Progress of the Medium-term Strategy for Precision Medicine Business

March 18, 2021

Senior Executive Vice President and Executive Officer
Division President of Healthcare Business Headquarters and
Chairman & CEO, Konica Minolta Precision Medicine, Inc.
Kiyotaka Fujii

Overview of Healthcare Business

Science Driven
Powered by Data Science
Patient Focus

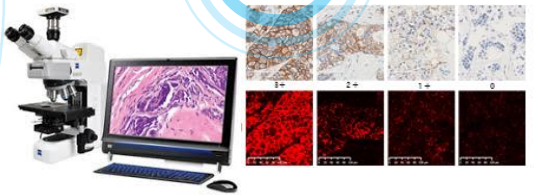
Pursue advanced medicine by making it visible and digital

X-ray diagnostic equipment

Genetic diagnosis

Ultrasound diagnostic equipment

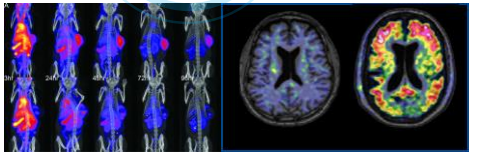
Pathology/Medical Imaging



Vital Sensing
(Pulse oximeter, Icterus meter)

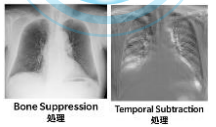
Medical ICT services
infomity

Drug discovery support services
(Oncology/Alzheimer)



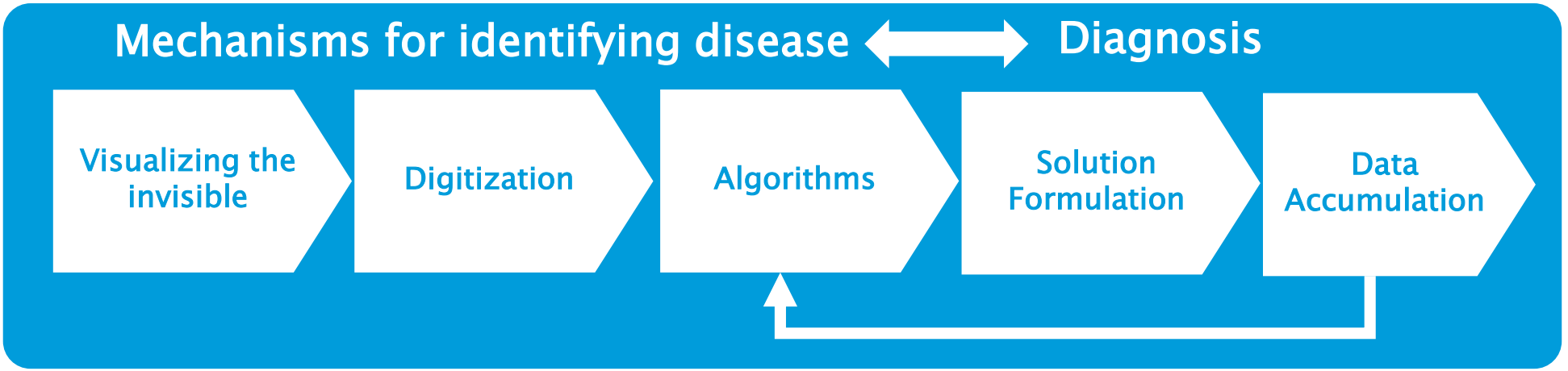
Medical information systems
(PACS)

Diagnostic support
(Image processing/Analysis)



iPACS™

Konica Minolta's Healthcare = Focus on Digital Diagnostics



- X-ray/Ultrasound
- Various modalities
- Photo composite technology
- Cutting-edge laboratories
- PACS

- Genetics
- Cells, Proteins
- Organs
- Whole body

- Bio Informatics
- AI

- Imaging diagnosis
- Genetic diagnosis
- Pathological diagnosis
- Drug discovery support

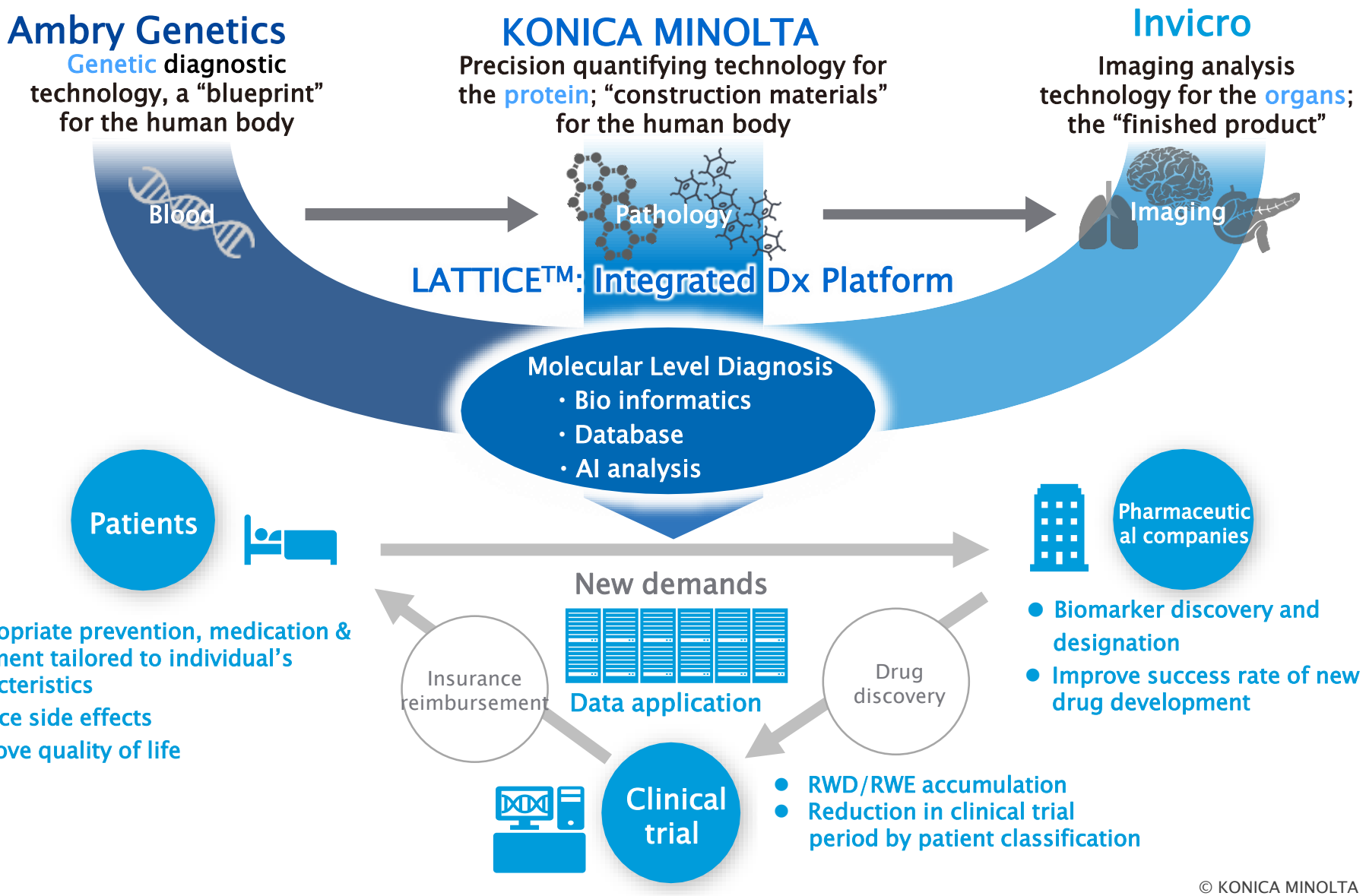
Cancer
Dementia
Intractable disease

Cloud service model

Early diagnosis
Prevention

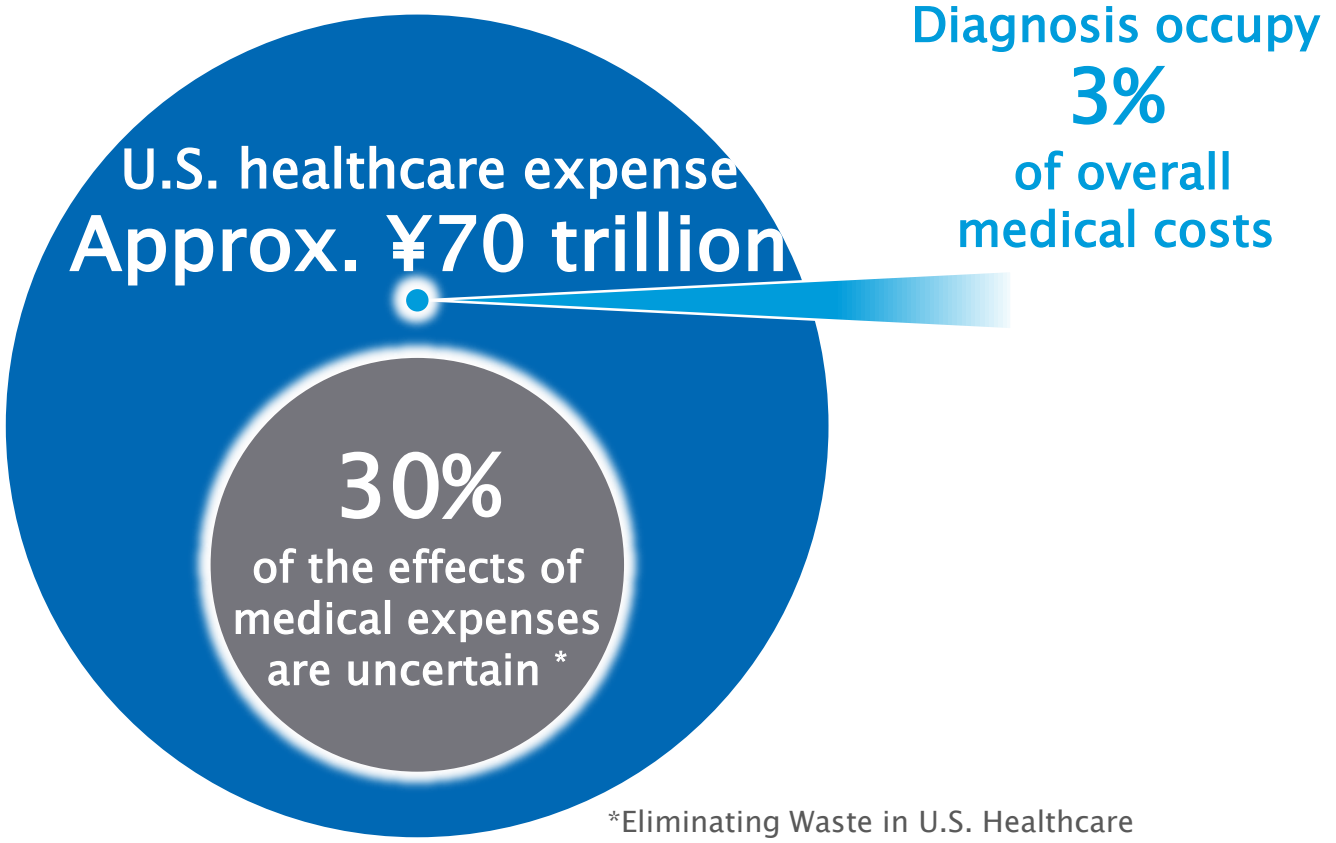
Individualized medical care
Precision

Strategy for Precision Medicine Business



Improving Diagnostic Accuracy is Key Factor to Reducing Medical Expenses

Significant reductions in healthcare costs will be achieved by providing diagnosis that meet the individuals, since effects of medical expenditures of ¥20 trillion or more are uncertain.



