

NEWSLETTER

GMAP Tech

Non-Tech Companies Fostering Technology Acquisitions

October 2020

EXECUTIVE SUMMARY

As innovation becomes key to business success, legacy firms are embarking on the inorganic growth path to leverage the latest technology from startups. And these incumbent organizations are benefiting from engaging with lean and agile startups that bring innovation faster with shorter turnaround periods. A major shift is that these companies have become more comfortable with technology, trying to recast themselves as tech companies as seen in the technology-intensive and acquisitive Aerospace & Defence, Industrial, and BFSI industries.

Companies in other industries are also active in acquiring tech firms to help reduce costs, competition, and disruption; expand to new geographies; and explore new market opportunities.

However, a particularly popular technology to garner patrons across all industries has been artificial intelligence. With companies from almost all industries acquiring or investing in AI firms to capitalize, enhance or expand their capabilities, while also adding to their skilled talent pool; this tech has had a major impact on deal-making. Other major technologies drawing attractive valuations from a diverse range of acquirers include analytics, automation, cloud, cybersecurity, and digital operations / management platforms.

Though, initially not comfortable with the high prices that many tech companies fetch, non-tech companies have now become much more fluent in the language of tech company valuations; leading to some notable large-ticket transactions in the history of deal-making.

CONTENTS

GLOBAL M&A PARTNERS

01	Introduction	04
02	Deal Drivers	06
03	Regional Trends	09
04	Deal Activity by Industry	11
	Aerospace & Defence	12
	Automotive	15
	BFSI	18
	Business Services	21
	Energy & Mining	24
	Food & Beverage	27
	Healthcare	30
	Industrial	33
	Leisure	36
	Maritime	39
	Packaging	42
	Retail of Consumer Goods	45
	Utilities / Infrastructure	48
05	GMAP Expertise in Technology	51
	Overview of GMAP Technology Team	52
	Selection of Deals Closed by Global M&A Partners in the Technology Sector	53

GLOBAL M&A PARTNERS

01 Introduction

Introduction

Companies beyond the technology sector are actively acquiring tech startups, offering stiff competition to the biggest names from Silicon Valley.

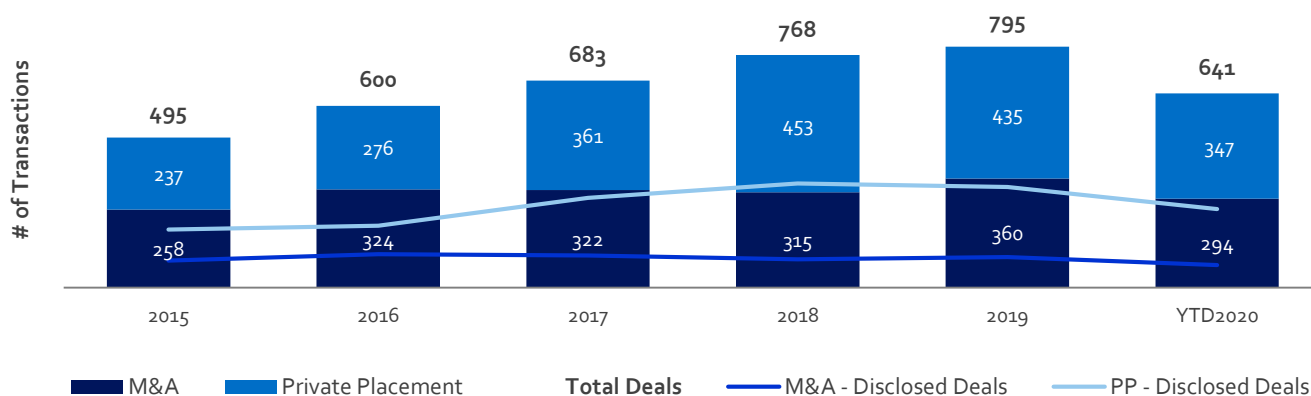
Then again, why are incumbents so keen on acquiring startups instead of developing products and services internally? Incumbent brands are facing a growing amount of pressure from major technology firms quickly encroaching on their territory. Major automakers such as Ford and General Motors are competing with Google to publicly deploy autonomous cars, while Wal-Mart is battling Amazon on the retail front. The dynamic and fast-evolving nature of technology and restricted access to the right tech talent, make acquisition considerations more preferable to building a product from the ground up for these cash-rich, non-digital companies.

This has given rise to intense cross-sectoral acquisitions and investments as incumbent brands try to assimilate new technologies into their operations and build newer offerings supplementary to their businesses as well as revenue streams.

GMAP assessed deal activity over the last 5 years (January 2015 – September 2020) to select transactions specific to disruptive* technology investments made by incumbents in select thirteen industries. In this newsletter, we highlight the key technology interests of non-tech players across each industry and select cross-sectoral deals that have changed the growth path of these players, as we know it. Deal activity screened includes both M&A and private placement transactions in the following thirteen industries:

- Aerospace & Defence
 - Automotive
 - Banking, Financial Services & Insurance (BFSI)
 - Business Services
- Energy & Mining
 - Food & Beverage
 - Healthcare
 - Industrial
 - Leisure
- Maritime
 - Packaging
 - Retail of Consumer Goods
 - Utilities / Infrastructure

Number of Transactions



The number of disruptive technology related investment by incumbents has only increased over the last 4 years and is expected to continue with this momentum in 2020 and beyond. This can be attributed to the growing need for digital business and work spaces, triggered by the onset of COVID-19, that has resulted in large-scale investments being made in the technology domain.



There’s no doubt that many non-tech companies have tried to build and have made the determination that it’s enormously challenging. It’s better to acquire disruptive technology than to be disrupted by that technology.

– **Anthony Armstrong**, Global Head of Technology M&A, Morgan Stanley



*Note: *) Disruptive technology refers to any innovative technology form including artificial intelligence, analytics, APIs, automation, big data, cloud, cryptocurrency, cybersecurity, digital platforms, machine vision, robotics, smart sensors, software applications, etc. that has upraised the industry further.*

GLOBAL M&A PARTNERS

02 Deal Drivers

Deal Drivers

Companies seek opportunities to develop their businesses by offering new and innovative products and services. With a growing digital economy, the focus has shifted toward digitally-enabled services. Firms that adapt to changing times, evolve with the use of innovative and emerging technologies. Such efforts enable them to undertake strategic decisions of acquisitions, investments, partnerships, and in-house developments, which help them thrive in the long run.

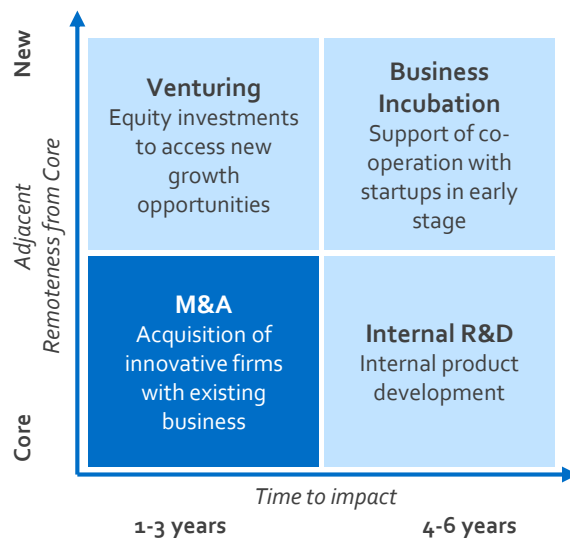
The spread of COVID-19 has also raised the importance and urgency for innovation in firms, which has increased the need for superior digital infrastructure and technology-based operations. Consequently, there is a surge in technology acquisition. In the second quarter of 2020, tech acquisitions outpaced acquisitions in other sectors, with a share of 27.0% – an increase from last year’s 24.0%. Other major drivers for technology investments include absorption of new technologies, building in-house capabilities, business transformation, cost saving, and diversification.

Absorbing New Technologies

With the rapid pace of innovation in technologies, quick business implementation is required before technology becomes obsolete. This requirement to pace up adoption and remain competitive in the market has led companies to seek acquisition rather than develop new technology offerings through internal R&D.

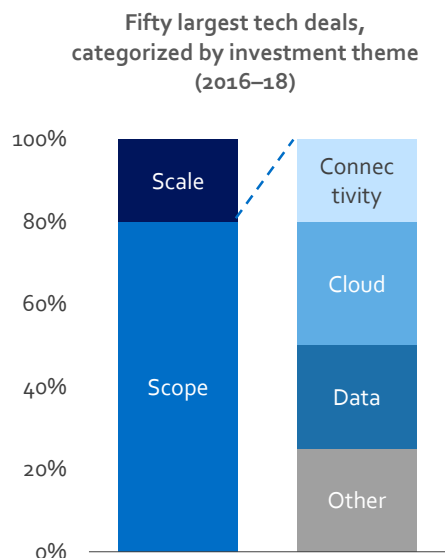
Research states that for corporates, technology is one of the most likely choices for acquisition. They also prefer acquisition of tech companies that are strategically adjacent to their core competencies.

Companies have started focusing on startups to acquire them for their intellectual property, talent, and proprietary data. M&A route is leveraged by companies to stay prepared for the latest technological advancements including the development of 5G, AI, IoT, ML, and cloud computing.



Building & Supporting In-house Capabilities

Companies across the globe are looking to acquire firms driven by technology for dealing with their vulnerabilities and capitalizing on sector shifts. Developments in the space of connectivity, cloud, and data have become indispensable across processes and sectors, making the development or acquisition of such technologies imperative for corporates to support and optimize their in-house capabilities.



Connectivity: With the development of connectivity and 5G, new product development is commonplace. Connectivity technologies have enabled companies to integrate various compelling features into their offerings, including improved security, advanced automation, and better and intelligent network infrastructure. For instance, Nokia’s acquisition of Alcatel-Lucent has helped in the expansion of its optical transmission portfolio and IP routers and switches business.

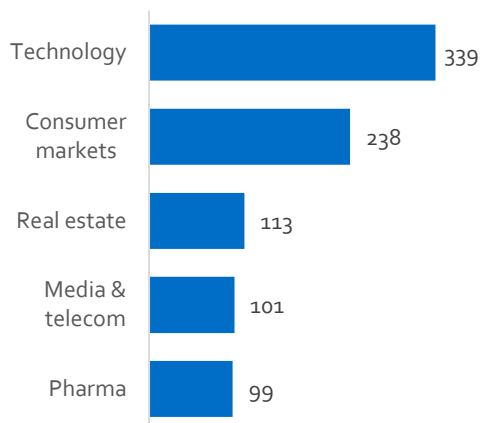
Cloud: The transition to cloud is growing at a rapid pace across sectors, leading to increased acquisitions in the cloud infrastructure and SaaS model space. Oracle’s acquisition of NetSuite to enable the shift of ERP software to the cloud is an example.

Data: Development in the field of data and analytics is quite evident, making it a necessity for firms to build relevant capabilities. With the increased value of data and analytics, companies are pursuing deals to acquire proprietary data and analytics technologies. Intel’s acquisition of Mobileye, which provides it access to better capabilities in mapping and developed location data functionality, is a major example.

Business Transformation

Companies that can foresee how tech could play a critical role in the future of their business and are willing and able to adopt them early on, will be well-positioned to drive growth for years to come. Companies need to evolve and transform key aspects of business to deliver digitally when required, as in the case of the COVID-19 crisis, which had a significant impact on businesses as well as the tech space. With more employees working remotely, many buyers are finding tech companies more attractive M&A targets to improve or supplement their existing capabilities and processes.

Technology outpaces other sectors for acquisition in Q2 2020



- The onset of the COVID-19 caused a significant drop in tech acquisitions in the first half of 2020. However, the tech deal market is expected to pace up in the near future.
- Financially strong companies with heavy capitalization are expected to indulge in M&A activities for accelerating recovery through business transformation.
- Reduced valuation will further accelerate industry convergence as different sectors look for technology to ensure faster recovery.
- Major boost in enterprise SaaS, cloud, and subscription-based models is expected to continue. This has led to increased valuations and a higher number of IPOs in tech space in the second half of the year.
- Software segments such as food-delivery applications are also expected to witness significant growth, provided the restrictions for indoor dining. Major acquisitions such as DoorDash’s acquisition of Caviar and JustEatTakeaway.com’s acquisition of Grubhub showcase the significance of acquisitions in this space.

Cost Saving

Non-tech companies are embarking on a digital transformation journey through tech acquisitions, since building their own technology stack would involve substantial costs. This also allows acquiring skills and technology quickly at a lower cost, comparing to developing it in-house.

- Firms have access to research and development efforts, which allow for better development or room to cut costs in production when applied to their counterpart firm without sacrificing quality.
- Non-tech companies are acquiring tech companies to enhance supply chain efficiencies by leveraging technologies of the target firm.
- Big companies have access to proprietary technology and can integrate new technology into their existing business by acquisition of tech startups.
- Non-tech firms will not have to pay the target firm a fee for access to its patent, since acquisition may transfer the right of that patent to the acquirer, thus eliminating the expense.

Diversification

Diversification through acquisition has been attractive for companies seeking to explore new business segments, product line, or geography. Non-tech acquirers are able to easily integrate innovation to create value in their existing business or create a complementary product and service. For instance, infrastructure contractors are acquiring technology companies to enable the delivery of “Smart City” solutions while automotive OEMs are acquiring software houses to advance the progress of autonomous vehicles. Such acquisitions help companies provide new emerging technology solutions that are complementary to their businesses and strengthen their efforts surrounding diversification.

Diversification through acquisitions is attractive for companies as it allows them to reach scale quickly when expanding into a new product line or geography and contrasts favourably with the time and cost involved in pursuing organic growth opportunities

– **Maura McLaughlin**, Partner of M&A Development, Arthur Cox

GLOBAL M&A PARTNERS

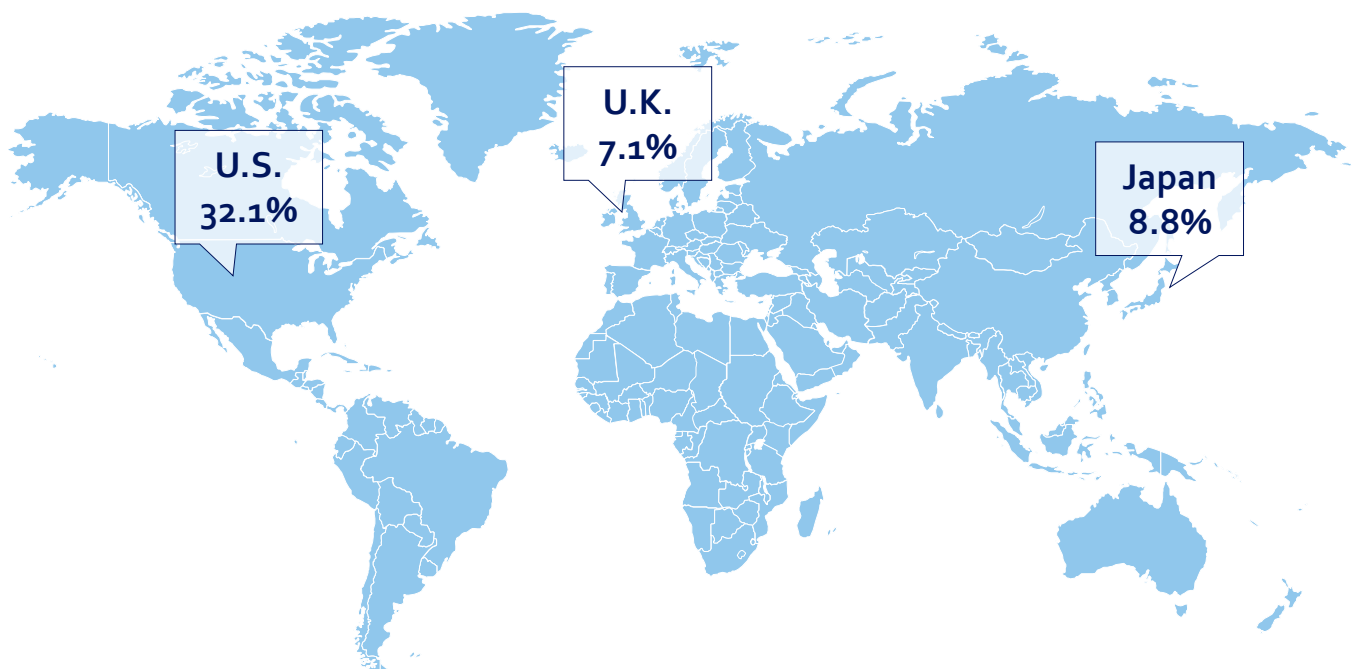
03

Regional Trends

Trends

Regional Trends

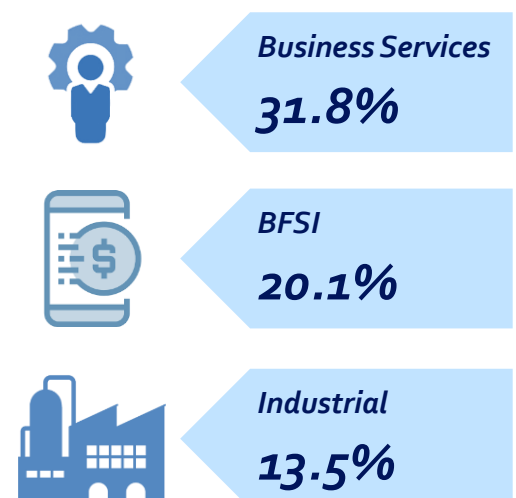
- Since 2000, more than 790,000 transactions have been announced globally, with the U.S. being a major contributor
- Similarly, the U.S. leads the tech acquisition landscape as well
 - With one of the largest tech hubs in the world – the Silicon Valley, the U.S. houses 32.1% of tech firms acquired by non-tech companies over the last 5 years
 - Target concentration in the U.S. stands at 3.6x the number of targets acquired in the second leading geography
- The U.S. is followed by two leading countries known for innovation and technology – Japan and the U.K.



