



Building the best suite of content-driven analytics

Jonathan Sheldon

Senior Vice President, Head of Bioinformatics Business Area

Disclaimer

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Regulation G: QIAGEN reports adjusted results, as well as results on a constant exchange rate (CER) basis, and other non-U.S. GAAP figures (generally accepted accounting principles), to provide additional insight on performance. In this presentation, adjusted results include adjusted net sales, adjusted operating expenses, adjusted EBITDA, adjusted diluted EPS and free cash flow. Adjusted results are non-GAAP financial measures QIAGEN believes should be considered in addition to reported results prepared in accordance with GAAP, but should not be considered as a substitute. QIAGEN believes certain items should be excluded from adjusted results when they are outside of its ongoing core operations, vary significantly from period to period, or affect the comparability of results with its competitors and its own prior periods. Please see the Appendix provided in this presentation "Reconciliation of Non-GAAP to GAAP Measures" for reconciliations of historical non-GAAP measures to comparable GAAP measures and the definitions of terms used in the presentation. QIAGEN does not reconcile forward-looking non-GAAP financial measures to the corresponding GAAP measures due to the high variability and difficulty in making accurate forecasts and projections that are impacted by future decisions and actions. Accordingly, reconciliations of these forward-looking non-GAAP financial measures to the corresponding GAAP measures are not available without unreasonable effort. However, the actual amounts of these excluded items will have a significant impact on QIAGEN's GAAP results.

Bioinformatics market offers dynamic growth opportunities

Our customers

Clinical testing

Decision support for improved outcomes



Discovery

Deep insights into disease biology
Microbiome research



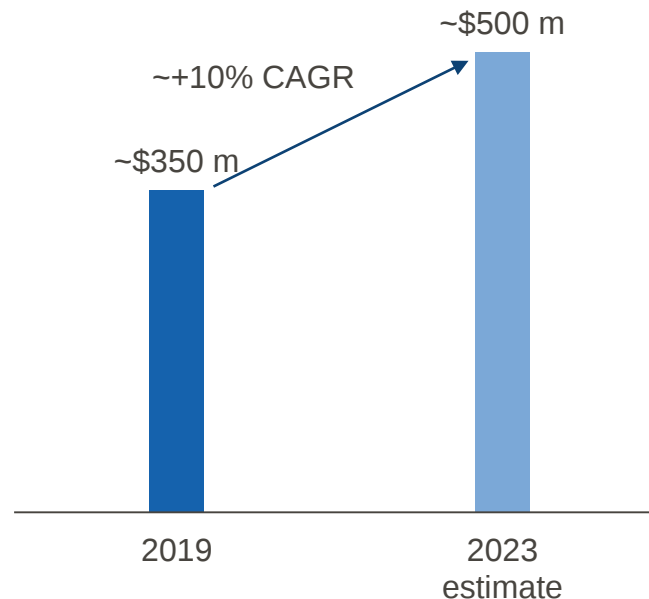
Pharma and clinical trials

Digital transformation of trials with real-world evidence



Total addressable market

QIAGEN market share: ~20%

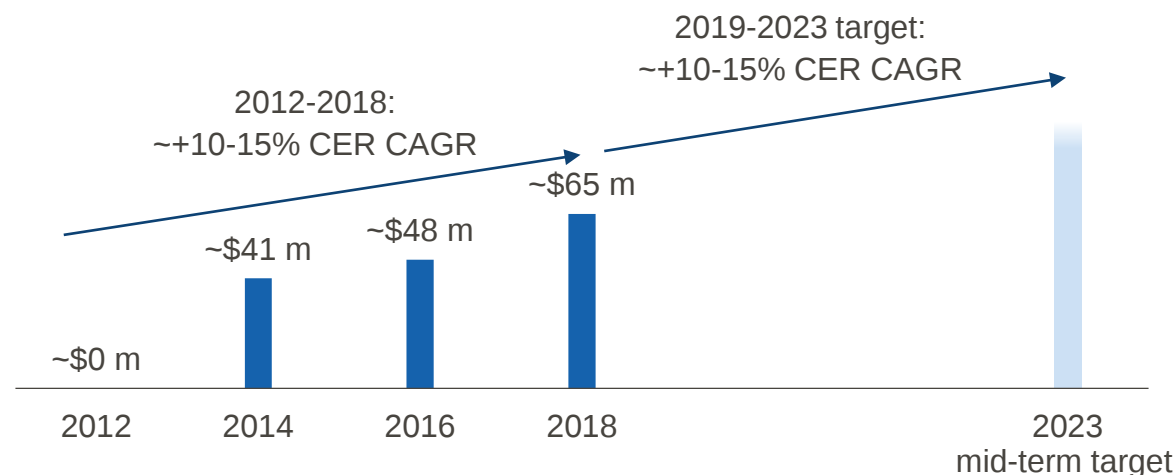


Key trends

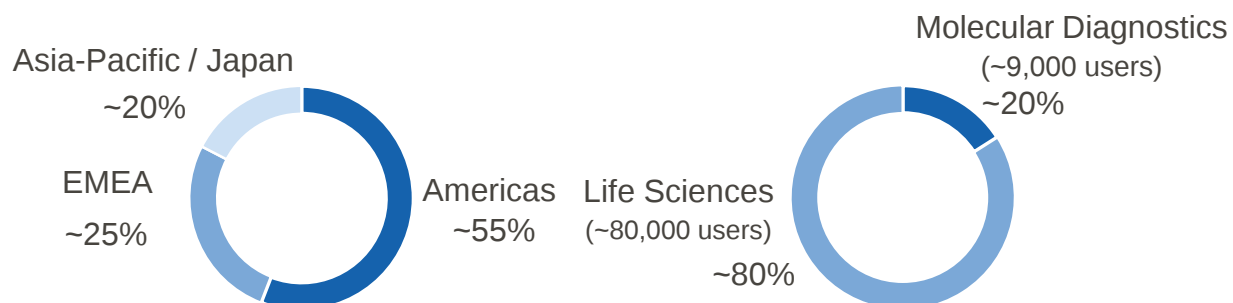
- **Bioinformatics industry transition**
Evolution of regulatory landscape accelerating entry into the mainstream of healthcare IT
- **Aggregation and analysis of big data**
Explosion of research and clinical data breaking traditional approaches to data analysis
- **Emergence of data science**
Machine Learning and Artificial Intelligence to exploit rapidly growing volumes of big data
- **Clinical data integration with genomics**
Provide context to improve outcomes and drive genomic-guided real world insights

