



INVESTMENT BANKING AND STRATEGIC ADVISORY TO THE TECHNOLOGY, INFORMATION AND HEALTHCARE INDUSTRIES

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XEN Partners

Welcome to our April 2017 HIT Market Update

If the U.S. healthcare were an economy, it would be larger than the GDP of Italy. So what are some of the key drivers that can contract the size of our healthcare "GDP"? It sounds counter-intuitive. Nations strive to expand their GDP, but when it comes to healthcare, we have to reverse our thinking before it overwhelms us.

The formula behind calculating GDP is: C + G + I + NX; where C stands for private consumption or consumer spending, G is the sum of government spending, I is the sum of all the country's investments/capital expenditures and NX is nation's total net exports which, for our purposes, is inconsequential. Lets analyze each component.

As population grows, government and consumer spending on healthcare (C+G) go up accordingly, unless productivity exceeds the rate of increase. A good example of increased productivity is the rise in spending on eVisits and house calls which despite upping the number of patient/doctor encounters, they have actually reduced the total cost of physician visits. Spending on diagnostic/monitoring mobile apps as well as precision medicine will also do their part in increasing productivity and reducing costs. These technologies could summarily replace the more expensive options. But to accelerate the rate of their adoption, we need to expedite government approval and push for better reimbursement coverage.

The situation regarding prescription drug spending is more subtle. As scientific discoveries advance, new expensive drugs are developed to cure diseases. CMS cites that we spend 17% of our healthcare dollars on medication, but let us not ignore the fact that targeted therapies also mean faster recoveries, less spending on unnecessary care and shorter hospital stays. In a recent article, Marginal Revolution claimed that if we decrease the rate of cancer mortality by 10%, overtime, we can save trillions of \$\$ in the U.S. alone. So we welcome greater spending on medical research.

On the investment side (I), the good news is that there is abundance of capital for ideas that can bust the traditional ways of caring for patients. Rock Health notes that in the past few years we have invested \$4-6 billion p.a. in digital health. These investments not only raise the productivity rate of our industry, they are rapidly shifting the fulcrum of power into the hands of consumers. When consumer is in charge, costs of doing business drops. We have seen this in other sectors and the budding signs are already in sight in ours. Just take a look at the robo-advisors industry.

Conversely, the picture for the enterprise market has not been that promising. We have invested tens of billion of dollars on EHR/RCM systems with small improvements in productivity. Digitizing the industry was a key imperative and yes EHR systems were appetizing starters. That being said, lack of standardization and complex IT infrastructure have to date impeded serious progress. But that is about to change as the government pushes for interoperability and standardization even under the Trump administration. The push will come slow but the market forces will surely quicken the pace. As a result, most B to B vendors should expect lower investment dollars coming from their client base except for meeting the government's incentive programs.

Experts believe that demand for healthcare is somewhat inelastic. Surely, the sector has been out of sync with the rest of the economy. But we know that with consumer power comes more elasticity; resulting in lowering the unit cost of "care". Its time to take out our pens and rewrite the economic theories for this industry. Lets add P for productivity rate and D for disruptive technologies to the formula.

Sincerely,

Afsaret

Afsaneh Naimollah www.XENPartners.com

For further information contact:

Afsaneh Naimollah Afsaneh@XENPartners.com +1 (917) 887-4278

> Jason Panzer Jason@Marlinllc.com +1 (212) 257-6300



"What makes you think you got your medication mixed up with your wife's?"

