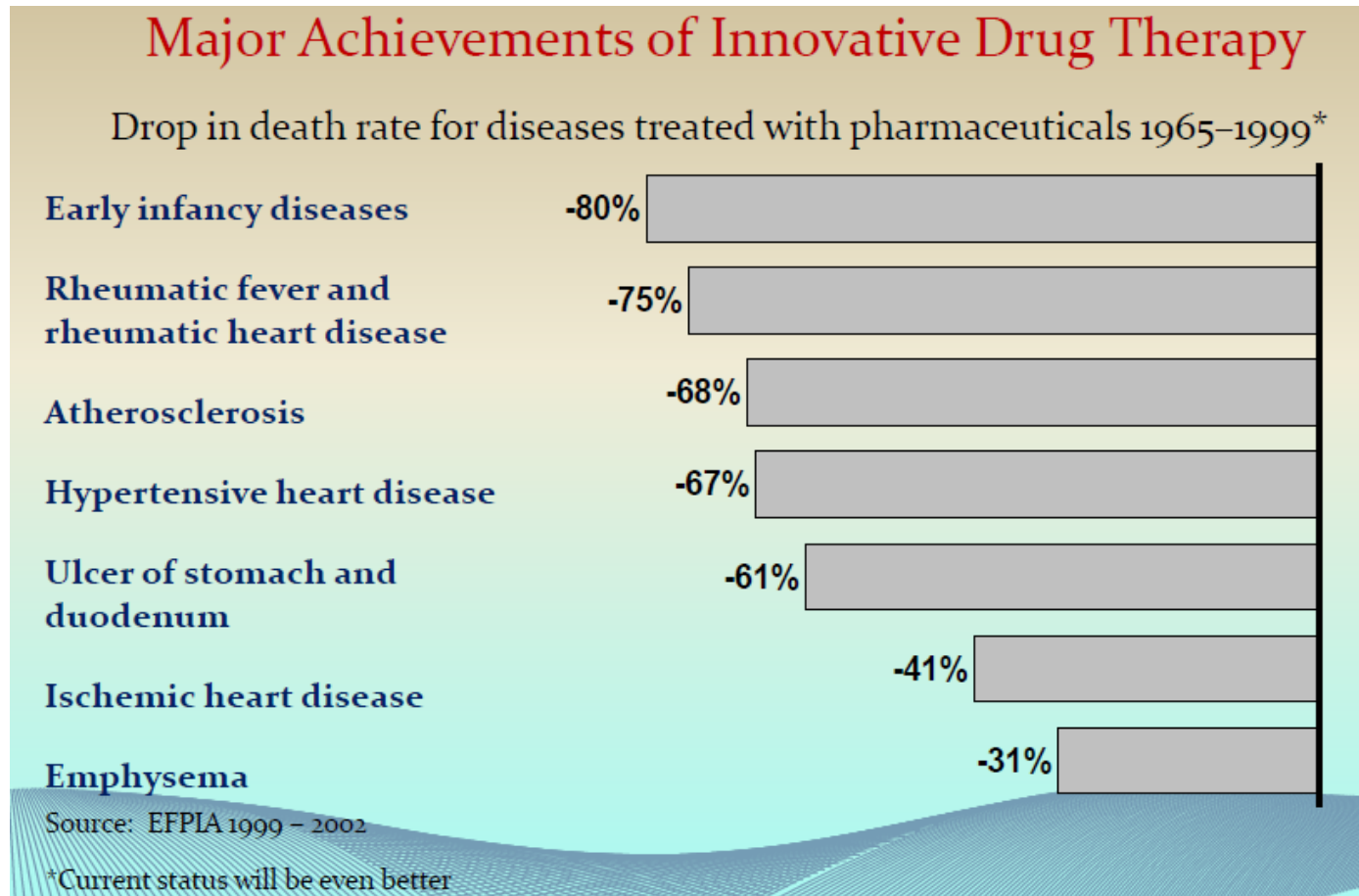


The five pharma industry growth drivers: real options or myths?

