

Biotechnology Certificate – New Technologies For Health

January 2018

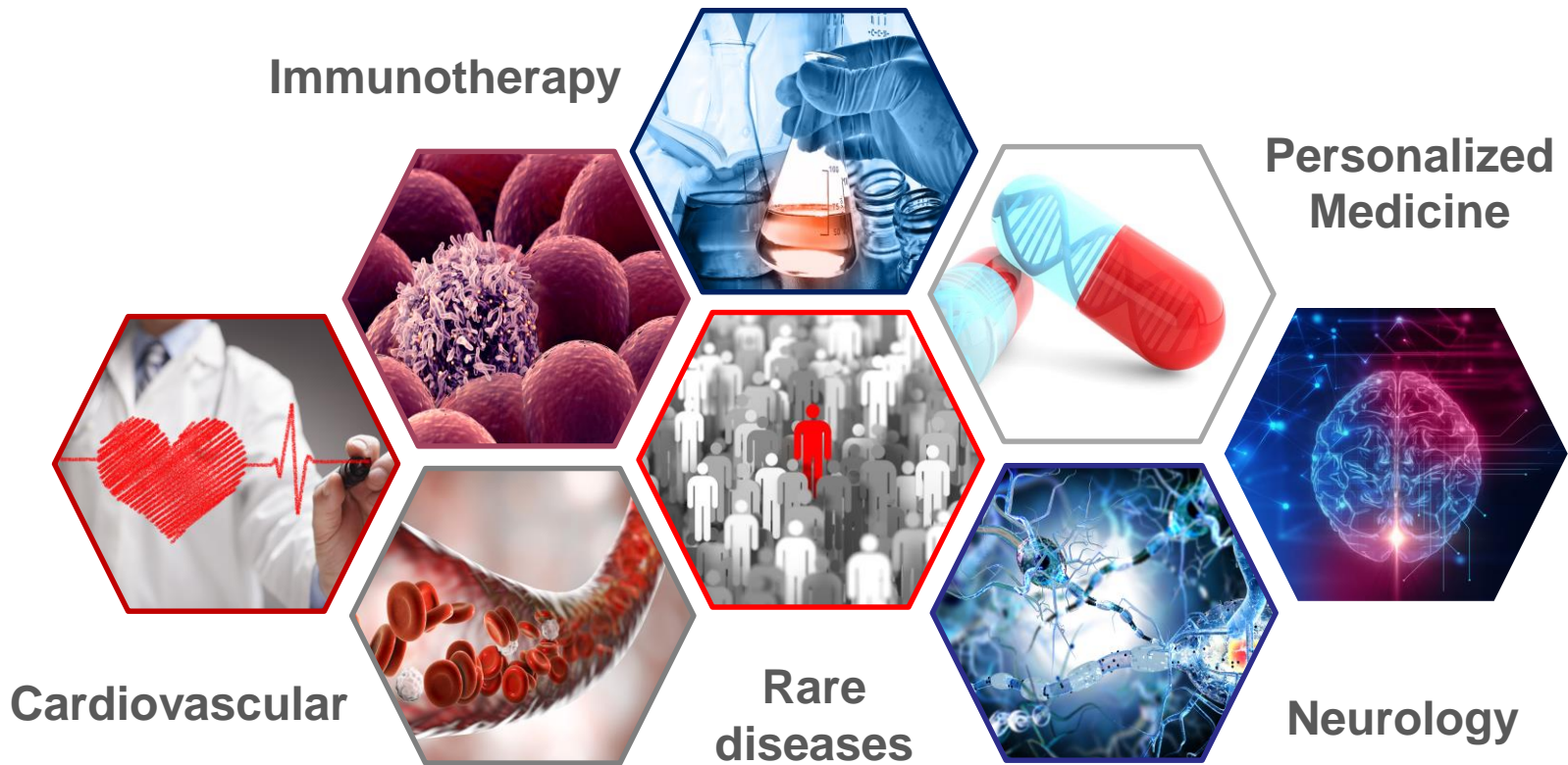


Investment Case

- After a very tough 2016 marked notably by political rhetoric on drug pricing and a very low level of drug approvals by the FDA, and a sharp recovery that followed in 2017, we believe the current rerating of the Biotechnology sector is likely to gain steam as we move into 2018.
- We see M&A as a very powerful catalyst to support sector's undemanding valuations
- On the therapeutic front, we believe that genes therapies and personalized medicine will be on investors' agenda as we move into 2018 as newer technologies (including mobile wearables) are now able to capture, analyze, and share clinical data in a very short timeframe.
- With the new US tax-code and the huge incentive it has on investments (expense of amortizations), Capex is likely to get a boost and is likely to benefit the "hardware" players
- We also believe that personalized medicine is not far away from becoming ubiquitous as prices for new testing (including DNA analysis) and analysis are coming down sharply
- Against this backdrop, we favor Biotech companies exposed to gene therapies, antibodies and rare diseases over the larger market cap names which benefited more from rising drug prices than from volume growth

Biotechnology Certificate details

- ✓ Issuing bank: UBS AG Zurich, Calculation agent: UBS AG, London Branch
- ✓ ISIN: CH0275762380
- ✓ Currency: USD
- ✓ Fees: 1.6% management fee



What Is Biotechnology?