Building the best suite of content-driven analytics

Bioinformatics sales trends⁽¹⁾



2018 sales by region and customer class



Discovery informatics

Curated research data and knowledge bases with integrated analysis and interpretation solutions

#1

Clinical testing informatics

Knowledge bases of clinically relevant variants for hereditary and somatic assays with QCI reporting

#1

Genomic-based content

Unique digital assets compiled over 20 years, curated knowledge of real-world data and experience

#1

Sample to Insight (1) Sales are distributed between QIAGEN's Life Sciences and Molecular Diagnostics customer classes

Strategy: Expand leadership in data analysis, interpretation and content

The partner of choice to get actionable insights from complex molecular and real-world data



Build on genomics leadership

Help customers achieve fast and actionable insights



Expand our datasets

Combine our curated and public data with secure access to patient datasets



Enhance data mining

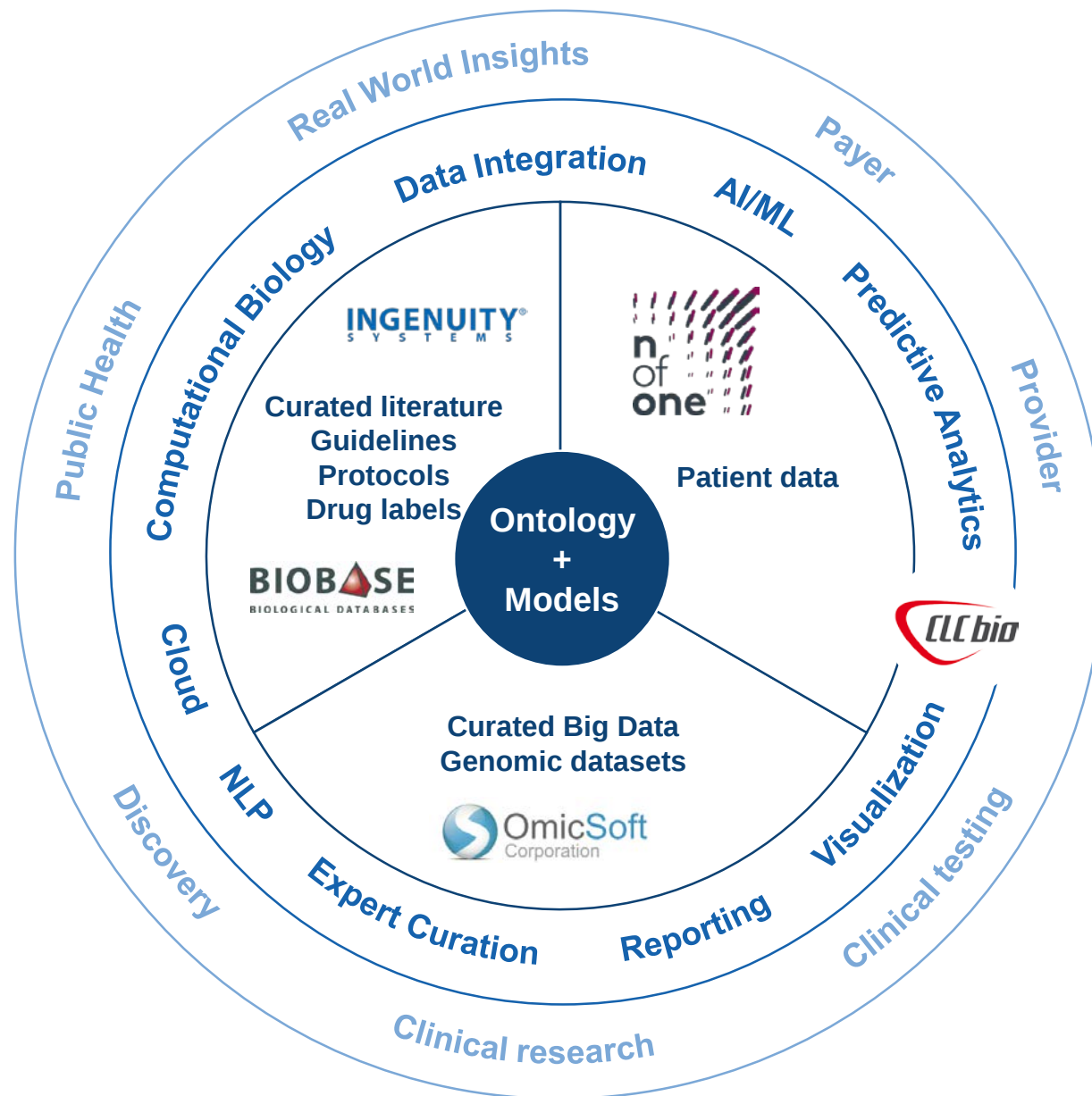
Discover new connections in data to help support better patient outcomes