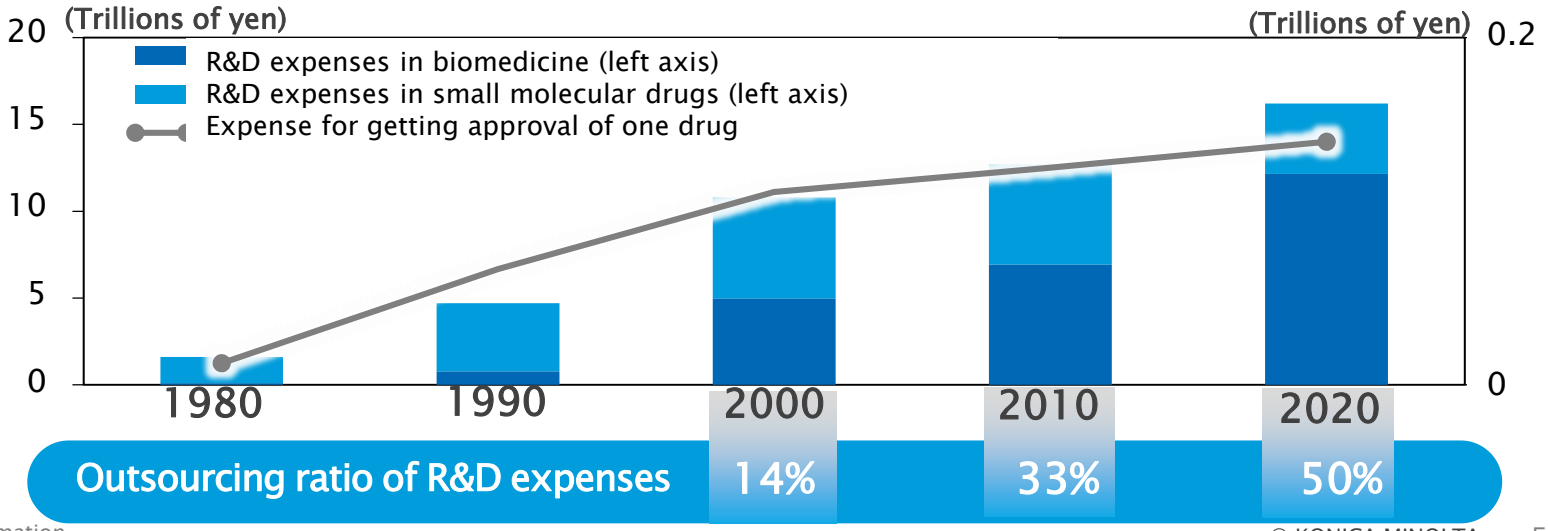
*Eliminating Waste in U.S. Healthcare

Precision Medicine Market: Diagnostics ¥4 trillion, CAGR20+%

Precision diagnostics market size: ¥4 trillion

		Genetic diagnosis		Pathology	Imaging
		Hereditary	Somatic		
Market size (FY19) Growth rate % (FY19-24)	Clinical	¥480 billion 2~5%	¥440 billion 30~40%	¥1.16 trillion 6~8%	¥880 billion 3~5%
	Drug discovery support services	¥120 billion 70~80%	¥280 billion 16~28%	¥400 billion 10~15%	¥400 billion 6~8%
Growth Drivers		• Patient awareness activities • Global expansion • Patient identification in drug development	• Acquisition of reimbursement • Discovery of new biomarkers • Processing capacity of organizational samples • Pair test with hereditary genetic testing • Liquid biopsy	• Increased use of biomarkers • Immunostaining/Genome multi marker detection capabilities • Digitization/Utilization of AI	• Increase in use of biomarkers • Molecular imaging • Global service network • Utilization of AI

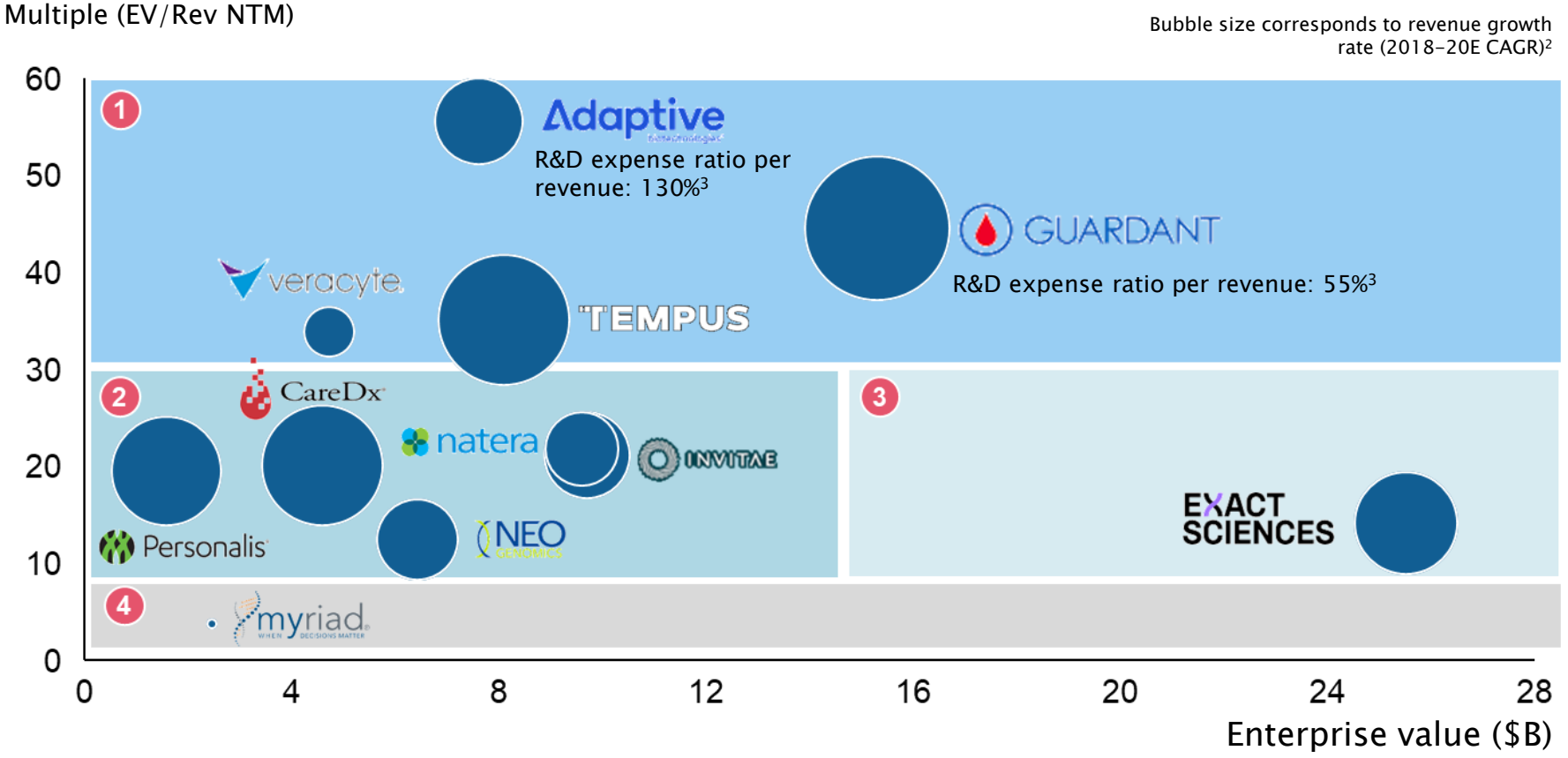
Pharmaceutical development R&D Market size: ¥17 trillion



Source: Our estimates, Kalorama Information Reports

Competitive Environment of Konica Minolta Precision Medicine (KMPM)

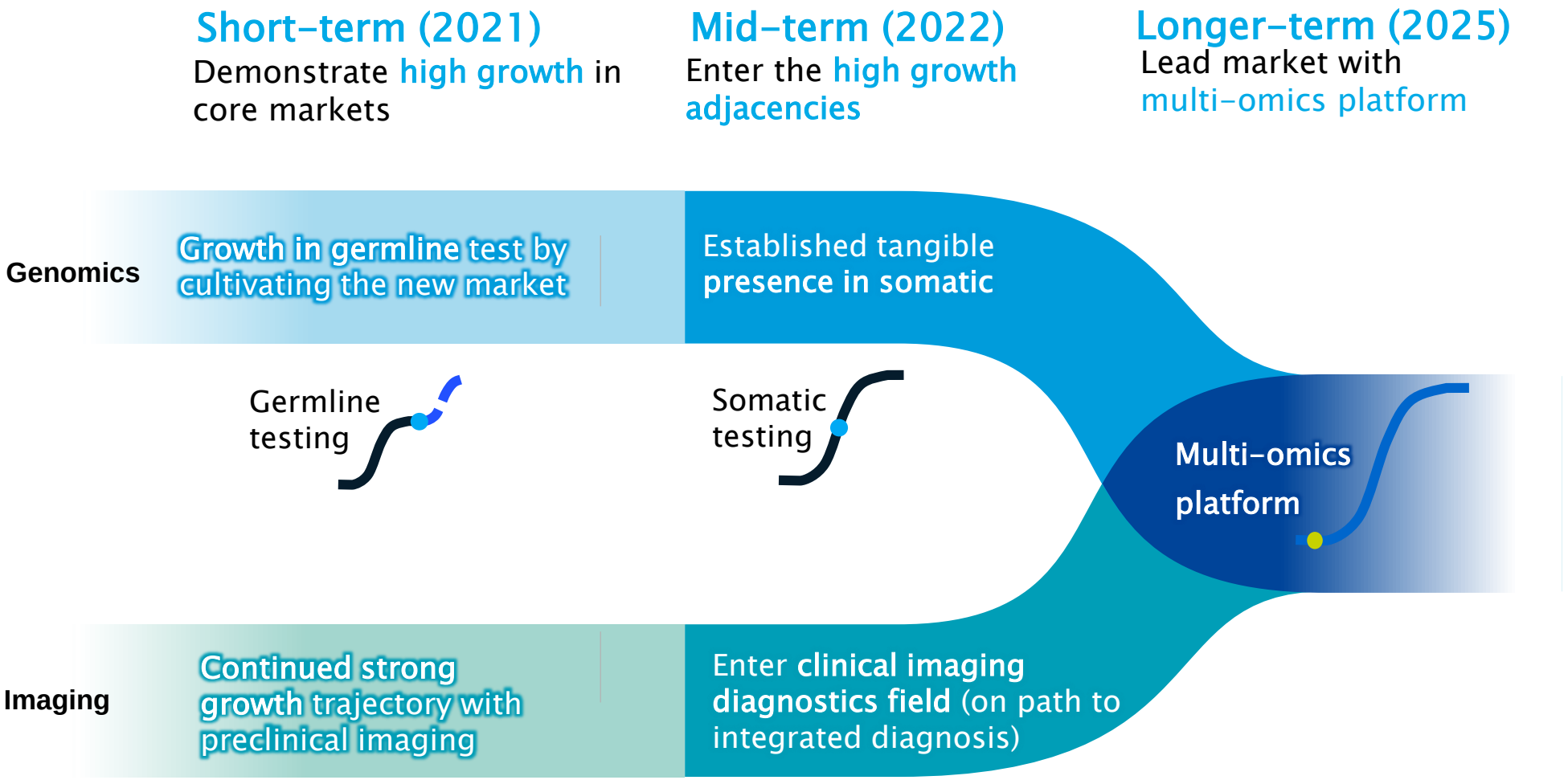
Multiple vs. enterprise value by company[1]



1. Based on latest 2021 data
2. Tempus bubble size based on valuation growth between 2019–2020; Exact Sciences CAGR excludes growth from Genomic Health acquisition
3. 2020 data

Source: Proprietary Corporate Performance Analytics tool, regulatory filings and S&P Global

Growth Strategy for Konica Minolta Precision Medicine



Growth of Core Businesses

Gene Diagnostics Business: Ambry Genetics Inc.

KONICA MINOLTA

Ambry's Strengths

Wet	Cutting-edge, large scale laboratory	• Massive capacity of up to 7,000 samples per day • Automated, fast and optimized workflow
Dry	Genetic analysis bioinformatics	• Top analysis accuracy in the industry
	Genetic mutation database	• Built up analysis database on 1.5 million people • Top-class data quality in the industry
Channels	Genetic counselors at large hospitals	• 70% share of genetic counselors • Targeting academic centers at large hospitals
Customers	Mainly ill patients	• 60% of tests targeting ill patients
Science HR	Capability to develop new products	• Vast improvement in diagnostic accuracy due to development of RNA tests • Many first NGS product in the industry
Pricing	Insurance coverage	• 95% of patients are covered by insurance • Premium prices are top class in industry

Growth Strategy

Turn third-party existing laboratories into customers

Provide analysis services on cloud

LATTICE

Expand targets to unaffected individuals at small- and medium-sized hospitals and imaging centers

CARE Program

Reinforce sales personnel

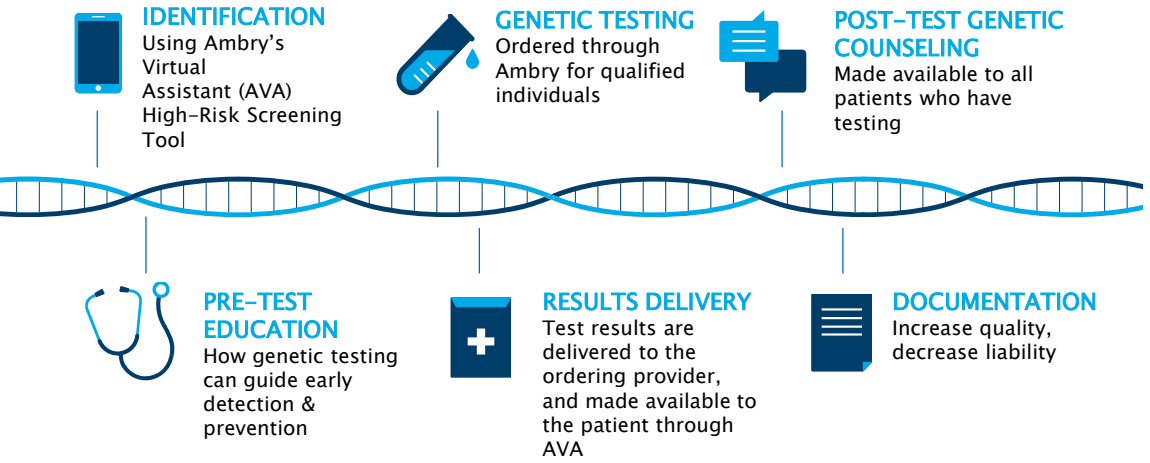
Expand sales of RNA tests

Somatic and liquid biopsy development

Insurance reimbursement requests in Japan

POPULATION HEALTH PLATFORM

Comprehensive Assessment, Risk and Education (CARE)



CARE Program Overview

OPPORTUNITY

- Millions of high-risk patients unidentified
- CARE (Comprehensive Assessment Risk & Education) Fully automated solution | Revenue generation | Increase quality of patient care

