Matchmaking And Integration In The New World Of Diagnostics M&A

Nontraditional buyers are snapping up molecular diagnostics assets with increasing frequency, applying a variety of models to enhance their businesses.

- As the value proposition for molecular diagnostics has improved, the assemblage of companies vying for promising high-value diagnostics assets has changed as well.
- Three distinct types of nontraditional acquirers have emerged: those adding molecular diagnostics as a new business; those seeking to expand their diagnostics test menu; and buyers acquiring molecular diagnostics assets as a resource for non-diagnostics product development.
- The unmet needs of each class of buyer dictate the deal rationale, the assets targeted, and the negotiating strategy, including the premium paid. Similarly, the unmet needs a buyer type seeks to address dictate the level and pace of integration.
- Based on the history of M&A activity, a range of acquirable assets is emerging, appealing to the full spectrum of buyers. An analysis of those data suggest that companies on the hit list in the next three to five years are most likely to be those who raised an A round between 2002 and 2007.

BY SOREN PETERSON, VIVEK MITTAL, AND KRISTIN POTHIER

Until recently, in vitro diagnostics were priced nearly at commodity levels and were relegated to the relative backwaters of the life science universe. That's changed, however, with the advent of molecular diagnostics tests that deliver more meaningful clinical value at correspondingly higher price points. As the value proposition has improved, the assemblage of companies vying for promising molecular diagnostics assets has changed as well. Seeking to capitalize on the potential of molecular diagnostics, nontraditional buyers have begun to enter into the sector, competing with traditional clinical diagnostics and diversified lab players such as **Beckman Coulter Inc.** (now a division of **Danaher Corp.**), **Quest Diagnostics Inc.**, and **Laboratory Corp. of America Holdings**. Deals by nontraditional buyers, which we define here as companies deriving less than 50% of revenue from diagnostics, have grown from 33% of molecular diagnostics M&A deals consummated between 2007-2008 to 63% of molecular diagnostics M&A activity between 2011-2012. (*See Exhibit 1.*) Due to their outsized role in the evolving molecular diagnostics M&A landscape, understanding the unique dynamics of these acquisitions as well as the form and structure of post-acquisition integration has consequences for all molecular diagnostics players as they predict the future makeup of the market and their position within it.

In a previous *IN VIVO* article describing the changing molecular diagnostics M&A landscape, we suggested that as the buyers of technologies change, so do the needs they seek to fulfill. (*See "Molecular Diagnostics M&A: Dormant But Not Done"* — IN VIVO, *December 2012*.) Matching the needs of an expanding list of buyers with emerging preclinical and clinical phase targets has profound implications for both parties. For acquirers, knowledge of the molecular diagnostics deal landscape is crucial to better understand the availability of and potential competition for molecular diagnostics assets. Furthermore, following acquisition, nontraditional buyers must ensure that their chosen integration strategy closely matches with the unmet needs that they sought to address. For emerging molecular diagnostics companies, recognizing and understanding the needs of potential suitors of both traditional and nontraditional makeup is crucial as these young companies evaluate paths to exits and growth.

CATEGORIZING NONTRADITIONAL BUYERS

The identity of recent nontraditional buyers in molecular diagnostics widely varies from pharmaceutical companies (e.g. **Novartis AG** and **Eli Lilly & Co.**), life science tool companies (e.g. **Illumina Inc.** and **Life Technologies Corp.**), diversified conglomerates (e.g. the **GE Healthcare** subsidiary of **General Electric Co.** and the **Siemens Healthcare Diagnostics Inc.** unit of **Siemens AG**), and entrants seemingly from sectors removed from diagnostics (e.g. the formation of **Nestle Health Science SA** within **Nestle SA**). From a list of twenty-two deals completed by nontraditional buyers between 2010 and 2013, three distinct types of acquirers emerge: buyers adding molecular diagnostics as a

new business; buyers seeking to expand their diagnostics test menu; and those acquiring molecular diagnostics assets as a resource for non-diagnostics product development. (*See Exhibit 2.*)