Develop customer base

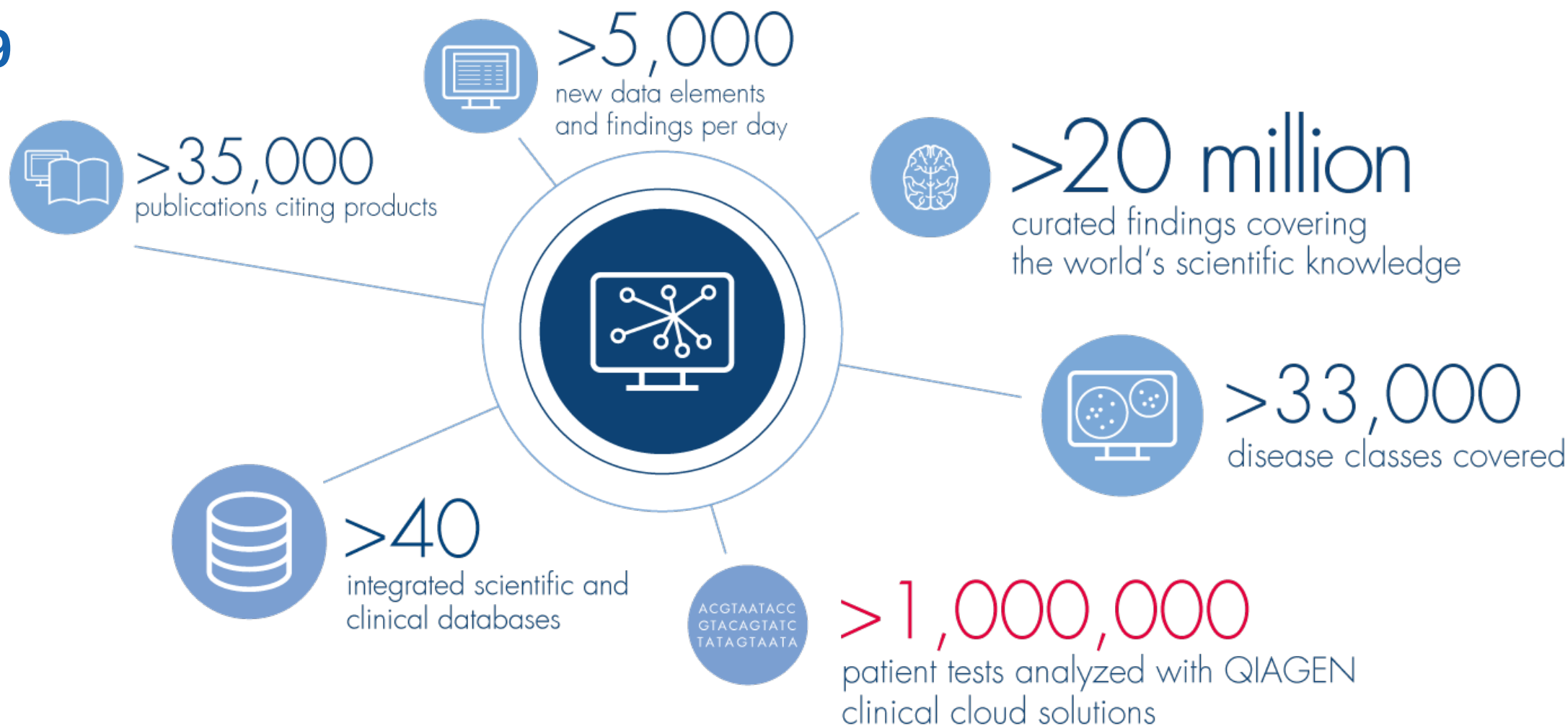
Build on our current strengths to increase QIAGEN's overall value contribution

QIAGEN is the partner of choice for actionable insights from molecular and real world data

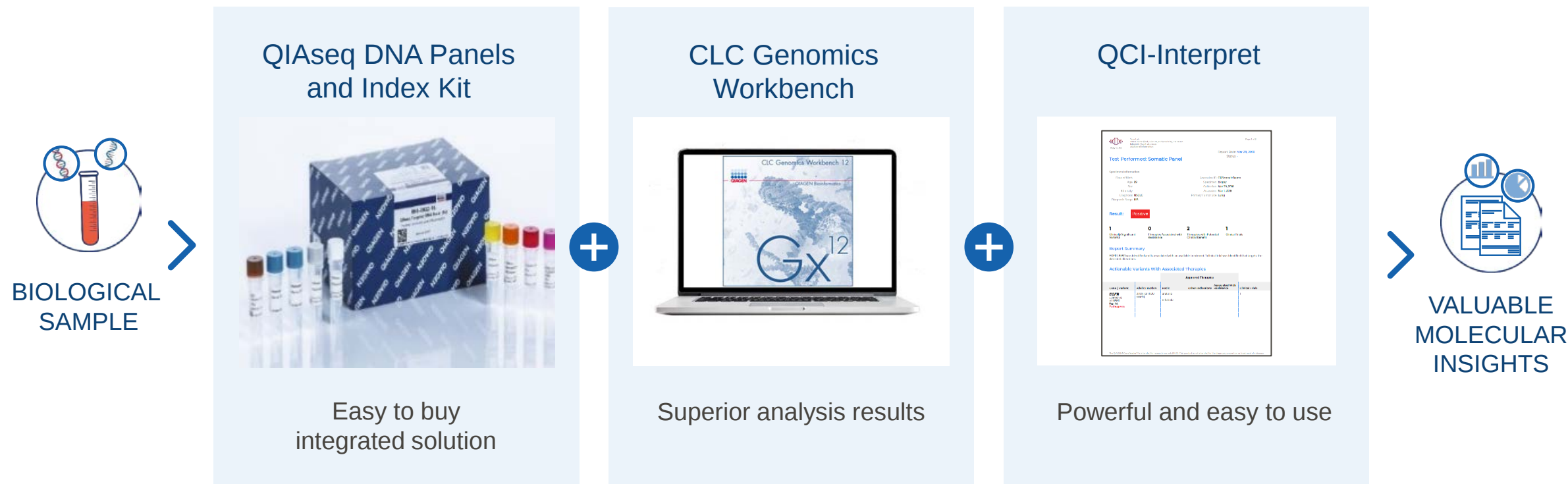


Build on genomics leadership: Help customers achieve fast and actionable insights

2019



Case study: One QIAGEN order to receive complete Sample to Insight NGS solution



Case study: QIAGEN Clinical Insight (QCI) as preferred partner for national programs



Multi-year partnership as preferred vendor for Genomics England to analyze 5 million genomes in 5 years for genetic disorders

Dr. Augusto Rendon, Director of Bioinformatics and Genomics England:

"NGS is a valuable tool for diagnosing and suggesting potential treatment approaches, but it is critical for healthcare providers to be able to interpret NGS data in the context of the vast body of knowledge from research and clinical experience."



