



OUTSELL'S FINTECH RANKINGS: IDENTIFYING THE WINNERS AND THOSE AT RISK

MARKET PERFORMANCE REPORT

December 15, 2016

WHO'S INSIDE:

Betterment
Chain
Digital Asset Holdings
DISCERN

itBit
Kensho Technologies
LearnVest
Motif

Palantir Technologies
Quandl
R3 CEV
Symbiont

WealthFront

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Why This Topic

Financial technology, or fintech, received nearly \$15 billion in venture capital (VC) and corporate investments globally in 2015. That's roughly double what it was in 2014. Funding momentum, however, has slowed down, particularly in the UK and US. Starting in Q3 2016, uncertainties surrounding Brexit and the US presidential election contributed to the slow down. Potential changes in employment laws brought upon by Trump's win and Brexit could further impede fintech growth in 2017. The key areas of fintech development that this report covers include advanced data analytics/artificial intelligence (AI), the blockchain, and robo financial advisory.

Despite recent political setbacks, the economy remains robust heading into 2017. Thus, fintech development is likely to regain steam once the legislative dust settles — prompting the importance of better understanding how this market could present new opportunities. The implications on the greater information industry from these three areas of innovation are significant in that the volume of non-financial services data now consumed by the financial services industry continues to increase in support of financial data analytics and advisory engines. On the other hand, the blockchain protocol is destined to change the world of banking, payments, e-commerce, legal/smart contracts, academic records and academia, voting, car leasing and sales, networking and IoT, sports/gambling/forecasting, online music, ride sharing, and healthcare data/records.

This report covers both the emerging and “veteran” companies driving these technologies as well as the investors and management teams backing research and development efforts. More specifically, the study identifies the key performance metrics among these companies, uncovers their degree of disruption on the financial services industry, as well as the challenges they will face in light of the latest market trends and regulations.

Methodology

Outsell applied its proven mix of expertise and proprietary data to establish its view of this market. It conducted a series of 37 interviews with investors who have an interest in the fintech space and with fintech entrepreneurs. Outsell supplemented this primary research with data collected from a variety of online sources, including investor websites. Finally, Outsell's recipe included a healthy dose of the unparalleled insight its gained through daily conversations with thought leaders and executives throughout the information industry.

Market Landscape

Although there are other areas of fintech development beyond the three categories of focus, such as peer-to-peer (P2P) payments and instant messaging/communication, Outsell focused on areas with the most aggressive investment activity and potential for disruption to financial services. These fintech categories are defined as follows:

- **Advanced data analytics/artificial intelligence (AI):** Data analytics that enables the determination of correlations and causal relationships between clusters of datasets to drive financial and investment decisions.
- **The blockchain:** An open, distributed ledger system based on the protocol behind cryptocurrencies that is making settlements in payments, stock/equity/forex/fixed-income/derivatives trading, and contract management instantaneous.
- **Robo financial advisory:** Also known as automated financial advisory, robo advisory is an algorithmic platform that helps investors create a risk-adjusted investment portfolio by mapping the individual's age, level of income, financial obligations, and savings target with current market conditions.

Together, these innovations garnered a majority of angel/foundation, VC, private-equity (PE), and corporate investments in fintech over the past year. These investors are defined by the following criteria:

Table 1. Types of Venture Capital Financing

| STAGE | DESCRIPTION | FUNDING LEVEL |
|-----------------------|--|------------------------------|
| Angel | An individual investor who provides financial backing for small startups or entrepreneurs. Entrepreneurs often find angel investors among their family and friends. The capital these investors provide can be a one-time injection of seed money or ongoing support to carry the company through difficult times. | Less than \$150K |
| Seed | The first stage of institutional investment, where investors provide relatively low levels of funding to pre-revenue companies. This funding is generally used to finance the early-stage development of a new product or service. | \$150K to \$1.5M |
| Early/Growth | A round of substantial funding, sometimes consisting of Series A and Series B financing, that allows a startup to continue product development and generate sufficient investor interest for successive financing rounds. | \$2-15M |
| Expansion (mezzanine) | The first stage of institutional investment, where investors provide relatively low levels of funding to pre-revenue companies. This funding is generally used to finance the early-stage development of a new product or service. | Varies: structured as a loan |
| Exit (bridge) | The stage used to support a company between venture rounds or before its initial public offering, often structured so it can be paid off using the initial public offering (IPO) proceeds. | Varies: \$10M and up |

Finally, there are four key stakeholders in this game, namely:

Banks: Both buy-side (asset managers) and sell-side (dealers/brokers) that need such technology to enhance their businesses and customer value.

“Veteran” fintech companies: Legacy financial information and solution providers looking to develop/adopt new technology to avoid obsolescence from disruptors.

Emerging fintech companies: These companies are often disruptors offering new solutions designed to revolutionize the financial services space.

Regulators: These legislators and government bodies often serve as a catalyst for customer adoption or barrier to entry for fintech players.

Together, Outsell's analysis of fintech developments, investors, and value-chain members provides a holistic view of what is driving innovation in financial services. The following section offers a detailed picture of who is funding the movers and shakers.

