



**SHINKA 2019**

課題提起型デジタルカンパニーへ向けて



KONICA MINOLTA

# Konica Minolta to Acquire Invicro (US)

**Acceleration of expansion of precision medicine business**  
Offering new value for drug discovery and development in immuno-oncology  
and neurodegenerative disease

**KONICA MINOLTA, INC.**

September 25, 2017

## 1. Positioning of the Transaction within Konica Minolta Strategy

2. Profile of Invicro

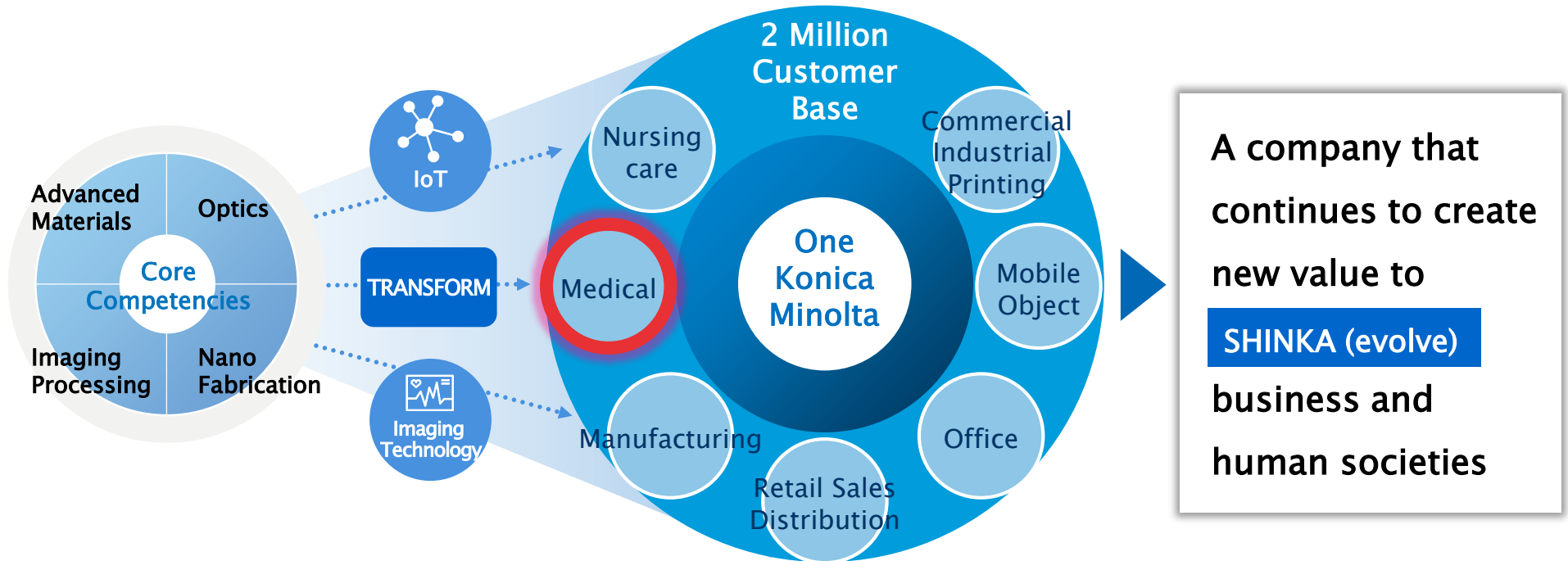
3. Full-fledged Entry into Precision Medicine