Multi-year partnership to deliver custom NGS patient data interpretation for genetic markers for predispositions

Dr. Asmaa Al Thani, Chair of Qatar Genome and Board Vice Chairperson of Qatar Biobank:

"The mission of our Genome Programme is to create a healthier population for generations to come... We selected QIAGEN as our partner for genomic interpretation due to their leadership in bioinformatics, including a vast knowledge base that connects sequencing data with the latest research to improve clinical outcomes."

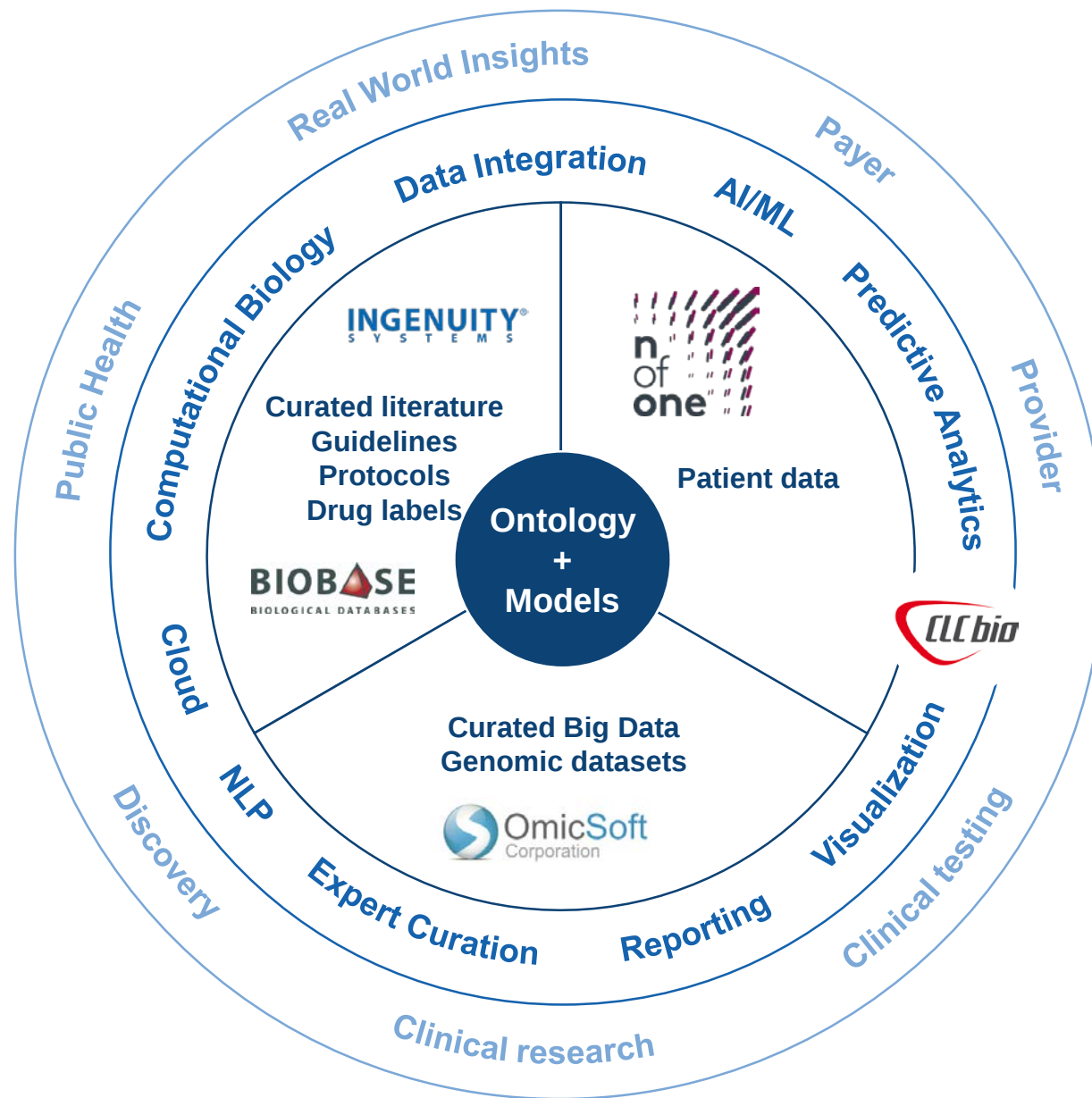


Multi-year partnership for molecular oncology and oncogenetic screening data in Japan's landmark program with NGS testing

Dr. Hiroyuki Mano, Director of C-CAT at Japan's National Cancer Center (NCC):

"C-CAT and our network of hospitals will use the QCI solution because of the breadth and depth of its professionally curated knowledge base, the ability to match patients with approved treatments or clinical trials and QIAGEN's customization of its QCI solution for C-CAT's specific needs."

