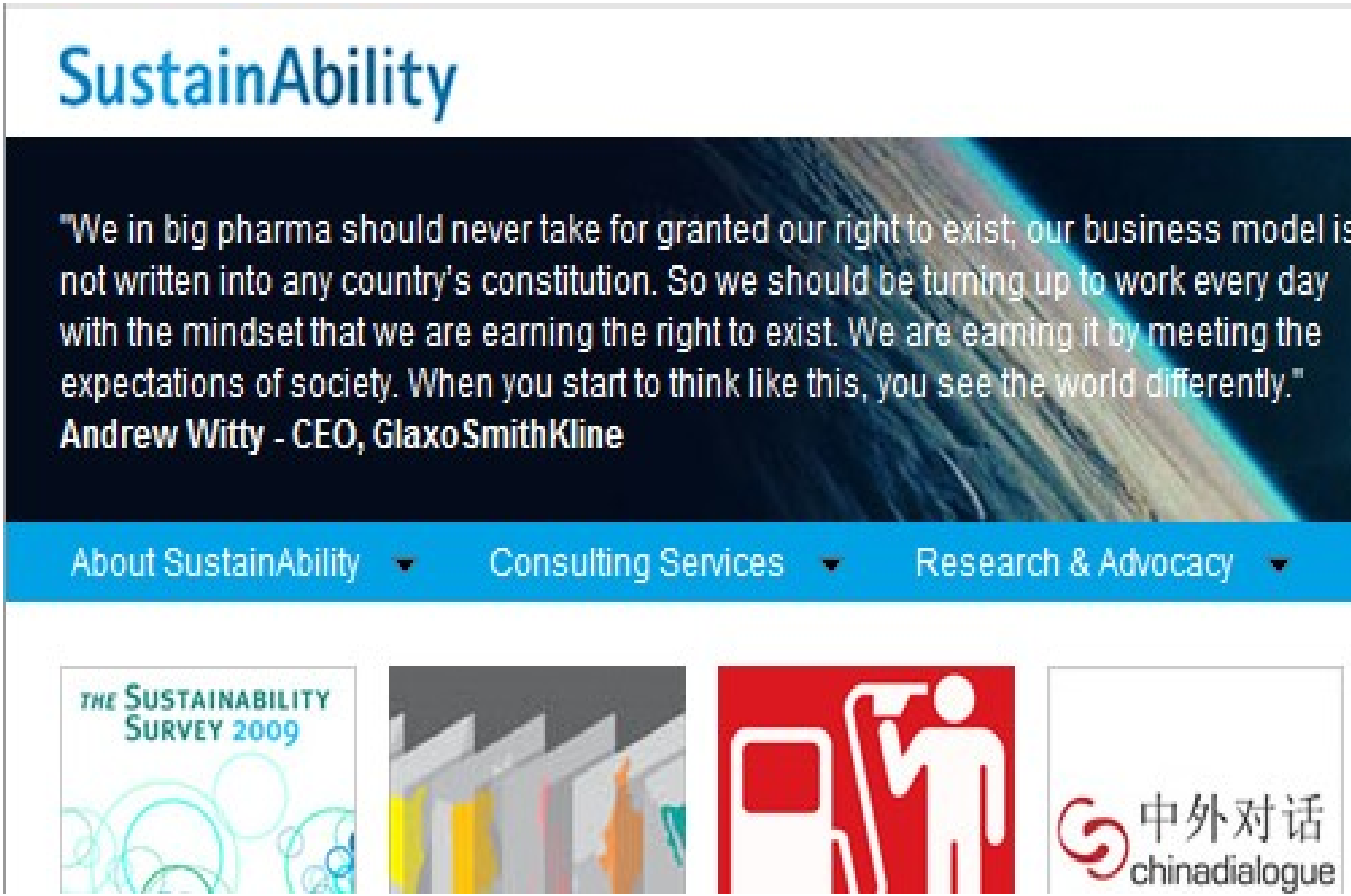
- Big pharma needs to address the following issues:
  - Payor Funding/Affordability to Patient
  - Guarantee of Treatment Outcome/Value Proposition
  - Alignment of Industry Objectives with Societal/Patient Objectives

Exhibit 3

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
THE SUSTAINABILITY SURVEY 2009
中外对话
chinadialogue

Stock Market Consequences of Industry Slowdown

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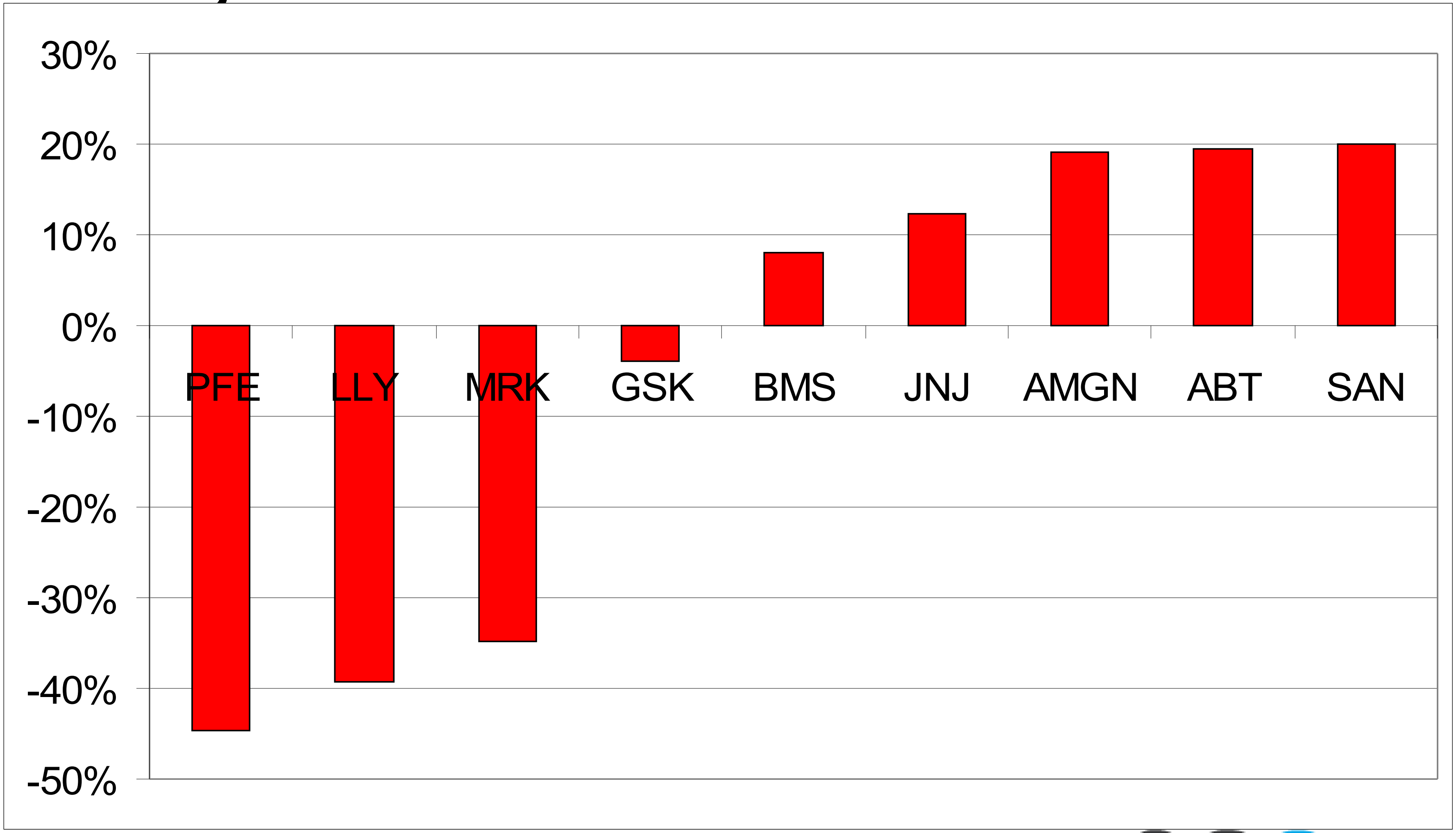
Big Pharma - Worst Performance



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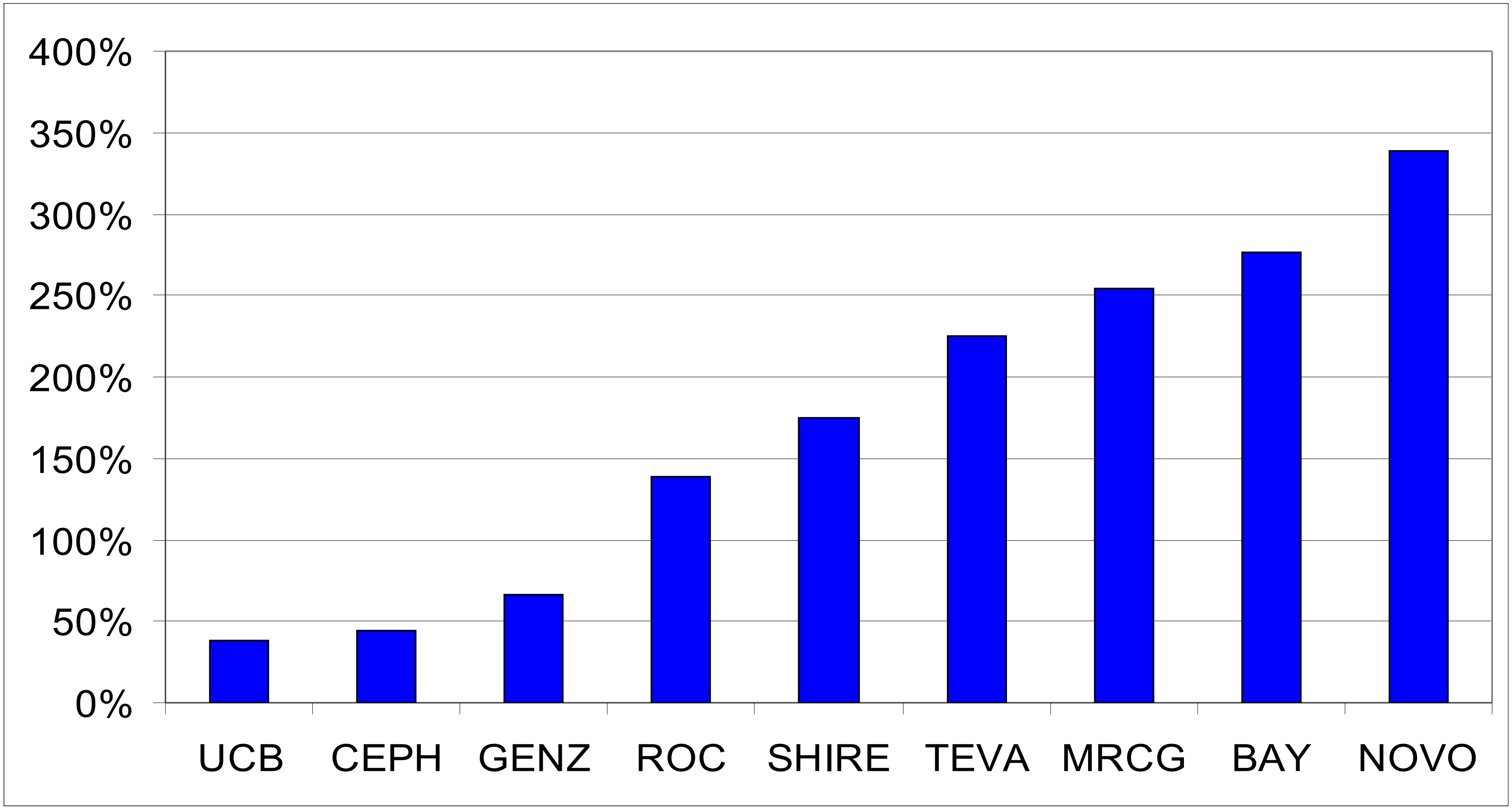
Best Performers - Specialty and Diversified Pharmas