DIFFERENTIATION

- Automation of patient identification
- Platform can be applied across a health system to all specialties and disease states

POPULATION HEALTH

- CARE for COVID launched 2020
- 500,000+ patients served
- Incremental disease state proof point

CARE Program ™ -Platform for pre-symptom

Expand sales into massive market targeting healthy and unaffected individuals

CARE program　Comprehensive Assessment, Risk & Education

Medical interview

Learn one's own risk through e-mail and medical interview app

Educational activities

Learn accurate information about genetic diseases and appropriate response to one's own risks

Higher risk individuals

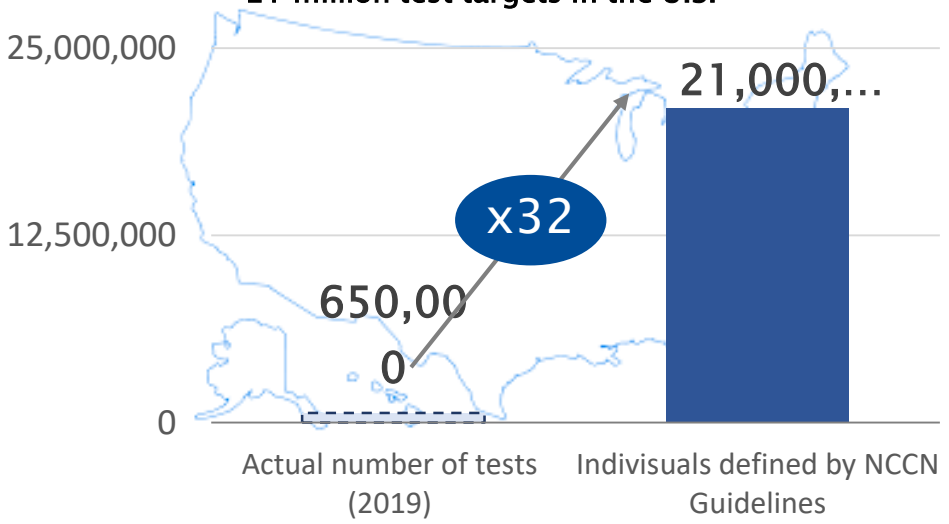
Genetic diagnostics

Receive genetic counseling and genetic testing at appropriate medical institution

Follow-up

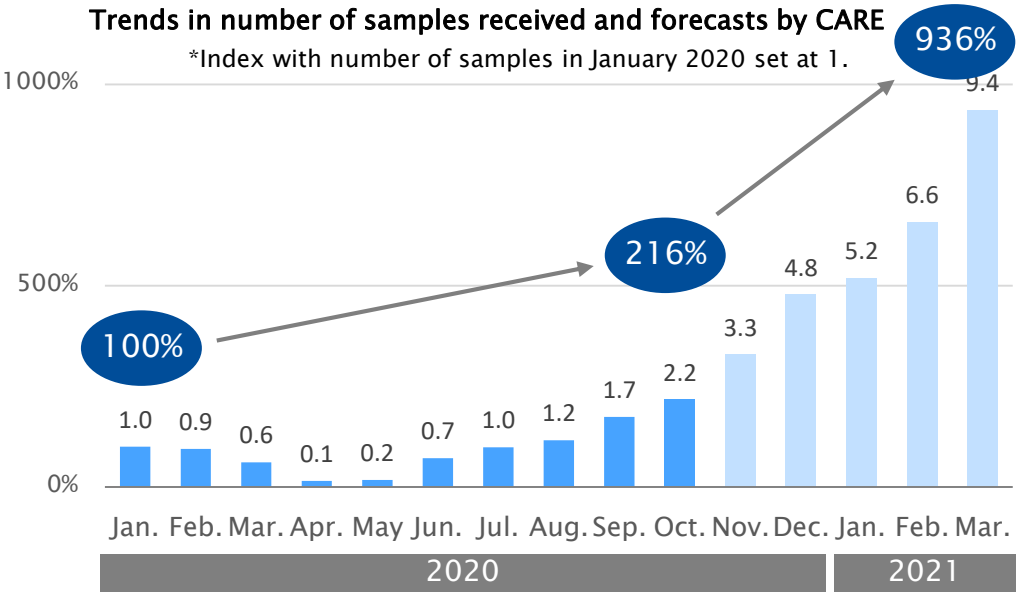
Receive appropriate medical management and relative response

21 million test targets in the U.S.



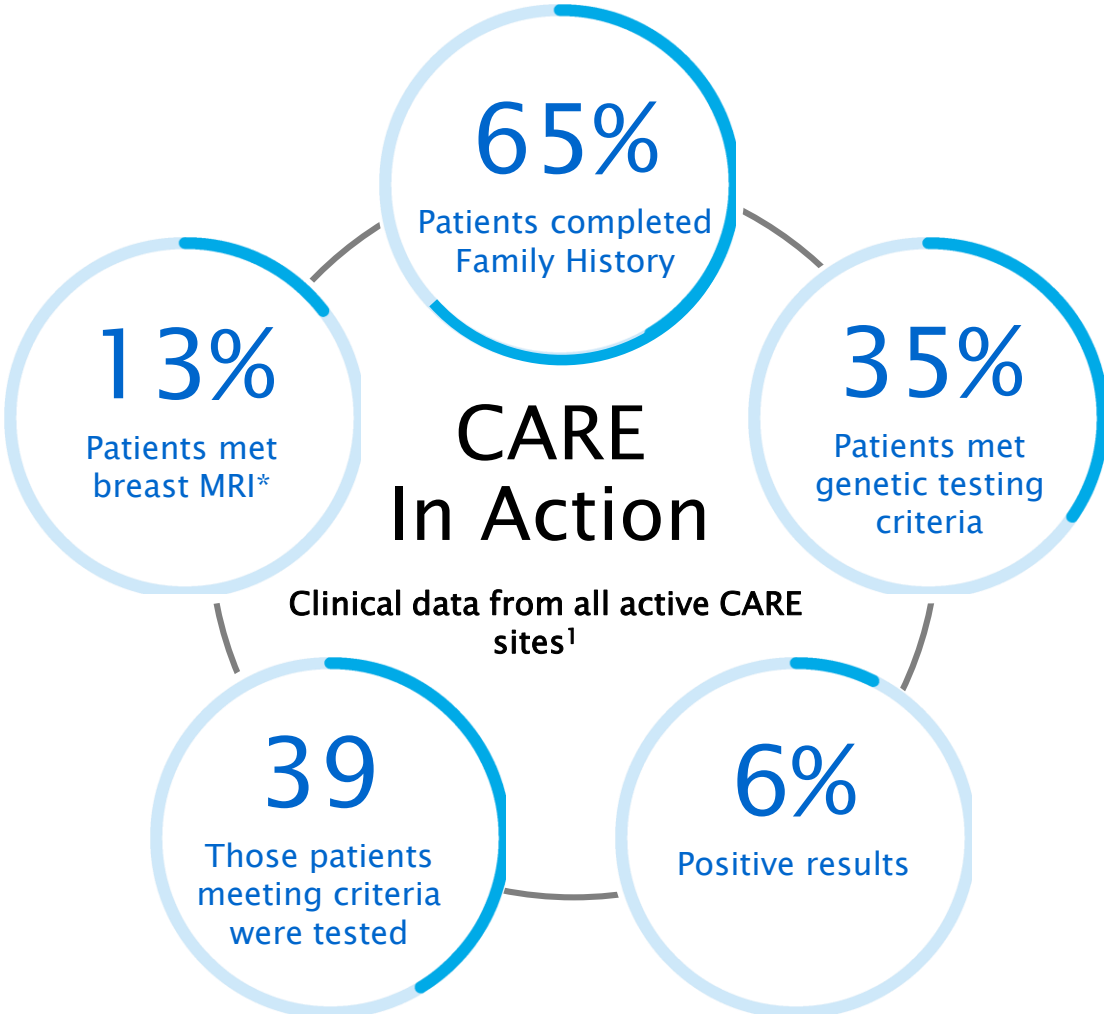
Trends in number of samples received and forecasts by CARE

*Index with number of samples in January 2020 set at 1.



Source: Cancer statistics, NCCN Guidelines

CARE Program ™ –Progress in FY2020



CARE sites' specialties:

30% Imaging Centers
20% Breast Centers
15% OBGYN
13% Oncology
9% Family Practice
5% High Risk
3% Internal Medicine
1% Surgical
1% Gastro
1% Urology
1% Onboarding for HRBC
1% Breast Surgeon

Sources: 1. Data on file with Ambry Genetics
2. Cdc.gov/chronicdisease/about/costs/index.htm
*Patients extracted by BRCA1/2 mutations with higher breast cancer incidence in 10 years
**HRBC hormone-receptor positive breast cancer

Sources: 1. Data on file with Ambry Genetics
2. cdc.gov/chronicdisease/about/costs/index.htm

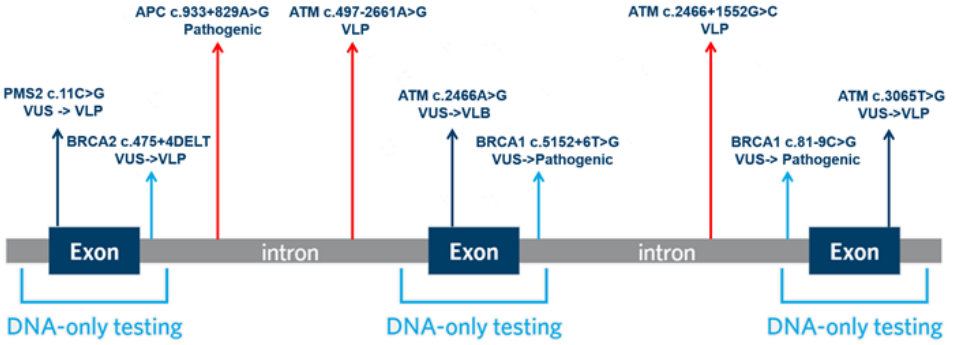
+RNAinsight

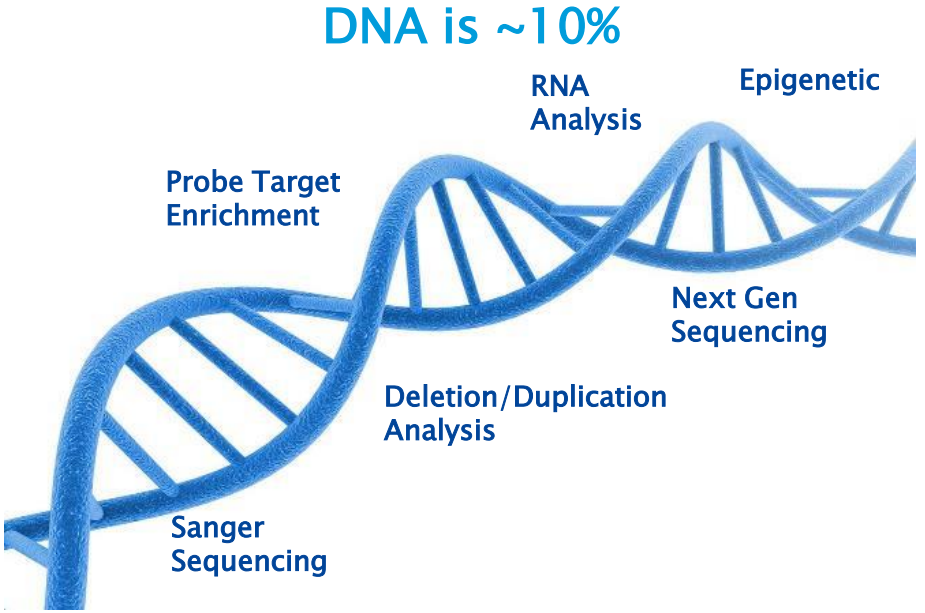
OPPORTUNITY

- The first RNA test in the industry
- Most progress in past 10 years in genetic testing field
- Supported for its ability to contribute to selection of appropriate clinical approach and treatment strategy for patients, and achieved approximately 200% year on year
  (H1 FY19 ➡ H1 FY20)
- Currently considering acquiring eligibility for insurance reimbursement

DIFFERENTIATION

- 9% improvement in diagnostic accuracy (decrease in false negatives)
- 5% improvement in inconsistent test results
- Achieved through bioinformatics and optimization of laboratory workflow





Drug Discovery Support Service: Invicro

Based on sophisticated medical imaging analysis technology utilizing AI, biomarkers are selected and risks in drug discovery process are significantly reduced