Roughly 42% of these deals fall into the first category, encompassing companies without a substantial molecular diagnostics portfolio which are considering molecular diagnostics as a source of growth. These buyers can be further divided into two camps: those with or without existing diagnostics or life science tool divisions. For example, Life Technologies and Illumina (via acquisitions of Pinpoint Genomics Inc. and Navigenics Inc., and **BlueGnome Ltd.** and **Verinata Health Inc.**, respectively) are seeking to leverage strengths in the development of underlying molecular technology into the clinical realm. Other players, with ready access to the clinical market through an existing portfolio of traditional diagnostics, are expanding into the quickly growing molecular diagnostics market. The 2010 acquisition of **Clarient Inc.** by GE Healthcare is a good example of an acquisitive player with an established presence in medical imaging looking to extend its reach into a molecular diagnostics market with which it has limited experience. (*See "GE Acquires Clarient To Anchor Its Molecular IVD Business"* — IN VIVO, *December 2010*.) Deals involving companies without prior exposure to either diagnostics or life science technologies and now expanding into the space include Nestle Health Science's acquisition of **Prometheus Laboratories Inc.** and **Samsung Electronics Co. Ltd.**'s 2011 leap into point of care diagnostics via the purchase of the Nexus division of **ITC Nexus Holding Co.** (now ITC), a provider of POC cardiac test kits. (*See "Nestle Gains GI Diagnostics For Nutritional Health Biz Via Prometheus Deal"* — "The Gray Sheet," *May 30, 2011*.)

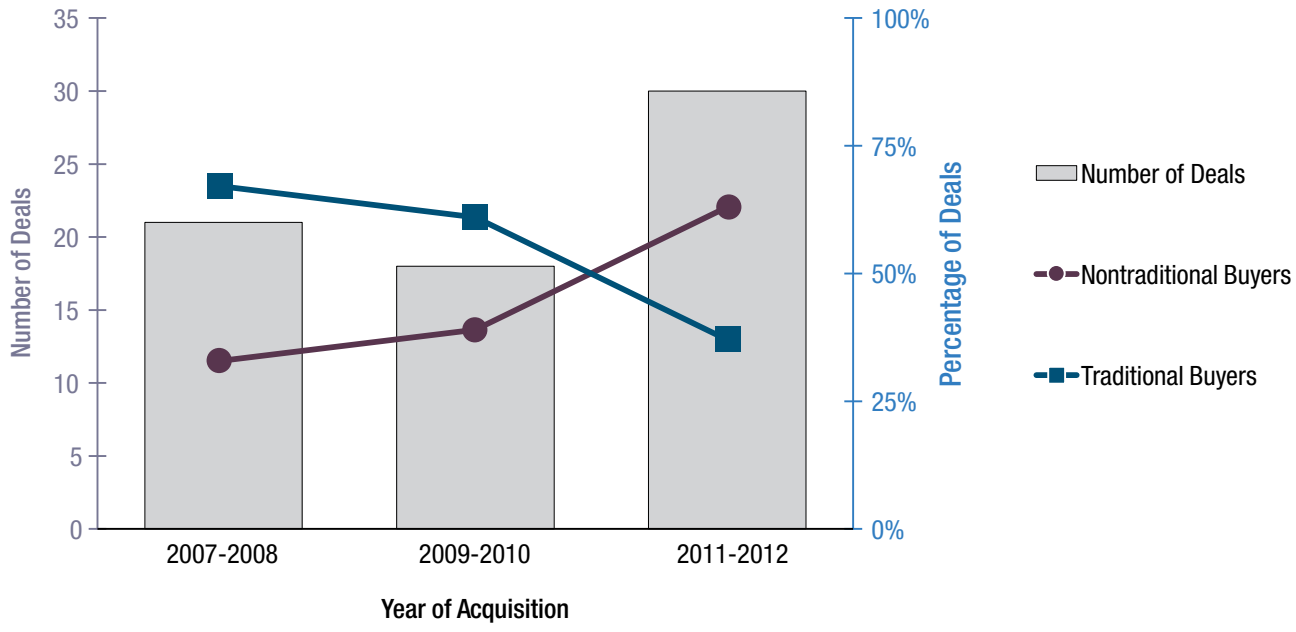
Deals involving buyers expanding their molecular diagnostics menu are almost as prevalent as those in category one. While molecular diagnostics are not a majority of the revenue for the companies in this group, they already maintain established molecular diagnostics businesses. These buyers seek to expand test offerings to existing market segments and extend reach to new clinical markets. They include both life science tool and reagent companies with established menus of molecular diagnostics (e.g. **Qiagen NV**, **Thermo Fisher Scientific Inc.**, and **PerkinElmer Inc.**) and diversified companies with substantial investments in molecular diagnostics (e.g. **Hologic Inc.**).