- The term has appeared for the first time with the **discovery of DNA**
- Modern biotechnology involves **the use of live organisms or their products** (bacteria or enzymes) to manufacture drugs
- Biotechnology products have **wider applications** than classic pharma
- A completely different business model than pharma:

R&D intensive **Smaller size**

Entrepreneurial

High risk, high reward profile

- Today lines are blurred between pure biotech and pharmaceutical companies as **these industries are partially consolidating**



Solution To A Global Social Issue - The "Hope Offering"



Entrepreneurial, knowledge intensive



High risk, high reward profile, strictly regulated



Computing power is an underlying fundamental of the industry



Reimbursement and pricing – important success factors

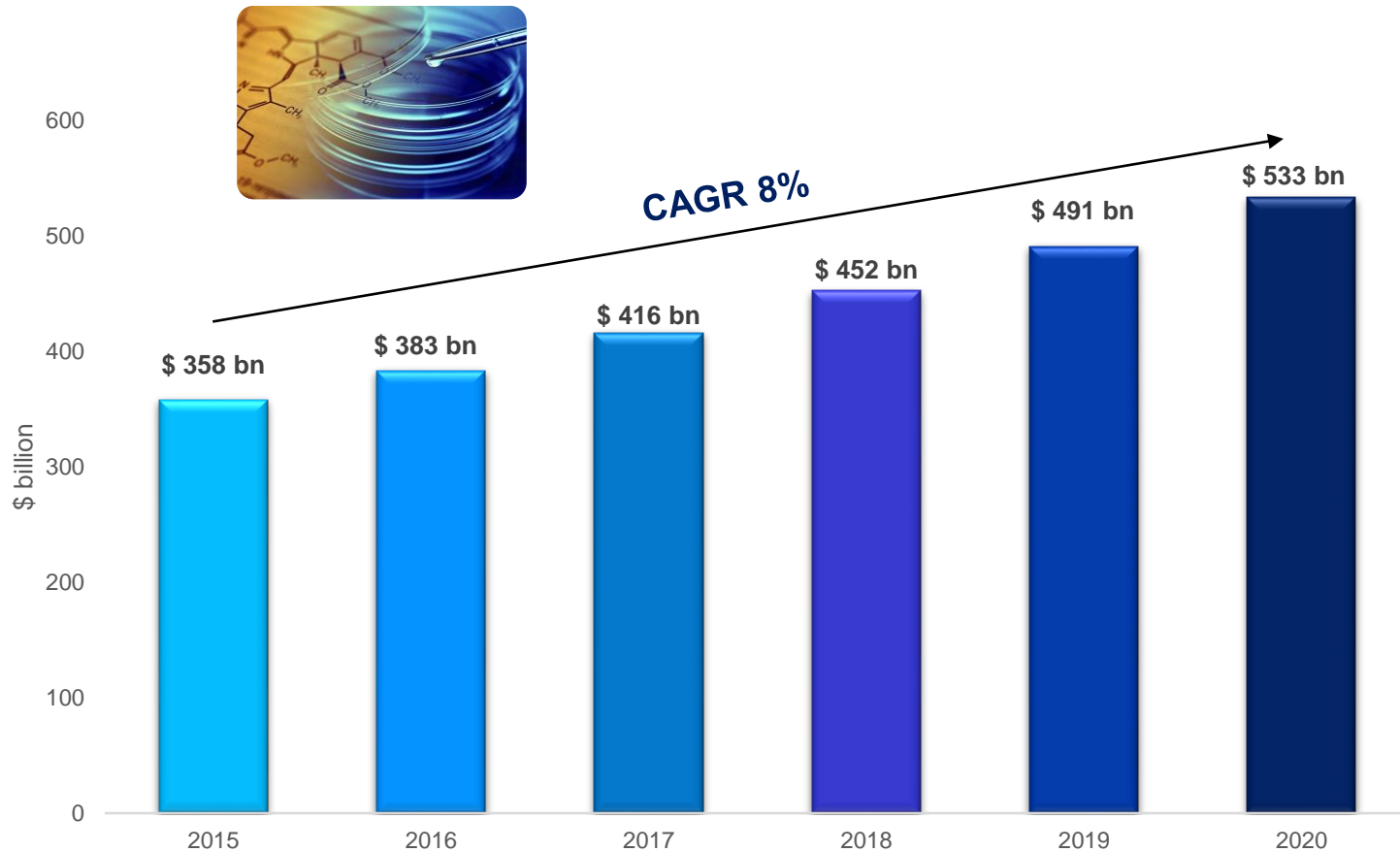


R&D dependent, high capital requirements



Constant business model evolution

Global Biotechnology Market Expected To Grow By 8% CAGR Through 2020



Source: MarketLine Industry Profile

United States Dominate The Biotechnology Market

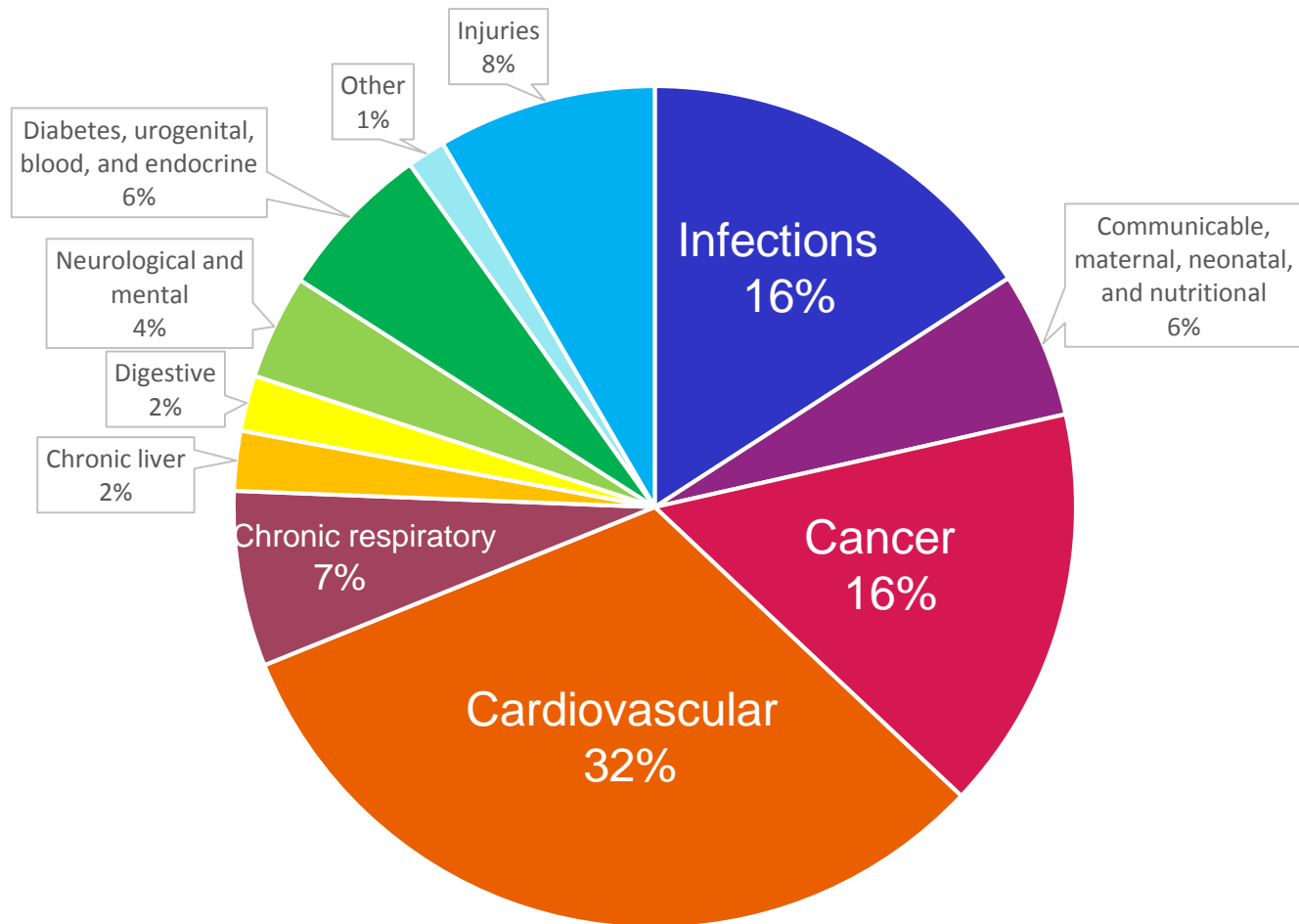


Geography	2015 (in \$ Bn)	Market share (%)
United States	147.0	41.1%
Europe	73.8	20.6%
Asia-Pacific (ex. Japan)	49.2	13.8%
Japan	39.4	11.0%
Middle East	6.5	1.8%
<i>Rest of the World</i>	<i>42.0</i>	<i>11.7%</i>
Total	\$357.9B	

