THE DIAGNOSTICS YEAR IN REVIEW 2016

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EXECUTIVE SUMMARY

A patient has nothing without an accurate and timely diagnosis. Diagnostics are the glue that holds the healthcare system together. An inaccurate, missed or delayed diagnosis can be the difference between profoundly different outcomes in quality and length of life.

Yet despite the critical role diagnosis plays as an integral part of any treatment plan, the Diagnostics Industry has historically been under-rewarded, underappreciated and undervalued. Long considered a less compelling, low margin/high volume business, diagnostics are increasingly becoming recognized as an integral and essential component of general medical and patient-specific care.

Health Catalysts' Diagnostics Year in Review 2016 describes the notable financial, transactional, regulatory and scientific events of the Clinical Diagnostics Industry in 2016, with a glimpse into 2017.

The Diagnostics Industry has never been an industry for the faint of heart, and 2016 was no different, requiring patience and fortitude on the part of investors but providing good justification for long-term confidence. In public market financial metrics, 2016 started slowly, picked up speed towards year-end and showed new strength in early 2017. The need for reimbursement reform was finally acknowledged with actions taken. Medicare announced their new market pricing methodology and private payors began to slowly create policies that allowed and even reimbursed genomic panels and targeted tests. Laboratory technologies improved by increasing accuracy with a wide array of analytes.

Clinical adoption of new tests and technologies have advanced in many areas during 2016. The highest visibility increases have come in genomic testing. As advanced genomics and proteomics become more accurate and less expensive, a new integrated companion diagnostics paradigm has emerged, in which diagnostics has become the gatekeeper to the success of breakthrough therapies, beginning in, but not limited to, oncology.

For consumers, "Biomarkers" and "Personalized / Precision / Predictive Medicine" became household words, even appearing in national television ads for cancer drugs and oncology treatment centers. In July 2016, the National Institutes of Health (NIH) announced the first $55 million in funding for the "All of Us" research program, that plans to enlist one million Americans to create a longitudinal personalized medicine investigation incorporating the latest diagnostic techniques. While the NIH budget for 2017 has yet to be finalized, this important research initiative is at least off the ground. The importance of recognizing individuals as consumers of and active participants in increasingly personalized healthcare, and valued participants in medical research projects has never been higher. If NIH is unable to proceed, commercial industry

players have already indicated interest in pursuing equivalent studies. Downstream in the clinic, patients demonstrated that they are learning the relevance of biomarkers, and are now requesting these analyses from their physicians before agreeing to treatment.

During 2016, the use of less invasive and non-invasive testing based upon cell-free DNA, circulating tumor cells, exosomes / extracellular vesicles (aka liquid biopsy), and non-traditional analytes such as fecal matter and breath, continued to expand and gain momentum both in research and in the clinic. A bold $900 million fundraising for Illumina's spinout of Grail, and Exact Sciences' reimbursement approvals were the high points of the year in progress toward alternatives to the invasive biopsy.

While there were few fundamentally new technologies announced in 2016, this was the year that genomic and proteomic technologies reached thresholds of consistency and cost that accelerated traction in the clinic. In academic medical centers, a wave of more advanced approaches including custom proteomic panels began to penetrate this important "bridge to the clinic". Foundation One, the commercial leader in genomic profiling assays in cancer, was performed on more than 40,000 patients, a 30%+ increase over the prior year.

Importantly, 2016 was a watershed year for the recognition of the importance of Diagnostics as a field where winning is less determined by a new lab-based innovation, and more focused on the creation of a new algorithm or computational analysis of data sets. The integration of "smart" information systems with fast and cheap cloud data processing allowed a whole new order of magnitude of data to be analyzed to aid in interpretation. If this continues, Diagnostics will soon become an information business with a wet lab on the side.

A Review of 2016 must reflect the long shadow that two highly publicized events cast over the Diagnostics Industry. The first was Theranos. The company launched a potentially transformative business model with an exciting but unproven testing technology, over $400 million in funding and a value of $9 billion. The story began with extensive press coverage: an enigmatic CEO, a board of luminaries (although almost devoid of healthcare experience), a secretive cult-like culture and the consumer appeal of cheap tests without a doctor visit or the onerous blood draw required by prevailing protocols. Early promise collapsed quickly when the underlying technology and claims proved to be unsubstantiated. *The Wall Street Journal's* exposé series on Theranos was among the most widely read in the paper's history.

What was the impact on the diagnostics industry in the wake of Theranos' demise? Prior to its implosion, companies in the same field had difficulty raising money because investors thought Theranos would sweep the current leaders aside. After the fiasco, investors avoided diagnostics entirely unless the technology was validated clinically and was generating revenues.

Can Theranos rise from the ashes? Theranos' "finger stick" technology is physiologically problematic, and is unlikely to ever match its hype, certainly not in 2017. Will the Theranos business concept of direct-to-consumer routine health tests become widespread? By the end of 2016, several prominent and respected laboratories (with published and peer-reviewed data) were utilizing and succeeding with this direct-to-consumer model. In addition, there are a dozen or more start-ups working on improved finger stick technology – so the dream lives on and will hopefully be realized.