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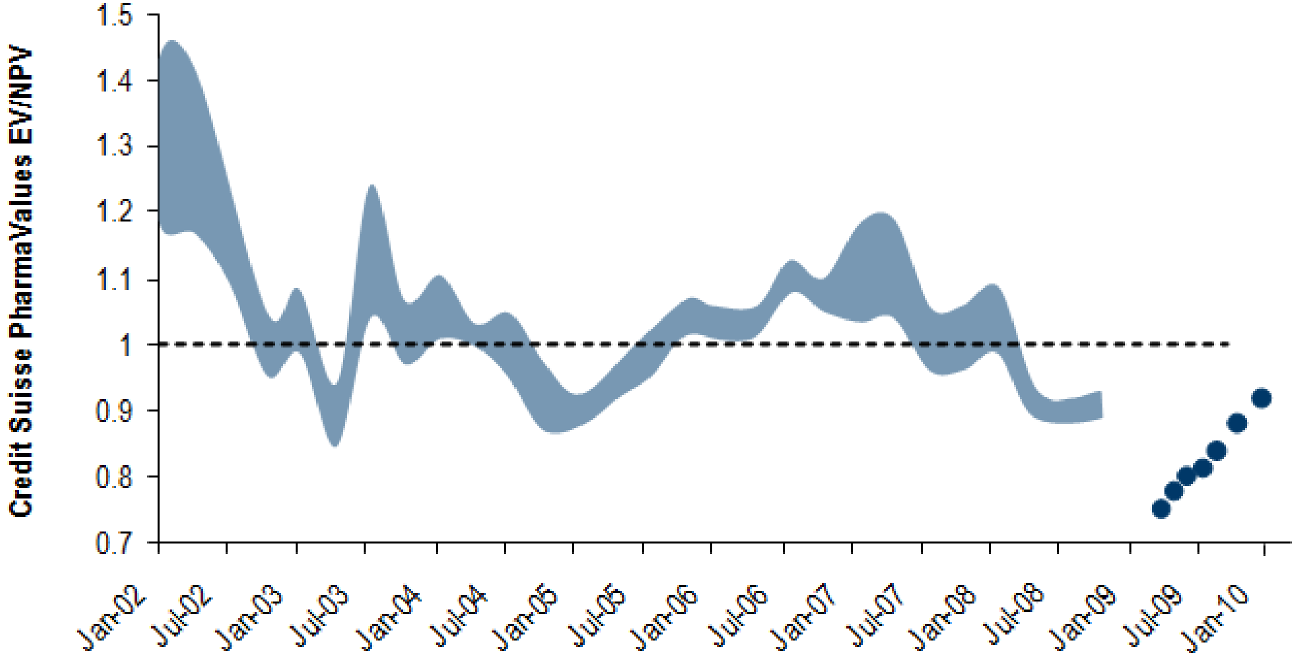
Pharma Sector is Cheap



CREDIT SUISSE

Source: Credit Suisse estimates

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Source: Credit Suisse PharmaValues

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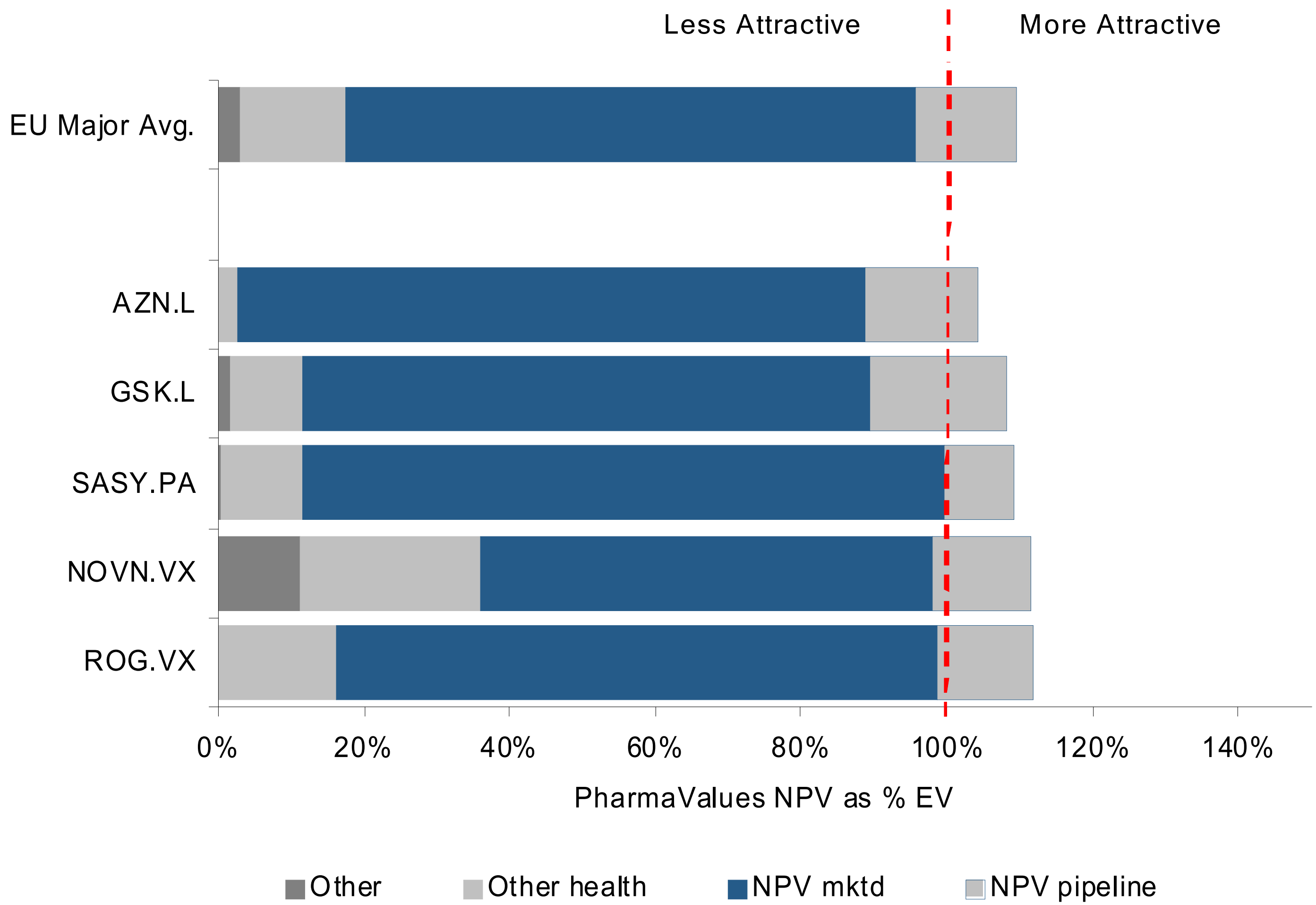
European Pharma is Cheap