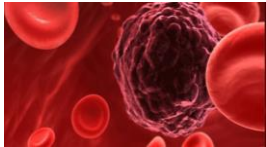
Source: AtonRā Partners & MarketLine

- Why? An entrepreneurial ecosystem, more active venture capital, M&A and IPO market

Global Mortality Causes In 2015 (nb. of cases)



New Challenges For A New World (I)



- **Oncology** cases have increased by **17% worldwide during the last 10 years**
 - ✓ due to the **aging of the population** (probability increases with age)
- **Neurological Diseases** are affecting more and more people (**+35.2% growth from 2005**)
 - ✓ due to: **Aging, Obesity, Smoking and Genetic Predisposition**
- **Diabetes and chronic kidney diseases** increased worldwide by **30% from 2005**
 - ✓ due to: **Obesity, High Blood Pressure, Smoking, Environmental, Inactivity**

IMPACT OF DIABETES

Cerebrovascular disease		BRAIN
Tooth decay and cavities, gingivitis (early gum disease)		TEETH
Sensorimotor polyneuropathy, autonomic nerve damage		NERVES
Diabetic retinopathy, diabetic macular edema, cataracts, glaucoma		EYES
Coronary artery disease		HEART
Diabetic nephropathy		KIDNEYS

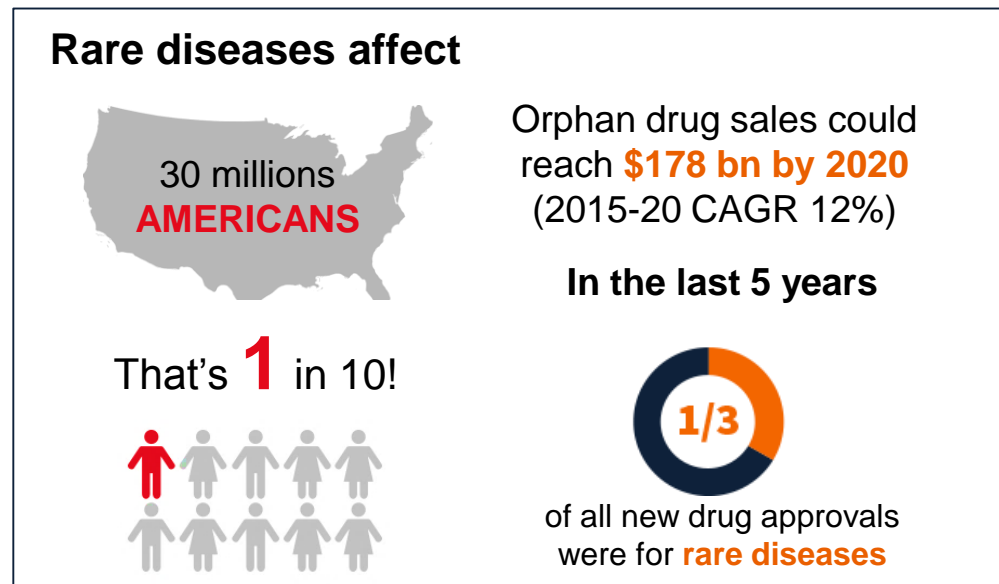


New Challenges For A New World (II)

- **Infection cases** have **decreased by 10%** during the last 10 years led primarily by decreases in HIV/AIDS and tuberculosis cases