Key Players

Outsell's secondary research uncovered many investors in the fintech market. Table 2 outlines some of the market's most influential and active investors alongside the 48 fintech companies in which they have invested.

Table 2: Data Analytics/AI/Investment Discovery

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| KEY FINTECH COMPANIES | 9W SEARCH* | ANALYTIXINSIGHT** | ARIALYTICS* | CLOUDERA | DATAMEER | DATAMINR | DATASIFT | DISCERN | ENIGMA.IO | EXPERT SYSTEM | GOVBRAIN* | IBM** | KENSHO TECHNOLOGIES | LEXALYTICS* | PALANTIR TECHNOLOGIES | PANORAMA | PRATTLE | QUANDL | RECOGNOS FINANCIAL* | SELERITY |
|------------------------------|------------|-------------------|-------------|----------|----------|----------|----------|---------|-----------|---------------|-----------|-------|---------------------|-------------|-----------------------|----------|---------|--------|---------------------|----------|
| 137 VENTURES | | | | | | | | | | | | | | | ● | | | | | |
| ACCEL | | | | ● | | | | | | | | | ● | | | | | | | |
| AMERICAN EXPRESS VENTURES | | | | | | | | | ● | | | | | | | | | | | |
| ARCH GRANTS | | | | | | | | | | | | | | | | | ● | | | |
| ARTIMAN VENTURES | | | | | | | | ● | | | | | | | | | | | | |
| ARTIS VENTURES | | | | | | | | | | | | | | | ● | | | | | |
| ATLANTE VENTURES MEZZOGIORNO | | | | | | | | | | ● | | | | | | | | | | |
| AUGUST CAPITAL | | | | | | | | | | | | | | | | | | ● | | |
| BOXGROUP | | | | | | ● | | | | | | | | | | | | | | |
| CENDANA CAPITAL | | | | | | | ● | | | | | | | | | | | | | |
| CITI VENTURES | | | | ● | | | | | | | | | | | | | | | | |
| CITIGROUP | | | | | | | | | | | | | | | | | | | | ● |
| COMCAST VENTURES | | | | | | | | | ● | | | | | | | | | | | |
| CREDIT SUISSE | | | | | ● | | | | | | | | | | | | | | | |
| CROSSLINK CAPITAL | | | | | | | | | ● | | | | | | | | | | | |
| DAHER CAPITAL | | | | | | | ● | | | | | | | | | | | | | |
| DEEP FORK CAPITAL | | | | | ● | | | | | | | | | | | | | | | |

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|--------------------------------------|------------|-------------------|-------------|----------|----------|----------|----------|---------|-----------|---------------|-----------|-------|---------------------|-------------|-----------------------|----------|---------|--------|---------------------|----------|
| EQUITY ZEN | | | | ● | | | | | | | | | | | | | | | | |
| EXPANSION VENTURE CAPITAL | | | | | | | | | ● | | | | | | | | | | | |
| F-PRIME CAPITAL PARTNERS | | | | | | | | | | | | | ● | | | | | | | |
| FIDELITY INVESTMENTS | | | | | | ● | | | | | | | | | | | | | | |
| FOUNDERS FUND | | | | | | | | | | | | | | | ● | | | | | |
| THE FSE GROUP | | | | | | | ● | | | | | | | | | | | | | |
| GENERAL CATALYST PARTNERS | | | | | | | | | | | | | ● | | | | | | | |
| GLYNN CAPITAL MANAGEMENT | | | | | | | | | | | | | | | ● | | | | | |
| GOLDMAN SACHS | | | | | | | | | | | | | ● | | | | | | | |
| GREYLOCK PARTNERS | | | | ● | | | | | | | | | | | | | | | | |
| GRP PARTNERS | | | | | | | ● | | | | | | | | | | | | | |
| GSV CAPITAL | | | | | ● | | | | | | | | | | | | | | | |
| GV | | | | ● | | | | | | | | | ● | | | | | | | |
| IA VENTURES | | | | | | | ● | | | | | | | | | | | | | |
| IGNITION PARTNERS | | | | ● | | | | | | | | | | | | | | | | |
| IN-Q-TEL | | | | ● | | | | | | | | | | | ● | | | | | |
| INSIGHT VENTURE PARTNERS | | | | | | | ● | | | | | | | | | | | | | |
| INTEL CAPITAL | | | | ● | | | | | | | | | | | | | | | | |
| IT VENTURES | | | | | | | | | | | | | | | ● | | | | | |
| IVP | | | | | | ● | | | | | | | | | | | | | | |
| KLEINER, PERKINS, CAUFIELD AND BYERS | | | | ● | | | | | | | | | | | | | | | | |
| KORTSCHAK INVESTMENTS, L.P. | | | | | | | | | | | | | | | ● | | | | | |