Source: Credit Suisse estimates

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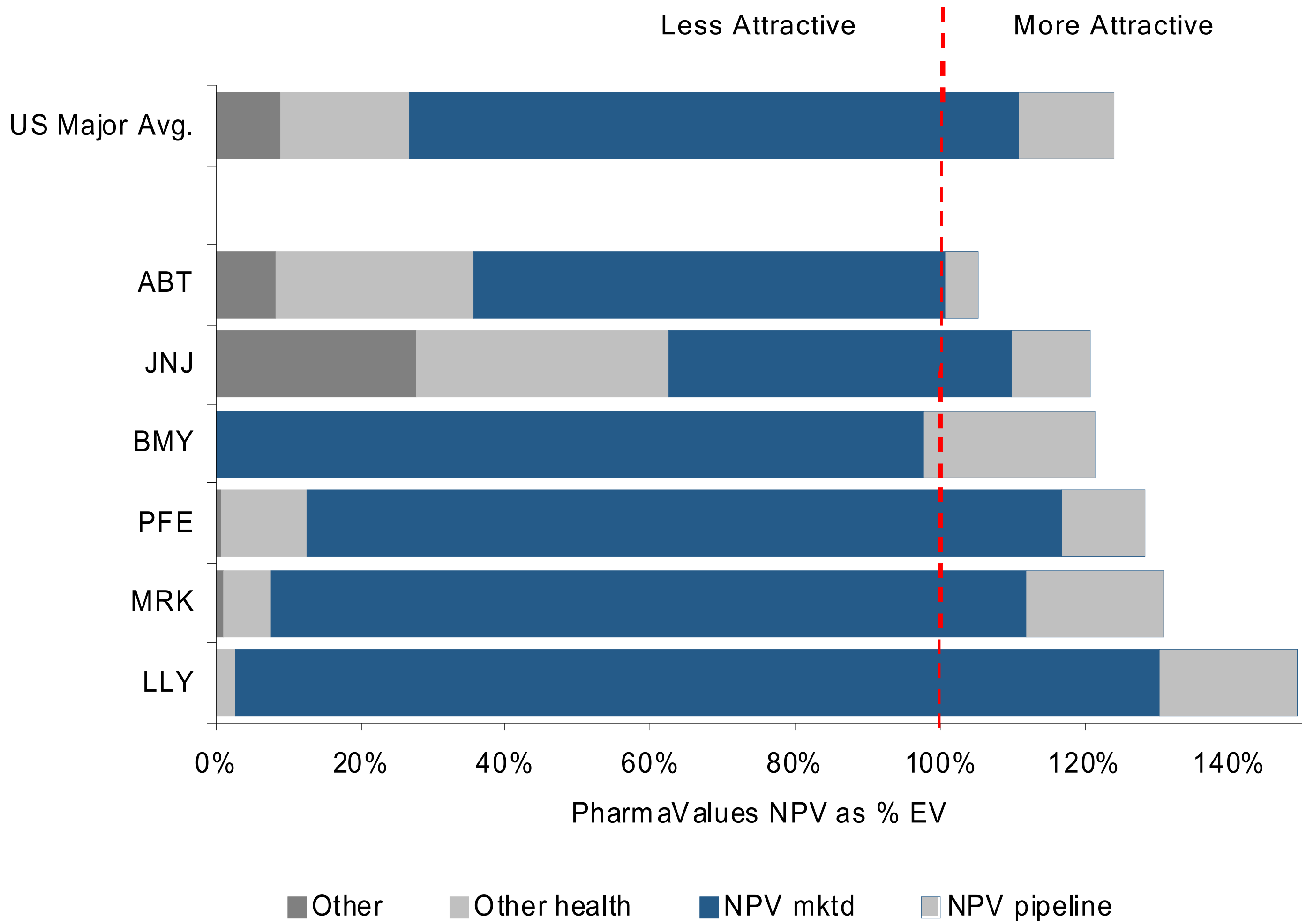
US Pharma is Cheaper_



Source: Credit Suisse estimates

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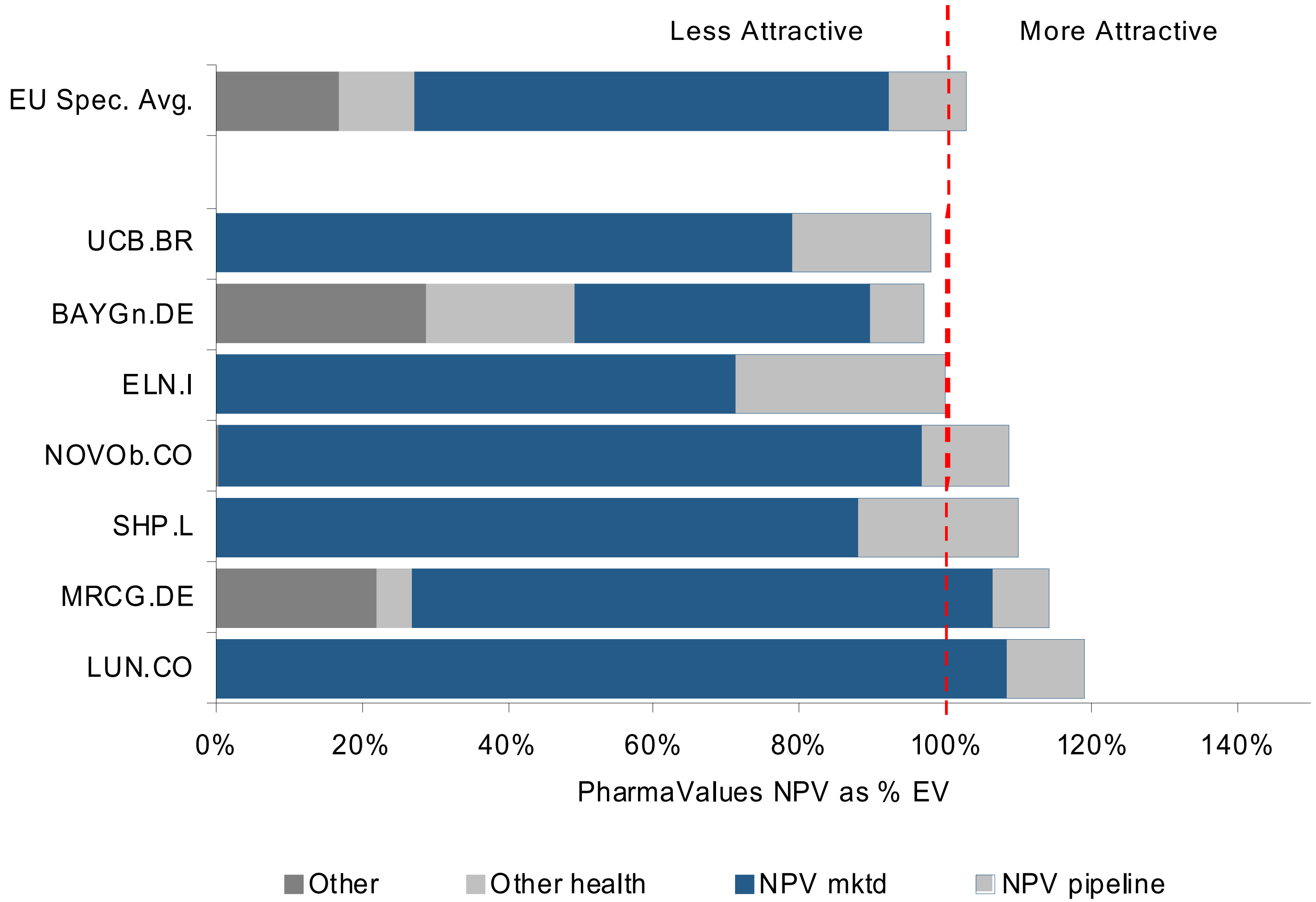
Specialty Pharma More Fully Valued



Source: Credit Suisse estimates

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Industry Must Take Better Care of its Cost Drivers

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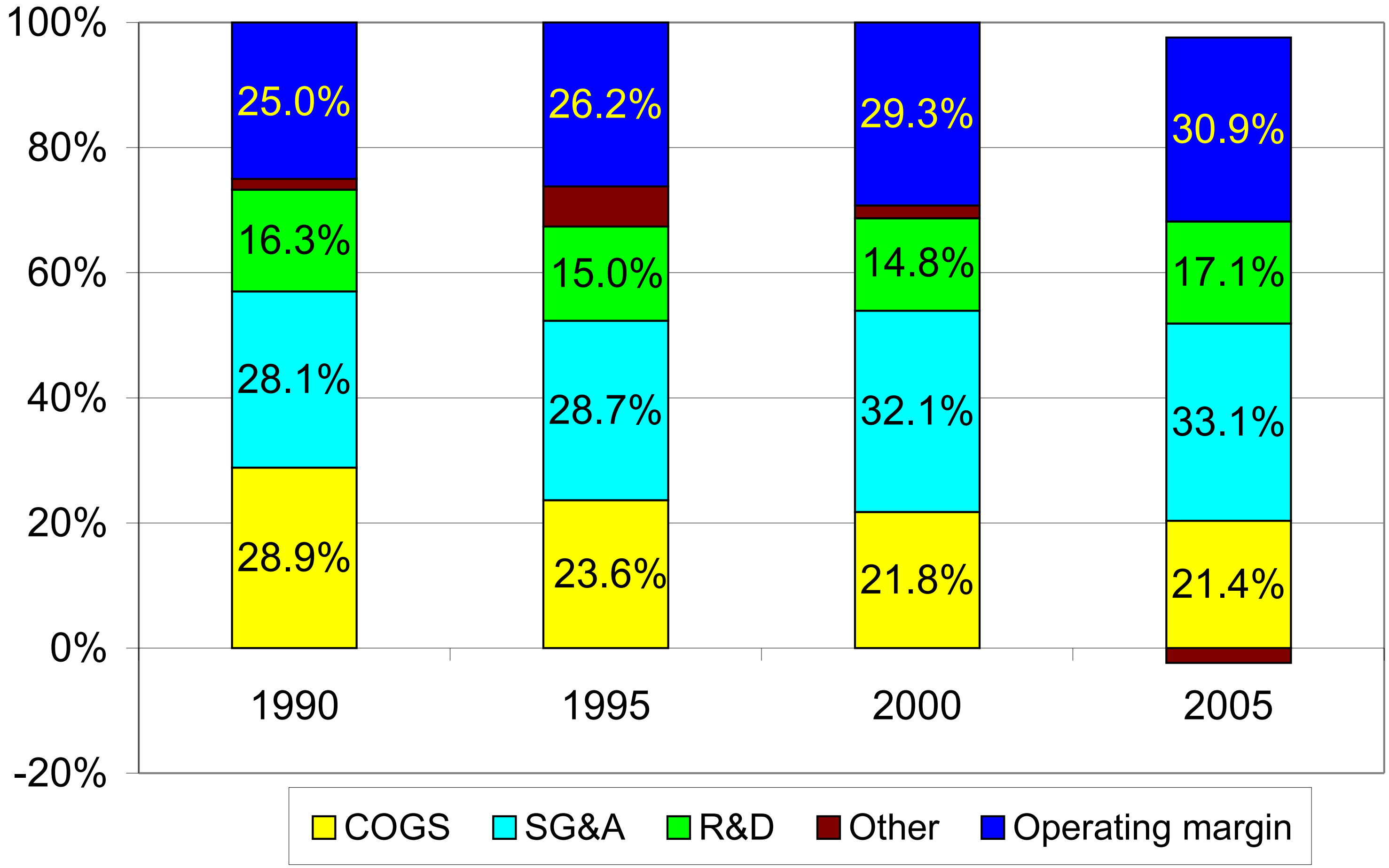
SG&A is the Biggest Cost Driver