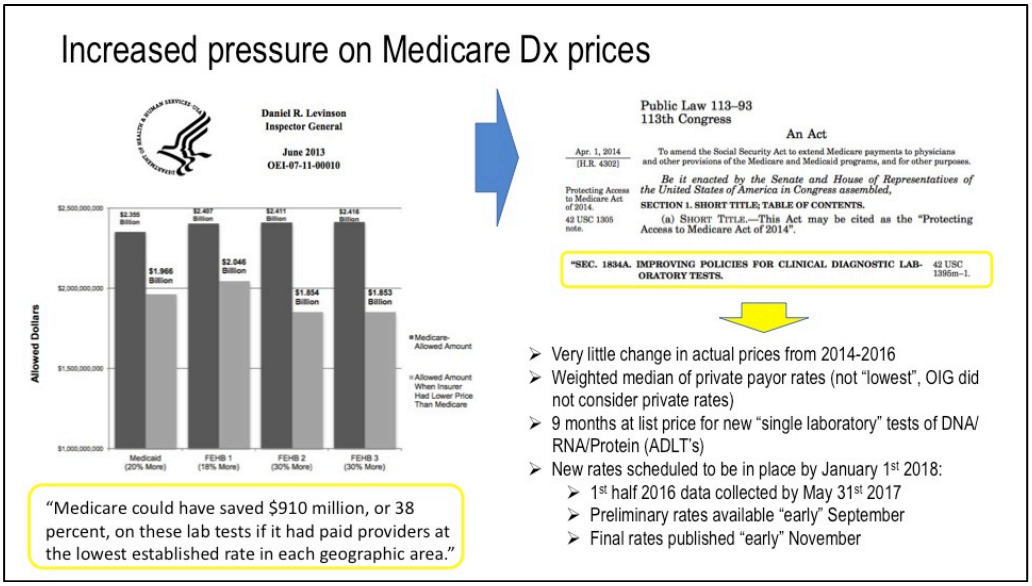
The second widely reported upheaval was Abbott's battle not to proceed with the acquisition of point of care (POC) leader, Alere, a few months after announcing its intention to do so. The logic was sound: Abbott had long aspired to build a strong position in this fast-growing segment; and Alere had built the world's strongest portfolio of POC technologies. However, the deal ran aground due to accounting and product reliability issues. In December Abbott began final legal maneuvers to annul the deal, but in April 2017, the two companies announced that they have reached a deal with the reduced price of $5.3 billion.

REGULATION AND REIMBURSEMENT

US federal reimbursement cutbacks and further Laboratory Developed Tests (LDT) oversight threatened a rocky road for 2016, but in fact there was little change in either area during the year. The new administration, still in its first 100 days, is unpredictable. But given their stance on regulations broadly, the prevailing sentiment is that there is a low likelihood of additional regulations in the near term.

The influential 2013 OIG report on Medicare "overpayment" for diagnostic testing concluded that Medicare was paying 38% more than the lowest private insurer prices for clinical testing. Steps to close this gap were embedded in the 2014 Protecting Access to Medicare (PAMA) statute. Effective lobbying throughout 2015 and 2016 made some positive headway and as a result Medicare will adopt median (not lowest) market-based pricing methodology. Importantly, special provisions were made for "advanced diagnostic tests" which included bringing to market new genomic and proteomic tests. First half 2016 actual price data submissions from select labs were due to the Centers for Medicare and Medicaid Services (CMS) by the end of March 2017, but this has been extended by 60 days to May 31, 2017 in part due to the successful efforts of the American Clinical Laboratory Association. Assuming no further postponements, it will be September 2017 when we see proposed prices, with final rules due November 2017. CMS has stated that the implementation date will remain as January 2018 – but there is still much time between now and then.

The impact of PAMA has been widely debated with a broad range of expected outcomes. Financial analysts are predicting a net industry wide 3-6% loss of revenue from Medicare. (See chart 1.1 below)



XIFIN, a leader in diagnostic billing services, has predicted as much as a 25% decline for the most commonly used tests over time with the maximum reduction per year per tests is limited to 15% for the first three years. But pricing is only one aspect of the likely change to come – the other challenge will be data gathering. Amongst smaller independent labs – the impact will be spilt. The pricing information needed from the labs will no doubt be a challenge for the smaller ones who don't have information systems that can easily adapt to the new requirements. On the other hand, PAMA may be a positive step forward at least for those firms looking for venture financing – because even if prices for certain tests suffer under PAMA, the new Medicare payment scheme may provide a higher level of transparency and predictability. For multi-test smaller reference and community labs – it is widely believed that the impact will be larger and more negative compared to the major reference labs which already receive net prices for many tests at or below the PAMA levels.

The FDA continued their commitment to personalized medicine in 2016 with more approvals of tests linked to treatment decisions. The FDA introduced the nomenclature of "complementary diagnostic" in late 2015 for diagnostics relevant to disease progression and prognosis even if there are no immediate clinical management consequences. In 2016, they approved Dako's PD-L1 IHC 28-8 pharmDX as a complementary diagnostic to assess the magnitude of benefit melanoma patients might derive from the immunotherapeutic Opdivo (nivolumab).