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|----------------------------------|------------|-------------------|-------------|----------|----------|----------|----------|---------|-----------|---------------|-----------|-------|---------------------|-------------|-----------------------|----------|---------|--------|---------------------|----------|
| MASSCHALLENGE | | | | | | | | | | | | | | | | | | | | |
| MERITECH CAPITAL PARTNERS | | | | ● | | | | | | | | | | | | | | | | |
| MITHRIL CAPITAL MANAGEMENT | | | | | | | | | | | | | | | ● | | | | | |
| MSD CAPITAL | | | | ● | | | | | | | | | | | | | | | | |
| NEW ENTERPRISE ASSOCIATES | | | | | | | | | ● | | | | ● | | | | | | | |
| NEW YORK CITY INVESTMENT FUND | | | | | | | | | ● | | | | | | | | | | | |
| THE NEW YORK TIMES | | | | | | | | | ● | | | | | | | | | | | |
| NEXT WORLD CAPITAL | | | | ● | | | | | | | | | | | | | | | | |
| NORTHGATE CAPITAL | | | | | | | ● | | | | | | | | | | | | | |
| OWL VENTURES | | | | | | | | | | | | | | | | ● | | | | |
| PROMUS VENTURES | | | | | | | | | | | | | ● | | | | | | | |
| REDPOINT | | | | ● | | | | | | | | | | | | | | | | |
| REED ELSEVIER VENTURES | | | | | | | | | | | | | | | ● | | | | | |
| SCALE VENTURE PARTNERS | | | | | | | ● | | | | | | | | | | | | | |
| SHARESPOST INVESTMENT MANAGEMENT | | | | | | ● | | | | | | | | | | | | | | |
| SINGAPORE TECHNOLOGIES TELEMEDIA | | | | ● | | | | | | | | | | | | | | | | |
| SOFTWARE AG | | | | ● | | | | | | | | | | | | | | | | |
| SPARK CAPITAL | | | | | | | | | | | | | | | | ● | | | | |
| SV ANGEL | | | | ● | | | | | | | | | | | | | | | | |
| T. ROWE PRICE | | | | ● | | | | | | | | | | | | | | | | |
| TOP TIER CAPITAL PARTNERS | | | | ● | | | | | | | | | | | | | | | | |

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|-----------------------|------------|-------------------|-------------|----------|----------|----------|----------|---------|-----------|---------------|-----------|-------|---------------------|-------------|-----------------------|----------|---------|--------|---------------------|----------|
| TRIPLEPOINT CAPITAL | | | | | | | | | ● | | | | | | | | | | | |
| TWO SIGMA VENTURES | | | | | | | | | ● | | | | | | | | | | | |
| ULU VENTURES | | | | | | | | | | | | | | | ● | | | | | |
| UPFRONT VENTURES | | | | | | | ● | | | | | | | | | | | | | |
| VENROCK | | | | | | ● | | | | | | | | | | | | | | |
| WELLINGTON MANAGEMENT | | | | | | ● | | | | | | | | | | | | | | |
| WORK-BENCH | | | | | | | | | | | | | ● | | | | | | | |
| WORKDAY | | | | ● | | | | | | | | | | | | | | | | |
| XFUND | | | | | | | | | | | | | ● | | | | | | | |

Table 3: Blockchain

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| KEY FINTECH COMPANIES | CHAIN | CLEARMATICS | DIGITAL ASSET HOLDINGS | EPIPHYTE | ITBIT | NASDAQ PRIVATE MARKET** | R3CEV* | SYMBIONT | To* | TRADEBLOCK |
|---------------------------|-------|-------------|------------------------|----------|-------|-------------------------|--------|----------|-----|------------|
| 500 STARTUPS | ● | | | | | | | | | |
| ABN AMRO | | | ● | | | | | | | |
| ACCENTURE | | | ● | | | | | | | |
| ASX LIMITED | | | ● | | | | | | | |
| ATLANTIC MERCHANT CAPITAL | | | | | | | | ● | | |
| BETAWORKS | ● | | | | | | | | | |
| BLOCKCHAIN CAPITAL | ● | | | | ● | | | | | |

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| KEY FINTECH COMPANIES | CHAIN | CLEARMATICS | DIGITAL ASSET HOLDINGS | EPIPHYTE | ITBIT | NASDAQ PRIVATE MARKET** | R3CEV* | SYMBIONT | TO* | TRADEBLOCK |
|------------------------------|-------|-------------|------------------------|----------|-------|-------------------------|--------|----------|-----|------------|
| | | | | | | | | | | |
| BNP PARIBAS | | | ● | | | | | | | |
| BROADRIDGE | | | ● | | | | | | | |
| CANAAN PARTNERS | | | | | ● | | | | | |
| CAPITAL ONE GROWTH VENTURES | ● | | | | | | | | | |
| CELERIDEM CAPITAL MANAGEMENT | | | | | | | | ● | | |
| CITI VENTURES | ● | | | | | | | | | |
| CITIGROUP | | | ● | | | | | | | |
| CME GROUP | | | ● | | | | | | | |
| DATA COLLECTIVE | | | | | | | | | | ● |
| DEUTSCHE BORSE | | | ● | | | | | | | |
| DIGITAL CURRENCY GROUP | ● | | | | ● | | | | | ● |
| DRAFT VENTURES | ● | | | | | | | | | |
| DTCC | | | ● | | | | | | | |
| F-PRIME CAPITAL PARTNERS | | | | | | | | | | ● |
| FINTECH COLLECTIVE | | | | | | | | | | ● |
| FISERV | ● | | | | | | | | | |
| HOME BREW | ● | | | | | | | | | |
| IBM | | | ● | | | | | | | |
| ICAP | | | ● | | | | | | | |
| JP MORGAN CHASE & CO. | | | ● | | | | | | | |
| KHOSLA VENTURES | ● | | | | | | | | | |
| LIBERTY CITY VENTURES | | | | | ● | | | | | |
| NASDAQ | ● | | | | | | | | | |
| NYCA PARTNERS | | ● | | | | | | | | |