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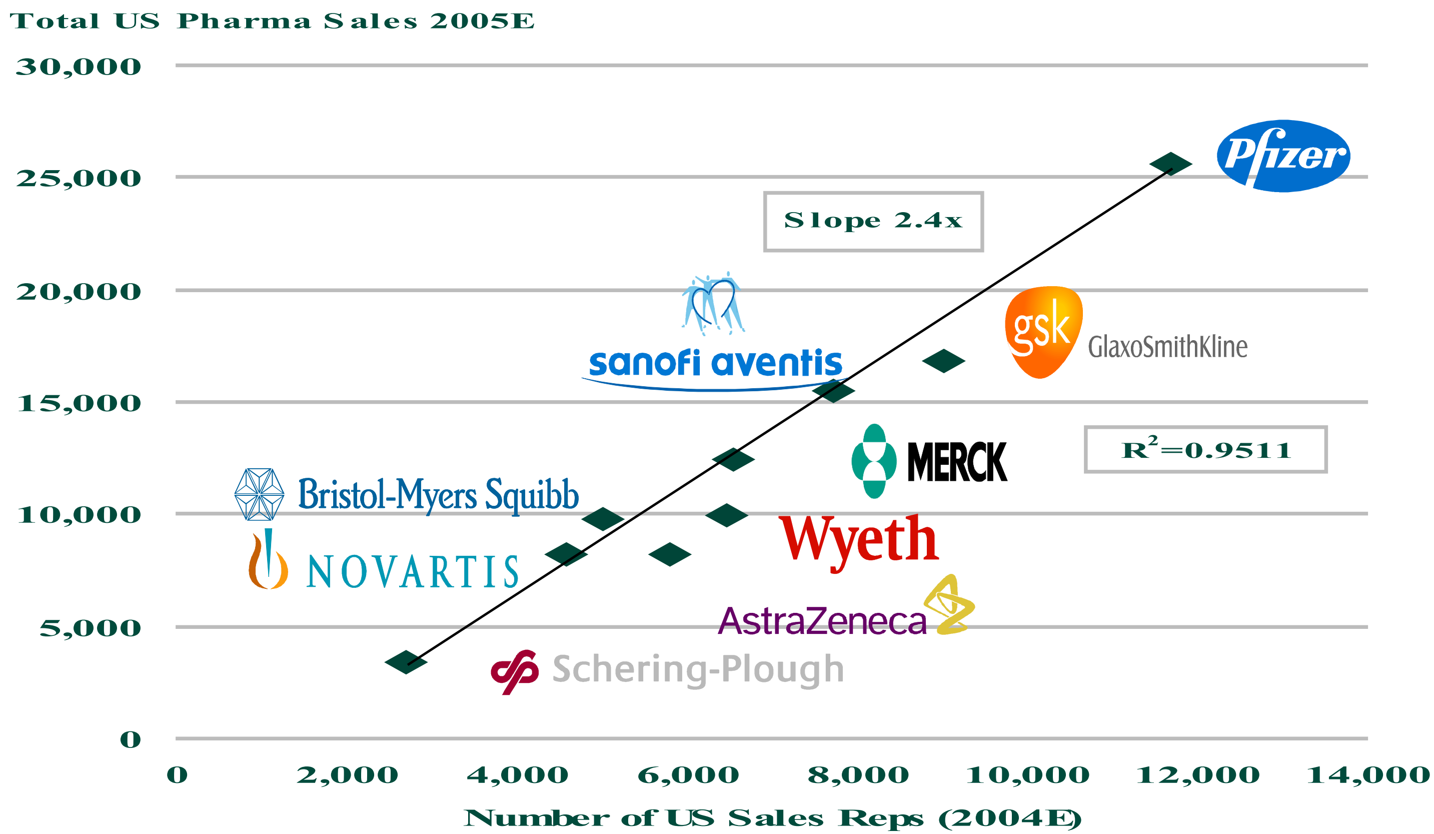
Does the Share of Voice Model Still Apply?



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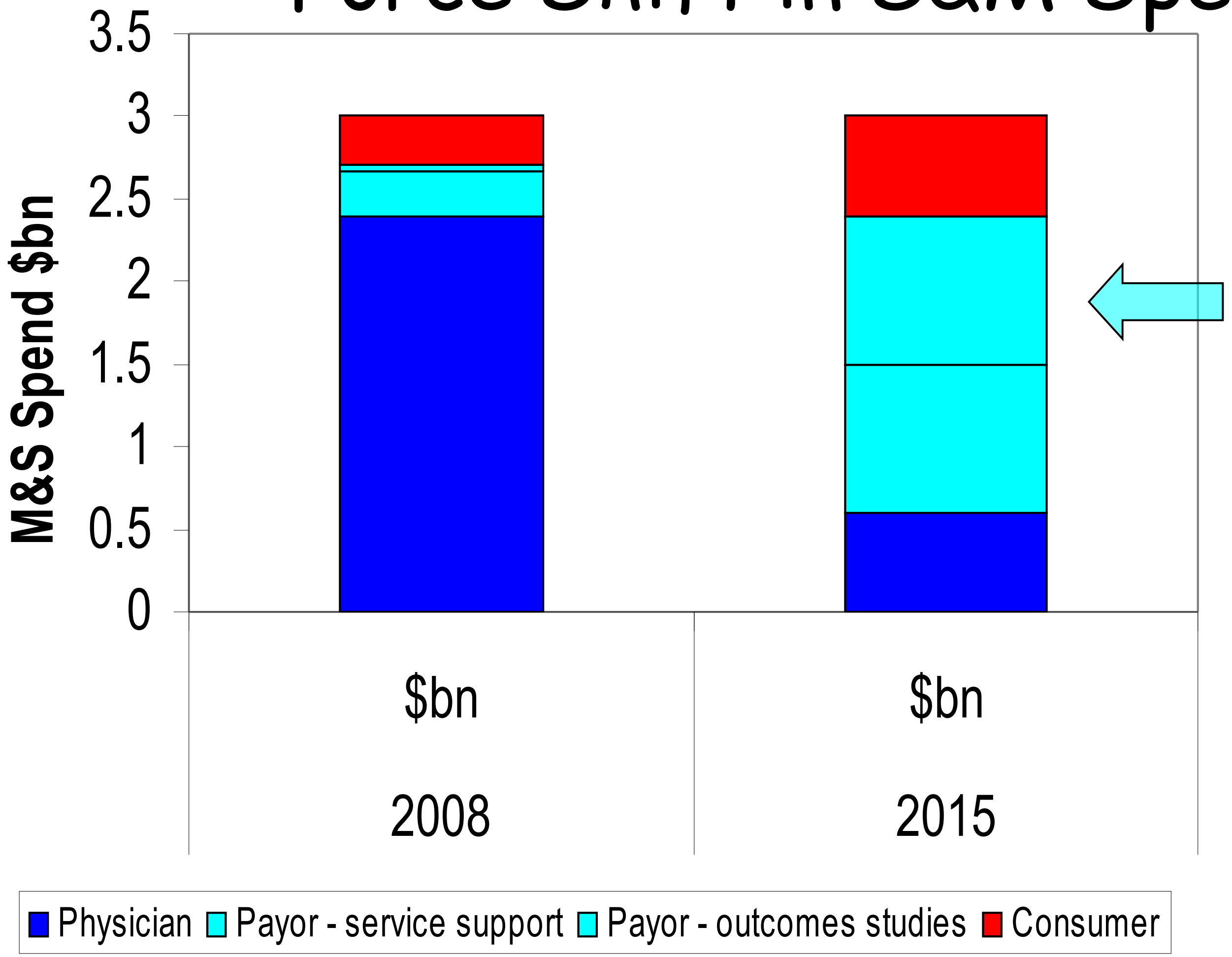
Changing Influence Over Rx Decision Will Force Shift in S&M Spend



$900m now an R&D Expense

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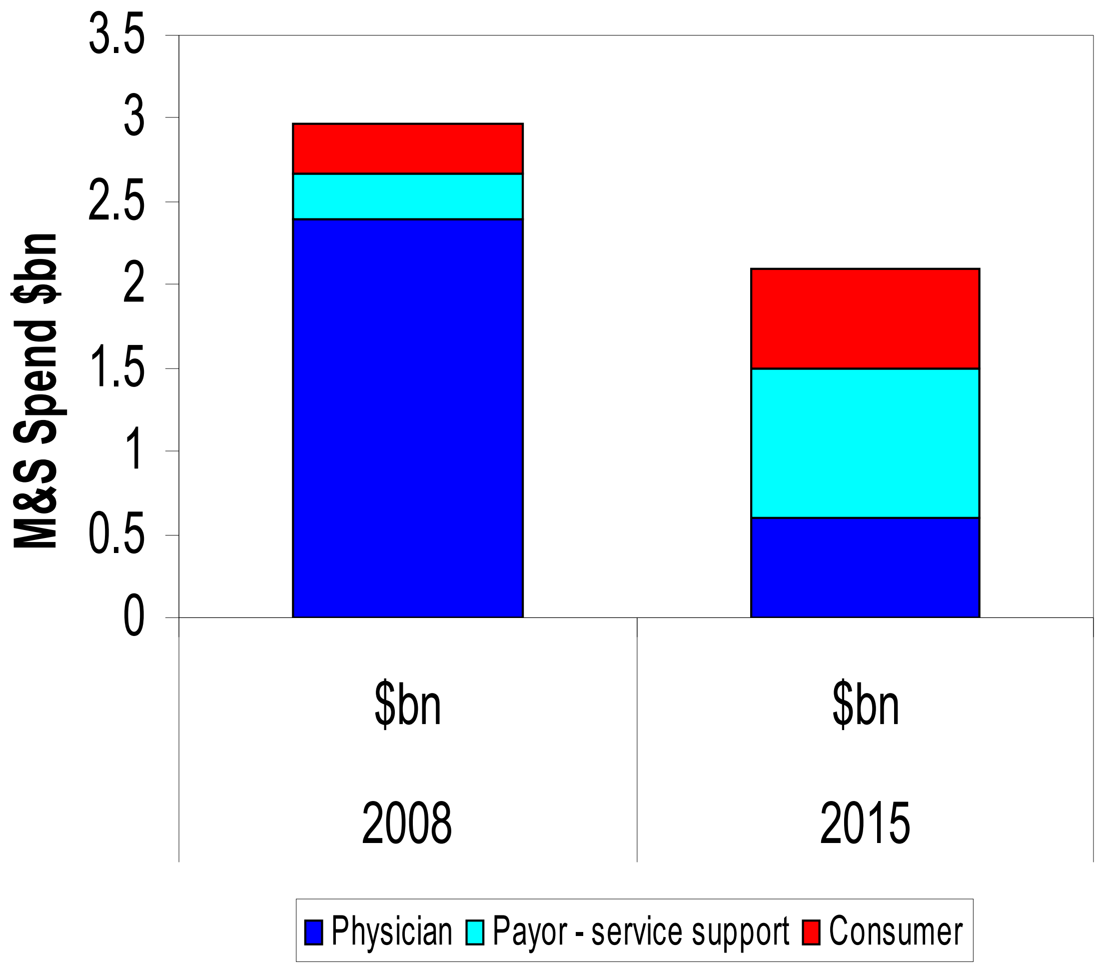
S&M Spending May Shrink Significantly