Finally, and to a lesser degree, some firms are acquiring molecular diagnostics as a resource for internal non-diagnostics product development. They may seek access to development capabilities for companion diagnostics – an increasingly attractive tool for market definition and commercialization for pharmaceutical companies. In order to add necessary skills to aid the development of internal pipelines, these companies are increasingly bringing in-house promising molecular diagnostics companies, as exemplified by Novartis' deal for **Genoptix Inc.**, or large data sets to guide clinical development of targeted therapeutics and companion diagnostics, as demonstrated by **Amgen Inc.**'s recent deal for **deCODE genetics EHF**. (*See "With Genoptix, Novartis Continues Its Diagnostics Build-up"* — IN VIVO, *February 2011* and *"Deals Of The Week: Teva/Xenon, Biogen Idec/Isis, Bristol-Myers Squibb/The Medicines Company"* — "The Pink Sheet," *December 17, 2012*.) Yet even with a high potential for M&A in this category, these buyers were responsible for only 18% of all deals by nontraditional players since 2010.

Buyers can certainly move over time between these categories. In 2005, Qiagen, historically a life science tool and reagents

Exhibit 1

Nontraditional Buyers Driving Molecular Diagnostics M&A



SOURCE: Elsevier's *Strategic Transactions*; Company press releases and financial filings; Health Advances analyses

Exhibit 2

Nontraditional Buyers In Molecular Diagnostics, 2010-2012

	Buyer Type 1: Adding As A New Business	Buyer Type 2: Expanding The Test Menu	Buyer Type 3: Adding As Resource For Product Development
Example Companies	*Tool companies/Non- molecular diagnostics companies:* Illumina Life Technologies Agilent GE *Other buyers:* Nestle	Thermo Fisher Qiagen PerkinElmer Hologic Danaher	Novartis Lilly Amgen
Category As A Percentage Of Deal Volume	42%	40%	18%

SOURCE: Elsevier's *Strategic Transactions*; Company press releases and financial filings; Health Advances analyses

company, began to take a molecular diagnostics tack. Beginning with the relatively small acquisition of Genaco Biomedical Products Inc., accelerating with the much larger acquisition of Digene Corp. in 2007, and continuing with its purchase of DxS Ltd. (now **Qiagen Manchester Ltd.**) and other firms into the current decade, Qiagen has evolved from a company adding molecular diagnostics as a new business to a firm expanding a menu. (*See "Taking Stock Of Qiagen"* — IN VIVO, *November 2010*.) Now, with nearly 50% of revenue derived from molecular diagnostics (and more than three-fold higher revenue as a percentage of overall sales), a legitimate case can be made that Qiagen is quickly evolving from a nontraditional buyer into a molecular diagnostics-focused company. Other firms focused on the research market, including Life Technologies and Illumina, may similarly evolve into companies expanding existing molecular diagnostics menus, depending on the success of recent acquisitions.

As nontraditional buyers enter molecular diagnostics and expand, the industry should continue to experience a growth in the number of players at scale, with test developers enjoying a correspondingly enriched buyer pool. Although molecular diagnostics may be only a portion of the growth strategy for nontraditional buyers, the new entrants tend to stay in the marketplace for future deals. According to our analyses, over 60% of the first wave of nontraditional entrants between 2005 and 2008 have continued their M&A push into molecular diagnostics since the initial foray. As reimbursement around molecular diagnostics is clarified and the market delivers top-line growth to buyers, we would expect that nontraditional (as well as traditional) buyers currently sitting on the sidelines will continue to invest in the sector.

WHAT NONTRADITIONAL BUYERS ARE LOOKING FOR

Although they share an interest in acquiring molecular diagnostics assets or expertise, the three buyer types have distinct approaches to the M&A process. Whether a nontraditional buyer is making its first foray into molecular diagnostics or continuing an ongoing expansion also influences how it values company types and technologies.

Roughly half of buyers adding molecular diagnostics as a new business unit test the waters by acquiring a small company with under $100 million in revenue, in most cases taking on newly launched tests that give them market access into growing or stable markets. These buyers are likely to slightly overpay for their assets, with a 20% richer deal up front to revenue multiple compared to acquisitions by other nontraditional buyers and nearly a 1.5x richer revenue multiple compared to more traditional molecular diagnostics buyers in the same time period. The other 50% of buyers adding molecular diagnostics as a new business unit acquire an established player with a proven portfolio at a reduced revenue multiple compared to other nontraditional acquirers.