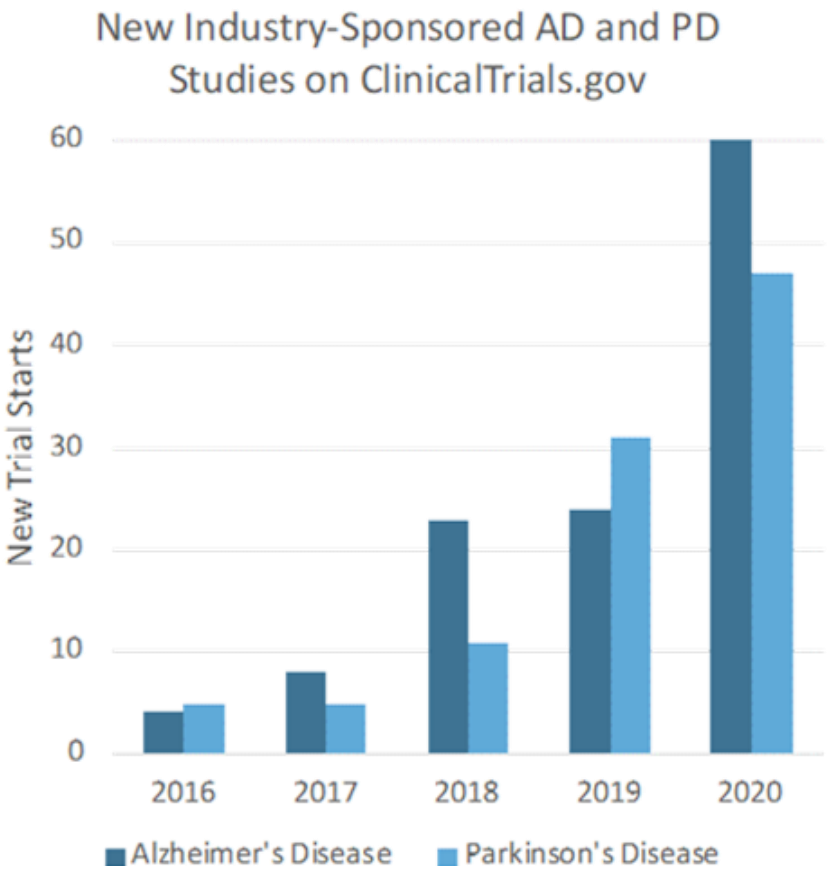
	Invicro's Strengths
Medical imaging analysis capability	• Deep understanding of disease and ability to specify biomarkers with proprietary AI and software • Experts in nuclear medicine
Imaging data management platform	• Imaging data management using cutting-edge software (iPACS) in the industry
World's largest AD/PD image database	• Quantification of images using TauIQ and AβIQ
Digital pathology	• IHC • PK/PD using Quanticell
Imaging treatment Project management	• Imaging partner network at 2,000 places globally • Familiar with laws and regulations, compliance and QA in different countries
Top-class scientists	• Over 100 scientists with PhDs and MDs • Medical and data science experts
Solid customer base	• 23 of 25 top pharmaceutical companies are clients • Over 200 client companies, including bio companies

Growth Strategy

- Take opportunity to resume AD clinical trial and secure position as leader in central nervous system (CNS) market
- Achieve high growth in cancer market with biomarker and data management capability
- Growth in digital pathology field based on Quanticell technology; Consider M&A targeting customer base, IP, data platforms
- Break into markets in Japan and Asia

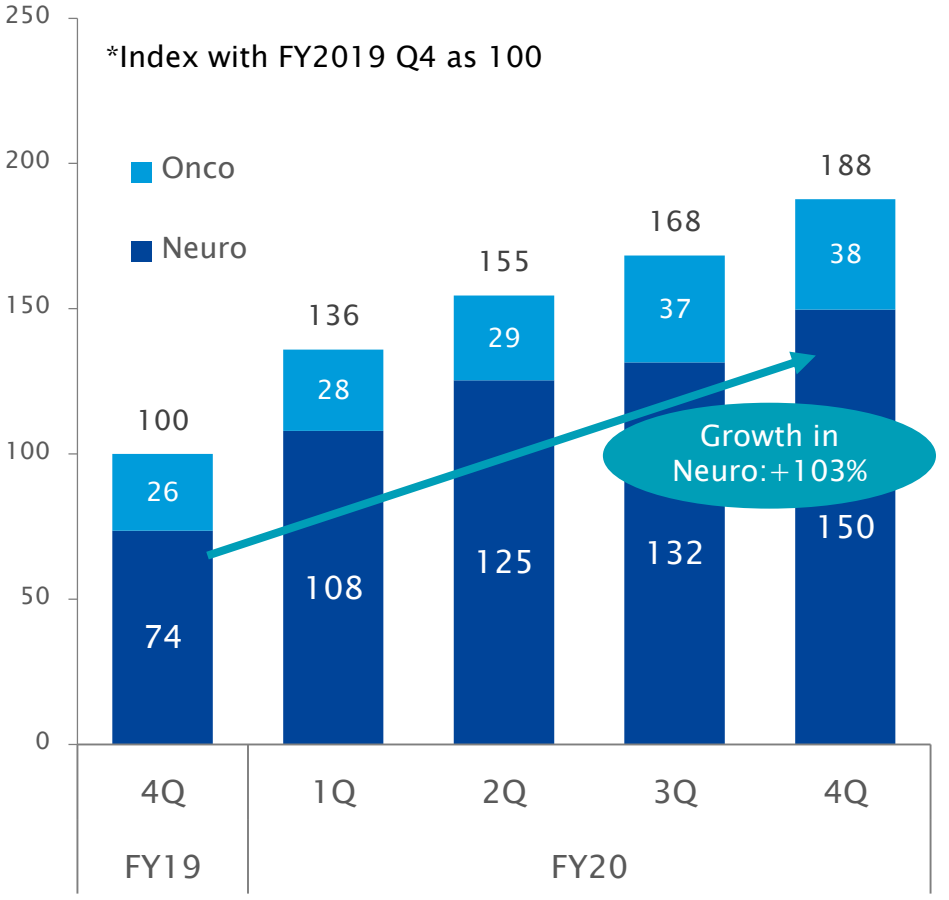
Invicro: Backlog Growth in Central Nerve System Field

Number of Clinical Trials: Market trends



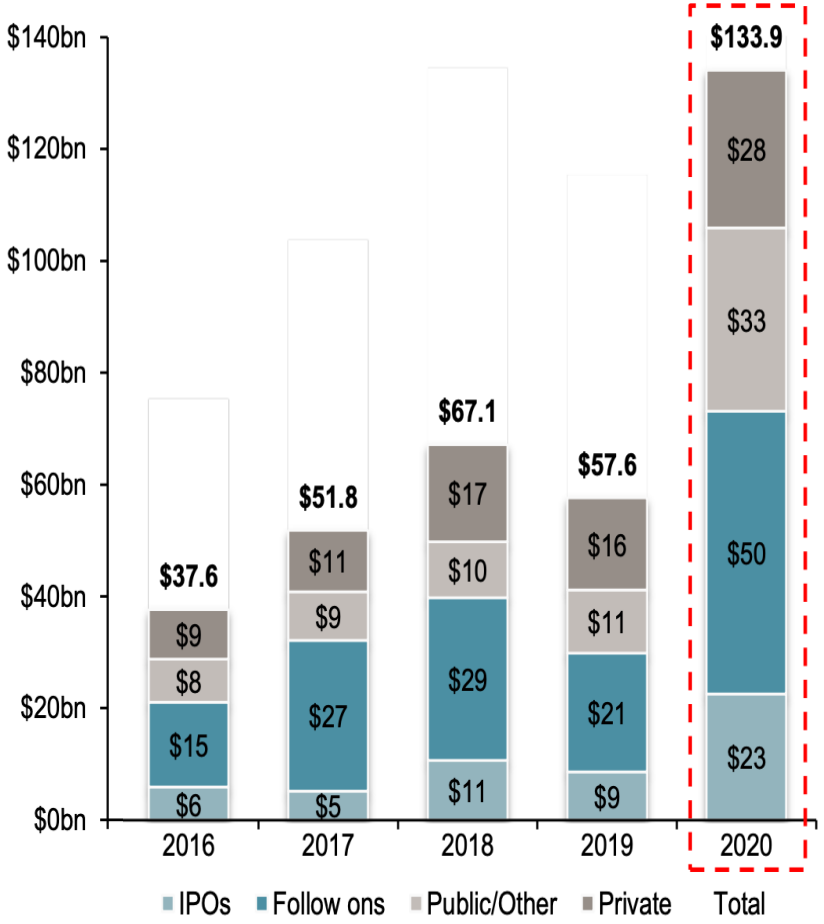
INDUSTRY DATA

Invicro's Backlog Trend

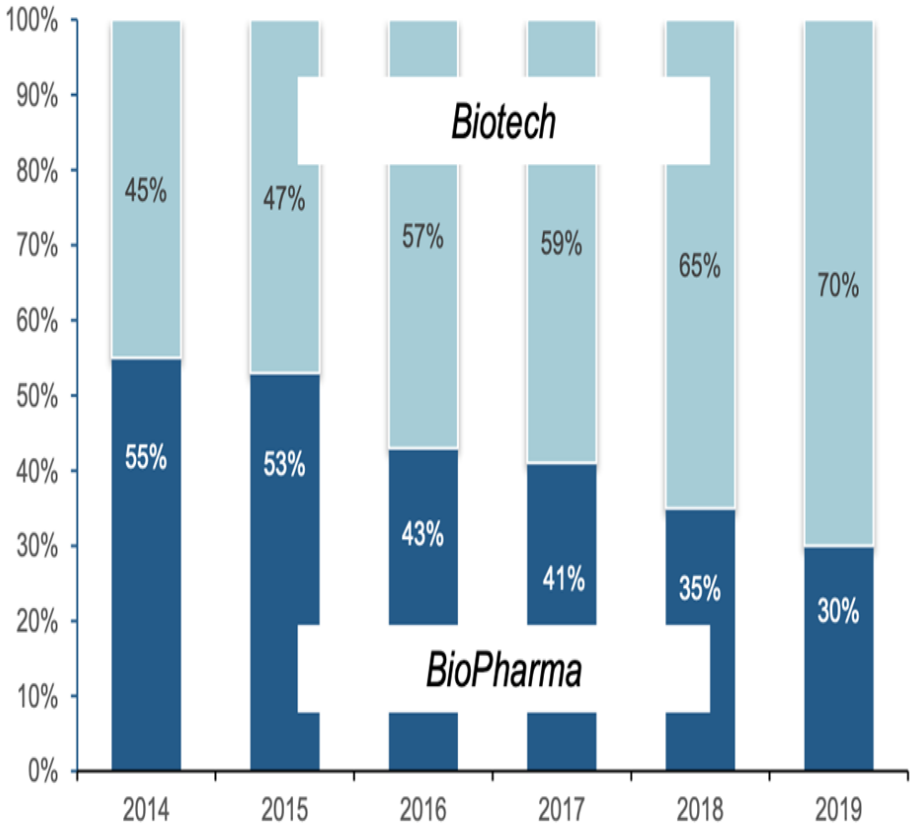


Equity Market Trends: From pharmaceutical development Ventures to Biotech Companies

Annual Biotech* Funding



Biotech*/BioPhama Trend



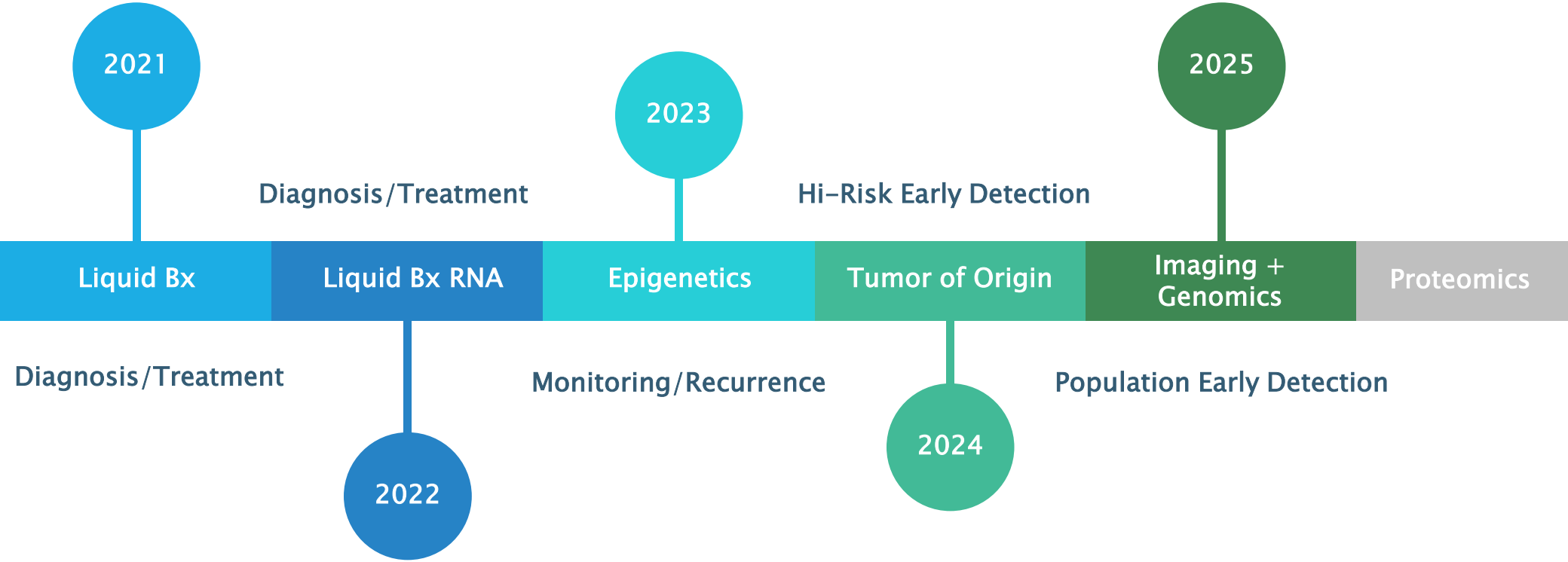
*Biotech: Drug Discovery Support Services and Diagnostic Tools
Source: Credit Suisse, State of the CRO Industry, 19JAN21