4. Key to Drug Discovery: Biomarker

5. Bio-healthcare Business Development

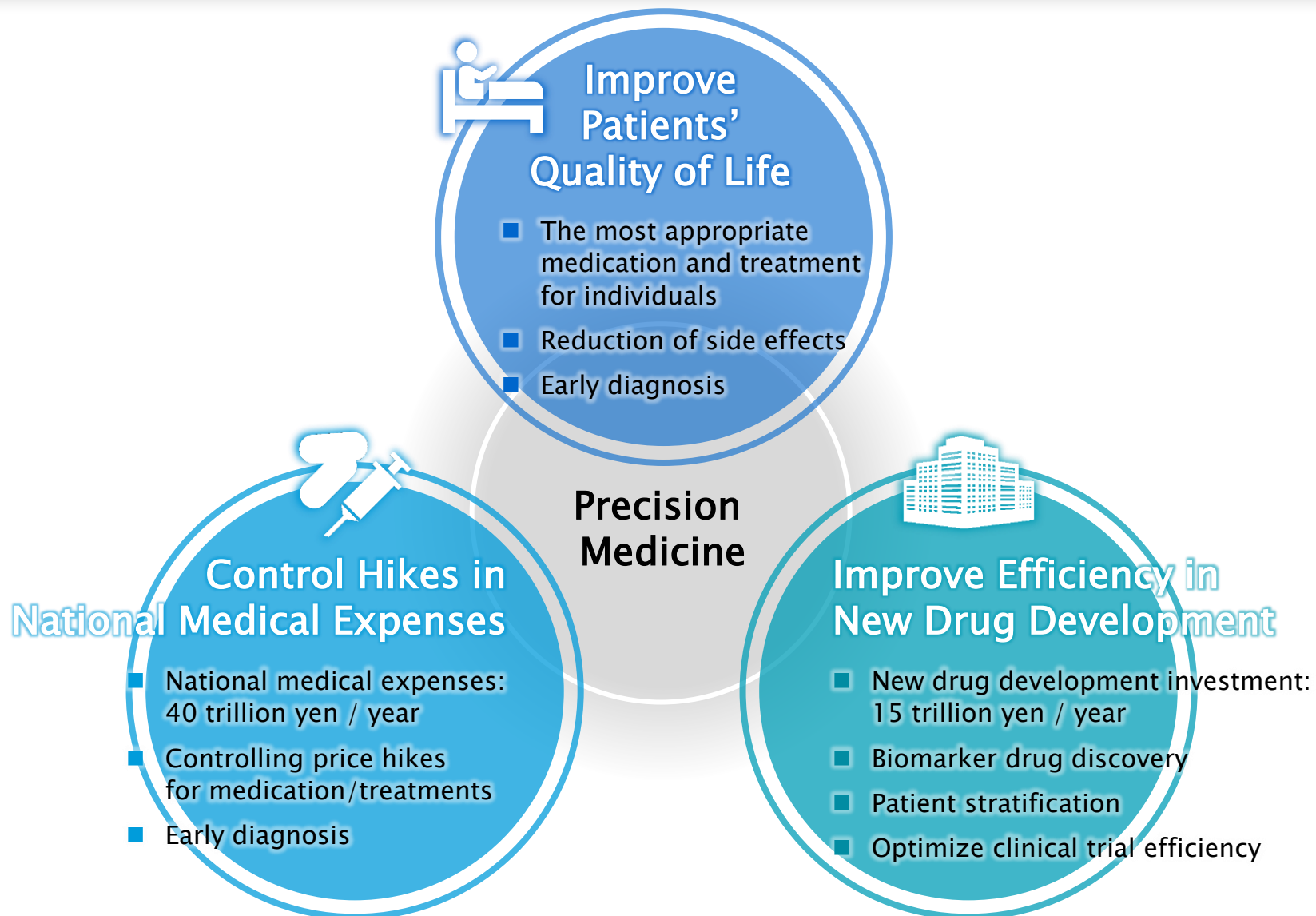
# Transformation of Konica Minolta

Vision : Digital Company with Insights into Implicit Challenges



- Provide solutions combining hardware, software and IT
- Provide solutions according to industries and business categories

# Societal Challenges Solved by Precision Medicine



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## Transaction Details

### Invicro LLC

Headquartered in Massachusetts; Unlisted; Established in 2008

Acquisition Price: ¥32 billion (purchase of 95% of shares, USD 1 = JPY 110)

Acquisition Completion: Scheduled for November 2017

## Strategic Significance

- Full-fledged entrance into the precision medicine field
- Launch drug discovery support business for pharmaceutical companies
- Provide value to customers with a combination of digital imaging technology, Konica Minolta's protein analysis technology and genetic diagnostic techniques
- Access to talented employees in Boston, the center of medical engineering excellence
- Build high growth, highly profitable business in healthcare field

## Invicro

### Founded in 2008

- Headquartered in Boston, Massachusetts, USA (unlisted)
- Offices in New Haven, Seattle, Michigan, London
- Revenue of \$106 million (FY2018 forecast) and revenue CAGR of 98% since founding

### Experienced Management Team

- Jack Hoppin. Ph.D Co-Founder and CEO
- Leadership team: 4 Ph.D holders and one MBA holder

### Imaging CRO for drug-discovery support

- Strengths are in searching and setting biomarkers in the areas of cancer, and central nervous system diseases such as Alzheimer's
- Full service including data management, imaging and analysis from cell to tissues to human body via a mathematical analysis engine
- Services to 140 companies including Japanese pharmaceutical companies

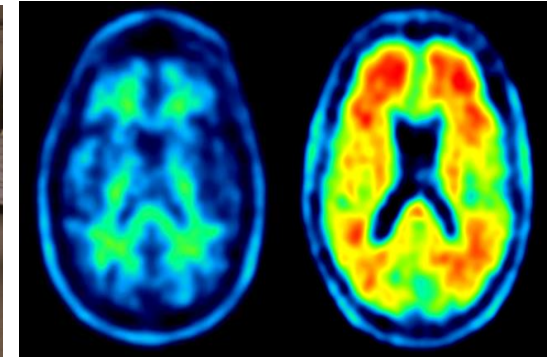
### Approximately 200 out of 300 employees are scientists, with over 60 holding Ph.Ds

- Scientists in the fields of medicine, biology, physics, mathematics, engineering, chemistry, etc.
- An authoritative presence leading the world in the cranial nerve field with numerous academic papers on the subject
- Strength in excellence of human resources



Note: Number of employees – as of September, 2017

# What is an Imaging CRO?



Important to analyze directly through imaging, drug movements and tissue changes in the body, especially in the development of biotechnology-based drugs for cancer and Alzheimer's disease