Industry Activity Comparison

- The highly diverse and direct consumer facing **Business Services** industry, which includes education, media & marketing, and professional services, is a leading technology acquisitive industry
 - Heavy investments in ed-tech and speech & marketing tools are driving growth of tech related activity
- The emergence of fintech has aided the development of technology innovation in the **Banking and Financial Services** sector. Digitalization of services has become commonplace with investments directed towards process automation cloud, and digital CRM platforms
- Core **Industrial** manufacturers have been dominant contributors to tech investments landscape. Industrial 4.0 implementation through automation and robotics in factories has spurred the growth of this movement

Industry-wise deal volume share



GLOBAL M&A PARTNERS

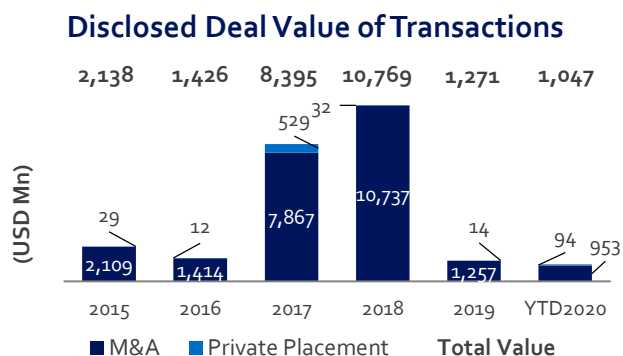
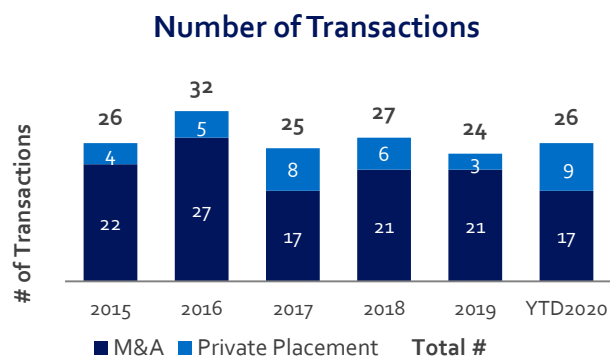
04

Deal Activity
by Industry

Aerospace & Defence

The Aerospace & Defense (A&D) industry is heavily technology-focused and is known to be an early adopter of disruptive technologies in both product development and manufacturing. It is also focused on growth, which gives rise to M&A and investments to access new technologies and gain new capabilities.

New technology deal volume has been stable over the last five years, with transaction values peaking during 2017–2018 due to large-ticket acquisitions by Thales S.A. in December 2017 and General Dynamics Corporation in February 2018.



AI and analytics attract buyers, integrated into both – products and processes

A&D has been one of the leading industries to adopt and apply AI effectively. AI and analytics help the industry transition from programed control systems to intelligent autonomous systems enabled by machine learning algorithms. Diagnostic and predictive analytics help reduce equipment failures, downtime, and costs. Manufacturers are able to offer superior products at competitive prices while maintaining profitability, pointing toward further growth in related tech investments in A&D.

U.S. DOD's unclassified investments in AI are estimated to grow from USD 600Mn in 2016 to USD 2.5Bn in 2021 (including investments in autonomy), with the department reportedly maintaining over 600 active AI projects.



AI has the potential to be a major growth driver for the A&D industry. However, AI technology is advancing faster than the pace at which many companies are adopting it. A&D executives need to find ways to accelerate their adoption of broader AI solutions that can deliver breakthrough outcomes by focusing not just on the technology but also on how they want to transform their workforce and capabilities.

– John Schmidt, Global Leader – A&D Practice, Accenture



Autonomous systems finding traction in the Defense segment

Autonomous unmanned aerial vehicles (UAV) are an important part of the A&D industry transforming military operations. The US military operates over 11,000 drones. The incorporation of UAVs and robotic systems with AI is expected to radically disrupt the defense segment by enabling intelligent warfare. Supported by AI, these autonomous systems are moving away from legacy set-ups to compact, non-traditional forms often offered by smaller, specialist players. Established A&D players are making strategic investments into specialist, new technology companies in a bid to expand their portfolio and reclaim their standing in the A&D contract landscape.

More than 60% of the unmanned, autonomous, and robotics-focused contracts in the President's Budget for FY2017 were awarded to non-traditional defense players or small prime contractors, while only 40% was awarded to large players such as Boeing, General Dynamic, Raytheon, and Lockheed Martin.

Cybersecurity is a key investment area

The rise of connectivity has increased the risk of cyberattacks and companies in the A&D industry are exposed to greater risks due to the industry's highly technical and sensitive nature. Companies acknowledge the role of cybersecurity capabilities as a competitive differentiator and the importance of implementation of robust cybersecurity practices both within their own and the clients' organizations. As a result, A&D industry manufacturers and service providers are investing heavily in cyber and information security businesses to secure their portfolios.



With chances of major digital disruption due to cyberattacks, the defense of any country is now heavily reliant on its ability to defend its cyberspace. Realizing the importance of having a cyberwarfare strategy, most countries have started investing in cybersecurity initiatives and improve their cyber-defense capabilities. Companies have also started viewing this as a promising area.

– Aurojyoti Bose, Lead Analyst, GlobalData



Insights from digital demographics data allow A&D companies to create a new generation of offerings that foster an ongoing, trustworthy relationship with operators. Maintenance solutions can be fine-tuned to an aircraft operator's specific operating environment or enhanced flight planning, which can maximize fuel savings and minimize greenhouse emissions.

– Jeff Wheless, Research Lead – A&D Practice, Accenture



Featured Transactions



February 2020

SOS International acquired advanced analytics software company NorthStar Systems for an undisclosed consideration. The acquisition broadens SOS' technology portfolio and expands its strategic position in the analytics domain.



December 2019

Airbus acquired MTM Robotics LLC for an undisclosed consideration. The transaction brings in innovative engineering and manufacturing solutions, thus providing time and cost-saving benefits with respect to its commercial aircraft manufacturing process while also allowing Airbus to enhance its expertise in the area of automation. GMAP member firm Meridian Capital served as the exclusive financial advisor to MTM Robotics on the transaction.



December 2017

Thales SA acquired Gemalto for a consideration of USD 6.7Bn. Apart from generating revenue and pre-tax cost synergies, the transaction is expected to accelerate Thales' digital strategy across its five target verticals (aeronautics, space, ground transportation, defence and security) through the acquisition of technologies that have applications in all its markets. Combined with Gemalto's digital security portfolio, Thales is equipped to offer end-to-end digital security solutions, from data creation to real-time decision making.



June 2017

EriSat LLC acquired Aerial Source, developer of AI-software for autonomous unmanned aerial systems, for a consideration of USD 724.0Mn. The tech-acquisition augments EriSat's manned as well as unmanned aerial systems with AI-powered capabilities.

Select Transactions – M&A

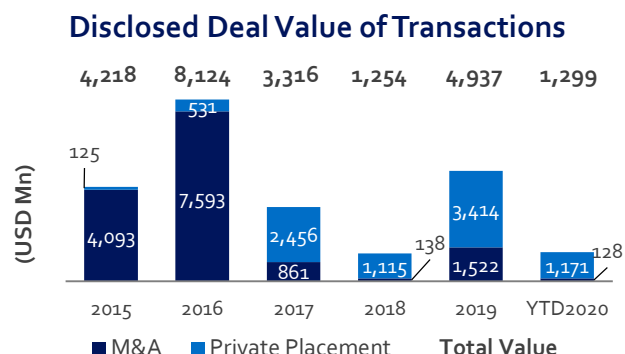
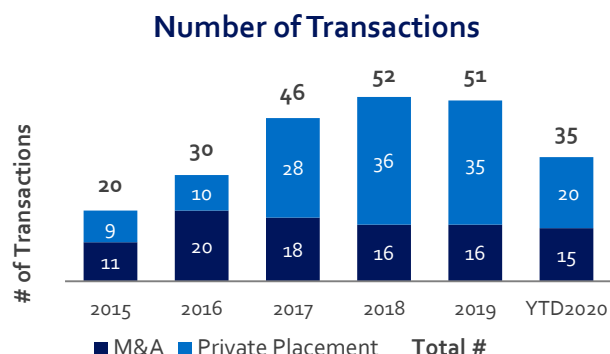
Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
04-Aug-20	NAR	B3Bar Holdings LLC	-	-	-	-
11-Feb-20	NorthStar Systems ApS	SOS International LLC	-	-	-	-
04-Feb-20	Hydroid, Inc.	Huntington Ingalls Industries, Inc. (NYSE:HII)	378.0	378.0	-	-
30-Dec-19	Forcepoint LLC	Raytheon Company	588.0	-	-	-
12-Dec-19	MTM Robotics LLC	Airbus Americas, Inc.	-	-	-	-
19-Nov-19	BWM Outcomes, LLC	Intrepid Solutions and Services, Inc.	-	-	-	-
09-Sep-19	Xtract Technologies Inc.	Patriot One Technologies Inc. (TSX:PAT)	17.4	4.6	-	-
26-Mar-19	Deep Learning Analytics, LLC	General Dynamics Mission Systems, Inc.	-	-	-	-
21-Aug-18	Predikto, Inc.	Raytheon Technologies Corporation (NYSE:RTX)	-	-	-	-
17-Dec-17	Gemalto N.V.	Thales S.A. (ENXTPA:HO)	6,718.5	5,521.2	1.8x	13.1x
12-Jun-17	Oliver Crispin Robotics Limited	GE Aviation System LLC	7.3	7.3	-	-
07-Jun-17	Aerial Source	EriSat LLC	724.0	724.0	-	-
28-Apr-17	Guavus, Inc.	Thales S.A. (ENXTPA:HO)	215.0	-	7.2x	-
Average					4.5x	13.1x
Median					4.5x	13.1x

Select Transactions – Private Placement

Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
24-Aug-20	Parazero Limited (ASX:PRZ)	Delta Drone SA (ENXTPA:ALDR)	0.4	-	-	-
06-Feb-20	Cerbair, SAS	MBDA Holdings SAS; TechnoFOUNDERS SAS; Boundary Holding SARL SPF; Aube Management; Smart Move Holding	6.0	-	-	-
08-Jan-20	PV Labs Inc.	Lockheed Martin Corporation (NYSE:LMT)	4.0	-	-	-
17-Sep-19	RedShield Security Ltd	Pencarrow Private Equity Management Limited; Sage Technologies, Ltd.	8.9	-	-	-
05-Jun-18	Verity Studios AG	Fontinalis Partners, LLC; Kitty Hawk Corporation; Sony Innovation Fund; Airbus Ventures	18.0	-	-	-
30-Jan-18	Altitude Angel Limited	Frequentis AG (XTRA:FOT); Seraphim Capital; Accelerated Digital Ventures Limited	4.5	-	-	-
20-Dec-17	Dover Microsystems, Inc.	QUALCOMM Ventures; Hub Angels Investment Group, LLC; The Charles Stark Draper Laboratory, Inc.; Hyperplane Venture Capital	-	-	-	-
10-Apr-15	Cybereason Inc.	Charles River Ventures, Inc.; Lockheed Martin Corporation (NYSE:LMT); Spark Capital Partners, LLC	24.8	-	-	-
Average					NA	NA
Median					NA	NA

Automotive

Improvements in vehicle and connectivity technologies are disrupting the automotive industry. The emergence of electric vehicles continues to drive innovation in the automotive industry as major automobile players seek to elevate their offerings with the help of smart technologies such as 5G antennas, improved head-up displays (HUDs), and internet-of-things (IoT)-based applications. Large automobile manufacturers such as Ford and Volkswagen are heavily investing in analytics, telematics, and other integrated infotainment technology-based companies to penetrate the ever-evolving technology scenario and be competitive in the industry.



Autonomous and electric vehicle technology developers receive the highest levels of funding

Companies in the electric and autonomous vehicle segment have been receiving the highest amount of investment from large automotive companies such as BMW, Toyota, Ford, General Motors, and Daimler AG. By providing funding to develop the AV and EV segments, manufacturers are powering some of the most innovative technology breakthroughs for the automotive industry.

- Autonomous technology:
 - GM became one of the leading players in this space with the acquisition of Cruise Automation, followed by investment from Honda (May 2019), and the acquisition of autonomous technology company ASTYX GmbH (June 2020)
 - In July 2019, Volkswagen invested USD 1.0Bn in Ford-acquired self-driving startup Argo AI
- Electrification technology:
 - Vehicle electrification initiatives by automakers are largely focused on establishing units that support EV manufacturing. However, they are also heavily investing in batteries and charging infrastructure – components that represent major technological advances that underpin the future of EVs

The VW Group announced an investment of USD 8.0Bn in EV development, of which USD 6.0Bn will be dedicated to battery production.

I have no doubt that the automotive industry will change more in the next five to 10 years than it has in the last 50. The convergence of connectivity, vehicle electrification, and evolving customer needs demand new solutions. The broader “societal trends” such as urbanization and sustainability are going to drive a lot of this change, as well as new technological developments at improving safety, fuel economy, and creating autonomous vehicles.

– Mary Barra, Chairman & CEO, General Motors

Innovation drives technology investments in the automotive industry

The volume of M&A and private placement transactions has been increasing over the past five years. In 2018, the industry witnessed the highest number of technology investments and acquisitions by legacy automotive OEMs and auto component manufacturers. With traditional manufacturers adopting technology, there have been significant changes

Tech Acquisitions by Non-Tech Companies

across the value chain. For instance, industry participants who outsourced parts design and manufacturing to Tier 1 suppliers are now investing in new technologies to gain ownership at different stages of the value chain.

Investing in external startups also allows Tier 1 and OEM manufacturers to progress toward new technologies and gives them an advantage at potential target acquisitions as the technological landscape unfolds, all at a lower risk of investment.

Automakers eager to ramp up their capabilities in the connected car space

IoT enables improved efficiency in driving management and leads to a future of intelligent, connected vehicles that deliver real-time diagnostic feeds, smart navigation features, entertainment, and vehicle detection tools to prevent accidents. Manufacturers are investing significantly in connected car technologies to stay ahead in the competitive environment. Traditional partnerships with telcos and chip companies for connectivity solutions have been replaced by technology firms. Popular areas of investment include vehicle-to-everything (V2X) technology, telematics software, cloud data management platforms, navigation/mapping services, cybersecurity, and sensing technology.

By 2021, 94.0Mn cars are expected to have IoT-enabled services globally.

Automakers explore automation benefits

Car manufacturers use industrial robots for a huge range of tasks from welding and painting to assembly and inspection. With the Industry 4.0 revolution, demand for smart, sustainable automation solutions has grown as the players aim for state-of-the-art production facilities. In addition to robots, they are investing in sensors, gripping & positioning units, electronic control equipment, and industrial machine vision systems to elevate their factories with efficient, digitally networked production lines. In 2016, Tesla acquired German automation company Grohmann Engineering for ~USD 135.0Mn to improve the speed and efficiency of its manufacturing processes.

Automotive is the main driver and the largest segment of the industrial robotics sector accounting for 30% of global robot installations.

Featured Transactions



January 2019

Bridgestone Europe, a subsidiary of Bridgestone Corporation in EMEA, acquired TomTom's telematics business for a cash consideration of ~USD 1.0Bn. Following the acquisition the company, TomTom Telematics rebranded as Webfleet Solutions. The transaction integrates tire and rubber company with digital fleet solutions provider to create data platform for connected vehicles. The combination of both companies' offerings allows Bridgestone to cross-sell tires and solutions to a larger customer base.



October 2017

Aptiv PLC acquired nuTonomy, Inc. for a consideration of USD 454Mn. The acquisition will enable Delphi to enhance its capabilities of providing superior autonomous mobility solutions with the combination of autonomous driving (AD) teams of both nuTonomy and Ottomatika which was acquired by Delphi in 2015. The acquisition will further improve Delphi's commercialization of AD and Automated Mobility on-Demand (AMoD) solutions for automakers and new mobility customers globally.



October 2017

General Motors acquired laser-imaging technology provider, Strobe to integrate its operations into Cruise Automation, a subsidiary of GM dedicated to self-driving technology. The deal gives G.M. in-house engineering expertise in the development of lidar sensors to create high-definition images for vehicles operated by computers.