Medium-term Growth Strategy: Expansion of Diagnostic Menu

Strengthening Somatic and LBx Field

Oncology Somatic Product Roadmap

Support Across the Patient Journey



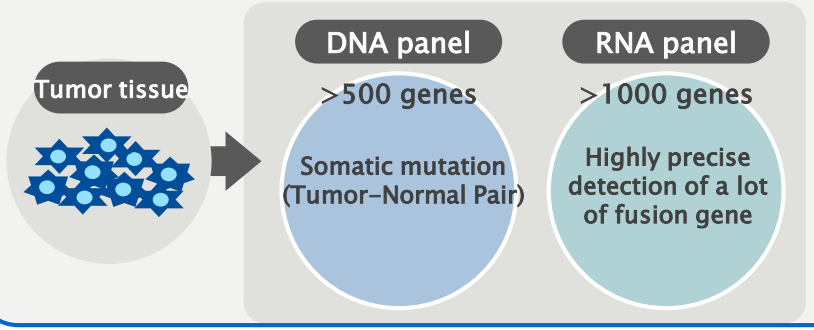
*LBx: Liquid Biopsy

Expanding Clinical Value Through Pair Test with TOP2 & Ambry Genetics

Todai OncoPanel (TOP2)

Oncogene mutation in tumor tissues

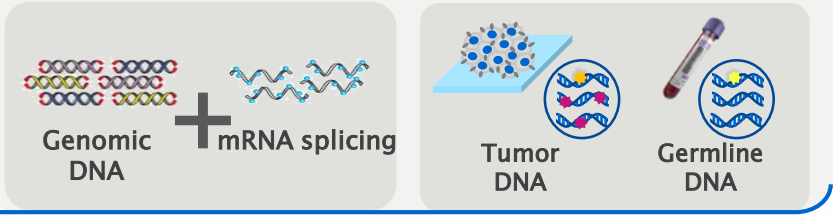
- Understand the characteristics of tumor tissues in a high sensitivity/precision manner
- Precise drug treatment selection



Ambry Genetics

Extensive performance of high-quality tests ranging from hereditary genetic tests to somatic tests

- Cutting-edge genetic diagnostic technology
- DNA/RNA pair test
- Results in somatic test in the U.S. market
- Database/AI analysis



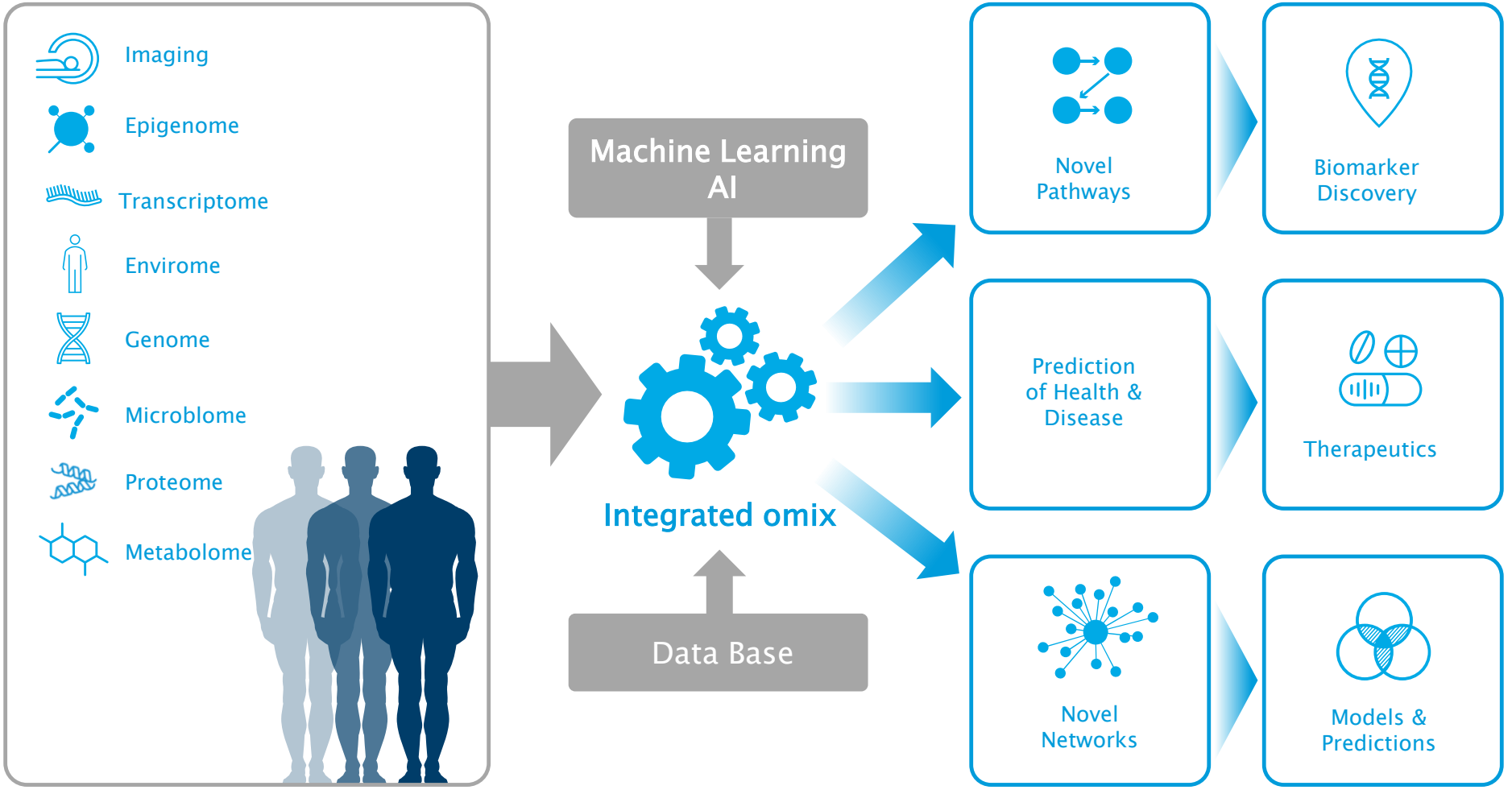
Understanding genetic mutations in wide range of cancer

Improving understanding of genetic risks

Oncogene mutation data are accumulated as one of the largest panels and integrated into C-CAT, contributing to the development of drug discovery and diagnostic support system as a national initiative

Medium to Long-Term Strategy: Developing Multi-omics Platforms

Precision Medicine Realized by Multi-omics Analysis



Overview of Collaboration with AWS

Overview

Konica Minolta precision medicine collaborates with AWS to create the next-generation of precision diagnostics

- Konica Minolta Precision Medicine, Inc. (KMPM) and Amazon Web Services, Inc. (AWS) enter into 5-year collaboration agreement
- AWS, as KMPM's preferred cloud provider, is supporting KMPM's global expansion of multi-omics platform LATTICE™*
- Amazon has made a financial investment in KMPM
- LATTICE™ is a groundbreaking integrated diagnostic data platform that combines genomics, pathology, and radiology data along with other critical information to uncover new, clinically relevant biomarkers and create the next generation of diagnostic tests

*LATTICE is a U.S. trademark of Ambry genetics, Inc.

Significance and Benefits of Collaboration with AWS

KONICA MINOLTA

KONICA MINOLTA

Konica Minolta Precision Medicine

KMPM

- AWS' endorsement and support on LATTICE™(Multi-omics platform) concept
- Using AWS's latest cloud and AI technologies
- Promoting the transition from on-premises to the cloud
- Strengthening GTM to pharmaceutical companies of AWS's customers and data collaboration
- Providing bio-informatics analysis services to existing laboratories
- Promoting the shift to cloud base for CARE Program
- Promoting efficiency of KMPM genetic data storage and cost reduction of data handling (reducing IT cost per sample to 1/4)

+

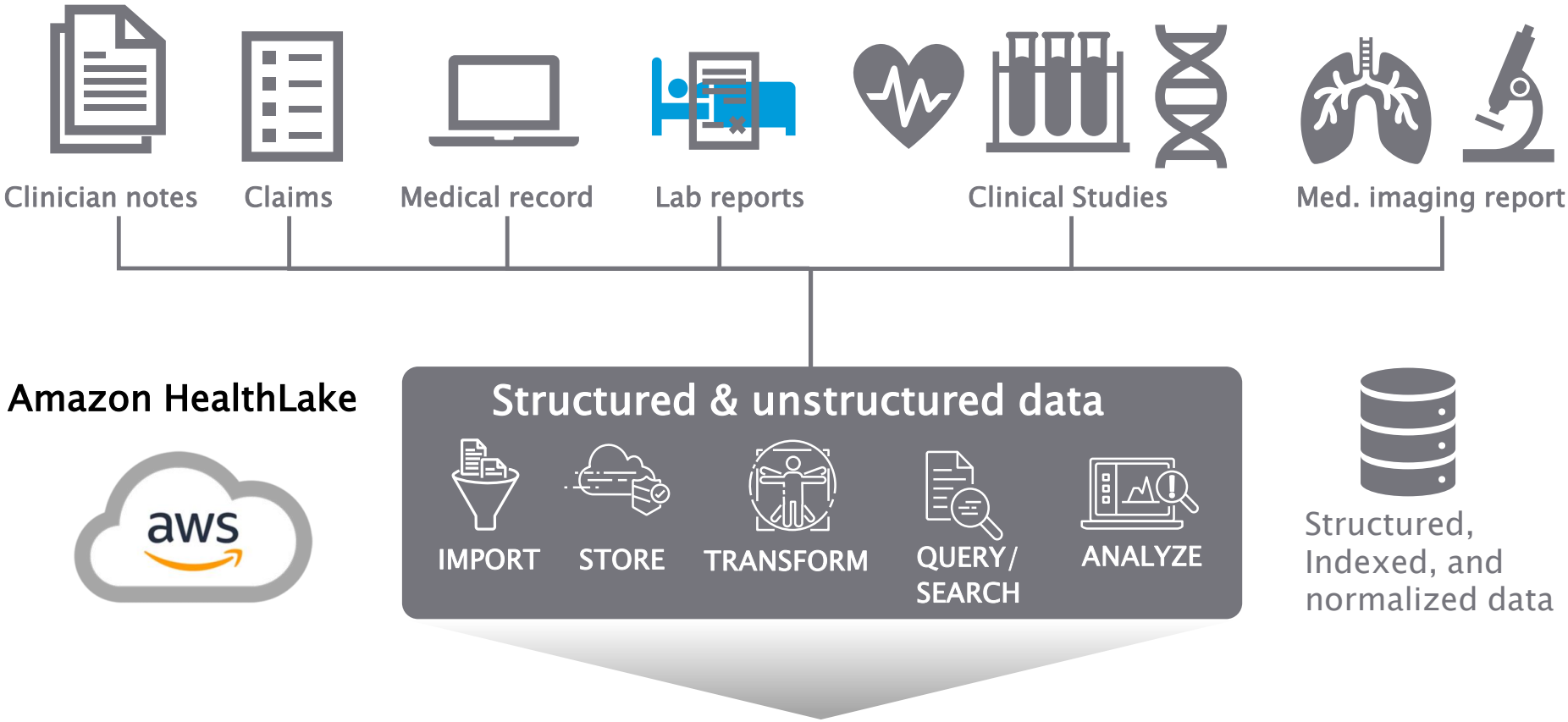
aws

Amazon Web Services, Inc.

AWS

- Precision diagnostics as the basis for realizing precision medicine
- Strengthening and accelerating innovative offerings in collaboration with KMPM (expertise and database in genetic, and healthcare imaging fields)
- Supporting to realize the global precision diagnostics through Amazon HealthLake
- Realizing cost reduction and improvement in the result of patient treatment through utilizing the AWS cloud technologies by more organizations in addition to pharmaceutical companies
- Ultimately, discovering new ways to save lives

About Amazon HealthLake



Population health management

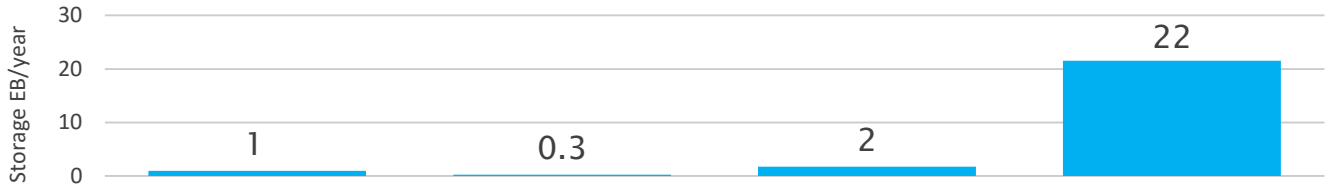
Improving Quality of care

De-risking of drug development

Source :
1) AWS on Air 2020: AWS What's Next ft. Amazon HealthLake - YouTube https://www.youtube.com/watch?v=I90EgWkb-O0
2) AWS re:Invent 2020: Make sense of health data with Amazon HealthLake - YouTube https://www.youtube.com/watch?v=Ld2Uno3V4Xk

The Ability to Analyze Enormous Amounts of Data is Essential in the Future Genetic Field.

The genomic field requires scalable storage and computing due to increasing chronological data with wide variety.