For companion diagnostics, 2016 established a new high - 27% of new drugs approved had diagnostics attached to them. These six companions were as follows:

- *Exondys* 51 (eteplirsen) for Duchenne Muscular Dystrophy (DMD) is dependent upon demonstration of the DMD mutation biomarker.
- *Epclusa* (sofosbuvir and velpatasvir) for chronic hepatitis C infection is directed by the HCV genotype of the viral strain present in a given patient.
- *Zepatier* (elbasvir and grazoprevir) is informed by the presence of HCV genotypes 1 and 4 in patients.
- *Rubraca* (rucaparib) for advanced ovarian cancer is informed by the BRCA1/2 gene test.
- *Venclexta* (venetoclax) for the treatment of chronic lymphocytic leukemia is indicated by the presence of a chromosome 17p deletion.
- *Tecentriq* (atezolizumab) for the treatment of advanced or metastatic urothelial cancer and metastatic non-small cell lung cancer was approved based upon PD-L1 expression levels.

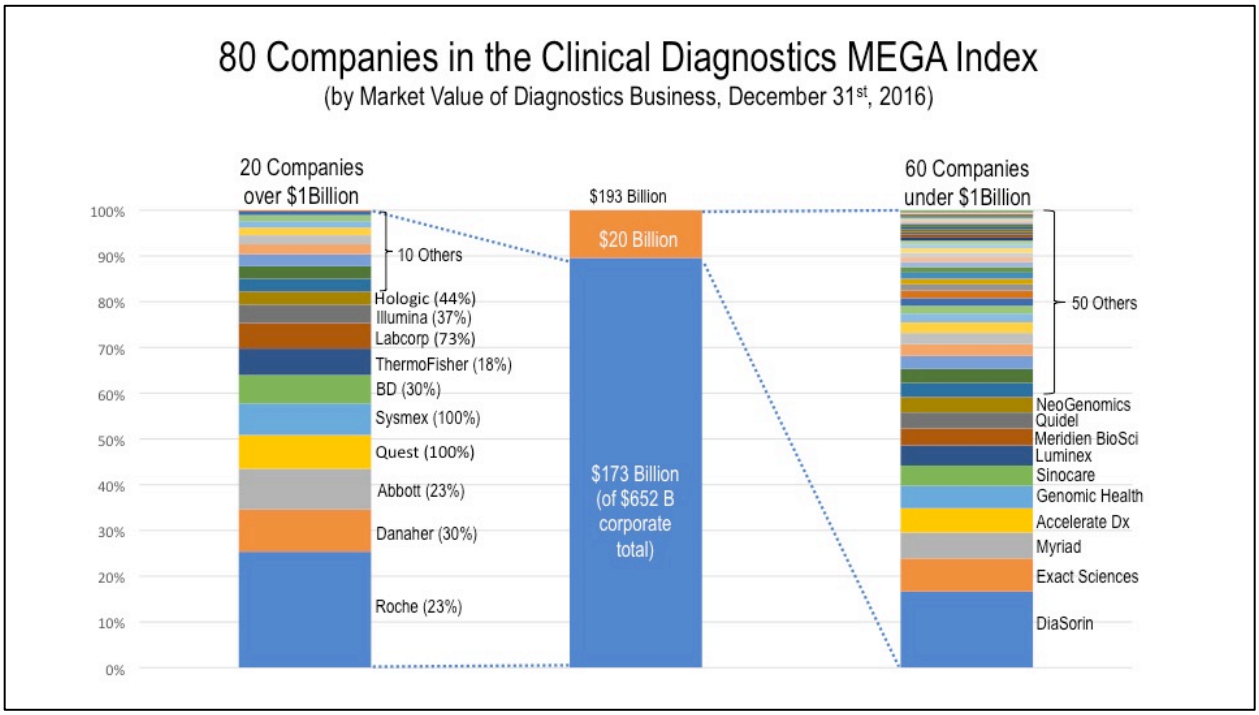
The MEGA: Diagnostic Company Index

The MEGA is comprised of 80 companies separated into two groups:

- 20 companies with more than $1 Billion in diagnostic revenue
- 60 companies with less than $1 Billion in diagnostic revenue

The MEGA analyzes stock prices and market values of these 80 companies from January 1 to December 30, 2016 with an addendum in the first quarter of 2017.

The MEGA 80 companies have total Diagnostic Revenues of $65 billion. These companies began 2016 with a diagnostics market capitalization of $203 billion, ending the year down slightly at $193 billion. (See chart 1.2 below)