Companies who wade into molecular diagnostics with a relatively small acquisition may be further categorized based on whether they are acquiring technology or resources to fulfill specific needs. Some are buying market access via a launched product, while others seek a platform for further internal development efforts.

GE, for example, a company with a strong history in imaging-based diagnostics, made its foray into molecular diagnostics and the pathology market with the 2010 acquisition of Clarient. For GE, this deal delivered market access to the pathology market, substantial expertise in molecular diagnostics, and allowed the opportunity to bridge the gap between its established imaging business and the burgeoning molecular diagnostics field. However, in order to fulfill these needs, GE shelled out more than 6.4x Clarient's revenue of $91.6 million, a nearly 40% higher multiple than deals involving other nontraditional buyers. In contrast, Life Technologies' smaller 2012 acquisition of Navigenics was not directed toward obtaining a clinically validated or launched product, but rather CLIA lab infrastructure

and an informatics platform that could be utilized for other molecular diagnostics efforts. Unlike GE, Life Technologies already had extensive life science tool expertise (in this case, a robust sequencing instrumentation business) that could be leveraged toward the clinical market, obviating a need to acquire additional molecular diagnostics expertise. These examples show how the unmet needs of the buyer dictate the assets targeted and the premium paid.

Those nontraditional buyers who add molecular diagnostics as a new business unit by acquiring an established player strive to address many of the same unmet needs as other new entrants. Similar to the nontraditional players mentioned above, these buyers may look to the acquisition as a mechanism to obtain market access or as an addition to internal capabilities, leveraging existing strengths. But unlike buyers acquiring smaller companies, they expect a deal to significantly impact the top and bottom lines. As a result, most of these larger dollar value acquisitions are for commercially validated companies that may serve as attractive growth or profit centers among the buyers' diverse businesses.

The recent **Agilent Technologies Inc.** acquisition of **Dako AS** is a prime example. (*See "Agilent Builds Cancer Diagnostics Biz Via Dako Acquisition For $2.2 Billion"* — "The Gray Sheet," *May 21, 2012*.) Although Agilent sought to leverage its technical expertise and global presence to grow Dako, the primary reason for the acquisition was top-line growth and a desire to lower volatility through economic cycles. Thus, Agilent was content to bring in a company with lower but steadier operating margins. The 2011 Nestle acquisition of Prometheus is another interesting twist on combining a desire for top-line growth with strategic objectives. Nestle Health Science, attempting to lock in market access to the clinical gastrointestinal market and add additional products to complement Nestle's clinical nutrition line, acquired Prometheus, a company focused on both diagnostics and drugs for gastrointestinal diseases. However, in step with these strategic goals, Nestle secured a business booking over $500 million in annual revenue at a higher margin than many of Nestle's current businesses, thus pairing a short-term growth opportunity with general strategic objectives.

Buyers who have recently entered molecular diagnostics and are adding additional products and capabilities are more likely to acquire companies with commercially validated tests and technologies. These companies follow the traditional M&A path, either executing primary acquisitions in adjacent market segments or bolt-on deals, strengthening existing businesses. Qiagen's recent approach to M&A is a good example of the first strategy. From tuberculosis test maker **Cellestis Ltd.** to prenatal testing company **AmniSure International LLC**, Qiagen has repeatedly acquired companies with established businesses as it seeks to broaden its menu of molecular diagnostics offerings. These additions have contributed much to Qiagen's top-line growth the past several years and have shifted the company's focus from its previous core research tool markets to the clinic. Other companies have made larger acquisitions to boost revenue derived from molecular diagnostics. The Hologic deal for **Gen-Probe Inc.** is one example of such a deal. Hologic had entered the molecular diagnostics arena through its 2008 acquisition of Third Wave Technologies Inc. (TWT), which gave it a portfolio of molecular HPV tests. This menu was dramatically expanded both within HPV and adjacent women's health segments through the $3.7 billion acquisition of Gen-Probe. (*See "Hologic Grabs Gen-Probe"* — IN VIVO, *May 2012*.)