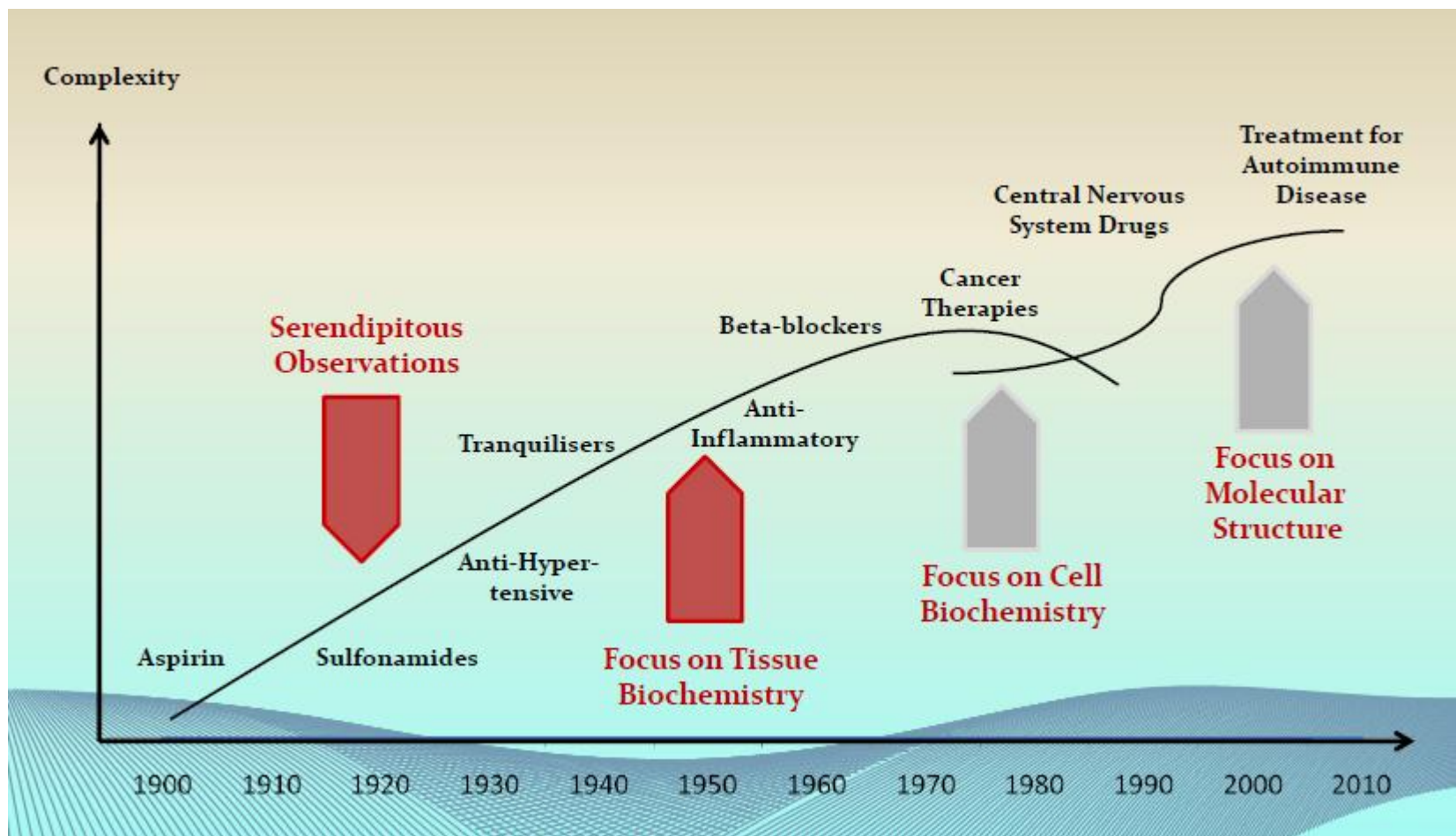
Claude Lubicki

Managing Director Bioexpand®

The Pharmaceutical Industry's contribution to improving Global Health