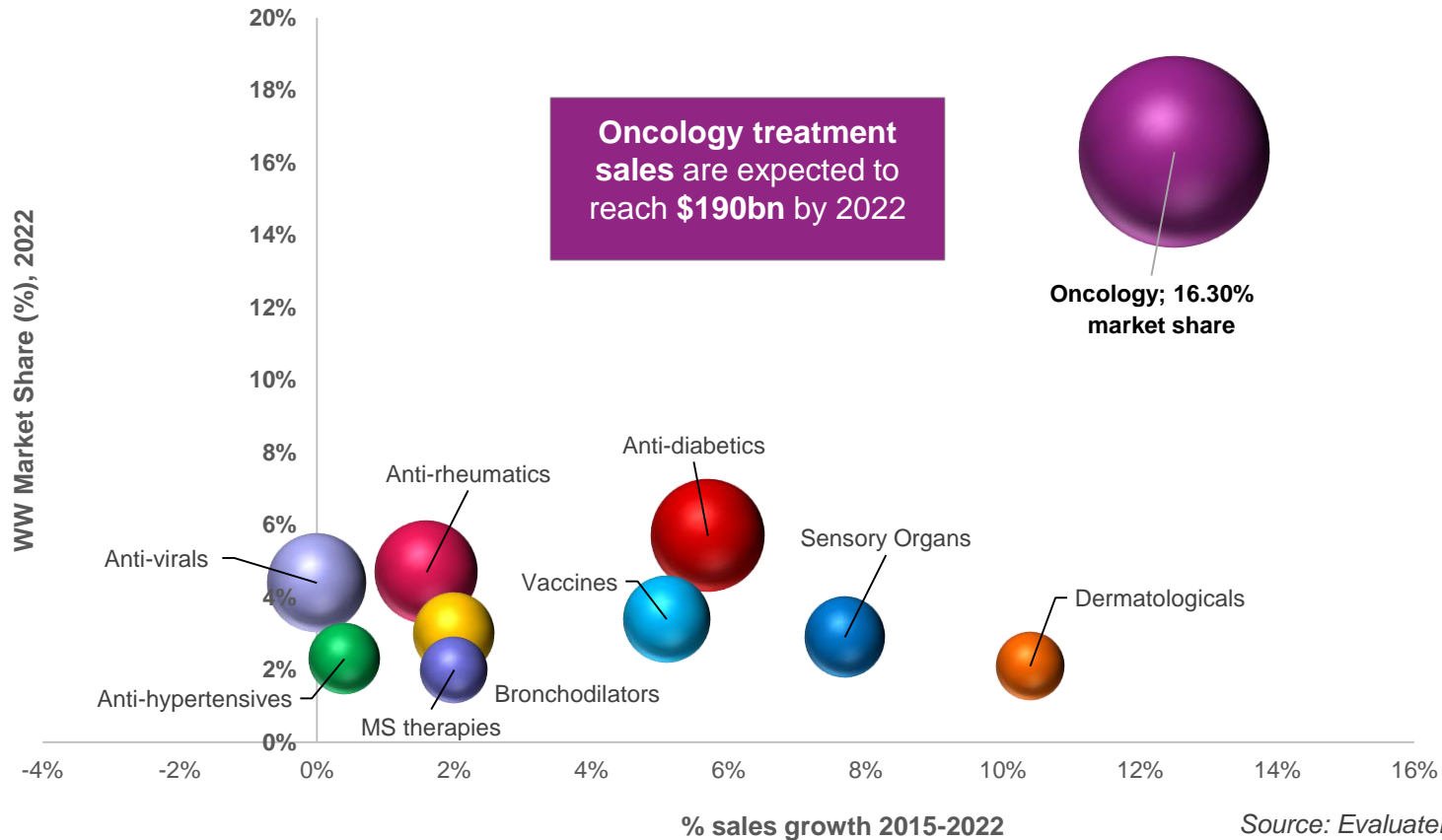


- **Cheaper gene sequencing** trigger the development of **personalized medicine** notably in oncology
- **Rare diseases** are more and more “attractive” due to governmental support and high profit margins