Expand our datasets:
Combine our curated
and public data with
patient datasets



Expand QIAGEN datasets with unique industrial-scale expert Knowledge Base curation

A “factory process” for very large scale, systematic clinical and scientific knowledge curation

High quality • High volume • Comprehensive • Proven quality • Cost-effective



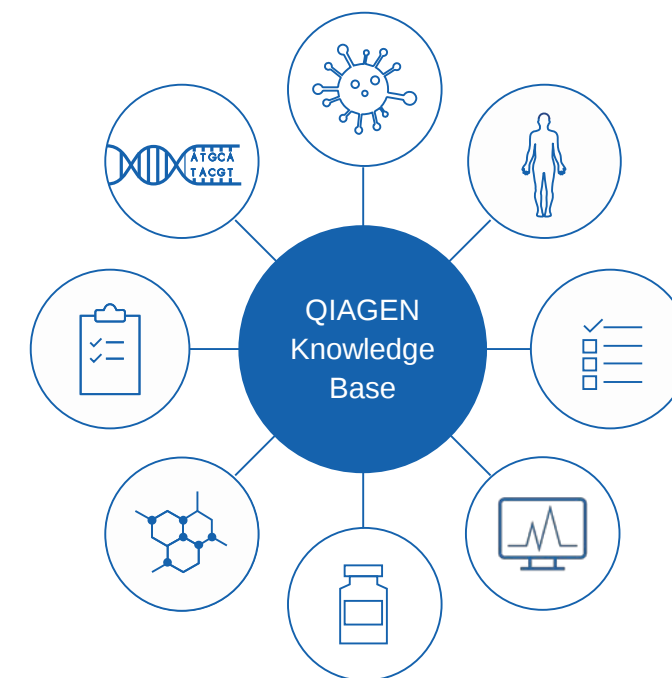
Huge collection of scientific content

- > Hard-to-search materials
- > Multiple format types

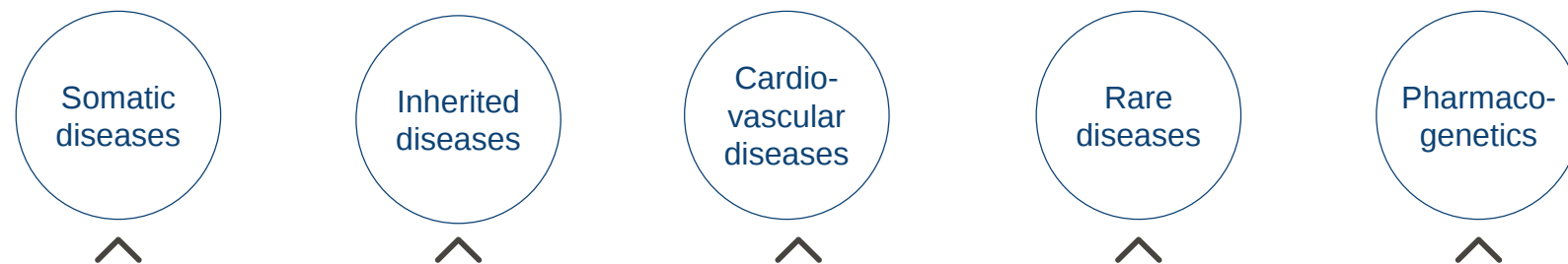


Distributed knowledge modeling

- > 4,000 human-years of effort to date
- > 20 years experience in expert curation



QIAGEN Clinical Insight (QCI) setting standards as resource for clinical decision support



QIAGEN Knowledge Base

Access to >40 scientific and clinical knowledge bases

Includes 3 proprietary QIAGEN Knowledge Bases

4 large pools of unique data assets

QIAGEN Clinical Insight (QCI)



Allele Frequency Community

OmicSoft Lands

N-of-One Marker Mine

QCI Consented Patient Data Cohort

Case study: N-of-One strengthens clinical decision support with real-world evidence

Molecular oncology decision support

- > Pioneer in molecular oncology decision support services
- Well recognized services provider for patient treatment information and clinical trials
- Strengthens leadership in clinical NGS interpretation
- Key addition to QIAGEN Clinical Insight (QCI)

N-of-One product portfolio



PrecisionInsights™

- Patient-specific clinical interpretation
- Treatment options reviewed by Ph.D.'s and oncologists



RapidInsights™

- Curation on demand
- Rapid delivery based on existing knowledge bases



GenomicInsights™

- Solutions to support drug development
- Analysis built on real-world patient database

MarkerMine

- > Anonymous patient molecular profiles
- Genes, variants, cancer types
- Associated drug sensitivity
- Current scientific evidence