Bolt-on deals have been limited by the immature nature of the emerging diagnostics businesses within new players. PerkinElmer's 2010 deal for **Signature Genomic Laboratories LLC** can be construed to be a bolt-on acquisition. Seeking to expand its reach in prenatal screening beyond its biochemical test portfolio, PerkinElmer acquired Signature, a chromosomal microarray company. Prior to the acquisition, PerkinElmer already had a focus in prenatal diagnostics through its biochemical test offerings, its 2007 acquisition of the newborn screening laboratory of **Pediatrix Medical Group Inc.**, and an established OB/GYN sales force. Together with Signature (and its recent distribution deal for Verinata's *verifi* noninvasive prenatal test), PerkinElmer has managed to assemble a significant franchise in prenatal testing with multiple testing modalities and extensive reach into over 160 million covered lives.

The needs of companies acquiring molecular diagnostics companies to assist with internal development projects are distinct from those of other nontraditional buyers. Acquirers in this category – largely pharmaceutical companies and slightly under 20% of deals reviewed – are seeking to bring in-house molecular diagnostics expertise to assist with either selection of molecular targets or patient populations. Distinct from other deals in the space, the requirement for commercially validated products that characterizes acquisitions by other nontraditional buyers seems not to apply.

When approaching expansion into molecular diagnostics, pharmaceutical companies either look for candidate companies that have diagnostics capabilities around specific disease areas or acquire broad platforms that appeal to multiple therapeutic areas. Both Novartis' acquisition of Genoptix and Lilly's acquisition of **Avid Radiopharmaceuticals Inc.** were primarily focused on specific disease areas – oncology for Genoptix and neurological diseases for Avid.

In order to access these assets, the pharmas took diverging dealmaking approaches. Novartis had the luxury of choosing from a large universe of oncology-focused diagnostics companies with similar capabilities and technologies. As a result, it was able to acquire a medium-sized, well respected molecular diagnostics firm with marketed products at a revenue premium less than 45% of deals by other nontraditional buyers. Lilly, on the other hand, sought to not only bring on diagnostics capabilities, but also garner potential future revenue from *Amyvid* (florbetapir F18), a beta amyloid imaging product. To de-risk the acquisition, Lilly approached the transaction in a manner analogous to recent drug development dealmaking. It paid a substantial upfront ($300 million) for a company with no current revenue, with additional earn-outs based on the achievement of specified regulatory and commercialization goals.

In addition, pharmaceutical companies are increasingly looking toward the acquisition of broad platforms that can be generalized across many diseases. Amgen's recent acquisition of deCODE brought on a massive dataset that can be used to identify particularly promising therapeutic targets and patient segments, potentially across multiple therapeutic areas. As patient segmentation occurs earlier in the drug development process, the need for robust datasets will become increasingly important. Similar companies holding substantial datasets may provide

future targets for other pharmaceutical companies looking to rationally design drugs to target specific patient segments.

BUYER TYPE DIRECTS THE LEVEL OF INTEGRATION

The unmet needs a buyer is seeking to address influences its approach to integration. Thus, the level of integration depends on the category of buyer. (*See Exhibit 3.*)

For buyers entering molecular diagnostics as a new business, integration strategy will be dictated by the strength of the acquired company's brand. Those seeking market access and initial top-line growth via acquisition are much more likely to allow the target company to stay relatively intact. The Illumina acquisition of blueGnome provides a good example. BlueGnome offers microarray-based products for cytogenetics and prenatal implantation genetic screening – products that have continued to produce revenue and present a large upside potential opportunity. Although future products may produce synergies with Illumina's core sequencing instrumentation business as well as the recently acquired Verinata business, currently blueGnome is a relatively independent entity. With a modest presence in molecular diagnostics prior to the acquisition, there was no need for Illumina to completely absorb the company: put another way, there was no clinical diagnostics infrastructure into which Illumina could fold blueGnome. This is also true for more bulky acquisitions of clinical customer oriented companies. The Agilent/Dako, GE/Clarient, and Nestle/Prometheus deals all exemplify companies with more significant revenue being kept by-and-large intact following the takeout. Agilent, for example, stated that cost synergy was not the primary goal following the acquisition. Dako, now a separate reporting segment within Agilent, has emerged relatively unscathed. But as Dako's operating margins are lower than those of other Agilent businesses, further integration with the goal of cost synergies may become more relevant in the future.