Aiming for groundbreaking imaging CRO through transformation in the new drug development process, through accurate image acquisition, digitization, AI and image analysis



# Business Model: Disruptive CRO

## Streamlined CRO with Biomarkers as Main Pillar

Customer challenge

Biomarker settings according to changes from low molecular drugs to biotechnology-based drugs

Improve the success rate of new drug development through implementation and design of clinical trials

Customers

**Pharmaceutical Companies**

Cancers, Central nervous (Alzheimer's)



Drug Discovery and Preclinical Testing

Early Phase Trials

Late Phase Trials

Value provided

- Biomarker Discovery
- Efficacy and Pharmacological Evaluations

- Toxicity, Efficacy Verification
- Clinical Trial Design

- Patient Stratification
- Data Analysis

Platform

**Invicro**

**Core Technologies**

- Imaging
- Informatics

**IT**

- Cloud Image Data Management
- Clinical Project Management

**Lab Services**

- Radiation
- Pathology

**KONICA MINOLTA**

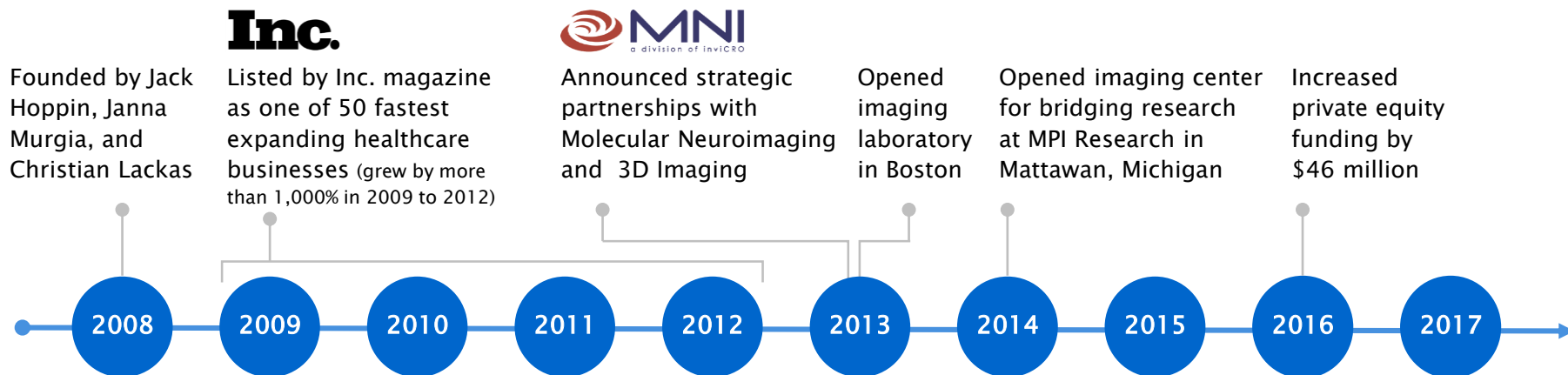
**HSTT/SPFS**

**AmbryGenetics**

**NGS**

## Rapid Expansion through Partnerships and Acquisitions since Establishment in 2008

### Corporate History



### Acquisitions

Acquired Seattle-based histology team

Acquired Molecular Neuroimaging in New Haven

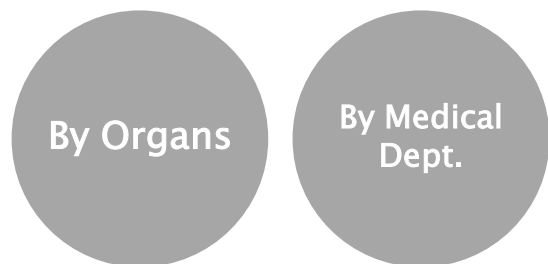
Acquired Imanova, a London-based preclinical and clinical imaging service



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# What is Precision Medicine?

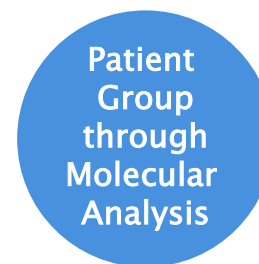
## Standardized Medicine



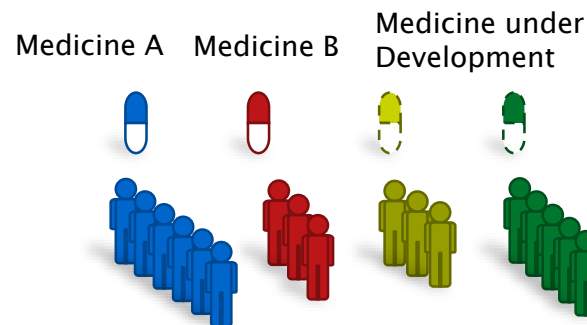
Patient characterization by gene mutation and protein expression analysis