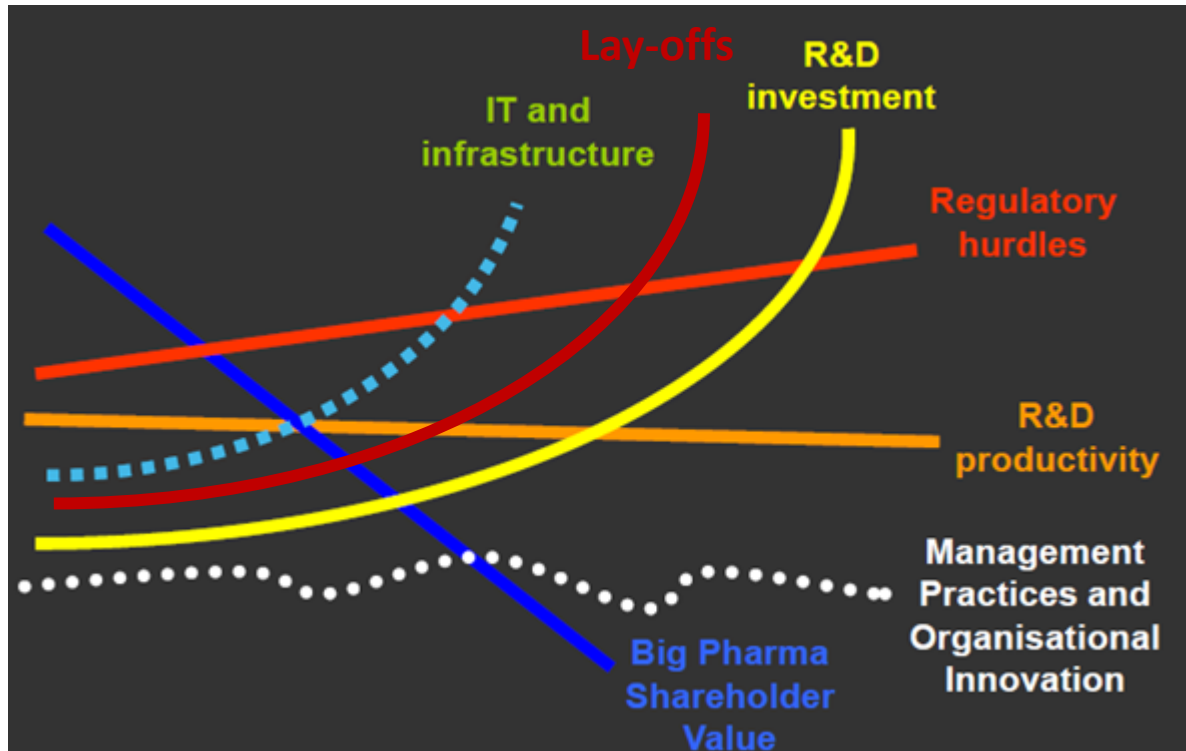


A Journey of more than 100 years



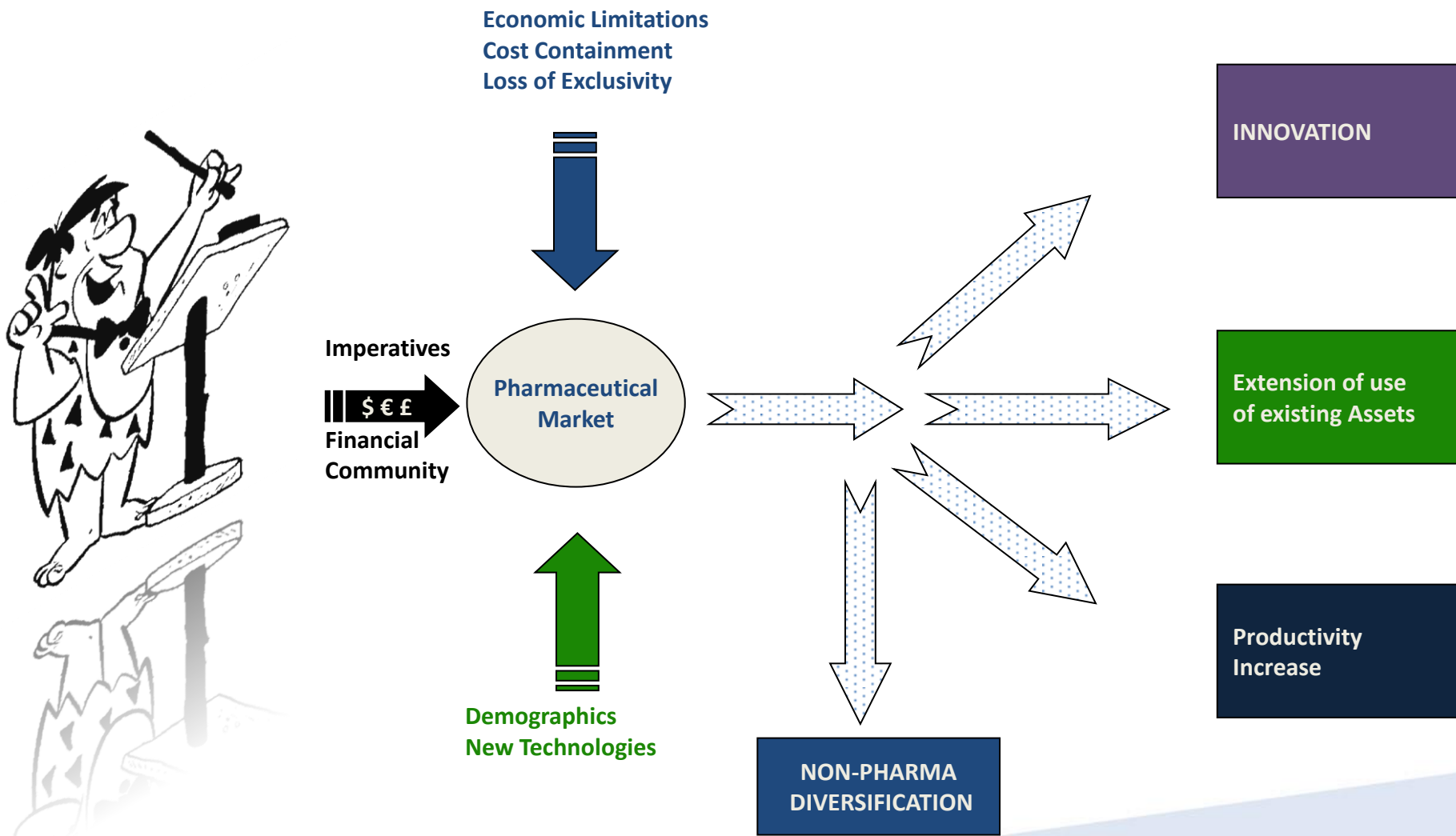
Source: Boston Consulting Group
Tapan Ray: September 20, 2011 Shanghai, China