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|------------------------------|-------|-------------|------------------------|----------|-------|-------------------------|--------|----------|-----|------------|
| ORANGE DIGITAL VENTURES | ● | | | | | | | | | |
| PANTERA CAPITAL | ● | | | | | | | | | |
| PNC FINANCIAL SERVICES GROUP | | | ● | | | | | | | |
| RAPTOR CAPITAL MANAGEMENT | | | | | ● | | | | | |
| ROUTE 66 VENTURES | | ● | | | | | | | | |
| RRE VENTURES | ● | | | | ● | | | | | |
| SANTANDER INNOVENTURES | | | ● | | | | | | | |
| SOLON MACK CAPITAL | | | | | ● | | | | | |
| STARTUPBOOTCAMP | | | | ● | | | | | | |
| SV ANGEL | ● | | | | | | | | | |
| THRIVE CAPITAL | ● | | | | | | | | | |
| VISA | ● | | | | | | | | | |
| Y COMBINATOR | | | | | | | | | | ● |

Table 4: Robo Financial Advisory

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| KEY FINTECH COMPANIES | ACORNS | ASSET BUILDER* | BETTERMENT | BLOOM | CHARLES SCHWAB INTELLIGENT PORTFOLIOS | COVESTER | FUTUREADVISOR | HEDGEABLE | LEARNVEST | MARKETRIDERS* | MOTIF | PERSONAL CAPITAL | REBALANCE IRA* | RITHOLTZ WEALTH MANAGEMENT* | ROBINHOOD | SIGFIG | VANGUARD PERSONAL ADVISOR SERVICES** | WEALTHFRONT | WISEBANYAN |
|---------------------------|--------|----------------|------------|-------|---------------------------------------|----------|---------------|-----------|-----------|---------------|-------|------------------|----------------|-----------------------------|-----------|--------|--------------------------------------|-------------|------------|
| ACCEL | | | | | | | | | ● | | | | | | | | | | |
| AMADEUS CAPITAL PARTNERS | | | | | | ● | | | | | | | | | | | | | |
| AMERICAN EXPRESS VENTURES | | | | | | | | | ● | | | | | | | | | | |
| ANTHEMIS GROUP | | | ● | | | | | | | | | | | | | | | | |
| BAIN CAPITAL VENTURES | | | | | | | | | | | | | | | | ● | | | |
| BALDERTON CAPITAL | | | | | | | | | | | ● | | | | | | | | |
| BAY PARTNERS | | | | | | ● | | | | | | | | | | | | | |
| BBVA VENTURES | | | | | | | | | | | | ● | | | | | | | |
| BENCHMARK | | | | | | | | | | | | | | | | | | | ● |
| BESSEMER VENTURE PARTNERS | | | ● | | | | | | | | | | | | | | | | |
| BETAWORKS | | | | | | ● | | | | | | | | | | | | | |
| BLACKROCK | | | | | | | | | | | | ● | | | | | | | |
| CANVAS VENTURES | | | | | | | ● | | | | | | | | | | | | |
| CIRCLE FINANCIAL GROUP | | | | | | | | | ● | | | | | | | | | | |
| CITI VENTURES | | | ● | | | | | | | | | | | | | | | | |
| CLARITAS CAPITAL | | | | | | | | | ● | | | | | | | | | | |
| COMMERCE VENTURES | | | | ● | | | | | | | | | | | | | | | |
| CONVERSION CAPITAL | | | | | | | | | ● | | | | | | | | | | |
| CORRELATION VENTURES | | | | | | | | | | | | ● | | | | | | | |
| CORSAIR CAPITAL | | | | | | | | | | | | ● | | | | | | | |
| CROSSLINK CAPITAL | | | | | | | | | | | | ● | | | | | | | |
| CRUTTENDEN PARTNERS | ● | | | | | | | | | | | | | | | | | | |
| DAG VENTURES | | | | | | | | | | | | | | | | | | | ● |
| DCM VENTURES | | | | | | | | | | | | | | | | ● | | | |