$3bn S&M spend

$2.1bn S&M spend

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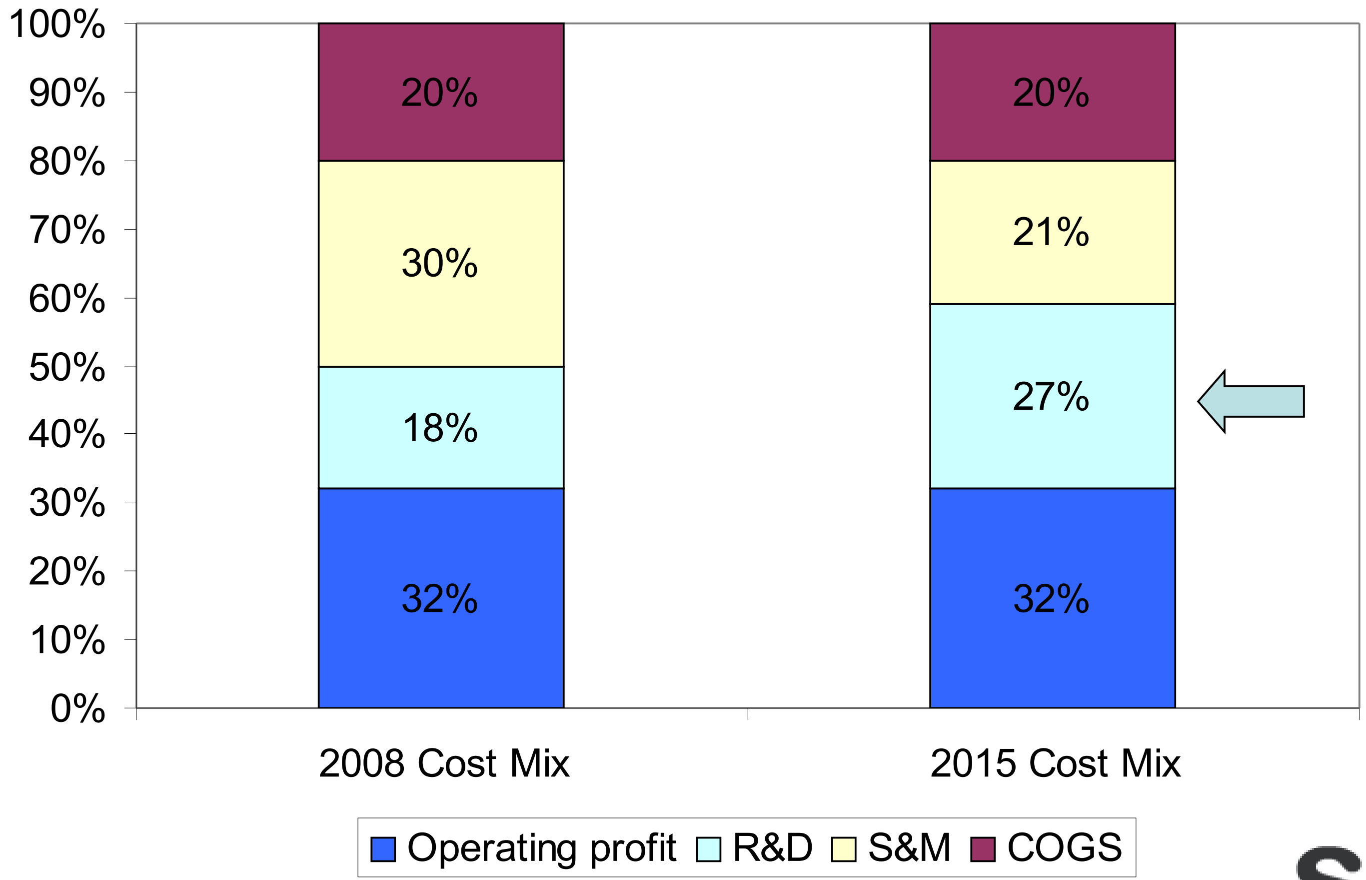
In This Model R&D is Greater than S&M



Includes $0.9bn for Outcome studies

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Metrics for Competitive Advantage

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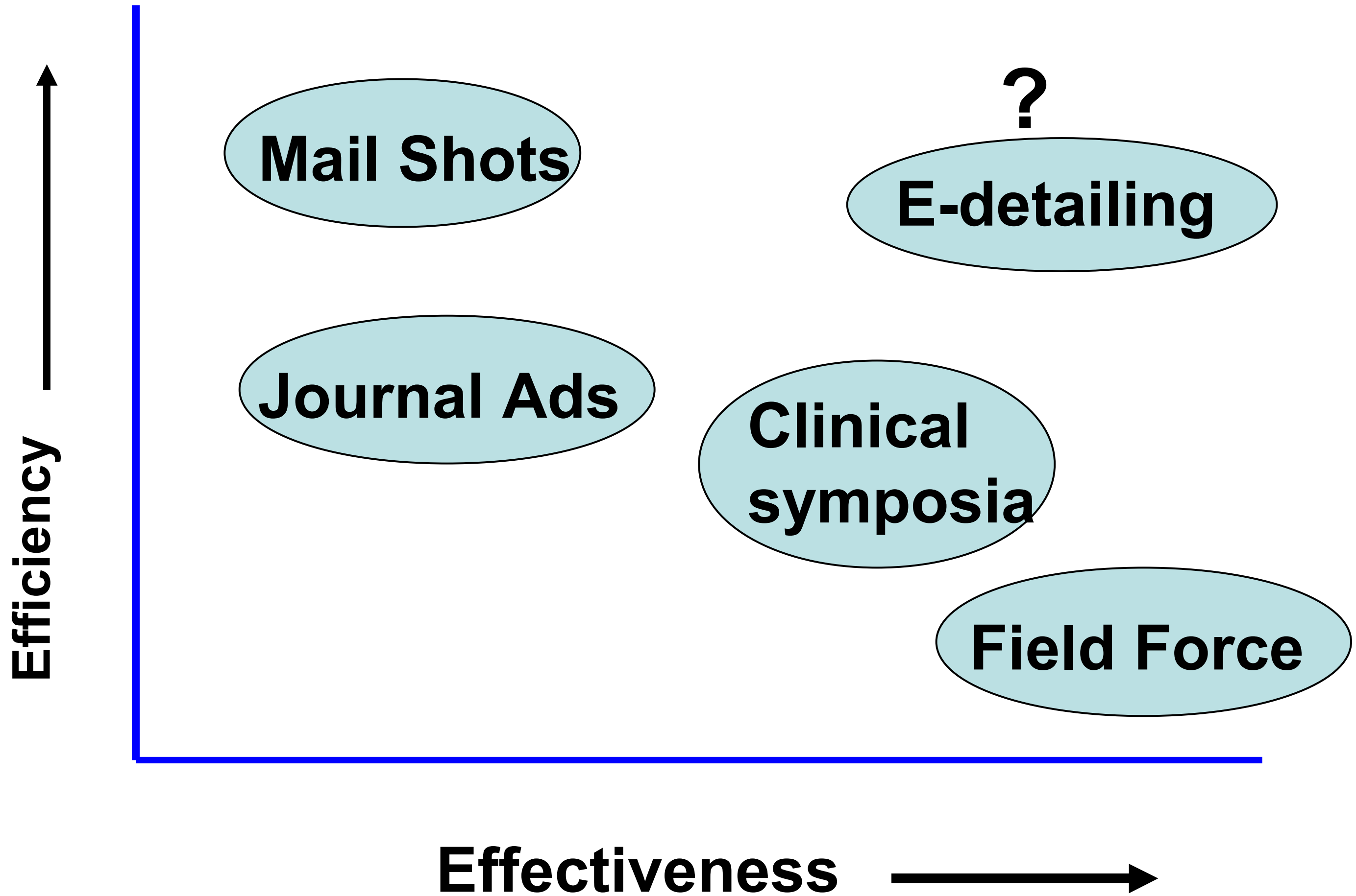
Efficiency vs Effectiveness