A slowing contribution?



Source: Leandro Herrero

Pharma under Pressure: A difficult choice for growth. what path to chose ?

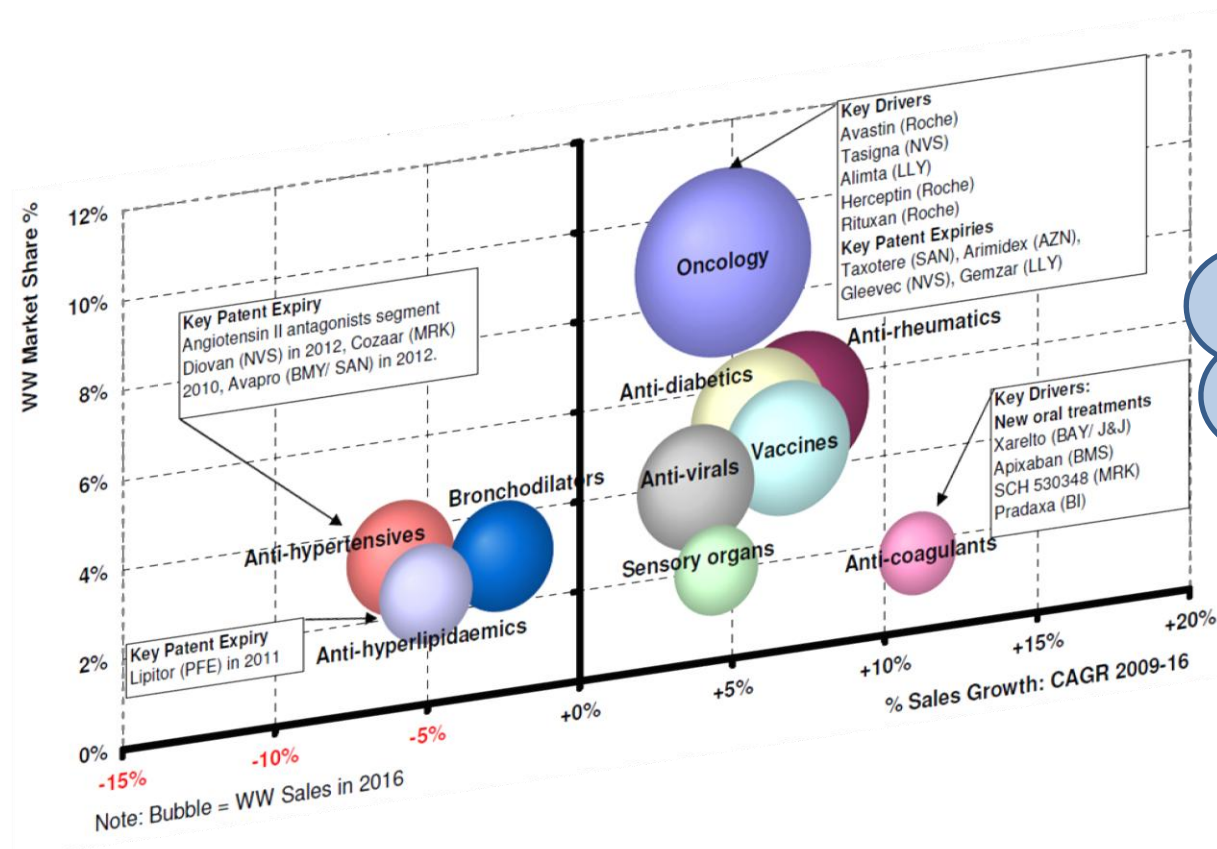


Continued needs for innovation

	Vaccine	Prevention	Treatment	Cure →
HIV/AIDS	✘	✘	✓	✘
Tuberculosis	✘	✘	✓	✘
Malaria	✘	✘	✓	✓
Childhood Diseases	✓	✓	✓	✓
Respiratory Infections and Diseases	✘	✘	✓	✘
Cancers*	✘	✘	✓	✘
Neuropsychiatric Disorders	N.A	✘	✓	✘
Cardiovascular Diseases	N.A	✓	✓	✘
Diabetes	N.A	✘	✓	✘