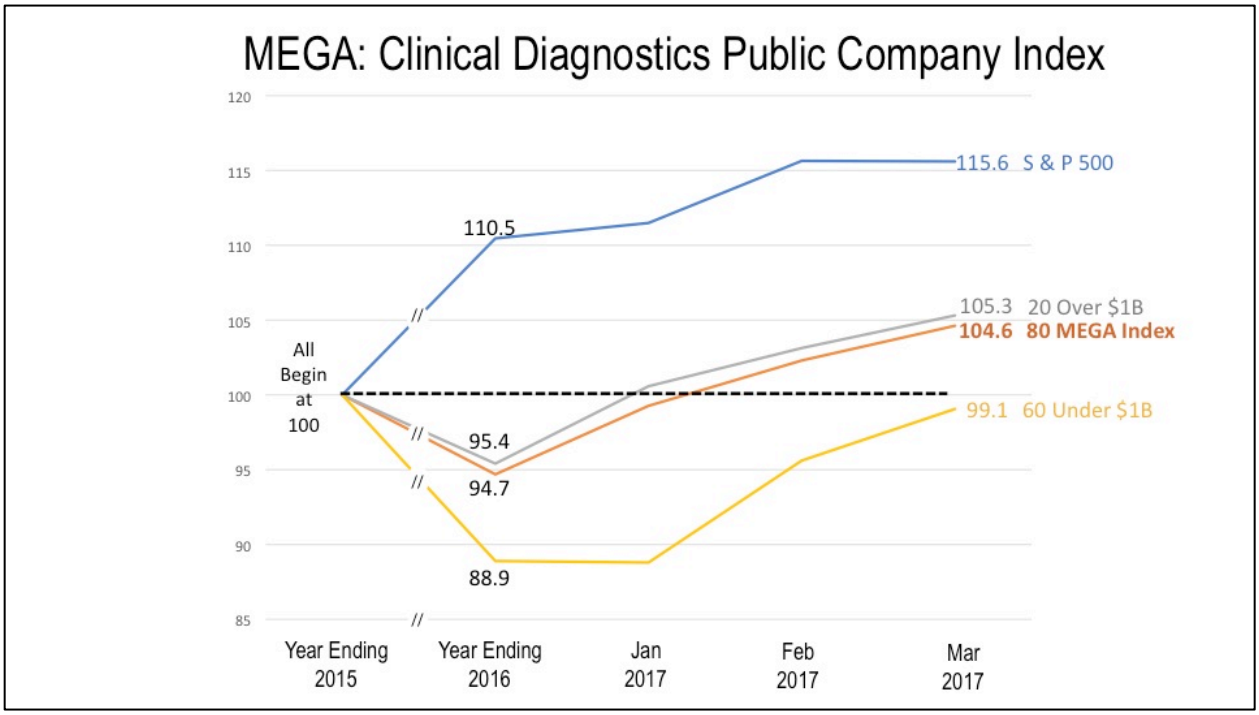


(See Appendix A for a full list of companies in the MEGA.)

- The 20 multi-billion dollar, mostly diversified, bio-science companies dominate Clinical Diagnostics. These 20 companies together produced $61 billion or 93% of 2016 Diagnostic Revenues, with the average company generating Diagnostic Revenue of $3 billion.

- The remaining 60 public companies account for 7% of Diagnostic Industry Revenue with an average company revenue of just $70 million. These smaller 60 companies generate 86% of their revenue from Clinical Diagnostics.

The MEGA index of all 80 public Diagnostics companies declined by 5.3% in 2016, a loss of 15.8% versus a broad index-linked strategy. The smaller 60 public Diagnostics companies declined more, by 11.1% on average. Volatility among the smaller companies was significant, as might be expected, with $7 billion of market value shifting from winners to losers: 17 of the 60 smaller public diagnostic companies lost 50% or more of their market value, while eight gained 50% or more. (See chart 1.3 below)



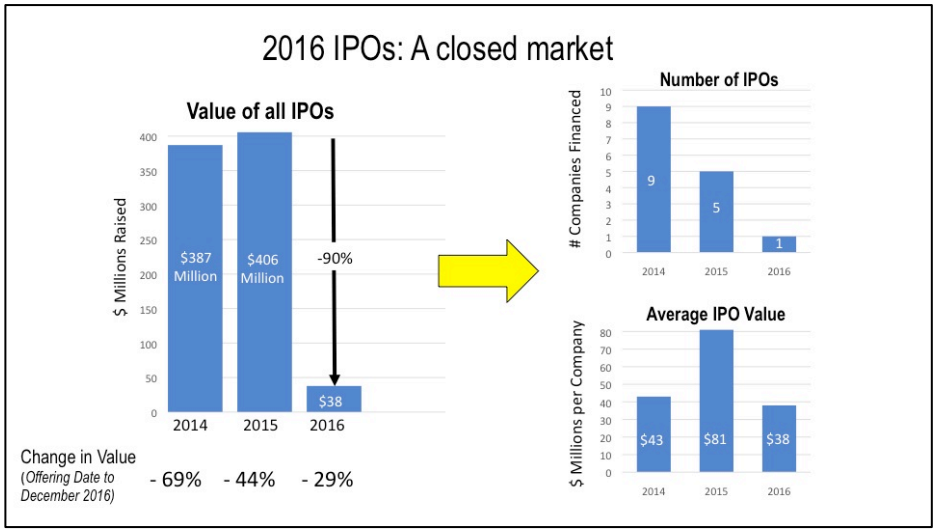
What was atypical was the high variability of many of the larger companies: an investment spread across all 20 depreciated 4.6%, but four companies appreciated more than double the S&P 500, while six companies lost value in absolute terms. Overall $25 billion of market value changed hands between winners and losers within this group of 20.

To put the Diagnostics Industry's performance in context, 2016 was a good year for the diversified market investor, with the S&P 500 index rising 10.5%.