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|------------------------------|--------|----------------|------------|-------|---------------------------------------|----------|---------------|-----------|-----------|---------------|-------|------------------|----------------|-----------------------------|-----------|--------|--------------------------------------|-------------|------------|
| INDEX VENTURES | | | | | | | | | | | | | | | ● | | | ● | |
| INNOSPRING SEED FUND | | | | | | | | | | | | | | | | | | | ● |
| INVESTMENT AB KINNEVIK | | | ● | | | | | | | | | | | | | | | | |
| IT VENTURES | | | | | | | | | | | | | | | ● | | | | |
| IVP | | | | | | | | | | | | ● | | | | | | | |
| JACOBS ASSET MANAGEMENT | ● | | | | | | | | | | | | | | | | | | |
| JP MORGAN CHASE & CO. | | | | | | | | | | | ● | | | | | | | | |
| JUMP CAPITAL | | | | | | | | | | | | ● | | | | | | | |
| KGC CAPITAL | | | | | ● | | | | | | | | | | | | | | |
| MACHINE SHOP VENTURES | | | | | | | | | | | | | | | ● | | | | |
| MADISON ANGELS | | | | | | | ● | | | | | | | | | | | | |
| MATH VENTURE PARTNERS | ● | | | | | | | | | | | | | | | | | | |
| MENLO VENTURES | | | ● | | | | | | | | | | | | | | | | |
| NEW ENTERPRISE ASSOCIATES | | | | | | | | | | | | | | | ● | | | | |
| NORTHWESTERN MUTUAL | | | ● | | | | | | ● | | | | | | | | | | |
| NORWEST VENTURE PARTNERS | | | | | | | | | | | ● | | | | | | | | |
| NYCA PARTNERS | | | | | | | | | | | | | | | | ● | | | |
| PKS CAPITAL | | | | | | | | | ● | | | | | | | | | | |
| QED INVESTORS | | | | ● | | | | | | | | | | | | | | | |
| QUEENSBIDGE VENTURE PARTNERS | | | | | | | | | | | | | | | ● | | | | |

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|---------------------------------|--------|----------------|------------|-------|---------------------------------------|----------|---------------|-----------|-----------|---------------|-------|------------------|----------------|-----------------------------|-----------|--------|--------------------------------------|-------------|------------|
| RED SWAN VENTURES | | | ● | | | | | | | | | | | | | | | | |
| REINMKR CAPITAL | | | ● | | | | | | | | | | | | | | | | |
| RENREN INC. | | | | | | | | | | | ● | | | | | | | | |
| RIBBIT CAPITAL | | | | | | | | | | | | | | | ● | | | ● | |
| RICHMOND GLOBAL | | | | | | | | | ● | | | | | | | | | | |
| ROSE TECH VENTURES | | | | | | | | | ● | | | | | | | | | | |
| ROTHENBERG VENTURES | | | | | | | | | | | | | | | ● | | | | |
| ROUTE 66 VENTURES | | | | | | | | ● | | | | | | | | | | | |
| SCIENCE | | | | | | | | | | | | | | | | | | ● | |
| SEQUOIA CAPITAL | | | | | | | ● | | | | | | | | | | | | |
| SIXTHIRTY – FINTECH ACCELERATOR | | | | | | | | ● | | | | | | | | | | | |
| SK VENTURES | | | | | | | | | | | | | | | | | | ● | |
| SLOW VENTURES | | | | | | | | | | | | | | | ● | | | | |
| SOCIAL CAPITAL | | | | | | | | | | | | | | | | | | ● | |
| SOCIAL LEVERAGE | | | | | | | | | | | | | | | ● | | | | |
| SORENSEN LEGACY FOUNDATION | | | | | | | | | | | | | | | | | | | ● |
| SOUND VENTURES | ● | | | | | | | | | | | | | | | | | | |
| SPARK CAPITAL | | | | | | ● | | | | | | | | | | | | ● | |
| STEELPOINT CAPITAL PARTNERS | ● | | | | | | | | | | | | | | | | | | |
| SUSA VENTURES | | | | | | | | | | | | | | | ● | | | | |
| TALON CAPITAL PARTNERS | | | | | ● | | | | | | | | | | | | | | |
| UMB BANKS | | | | ● | | | | | | | | | | | | | | | |
| UNION SQUARE VENTURES | | | | | | ● | | | | | | | | | | ● | | | |

Continued on next page

* UNAVAILABLE
 ** PUBLIC

| KEY FINTECH COMPANIES | ACORNS | ASSET BUILDER* | BETTERMENT | BLOOM | CHARLES SCHWAB INTELLIGENT PORTFOLIOS | COVESTER | FUTUREADVISOR | HEDGEABLE | LEARNVEST | MARKETRIDERS* | MOTIF | PERSONAL CAPITAL | REBALANCE IRA* | RITHOLTZ WEALTH MANAGEMENT* | ROBINHOOD | SIGFIG | VANGUARD PERSONAL ADVISOR SERVICES** | WEALTHFRONT | WISEBANYAN | |
|-----------------------|--------|----------------|------------|-------|---------------------------------------|----------|---------------|-----------|-----------|---------------|-------|------------------|----------------|-----------------------------|-----------|--------|--------------------------------------|-------------|------------|---|
| USAA | | | | | | | | | | | | ● | | | | | | | | |
| VAIZRA INVESTMENTS | | | | | | | | | | | | | | | ● | | | | | |
| VENROCK | | | | | | | | | | | | ● | | | | | | | | |
| VILCAP INVESTMENTS | | | | | | | | | | | | | | | | | | | | ● |
| VTF CAPITAL | | | | | | | | | | | | | | | | | | | | ● |
| WICKLOW CAPITAL | | | | | | | | | | | ● | | | | | | | | | |
| Y COMBINATOR | | | | | | | ● | | | | | | | | | | | | | |
| YNEXT INCUBATOR | | | | | | | | ● | | | | | | | | | | | | |

In the global venture capital arena, there were 860 fintech deals across 46 countries in 2015, most of which occurred in the US and UK, followed by China and India (according to Innovate Finance). The volume of deals decreased slightly from 2014 to 2015, but the size of those deals increased, yielding \$15 billion in total investments, with approximately \$6 billion in the three areas of focus (AI, blockchain, and robo advisory). The highest volume of deals were in the \$1-5 million tier. The UK had the highest number of deals outside of the US, and it is third behind US and China in terms of total investment.