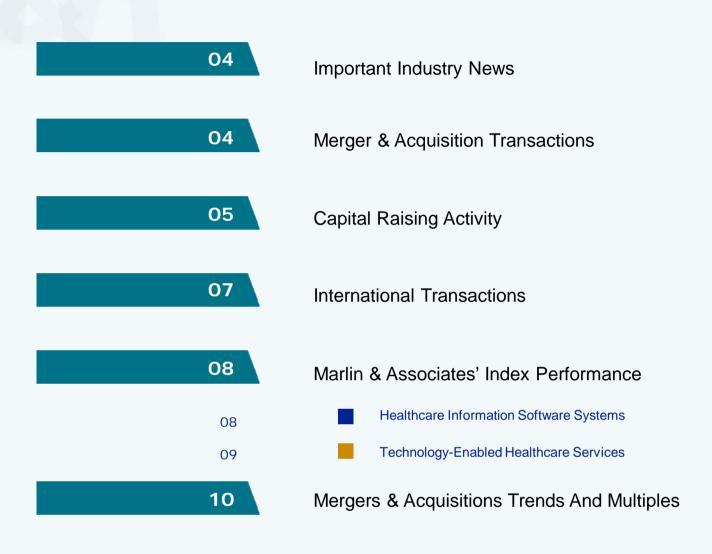
In this issue:

- Advisory Board is rumored to be eyeing Evolent Health after fending off a takeover by Elliot Management.
- Grail, the early cancer screening startup, raises over \$900 million.
- Eliza, a communication and patient engagement company, is sold to HMS for \$170 million.
- Warburg Pincus invests \$115 million in Alignment Health, a next generation healthcare delivery system.
- Lovingo Health, a digital health company for managing diabetes, raises \$52.5 million in Series D.
- NantHealth announced a \$184 million loss for 2016. Shares drop significantly. STAT accuses the founder of selfdealing.

April 2017



MARLIN & ASSOCIATES HIT MARKET UPDATE







IMPORTANT INDUSTRY NEWS

Donald Rucker is named new head at ONC (Office of National Coordinator)

Dr. Rucker is one of the most qualified candidates to run the ONC. He has been an ER doctor, an inventor, an informatics expert and a professor. He served as the CMO of Siemens for 13 years. The agency is facing some challenging times. Rucker will have a strong say on the EHR oversight and testing timeframes for the new government mandates. We just hope that he does not yield to the wishes of the big vendors who would like to kick the can down the road and delay the requirements.

NantHealth's big loss and accusations of insider dealings

NantHealth announced its first annual results since going public. For 2016 the company lost \$184 million on revenues of \$100 million. Readers recall that the company acquired NaviNet last year. We believe a substantial portion of the NantHealth's revenues comes from NaviNet. R&D spent was over \$62 million. More importantly STAT News, accuses the founder of the company, Dr. Soon-Shiong, of self-dealing and using the company as a vehicle for his other research businesses. The stock has been hammered since the findings were disclosed.

The UK government to develop AI powered avatars as physicians

University of Essex and Orbital Media and Innovative UK, are developing physician chatbot for treatment of minor ailments. It is estimated that NHS spends over \$2.5 billion on such ailments a year. The collaboration is to last 30 months. Products will be available on smart phones and will be sold as on line interactive symptom searches.

Teladoc and Accolade join forces to offer an integrated service

This is the story of two classy companies with overlapping client base joining hands to provide a stronger service to their customers. Teladoc, the leading eVisits company has joined hands with Accolade, an ondemand healthcare concierge provider for employers and health plans. The integrated service aims to help members navigate their telehealth benefits. The good news is that the budding digital health sector is coming to its own and partnerships like this are demonstrative of the organic need for a seamless care delivery. Teladoc and Accolade together can simplify and unify the patient experience without losing quality of care.

On March 1st, Teladoc announced their 2016 financial results showing 17.5 million members. The company had one million eVisits in 2016, generated over \$120 million in sales with negative EBITDA of \$44 million. Teladoc trades at 11.0x sales. We applaud all the hard work that Teladoc has done on behalf of the industry. We view the company as a true change agent.

M&A TRANSACTIONS

Genoptix, based in Carlsbad, CA is sold to Ampresand Capital Partners and 1315 Capital

Genoptix was the commercial laboratory business of Novartis which it acquired in 2011 for \$470 million. The company provides molecular profiling to oncologists and pathologists and offers clinical trial services to the bio pharma market. Novartis will retain the bio pharma business of Genoptix. Given the size of the funds involved in this transaction, we do not believe that this deal is of significant size.