As we begin 2017 we can be optimistic that 2016 performance is behind us. At the end of the first quarter of 2017, the overall MEGA index stands up 10.5% at 104.6, and the smaller 60 companies in the index recovered by 11.5%, almost back to their aggregate value at the beginning of 2016. This is significantly better than the S&P 500 index that is (only) up 4.6% for the year to date (an annualized rate of 19.7%, unlikely to be sustained throughout the rest of the year).

Initial Public Offerings

The Diagnostic IPO market had its leanest showing in years, with only a single private company (Fulgent) coming to market with a $38 million offering. In 2015, five companies raised $406 million; in 2014, nine companies raised $387 million. (see chart 1.5 below)

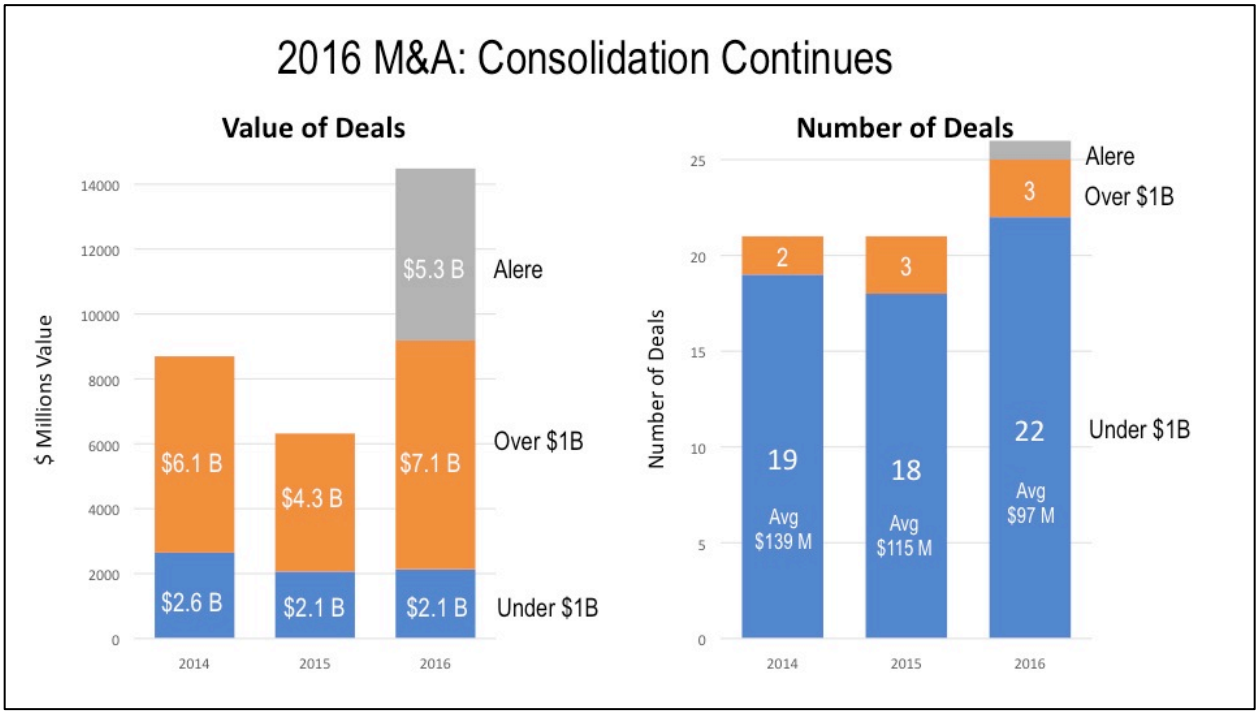


While the average of these 15 IPO's raised $57 million, the returns on their stock price have been dismal. By the end of 2016, these IPO's had lost 57% of their value since their initial offering. Some companies fared worse than others, but no IPO from these three years stood above its offering price by the end of 2016.

Given those returns – what are investors looking for? Investors' focus appears to have shifted in the last few years. Public investors in Diagnostics had been impressed with revenue traction and top-line growth potential, seeing growing testing volume tempering their concerns about reimbursement. By the end of 2016, there was more focus on sustainable business models with profitability and cash flow as primary metrics.

Mergers & Acquisitions

The Diagnostics industry has been characterized for decades by a pattern of smaller company innovation, followed by the acquisition of the winners by larger companies with the financial resources to drive their business to scale. It is these, typically, younger companies that deliver on the promise of growth in every industry, and clearly this pattern continues in Diagnostics, as demonstrated by their higher capitalization multiples, and a healthy number of new startups. The 60 smaller public companies trade at a 5.3x revenue multiple, versus the top 20 trading at 2.9x. (See chart 1.4 below)