Investment Criteria

Outsell identified the most active and influential investors in its analysis of the fintech market, focusing specifically on AI, blockchain, and robo advisory. Primary research revealed across-the-board uniformity in the criteria that investors employ. Revenue generation is clearly a crucial key performance indicator (KPI). Other key metrics include: customer growth, investment outcomes, and operational savings (to the extent that these are measurable), as well as scalability, in terms of reach and size of the potential user base.

To determine the key investors from all investors in Table 2-5, Outsell totalled the number of investments that each firm made and determined the top six investors.

Accel

At a Glance

[Accel](#) is a growth- and early-stage venture capital firm, enabling an international group of entrepreneurs. Accel funds startups that redefine and disrupt traditional businesses. Founded in 1983, the firm has already supported exit strategies for hundreds of its portfolio companies. Accel's mission to support business and entrepreneurship allows it to seek out and invest in the companies that will be responsible for the next series of industry disruptions.



Recent News

Accel raises \$500 million in funding to invest in Israeli and European startups.



URL

accel.com



Estimated Total Fintech Investment
\$200 million



Key Focus Areas

Software, Mobile, Drone Technology, Financial Technology, Design, AI, Internet of Things, Security, Media



Geographic Coverage

United States, India, Europe

Notable Investments

Atlassian, Braintree, [Cloudera](#), DJI, [Dropbox](#), Dropcam, Etsy, [Facebook](#), Flipkart, Lookout Security, [MoPub](#), [Qualtrics](#), Slack, Spotify, Supercell, and [Vox Media](#)

In Outsell's Opinion

Accel is versatile, investing in the latest technological developments even if most of them have never been market-tested. Given the nascent nature of many of these technologies, Accel is also taking on a higher level of risk than most investors in its assets under management (AUM) class.

Digital Currency Group

At a Glance

Based in NYC, [Digital Currency Group](#) (DCG) builds and supports bitcoin and blockchain companies by utilizing its professional network, domain expertise, and access to funding. DCG has been an active seed investor in the cryptocurrency industry across 20 countries, amounting to over 50 investments.

Furthermore, DCG owns and operates the world's biggest cryptocurrency asset management firm, Grayscale Investments. Grayscale manages the Bitcoin Investment Trust — the world's first publicly traded bitcoin investment platform. DCG also runs the prominent bitcoin brokerage firm, Genesis Trading.



Recent News

Blockchain anti-piracy provider, Custos, gets seed funding from DCG.



URL

dcg.co



Estimated Total Fintech Investment
\$100 million



Key Focus Areas

Bitcoin, Digital Currency, Blockchain Technology, Financial Services, Financial Technology



Geographic Coverage

Global

Notable Investments

Chain, Bitnet Technologies, Ripple, Gem, Align Commerce, Abra, and BitX

In Outsell's Opinion

DCG focuses strictly on developing cryptocurrencies and all things blockchain. Given that these technologies have not gained mass adoption, and many are still in the testing phase, the large amount of assets invested in these companies remain a significant risk for the firm's survival.

GV (Google Ventures)

At a Glance

[GV](#) offers seed-, venture-, and growth-stage funding to technology companies. The firm, while operating independently from Google, is responsible for making investment decisions on behalf of the internet giant.



Recent News

GV's mission is focused on supporting technology that serves the masses and not just the elite.



URL

gv.com



**Estimated Total
Fintech Investment**
\$100 million



Key Focus Areas

Fintech, Enterprise



Geographic Coverage

United States, Europe

Notable Investments

Pindrop, Jet, Jaunt, Carbon, [Udacity](#), and Editas Machine

In Outsell's Opinion

A well-balanced investor that hedges its risk in fintech investments with enterprise investments. Its current portfolio serves to garner significant gains due to its risk-mitigating investment strategy that spans multiple verticals.

New Enterprise Associates

At a Glance

New Enterprise Associates (NEA) teams up with startups to develop transformational businesses across multiple stages, sectors, and geographies. NEA is one of the world's largest and most active VC firms with more than \$13 billion in AUM. Its track record includes more than 300 acquisitions, and over 190 portfolio company IPOs.

In the US, NEA has offices in Boston, Menlo Park, Washington DC, NYC, and Chicago. In India, it has offices in Mumbai and Bangalore. In China, it has offices in Shanghai and Beijing.



Recent News

NEA to lead the investment community in Quantum Computing.