Grouping patients based on their characteristics at molecular level

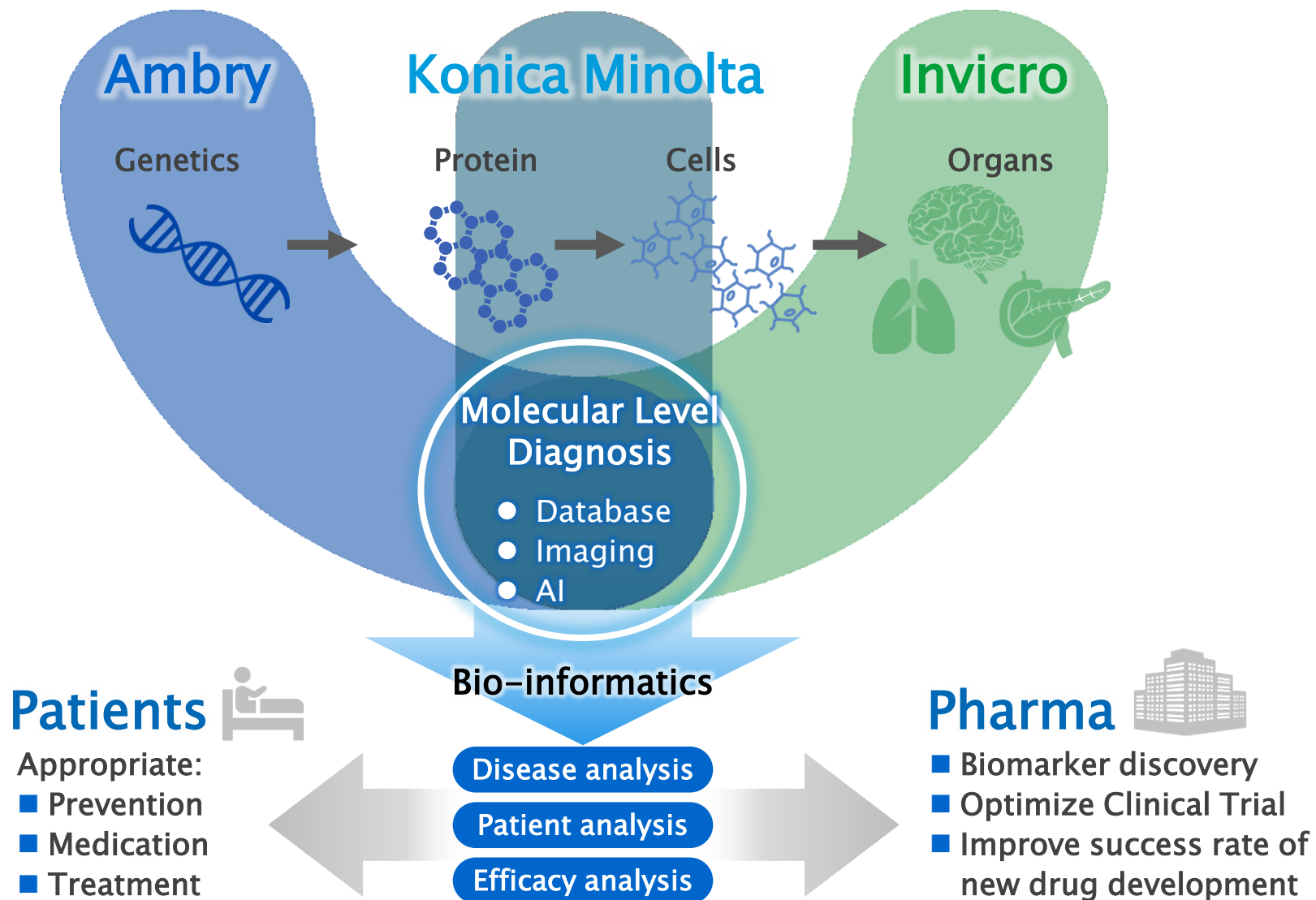
## Precision Medicine



Prevention • Prognosis  
Treatment • Medication  