Select Transactions - M&A

Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
23-Sep-20	Beijing TuSimple Future Technology Co., Ltd.	Traton SE (XTRA:8TRA)	-	-	-	-
08-Sep-20	Electromaps S.L.	Wallbox Chargers, S.L.	-	-	-	-
15-Jun-20	Net Element, Inc. (NasdaqCM:NETE)	Mullen Technologies, Inc.	-	-	-	-
05-Jun-20	ASTYX GmbH	GM Cruise Holdings LLC	-	-	-	-
12-Feb-20	Yamaha Motor Robotics Holdings Co., Ltd.	Yamaha Motor Co., Ltd. (TSE:7272)	106.0	307.0	1.7x	-
23-Dec-19	Namuga Co., Ltd. (KOSDAQ:A190510)	Dreamtec Co., Ltd.	103.6	154.6	0.6x	13.8x
22-Jan-19	Webfleet Solutions B.V.	Bridgestone Europe NV/SA	1,033.7	1,033.7	5.2x	-
29-Aug-18	FDTech GmbH	Volkswagen AG (XTRA:VOW3)	-	-	-	-
24-Oct-17	nuTonomy Inc.	Aptiv PLC (NYSE:APTV)	454.0	290.0	-	-
14-Jun-17	NexTraq, Inc.	Michelin North America, Inc.	316.5	316.5	-	-
10-Feb-17	Argo AI, LLC	Ford Motor Company (NYSE:F)	-	-	-	-
19-May-15	Elektrobit Automotive GmbH	Continental Aktiengesellschaft (XTRA:CON)	668.2	668.2	3.5x	26.8x
Average					2.8x	20.3x
Median					2.6x	20.3x

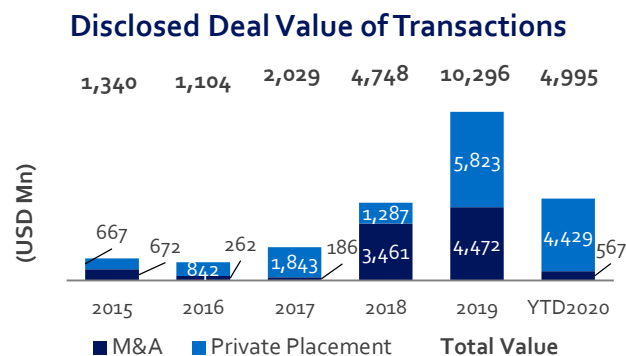
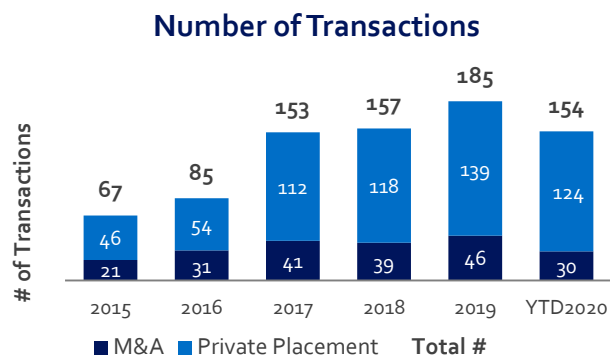
Select Transactions - Private Placement

Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
22-Sep-20	Aurora Labs Ltd.	Porsche Automobil Holding SE (XTRA:PAH3); Toyota Tsusho Corporation (TSE:8015); UL Ventures; LG Technology Ventures	23.0	-	-	-
14-Sep-20	Wuxi Lead Intelligent Equipment CO.,LTD. (SZSE:300450)	Contemporary Amperex Technology Co., Limited (SZSE:300750)	367.1	-	-	-
26-Feb-20	Pony.AI, Inc.	Toyota Motor Corporation (TSE:7203)	462.0	-	-	-
05-Feb-20	Cepton Technologies, Inc.	Koito Manufacturing Co., Ltd. (TSE:7276)	50.0	-	-	-
10-Sep-19	Rivian Automotive, LLC	Cox Automotive, Inc.	350.0	-	-	-
12-Jul-19	Argo AI, LLC	Volkswagen AG (XTRA:VOW3)	1,000.0	-	-	-
07-May-19	GM Cruise Holdings LLC	T. Rowe Price Group, Inc. (NasdaqGS:TROW); Honda Motor Co., Ltd. (TSE:7267); General Motors Company (NYSE:GM); SoftBank Investment Advisers (UK) Limited	1,150.0	-	-	-
11-Sep-17	StoreDot Ltd.	Daimler AG (XTRA:DAI); Samsung Venture Investment Corporation; Samsung Ventures Israel; Norma Investments Ltd; Ready Solutions, Inc.	60.0	-	-	-
Average					NA	NA
Median					NA	NA

Banking, Financial Services & Insurance (BFSI)

Digital technologies are transforming the banking, financial services, and insurance industry (BFSI). BFSI companies are heavily investing in technology startups to run operations virtually, without investing into fixed assets.

The volume of transactions has been increasing over the past five years. In 2019, the industry witnessed the highest number of transactions and a deal amount of USD 10.3Bn, with private placement being at a peak in the last five years, where Indonesia-based platform GO-JEK raised USD 3.0Bn from Mitsubishi UFJ Lease & Finance Company, AIA Financial, Alphabet, The Siam Commercial Bank Public Company Limited, PayPal Holdings, and others.



AI, blockchain and cloud – New tech ABC redefining banking; acquisitions rise to improve operations, security and CX

Fintech companies have made their way into traditional banking and have encouraged large banking and financial services firms to either enhance their technology in-house or invest and partner with fintech firms to tackle competition. Large global banks such as Citi, Morgan Stanley, US Bancorp, HSBC, and Deutsche Bank have set aside tech budgets and are heavily investing into emerging technologies to enhance their competitive positioning.

AI, with its high-computing and cognitive abilities, is helping financial businesses manage risks, detect frauds, and identify data patterns that enable them to make decisions with minimum human intervention. As a result, most of the financial services providers are investing in AI for enhancing safe customer experiences and cost saving. In 2019, banks and financial services firms invested in enhancing their 24/7 available AI-powered chatbots and voice assistants, making them more intelligent and integrating them into their services.

AI implementation can help banks reduce costs by up to 25%, increase profits by 31% and add USD 1.2Tn in gross value added (GVA) of the financial industry by 2035.

Blockchain technology helps banks replace traditional banking business models with peer-to-peer lending, smart contracts, and digital payments; eliminating intermediaries and speeding up underlying processes. Its benefits will eventually catalyze the adoption of this technology by most banks.

Blockchain is estimated to save ~USD 20.0Bn in annual operating costs for the BFSI industry.

Additionally, banks are migrating their existing applications (core banking, risk management, digital banking) to the **cloud** as a part of their business strategy. Cloud adoption is helping them secure customer financial data and transactions over the various omni-channel platforms and transaction processing payment networks through which they deliver their services. To prevent data breaches, banks are investing in firms offering cybersecurity solutions such as multi-factor authentication, firewalls, and anti-malware. Many banks are benefiting with fintech firms also providing marketing, administration, loan servicing and other services; enabling banks to offer tech-enabled banking products.



It starts with embracing technology. Consumers demand modern, user-friendly financial technologies. If banks and credit unions reject fintech or lag in adopting these technologies, they'll struggle to meet consumers' expectations.

– Eric Bangerter, VP - Ecommerce, UW Credit Union



Fintech transforming business models, partnerships on the rise

In the past five years, the impact of technology on the banking & financial services industry has been massive. Technology-led innovations in banking products and services have prospered as companies leveraged fintech to build new business models, particularly digital. The industry is increasingly utilizing digitization and other new technologies to enhance their banking services features; pushing the growth of technology-focused investments.

In 2019, the U.S. Fintech investments posted a growth of 54.0% to USD 26.1Bn and U.K. Fintech rose to 63.0% to USD 6.3Bn.

Banking has to work when and where you need it. The best advice and the best service in financial services happens in real time and is based on customer behavior, using principles of Big Data, mobility, and gamification.

– Brett King, CEO & Co-Founder, Moven

Technology innovations will be heart and blood of the banking industry for many years to come and if big banks do not make most of it, the new players from FinTech and large technology companies surely will.

– David Brear, Group CEO, 11:FS

Featured Transactions



February 2020

First American Financial Corporation acquired Docutech for a cash consideration of USD 350.0Mn. The transaction demonstrates First American's commitment to invest in and grow its core business. It also reflects First American's plan to improve home-buying experience and drive digital transformation of the real estate settlement process. Docutech's technology enhances First American's ability to provide lenders with end-to-end digital mortgage and settlement services and deliver a more digitalized experience to borrowers.



September 2019

Prudential Financial acquired Assurance IQ for USD 3.5Bn. The terms of the acquisition include a total upfront consideration of USD 2.4Bn and an additional earn-out of up to USD 1.2Bn in cash and equity, contingent upon Assurance achieving multi-year growth objectives. Assurance adds a large and rapidly growing direct-to-consumer channel to Prudential's financial wellness businesses.



July 2018

State Street Bank and Trust Company acquired Charles River Systems for an all cash consideration of USD 2.6Bn. Integration of Charles River Development's front-office systems with State Street's existing front, middle, and back office capabilities, enable State Street to deliver a global front-to-back platform for asset managers and asset owners that will be unique in the investment servicing industry.

Select Transactions – M&A

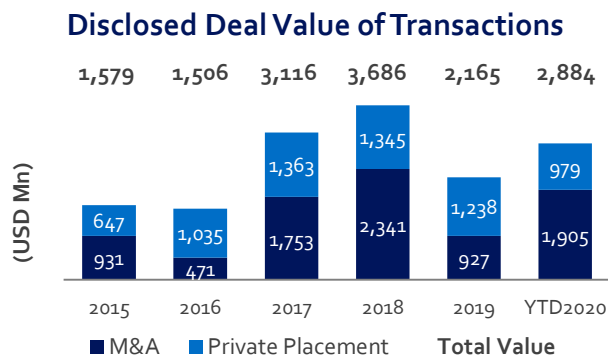
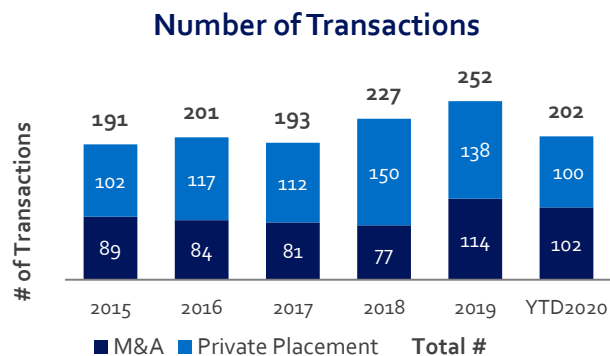
Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
23-Jul-20	Dunstan Thomas Group Limited	Curtis Banks Group plc	35.0	27.4	2.6x	10.2x
22-Jan-20	Clearpool Group, Inc.	Bank of Montreal (TSX:BMO)	147.0	139.0	-	-
11-Dec-19	Innovative Aftermarket Systems, L.P.	iA Financial Corporation Inc.	719.9	719.9	-	-
02-Dec-19	WebCash Corporation	Industrial Bank of Korea	10.1	251.3	3.7x	42.6x
27-Aug-18	InfoArmor, Inc.	The Allstate Corporation	525.0	525.0	-	-
22-Aug-18	Crayon Group Holding ASA	OEP ITS Holding B.V.	37.4	171.4	0.2x	18.2x
27-Mar-18	FreeAgent Holdings plc	National Westminster Bank Plc	71.0	69.2	5.2x	-
22-Feb-18	eFinans Elektronik Ticaret ve Bilisim Hizmetleri A.S.	QNB Finansbank A.S.	5.3	10.8	-	-
31-May-17	HelloWallet, LLC	KeyBank National Association	23.7	23.7	-	-
27-Apr-17	EMCS Thai Co., Ltd.	Thai Reinsurance Public Company Limited	4.6	9.0	2.5x	-
10-Mar-16	Iwagin Lease and Data Corporation	The Bank of Iwate, Ltd.	16.0	17.5	0.5x	-
Average					2.5x	23.7x
Median					2.6x	18.2x

Select Transactions – Private Placement

Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
23-Jul-20	Quantexa Limited	HSBC Holdings plc; AAC Capital Partners; Dawn Capital LLP; Evolution Equity Partners; Accenture Ventures; British Patient Capital Limited; AlbionVC	65.0	-	-	-
22-Jul-20	BlackBerry Limited	Fairfax Financial Holdings Limited	535.0	-	-	-
24-Jun-20	OJO Labs Inc	Wafra Inc; Royal Bank of Canada; Northwestern Mutual Capital LLC; LiveOak Venture Partners LP; Breyer Capital	62.5	-	-	-
15-Apr-20	BioCatch Ltd	Industry Ventures, L.L.C.; Bain Capital Private Equity, LP; Creditease Corp.; OurCrowd Ltd.; American Express Ventures; Maverick Ventures	145.0	-	-	-
31-Dec-19	Verto Analytics Inc	Finnish Industry Investment Ltd; OP Financial Group; Conor Venture Partners Oy; Open Ocean Capital Ltd.; Springvest Oy	16.0	-	-	-
27-Nov-19	91streets Media Technologies Private Limited	Bessemer Venture Partners; Temasek Holdings Limited; Caisse de dépôt et placement du Québec; LGT Group Foundation; Eight Roads Ventures India; KB Financial Group Inc; Orios Venture Partners	220.0	-	-	-
Average					NA	NA
Median					NA	NA

Business Services

The business services sector encompasses a broad number of sub-sectors such as education, media, and even facility management. The diverse nature of these sub-sectors has created a mixed bag of opportunities for M&A. The volume of transactions has only grown over the past five years, with a steady mix of M&A and private placements peaking in 2019 with 252 deals. However, 2018 was when the industry witnessed the highest inflow of investments valued at USD ~3.7Bn.



Education sector witnesses a digital revolution

The education sector has witnessed significant investments as educational institutes turn toward digital methods of teaching to be impactful and competitive while operating cost-effectively. Investing in teaching tech as well as technology related to the subjects at a university is becoming prominent in the education sector. Additionally, the adoption of digital mediums has resulted in a surge of online learning platforms. To mitigate the threat as well as capture the market, traditional education resource providers are engaging in edu-tech M&A.

Currently, digital drives a bigger part of Pearson's business. In 2019, the company reported that 62% of its revenues were generated from digital or digital-enabled services. The company announced that it will move away from its traditional practice of updating and reprinting new textbooks and instead roll out all textbook updates first in the digital version. Pearson has also invested in AI capabilities aiming to power new education tools and acquired edu-tech startups to build its digital portfolio.



We're still the leading education-related content business in the world. We lead in assessment and certification. But the fastest area of growth really is now in more services-type offerings and actually combining the content and the assessment powered by technology to really provide much more personalized and adaptive learning.

– John Fallon, CEO, Pearson



Data capability is currency in customer-centric research & consulting and media & marketing segments

Data is the new oil of the digital economy. But it isn't valuable unless it provides insights. Research and consulting firms are addressing business issues by harnessing the power of data. Such firms are acquiring technologies that offer them the right tools to capture, analyze, interpret, and present data. The acquisition of AI, data analytics, and business intelligence platforms is commonplace. Additionally, firms are purchasing solutions that manage their own organizational records and automate cumbersome processes. Of late, firms are expressing interest in acquiring remote working and productivity platforms to manage remote workforce during the COVID-19 pandemic.

The media & marketing (M&M) sector is no different. Marketing analytics is increasingly being adopted by various M&M firms to collect and analyze consumer data and provide insights. Strategies based on these insights are further implemented with the help of AI/ML-enabled algorithms that support targeted advertising & marketing campaign platforms, which are attracting investment from various advertising, marketing, and publishing houses.

We will see an increased emphasis on the term "digital." We're all working remotely. We're teaming up in different ways. There are going to be more conversations around how we can operate more effectively in digital transformations. We've talked about our need to build bionic companies, but combining digital and AI tools allows for more agile practices.

– Rich Lesser, CEO, BCG

Freight companies exploring digital solutions for operational efficiency and business growth

The logistics industry witnessed unprecedented development with the advent of e-commerce and growth in consumption in sectors such as retail. Apart from securing assets and infrastructure on their path toward growth, logistics companies aim to bring in higher levels of seamlessness in their business through digitization. Such players favor the acquisition of warehouses, supply chain, logistics, and transport management solutions for long-term advantage over short-term outsourcing of processes. E-commerce applications, platforms serving shippers and carriers, real-time tracking and communication, omni-channel operation management, and marketing are attractive acquisition targets for large freight and logistics service providers. Such acquisitions help logistics service providers to expand their service portfolio and consolidate various complementing businesses to improve revenues and profitability.

Featured Transactions



June 2020

RWS Holdings Plc acquired Iconic Translation Machines, Ltd, an Ireland-based company engaged in providing neural machine translation software & solutions, for an initial consideration of USD 10.0Mn. The acquisition allows RWS to leverage language technology to strengthen its capabilities & offerings in neural machine translation.



February 2020

McKinsey & Co. acquired Orpheus GmbH for an undisclosed consideration. The acquisition of Orpheus enabled McKinsey to introduce a new product offering - Spend Intelligence, which is a combination of Orpheus' advanced platform technology, and McKinsey's industry expertise and content-rich services in digital procurement.



November 2019

Alpha Financial Markets Consulting (AFMC) acquired Obsidian Solutions Limited for a consideration of USD 7.27Mn. The acquisition is expected to generate recurring revenue by providing complementary, technology focused products to AFMC's ADS proposition; enhance the ADS 360 SalesVista product with additional reporting capability; acquire a highly skilled technology development team and expand North American client base.



November 2018

iHeartMedia, Inc. acquired Jelli, Inc. for a consideration of USD 65.3Mn. The transaction allows Jelli to provide a single platform for advertisers, supporting its mission of transforming audio advertising through technological innovation.



July 2018

Forrester Research acquired FeedbackNow/S.Now SA for a consideration of USD 14.2Mn. The acquisition aims to enable Forrester to expand its range of CX Cloud inputs, enabling immediate insights, and prioritizing those experiences to create greater financial value for the company.