Centauri Health Solutions buys Cleveland, OH- based Human Arc Corporation

Centauri provides a suite of software products that assess the current health status of Medicare, Medicaid and Health Insurance Exchange beneficiaries. Human Arc works with both providers and payers to help in identifying patients that could be eligible for government-sponsored health coverage or subsidies. The combined firms' offering will cover 20 million beneficiaries with 650 employees across six regional offices. Silversmith Capital Partners led the investment.

Human Arc has been around since 1984 with an established base of clients and impressive profitability. Centauri, which was founded only in 2015, brings a new vision and technology to the combined entity. Classic case of an "oldco" and a "newco" joining hands to make a strong combination.

Wayne-PA based Bracket is purchased by the private equity firm, Genstar

Parthenon Capital first invested in the company in 2013. Bracket is a software company serving the pharma, biotech and the CRO sectors. Genstar just closed its eight fund with \$3.9 billion of committed capital. The investment in Bracket is a good start.



Envision Healthcare buys Imaging Advantage based in Santa Monica, CA

Envision has turned M&A into an art commanding an enterprise value of \$13.5 billion. The company is a serial acquirer in many different industries from medical transportation, physician services and staffing to running ASCs. IA is a teleradiology company armed with a decent analytics capability. Goldman Sachs Merchant Banking Division was one of the larger shareholders of IA.

nThrive expands outsourcing activity via acquisition of Towson, MD-based e4e Inc.

Since the Pamplona investment in nThrive (the old MedAssets), it seems that the company has been on an acquisition spree. E4e, established in 2000, e4e is an outsourcing company covering both payers and providers. Services include claims management, audit and cost avoidance solutions. Expect a lot more acquisition by this company. This is a classic case of taking an underperforming public company private and breathing new life into its business.

TeleTechHealthcareSolutionsbuysConnextionsofOrlando,FLfromOptumHealth for \$80 million

Optum bought the company back in 2011 for \$325 million. The company has a patient engagement platform serving insurers, employers and providers. TeleTech provides customer engagement across several verticals. After this acquisition healthcare will become the largest portion of their business with \$300 million in revenue.

Ability Network buys ShiftHound based in San Diego, CA

Since its recap by Summit Partners in 2014 - purportedly for ~ \$500 million, Ability has purchased six companies. These acquisitions have successfully diversified the business from the traditional Medicare connectivity and RCM services. ShiftHound, founded in 2008, is a workforce management company covering a variety of subsectors in healthcare from long term care facilities, hospice, to urgent care and veterinary.

Ability has successfully evolved into one of the most dynamic and largest diversified HIT companies in the U.S.

Eliza, a patient communication and engagement company and based in Danvers, MA, is purchased by HMS for \$170 million

HMS is a large public company in the business of benefit management/cost containment solutions on behalf of the government and insurers. By using Eliza's outreach technologies, HMS is hoping to enhance its member communications and improve their analytics. This is a bit of a head scratcher for us but perhaps the data that Eliza can generate for HMS would be a good value in the long run.

Advisory Board is rumored to be eyeing a merger with Arlington, VA-based Evolent Health

It is hard to believe that it was only a few years ago that ABCO and others invested \$100 million in Evolent. The core value proposition of the company is helping health systems to migrate to value based care and population health management.

ABCO is a well-known name for research and best practices consulting across select industries. The company has been under considerable pressure to do something in the next generation healthcare space. But we all know that in that space, prices are high and the picking is slim. We think the combination of the two companies makes a lot of sense but the numbers do not add up. This will not be an accretive deal and if done, shareholders are being asked to take huge leap of faith.

CAPITAL RAISING ACTIVITY

Menlo Park, CA based Grail raises over \$900 million From Amazon, Bristol-Myers, Merck, Johnson & Johnson and others

Grail is a spinoff of Illumina, the largest provider of genomic analytical tools in the world. Grail is a liquid biopsy company that is working on developing early cancer detection technologies.