Drug Discovery

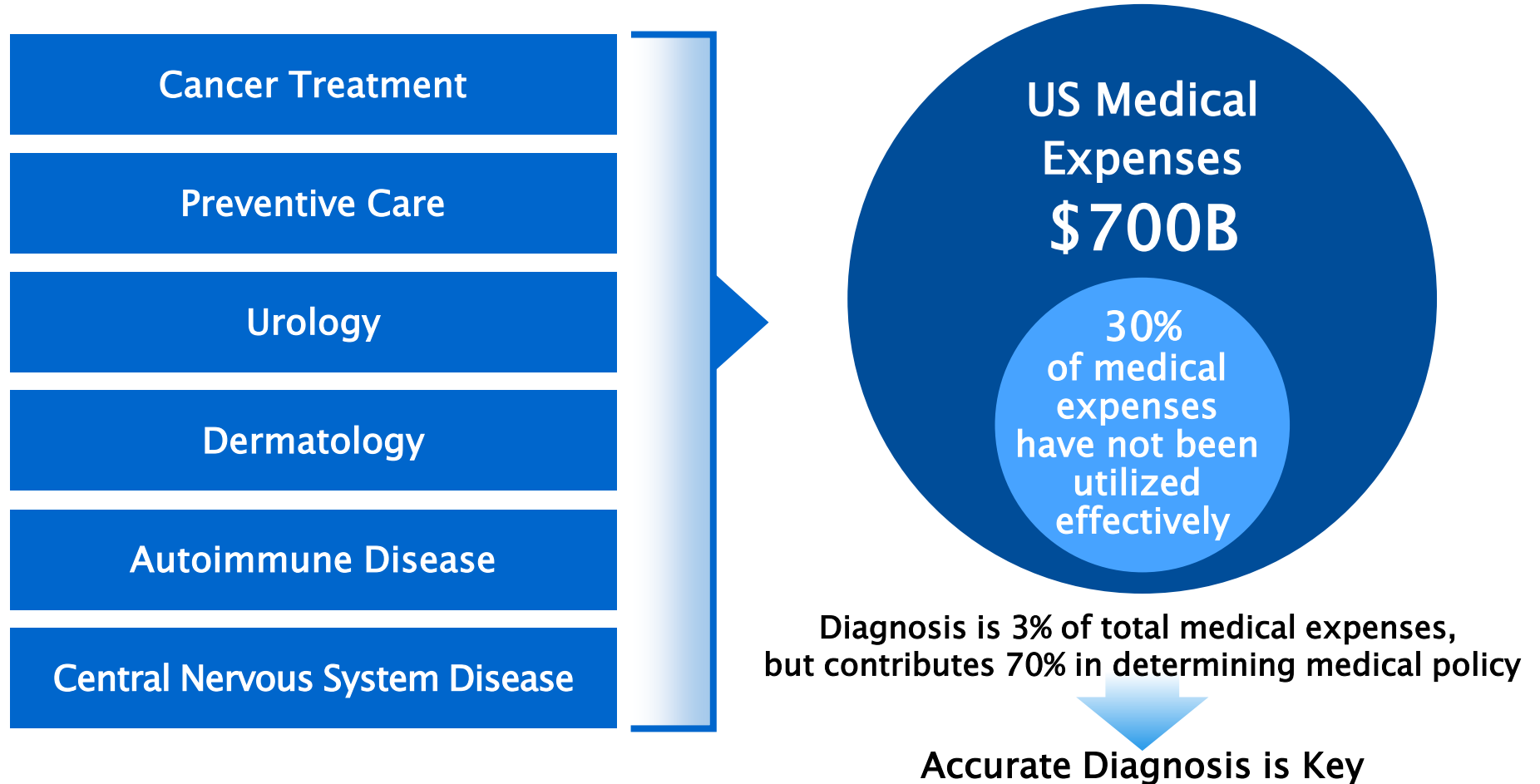


# Konica Minolta's Vision for Precision Medicine



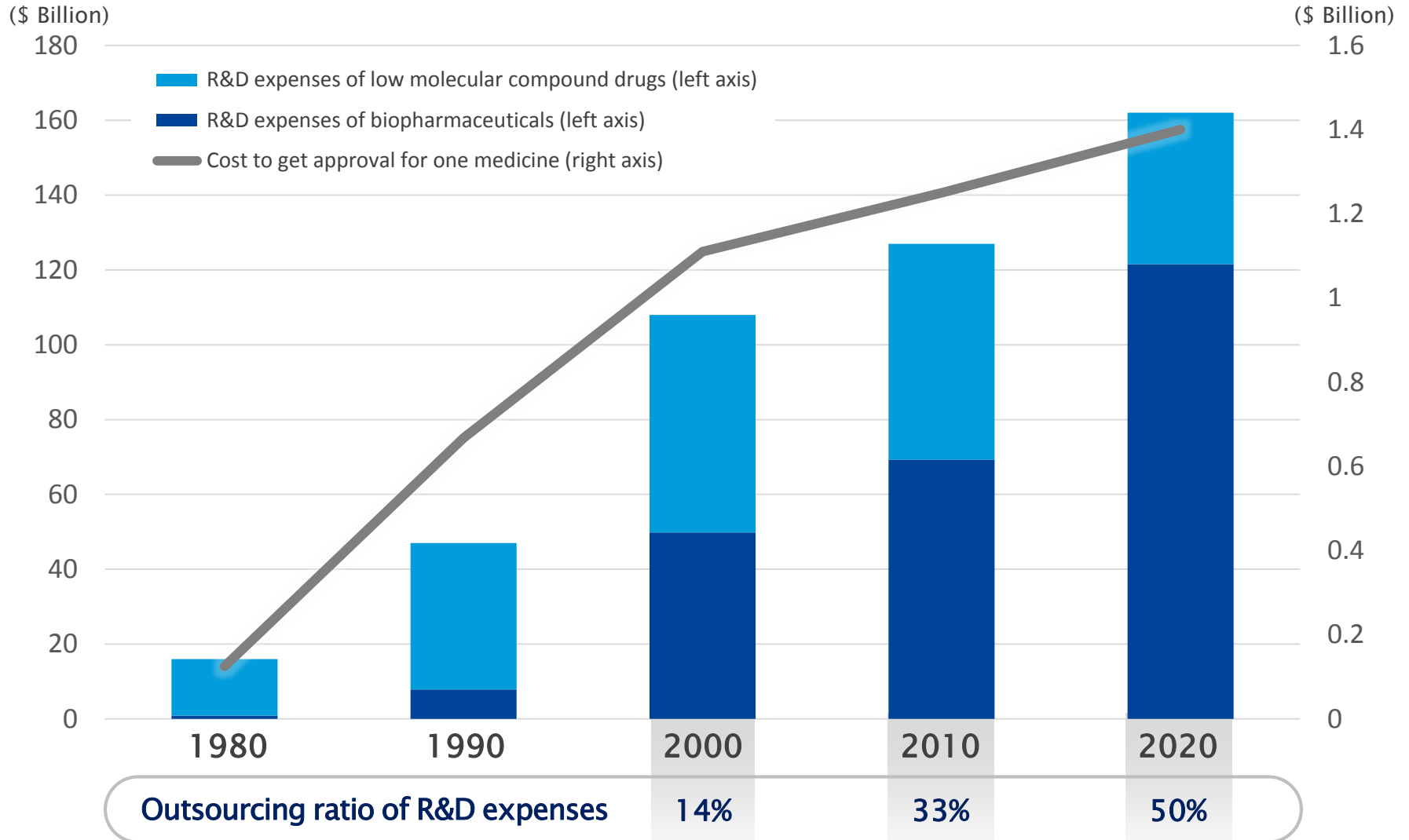
# Increase Effectiveness of Medical Expenses