✓ = Medicines Exist ✘ = R&D Underway N.A. = Not relevant to Vaccines now

2009-16 Growth Comes from Other Therapeutic Areas



Manufacturers, Payers & Patients syndicate their efforts to tackle cost

New Technologies : Dream or Reality?

Cell Therapy:

- Organ transplant
- Autologous Chondrocyte Implantation (ACI)
- Abundant clinical work in CVD
- Stem Cells
- ...

Immunology:

- Monoclonal Antibodies
- Radio-Immunotherapy
- Therapeutic Vaccines
- Cytokines
- ...

Gene Therapy:

- No FDA -approved product ...yet
- 661 ongoing Phase I/II/III in ClinTrials.gov
- ...

Drug Delivery:

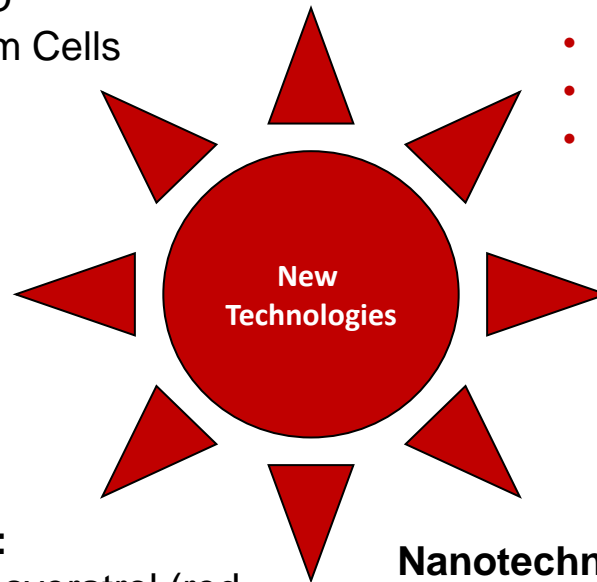
- Inhalation
- Implants
- Coated-Stents
- Liposomes
- Micro-Chips
- ...

Nutraceuticals:

- Anti-aging resveratrol (red wine)
- Probiotics
- Pomegranate juice for PCa
- ...

Nanotechnologies:

- Nerve regeneration scaffold
- Nanotubes for bone regeneration
- Antiviral nanoemulsion
- ...