Select Transactions – M&A

Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
9-Jun-20	Iconic Translation Machines Ltd.	RWS Holdings plc (AIM:RWS)	20.0	10.0	16.7x	-
4-Jun-20	Mathway, LLC	Chegg, Inc. (NYSE:CHGG)	116.0	93.5	8.9x	-
28-May-20	Link Commerce Ltd	DHL International (PTY) Ltd.	-	-	-	-
24-Feb-20	Wirefire Creative Inc	KPMG LLP (Canada)	-	-	-	-
6-Feb-20	Orpheus GmbH	McKinsey & Company, Inc.	-	-	-	-
11-Nov-19	Obsidian Solutions Limited	Alpha Financial Markets Consulting plc (AIM:AFM)	7.3	3.7	-	-
13-Sep-19	ElevatedPrompt Solutions Inc.	Ernst & Young LLP (Canada)	-	-	-	-
7-Aug-19	Inspyro Ltd	Discovery Education, Inc.	-	-	-	-
20-May-19	Kernel Analytics, SL	The Boston Consulting Group, Inc.	-	-	-	-
21-Sep-18	Chengdu Yinzhe Education and Technology Co., Ltd.	Bright Scholar Education Holdings Limited (NYSE:BEDU)	29.5	-	-	-
10-Jul-18	FeedbackNow	Forrester Research, Inc. (NasdaqGS:FORR)	14.9	9.2	-	-
19-Jul-16	Sixtree Australia Pty Ltd	Deloitte Consulting Pty Limited	-	-	-	-
9-Nov-15	Zipments Corp.	Deliv, Inc.	-	-	-	-
28-Oct-15	TMP Direct, LLC	Integrated Distribution & Logistics Direct, LLC	-	-	-	-
Average					12.8x	NA
Median					12.8x	NA

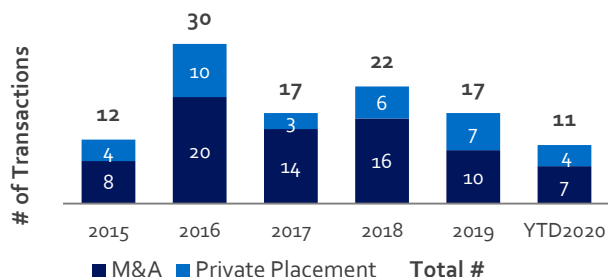
Select Transactions – Private Placement

Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
18-Aug-20	Zuum Transportation Inc.	Estes Express Lines, Inc.; BNSF Logistics, LLC; Estes Forwarding Worldwide, LLC; Holman Growth Ventures.; SAIC Venture Capital	8.6	-	-	-
10-Aug-20	Inspector Cloud LLC	OKS Group, LLC	0.5	-	-	-
7-Aug-20	Monstar Lab, Inc.	Skylight Consulting Inc.; Shimane Chuo Shinkin Bank; Dentsu Innovation Partners Inc.; Serverworks Co., Ltd. (TSE:4434); FFG Venture Business Partners Co., Ltd.; Japan Post Capital Co., Ltd.; Alpha AI Imteyaz Co. Limited	-	-	-	-
4-Aug-20	Xi'an GuandStrike Information Technology Co., Ltd.	Yangtze Delta Region Institute of Tsinghua University, Zhejiang; Turing Ventures; Hangzhou Duyan Equity Investment Co., Ltd.	1.4	-	-	-
29-Jul-20	Jupiter Intelligence, Inc.	Liberty Mutual Holding Company Inc.; MS&AD Insurance Group Holdings, Inc. (TSE:8725); SYSTEMIQ Ltd.	-	-	-	-
15-Jul-20	Hengderui Technology (Shenzhen) Co., Ltd.	Imperial College; IQ Capital Partners LLP; Royal Academy of Engineering	1.3	-	-	-
Average					NA	NA
Median					NA	NA

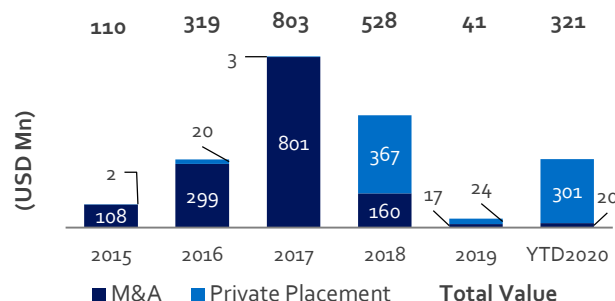
Energy & Mining

Advanced technologies have the potential to improve global mining & energy industry in several ways, from drones and advanced modelling techniques creating images of subterranean environments beyond the reach of humans to automated vehicles avoiding collisions. Companies are partnering with tech startups to gain a competitive edge and remain innovative and agile in a dynamic market. In 2017, tech deal value was the highest at USD 803.0Mn over the past five years.

Number of Transactions



Disclosed Deal Value of Transactions



Technology helps ease sustainability and regulatory pressures

The Energy & Mining industry is facing the issues related to regulation, geopolitical risk, legal limits on natural resource use, shareholder activism, and public scrutiny. Countries are implementing measures to decarbonize their energy systems, in the wake of the deteriorating global warming scenario. Mining companies are embracing technological advancements, that help the transition to low-carbon economy, to stay compliant and address environmental issues. As energy conglomerates cut petrochemical related fuel production and move towards green energy sources, their investment in related green technologies is expected to rise.

Under the sustainable development scenario, spending on energy efficiency will reach USD 16.7Tn by 2040, which is around USD 625.0Bn per year for the next ten years.

Mining companies invest in digitalization and smart technologies to optimize mine operations and energy storage

Digitization is the catalyst in mining operations as it leverages digital tool processes that make operations instrumented, interconnected, and intelligent. Digitalization has enabled predictive and prescriptive analysis, continuous monitoring and virtual simulations in mining operations with the help of sensors connected to the internet that aid in collection of huge amounts of data in real time to help managers make smart decisions to improve efficiency, strengthen safety, and reduce costs. The digital mine is leveraging industrial internet of things (IIoT) to transform mining operations. Hence, investments in digitization, IIoT, cloud data platforms, and data analytics have been a priority for mining companies.

Large miners are acquiring and investing in IIoT and data analytics technology firms to determine optimum load time and frequency to help maximize fuel consumption, reduce haul distance and the need for vehicle maintenance; boosting the efficiency of haulage operations. In addition, transportation technology and tools, such as drones, are enhancing safety and supporting many other applications.

Another emerging area of interest for tech-investments in energy is storage. Although companies are yet to widely access cost-effective solutions, energy storage ensures energy procurement for future use and stable pricing, benefiting both consumers and energy companies. The acquisition of Sonnen—smart and distributed energy storage systems by Shell to provide affordable and clean energy, is an example of energy companies' growing inclination towards this technology.



Digital transformation can enable a zero entry, fully automated and integrated mine. Mines will be designed differently for automation from inception with methods tailored and scaled to the ore body and variation in execution reduced by automation. Best of all, we will be able to fully harness the flow of information.

– Gavin Yeates, Mining Futurist & Industry Consultant



O&G go big on analytics, IoT and robotics

The oil & gas industry is also aggressively investing into smart and immersive technologies to maximize operational efficiency and enhance profit. Offshore rigs and production facilities are benefiting from the use of AI-powered autonomous monitoring robotics, drones and systems; particularly to eliminate human presence in high-risk locations. The generation, collection, storage, and analysis of huge amounts of data including 3D seismic surveys, drilling, and production facilities is optimized by cloud-based data and analytics tools. Enabled by IoT, real-time data insights on machinery, storage, transportation, and employee safety is helping O&G companies efficiently streamline processes and improve profitability. These benefits are expected to further drive up tech-related investments in O&G industry.

Deployment of digital technologies in upstream operations could yield collective savings in capital and operating expenditures of USD 100.0Bn to USD 1.0Tn by 2025.

Companies that do not take advantage of this new generation of technologies—including big data and AI elastic cloud computing—will not be competitive and will go out of business.

– Tom Siebel, Founder, Chairman and CEO, C3.ai

Digital is fundamental to being able to produce the energy, because you want the energy to be increasingly clean and renewable. Digital is fundamental to renewable. You cannot do renewable energy without digital. You can't do it. It's fundamental to solar. It's fundamental to wind. It's fundamental to distributed energy.

– Morag Watson, Chief Digital Innovation Officer, BP

Featured Transactions



July 2020

Sino Hua-An International Bhd has planned to acquire Hong Kong's internet of things (IoT) firm HK Aerospace for USD 35.0Mn with the objective to strengthen its digital transformation and digital ecosystem solutions. Upon completion of the agreement terms, HK Aerospace will become a wholly-owned subsidiary of Sino Hua-An. The acquisition comes with a minimum profit after tax guarantee from the vendors, which is USD 3.0Mn for the first financial year of HK Aerospace.



September 2018

TOTAL SE acquired G2mobility, France-based electric vehicle charging solutions provider. Acquisition accelerated the growth of its electric vehicle charging businesses, from designing smart charging stations to optimizing energy usage management and selling integrated services.



October 2017

Roxar acquired Paradigm, a software solutions provider for the oil & gas industry, for USD 510.0Mn. Paradigm joined with Emerson's existing Roxar software business, an end-to-end Exploration & Production (E&P) software portfolio with offerings spanning seismic processing and interpretation to production modeling. Paradigm's technology offerings enabled Emerson to help oil and gas operators increase efficiency, reduce costs and improve return on investment.

Select Transactions - M&A

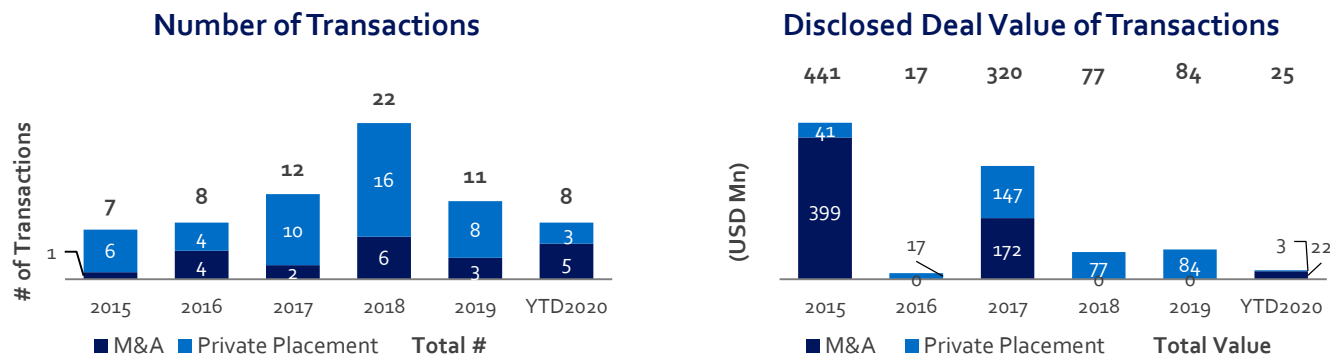
Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
16-Jul-20	azeti GmbH	Aurubis AG	-	-	-	-
7-Jul-20	AusSpec International Limited	Imdex Limited	5.9	4.1	5.6x	-
24-Dec-19	Alloyed	JX Nippon Mining & Metals Corporation	8.0	32.0	-	-
2-Dec-19	TouchPoint International Sdn Bhd	Sino Hua-An International Berhad	8.6	-	-	-
06-Aug-18	Future Gas Station (Beijing) Technology, Ltd	Beijing BHD Petroleum Technology Co., Ltd; NanJing Recon Technology Co., Ltd	4.9	-	-	-
09-Jul-18	Global Satellite Integration Ltd.	Blue River Resources Ltd	-	-	0.4x	-
29-Jun-18	Radisys Corporation	Reliance Industries Limited	96.5	-	0.7x	-
16-Oct-17	Paradigm Ltd	Roxar, Inc	510.0	510.0	-	-
28-Aug-17	RigMinder Operating LLC	Trinidad Drilling Ltd	40.0	-	-	-
19-May-16	Canberra Data Centres Pty Ltd	Infratil Limited; Commonwealth Superannuation Corporation	781.9	588.6	-	-
Average					2.2x	-
Median					0.7x	-

Select Transactions - Private Placement

Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
11-Aug-20	Flyscan Systems Inc.	BDC Capital Inc; Enbridge Inc; National Optics Institute	4.3	-	-	-
29-Jan-20	Assembrix Lt	SeAH Holdings Corporation	-	-	-	-
2-Jul-19	Freight Commerce Solutions Pvt Ltd	Lightspeed Venture Partners; Alstom Industries Limited	8.0	-	-	-
23-Jun-19	Glue AB	Lundin Energy AB	5.3	-	-	-
29-May-18	Zhejiang Caogen Network Technology Co., Ltd	Geo-Jade Petroleum Corporation	358.4	-	-	-
11-Apr-18	Onect LLC	Nucor Corporation	3.8	-	-	-
9-Aug-17	Aisan Technology Co., Ltd	Okaya & Co., Ltd	1.8	-	-	-
15-Dec-17	Future Gas Station (Beijing) Technology, Ltd	Beijing BHD Petroleum Technology Co., Ltd.; NanJing Recon Technology Co., Ltd.	0.7	-	-	-
13-Apr-17	Dataram Corporation	U.S. Gold Corp	0.3	-	-	-
23-Nov-16	Pushfor Limited	Metdist Limited; NTAsset (Cayman) Limited	1.5	-	-	-
09-Feb-16	Sky Futures Ltd	Bristow Group Inc. (NYSE:VTOL); MMC Ventures Limited	5.7	-	-	-
15-Jun-15	Industrial and Financial Systems do Brasil Ltda	Açotubo Indústria e Comércio Ltda	1.3	-	-	-
27-Feb-15	Voleo Trading Systems Inc	Jet Metal Corp	0.2	-	-	-
Average					NA	NA
Median					NA	NA

Food & Beverage

Technology acquisitions in the food & beverage industry have taken a hit in the year 2020 because of COVID-19. While the full impact of the pandemic remains unknown, the outbreak has led to a dramatic slowdown in M&A activities. In 2018, the industry witnessed the highest volume of acquisitions and investments; while in 2017, the highest amount of deal value over the past five years.



With so many different products available in a multitude of channels – in-store, farmer’s markets, online, social media and more – product innovation and differentiation are important to middle market food and beverage companies. Large companies are looking for emerging technologies and creative solutions, such as edible packaging, to address consumer preferences around sustainability. Furthermore, organizations are choosing innovative ways to automate repetitive processes to facilitate improved production, back-office processes, supply management, fulfillment, and delivery within businesses. Companies seek to invest in technology startups, from software and algorithm to digital technologies, for enhancing efficiency and catering to consumers through diverse channels.

FoodTech helps in delivering enhanced customer services

The demand for FoodTech is finding its way into the Food & Beverage sector due to growing urbanization and resultant digital opportunities from mindful consumers. Trending topics such as climate change and sustainability, alternate diet preferences, growing health consciousness, food traceability, and the rise of veganism and vegetarianism are encouraging companies to gain knowledge about niche markets and explore ways of market penetration. As a result, companies are investing in new technologies to stay ahead of competition.

Concepts such as e-restaurants, online services, and doorstep food delivery are compelling companies to deploy consumer analytics that help in understanding and serving customers in better ways. FoodTech firms are making their way into the industry by offering technologies such as AI and service robotics to deliver refined services to customers. For instance, McDonald’s acquisition of drive through AI tech startup Apprente and decision technology firm Dynamic Yield, reinforces the importance of FoodTech acquisitions in the Food & Beverages industry. Moreover, companies are applying AI to track historical data for customer preferences, tastes, and habits and are utilizing this data to create new solutions and forecast inventories.

AI in the food & beverage industry is expected to grow at a CAGR of over 65.3% by 2025.

AI is also streamlining the tracking of products in the era of e-commerce channel growth, while helping food brands and restaurants ensure transparency in their offerings. Blockchain technology is also expected to support food traceability solutions by enabling fast data integration and identification of quality throughout the supply chain.

The changes in the food supply chain towards a quickly growing and expanding percentage of fresh foods has rekindled the interest and focus in collaboration. There are many tools being offered to assist in this journey to a collectively-managed profitable delivery of consumer expectations. The opportunities to enhance supply visibility and share data in real-time with cloud-enabled applications and mobile devices are becoming game changing. Of great concern though are cloud stability, back-up systems, and cybersecurity.

– Michael Bargmann, Principal, Collaborative Logistics



Consumers, especially in smaller towns, who were earlier hesitant are adopting digital delivery now. The ticket size has also increased, indicating that delivery will be a long-term trend.

– Pratik Pota, CEO, Jubilant Foodworks



Food processors invest in technology to improve yield and food-handling processes

F&B industry is increasingly relying on technology for more efficient production to meet the demand of the expanding global population. Robotics, data, and application in such processes are among the latest technologies used by food processing players to improve efficiencies. Food & beverage companies are adopting ‘flow-through’ sortation systems that are based on the automated storage and retrieval solution. Companies are also investing in software and digital tools to analyze inventories for meeting the growing demand. The use of robotic de-palletizing and palletizing in inventory sortation, along with automatic vehicles provides flexibility, modularity, and scalability as operators needs to transport cases, totes, and trays.



The benefits to ‘flow-through’ are immense—from less product handling and greater quality control, to having a longer shelf life and reducing inventory on-hand, thereby freeing up capital for other needs.

– Sean O’Farrell, Market Development Director, Dematic



Sustainable packaging gains traction in F&B

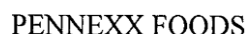
The use of single-use plastics such as cutlery, stirrers, straws, and plates have already been banned in many countries. Hence, many big companies are striving to reduce plastic generation and disposal, extensively. Food & beverage manufacturers are adopting alternative biodegradable and plastic-free solutions, which has resulted in the acquisition of innovative packaging solution providers for cost-effective end products and beneficial deals.

Featured Transactions



January 2020

SHE Beverage Company acquired 90.0% of Buildingit in exchange for 1.9Mn shares of its common stock at USD 2.5 per share for total purchase price of USD 4.8Mn. The remaining 10.0% interests in BLDG are held by Yelton and Wakefield.



October 2019

Pennexx Foods acquired Your Social Offers, a software provider that utilizes artificial intelligence and social media for targeted marketing. Acquisition will help Pennexx to enhance its customer relationship.



January 2018

Anheuser-Busch InBev NV (AB InBev) acquired WeissBeerger for a consideration of USD 80.0Mn. The partnership with WeissBeerger will enhance AB InBev’s connection with points-of-connections (POCs) and consumers around the world. The transaction will also allow WeissBeerger to access existing and new markets to grow its technology platform and analytics capabilities for the benefit of the POCs and consumers.