The momentum behind liquid biopsies is unprecedented. We all know that cancer is a traumatic and costly disease so prevention or early detection will save our system trillion of dollar overtime. This is a significant shift from risk-driven diagnostics to routine screening of healthy population. Let's hope that insurers will see the light and start reimbursing these tests.



Freenome, based in San Francisco, CA raises \$65 million in Series A

Freenome is another liquid biopsy company for early detection of cancer. The company raised over \$5.5 million from Andreessen Horowitz and others in June of 2016. The new round includes Allen & Company, Polaris, the Founders Fund amongst others. Freenome relies on machine learning to identify what signatures are most relevant to early detection. Grail, on the other hand, uses high intensity sequencing tools alongside population-scale clinical trials and computational power to arrive at its results.

Warburg Pincus invests \$115 million in Alignment Healthcare based in Orange, CA

General Atlantic, one of the most respected names in the PE industry, originally invested \$125 million in the company in April of 2014. Alignment establishes partnerships with a variety of provider organizations. Services include end to end care programs comprising of clinical care coordination, risk management and IT enablement. The company has a sophisticated methodology for risk taking spanning the assumption of full risk for clinical outcomes, on one hand, to outsourcing contracts similar to care-as-a service- taking very little clinical risk.

Livongo, based in Mountain View, CA receives \$52.5 million in Series D led by General Catalyst and Kinnevik bringing total funding to \$145 million

This is a similar company to Omada Health; both trying to tackle diabetes patients. The company combines remote monitoring with live coaches for effective disease management. With the new funds, the company plans to move into other chronic diseases and also expand internationally. One of the reasons we like Omada is because the company has invested substantial resources to validate its results via third parties; probably the main reason behind being granted a reimbursement code from Medicare (a big deal indeed). We will watch Livongo's progress with much interest.

Amino Inc. based in San Francisco, CA raises \$25 million bringing the total funding to \$45 million

The round was led by Highland Capital. Amino combines search for doctors with price transparency and appointments all in one website. The roots of the company are in the consumer space, but as we all know, the real opportunity is with payers, IDNs and selfinsured employers and that is where the company is headed. This is a very crowded space. We are not sure how Amino plans to differentiate themselves. At the end of the day, ease of use, data quality and depth as well as pricing will set apart the winners from the losers in this space.

AliveCor secures a \$30 million round of funding from Mayo Clinic and Omron Healthcare

The company had already raised close to \$15 million prior to this round. AliveCor develops EKG for mobile devices. The company's products are both consumer and professional grade. The measurements are done by putting four fingers on electrodes which are wirelessly connected to a mobile device. In 30 seconds a medical grade EKG is produced. The solution is sold for \$99. The company was voted as one of the most innovative healthcare companies by the publication, Fast Company.

Dublin, OH-based Updox raises \$13.7 million

Updox provides communication and document management solutions for medical practices. The company has a broad offering of services ranging from electronic fax to patient portal, email, appointment booking and surveys. For small physician offices, this approach is actually a sound one. There is a lot to be said about one stop shop to save time. We think Updox will continue its impressive growth.

Drchrono based in Mountain View, CA raises \$12 million in Series A

We love this company. Drchrono is one of the most progressive enterprises in the EHR space. They have an agile architecture which can plug in the latest technologies and innovations. The company started eight years ago and generates \$12 million in revenue largely catering to small practices. This funding will allow them to aim higher and get into the larger markets competing with the big guys. Box was one of the early investors. This round was led by Runa Capital based in Palo Alto.



New York City-based Aetion receives \$11.2 million from Flare Capital and others

Action provides solutions to assess real-world evidence (RWE) from a range of sources. The company's clients are predominately life science firm's and payers. The solution helps life science companies to better engage with payers and regulators. The RWE business is a big industry.