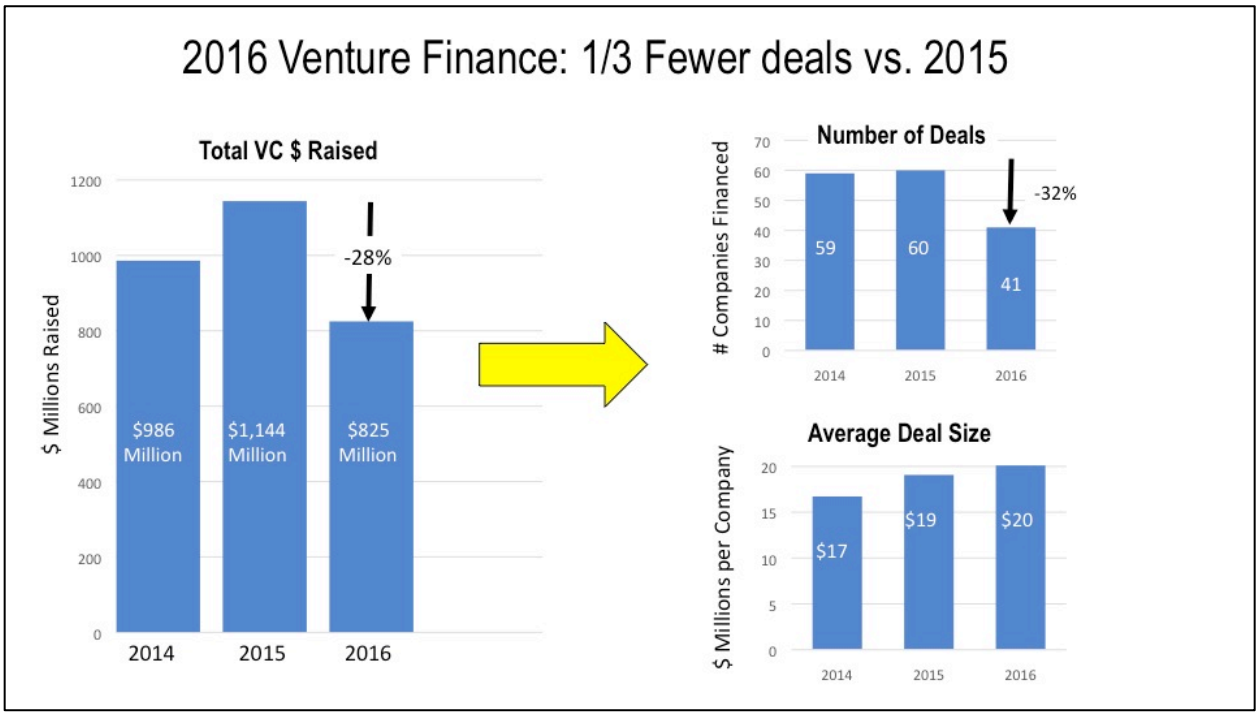
The largest players continued to consolidate their leadership while several smaller companies merged to create stronger scale businesses. $18 billion was spent on these deals during the year. Three innovative larger public companies left the public markets through acquisition in 2016 – Affymetrix (acquired by ThermoFisher), Cepheid (acquired by Danaher) and Sequenom (acquired by Labcorp).

While the Diagnostics' M&A arena has been relatively stable with roughly the same number of deals in each of the last three years – even without Alere/Abbott - 2016 was the strongest year of the bunch. Twenty-five deals (25) with a total value of more than $9 billion made for an impressive year.

VENTURE FINANCINGS

The pace at which new private companies found venture financing slowed substantially in 2016. One third fewer companies successfully raised venture money during 2016: 40 companies versus 58 in 2015 and 60 in 2014. The average amount of the venture raise stayed fairly constant over prior years at about $20 million (compared with $17 million in 2015 and $19 million in 2014).

The total raise was $810 million in 2016, versus $1,253 million in 2015, and $1,037 million in 2014. (see chart 1.6 below)



Beyond the business and financial highs and lows of 2016, it was a breakout year for innovative science and technology reaching the clinic. Important continuous incremental gains in fidelity, throughput, cost reduction, as well as massive expansion of the pathogenic and normal reference datasets critical to precision diagnosis reached the stage where clinicians can rely on them.

The most visible trend was the accelerating movement of Next Generation Sequencing (NGS) technology into specific clinical settings, i.e. oncology; prenatal non-invasive testing; newborn screening; and hard-to-diagnose rare diseases (particularly in pediatrics). NGS is quickly replacing many traditional nucleic acid tests in the clinic by performing massively parallel (multiplexed) analysis of small segments of DNA from many patients at the same time, using a bioinformatics assembly pipeline to recreate the overall sequence of the molecule and compare it to the best reference data set.

Sequencing

There were two now established avenues of distribution for clinical NGS: commercial sequencing-dedicated diagnostic companies and independent reference labs. The commercial sequencing diagnostic companies such as Ambry Genetics, GeneDx, Invitae, and Fulgent, offer low cost disease focused NGS offerings in the central lab mold of Myriad and Genomic Health. The independent reference labs have their own in-house NGS offerings, supported by vendor technology from diagnostic companies, such as Abbott, Oxford Gene Technologies, Qiagen, and Roche. With broad test availability, the steady lowering of prices and the increased use of NGS in clinical studies with resulting data prescribing use – are we close to “democratizing sequencing”?

Democratizing sequencing is dependent on costs – but it is not sufficient to look at the cost of the sequencing itself. A big challenge for NGS has always been the cost of the “before and after” support processes that sequencing requires. The “before” support is the library preparation needed to get a sample ready for the sequencer, and the “after” comprises the bio-informatics required to make meaningful clinically relevant sense of the massive quantity of data a sequencer produces. Together, these two elements comprise 75-85% of the total end-to-end NGS cost. To some degree these two elements can substitute for each other – more selective library preparation reduces the amount of irrelevant data produced and allows more patient samples per run. Frequent iterative improvements in library preparation, chemistry, automation, and bioinformatics are delivering lower costs and enabling broader NGS adoption. Illumina’s massively parallel automated chemistry and linked bio-informatics has now broken through the long-standing $1,000 genome benchmark, although only at the highest sample volumes.