Select Transactions - M&A

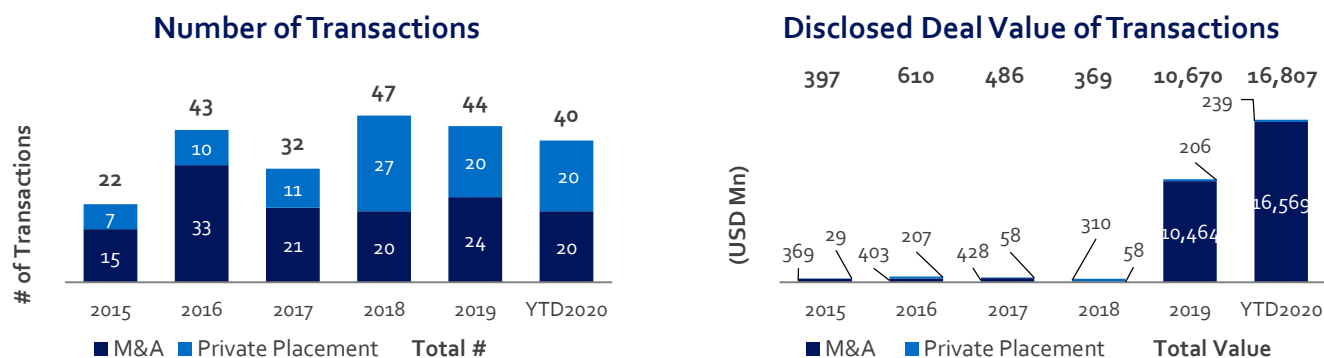
Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
30-Jun-20	Beijing Huaxia Dentsu Technology Co., Ltd.	Beijing Hongluo Foods Co., Ltd.	5.9	90.8	3.2x	-
30-Mar-19	Cuida Mi Mascota S.A.P.I. de C.V.	Mars Incorporated	-	-	-	-
7-Nov-18	GreatRateFreight, Inc	Gold River Productions, Inc; RushNet, Inc	-	-	-	-
4-Oct-18	HempHUB Inc	RushNet, Inc	-	-	-	-
27-Feb-18	Priwen Systems Inc	Minerco, Inc	-	-	-	-
26-Jan-18	WeissBeeger Ltd	Anheuser-Busch InBev NV	80.0	-	-	-
18-Oct-17	Shenzhen Niiwoo Financial Information Services Co., Ltd	New Silkroad Culturaltainment Limited	172.5	172.5	68.4x	-
24-May-17	Foods Connected Ltd	Hilton Food Group plc	-	-	-	-
27-Sep-16	Cash Flow Generating App Portfolio	Future Farm Technologies Inc	-	-	-	-
Average					35.8x	NA
Median					35.8x	NA

Select Transactions - Private Placement

Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
6-Apr-20	AgroScout Ltd	The Trendlines Group Ltd. (Catalist.42T); Kibbutz Yiron	3.0	-	-	-
11-Dec-19	MPaani Solutions Private Limited	Arca Continental, S.A.B. de C.V.; Chiratae Ventures India Advisors Pvt. Ltd; Blume Venture Advisors Pvt. Ltd; Candy Ventures Sarl	5.5	-	-	-
11-Dec-19	Zippin	Sapphire Ventures, LLC; Nomura Research Institute, Ltd; Arca Continental, S.A.B. de C.V.; NTT Docomo Ventures, Inc; Scrum Ventures; Core Ventures Group, LLC; Pear Ventures; Montage Ventures; Maven Ventures Growth Labs; SAP.iO Fund; The Kraft Heinz Company, Investment Arm	12.0	-	-	-
8-Nov-18	Ganaz Inc	Founder's Co-op; Taylor Farms Retail, Inc.; GAN Ventures; The Helm; 122 West Ventures	2.1	-	-	-
30-Aug-17	Agrible, Inc	Archer-Daniels-Midland Company; Serra Ventures, LLC; iSelect Fund Management, LLC; Flyover Capital; Maumee Ventures LLC	15.7	-	-	-
Average					NA	NA
Median					NA	NA

Healthcare

The global Healthcare sector, comprised of healthcare center, healthcare facilities, healthcare-focused technology and equipment companies, has been investing in technology focused companies as a method to bring innovation to its existing business. The number of M&A deals have been consistent from 2016 to 2019, with a slight dip in 2017. The 2020YTD deal value is USD 16.8Bn, which has already surpassed the comparable amount of the last five years, driven by major M&A activity involving investors Siemens Healthineers AG, Agilent Technologies, Roper Technologies and MERCK.



Although healthcare M&A activities have not increased dramatically during the COVID-19 crisis, they have not subsided as much as in other sectors. The financial fallout of losing revenues from non-essential surgeries and procedures has left larger healthcare providers rethinking plans to grow through acquisitions, mergers, partnerships, and strategic developments. Other activities that have hindered healthcare transactions as well as exacerbated the conditions for many other organizations, are expected to pick up pace post the Covid-19 pandemic.

Preventive care and digital care delivery

With the use of health apps, biosensors, AI, VR, robots, electronic health records, and telehealth, healthcare organizations are improving patient health outcomes, cost-effectiveness, and delivery of timely care. For instance, AI is used to detect diseases and analyze information from a patient's Electronic Health Record (EHR) in order to more accurately diagnose their health issues and consult on various ways to treat it. New technology investment and integration have allowed healthcare organizations to rapidly evolve components of patient care while strengthening revenues.

From real-time diagnosis aided by machine learning to wearable devices that track and transmit patient data from a distance, a host of new and evolving technologies are poised to influence care delivery in 2020. Investments in health monitoring and preventive care technology companies will help in reducing hospitalization and related costs.

A large number of doctors, health systems, and medical specialties have started providing telehealth services. As insurers start offering reimbursements for telehealth and the scope of telehealth coverage for medicare advantage enrollees expands, the benefits will continue to be more evident. For instance, a senior citizen recovering in post-acute care could receive an on-camera consultation without the physical and financial toll of travel.

As the pandemic wreaks havoc within the healthcare system, telemedicine is stepping up and helping healthcare organizations and caregivers provide better patient care economically. Healthcare providers seeking opportunities to reduce costs and improve efficiency, are expected to eventually trigger healthcare technology investments and acquisitions.

The global healthcare expenditure is estimated at USD 750.0Bn in 2020, presenting opportunities to digital tools and medical technology firms.

In 2019, more than 100 hospitals have invested in virtual care technology and services.

We're seeing a shift away from using technology to advance specialty care and high-tech medicine and a shift toward using technology to enable prevention and primary care

– Dr. Felix Matthews, Managing Director and Physician Leader at Deloitte

Virtual reality enters medicine to assist in patient treatment

VR technology is also finding a role in healthcare. Vivid imagery provided via headsets is also being used in hospitals as a mode of distraction and a way to avoid or lessen the use of pain medication, especially for patients undergoing treatments or experiencing discomfort. Many healthcare organizations have realized the benefits of VR and have started investing in it and implementing it in their operations. Such companies are investing into VR tech startups such as Oculus Rift and HTC Vive to enhance their technological capabilities for open surgeries in risk-free environments.

You need big data to drive you to the right place. Once you know who is at risk, that is where little data comes in. You need the boots on the ground. Large data sets are good, but it comes down to messaging the provider or patient. Then you can use care management to drive provider behavior.

– **Terri Steinberg, MD**, Chief Health Information Officer and Vice President of Population Health Informatics, Christiana Care Health (Delaware)

Adopting a continuous learning mindset is and will continue to be needed to adjust to the changing healthcare landscape. Staff will need to possess and continually refine competencies in IT in order to contribute and compete. For our patients, who will be expected to handle more self-care through IT capabilities, the need to develop comfort with wearables and using self-monitoring, AI and care management will be essential. In short, the biggest challenge facing healthcare will be in embracing the embeddedness of IT in all facets of the health care and the delivery system.

– **Linda C. Lombardi, PhD**, Chief Strategy Officer and Chief Experience officer, NYC Health + Hospitals

Featured Transactions



August 2020

Siemens Healthineers AG announced its plans to acquire Varian Medical Systems for a total consideration of USD 16.4Bn. Under the agreed transaction, Siemens Healthineers will acquire all shares of Varian for USD 177.5 each in cash, representing a 24% premium. The deal is expected to create an integrated platform of end-to-end oncology solutions with highly complementary diagnostic tools, imaging, radiotherapy, and AI capabilities. The acquisition is aimed at leveraging the share values, combining synergies, innovation capabilities, and customer fit.



July 2020

Recursion Pharmaceuticals acquired Vium to bolster its efforts to industrialize drug discovery. Vium's platform combines computer vision, machine learning, and sensor technologies to non-invasively collect and derive insights from digital biomarkers in preclinical research. The transaction will help Recursion rapidly integrate Vium's advanced technologies to grow its drug discovery pipeline of over 30 programs along with the programs developed jointly with large pharmaceutical partners.



August 2019

Roper Technologies acquired iPipeline in an all-cash transaction valued at USD 1.6Bn. The transaction was expected to demonstrate Roper's capital deployment strategy by acquiring another high-quality business to help grow and compound its cash flow. Post the transaction, iPipeline thrives as a part of Roper with a clear niche market leadership, a history of strong organic growth, high customer retention, and a sturdy management.

Select Transactions – M&A

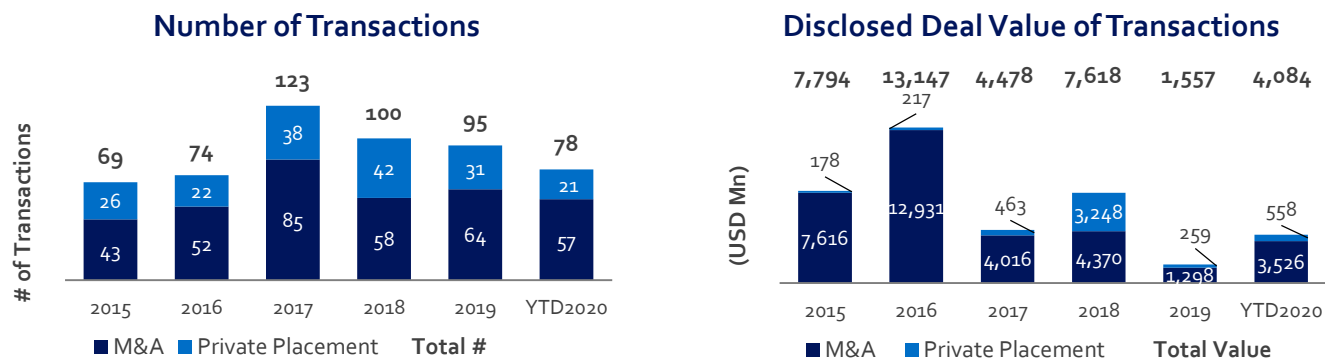
Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
19-May-20	Hint Inc	Revanne Therapeutics, Inc	148.1	56.0	-	-
19-May-20	Physera, Inc	Omada Health, Inc	30.0	-	-	-
11-Mar-20	Xcure Corp	CU Healthcare co., Ltd	22.8	52.5	3.5X	-
27-Feb-19	Versum Materials, Inc	MERCK Kommanditgesellschaft auf Aktien	6,988.4	5,876.7	4.8X	14.5X
10-Apr-19	Beijing Zhiyou Wangan Technology Co., Ltd.	Shenzhen Cau Technology Co., Ltd (SZSE:000004)	261.6	261.6	12.7X	-
14-Mar-19	Arxspan, LLC	Bruker Corporation (NasdaqGS:BRKR)	16.6	16.6	-	-
14-Mar-19	Linkury Ltd	Medigus Ltd. (TASE:MDGS)	2.5	2.5	-	-
17-Jan-18	S-MAC CO., Ltd.	G-Baise Inc	0.2	180.0	1.0X	7.2X
05-Jan-18	Budly Software Inc.	MYM Nutraceuticals Inc	2.5	2.5	-	-
6-Mar-17	Advanced Vision Technology (A.V.T.) Ltd.	Danaher Corporation (NYSE:DHR)	93.8	93.8	1.3X	14.7X
Average					4.7X	10.9X
Median					3.5X	10.9X

Select Transactions – Private Placement

Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
16-Aug-20	TeraGroup	APEX National Investment Company	-	-	-	-
30-Apr-20	Rapid Micro Biosystems, Inc.	Asahi Kasei Medical America Inc.; Endeavour Vision SA; Longitude Capital Management Co., LLC; Xeraya Capital Sdn Bhd.; Ally Bridge Group; Bain Capital Life Sciences Investors, LLC	120.0	-	-	-
12-Dec-19	Aeolus Robotics, Inc.	Saint-Care Holding Corporation; Medical Care Service Company Inc; Gakken Cocofump Holdings Co., Ltd	20.0			
09-Nov-19	Innophys Co., Ltd.	Fidelity Investments; Nac Co., Ltd; Future Venture Capital Co., Ltd; Hi-Lex Corporation; Towa Pharmaceutical Co., Ltd; Bic Camera Inc; Brother Industries, Ltd; Tokai Corporation; TIS Inc	32.3			
27-Aug-18	Alpha Holdings, Inc. (KOSDAQ:A117670)	Artemis Investment Advisory Co., Ltd.; Premier Bio Corporation; Changjo Investment	33.1			
15-Jun-18	ITEK, Inc. (KOSDAQ:A119830)	Korea Stem Cell Bank Co., Ltd.; Gem&Company; Stone Bridge Union Co., Ltd.; Wonjin Bio HC Co., Ltd.; Bel Air Investment Co., Ltd.; Wise Alliance Co.,Ltd.	56.7			
Average					NA	NA
Median					NA	NA

Industrial

The industrial sector is comprised of providers of industrial machinery, electrical components and equipment, and heavy industrial equipment and OEMs and industrial conglomerates. M&A transactions and private placement in the sector was the highest in volume in the year 2017 with a total of 123 transactions. Its highest deal value totaled at ~USD 13.1Bn in 2016, attributed to large ticket acquisitions of Dematic Group, Sensus Worldwide and Mentor Graphics Corporation.



Growing need for IoT & AI by OEMs to result in growth in investment and collaboration activity

Emerging technologies such as AI, IoT, and Blockchain help OEMs enhance their productivity and offer more products to customers. Most OEMs' businesses are centered on delivering product-as-a-service. It is predicted that by 2030 sensor-equipped and IoT-connected products will be preferred over their non-tech alternatives. Consumers prefer subscription-based formats from product-as-a-service providers. Hence, several industrial manufacturers such as BAE, Caterpillar, GE, and ABB have launched subscription models and are investing into new technologies to meet this demand.

IoT will be a crucial part of the Industry 4.0 revolution. 30% is the increase in productivity that is expected for first-wave IoT-adopters.

Service business transformation technologies, coupled with increasing data-transfer bandwidths (5G), IoT, AI and ML, are being used by OEMs to facilitate predictive and prescriptive maintenance, optimize productivity, and maximize product uptime more efficiently; driving OEMs to invest in technology-based startups to drive cost-effective production.

IM&C segment leading in implementation of advanced technologies

The industrial machinery and components (IM&C) industry has started acquiring and adopting Blockchain, Internet of Things (IoT), and cloud solution-as-a-service business models. Blockchain is helping companies offer faster and more secure agreements between partners in a complex supply chain, legally. Furthermore, blockchain helps reduce the number of impacted parties in cases of faulty machinery or components, immediately identify devices on that network, alter permissions as needed, and communicate seamlessly and securely. Companies have been using cloud solutions to respond to business requirements as promptly as possible. As a result, industrial players are acquiring and investing into blockchain, AI, and cloud platforms to improve operations.



This is a hardware-plus-service business; the value-added services have high margins that will reflect on the bottom-line, Companies like us have an edge because analytics can be done only when you understand the domain very well. New age technology has to be built into new assets, but it is also necessary that old assets adopt it if they have to be competitive and relevant.

– JD Patil, SVP & Member of the Board, Larsen & Toubro



Advent of Industry 4.0 has led to increase in Industrial IoT investments and acquisitions

Industrial Internet of Things (IIoT) allows the use of IoT devices to enhance the efficiency of manufacturing and industrial processes. Various types of hardware devices such as sensors, and industrial robots are used to make a system of connected devices that provides real-time analytics data. This helps enhance machine to machine (M2M) communications, thereby increasing the reliability and efficiency of the machines used in industries. Manufacturing companies are investing in IIoT to improve productivity, predict equipment failure, spot trends, and improve employee safety.

Global Industrial IoT (IIoT) market is estimated at USD 82.4Bn in 2020 and expected to grow at a CAGR of 21.3% over 2020-2028.



Building on the foundation laid by traditional control systems. Industrial IoT is making these heavy equipment and system controls more user-friendly, adaptive and capable than ever before.

– Mary Barra, Chairman & CEO, General Motors



Featured Transactions

Atlas Copco

February 2020

Atlas Copco AB signed a business combination agreement to enter a strategic partnership with ISRA Vision AG for USD 1.2Bn. For ISRA, the strategic partnership represents a way to further accelerate the growth and innovation path. The transaction is aimed at strengthening focus on industrial automation and enhancing machine vision business with ISRA as nucleus. Under the terms of the strategic partnership agreement, Atlas Copco will launch a voluntary public tender offer of USD 54.7 per ISRA share in cash. The offer price represents a premium of ~29.0% on the volume-weighted 3-month average share price prior to the announcement and a premium of ~43.0%.

AMETEK

September 2019

Ametek acquired Gatan in an all-cash transaction valued at USD 925.0Mn. The transaction enhances and extends Ametek's operation and performance of electron microscopes. With annual sales of approximately USD 180.0Mn, Gatan joined AMETEK as part of its Electronic Instruments Group (EIG), a leader in advanced analytical, monitoring, testing, calibrating, and display instrumentation.

DOVER

April 2017

Dover Corporation acquired Caldera Graphics SAS for a cash consideration of ~USD 37.3Mn. Post acquisition, Caldera has been integrated with Dover's Printing and Identification platform, alongside MS Printing Solutions ("MS") and the JK Group serving the global digital textile printing market.

TDK

December 2016

TDK Corporation entered into an agreement to acquire InvenSense for USD 1.3Bn at USD 13.0 per share in an all-cash transactions. The transaction has promoted further growth in sensor and actuator products, an important part of TDK's growth plan, and strengthened TDK Corporation's position as a stronger global player for sensor solutions.