URL

nea.com



Estimated Total Fintech Investment
\$300 million



Key Focus Areas

Software, Health Care, Internet, Biotechnology, Consumer, Medical Device, Pharmaceutical, SaaS, Energy



Geographic Coverage

Global

Notable Investments

Among its historical investments are technology leaders like Data Domain, *CareerBuilder*, Diapers.com, *Groupon*, *Juniper*, Macromedia, *Salesforce.com*, *Tableau Software*, *TiVo*, *WebEx*, and *Workday*.

In Outsell's Opinion

NEA is a true diversified investor with a proven track record of successful exits by its portfolio companies across virtually all industries. Its approach with fintech is pragmatic, and hedges its investments in this emerging area with investments in traditional financial solutions.

Spark Capital

At a Glance

Spark Capital is an early- and growth-stage VC firm that invests in startups that create products and services for consumers, as well as for the business professional. Spark Capital made a name for itself with its support of notable companies, including Oculus VR, Slack, Twitter, Warby Parker, Wealthfront, and IEX. The investment firm has offices in NYC, Boston, and San Francisco, and it prides itself on investing in companies that demonstrate a balance between art and technology.



Recent News

Spark raises \$500 in second growth fund.



URL

sparkcapital.com



Estimated Total Fintech Investment
\$120 million



Key Focus Areas

Marketplaces, Software, Mobile, Hardware, Consumer tech



Geographic Coverage

United States

Notable Investments

Affirm, Cybereason, Behalf, Postmates, and Slack

In Outsell's Opinion

Spark Capital is unique. It really does not have a particular category of investment in any industry. As long as the company does something really cool, or in the firm's own terms does something "magical," and has the ability to demonstrate a significant ROI, it will consider an investment. This approach mitigates the risk of any fintech investments falling through, and also helps the firm identify potential synergies (thus, market opportunities) in seemingly unconnected technology applications.

FinTech Ranking

Although the companies listed span across AI, blockchain, and robo advisory, they all share common attributes that enable them to be evaluated on the same basis for potential and risk.

Scoring Criteria

Outsell scored the key fintech investments made by investors across a set of five categories: Management experience, cost reduction potential, focus on benefiting end customers, sales channel/route to market, and scalability. Outsell scored each category up to 10 (with 10 the highest score), for a possible total of 50 points.

- **Management experience:** Companies received high scores here if they were led by a management team with direct personal experience in the financial markets, and also if they had valuable experience working with other fintech startups. On the flip side, companies scored lower if they were led by serial entrepreneurs who were felt to be keen to get the company off to a good start but who lost interest after this initial stage, or who had little direct personal experience working in the financial services space.
- **Costs:** In a market in which profitability is all important, helping financial professionals perform tasks more efficiently, which saves customers money, is a vital selling point for new fintech startups trying to make their mark. Companies received high scores in this category if they directly targeted this money-saving aspect, and they scored poorly if their solution added new spending into the budget or if it did not directly save money on existing tasks.
- **Potential to substantially improve customer benefits:** The holy grail of fintech solutions is the ability to leverage analytics and platforms to improve investment outcomes, while reducing operational cost and risk. Companies received high scores in this category if they targeted this goal, and particularly high if they demonstrated that their solution was able to deliver on its promises. Companies scored poorly in this category if they failed to target this goal or if they could not provide evidence that their solution worked effectively.
- **Sales channels/routes to market:** For startups, particularly in the world of finance where legacy financial research tools, advisors, payment, and accounting practices have been deeply rooted in the industry, ensuring a clear route to market with a relatively untested technology is vital. Adoption of these solutions, even as pilots, is an important step to building a reputation and to demonstrating service values. Companies received high scores in this category if they targeted institutional or retail financial stakeholders, and less highly if they were looking to address the broader market outside of financial services (breadth over depth).
- **Scalability:** A solution does not offer strong long-term growth opportunities when it only fits the needs of a certain-sized institution, number of users, or just one geographical region. Companies that received high scores in this category offered solutions with a broad, global appeal and applicability in multiple aspects of financial services and corporate finance, while those that received poor scores offered solutions that required a high-degree of customization, and were difficult to roll out to a broad customer base.

Using this scoring rubric, Outsell evaluated the fintech investments of major investors to produce a view of which investments have the most potential and which may find the market more of a struggle. Outsell profiles the top five and the bottom five companies in the following section of the report.

Five Highest Scorers

Digital Asset Holdings

Score: 41 | 50

At a Glance

Digital Asset Holdings (DAH) develops distributed, encrypted straight through processing (STP) tools. Its technology enhances efficiency, security, compliance, and settlement speed.



Recent News

With scepticism around blockchain's success in financial services, DAH is targeting market-wide adoption of its platform by 2020, with the aim to eliminate the need for middle- and back-office operations. It recently received another \$20 million in funding from major banks in the R3 initiative.



URL

digitalassets.com



Estimated Revenue

\$12 million



Revenue Model

Licensing model for its blockchain platform



Key Focus Areas

Middle- and back-office function

Partnerships

Co-founder Sunil Hirani is the head of trueEx and has joined forces with DAH to accelerate its value in financial services.

In Outsell's Opinion

DAH is the largest news maker in the blockchain space, given its potential financial impact of more than \$20 billion in operational cost savings for banks per year, globally, and it is led by a seasoned financial services executive, Blythe Masters (former managing director at JP Morgan).