With drug prices on the rise, payers and government agencies are demanding more evidence for reimbursement. The industry spans from early stage R&D to clinical trials and the commercial phase for new drugs.

San Rafael, CA-based Conversa Health raises \$11 million

Conversa is a patient engagement and patient relationship management company. The software not only keeps the patient and the care team connected, it also helps trigger alerts based on self-reported data from patients through a curated Q&A and/or results of biometric monitoring devices.

We like this industry a lot. These solutions allow case workers to cover more patients and bring the concept of patient engagement closer to reality.

Retriever Medical based in Valhalla, NY receives minority investment from TA Associates

The company is one of the largest payment processors for the dental, physician, hospital and veterinary clinics. Retriever, founded in 1993, serves over 15,000 practices. Company claims that they are the only processor that can update the patient's file on any practice management system; substantially cutting credit card processing fees.

Over the years Retriever has become more and more sophisticated. The company offers tools that accelerate cash flow and reduce uncollectible balances through the company's credit, debit and ACH acceptance capabilities.

INTERNATIONAL TRANSACTIONS

WNS buys Houston, TX-based HealthHelp for \$95 million

HealthHelp is a benefit management company serving radiology, oncology and other disciplines. WNS of India, a diversified IT company, is an active acquirer with over \$500 million in revenue and \$1.4 billion in market capitalization. The company focuses on all aspects of insurance across a variety of sectors. This is a nice addition to their U.S. healthcare presence.

The HCI Group based in Jacksonville, FL sells 85% shareholding to the Indian conglomerate, Tech Mahindra for close to \$90 million

The deal calls for the purchase of the remaining shares over three years. HCI is one of the largest consulting groups for the implementation of EMR systems including Epic and Cerner in addition to its security consulting business. Annual sales of the company were \$110 million in the fiscal year ending September of 2016.

Tech Mahindra is a giant IT company listed on the Indian stock exchange with a market cap of over \$6.0 billion. We recall a time that Indian companies were extremely selective and shied away from paying full prices for U.S. acquisitions. Times have changed. Businesses like HCI play nicely to the strengths of Indian IT players.

Haoeyaou China raises \$40 million from Hakim Unique Internet

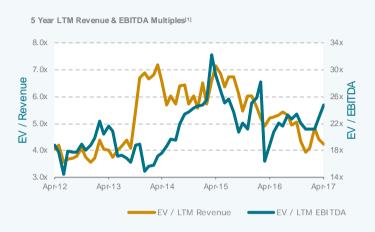
The sole purpose of this company is to connect Chinese patients to American doctors. This can be through virtual visits or arranging for travel to the U.S. for treatment.

Health tourism is an underserved market. With the Chinese consumers' improving economic condition comes demand for luxury goods including the best healthcare available in the world!