Select Transactions - M&A

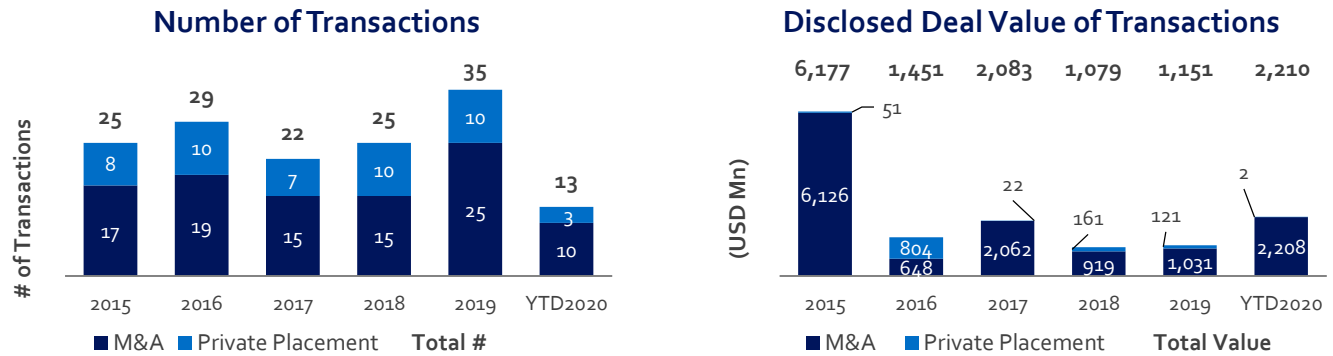
Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
1-Apr-20	Neighbor System Co.,Ltd	MAXROTEC Co., Ltd	12.2	23.9	0.5X	-
29-Mar-20	Insigma Technology Co., Ltd	Zhejiang Wanliyang Co., Ltd	69.8	1,328.8	2.4X	22.0x
3-Mar-20	Digital Applications International Limited	Dematic Limited	133.8	108.2	3.0X	-
17-Oct-19	BroadenGate Software Services Co., Ltd	Infore Holding Group Co.,Ltd	20.2	21.3	1.4X	-
2-Oct-19	V2Com Participacoes S.A.	WEG S.A.	11.0	21.6	2.4X	-
23-Apr-19	INSIS S.p.A.	Fincantieri S.p.A.	26.2	43.7	0.8x	-
4-Apr-19	ser elektronik GmbH	SMT Scharf AG	2.2	4.4	1.3X	-
21-Nov-18	Automatic Bank Services Limited	Visa International Limited	9.9	99.3	4.1 X	12.3x
11-Jul-18	Shanghai Lianhong Chuangneng Information Technology Co., Ltd	Nancal Technology Co.,Ltd	35.7	35.7	1.3X	-
8-Nov-17	IGE+XAO SA	Schneider Electric Industries SAS	166.2	213.2	4.6x	16.4x
Average					1.9x	16.4x
Median					2.2x	16.9x

Select Transactions - Private Placement

Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
22-Jul-20	Viasat, Inc. (NasdaqGS:VSAT)	Intercorp; The Baupost Group, LLC	175.0	-	-	-
30-Apr-20	otonomo Technologies Ltd	Bessemer Venture Partners; Avis Budget Group, Inc; SK Holdings Co, Ltd; Alliance Ventures	46.0	-	-	-
9-Nov-19	Innophys Co., Ltd	Fidelity Investments; Nac Co., Ltd; Future Venture Capital Co., Ltd; Hi-Lex Corporation; Towa Pharmaceutical Co., Ltd; Bic Camera Inc; Brother Industries, Ltd; Tokai Corporation; TIS Inc	32.3	-	-	-
24-Oct-19	Sofdesk Inc.	EnerTech Capital; BDC Capital Inc.; Desjardins Capital Inc.; Generac Holdings Inc. (NYSE:GNRC)	5.7	-	-	-
21-Dec-18	Tank Utility, Inc.	Generac Holdings Inc. (NYSE:GNRC); Serra Ventures, LLC; Bullpen Capital; Energy Foundry; Blue Fog Capital, LLC; Array Ventures	6.0	-	-	-
11-Jun-18	PTC Inc. (NasdaqGS:PTC)	Rockwell Automation, Inc. (NYSE:ROK)	1,000.0	-	-	-
5-Mar-18	Ever-Rising Group	Ningbo Akin Electronic Technology Co.,Ltd.	236.3	-	-	-
Average					NA	NA
Median					NA	NA

Leisure

The global leisure industry, comprised of casinos, bars, restaurants, hotels, entertainment events, online gaming, sports facilities, and travel-focused businesses, is subject to various influential factors, such as weather conditions, natural catastrophes, politics, economics, and evolving consumer habits. Furthermore, in today's age, even technology plays a key role in determining how people plan their leisure activities, creating new opportunities for growth.



Although investments in emerging technologies by the leisure sector has been muted in the past as it was traditionally focused on asset acquisition, it witnessed a minor spike in the previous year. Deal activity in the eight months of 2020 has also been sluggish, making leisure, one of the worst-hit industry by COVID-19. As players seek technology to reach out to customers during the pandemic, YTD2020 deal value demonstrates growth over last two years and an increase of about 52% since 2016. Historically, M&A had dominated the number of private-placement investments in this industry.

Spur in online activity has resulted in associated digital investments by gaming and hospitality firms

The shift to online platform and the relaxation of regulations have spurred the acquisition of several online betting and gaming platforms. This has led the way for more activity related to payments development, POS, and payment security firms in the casino and online gaming segments, given their need to secure consumer transactions.

The acquisition of advertising and marketing platforms is prominent among online gaming, hospitality, and travel companies. Companies are heavily investing in developing their consumer-centric capabilities by acquiring firms working on disruptive technologies, such as data analytics and AI to attract consumers via multiple media channels.

Other popular acquisition targets in the leisure industry include the industry participants in compliance management tools, policy guidance and reporting, customer and employee engagement and management, guest management, chatbots, online ordering, loyalty programs, and game development.



Every industry and every organization will have to transform itself in the next few years. What is coming at us is bigger than the original internet and you need to understand it, get on board with it and figure out how to transform your business.

– **Tim O'Reilly**, Founder and CEO, O'Reilly Media



Hospitality sector embraces technology for customer facing, marketing, and operational applications

Big data and predictive analysis for modern tourism management, robotics, IoT and artificial intelligence for customer service, augmented reality (AR) and virtual reality (VR) for enhanced customer experience, and recognition technology are the key digital trends in the travel and tourism industry.

Accor is one of the leading acquirers in the hospitality segment, with

The global travel & hospitality AI market is estimated to reach USD 11.0Bn by 2024, growing at a CAGR of ~38.0% over 2018–2024.

Tech Acquisitions by Non-Tech Companies

focus on e-booking software, online booking portals, and supply chain management solutions.

Cloud-based interactive platforms and AI & analytics-based consumer insight tools are popular acquisition targets for buyers wanting to achieve advertising, marketing, and operational success.

Restaurants, bars, and hotels are turning to a more digitalized approach on the customer-front. Digital menus, online reservations and bookings, cashless payments, integrated CRM, digital workflow management, etc. have percolated into the operations of the hospitality segment owing to the investments in such platforms.

Technology needs to be leveraged to enhance the in-hotel experience, in order for us to offer guests exactly what they want. Guests today expect integrated and personalized digital interactions across channels throughout their travels, which is why digital innovation is playing an increasingly critical role in ensuring a steady stream of new guests, and loyal guests that repeatedly stay with us time and again.

– **Sarah Somerville**, Senior director, Customer engagement APAC, Hilton Honors

Technology is lifting the limits of creativity and transforming the possibilities for entertainment and leisure. One: Invest most of the capital in creating high-quality, branded content and experiences. Two: Embrace technology and use it aggressively to enhance the quality of Disney's product and thus the consumer experience. And lastly, get closer to the customer by becoming more efficient as a company.

– **Bob Iger**, Chairman & CEO, Disney

Featured Transactions



July 2020

Esports Entertainment Group, Inc. acquired Argyll Entertainment AG, a Switzerland-based company operating an online casino and a livestreaming sportsbook for a consideration of USD 13.4Mn. The acquisition will enable Argyll to increase its users while providing Esports with opportunities to capitalize wealth due to combined operations, expertise, and domain knowledge. Furthermore, Esports will also get access to Argyll's brand SportNation.bet along with exclusive sports and gaming content and rewards program.



June 2020

Zynga, Inc. has agreed to acquire Peak Oyun Yazilim ve Pazarlama A.S. (Peak Games) for an estimated consideration of USD 1.8Bn. The transaction will add significant scale to Zynga's live services portfolio to eight 'forever franchises' and will expand its margin over the coming years. It will enhance Zynga's new game pipeline with additional projects in the early development stage. The acquisition will further grow Zynga's average mobile DAUs by more than 60% and will strengthen its international customer base.



September 2019

NetEnt AB, a Sweden-based developer and licensor of gaming systems, acquired Red Tiger Gaming Limited online developer and supplier of casino games and related software for USD 242.2Mn. The transaction is in line with NetEnt's prospect of gaming focused on customer reach and regulated markets, and it will provide the company with an opportunity to improve its revenue synergies and technology.

Select Transactions - M&A

Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
07-Jul-20	Argyll Entertainment AG	Esports Entertainment Group, Inc.	13.4	13.4	1.1x	-
07-Jul-20	BetSys, s.r.o.	STS Gaming Group	-	-	-	-
01-Jun-20	Peak Oyun Yazılım ve Pazarlama A.S.	Zynga, Inc.	1800.0	1800.0	45.0x	-
11-Mar-20	Lead Republik Limited	Raketech Group Holding PLC (OM:RAKE)	1.9	-	-	-
07-Jan-20	Compl.ai Inc.	FCm Travel Solutions (India) Private Limited	-	-	-	-
18-Dec-19	Onu Innovation Co., Ltd.	Shinsa Food Co., Ltd.; Golden Hill Co., Ltd.	3.5	-	1.6x	-
07-Dec-19	Jiangsu Zhongli Electronic Information Technology Co., Ltd.	Suzhou Shajiabang Tourism Development Co., Ltd.; JiangSu Genland Trade Group Co.,Ltd	89.7	-	1.3x	-
02-Dec-19	mkodo Ltd.	Pollard Banknote Limited (TSX:PBL)	10.1	-	-	-
25-Nov-19	Bimedia SAS	La Française des Jeux Société anonyme (ENXTPA:FDJ)	55.0	-	-	12.5x
29-Oct-19	Tuque Games Inc.	Wizards of the Coast, LLC	-	-	-	-
20-Sep-19	Mindway AI A/S	Better Collective A/S (OM:BETCO)	0.6	-	-	-
19-Sep-19	AXS Group LLC	Anschutz Entertainment Group, Inc.	-	-	-	-
10-Sep-19	Apprente, Inc.	McDonald's Corporation (NYSE:MCD)	-	-	-	-
05-Sep-19	Red Tiger Gaming Limited	NetEnt AB	242.2	242.2	-	-
Average					12.2x	12.5x
Median					1.4x	12.5x

Select Transactions - Private Placement

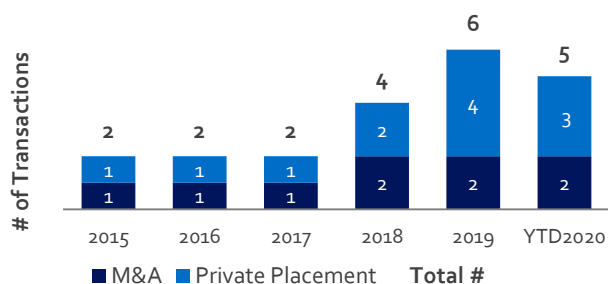
Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
18-Aug-20	Blanket, Inc.	Aurify Brands, LLC; Branded Ventures	0.8	-	-	-
05-Aug-20	Rollic Games Oyun Yazılım ve Pazarlama A.S.	Zynga, Inc.	168.0	-	-	-
23-Apr-20	LOOP LOGISTICS SAS	Speedinvest GmbH; Fashion for Good B.V.; Alante Capital; Volta Circle Limited	1.1	-	-	-
03-Mar-20	TP Connects Technologies LLC	Flight Centre Travel Group Limited	-	-	-	-
29-Jan-20	Barstool Sports Inc.	Penn National Gaming, Inc.	163.0	-	-	-
07-Sep-19	Tote Limited	Alizeti Capital Limited	122.8	-	-	-
19-Aug-19	Groups360	Hilton Worldwide Holdings Inc; Marriott International, Inc; InterContinental Hotels Group PLC; Accor SA	50.0	-	-	-
23-Jul-19	AdInte co.,Ltd.	Tokyo Dome Corporation	-	-	-	-
17-Jul-19	Keenwawa, Inc.	Alesa, S.A.B. de C.V.; Valor Management Corp.; M.H. Alshaya Co. W.L.L.; Tao Capital Partners	30.5	-	-	-
Average					NA	NA
Median					NA	NA

Maritime

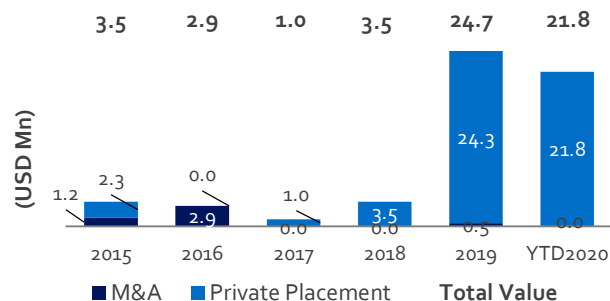
The growing world population and the subsequent increase in passenger movement and trade activities have resulted in the continuous expansion of the maritime industry. The industry witnessed significant qualitative and quantitative growth due to the booming e-commerce activities across the globe.

In 2018, total maritime trade volume was estimated to have reached 11.0Bn tons, an all-time high; while an estimated 793.3Mn TEUs were handled in container ports worldwide.

Number of Transactions



Disclosed Deal Value of Transactions



An industry conservative towards technology acquisitions

However, the industry is not known to be very active on the M&A front. Leading players are more acquisitive than others and a majority of their deals are strategically designed for asset acquisitions rather than innovation elevation, which leads to further industry consolidation and less competition. Half of the top 20 carriers in 2013 seldom operate as stand-alone entities, having merged with large players or formed alliances to cut costs and grow. The industry, in general, has a conservative approach where market participants focus on organic growth and straightforward asset transactions rather than corporate acquisitions.

95,402 ships with 1,97Bn DWT Tons capacity have increased the global ship carrying capacity by over 2.6% annually.

In this decade (the 2020s), there will be a revolution in the (maritime) business. There has been a maturation of technologies where the cost curves have been driven way down, as all aspects of business become much more data driven. A major trend is the use of AI and its major application is end to end visibility. Sustainability is another driving factor that will speed up the adoption of new technologies in the maritime sector.

– Chris Clott, Director, New York Maritime Innovation Center (NYMIC)

Winds of change attract players to the digital landscape

However, it is catching up with the acquisition of new technologies by investors who enjoy adequate access to funding capital. This is evident with the technology investment deal count and value peaking recently in 2019, leading to raised momentum. In 2020, YTD transaction volume and value are on par with the previous year and private placements have surpassed traditional M&A deals. The industry has witnessed a few medium and large-sized players acquire technology companies to easily enter the digital market. Further, adding additional services to their portfolio gives them a foundation to start from rather than build their own set up.

The focus is on real-time data collection & monitoring of shipments and the automation of operational procedures. The power of IoT, RFID, and Automatic Identification & Data Capture (AIDC) technology is being explored to monitor critical metrics. Based on the sector and the company's approach, the M&A appetite differs despite the availability of finance.

- While bulk carriers are focused on efficiency and scaling their operations organically, container lines are expected to

Tech Acquisitions by Non-Tech Companies

drive up activity with investments in technology solutions. They are focused on opportunities that help them establish their presence in onshore activities and further integrate and expand into the supply chain. For instance, port-side logistics and terminal infrastructure solutions.

- The availability of dry-powder funding with PE is likely to result in the consolidation in the ship management sector.
- This largely paper-dependent industry is also turning to business process management solutions to streamline documentation, reporting, and compliance, while improving efficiencies and reducing costs.

It is important for the maritime industry to reimagine the way in which it operates and navigate future challenges of disruption and environmental regulation. So this is a good opportunity for tech startups to work alongside with us to co-create solutions to shape the future of Maritime Singapore.

– **Tan Beng Tee**, Assistant Chief Executive (Development), Maritime and Port Authority of Singapore

On autonomous vessels: There will always be human beings on the ships; but there will be fewer of them, and they will be assisted by highly trained experts working remotely from the shore-side.

– **Chris Clott**, Director, New York Maritime Innovation Center (NYMIC)

Featured Transactions

SEQUOIA

CMA CGM

INCOMLEND

August 2020

Incomlend Pte. Ltd., a global online voice trading platform that aims to democratize access to trade finance, raised USD 20.0Mn in Series A round led by Sequoia Capital. The deal was supported by shipping and logistics company CMA CGM Group to create strong and innovative synergies between financial and logistics flows by facilitating access to trade finance. The funds are expected to drive geographic expansion and develop state-of-the-art digital invoice finance underwriting and processing technology.

CMA CGM

LUNDI MATIN

March 2020

CMA-CGM SA and Lundi Matin SAS acquired e-commerce activities of Oxatis and Doyousoft/Channel Pilot Solutions/Oxatis Espana/Oxatis UK, for an undisclosed consideration. The deal is in line with the acquirers’ strategy of providing their customers with end-to-end solutions and expanding their customer base. The acquirers plan to inject EUR 8Mn in Oxatis over a period of three years to keep operations running.

PSA
 The World's Port of Call

February 2018

PSA International Pte Ltd. acquired a 30.0% stake in CrimsonLogic Pte Ltd. for an undisclosed consideration. The acquisition combines CrimsonLogic's eGovernment and GeTS solutions, which complement PSA's global portfolio of port and logistics assets and technology systems, adding synergies to CrimsonLogic's business and aiding in streamlining trade processes. This transaction will allow innovation and trade solutions that will facilitate global trade flow and improve processes in the supply chain. Prior to this transaction, PSA held 15.0% stake in CrimsonLogic.