Creative Alliances with unconventional players

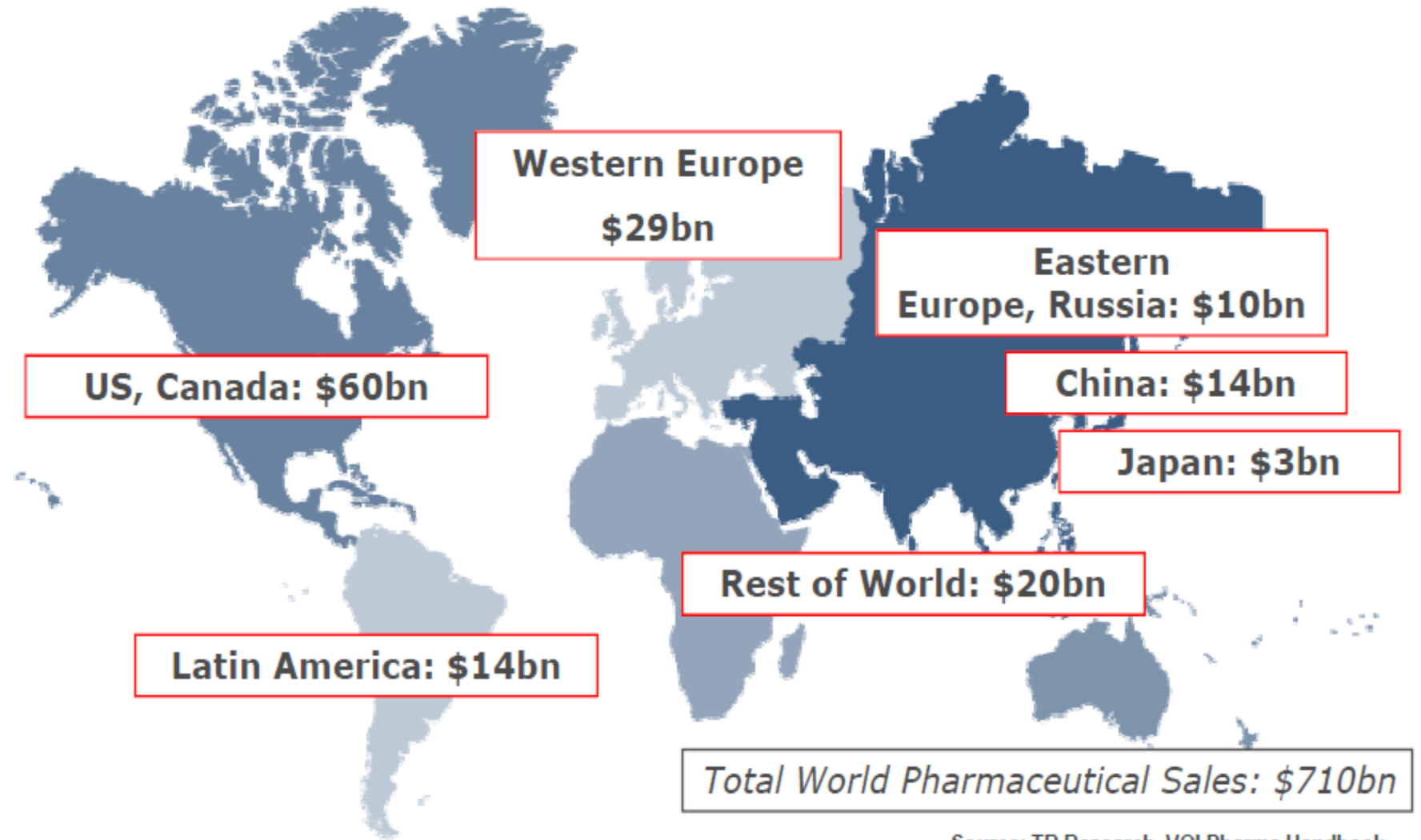


- **IBM and The Institute of Bioengineering and Nanotechnology Find Breakthrough for MRSA Treatment. A new Molecular Structures Could Fight Infectious Diseases Better than Conventional Antibiotics**



- **Nestlé is challenging the global drugs industry with plans to invest SFr500m (\$510m) over the next decade to support the creation of a standalone health science business to tackle obesity and chronic disease**

Generics: a \$150 Billion Market!