Data type	Astronomy	Twitter	YouTube	Genomics
Amount of data	25 zetta/bytes/year	0.5/15billion tweets/year	500-900 million hours/year	1 zetta-beases/year
Storage	1EB/year	1-16 PB/year	1-2 EB/year	2-40 EB/year

1zetta $=10^3$ E ,
1E$=10^3$ P, Zeta > E > P

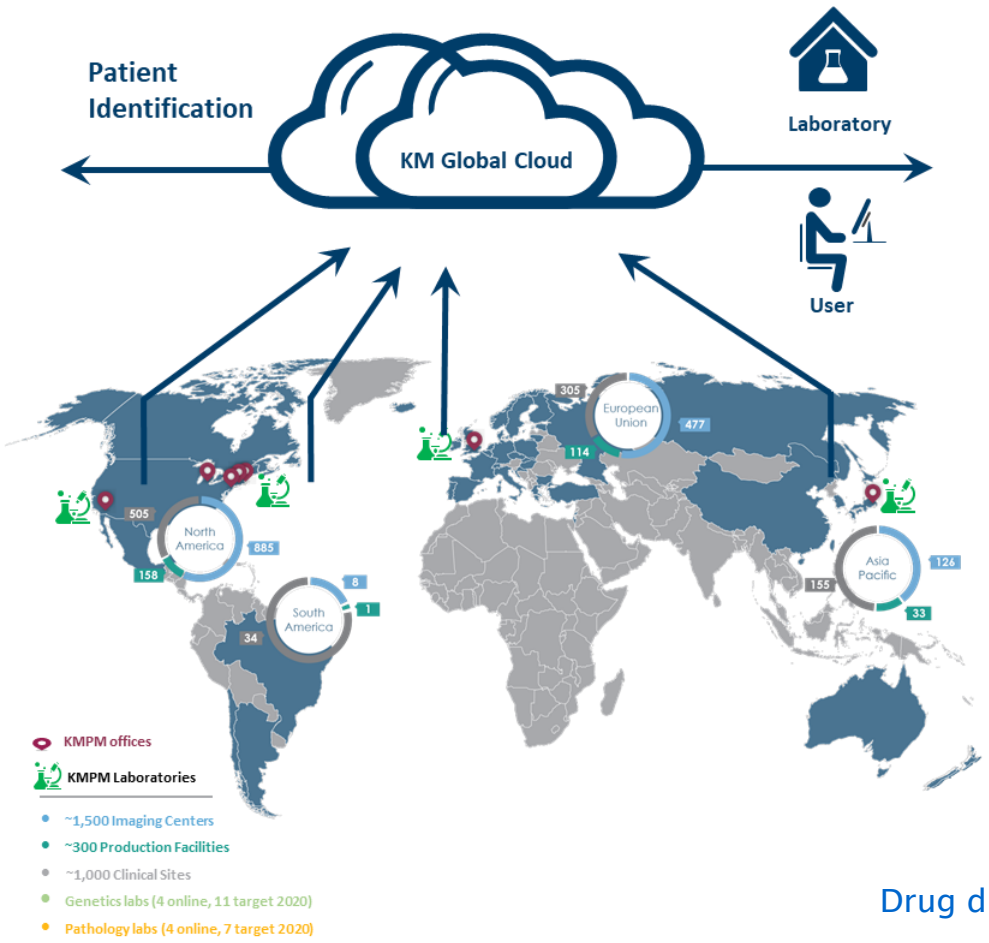
Cancer whole exome sequencing

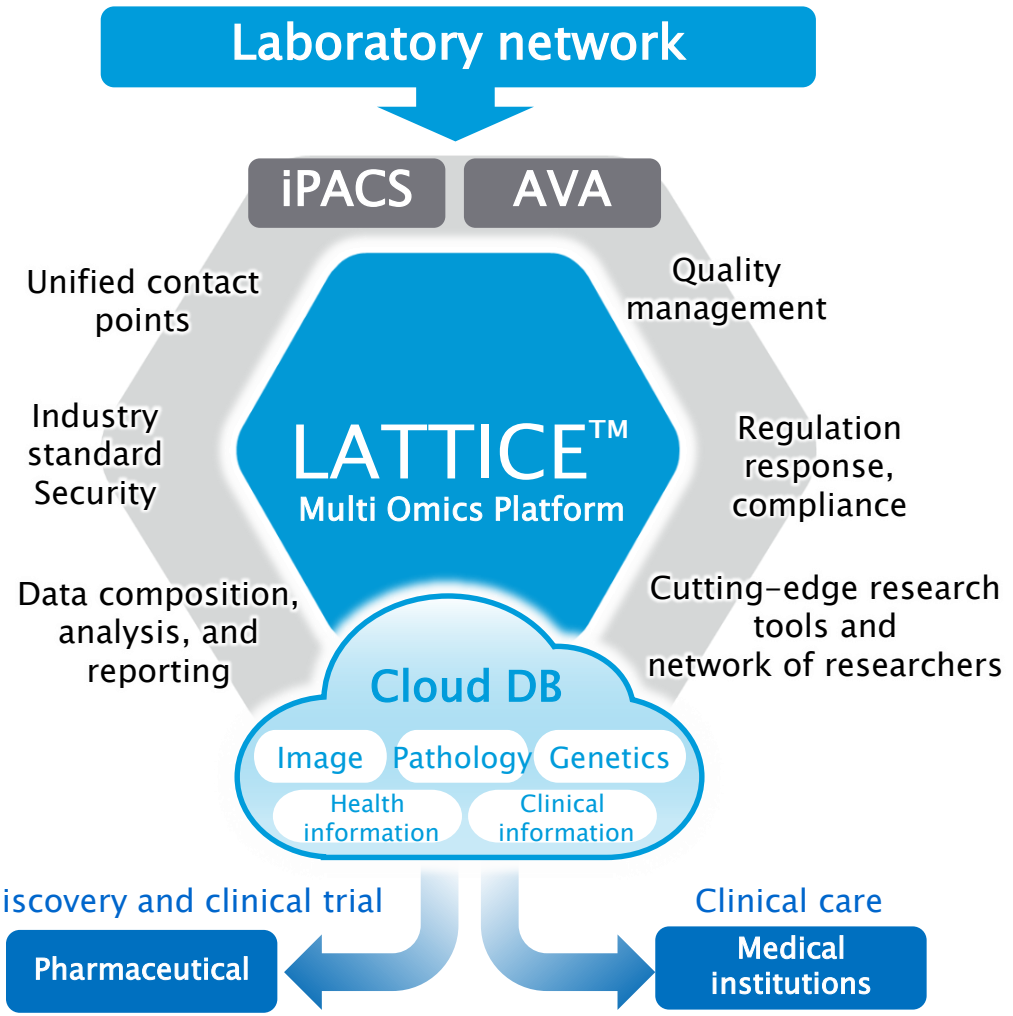
Data computational and storage needs

for 1 patient =

100X Apollo 11 Mission

LATTICE™: Multi-omics Platform

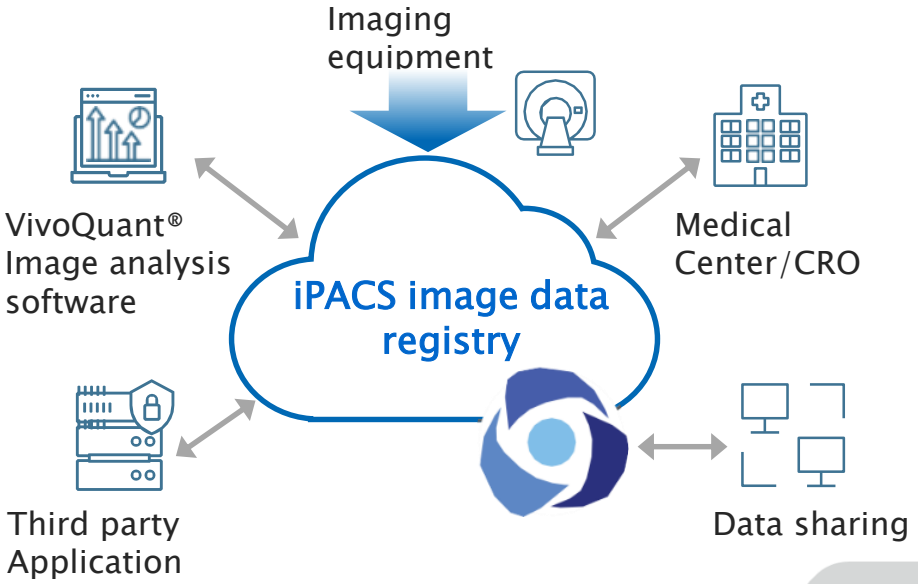




KMPM's Differentiated Platform Becomes Cloud-based

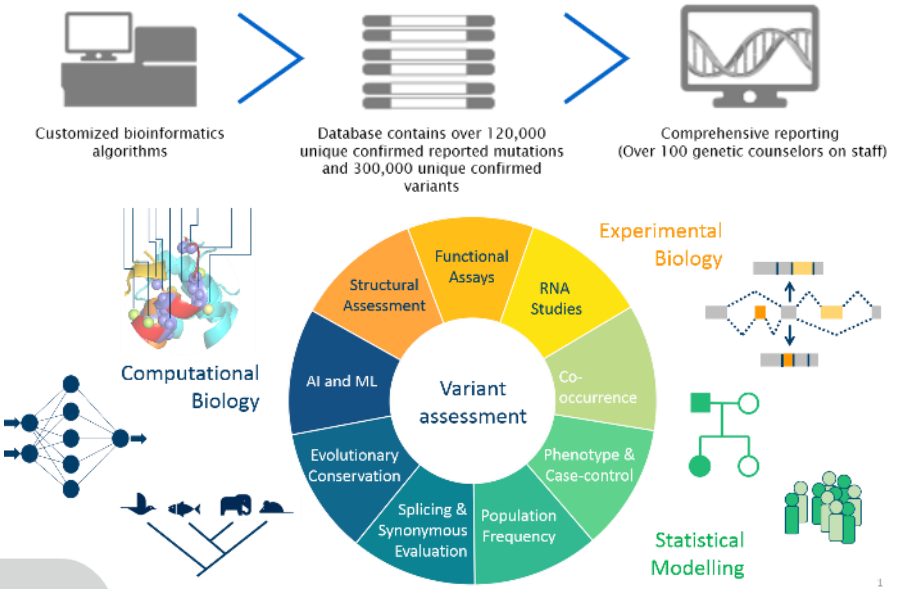
iPACS

Efficiency of image data management



Ambry Variant Analyzer (AVA)

Industry's No.1 genetic mutation analysis system



amazon HealthLake

LATTICE™ Multi Omics Platform

powered by aws

Customer Base and Our Proprietary Database as Barriers to Entry by Other Companies

KONICA MINOLTA

iPACS

Customer base

- 23 of top 25 pharmaceutical companies **are our clients**
- **Over 200 companies are our clients,** including biotech companies
- Increasing 2 new customers per month

Proprietary database

- **Imaging for drug discovery and clinical trial** (CT、MRI、FDG-PET、PSMA-PET)
- 32 thousand AD images achieved
- **Proven AI-analysis (Tau^{IQ}, Amyloid^{IQ})**
- Digital **pathology imaging** (Quanticell)
- New **biomarkers search** (SPFS)
- Pharmaceutical companies/patient collaboration (BPH)

Ambry Variant Analyzer (AVA)

Customer base

- **Major hospital group**
- Major imaging centers
- Cover 97% of insured patients through insurance company network
- Access to **unaffected individuals** through CARE Program

Proprietary database

- **Accumulation of analysis data for 1.5 million people**
- 9500 active orders
- **Highly accurate** genetic analysis data from RNAs tests
- **High quality** analysis data by genetic counselor's translation

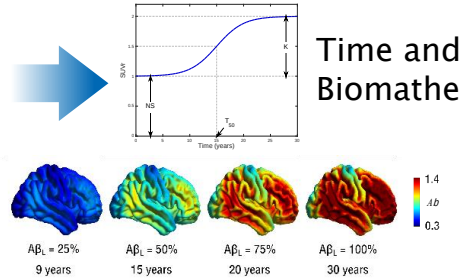
iPACS Strengths: Proprietary Database + AI Analysis Capabilities

KONICA MINOLTA

Leading Company in the CNS market with advantage of analysing software and world-class databases

ADNI
Alzheimer's Disease Neuroimaging Initiative

Big data

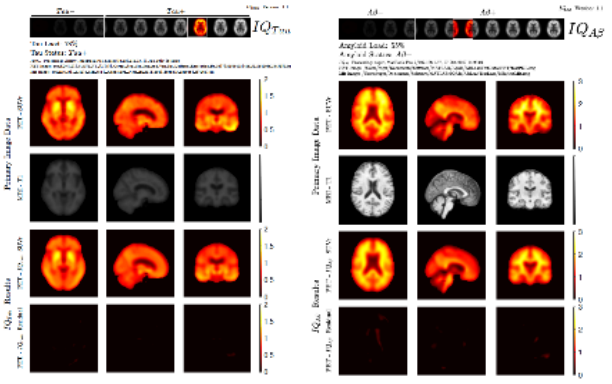


Time and space
Biomathematical modeling

IQ Analytics

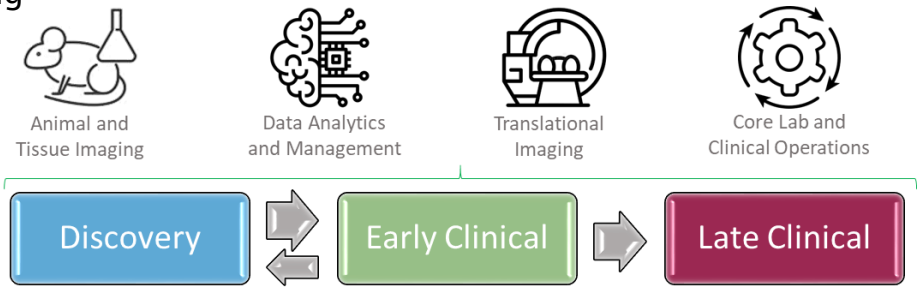
Domain knowledge for CNS imaging biomarkers
Extended AI algorithms