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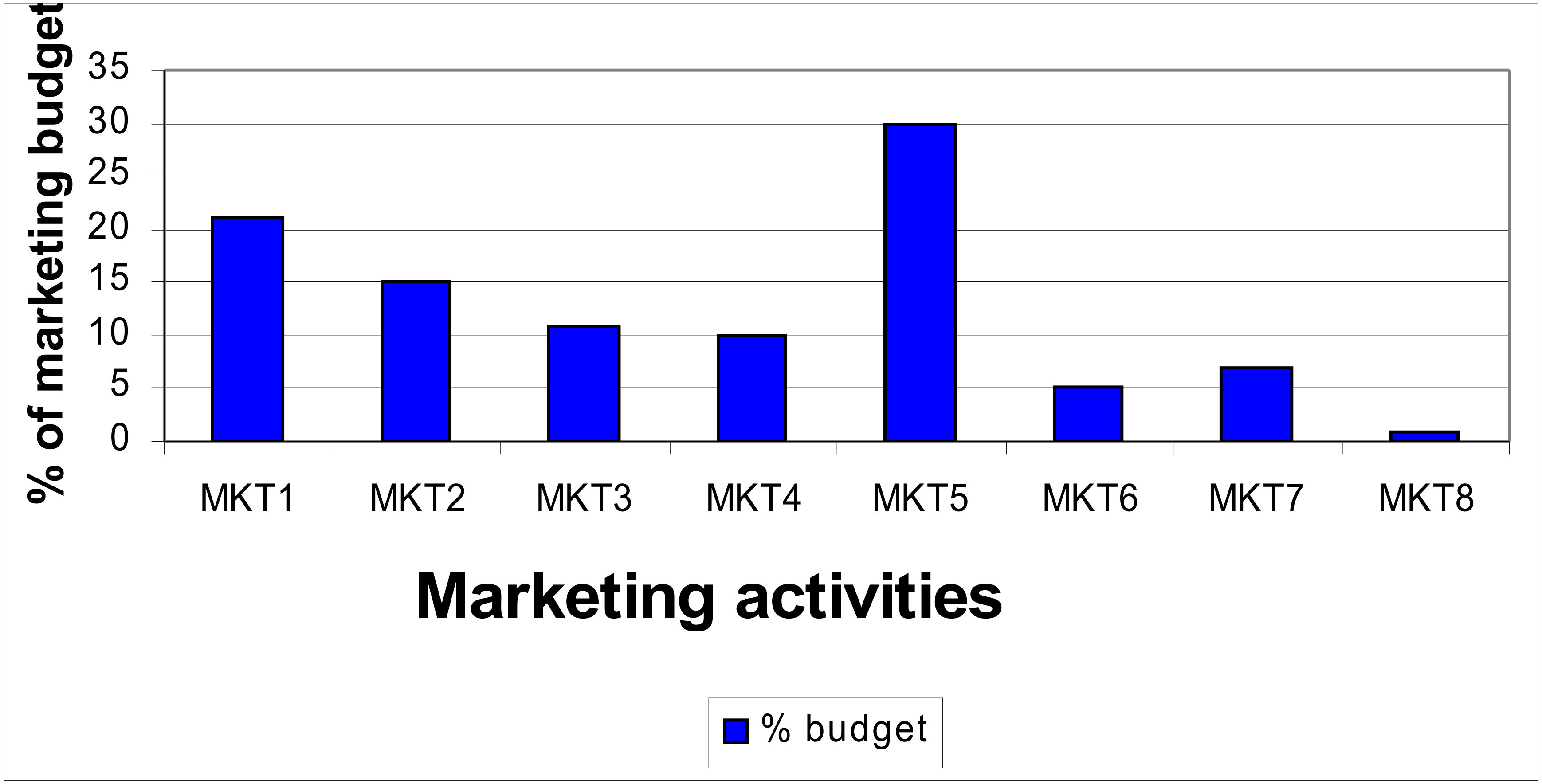
You (Should) Know Your Cost Breakdown



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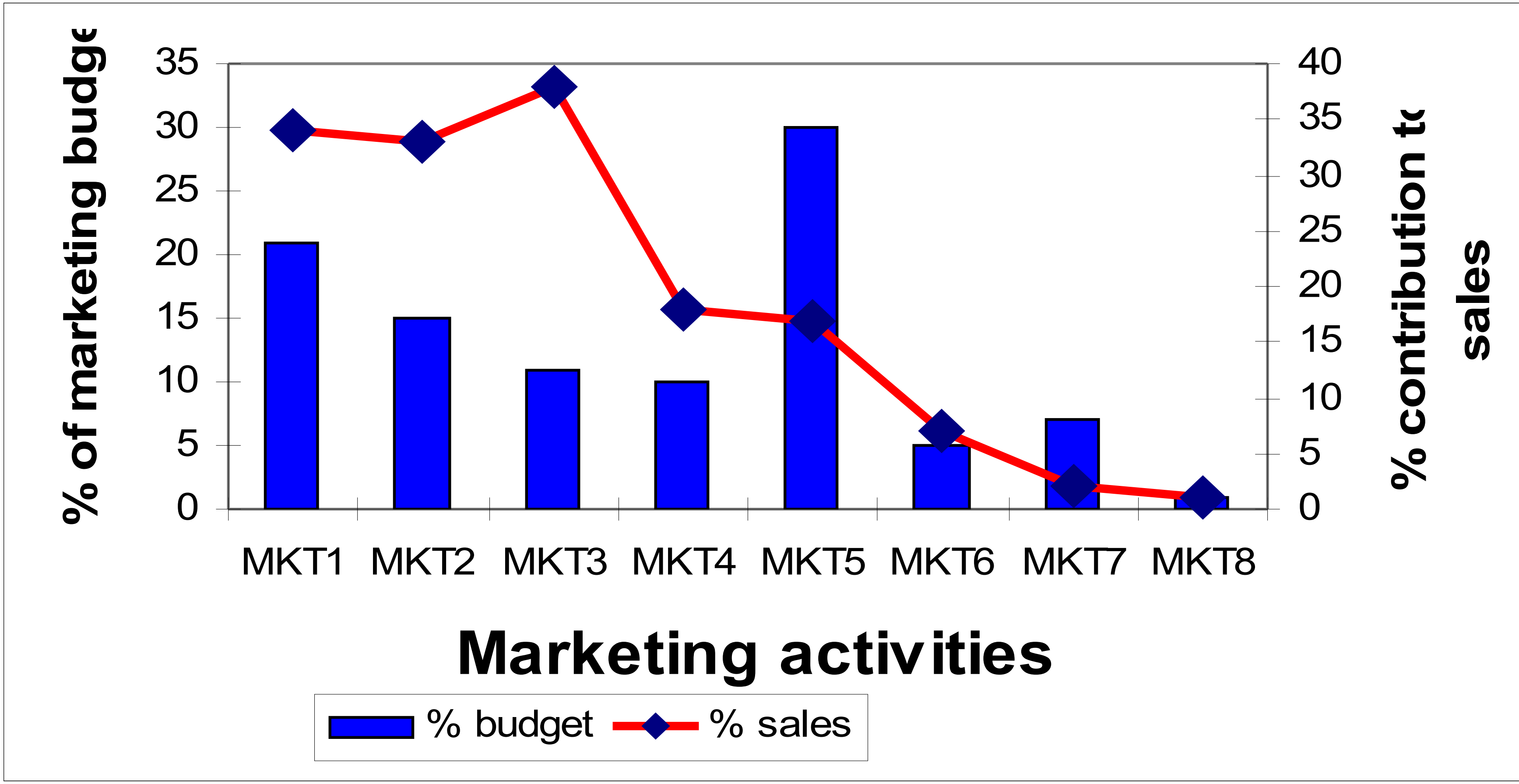
But Do You Know Their Contribution To Sales?



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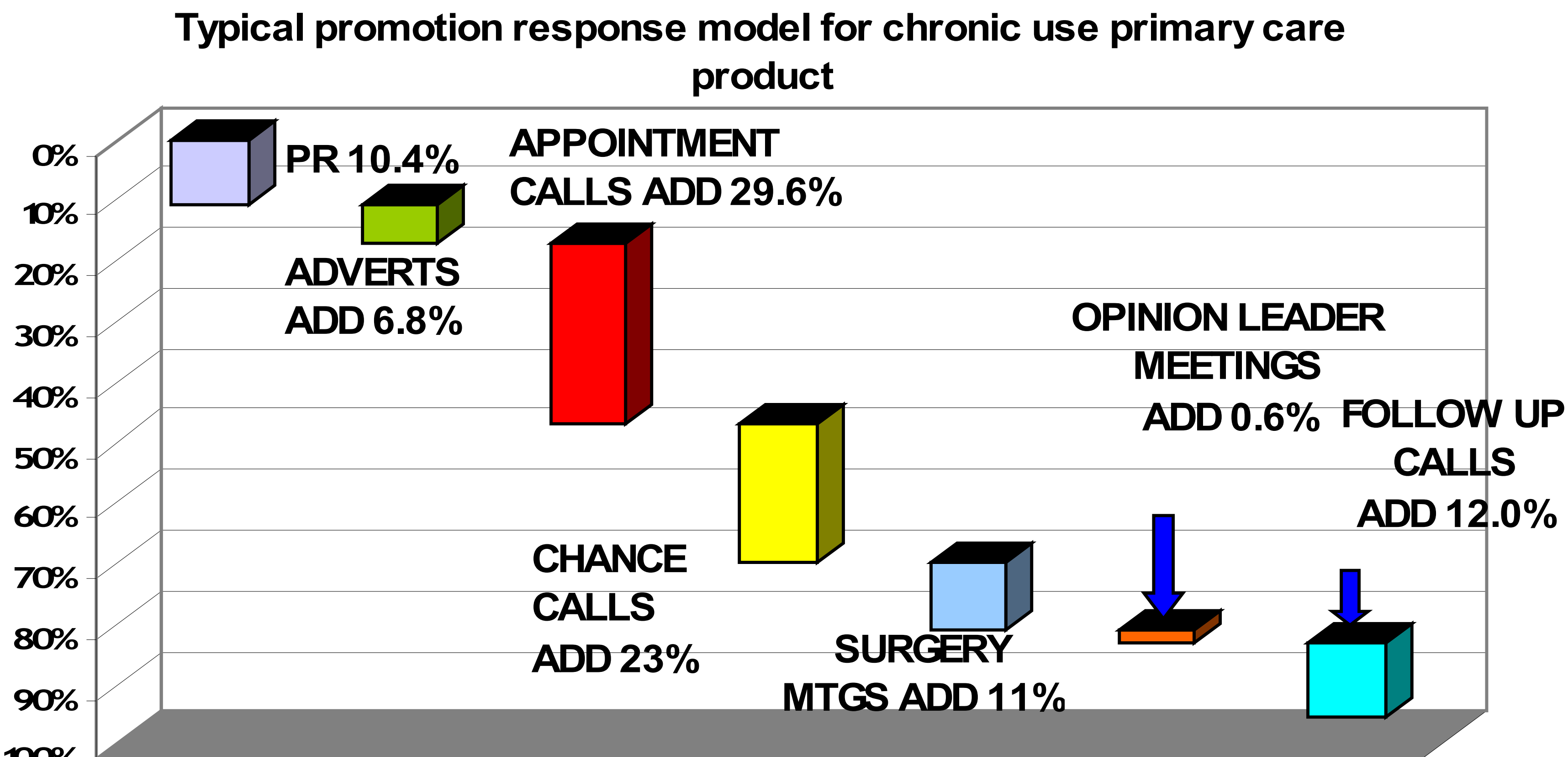
Build A Promotion Response Model