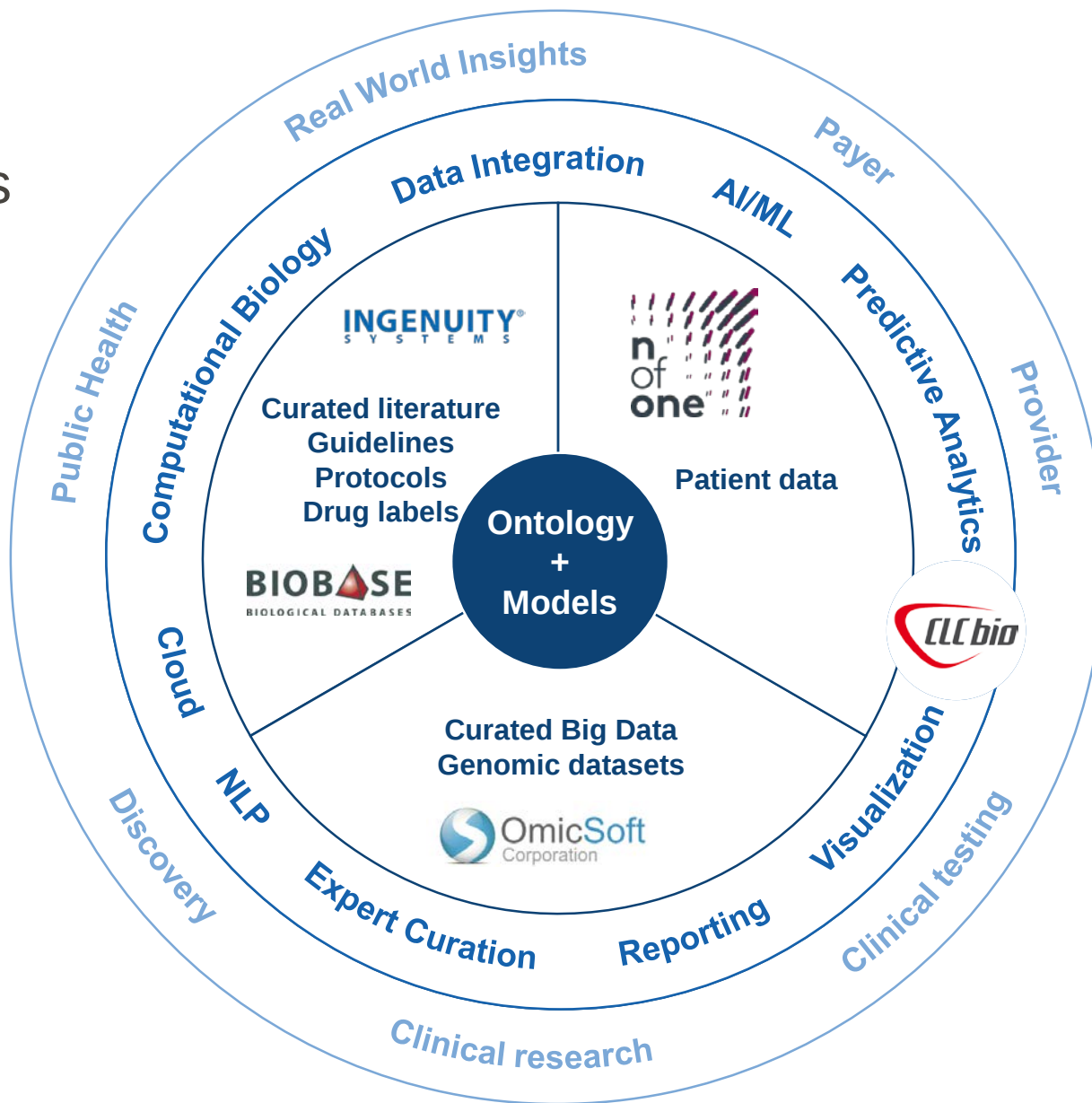
>146,000
patient cases

>136,000
unique variants

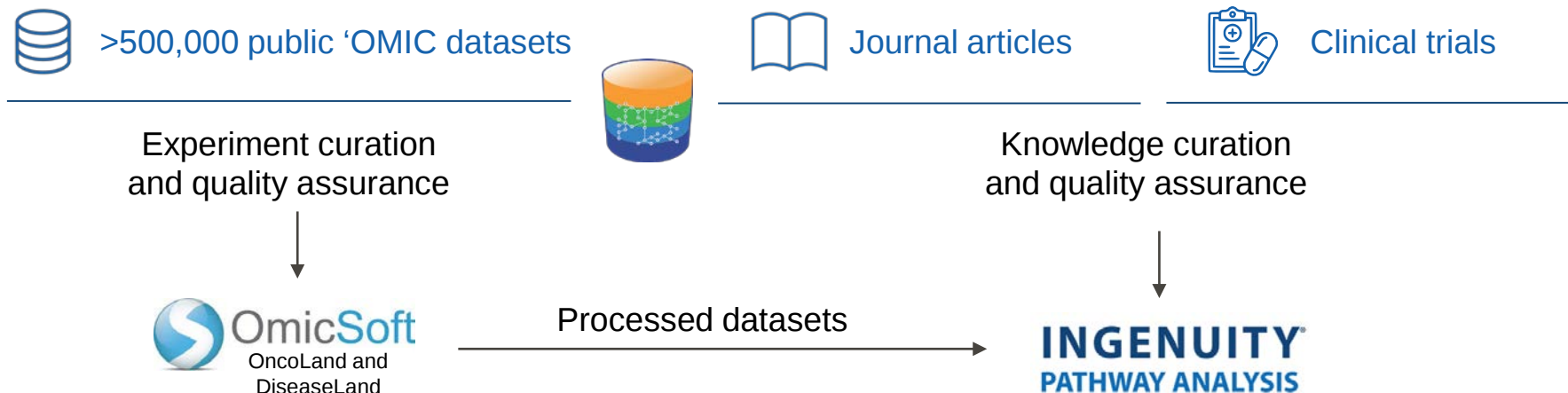
>1,100
cancer types

>2,000
genes

Enhanced data mining:
Discover new connections
in data to support better
outcomes