- 32, 000AD image analysis
- Key biomarkers original analysis program



Tau^IQ | Amyloid^IQ

High growth in the oncology market with biomarkers and data management capabilities



BIOCLINICA / ERT
ICON
CALYX | parexel
Core Lab and Clinical Operations

Quanticell™ IHC

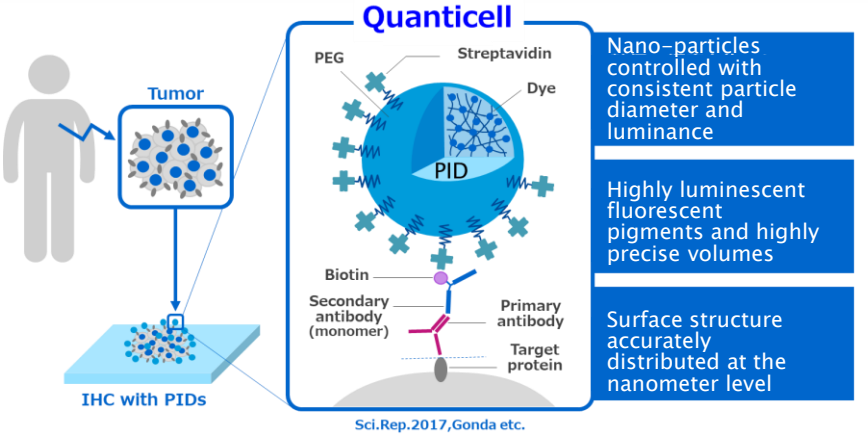
Phosphor-integrated Dots (PID)-based Detection Technology

Key characteristics

- Sensitivity: Brightness is 100 times higher than Quantum Dots (QDs), and elements that cannot be detected with standard IHC methods can be measured.
- Quantification: Highly precise measurements can be made at 300 times dynamic range compared to QDs
- Clarification of physiological significance: Physiological significance can be analyzed through analysis of location within the cells

Value for pharmaceutical companies

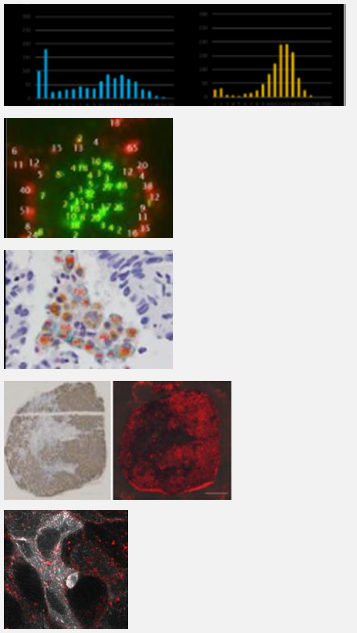
- Can detect low-incidence proteins that are difficult to detect (Her2, PDL-1, etc.)
- Improve patients' QOL and pharmaceutical companies' economic potential by increasing target patients



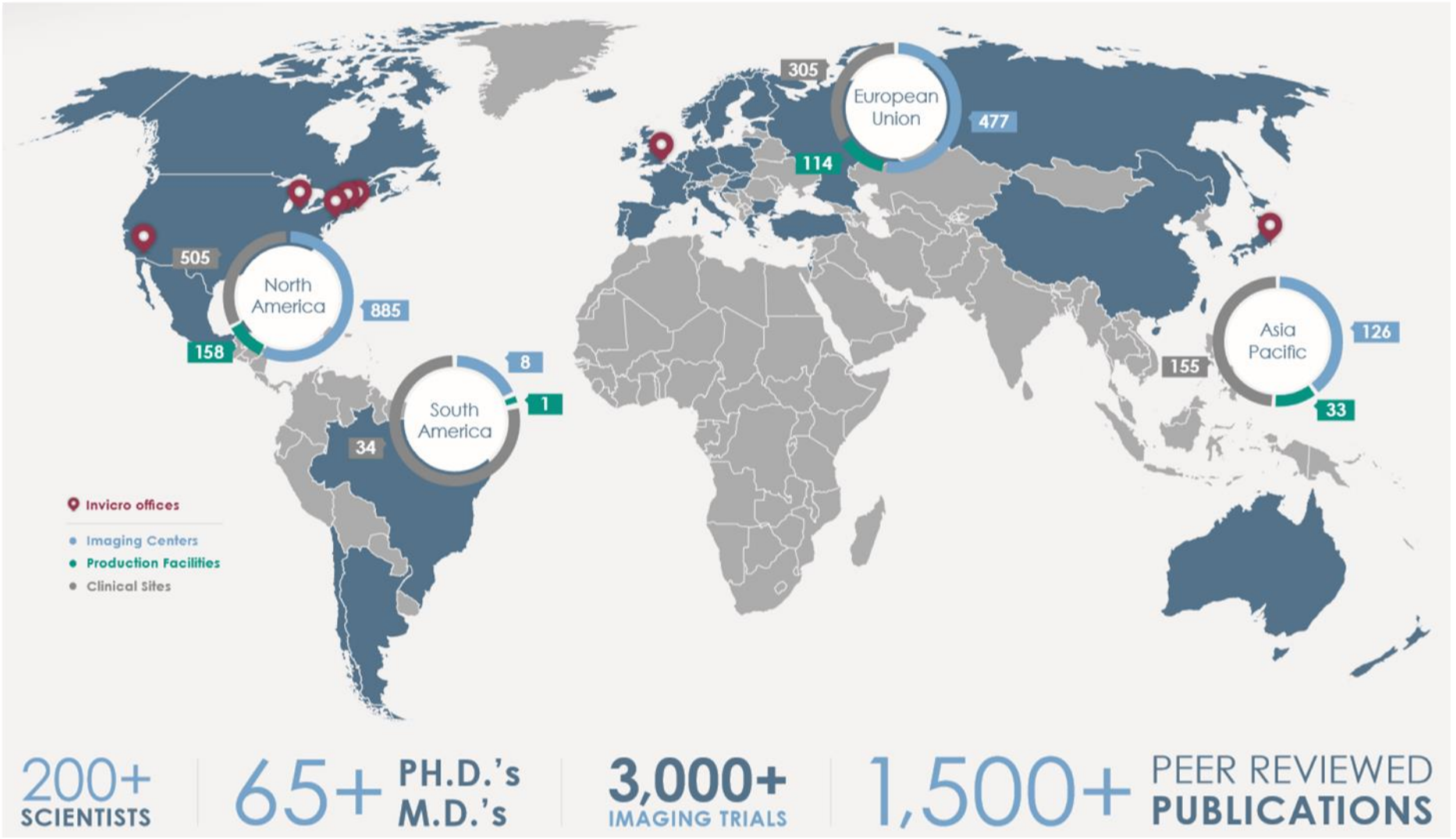
Sci.Rep.2017,Gonda etc.

Quanticell: Quantification of cells
PIDs : Phosphor Integrated Dots

- Analysis through quantification and analytics
- Locational analysis of target particle
- Classification of specific people with diseases and identify patients with false negatives
- Analysis of location and amount of drug and target particle
- Dynamic analysis of target particle within living cell



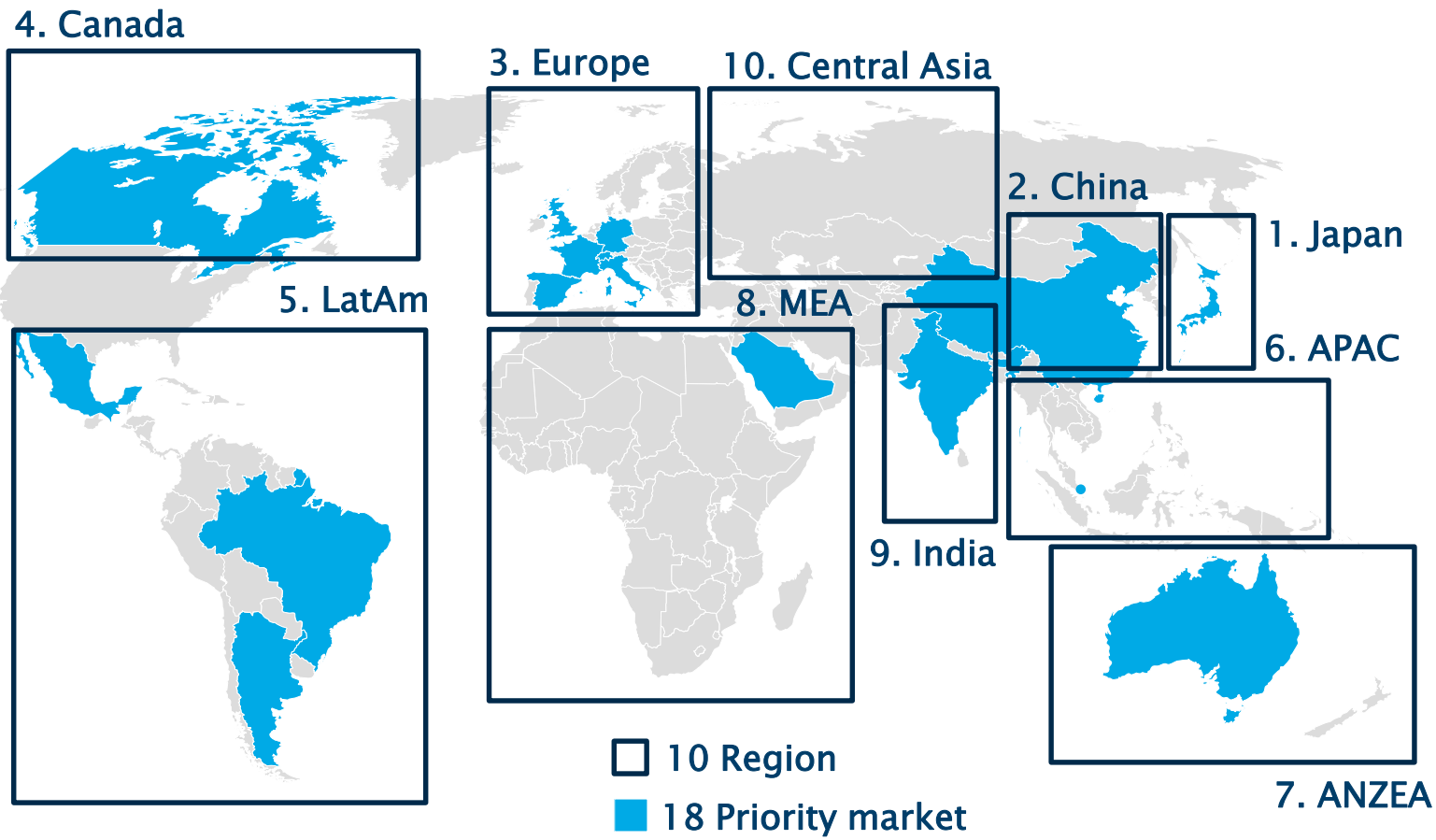
iPACS Strengths: Scientific Strength + Global Network



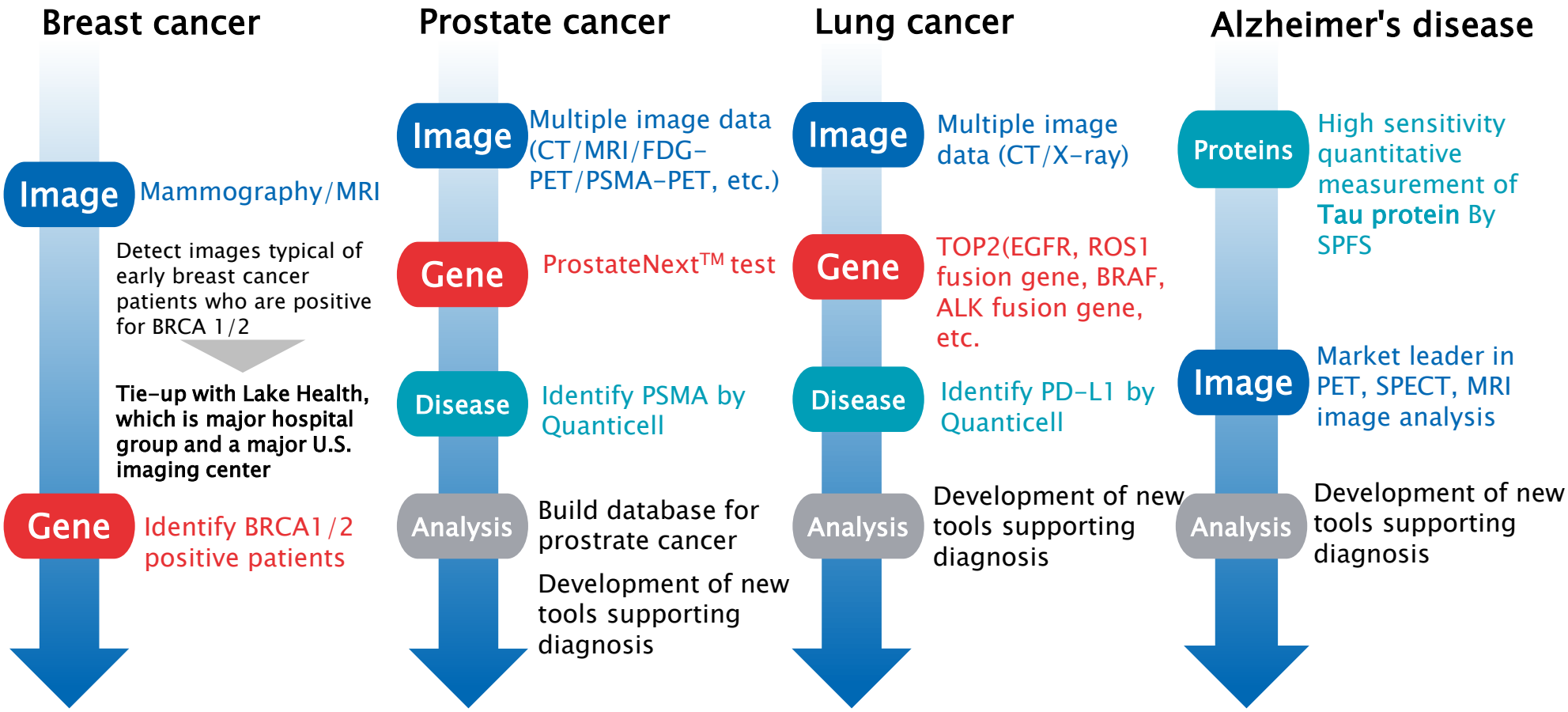
Global Deployment of LATTICE™ Labs

Selected 18 priority markets by target market size and attractiveness, covering 85% of all markets.