When the acquired assets or platforms hold little or no brand equity, integration tends to be more rapid. Recent deals by **Luminex Corp.** and Life Technologies are interesting case studies. Rather than acquiring commercially validated assets, the companies have sought to acquire platforms and progressed with relatively rapid integrations. Luminex's most recent acquisition, GenturaDx, has no launched products and does not directly interface with clinical customers, instead providing a modular RT-PCR system allowing rapid test turnaround. The acquisition serves as a platform to be utilized in conjunction with Luminex's emerging diagnostics strategy. As such, GenturaDx has quickly been incorporated into the Luminex organization. Luminex quickly sought cost savings, cutting headcount within four months of the acquisition and reassigning work to Luminex staffers.

Life Technologies' pivot to molecular diagnostics showcases a somewhat similar approach to integration. LifeTech has been an active nontraditional buyer, acquiring AcroMetrix Inc., Pinpoint Genomics, and Navigenics since 2010. AcroMetrix (diagnostics QC products) and Navigenics can be considered platform investments that help establish LifeTech's molecular diagnostics capabilities and reach. Given that neither firm was producing considerable revenue nor providing substantial market access to potential customers, it is not surprising that both were quickly absorbed, losing whatever brand identity and independence they had. Pinpoint Genomics was in late development with an early-stage non-small cell lung cancer test at the time of acquisition. However, with little brand equity and no relationships with potential customers, LifeTech chose to jettison the Pinpoint name and rebrand the diagnostic – and LifeTech over all, which used the deal to signal its arrival as a new player in molecular diagnostics.

Because many nontraditional buyers have notable synergies between established businesses and acquired molecular diagnostics assets, nearly 80% of acquisitions by companies expanding their test menu are for the most part absorbed into the larger acquiring organization. The degree to which this occurs depends on the level of potential synergies between the companies and the brand equity of

Exhibit 3

Nontraditional Buyer Integration Strategies

Deal Type	Goal Of Acquisition	Asset Characteristics	General Integration Strategy
Adding as new business	Market access	Launched product	Acquisition independence
	Platform technology	Foundation for molecular diagnostics development	Rapid absorption
Expanding test menu	Market access/Cost synergies	Commercial validation	Absorption
			Focus on cost synergies and co-promotion
Adding as resource for product development	Molecular diagnostics capabilities	Service business	Rapid absorption
	Better enable patient segmentation	Broad molecular diagnostics capabilities	Position within buyer to maximize impact on product development

SOURCE: Health Advances analyses

the acquired company. Assets that fit well with the current menu mostly are quickly absorbed. Ipsogen SA (now **Qiagen Marseille SA**), for example, was quickly absorbed by Qiagen in 2011: the nearly 80 Ipsogen diagnostic tests fit nicely with Qiagen's existing *QIAsymphony* platform menu, and Ipsogen had established little brand equity at the time of the acquisition.

More substantial acquisitions may take more time for integration. Gen-Probe immediately became the proclaimed cornerstone of Hologic's molecular diagnostics arm, leading to the closure of TWT. However, even as the foundation of a separate Hologic reporting segment, Gen-Probe has lost substantial autonomy. Former Gen-Probe businesses no longer considered strategic, such as transplant diagnostics, have been divested, with resulting substantial cost-saving synergies within a year after deal closure. Recently, Carl Hull, the former Gen-Probe CEO, stepped down as head of the diagnostics reporting unit, replaced by Rohan Hastie, PhD, a Hologic compatriot. As an observer may expect, this transition has taken longer than the digestion of smaller pieces and may take a year longer to fully realize synergies both on the revenue and cost side.

That said, not all nontraditional buyers extending a menu of marketed products fully absorb acquired assets. Targets providing significant market access to customers still retain a degree of independence. Thermo Fisher's $925 million cash acquisition of **One Lambda Inc.** in 2012 is a good example. One Lambda, the market leader in HLA typing, has significant brand equity. Thus, Thermo has chosen to keep the acquisition relatively separate, with limited cost synergies primarily derived from an improved tax structure and reduced G&A costs. Acquired companies providing strong brands and market access to testing segments outside of the buyer's expertise are also more likely to remain independent after acquisition. Signature Genomics, offering prenatal testing services outside of PerkinElmer's menu at the time of acquisition, has remained largely untouched, with a preserved brand identity and limited cross-selling.