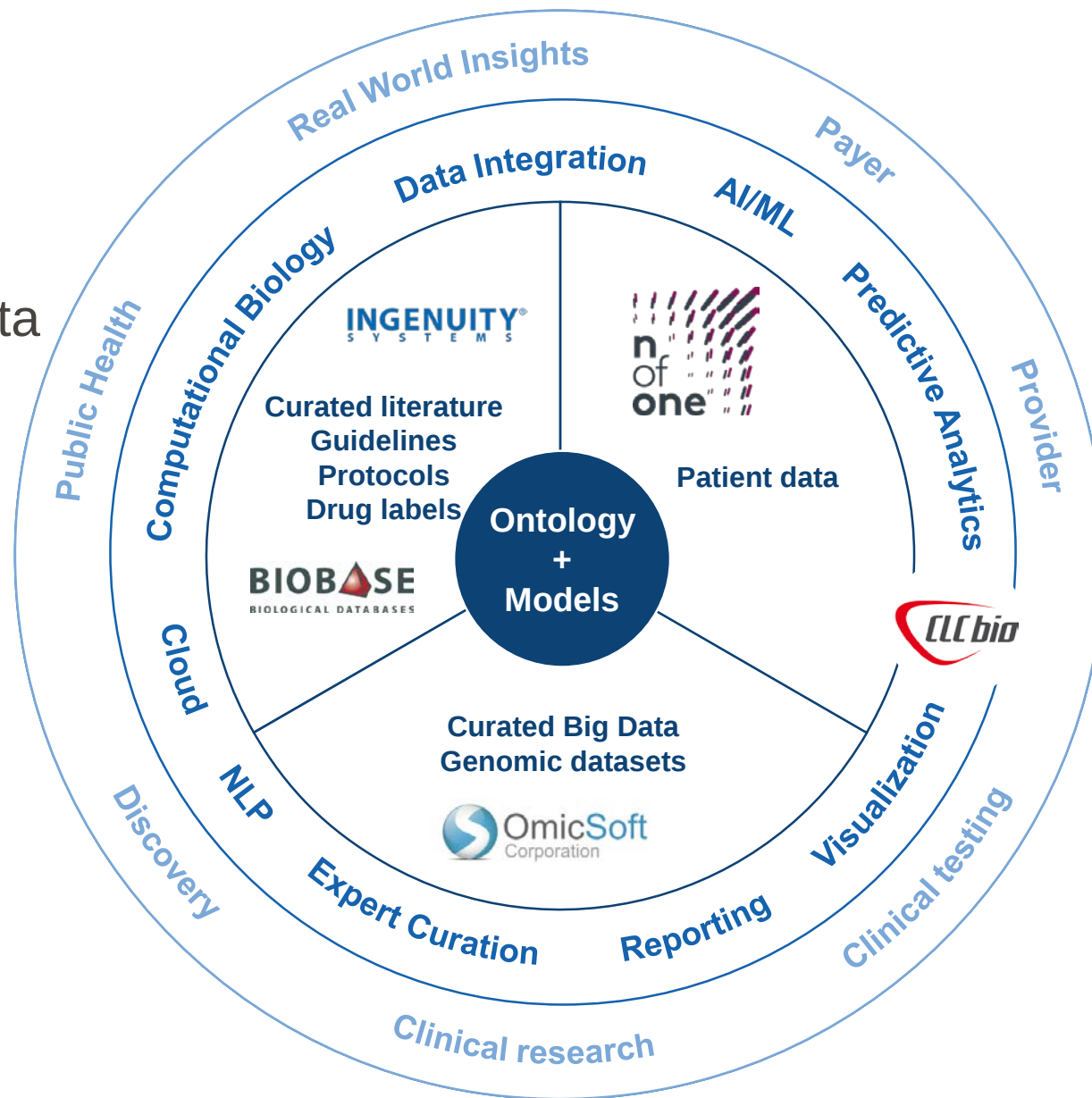
Case study: Analysis Match catalyzes value for customers with dive into comparative data