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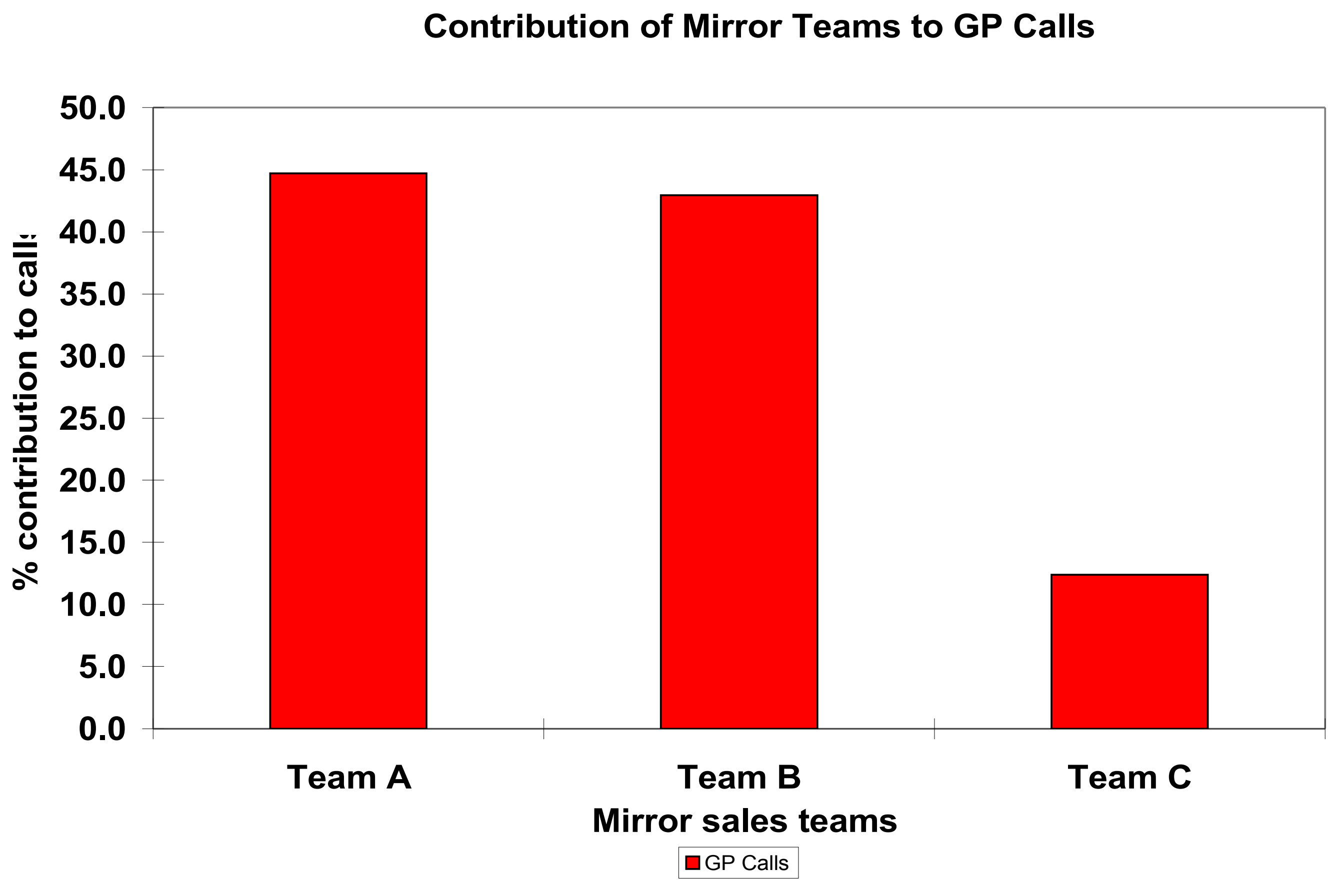
You Know Your Field Force Costs



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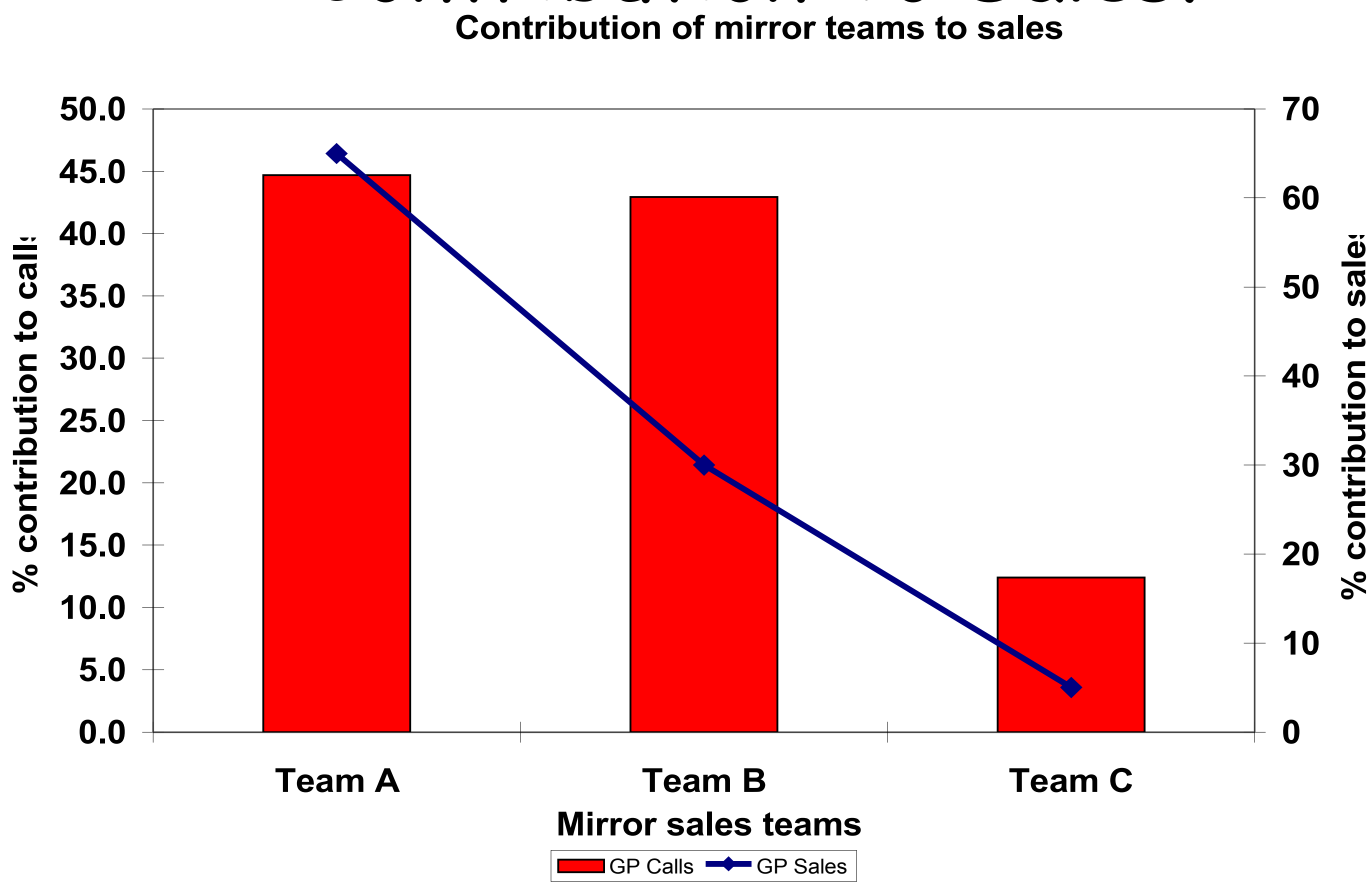
But Do You Know Their Relative Contribution To Sales?