In the US, medical expenses of over \$200 billion in six disease areas have not been used effectively



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# Pharmaceutical Companies Shifting to Biotechnology-based Drugs

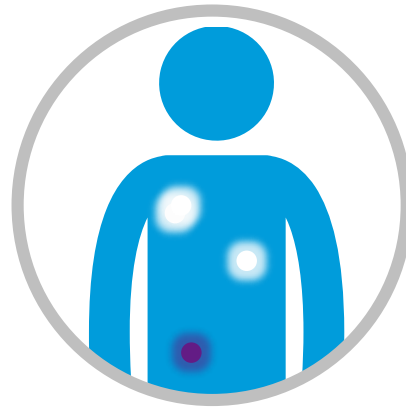




# Biotechnology-based Drugs Driven by Biomarkers



Search and settings for new drug targets



Utilization of preclinical trial results for clinical trial design



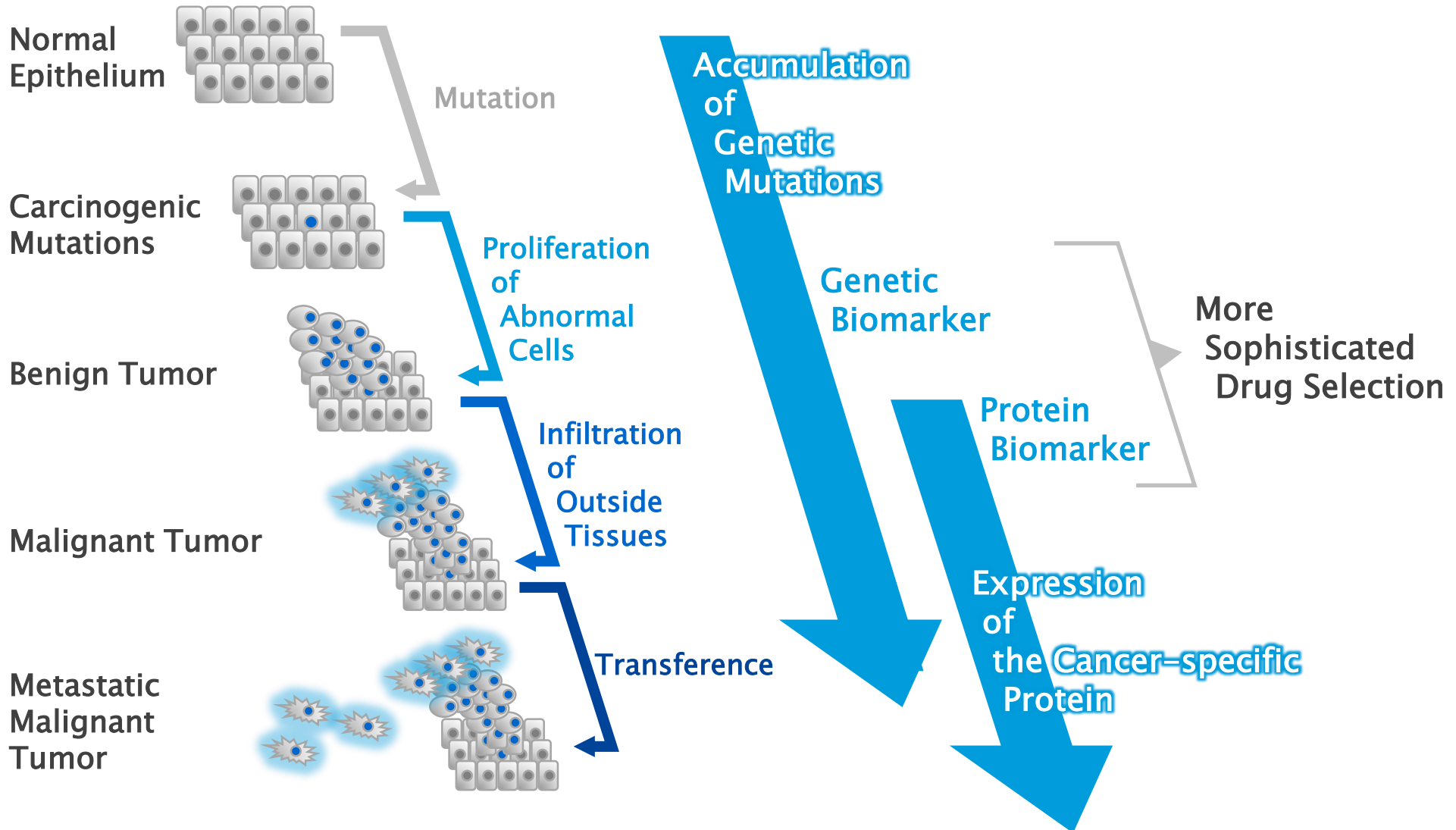
Patient Stratification (grouping)