The most rapid integration may occur when companies are adding molecular diagnostics as a resource for internal product development. Most molecular diagnostics companies acquired for this reason have lost independence and have been repositioned within the buyer organization to maximize impact on internal development projects. Where conflict has emerged between revenue producing service businesses and acquiring molecular diagnostics prowess, the integration process has served to separate the acquired organization in a manner that keeps molecular diagnostic expertise close to internal product development efforts.

Take the Novartis/Genoptix transaction. Genoptix, which was producing over $180 million in revenue at the time of the purchase, has been split in two parts. The revenue-producing Genoptix service business has resided in Novartis' global Pharmaceuticals Division, continuing to generate "immaterial" revenues, according to the latest 20-F filing. In contrast, the molecular diagnostics function of the company, designated **Novartis Molecular Diagnostics** at deal signing, has been repositioned into Novartis Oncology Global Development and has been renamed Companion Diagnostics, with a function of developing and commercializing companion diagnostics for early-, mid-, and late-stage products in development. This repositioning contrasts with some of Novartis' initial public statements, and suggests an evolved view of the value and role it sees for its internal molecular diagnostics capabilities. (*See "Novartis Follows Its Own Business Development Model into Molecular Diagnostics "* — IN VIVO, *May 2010*.)

For buyers entering molecular diagnostics as a new business, integration strategy will be dictated by the strength of the acquired company's brand.

Not all firms acquired by pharmaceutical companies necessarily cut development activities unrelated to internal projects, however. Lilly's Avid Radiopharmaceuticals, acquired both for Amyvid and for its overall diagnostics expertise, has maintained a development pipeline with academic and other industry partners and has retained a separate management structure and separate location outside of Lilly. As part of a "Tailored Therapeutics" group, Avid has become the in-house diagnostics experts at Lilly, managing relationships with vendors developing companion diagnostics for Lilly outside of Avid's immediate imaging expertise.

PAIRING EMERGING M&A TARGETS AND BUYERS

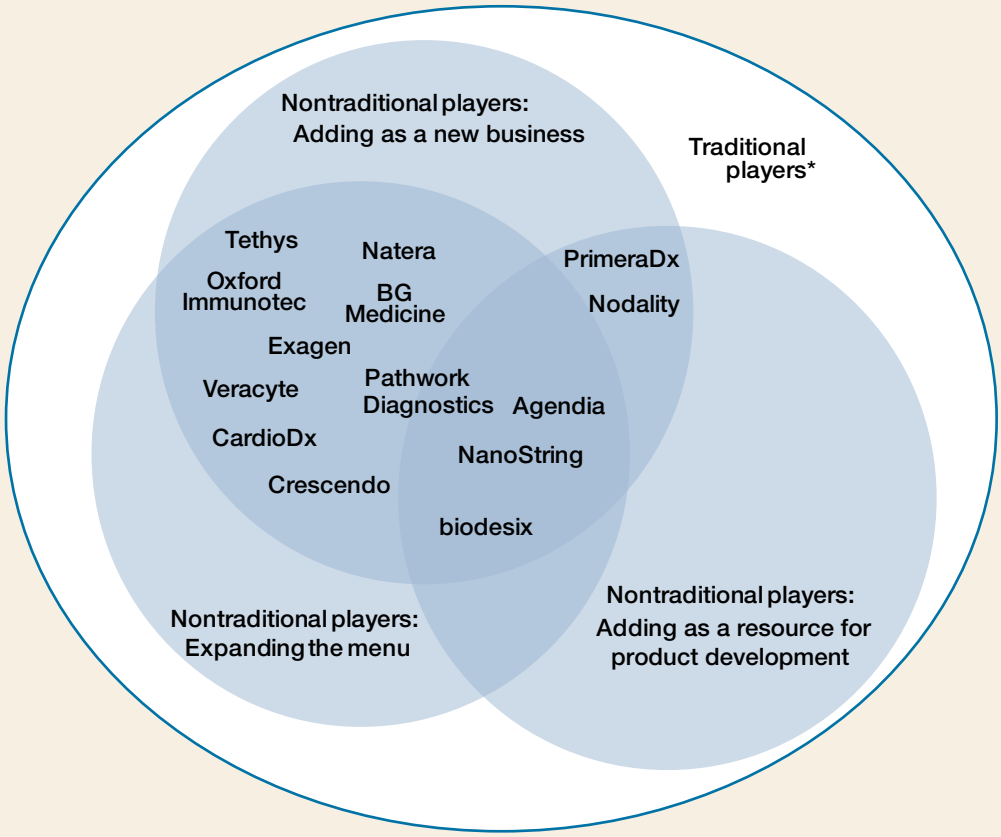
By dissecting buyer preferences and goals, a pattern emerges for prospectively pairing some of the industry's most eligible targets with broad sets of nontraditional buyers. In our previous *IN VIVO* article, we proposed an 11 year gestation time between molecular diagnostics company founding and acquisition, based on historical diagnostics industry exit data. If those historical data are predictive, we would expect that companies on the hit list in the next 3-5 years are most likely to be those companies who raised an A round between 2002 and 2007. Assets in this group range from platform-centric companies such as **Nodality Inc.** to companies with launched tests including **Crescendo Bioscience Inc.** and **CardioDx Inc.**