Illumina announced towards the end of 2016 a $100 genome target, to be enabled by new upcoming instruments. However, neither of these target values include estimates of the full set of support costs required.

What does the next next generation of sequencing look like? Single molecule, very long read, USB stick, sequencing strategies (e.g. Oxford Nanopore, 10x Genomics, and others) have continued to make technical progress during 2016, but are still primarily used in the academic research space. They offer several key advantages: better definition of DNA structural abnormalities (e.g. inserts, deletions, repeats of sequence within a gene, and multiple gene copies within a genome); the "phasing" of variant alleles on the two strands of DNA; and better identification of single cell anomalies. When (and if) these approaches reach acceptable performance for the clinic, their low cost will enable creative destruction in the NGS industry or at the very least claim the long and hard-to-read sequencing space to the detriment of smaller companies that complement Illumina's leadership in low cost sequencing.

Concert Genetics' review of the genetic testing market, "The Current Landscape of Genetic Testing: 2017 update" estimates that: there are 69,104 genetic testing clinical products available and orderable in the US as of March 1, 2017 with 11 new ones are being added every day. 48% of all genomic tests are performed by NGS today, and NGS comprises 75% of the growth. Very high throughput at low cost allows NGS to provide high redundancy of reads at any given base and results in a high enough degree of overall accuracy to compete with traditional PCR or microarray based protocols. There are widespread efforts to expand the range of NGS therapeutic applications to common disorders such as heart disease, diabetes, and obesity, and autism.

Companion Diagnostics – Now here to stay?

Oncology is the fastest growing application of NGS based diagnostics in the clinic. Over the past 25 years the traditional "blockbuster" pharmaceutical financial model has fundamentally changed from mid-priced drugs taken by millions to high priced drugs that taken by hundreds or thousands. As the highly selective utility of these expensive drugs became apparent, pharmaceutical development economics required finding all the potentially responsive patients as quickly as possible. The companion diagnostics business was born, has grown dramatically over the past 10 years, and continues at a strong pace.

There is now a substantial and rapidly growing arsenal of oncology drugs available to the clinician each addressing a different vulnerability of cancer pathways. There is a growing awareness of the many different driver conditions that can be present in a single patient at the same time, and of the dynamics that change what drives disease progression across metastasis sites; over time; and in response to treatment. Creating carefully managed combination therapy is the wave of the future and it is driving the need for broader panels of genome and epigenome analysis. The result is that oncologists and patients need broad panels to assess all potentially effective therapies for an individual patient.

The clinical paradigm is beginning to shift from the drug centric companion diagnostic of "Find me patients for this drug" to a patient centric disease panel of "Find me all the drugs that may work in this patient for this tumor". Specific drug companion diagnostics will continue to grow because they are required for drug development and clinical trials, but they will be pushed aside by broader panels in the clinic. BRCA 1 and 2 are the two most widely ordered "single" gene tests and they provide a clear demonstration of how multigene panels grow. In mid-2013, the Supreme Court opened the BRCA market, and based on Concert Genetics data, 6 months later more than 30 multi-gene panels including BRCA had been launched into the clinic.

Today, just over 3 years later, there are 258 gene panels available, of which 75% are completely unique in terms of the genes they include beyond BRCA 1 and 2, and they serve 27 diverse clinical indications. NGS is the technology of choice for genomic analysis in the clinic.

Point of Care

Point of Care (POC) approaches have established themselves in all situations where timeliness has high value. The extreme of this trend is represented by the "lab on a chip" that offers the potential to utilize existing micro/nano fluidic technologies to multiplex analytic approaches (chemistry, immunology, nucleic acid, etc.), concurrently, to very small samples, on a single chip, in real time. A December 2016 Google search identified 242 distinct teams or companies pursuing a wide range of options in this direction. Most of the component technologies are already in use in the diagnostics industry today: automated library preparation and compact sequencing chemistry. To date, however, applications are scarce. One step in this direction is the "artificial pancreas" for Type 1 Diabetes patients. In June 2016, Dexcom presented data on the use of Continuous Glucose Monitoring (CGM) at the American Diabetes Association. The FDA expert panel determined that the Dexcom CGM system was safe, effective and had benefits that outweighed the risks. Formal FDA approval was received by

year-end. I believe that POC technology will continue to improve in accuracy and become an even more important option in the clinical setting.

The consumer versions of POC devices continue to expand as "wearables". These were not new in 2016 but we did see a shift this year as the consumer was able to gather more sophisticated and precise information from their wrist. Physicians began to take notice and have, in still isolated cases, integrate the information into treatment decisions. While accuracy of any individual data point of reading has not reached the standard of a POC or lab test, the ability to get thousands of data points instead of a dozen may proof to elucidate a more relevant view of the patient's condition. This philosophical shift – continuous information at a "low level" of precision vs. a single "perfect" data point every three months – may herald a new powerful approach to monitoring every chronic disease.