Companion diagnosis (Pre-dosage diagnosis)

**Biomarker settings affect all trials – pre-clinical, clinical as well as diagnosis. Appropriate biomarkers will lead to the improvement in success rates of trials and therefore lead to informed decisions on medication.**

# Cancer Mechanism and Biomarker



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## Goals

Provide high-value-added medical care

Help to control medical costs

Improve quality of life

## Business Domains

Primary care

Precision medicine

Diagnostics

## Core Technologies

Optical Technology

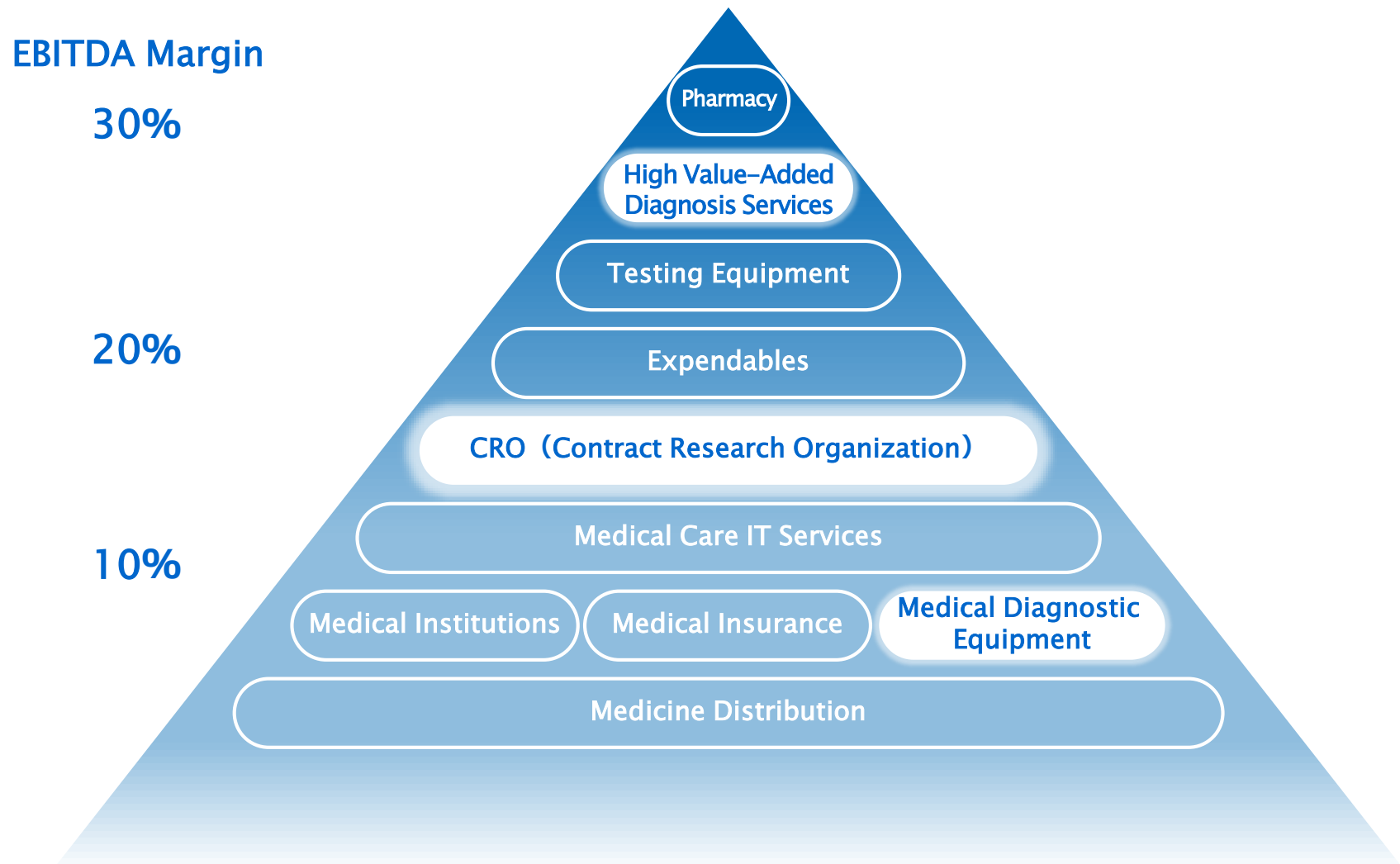
Imaging