Marlin & Associates' Index Performance Healthcare Information Software Systems

Public Market Data





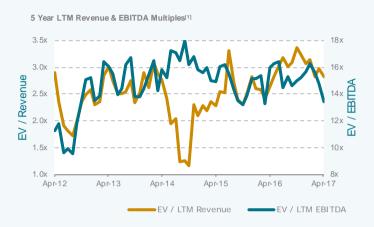
Company	Market	Enterprise	EV / Revenue		EV / EBITDA		Revenue Growth		EBITDA Margin	
(USD millions)	Сар	Value	CY2016A	CY2017E	CY2016A	CY2017E	CY2016A	CY2017E	CY2016A	CY2017E
Cerner	20,003	20,210	4.3x	3.9x	15.4x	11.8x	8%	10%	28%	33%
Veeva Systems	7,581	7,062	13.0x	10.7x	58.0x	35.1x	33%	21%	22%	31%
athenahealth	4,519	4,663	4.3x	3.6x	43.5x	15.1x	17%	19%	10%	24%
Medidata	3,325	3,214	6.9x	5.8x	49.0x	24.0x	18%	19%	14%	24%
Health Equity	2,574	2,394	13.4x	10.7x	44.0x	29.8x	41%	25%	30%	36%
Allscripts	2,323	3,986	2.6x	2.3x	26.2x	11.3x	12%	11%	10%	21%
CompuGroup Medical	2,216	2,581	4.2x	3.9x	22.4x	16.0x	3%	10%	19%	24%
The Advisory Board	1,898	2,372	3.0x	3.0x	19.1x	12.0x	5%	0%	15%	25%
Inovalon	1,853	1,547	3.6x	3.5x	20.9x	14.6x	(2%)	4%	17%	24%
Omnicell	1,514	1,714	2.5x	2.3x	27.2x	17.7x	43%	8%	9%	13%
Quality Systems	946	947	1.9x	1.8x	15.5x	10.3x	2%	2%	12%	18%
Benefitfocus	839	881	3.8x	3.3x	na	57.6x	26%	14%	na	6%
iRhythm Technologies	832	758	11.8x	8.5x	na	na	77%	39%	na	na
NantHeatlh	601	425	4.2x	2.9x	na	na	72%	47%	na	na
Invitae	401	322	12.9x	5.3x	na	na	199%	142%	na	na
Computer Programs & Systems	374	524	2.0x	1.9x	16.0x	10.6x	47%	2%	12%	18%
Trim Mean Median	2,245 1,876	2,362 2,043	5.6x 4.2x	4.4x 3.6x	28.4x 24.3x	18.0x 15.1x	29% 22%	17% 12%	16% ı 15%	23% 24%

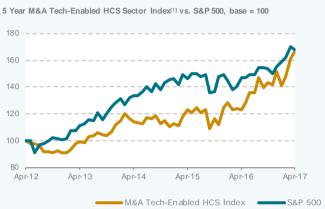
^[1] Invitae added as of 2/2/15. NantHealth added as of 6/2/16. iRhythm Technologies added as of 10/20/16.



Marlin & Associates' Index Performance Technology-Enabled Healthcare Services

Public Market Data





Company	Market E	Enterprise	EV / Revenue		EV / EBITDA		Revenue Growth		EBITDA Margin	
(USD millions)	Сар	Value	CY2016A	CY2017E	CY2016A	CY2017E	CY2016A	CY2017E	CY2016A	CY2017E
McKesson	32,914	41,074	0.2x	0.2x	8.9x	9.9x	4%	2%	2%	2%
Cotiviti	3,755	4,427	7.1x	6.4x	20.7x	16.4x	15%	11%	34%	39%
WebMD	2,909	2,962	4.2x	4.1x	15.7x	12.5x	11%	2%	27%	33%
HMS Holdings	1,745	1,767	3.6x	3.3x	18.6x	13.1x	5%	10%	19%	25%
Evolent Health	1,503	1,652	6.5x	3.9x	na	na	162%	66%	na	na
Tivity Health	1,158	1,367	2.7x	2.5x	13.1x	11.6x	11%	9%	21%	22%
Teladoc	1,153	1,131	9.2x	6.2x	na	na	59%	48%	na	na
MINDBODY	1,112	1,042	7.5x	5.8x	na	nm	37%	30%	na	3%
HealthStream	769	666	2.9x	2.6x	31.7x	18.6x	8%	12%	9%	14%
Emis	700	706	3.6x	3.4x	13.6x	10.8x	2%	5%	26%	31%
Vocera Communication	681	607	4.8x	3.8x	na	nm	23%	24%	na	5%
Castlight Health	380	265	2.6x	2.2x	na	na	35%	20%	na	na
Accretive Health (R1 RCM)	312	303	0.5x	0.7x	1.0x	nm	405%	(32%)	53%	1%
Tabula Rasa Healthcare	218	216	2.3x	1.8x	26.1x	12.9x	34%	25%	9%	14%
Cranew are	171	126	2.3x	2.0x	7.7x	6.5x	15%	16%	31%	31%
Trim Mean Median	1,492 1,133	1,545 1,087	3.9x 3.6x	3.0x 2.9x	15.1x 13.6x	11.7x 12.1x	31% 16%	20% 14%	23% 26%	20% 22%