Select Transactions – M&A

Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
30-Mar-20	E-Commerce Activities of Oxatis and Doyousoft/Channel Pilot Solutions/Oxatis Espana/Oxatis UK	CMA CGM S.A.; Lundi Matin SAS	-	-	-	-
22-Jan-20	Nautas Technologies SA	BALEÀRIA EUROLINEAS MARITIMAS, S.A.	-	-	-	-
23-Jan-19	Integra Telecommunication & Software Limited (BSE:536868)	Micro Logistics (India) Private Limited	0.5	0.8	83.5x	-
09-Jan-19	Techsol Marine, Inc.	Ocean Group Inc.	-	-	-	-
13-Jun-18	Nedcargo Multimodal B.V.	Combined Cargo Terminals B.V.	-	-	-	-
22-Feb-18	Crimsonlogic Pte. Ltd.	PSA International Pte Ltd	-	-	-	-
12-Apr-17	Laus CC d.o.o.	Atlantska Plovidba d.d. (ZGSE:ATPL)	-	-	-	-
17-May-16	JAMES FISHER ASSET INFORMATION SERVICES LIMITED	James Fisher and Sons plc (LSE:FSJ)	2.9	2.8	-	-
11-Aug-15	Escort Teknoloji Yatirim A.S. (IBSE:ESCOM)	Ata Romorkor Kurtarma Hizmetleri Ve Dis Ticaret Limited Sirketi	1.2	24.3	58.8x	-
Average					71.1x	NA
Median					71.1x	NA

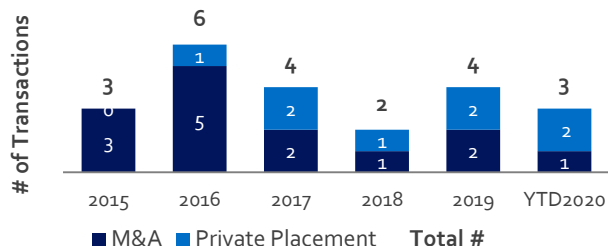
Select Transactions – Private Placement

Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
11-Aug-20	Incomlend Pte. Ltd	Sequoia Capital India Advisors Private Limited; CMA CGM S.A.	20.0	-	-	-
26-Mar-20	Sortify.tm Limited	Quayside Holdings Limited; K1W1; WNTVentures	0.7	-	-	-
24-Feb-20	Staffyou B.V.	Euro-Rijn Group B.V.	1.1	-	-	-
05-Sep-19	Loadsmart, Inc.	Ports America, Inc.; Connor Capital SB, LLC; Chromo Investimentos Ltda.; Maersk Growth	19.0	-	-	-
24-May-19	HUUB	A.P. Møller - Mærsk A/S (CPSE:MAERSK B)	1.7	-	-	-
27-Feb-19	Ladingo Ltd.	ZIM Integrated Shipping Services Ltd.	1.0	-	-	-
31-Jan-19	Orca AI	MizMaa; Ray Car Carriers Ltd.; theDOCK Innovation Hub	2.6	-	-	-
28-Jun-18	Urbantz S.A.	Sambrinvest S.A.; CMB NV	3.5	-	-	-
23-Feb-18	Mober Technology PTE Inc.	2GO Group, Inc. (PSE:2GO)	-	-	-	-
31-Dec-17	Swiped On Limited	New Zealand Growth Capital Partners; Quayside Holdings Limited; K1W1; Enterprise Angels	1.0	-	-	-
25-Jul-16	TRAXENS SAS	CMA CGM S.A.; MSC Mediterranean Shipping Company S.A.	-	-	-	-
09-Feb-15	TRAXENS SAS	CMA CGM S.A.; CAAP Création; Banque Populaire, SCR Provençale et Corse	2.3	-	-	-
Average					NA	NA
Median					NA	NA

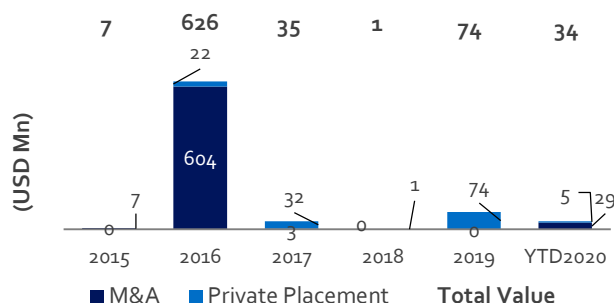
Packaging

Technology acquisitions in the packaging industry have been limited over the past five years. The number of deals has fluctuated from 2016 to 2019 and the volume of private-placement investments has also been consistently low over the past five years. However, the packaging industry participants are focusing on tech innovations, marketing, labelling, prolonged shelf life, and environmental protection.

Number of Transactions



Disclosed Deal Value of Transactions



Manufacturers explore sustainable packaging technology investments

Amid the current intense scrutiny of plastic packaging, manufacturers are exploring alternatives such as plant-based fibers including micro-fibrillated cellulose (MFC), where plant fiber is broken down to micro levels and reconstituted as packaging material that is stronger and lighter than its glass or carbon fiber counterparts. It can also be incorporated into other packaging materials to strengthen them. However, researchers are yet to find ways of mass producing such packaging material, which has only been created in the laboratory in small quantities.

The global packaging automation solution market accounted for USD 42.6Bn in 2019 and is expected to reach USD 95.9Bn by 2027, growing at a CAGR of 10.7% over 2019–2027.

Cloud and data solutions help construct integrated processes, profitable business models

Another essential elements are IoT and Cloud Computing. IoT helps packaging industries in receiving real-time data and analysis of product quality, machine performance, and machine yields. With cloud-based solutions, the packaging industry has witnessed a decline in Total Cost Ownership (TCO) and the advantages of integration. As with other trends across the larger industrial sector, companies are expected to invest in this technology since the benefits have been indispensable.

With the adoption of digitalization, the packaging industry will look forward to reaping the benefits of machine learning, analytics, and BI tools, which enable manufacturers to operate with an integrated data model and replace inefficient legacy systems. Using analytical tools will not only impact growth, but also help manufactures optimize production processes. Supply chain digitization is a priority for leading enterprises who rely on back-office digitization and operation digitization. Hence, companies should shift focus from simply using digital technologies for cost containment and begin investing in them to leverage their transformative potential and create new business models and revenue streams.



Digital transformation allows brands to empower employees, engage customers, optimize operations, and transform products.

– Meetul Patel, COO and CMO, Microsoft India



E-commerce players at the forefront of deploying automation and innovative technologies in packaging

Organizations are transforming packaging in the field of e-commerce. The ability of robotic arms to sort small items into boxes for quick and accurate delivery, has made them a chosen technology with manufacturers and retailers. Robotic arms offer movement and task flexibility, while the systems can be reprogrammed to change their packaging functions. Mobile

Tech Acquisitions by Non-Tech Companies

robotic platforms that can navigate their way around warehouses, have also aided in significant efficiency improvements. Such autonomous mobile robots or AMRs self-learn new routes and can be deployed quickly in new environments, making them more flexible than previous models that had to be programmed to follow fixed routes. Investments into such emerging technologies will help companies survive long-term competition and help them grow.

Additionally, with technologies such as near-field-communication (NFC) and bluetooth low-energy (BLW), newer interactive communication channels have opened up between all parties involved in business, allowing customers to access product related information via NFC in almost unlimited ways including directly contact with the manufacturer/retailer/ brand. Promotional campaigns, competitions, and bonus campaigns can be integrated indefinitely, while offering an important security advantage NFC chips have unique serial numbers assigned by the manufacturer that prove the originality of products. Investments into such emerging technologies will help companies survive long-term competition and help them grow.

Players still investing in digital printing technology to replace mechanical processes

Digital printing allows packaging companies more latitude in personalization and customization than outdated mechanical processes. Most companies switched from analog to digital techniques within the past decade. However, retooling completely takes time and in 2020, there exist a handful of dated companies that need to make progressive investments.



With more devices connected to the internet than there are humans. We are going through a technological movement towards digital food. Just as the industrial revolution transformed food, digital technology is transforming how we manufacture, grow and consume food.

– **Libby Costin**, VP, Global Marketing, Tetra Pak South East Asia, East Asia and Oceania



Digital technologies are revolutionizing every industry, and it's exciting to make the latest innovations work for our customers. We are pleased to be the first to launch digitalized services, offering customers reduced costs, enhanced efficiency, and peace-of-mind. This is just the beginning of what promises to be a very exciting journey for us and our customers.

– **Dennis Jonsson**, President and CEO, Tetra Pak



Featured Transactions



November 2016

Multi Packaging Solutions International Limited acquired i3 Plastic Cards, US-based solution provider for plastic transaction cards, such as pre-paid gift and loyalty cards for USD 31.9Mn. The acquisition is complementary to Multi Packaging's strategic plan of growing business organically, expanding it geographically, and gaining a substantial position in the packaging industry. Under the terms of the deal, Multi Packaging will pay USD 15.0Mn in cash and will issue ~0.2Mn shares as consideration.



March 2016

CCL Industries acquired Checkpoint Systems for USD 10.2 per share in cash for a total transaction value of ~USD 443.0Mn. The purchase price represents a premium of 29% over share price and a 50.0% premium over the 30-day volume-weighted average price. CCL plans to leverage Checkpoint's hardware, software, and consumables to create a unique offering, the future of inventory management for brand owners and leading retailers, globally.

Select Transactions - M&A

Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
17-Jan-20	IDentilam Ltd/I.D.&C. World Holdco Ltd	CCL Industries Inc	29.4	29.4	-	-
12-Apr-19	SES America, Inc	Lacroix Emballages SAS	-	-	-	-
02-Oct-17	JASTECH France SAS	Digital Packaging S.A.S.	-	-	-	-
06-Apr-17	Shenzhen Runtianzhi Digital Equipment Co., Ltd	Suzhou Hycan Holdings Co., Ltd	3.0	140.3	2.3X	24.4X
08-Nov-16	i3 Plastic Cards, LLC	Multi Packaging Solutions International Limited	31.9	18.1	2.5X	-
8-Jun-16	Biolog Device Co., Ltd	Wonlim Corporation	4.7	71.8	1.7X	7.5X
02-Mar-16	Checkpoint Systems Inc	CCL Industries Inc	557.3	454.3	0.7X	9.5X
15-Jan-15	PeopleVine	Alliance Creative Group, Inc	-	-	-	-
Average					1.7X	12.5X
Median					1.7X	9.0X

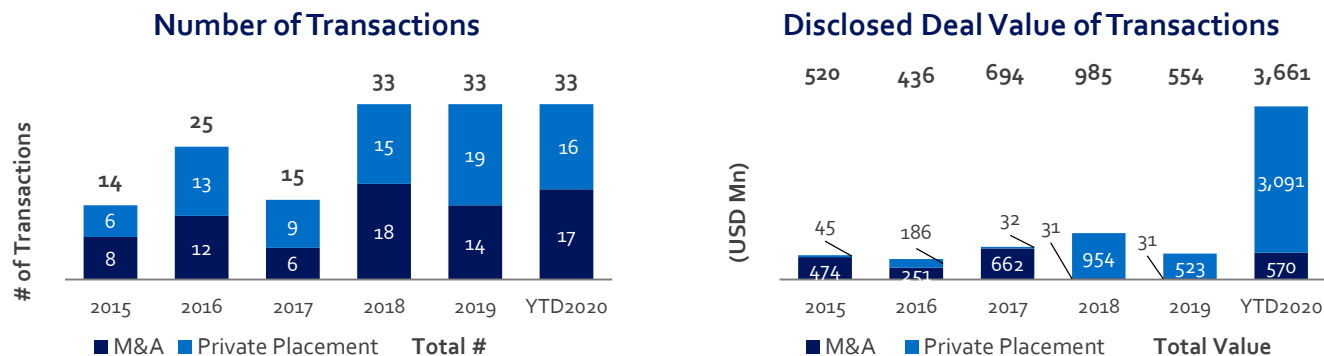
Select Transactions - Private Placement

Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
28-Apr-20	Logmore Oy	Jaakkoo Taara Oy; Tekton Ventures; Icebreaker; Trind Ventures OÜ; NordicNinja VC	4.9	-	-	-
15-Aug-19	GNET Integration Services, Inc	Hermann Companies, Inc; Serra Ventures, LLC; Dreampact Ventures	3.5	-	-	-
14-Jan-19	Wiliot Ltd	PepsiCo, Inc; Avery Dennison Corporation; Samsung Venture Investment Corporation; QUALCOMM Ventures; Vintage Investment Partners; Amazon Web Services, Inc; NTT Docomo Ventures, Inc; Verizon Ventures; Maersk Growth	70.0	-	-	-
25-Oct-18	Verisolutions, LLC	Avery Dennison Corporation; Service Provider Capital, LLC; Atlanta Seed Company	-	-	-	-
30-Aug-17	Vidente Co., Ltd	NK Mulsan Co., Ltd; Bit Galaxia Investment Partnership 1; BTC Korea.Com Co., Ltd	12.8	-	-	-
13-Apr-17	Zhejiang Jiemei Electronic Information Materials Co., Ltd	Zhejiang Jiemei Electronic And Technology Co., Ltd	18.8	-	-	-
13-Oct-16	PragmatIC Printing Limited	Avery Dennison Corporation; ARM Limited; Cambridge Innovation Capital PLC	22.0	-	-	-
Average					NA	NA
Median					NA	NA

Retail of Consumer Goods

Technology has been a crucial part of retail since past few decades. New technologies have also found their way into the retail sector with applications ranging from supply chain to in-store operations and consumer devices.

Though the volume of M&A and private deals have balanced each other over the years, private deals lead the way in deal value, powered by the availability of dry powder with investors.



Retailers invest in consumer analytics and in-store technologies to win consumers

Consumer and data analytics are the primarily implemented processes across segments including food, apparel, electronics, and automobiles. Technology application has transcended across channels and various social media platforms. Tracking consumer behavior and their purchase journeys help various brands with targeted campaigns. Drawing insights from huge pools of consumer data, organizations can predict future buying patterns more accurately and create offers that result in successful conversions.

Thus, retailers are considering big data, analytics, and AI technology providers to merge with their operations.

The exponential growth of e-commerce has compelled many retailers to go digital. This is spurring the adoption of AR/VR and visualization technologies by retailers who aim to provide consumers with a life-like experience of visiting the store. Players at the forefront of acquiring these technologies are often manufacturers-cum-retailers of apparel, accessories, home furniture, and gaming products.

Other technologies supporting the online presence of brands are also common acquisition targets among retailers. They include mobile app development and support, digital payments, social network integrations, delivery, marketing and SEO tools, customer management programs, and data and cybersecurity solutions.

In a bid to transform itself into a 'technology and innovation company' and take on Amazon, Walmart has been on an acquiring spree for tech firms, some of which include e-commerce giant Jet.com (USD 3.3Bn, 2016), delivery startup Parcel (2017), AI-based consumer analytics firm Aspectiva (2019), and ad-tech startup Polymorph (2019).

In 2020, 20% of retail companies are estimated to adopt augmented, virtual and mixed reality solutions in their digital strategies while 40% of data analytics projects are estimated to be customer experience related.

We are living in exceptional times, with an extraordinary burst of retail innovation, driven largely by digital developments...The digitization of the food and CPG industry has already disrupted and transformed the industry, yet the story has only just begun.

– Susan Barratt, CEO, IGD

Retailers investing in software solutions to digitize back-end and supply chain operations

Other than consumer insights and e-commerce enablement, technology acquisitions in retail are increasing as companies seek to achieve operational efficiencies and cost-effective operations. Retailers are expressing interest in solutions that support their in-store and back-end operations:

- Retailers keen on replacing legacy systems across various retail functions are investing in cloud capabilities

Tech Acquisitions by Non-Tech Companies

- Large retail businesses are also integrating omni-channel customer retail fulfilment with inventory and supply chain management solutions that streamline operations across multiple store locations and warehouses
- They are also investing in IoT-enabled beacons/sensors and other AI technologies to track inventory and consumers while delivering an enriched customer experience
- Integrated payments, financial services, and CRM/loyalty program platforms are also popular targets

In light of COVID-19, acquisitions aiding online retail brand activities and smart supply chain solutions are expected to grow further.

The global retail technology spending reached ~USD 203.6Bn in 2019.

Bricks and mortar retailers are struggling to survive because they are falling behind the tech trend. Rather than competing against the online world of e-commerce, retailers should be adopting the right strategies to complement it and accommodate changing shopping habits.

– Leigh Moody, Managing Director (U.K.), SOTI

Retailers are always wondering about what or even if they should be investing in technology. Let me put it this way, as you go through your budget process keep in mind that you are not going to out-invest Amazon.

– Joe Dalton, Chief Products and Marketing Officer, PivotLink

Featured Transactions



April 2020

IKEA Group acquired Geomagical Labs, US-based AI home imaging design software firm for an undisclosed consideration. The deal will expand Ikea's digital visualization tools, allowing it to offer an affordable and unified online shopping experience to its customers.



April 2020

Anjana Investments, S.L.U./Aurgi SL acquired Autingo SL from Sanz CLIMA S.L. at an undisclosed amount. The business will contribute in significantly augmenting Aurgi's digital presence and capabilities through its own platform.



October 2019

ASICS Corporation acquired running race registration site business from Fast North Corporation for a consideration of USD 28.0Mn, financing the transaction by its cash on hand. The transaction is in line with ASICS' strategy to improve the exposure of the ASICS brand to potential customers through digital platform.

NORDSTROM

March 2018

Nordstrom acquired OMG Holdings (BevyUp), US-based provider of tools and insights to retailers, from a group of angel investors for an undisclosed consideration. The transaction is in line with Nordstrom's strategy of investing in technologies that will help create a seamless shopping experience for customers.