10 Regions	18 Priority Markets(1)
1. Japan	Japan
2. Greater China	China, Taiwan Hong Kong
3. Europe	Germany France UK Italy Spain Switzerland
4. Canada	Canada
5. Latin America	Brazil Argentina Mexico
6. APAC	Singapore
7. ANZEA	Australia
8. MEA	Saudi Arabia
9. India	India
10. Central Asia	*None*



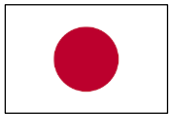
Diseases in Which Multi-omics Platform is Expected to be Utilized



Early Diagnosis and Improvement of Diagnostic Accuracy

RWD: It is Important to Link Clinical and Diagnostic Information.

Global Comparison of Biobanks

	Size/Target population	Data type	Clinical information	Data utilization
Taiwan Biobank 	● General citizens: 0.2 million ● Patients with chronic illness	● Blood, urine, hematology, DNA, etc. ● Tissue of cancer patients ● With tracking	● EMR/EHR ● Lifestyle/medical history ● With tracking	● Available for both research institutions and private companies
China National GeneBank 	● General citizens: 1 million (China Nanjing PJT)	● Blood, urine, DNA, etc. ● Without tracking	● Lifestyle/medical history ● Without tracking	● Research institutions in China only
Tohoku Medical Megabank 	● General citizens: 0.16 million	● Blood, DNA, other body fluids, secretions, etc. ● With tracking	● Lifestyle/medical history ● With tracking	● Research institutions only
Genomic England 	● 5 million ● General citizens, rare diseases and cancer patients	● Blood, urine, saliva, DNA, etc. ● Tissue of cancer patients ● With tracking	● EMR/EHR ● Lifestyle ● With tracking	● Available for both research institutions and private companies
All of Us 	● General citizens: 1 million	● Blood, urine, saliva, etc. ● With tracking	● EMR/EHR ● Lifestyle/medical history ● With tracking	● Research institutions only

Each biobank exists separately, and there is no centralized management or linkage of data.

Source: Data from the Second Genomic Healthcare Council of the Cabinet Office, IQVIA Institute; Understanding the Global Landscape of Genomics Initiatives, May 2020

Progress of the Genomecohort Project

KONICA MINOLTA

Genomecohort research* progresses at the national level and on a large enterprise basis

*Genomecohort Study: One of the large observational study methods to investigate the relationship between cause and onset of disease

Ancestry.com
For-Profit Company
Current Cohort: 15 million
Data Type: Genotyping
Linked Data: Survey

Genomics England
State-Owned Company
Current Cohort: 122,000
Target: 5 million**
Data Type: Whole genome
Linked Data: EMR/EHR

Million Veteran Program
Government Project
Current Cohort: 700,000
Target: 1 million
Data Type: Biological samples
Linked Data: Clinical data

China Nanjing Project
Government Project
Target: 1 million

Turkish Genome Project
Government Project
Target: 1 million ***

AstraZeneca-MedImmune
For-Profit Company
Target: 2 million
Data Type: Whole exome

"All of Us" Precision Medicine Initiative
Government Project
Target: 1 million
Data Type: Biological samples
Linked Data: EMR/EHR

23andMe
For-Profit Company
Current Cohort: 10 million
Data Type: Genotyping
Linked Data: Survey

Genomic Health inc.
For-Profit Company
Current Cohort: 1 million
Data Type: Genotyping – Somatic (tumor)

Dubai Genomics
Government Project (10X Initiative)
Target: "whole population of Dubai"
Data Type: Whole genome

Tohoku Medical Megabank
Public Project
Target: 0.2 million
Data Type: Genotyping, Biological samples

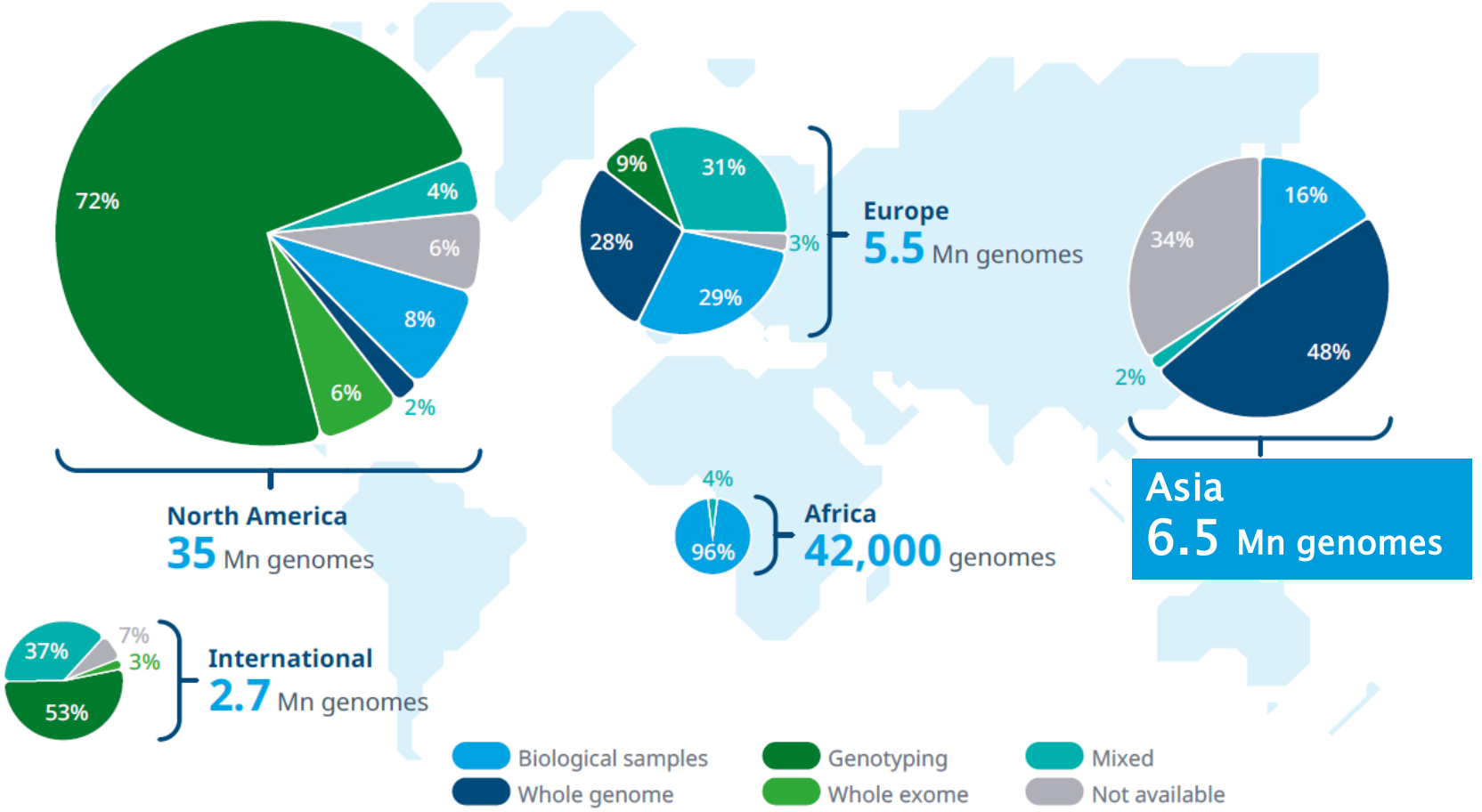
**Of which at least 500k will be whole genomes
***Planned for completion by 2023, the 100th anniversary of the founding of the modern Turkish state.

Public Private

Source: IQVIA Institute; Understanding the Global Landscape of Genomics Initiatives, May 2020

Progress of Genomecohort Project

Asian genomecohort studies haven't accumulated enough data considering percentage of global population (6.5M by 2025) and have high potential of most recent coming growth.

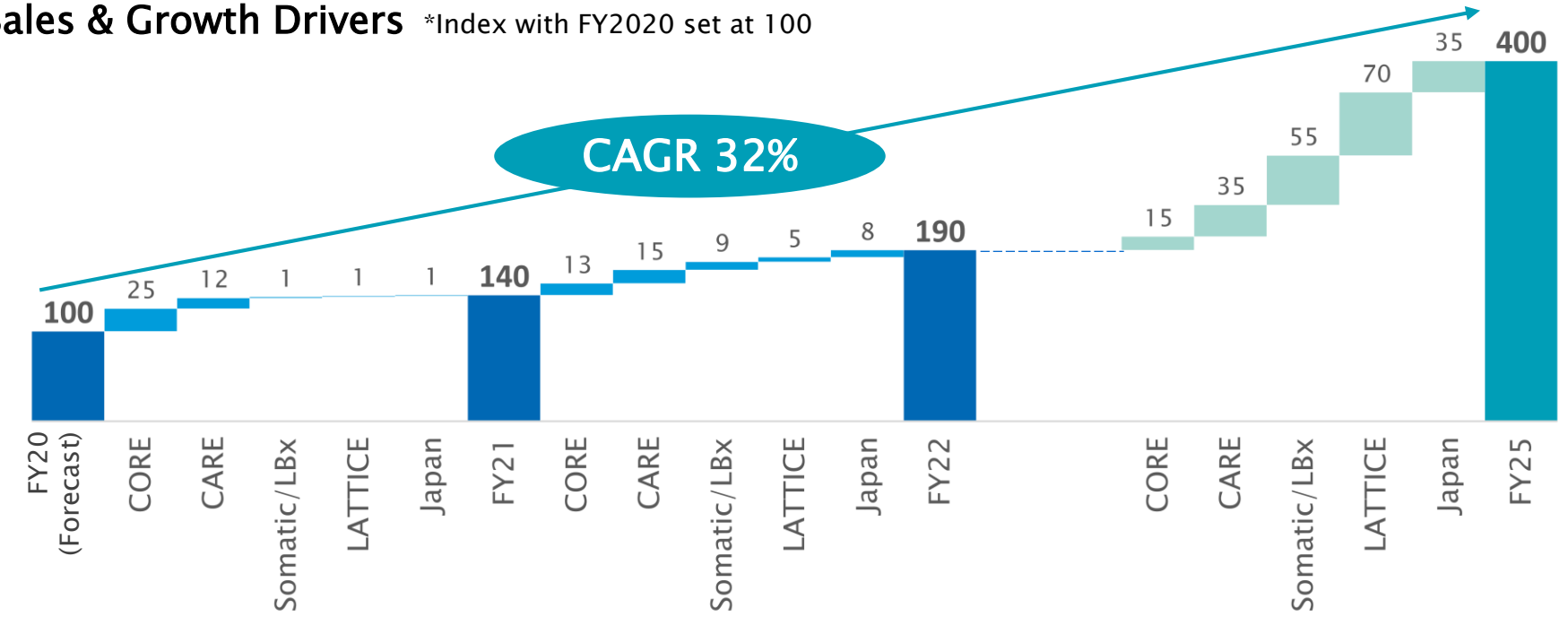


Source: IQVIA Institute; Understanding the Global Landscape of Genomics Initiatives, May 2020

Numerical Outlook for Growth

Precision Medicine Business: Accelerate Sales Growth and Earnings Improvement

■ Sales & Growth Drivers *Index with FY2020 set at 100



■ Continuous investment for growth

*Indicator when FY2020 amount invested is set at 100

By measures	FY20	FY21	FY22	FY23	FY24	Total
Expansion of AG sales	5	55	30	5	0	**95**
AG R&D (including Somatic/LBx)	40	25	40	55	75	**235**
LATTICE	35	20	20	20	20	**115**
Japan	20	20	20	20	25	**105**
Investment amount	**100**	**120**	**110**	**100**	**120**	

Focus of M&A Strategy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