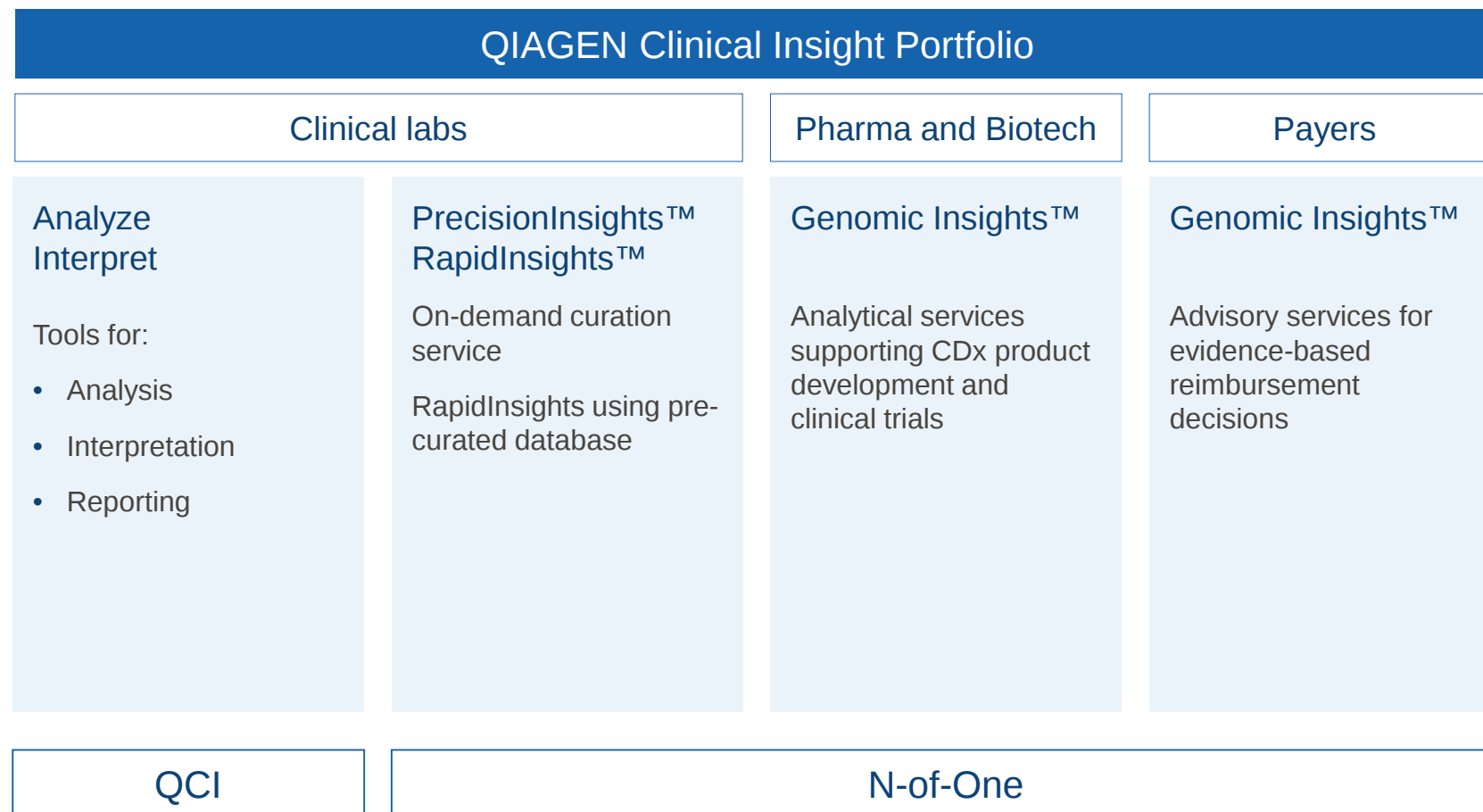
Key advantages of Analysis Match

- > Integrated view of known biology and thousands of prior experiments
- Discovers hidden connections in data, with similarities and differences
- Allows customers to build confidence in their results and gain novel insights
- Feed and validate hypotheses for more use of QIAGEN laboratory solutions

QIAGEN is the partner of choice for actionable insights from complex molecular and real world data



N-of-One helps power QCI, providing access to new markets and customer segments



Example QCI report

YOUR LAB
1700 Lincoln Blvd, Suite 20, Redwood City, CA 94063
labs.com / (855) 484-4040
Additional Information

Report Date **Sep 25, 2018**
Status -

Test Performed: Somatic Panel

Patient	Client	Specimen
Patient Name Michelle Doe Date of Birth Jan 1, 1990 Age 28 Sex Male Ethnicity Caucasian Diagnosis Mela	Client General Hospital Client ID ABC123 Physician Dr. E Smith Pathologist Dr. R Jones	Accession ID Melanoma-sample Specimen biopsy Collection Sep 24, 2018 Accession Sep 24, 2018 Primary Tumor Site Skin

Result: Positive

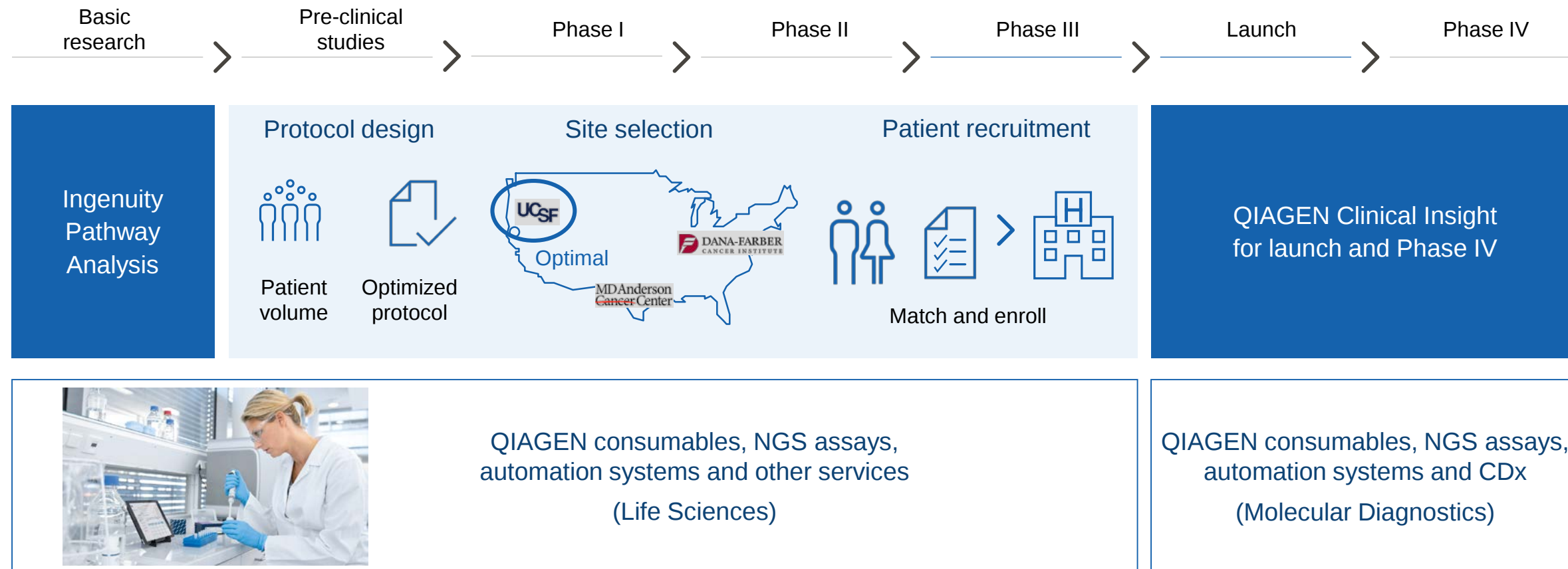
2 Clinically Significant Variants **2** Therapies with Potential Clinical Benefit **2** Clinical Trials

Actionable Variants With Associated Therapies

Gene / Variant	Allelic Fraction	Approved Therapies			Clinical Trials
		Mela	Other Indications	Associated With Resistance	
BRAF † c.1799T>A p.V600E g.140453136A>T Tier 1A Pathogenic	73.0% (of 137 reads)	dabrafenib /trametinib vemurafenib	-	-	1
TP53 † c.530C>T p.P177L g.75784000C>A Tier 2C Pathogenic	89.0% (of 76 reads)	-	-	-	1

† Allele Fraction (AF) >40% AF suggests that it may be germline and pathogenic or likely pathogenic. Recommend obtaining confirmatory germline testing.

Case study: Genomic real-world evidence to optimize drug development and CDx usage



Summary

- Transforming from tools/tech vendor to delivering real-world healthcare insights
 - Offering unique integrated data assets combined with deep analytical skills
 - Creating scale and core enterprise software capabilities
 - Supporting customers to realize complete value of genomic data
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