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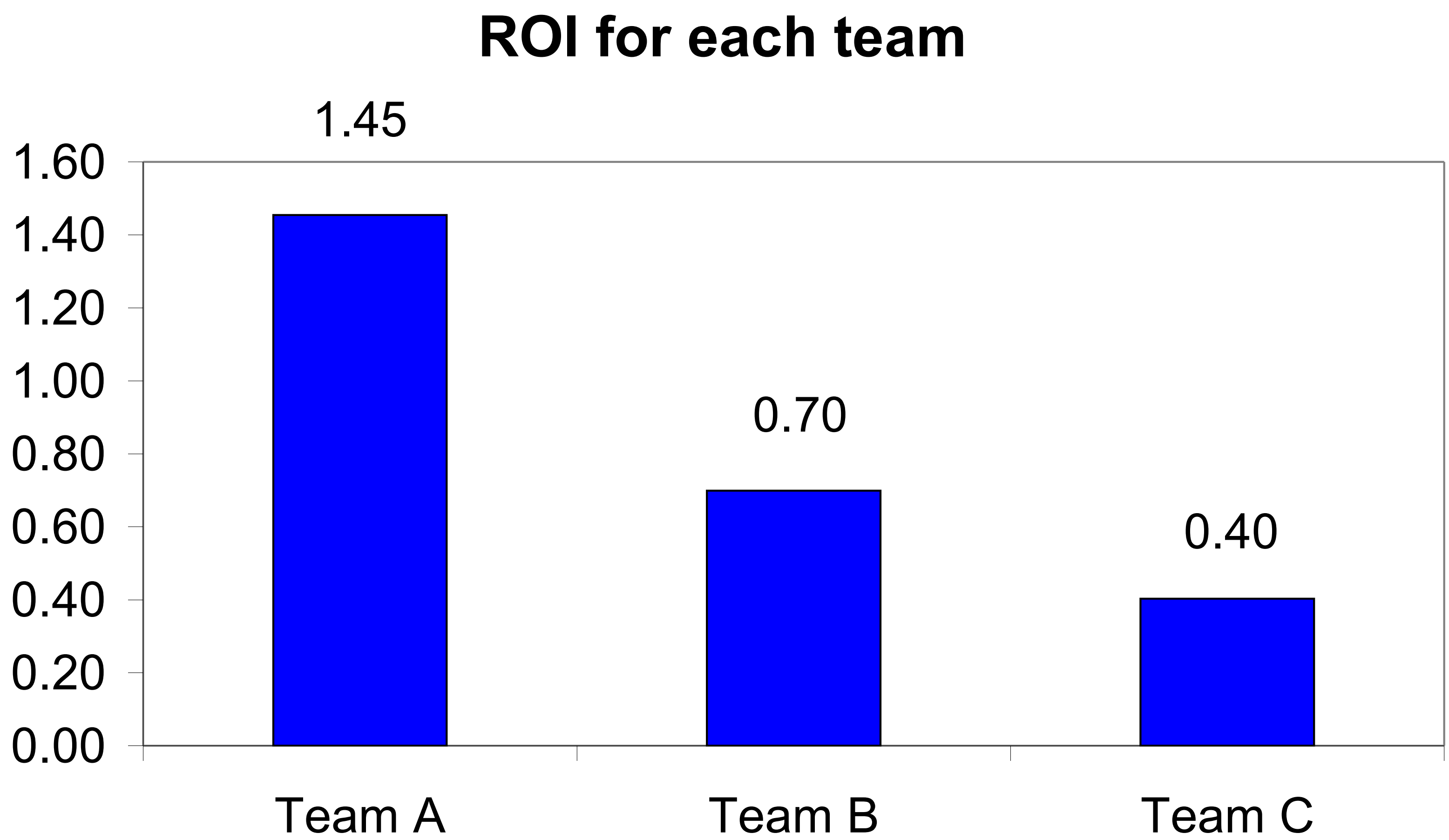
Some Field Forces Have Higher ROI Than Others



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

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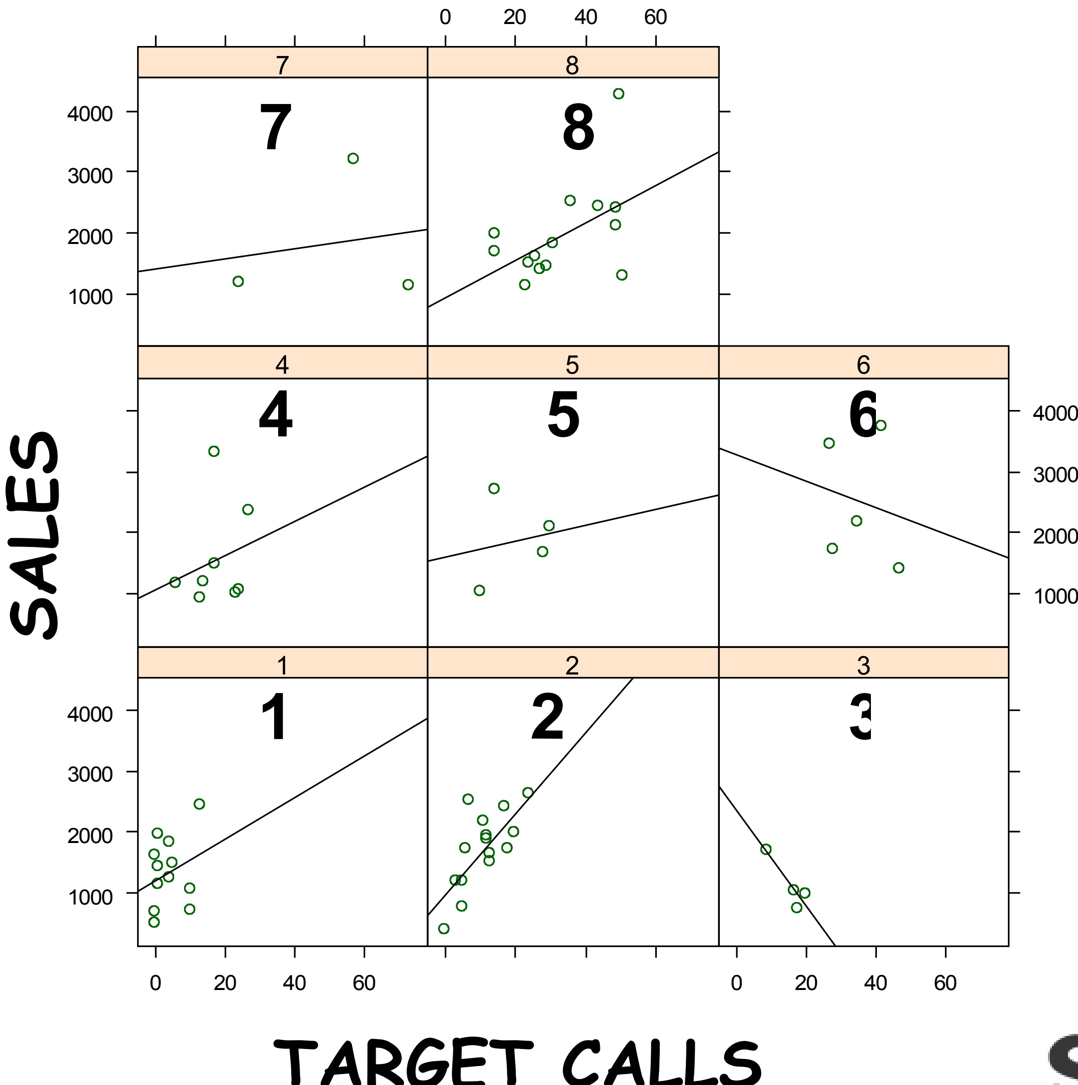
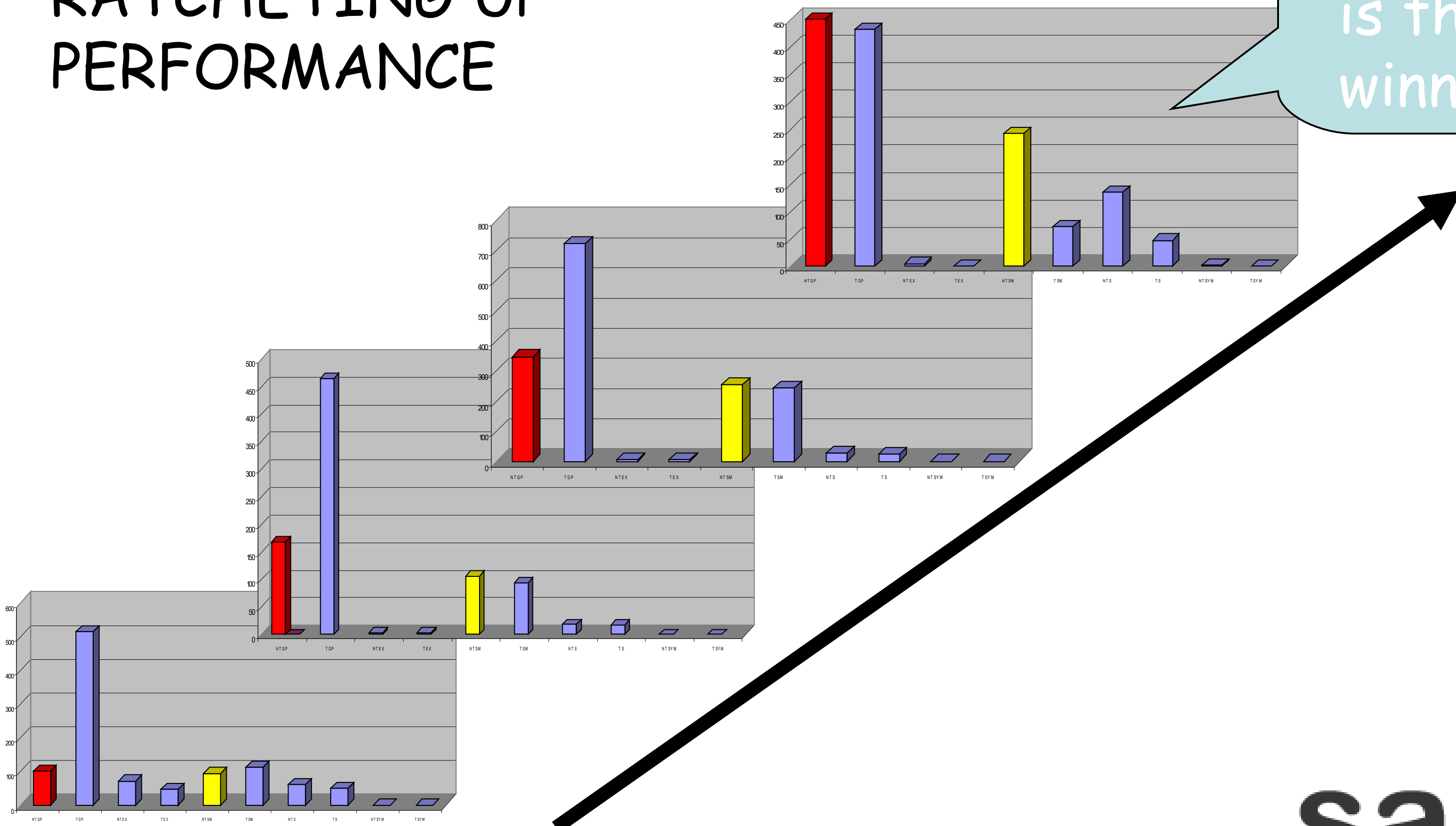
Examining Strategies in Detail



Strategy Templates Can Be Used To Improve Performance

RATCHETING UP PERFORMANCE



Strategy 2 is the winner!

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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