Technology Platforms

There is still substantial mileage left in traditional nucleic acid testing technologies that identify pathogens and pathogenic mutations in DNA or RNA. The industry began with PCR based tests, and evolved to include microarrays. The arsenal of creative and innovative approaches that are being applied to both of these older technologies has added a vast range of capabilities that enable new applications. For example, Real Time PCR provides viral or mutation load in a sample, and the use of droplet based (or "digital") PCR has enabled massive multiplexing of patient samples and of single cells. Recently Rutgers team announced the development of a "SuperSelective" PCR that enhances PCR sensitivity to find one DNA copy that differs from normal by only a single letter (of 2.3 billion) in a pool of 100,000 DNA sequences.

PCR is still the technology of choice when a large number of samples need to be interrogated for the presence of a limited and specific sequence present in a few copies diluted into a large sample (e.g. a few copies of a specific virus a in a liter of donated blood). PCR confirms whether or not a specific pathogen sequence or sequence mutation is present, but it tells nothing more. NGS has the opposite problem: it describes everything present whether it is of interest or not.

Microarrays have traditionally offered attractive economics in identification of structural variation in the human genome, and measurement of RNA expression (Gene Expression Profiling-GEP). 2016 saw further advances in this area, including: chromosomal microarrays (CMA) customized by Lineagen on the AffymetrixHD array (ThermoFisher) for neurodevelopmental disorder diagnosis, and application of GEP to improved thyroid nodule diagnosis by Veracyte and Rosetta Genomics.

However, as the number of genes of interest grows and is compounded by a lengthening list of known pathogenic mutations in each gene, the relative cost of PCR versus NGS strongly favors NGS. So, expect PCR applications to be increasingly cannibalized.

Concluding Thoughts

The Diagnostics Industry is finally and sustainably moving towards a positive tipping point.

First, today's diagnostics technologies are truly platform technologies that enable robust analysis with improved sensitivity and specificity with smaller and smaller samples using analytes beyond traditional blood, urine and saliva. These improvements will allow physicians to be technology agnostic and choose the best technology for each test.

Second, the long sought-after convergence between information technology and biology is now real. This integration is happening not through Business-to-Business partnerships but by Diagnostics companies hiring their own software programmers, statisticians and bio-informatics teams. Chief Information Officers are the fastest growing new senior position in diagnostic labs and test development companies.

Third, Biopharma is deeply engaged in the discussion and implementation of Diagnostics. Whether it be through enabling partnerships or diagnostic integration into all stages of clinical studies and clinical trials, researchers are committed to at least investigate what the diagnostic data can tell them about patient response differences.

Finally, Diagnostics education took large steps forward in the last few years. Medical schools found ways to add coursework on genetics and genomics after years of reluctance to change curricula. Arizona State University's School of Biomedical Diagnostics, the only school focused on establishing Diagnostics as an independent intellectual discipline, had more than 70 Master Degree students in only their third year of operations.

Diagnostics – the central core of healthcare deserving respect? Yes!

APPENDIX

The MEGA: Diagnostic Company Index - Full Company Listing

20 over $1 Billion	60 under $1 Billion	
Abbott	Abaxis	MDX Health (Belgium)
Agilent	Accelerate Dx	Medmira (Canada)
Alere	Akers Biosciences	Meridien Biosciences
Becton Dickinson	Bio-Techne (was Techne)	MetaStat Inc.
Bio-Rad	Biocartis (Belgium)	MGC Dx Corp
BioMerieux	Biocept, Inc.	Myriad Genetics
Danaher	Biomerica inc	Nanostring
Fujifilm	Bioptix Inc	Natera
Grifols	Cancer Genetics	Navidea Biopharmaceuticals
Hologic	Capnia Inc	NeoGenomics
Illumina	CareDx Inc	Oncocyte (Spinout of Biotime)
LabCorp	Check-Cap Ltd (Israel)	OpGen
Opko Health (incl. BioRef Labs)	Chembio DX	OraSure Technologies
Perkin Elmer	Combimatrix Corp	Oxford Immunotec
Qiagen	DiaSorin SpA (Italy)	Psychemedics Corp
Quest	EKF Diagnostics Holding PLC	Quidel
Roche	Enzo Biochem	Quotient Ltd UK
Siemens	Epigenomcs (Germany)	Roka Bioscience
Sysmex	Exact Sciences	Rosetta Genomics Ltd (Israel)
ThermoFisher	Foundation Medicine	Senseonics
	Fulgent Genetics	Sinocare (Shenzhen, China)
	Genetic Technologies Ltd (Aus)	SurModics Inc.
	GenMark Dx	T2 Biosystems
	Genomic Health	TearLab Corp
	Genomic Vision (France/Euro)	Transgenomic
	HTG Molecular Dx	Trinity Biotech Plc (Ireland)
	Interleukin Genetics	Trovagene
	Invitae	Veracyte
	ITUS Corporation	Vermillion
	Luminex	VolitionRX Ltd (Belgium)

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Please contact me at mara.aspinall@healthcatalysts.com for comments and suggestions for next year's - Diagnostics Year in Review 2017

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