Select Transactions - M&A

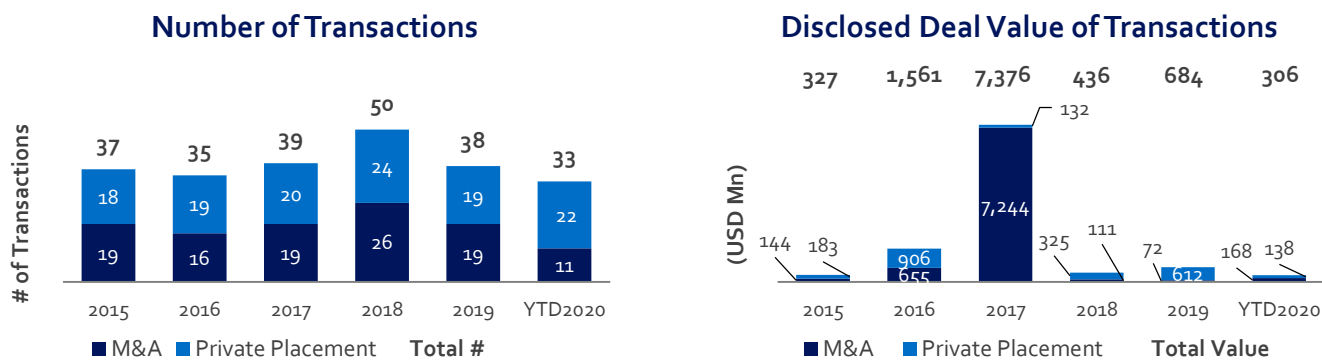
Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
2-Apr-20	Geomagical Labs inc.	IKEA A/S	-	-	-	-
1-Apr-20	Autingo S.L.	ANJANA INVESTMENTS, S.L.U.	-	-	-	-
31-Oct-19	Race Roster Business Operation of Fast North Corporation	ASICS Corporation (TSE:7936)	28.0	28.0	5.3x	-
17-Jul-19	PopularSoft Co.,Ltd.	T-Gaia Corporation (TSE:3738)	-	-	-	-
26-Feb-19	Aspectiva Ltd.	Walmart Inc. (NYSE:WMT)	-	-	-	-
11-Jan-19	Askuity Inc.	The Home Depot, Inc. (NYSE:HD)	-	-	-	-
11-Jan-19	ZiipRoom, Inc.	Bose Corporation	-	-	-	-
13-Nov-18	Thai Smart Card Co., Ltd.	CP ALL Public Company Limited (SET:CPALL)	23.9	87.3	9.3x	-
9-Mar-18	KaiOS Technologies, Inc.	Reliance Retail Limited	7.0	43.8	4.7x	-
8-Mar-18	BevyUp	Nordstrom, Inc. (NYSE:JWN)	-	-	-	-
17-Oct-16	etailz, Inc.	Trans World Entertainment Corporation (NasdaqCM:TWMC)	75.1	54.3	0.8x	-
8-Mar-16	LoudCloud Systems, Inc.	Barnes & Noble Education, Inc. (NYSE:BNED)	17.9	17.9	-	-
7-Apr-15	ttr GmbH	Media-Saturn-Holding GmbH	-	-	-	-
4-Feb-15	MyFitnessPal, Inc.	Under Armour, Inc. (NYSE:UAA)	474.0	-	33.9x	-
Average					10.8x	NA
Median					5.3x	NA

Select Transactions - Private Placement

Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
14-Aug-20	Longtail UX Pty Ltd	Global Retail Brands Pty Ltd; W23	2.3	-	-	-
21-Jul-20	Leap Tools Inc.	Connection Retail Limited	0.3	-	-	-
4-Feb-20	Relay2 Inc.	T-Gaia Corporation (TSE:3738)	-	-	-	-
10-Sep-19	Caper Inc.	Red Apple Group, Inc.; Lux Capital Management; First Round Capital; Y Combinator Management LLC; FundersClub Inc.; Hardware Club	10.0	-	-	-
14-May-19	Texel, Inc.	Marks and Spencer Group plc (LSE:MKS); Founders Factory Ltd	-	-	-	-
12-Mar-19	Yoren Limited	Lawson, Inc. (TSE:2651); T-Gaia Corporation (TSE:3738)	11.0	-	-	-
13-Feb-19	Motimate AS	REMA 1000 Norge AS	-	-	-	-
6-Jun-18	Guangxi TalentCloud Technology Co., Ltd.	Shenzhen the Orchard Industrial Development Co., Ltd.	-	-	-	-
2-Jun-17	AI TOKYO LAB & Co.	Satudora Holdings (TSE:3544)	-	-	-	-
26-Oct-16	Hangzhou Enniu Network Technology Co., Ltd.	Harvest Fund Management Co., Ltd.; Intime Retail (Group) Company Limited	84.0	-	-	-
14-Oct-16	HOVER Inc.	The Home Depot (NYSE:HD); Standard Industries Inc.; GV	25.0	-	-	-
11-May-16	orderbird AG	Ceconomy AG (XTRA:CEC); ConCardis GmbH; Digitalplus GmbH	22.9	-	-	-
31-Dec-15	Bohemian Wrappsody AB	H & M Hennes & Mauritz AB (publ) (OM:HM B); Klarna Bank AB (publ); Nordea Bank Danmark A/S, Investment Arm	4.7	-	-	-
Average					NA	NA
Median					NA	NA

Utilities / Infrastructure

The Utilities/Infrastructure sector has been consistently investing in new technologies over the past five years. The number of M&A deals have remained almost the same between 2018 and 2019, while increasing consistently between 2016 and 2018. In terms of disclosed deal value, 2017 was a landmark year with ~USD 7.4Bn of total deal value. The number of private-placement and M&A have also been consistent, with a maximum of 50 deals in 2018.



Utility players adopt technology, actively venture into sustainable investments

The emerging new technologies such as artificial intelligence, machine learning, and various advanced capabilities are disrupting the utility sector. The new technologies have not only allowed the discovery of new revenue streams, but also optimized the efficiency of existing grid and utility operations. Their presence are simplifying the integration of distributed energy resources, such as electric vehicles and clean energy sources with the main grid as well.

Over the past decade, utilities have been criticized for their failure in adopting new technologies. However, a number of energy providers have since initiated collaboration with startups, developing their engagement with new tech. In cases when utilities are not working together with technology startups to pilot new solutions within grid networks, they are investing in small companies, taking over large shares or even owning them.

For instance, in developed countries such as the U.S. and France, where carbon emission reduction goals have been set and are strictly followed, technologies such as blockchain and advanced distributed energy resources management systems are helping in the expansion of utilities renewables portfolios. Companies such as Innogy is acquiring grid-scale solar and storage technology startups to switch from coal power and customer defection to rooftop solar.

Companies invest in smart meter and digital solution deployments to optimize power distribution

Smart meters are another area of interest for utility companies. Smart meters are a key tool for utilities seeking to gain insights into and control over their electricity distribution networks, which help in replacing manually read electromechanical meters with digital, two-way communicating devices that measure and share usage data in hourly or minute-by-minute intervals. Globally, utilities are expected to invest a total of around USD 30.0Bn over the next five years to install more than 300.0Mn smart meters, ensuring full deployment in many of the world's most populous countries.

Also, Italian multinational utility Enel has evaluated 4,000 startups and has invested with around 180 of the companies to globally scale up its partnership while enhancing and developing technologies including IoT, big data, automation, AI, and augmented reality.

As per experts, utilities can accelerate digital transformation by focusing on three main areas, i.e. adoption of digital ways of working, attraction and retention of digital talent, and modernization of the IT architecture and environment.



Cumulative investment in advanced metering infrastructure (AMI) will rise to USD 127.6Bn by 2025, up from USD 97.4Bn this year. Over that period, total smart meters deployed will rise from about 1.0Bn to nearly 1.3Bn.

– Wood Mackenzie Report



Asia is expected to dominate the market with roughly 40% of all new meters deployed by 2025, or more than 136 million units, driven by nationwide deployments in Japan and South Korea and anticipated growth in India. By 2025, about 850 million smart meters will be installed across Asia including 82 million in Japan, 22.5 million in South Korea, and 640 million in China, the first-generation advanced metering infrastructure rollout of which was completed in 2019.



ERDF's digital transformation program has three major points of focus. It is seeking to capitalize on the richness of the data collected to enable us to be an ever better neutral digital market enabler. It is using the opportunity of new digital technologies to enhance our industrial economical and relational performance. Last but not least, it aims to pave the way for the true digitalization of DSOs in France, in Europe and internationally.

– **Christian Buchel**, Deputy General Manager and CDO, ERDF



The global digital utility market is expected to grow from an estimated USD 135.0Bn in 2017 to USD 244.0Bn by 2022.



For me and for Engie, digital is much more than just a tool, it's changing the way of working. We have a lot to learn from external benchmarking, from start-ups and from partners but we also must not miss the extensive amount of creativity and know-how that we have already within the company.

– **Chris Coburn**, Chief Innovation Officer, Mass General Brigham



Featured Transactions



January 2020

Circle Gas Limited has acquired KopaGas Ltd from a group of investors for a consideration of USD 25.0Mn. The group of investors includes Acumen Fund, Inc., Hooge Raedt Social Venture B.V., Saisan Co., DEG/KFW, Andron Mendes, and Dr Sebastian Rodriguez. The acquisition will give Circle Gas access to KopaGas' pay-as-you-go (PAYG) technology, manufacturing capabilities, and the market in East Africa. It will allow KopaGas to scale up its operations in Tanzania and expand into Kenya in 2020.



December 2019

Kurita Water Industries Ltd. acquired 75.0% stake in Pentagon Technologies Group, Inc. for an estimated consideration of USD 150.0Mn. The transaction will enable Kurita Water Industries to obtain a base for overseas service business in the electronics industry and create synergies with Kurita's precision cleaning tool business. Post the transaction, Kurita Water Industries will wholly own Pentagon Technologies Group through its US-based subsidiary Kurita America Holdings Inc.



July 2017

Sarvana S.a.r.l. acquired ista International, a Germany-based provider of metering systems and services including accounting, billing, installation, and energy service from CVC Capital Partners Limited and Canada Pension Plan Investment Board. Sarvana S.a.r.l., a joint venture formed between Cheung Kong Infrastructure (CKI) and Cheung Kong Property (CKP), will control 65.0% and 35.0% shares of the company, respectively. The transaction is in line with CKI's strategies of investing in infrastructure and infrastructure related opportunities around the world and embracing new growth opportunities through diversification.

Select Transactions – M&A

Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
22-Jun-20	Jollywood (Suzhou) Sunwatt Co., Ltd. (SZSE:300393)	Guizhou Wujiang Energy Investment Co., Ltd.	164.6	1,019.4	2.0x	10.1x
13-Jan-20	KopaGas Ltd	Circle Gas Limited	25.0	25.0	-	-
26-Dec-19	Pentagon Technologies Group, Inc	Kurita Water Industries Ltd.	150.0	-	-	-
17-Oct-19	JSC FCS&HT SNPO Eleron	Joint Stock Company Atomic Energy Power Corporation	54.5	-	-	-
17-Aug-19	Anhui Yongqin New Energy Technology Co., Ltd.	Zhuhai Port Risen Energy Co.,Ltd	8.9	-	-	-
07-Aug-19	Rioglass Solar Holding, S.A.	Atlantica Sustainable Infrastructure	7.0	-	-	-
30-Apr-19	Masabi Limited	Royal Dutch Shell Plc; Smedvig Capital Limited; MMC Ventures	20.0	-	-	-
07-Jan-19	DeClout Limited	Kyowa Exeo Corporation	72.4	72.4	0.3x	4.4x
20-Dec-18	eeMobility GmbH	Statkraft AS	28.5	-	-	-
08-Aug-18	ZipGo Technologies Pvt. Ltd.	Essel Infraprojects Ltd	43.8	-	-	-
08-May-18	Simple Energy, Inc.	The AES Corporation	34.0	-	-	-
05-Feb-18	EdgePower Inc.	Just Energy Group Inc.	18.7	-	-	-
Average					1.2x	7.3x
Median					1.2x	7.3x

Select Transactions – Private Placement

Date	Target	Buyers	Deal Value (USD Mn)	Implied EV (USD Mn)	EV/Revenue (x)	EV/EBITDA (x)
30-Jul-20	Shanghai International Superconductor Technology	Shanghai Zongjin Energy Technology; State Grid Shanghai Electricity; Chao Ao Investment	39.7	-	-	-
23-Jan-20	GridBeyond Limited	ACT Venture Capital Limited; EDP - Energias de Portugal; Electricity Supply Board; Total Carbon Neutrality Ventures	11.6	-	-	-
10-Jul-19	Beyond Limits	Xcel Energy	25.0	-	-	-
04-Apr-19	ClimaCell	SB Energy	15.9	-	-	-
14-Jan-19	Driivz	Centrica; Ombu; Inven Capital	12.0	-	-	-
11-Jan-19	Vinli	E.ON SE ; The Westly Group; Hersh Family Investments	13.5	-	-	-
28-Aug-18	Indegy	Centrica; Vertex Ventures Israel; Magma Venture Partners; Aspect Ventures; Liberty Technology	18.0	-	-	-
31-May-18	Ecobee	AGL Energy; BDC Capital; Caisse de dépôt et placement du Québec	36.2	-	-	-
31-May-18	Columbus Collaboratory	American Electric Power Company; Cardinal Partners; Battelle Memorial Institute; L Brands; Nationwide Mutual Insurance Company; The Huntington National Bank	14.0	-	-	-
16-Jan-18	BIDGELY	E.ON SE ; innogy SE; Khosla Ventures; Georgian Partners Growth; Constellation Technology Ventures	27.0	-	-	-
Average					NA	NA
Median					NA	NA

GLOBAL M&A PARTNERS

05

**GMAP Expertise
in Technology**

Overview of GMAP Technology Team



Emmanuel Antmann
Financiere de Courcelles (FRANCE)
Managing Director

Phone: +33 1 78 42 88 70
Cell: +33 6 75 24 24 78
Email: eantmann@globalma.com



Yair Ephrati
Value Base (ISRAEL)
Chief Executive Officer

Phone: +972 3 622 3381
Cell: +972 54 486 6886
Email: yephrati@globalma.com



Sébastien Laurent
Financiere de Courcelles
(THAILAND)
Managing Partner

Phone: +66 81 804 3976
Email: slaurent@globalma.com



Richard Betsalel
Crosbie & Company (CANADA)
Director

Phone: +1-416-362-4882
Email: rbetsalel@globalma.com



Patrick Ringland
Meridian Capital (USA)
Managing Director

Phone: + 1 206 224 6155
Email: pringland@globalma.com



Tony Richardson
Meridian Capital (USA)
Director

Phone: +1206-582-3891
Email: trichardson@globalma.com



Monica Com
Macroinvest (PERU)
Director

Phone: +511 203 9800
Email: mcom@globalma.com



Frédéric de Boer
Zetra International
(SWITZERLAND)
Partner

Phone: +41 44 7 555 999
Email: fdeboer@globalma.com



Pal Farkas
Invescom (HUNGARY)
Managing Director

Phone: +36 1 275 1116
Email: pfarkas@globalma.com

Selection of Deals Closed by Global M&A Partners in the Technology Sector (1/2)

 | **AIRBUS**

Leading provider of high-quality, automated portable tools and software systems for the global aerospace industry.



Meridian Capital LLC
Advisor to the seller 

Quik | OBI Partners

OBI Partners acquired joint control in Quik, online supermarket



Value Base M&A
Advisor to the seller 

CRUXIN | 

Largest Dutch technical company acquired Dutch system integrator to strengthen position in High-End security market



JBR
Advisor to the buyer 

 | **HARALD QUANDT**
INDUSTRIEBETEILIGUNGEN

DIVESTITURE of a software specialist for culture collection management

Germany Switzerland | 

Zetra International
Advisor to the seller 

 | **Trescal**

Trescal Group, a France-based calibration service provider, acquired KTICC, a calibration solution provider in Korea

France Korea | 

Locus Capital Partners
Advisor to the buyer 

 | **ENEngineering**
A portfolio company of
KOHLBERG & COMPANY

A leading provider of outsourced engineering and infrastructure data management services was acquired by EN Engineering



Meridian Capital LLC
Advisor to the seller 

SENSORFACT | Forward.one

A Dutch PE provides growth finance to a Dutch start-up, specialized in smart energy savings for manufacturing industry



JBR
Advisor to the seller 

catalis  | **NORTH EDGE**

Catalis provides a range of services into the high growth, global video games market through three divisions



Zeus Capital
Advisor to the seller 

OAG  connecting the world of travel

OAG is an air travel intelligence company which provides digital information and applications to the world's airlines




Zeus Capital
Advisor 

Selection of Deals Closed by Global M&A Partners in the Technology Sector (2/2)




IT Lab is an IT support and technology services provider delivering outsourcing, cloud, application and consultancy




Zeus Capital
Advisor to the buyer 

PIXOMONDO

International visual effects company which produces visual effects for feature films, television and commercials



Zeus Capital
Advisor 



The MBO of Simply Conveyancing backed by Livingbridge private equity



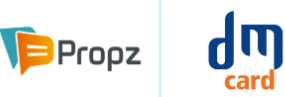
Cooper Parry Corporate Finance
Advisor to the buyer 




Fitternity - India's leading fitness discovery and booking platform raised Series A capital from Sixth Sense Ventures




Acquizon Advisory Private Ltd
Advisor 



Exclusive advisory to shareholders on the sale of a minority equity stake of PROPZ (GPNX S/A) to DMCard



Condere
Advisor to the seller 



Dongwoon Anatec, a leading fabless semiconductor company in Korea, sold its AMOLED DC-DC Business to Shenzhen Challenge



Locus Capital Partners
Advisor to the seller 



Sale of a majority stake in SmartBill, the leading Romanian cloud based business management software provider



Invescom Corporate Finance
Advisor to the seller 



Software editor of real-time geolocation applications for cyberdefence



Financière de Courcelles
Advisor to the seller 



Financial advisor to Telefónica del Perú S.A.A.



Macroinvest
Advisor 

GLOBAL
M&A
PARTNERS

 Financière
de Courcelles

About Us

Established in 1999, Global M&A Partners is one of the major international M&A networks comprised of independent investment banking firms partnering to provide international scope and local market expertise to our clients. We operate in more than 30 countries across 4 continents and have completed over 1,500 transactions during the last five years typically ranging from €20 to €500 million.

Our Tech sector team is comprised of seasoned M&A professionals from various partner countries with extensive knowledge of the dynamics and innovative changes occurring globally and locally in the Tech industry (e.g., changing consumer preferences, emerging technologies, etc.).

Our M&A activity in the Technology sector is robust and includes many cross-border transactions, driven by international growth, strategic tuck-ins, and consolidation. Given our sector experience, transaction expertise, and unparalleled access to local decision makers, we can work together to offer customized M&A solutions and premium valuations for our clients.