Teladoc added as of 7/1/15, Cotiviti added as of 5/26/16, Tabula Rasa added as of 9/30/16

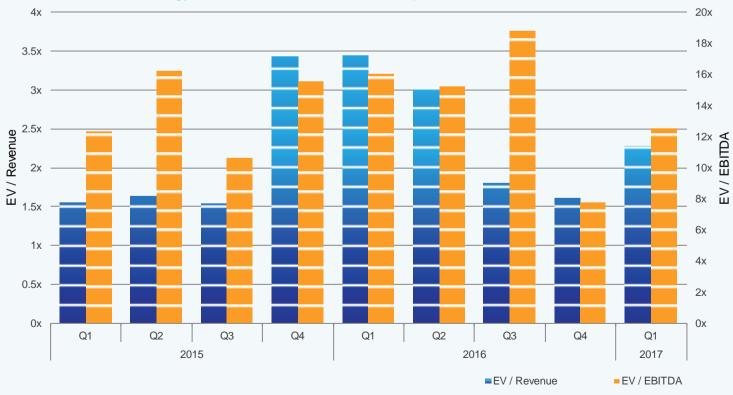


MERGERS & ACQUISITIONS TRENDS AND MULTIPLES

Healthcare Technology and Services Transaction Activity



Note: Excludes Medtronic acquisition of Covidien, Anthem acquisition of Cigna, Aetna acquisition of Humana, and Abbott acquisition of St. Jude



Healthcare Technology and Services Transaction Multiples



PEER AND INDUSTRY GROUP RECOGNITION

"We are always grateful to be recognized for our hard work, but we are more pleased that we are able to help our clients achieve the results that they seek."

Ken Marlin

Founder and Managing Partner

Boutique Investment Banking Firm of the Year (2014, 2015, 2016) - The M&A Advisor

M&A Award USA TMT Advisory Firm of the Year (2012, 2015) – Acquisition International

The M&A Advisor and The M&A Forum have recognized Marlin & Associates for excellence in multiple deal categories including:

- Cross-Border Boutique Investment Banking Firm of the Year (2016)*
- Boutique Investment Banking Firm of the Year (2014, 2015, 2016)*
- Advisory Firm of they Year (2015)*
- Middle Market International Professional Services (B-to-B) Deal of the Year (2013)
- Financial Services Deal of the Year (2013, 2012 and 2011)
- Information Technology Deal of the Year (2011)
- Middle Market Deal of the Year <\$25M (2011)
- Corporate and Strategic Acquisition of the Year (2011)
- Middle Market Financial Services Deal of the Year (2011 and 2010)
- Middle Market Information Technology Deal of the Year (2011 and 2010)
- Middle Market International Financial Services Deal of the Year (2013 and 2010)
- Middle Market International Information Technology Deal of the Year (2010)
- Middle Market Financial Services Turnaround Deal of the Year (2009)
- Middle Market Information Technology Turnaround Deal of the Year (2009)
- Middle Market International Deal of the Year(2008)
- Middle Market Financial Services Deal of the Year (2008)
- Middle Market Technology Deal of the Year (2008)
- Middle Market Investment Banking Firm of the Year (2008 and 2007)*
- Middle Market International/Cross Border Deal of the Year (2007, Below \$100M)
- Middle Market Financial Services Deal of the Year (2007, Below \$100M)
- Middle Market Financing Agent of the Year Equity (2007)*
- Middle Market Computer and Information Technology Deal of the Year (2007)

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- Financial Technology Deal of the Year (2012, 2011)
- North America Small Mid Markets Corporate Deal of the Year (2013)
- Corporate M&A Deal of the Year (2010)
- Technologies Deal of the Year (2010)

* Firm-wide Awards

TMT Advisory Firm of the Year (2016)

Boutique Investment Banking Firm of the Year (2016)

 ACQ5
(Acquisition Finance Magazine)