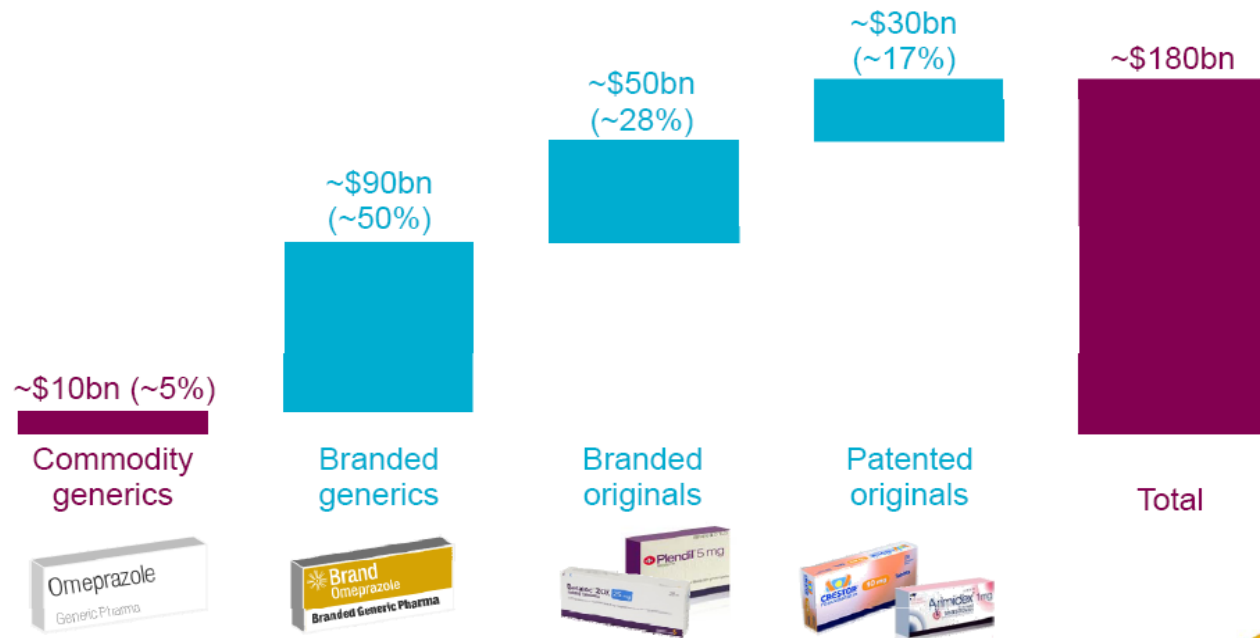


Source: TR Research, VOI Pharma Handbook

Branded Generics Dominate in Emerging Markets

Brands dominate the market as brands are the best proxy for quality

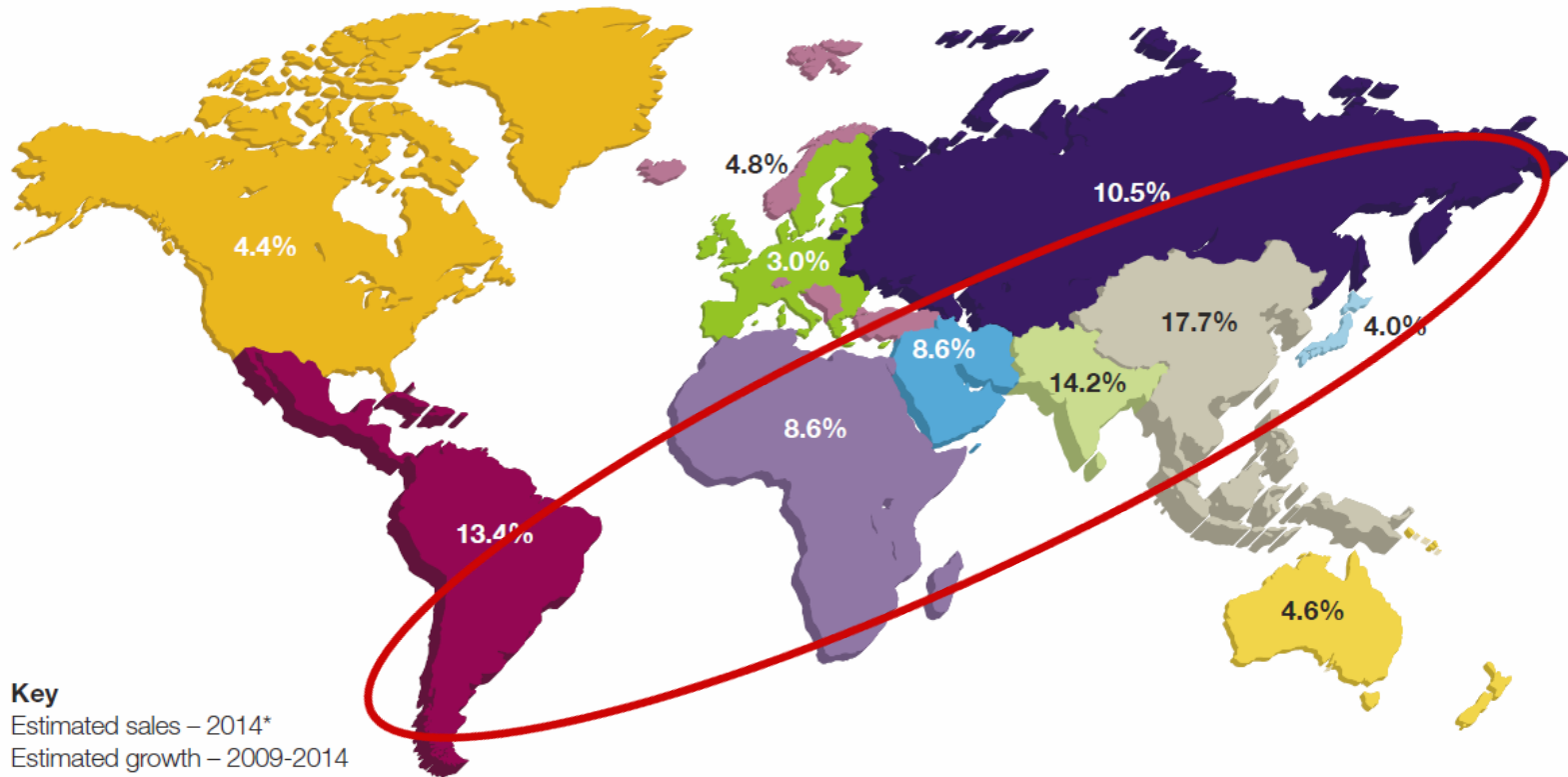
Emerging market sales¹, 2009, Ex-manufacturer



¹ Across 17 selected markets (China, Turkey, India, South Korea, Brazil, Mexico, Poland, Russia, Taiwan, Hungary, Romania, Egypt, Algeria, Saudi Arabia, South Africa, Ukraine, UAE). Source: IMS; AZ analysis.