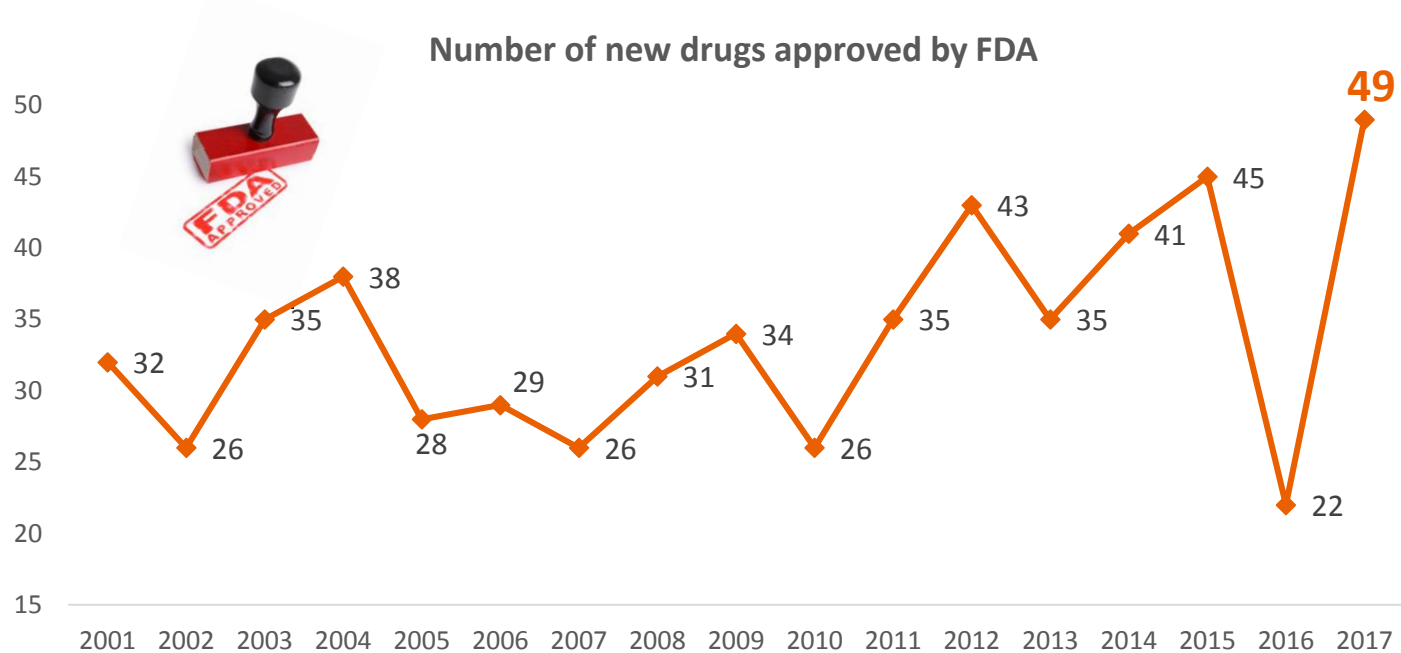


Oncology Has The Largest Market Potential

Top 10 Therapeutic Areas By 2022 - Market Share & Sales Growth



➤ Emerging markets will lead “Anti-diabetics” growth

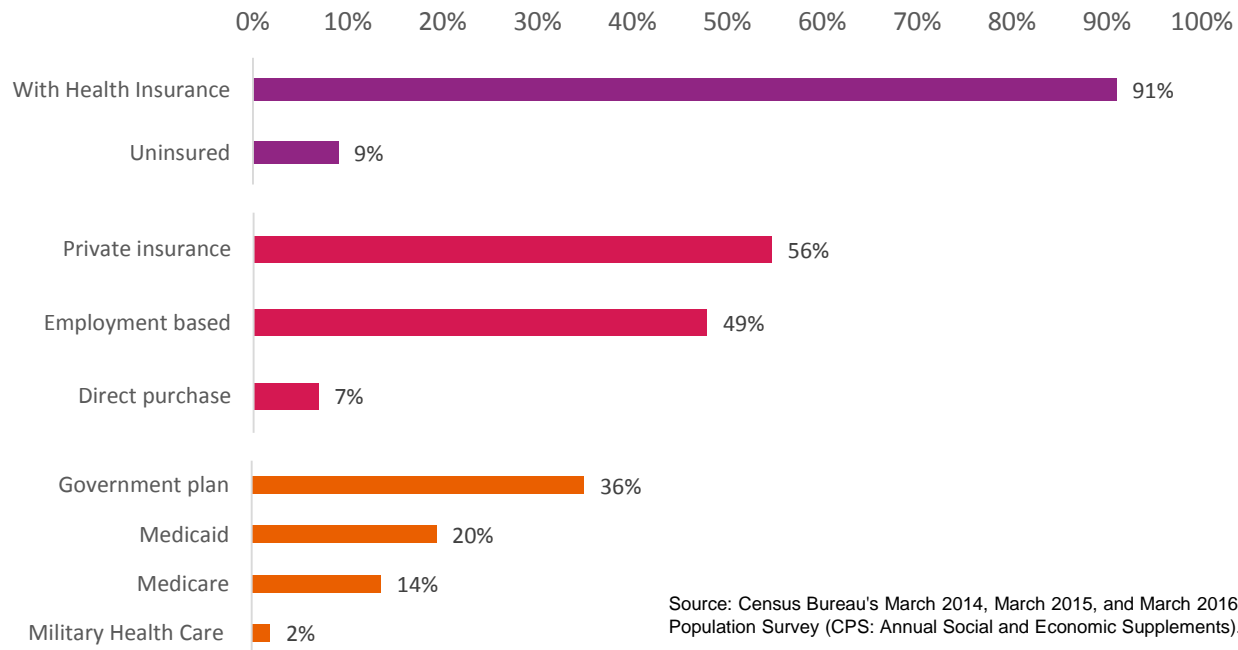


Source: AtonRâ Partners, EvaluatePharma 2017

- A record year for FDA approvals in **2017**, following an unprecedented low number in **2016** as fewer applications were submitted and complete response letters (CRLs) were sent due to manufacturing practice deficiencies (GMP)
- **The 2018 outlook is promising as well as:**
 - ✓ many important drugs in the **last stages of development** are awaiting approval
 - ✓ the **21st Century Cure Bill** is aimed at getting new drugs and devices approved faster
 - ✓ the FDA is reshaping current regulations to speed up approvals of new drugs and promote competition