Based on the history of buyer activity, a range of acquirable assets is emerging, appealing to the full spectrum of buyers. (*See Exhibit 4*.) Companies entering molecular diagnostics will target companies offering either market access or platforms able to guide internal development of molecular diagnostic test panels. Buyers expanding a menu will focus predominantly on commercially validated tests able to positively impact the top and bottom line. Finally, buyers looking to molecular diagnostics as a resource for product development will value either generalizable molecular diagnostics expertise, as demonstrated by service businesses, or large data sets that may be able to guide internal development. As clinically validated products draw attention from multiple nontraditional buyer pools, target assets may attract interest from multiple entrants, potentially driving up future deal values.

Although nontraditional buyers are a potential buyer pool for emerging assets, they are certainly not the only players competing for companies. Fresh off a string of acquisitions, some firms may want to take a breather: new molecular diagnostics businesses and new markets demand managerial attention to integrate and to drive revenue expansion and operating margin growth. Whether non-

Exhibit 4

Assets Primed For Exit Are Likely To Be Attractive To Multiple Buyer Types



* Acquisition goal is to leverage existing laboratory capability or sales force with commercially validated products.

SOURCE: Health Advances analysis

traditional buyers pause or continue their molecular diagnostics M&A ambitions, they are likely to compete with additional new nontraditional players such as **EMD Millipore** (the life sciences division of **Merck KGAA**), which recently announced a CLIA lab, as well as the increasingly successful group of entrenched traditional molecular diagnostics players, including mid-tier players, such as **Myriad Genetics Inc.** and **Genomic Health Inc.**, and labs like Quest and Labcorp. Recent deals by Myriad (the acquisition of Rules-Based Medicine Inc., which is now **Myriad RBM Inc.**, and an investment in Crescendo) suggest that the company will be looking to expand its menu over the next several years. Similarly, while Genomic Health has not yet signaled that it is in the market, it may well be poised to identify assets to feed its CLIA lab and further leverage its strong sales force.

The potential rise of mid-tier diagnostics players would match well with historical data from the first spurt of nontraditional buyer activity in molecular diagnostics in the mid-2000s. Between 2005 and 2006, a number of nontraditional molecular diagnostics buyers ranging from Qiagen to Siemens and PerkinElmer rushed into the M&A marketplace, making up nearly 50% of all molecular diagnostics acquisitions. (*See "Is Diagnostics the New Biotech... and Will Pharma Embrace It?"* — IN VIVO, *September 2011*.) By the middle of 2007, nontraditional buyer activity had begun to temporarily recede, but the traditional mid-tier diagnostics players of the day, including Inverness Medical Innovations (now **Alere Inc.**), Hologic, **Cepheid**, Celera Corp. (now part of Quest), **Immucor Inc.**, and Gen-Probe increased M&A activity, leading to a particularly rich acquisition environment before the recession.

Several factors will influence the intensity of the future molecular diagnostics M&A market. The assembly line of attractive assets depends on a healthy level of VC investment, clarity in the regulatory environment, and equitable reimbursement for the value of each test. Provided that a test developer is well-poised to run through the gamut of simultaneously evolving financing, regulatory, and reimbursement environments, a diverse lineup of M&A suitors awaits. Those who have developed successful paths forward will only add to the ecosystem of innovative companies bringing meaningful clinical tools to both a rapidly changing medical system and patients in need.

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IV

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