2009-14 Growth Will Come from Emerging Markets



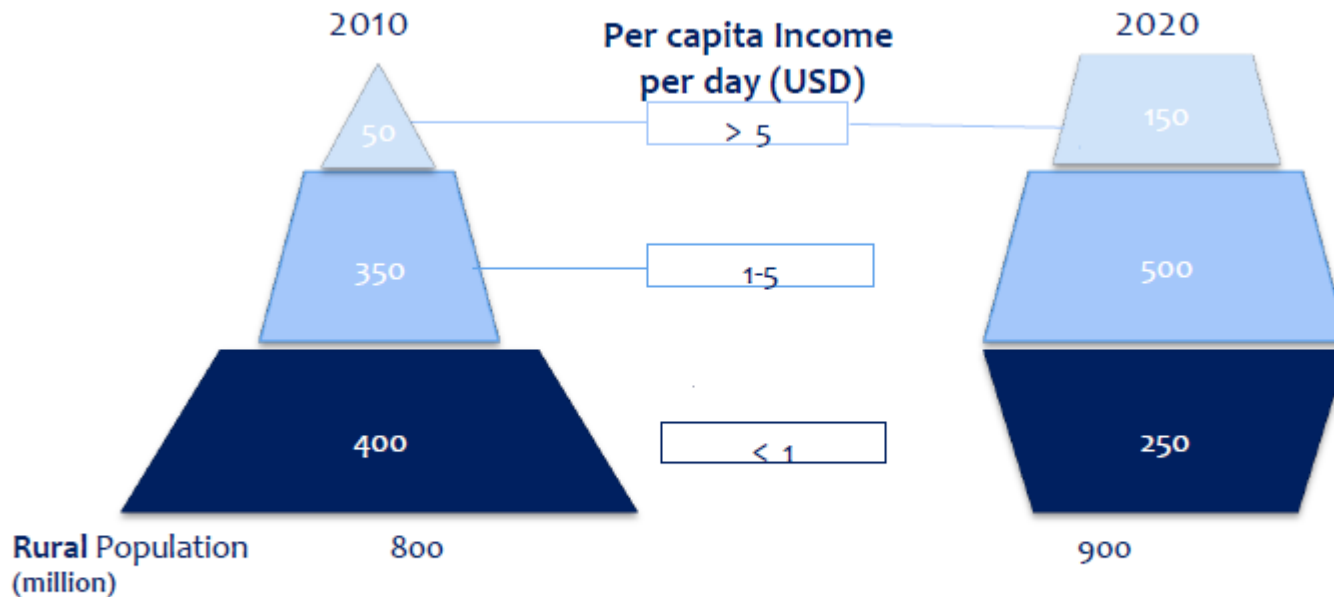
Key

Estimated sales – 2014*
 Estimated growth – 2009-2014
 (compound annual growth rate)

- **North America** Sales **\$398.1bn** Growth **4.4%**
- **Europe (EU countries)** Sales **\$261.7bn** Growth **3.0%**
- **Europe (Non EU countries)** Sales **\$26.3bn** Growth **4.8%**
- **South East & East Asia** Sales **\$132.0bn** Growth **17.7%**
- **Japan** Sales **\$115.5bn** Growth **4.0%**
- **Latin America** Sales **\$94.4bn** Growth **13.4%**
- **CIS** Sales **\$26.6bn** Growth **10.5%**
- **South Asia** Sales **\$26.1bn** Growth **14.2%**
- **Africa** Sales **\$20.9bn** Growth **8.6%**
- **Oceania** Sales **\$15.0bn** Growth **4.6%**
- **Middle East** Sales **\$13.3bn** Growth **8.6%**

Source: IMS Health.
 * Ex-manufacturer prices at CER.

How to secure long term growth and commitment?



Source: Bird of Gold, MGI & MART Knowledge Centre

Source: Tapan Ray

Change as a way of life



- Innovation is often stifled by different goals within the organization.
- Getting rid of the obsession with uniformity: « *We need to benchmark* »
- Simplify the operating culture

Five growth Areas: Reality or myths?

Five Growth Areas for Pharma

- I. Innovation as the core
- II. Creative Alliance with new players
- III. Adressing Global markets
- IV. Generics
- V. Change as a way of life