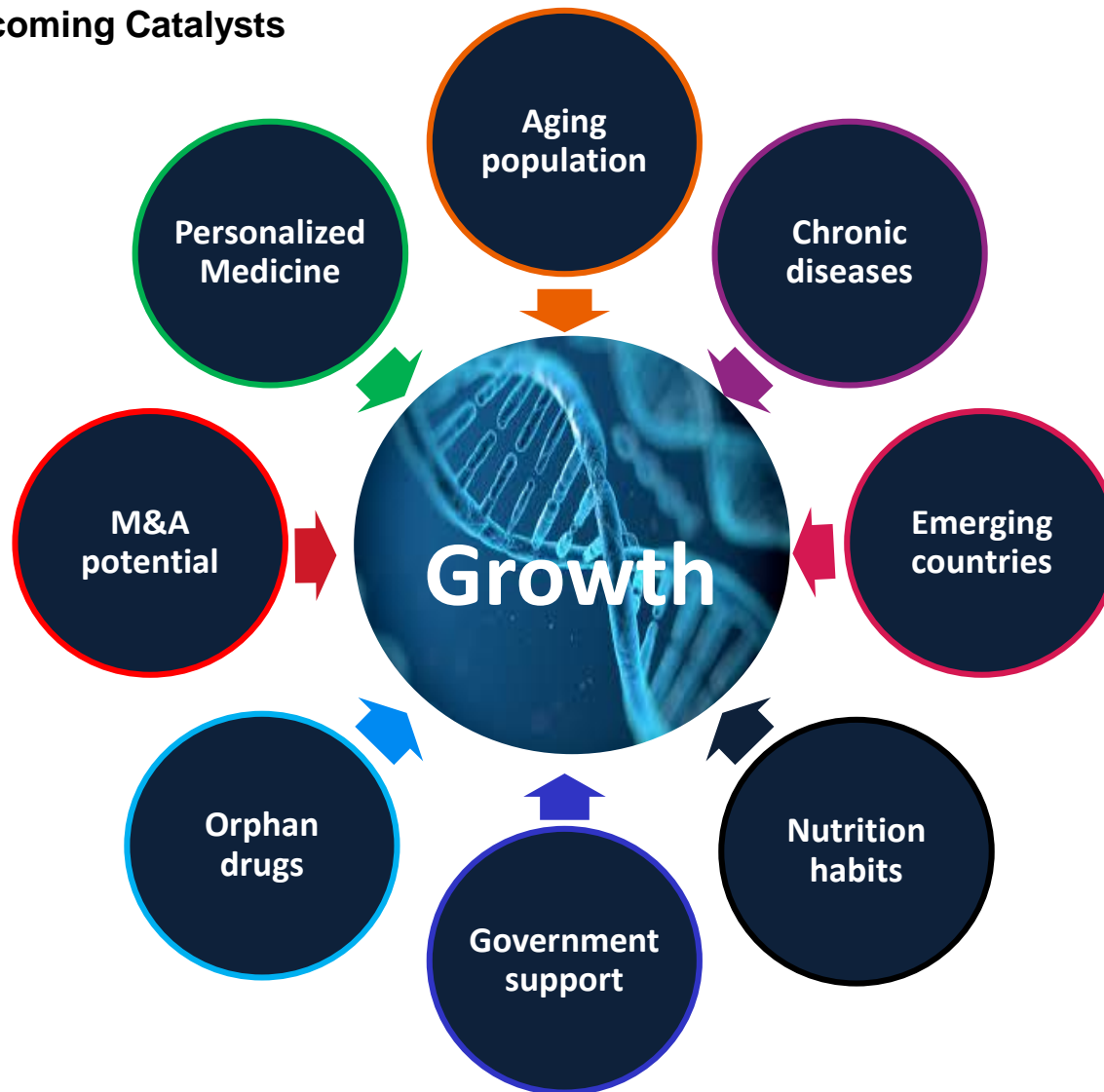
- **Food and Drug Administration** → The first level of decision-making before commercialization
 - ✓ consistent legal and political framework across states
 - ✓ the FDA has the most demanding approval standards in the world
- The **FDA** does **not decide on a drug's reimbursement** policy:
 - ✓ insurance companies have the right to decide individually
 - ✓ biotech companies start reimbursement discussions at the **earliest stages of research**

Percentage of People by Type of Health Insurance Coverage in US



Source: Census Bureau's March 2014, March 2015, and March 2016 Current Population Survey (CPS: Annual Social and Economic Supplements).

Upcoming Catalysts



Personalized Medicine: The Future Of Medicine?

- Treatments targeted to the needs of individual patients
- **Technological breakthroughs** and **computer power** are giving a boost to this field
- Strong government support



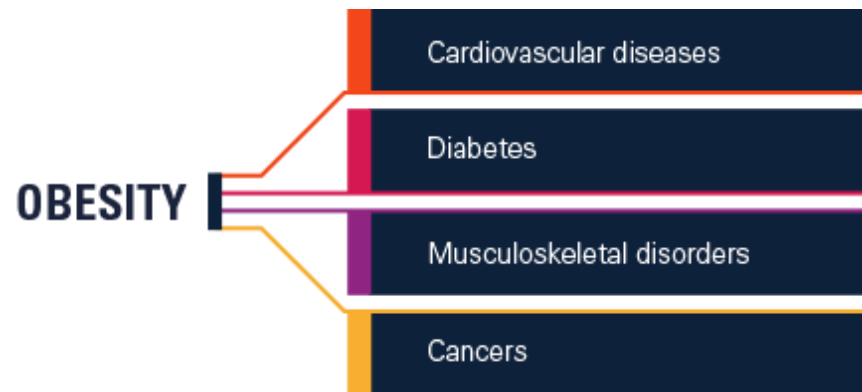
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A Fast Changing World