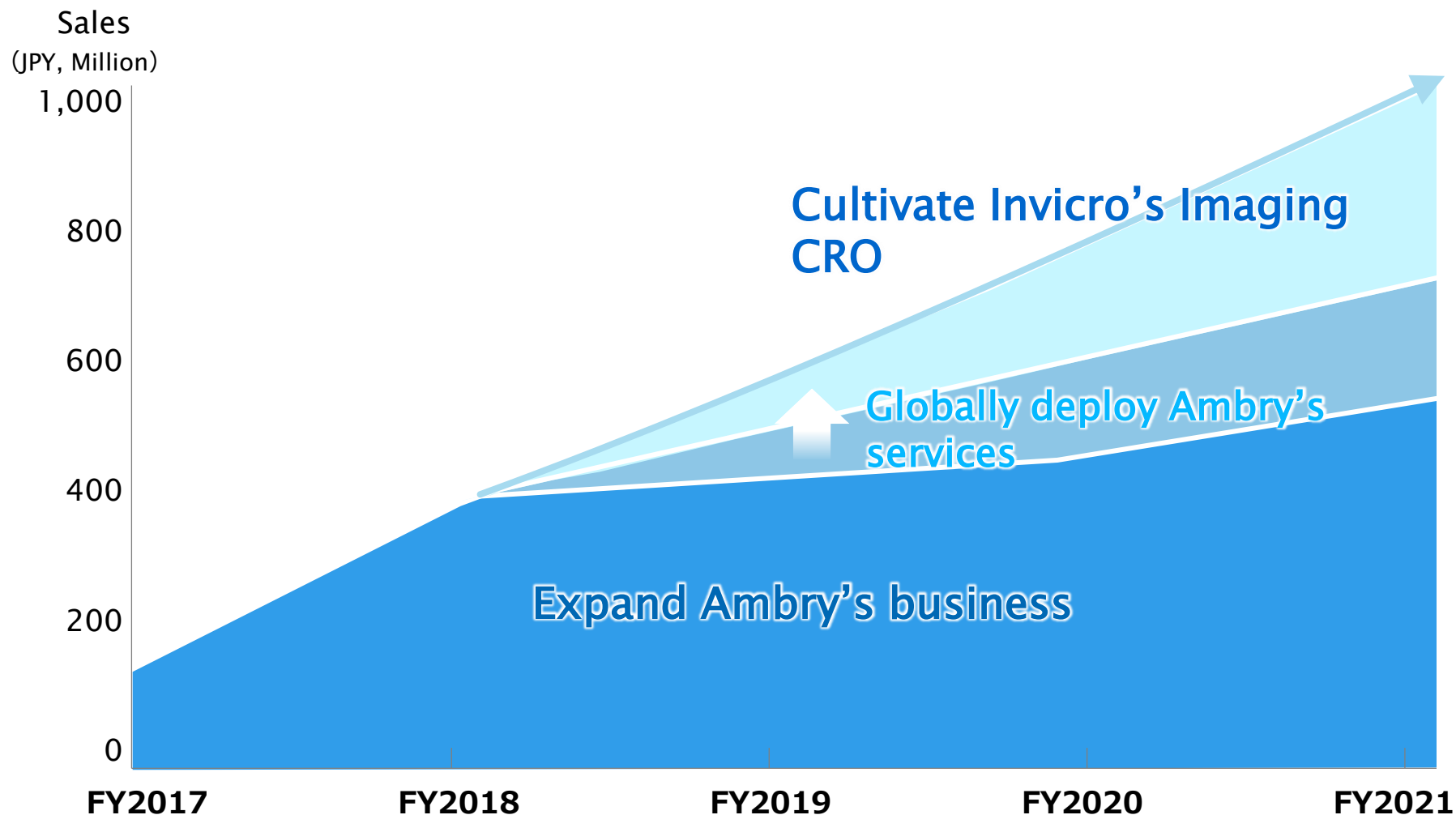
Advanced Materials

Nano Fabrication

IT

# High Profitability in Healthcare Market





# Smart Super Labs Worldwide



Commercial Lab

Clinical Research Lab

Japan Lab 2017H2 Scheduled to operate

Clinical Research Lab

Europe Lab 2018H1  
Scheduled to operate



Imanova  
Centre for Imaging Sciences

Commercial Lab

Imanova Lab 2018H1  
Scheduled to operate



Ambry Genetics™

Commercial Lab

AG Lab 2017H2 Scheduled to operate



Commercial Lab

IC Lab 2017H2  
Scheduled to operate

Clinical Research Lab

US Lab 2017H2  
Scheduled to operate



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