Changing Nutrition Habits

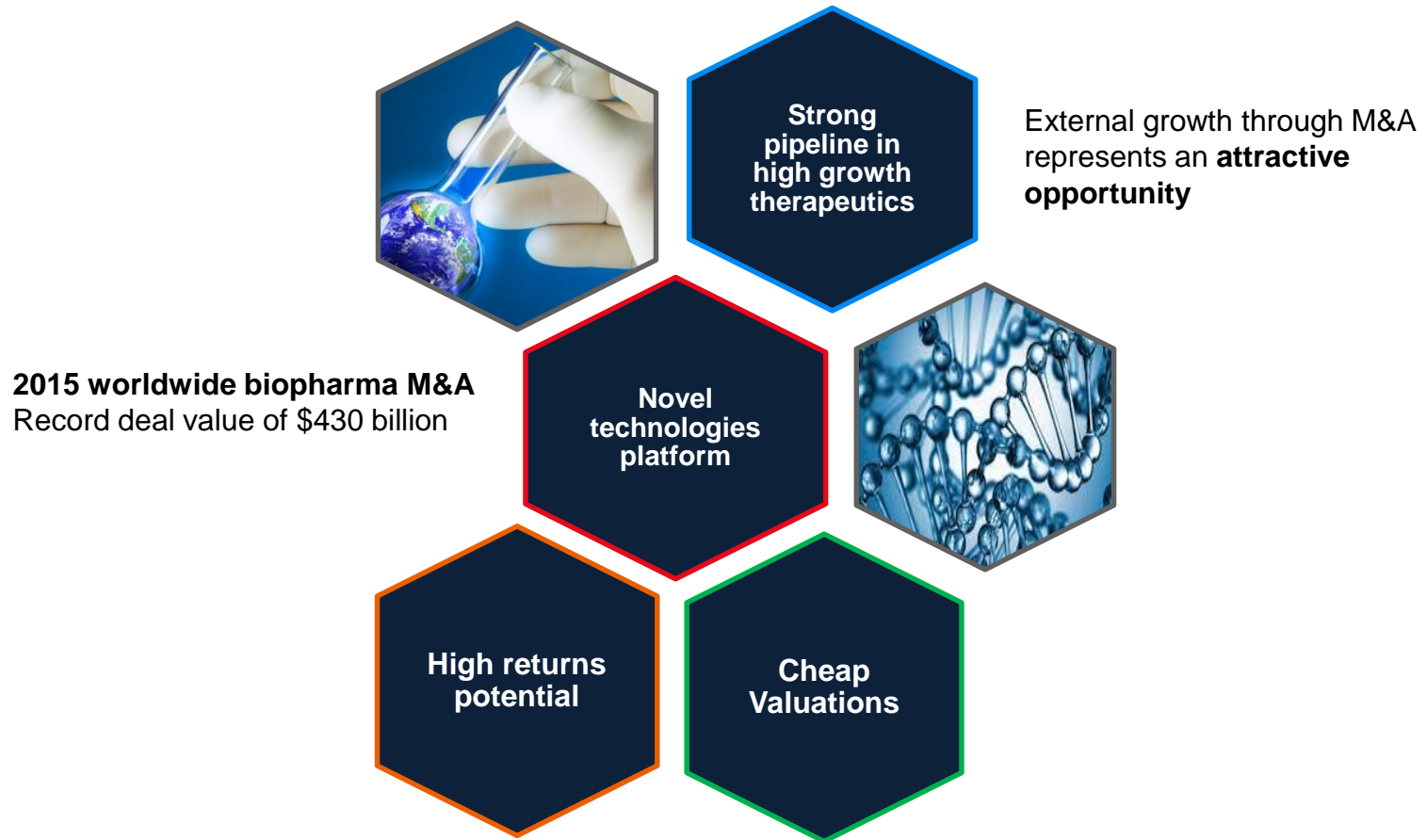
- **Obesity levels** (13% of worldwide obese population comes from the U.S.).
- The two countries showing the highest growth in obesity are **China** and **India** (15% of the worldwide obese population) leading to:



Emerging Markets: A Real Opportunity For Biotech

- ✓ huge populations
- ✓ increasing prosperity and standards of living (growing middle class)
- ✓ aging population
- Global executives are **expecting 30%** of their biopharmaceutical sales to come from emerging markets by 2018

2018 Is Expected To Be A Very Strong Year In M&A



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