Kensho Technologies

Score: 38 | 50

At a Glance

Kensho is pioneering real-time statistical computing systems (natural language based algorithmic technology) and scalable analytics architectures — the next-generation of improvements to the global financial industry



Recent News

Kensho partners with CNBC to add context to financial news, building a "Siri" for the financial industry.



URL

kensho.com



Estimated Revenue

\$9 million



Revenue Model

Licensing model for its analytics platform



Key Focus Areas

Investment discovery

Partnerships

Working actively with the largest banks, JPMorgan Chase, Bank of America Merrill Lynch, and Gold Sachs, to test its platform.

In Outsell's Opinion

The top name in big-data analytics for financial services. Its capabilities in the space have placed it in a position to surpass IBM Watson's AI capabilities. While Watson is focused on a common analytical technology that can be leveraged industry-wide, Kensho focuses on all possible data that could be applicable to the needs of financial services. In the end, it is about who has the most advanced analytical engine and database access. To date, Kensho appears to have the edge with its banking partnerships.

IBM Score: 35 | 50

At a Glance

IBM Watson is a powerful AI platform, utilized across multiple industries. Its value add in financial service includes investment discovery and risk and compliance management.



Recent News

IBM makes its AI platform more appealing to banks by acquiring Promontory.



URL

ibm.com



Estimated Revenue

\$68 million



Revenue Model

Licensing model for its IBM Watson platform



Key Focus Areas

Licensing model for its IBM Watson platform

Partnerships

Working with Citigroup, Banco Bradesco, and Banorte to provide financial market intelligence.

In Outsell's Opinion

A well respected pure-play technology provider that is progressively garnering attention from highly regulated verticals such as financial services and healthcare. Many banks remain dubious as to the power of IBM Watson, specifically in financial services, and the cost of Watson is prohibitive for some. IBM also faces stiff competition in the financial AI arena from Kensho Technologies, [Palantir Technologies](#), and [Digital Reasoning](#).

WealthFront Score: 34 | 50

At a Glance

[Wealthfront](#) is a consumer financial planning and investment portal that caters to all levels of retail investors. It works against the traditional financial advisor model, but substitutes much of human talent and research with computed advice to include assessment on the level of investment risk that the designated individual could responsibly take on.

**Recent News**

Wealthfront remains adamant that it will not work with financial advisors, staying true to its roots and remaining 100% robo.

**URL**

wealthfront.com

**Estimated Revenue**

\$8 million

**Revenue Model**

Licensing model for its online investment portal

**Key Focus Areas**

Retirement planning, college-tuition planning, real-estate investments, and stock and equity trading

Partnerships

Wealthfront has partnered with the state of Nevada to offer a new college-savings plan, with other states in sight for further collaboration.

In Outsell's Opinion

Wealthfront stays "pure" in the robo advisory game, as compared to Betterment and [LearnVest](#) (now under Northwestern Mutual). Its lack of commercial partnerships, particularly with traditional financial advisors, will cause it to lose market share to Betterment, though. Its AUM is nearly \$3 billion, second only to Betterment at \$3.5 billion, with a high volume of investors.

Betterment

Score: 31 | 50

At a Glance

[Betterment](#) is an automated financial planner and advisor that offers a multitude of services for investors of all demographics — from recent college graduates to retirees.

**Recent News**

Betterment is now rival to Fidelity Investments, to which it once provided its services.

**URL**

betterment.com

**Estimated Revenue**

\$9 million

**Revenue Model**

Subscription model for its online financial advisory platform

**Key Focus Areas**

Retirement-planning, lending and risk assessment, and family-/estate-planning

Partnerships

It has formed a partnership with transportation industry disruptor Uber to offer Uber's drivers financial planning through its platform.

In Outsell's Opinion

Despite scoring lower than Wealthfront based on Outsell's metrics, Betterment remains the largest player in the robo advisory space, with AUM at nearly \$3.5 billion. It maintains the largest market share mainly due to its strategic partnerships with commercial players, both within and outside of financial services.

Five Lowest Scorers: Profiles

Enigma.io

Score: 12 | 50

At a Glance

Enigma.io started as a central database for all public information, including financial filings, government documents, and data issued by the public sector, which has now grown to a full-service data analytics house.



Recent News

Enigma.io raises \$28.2 million in Series B funding to extend enterprise operations and add talent.



URL

enigma.io



Estimated Revenue

\$14 million



Revenue Model

Licensing model for its search and investment discovery platform



Key Focus Areas

Investment research and analysis, particularly on information that stems from public records. This data could be extrapolated to assess associations, causal relationships, and correlations in the market.

Partnerships

Since winning the TechCrunch 2013 innovation award, this NYC-based startup has been keeping its operation relatively to itself. Given the opportunities to capture and source additional data — this is not a good thing.

In Outsell's Opinion

Enigma.io is facing an uphill battle with regulators as more and more legislations are issued that restrict the re-use of public data. *Enigma.io* needs to explore opportunities with private data, or potentially face obsolescence when such data-reuse restrictions gain critical mass.

Arialytics

Score: 15 | 50

At a Glance

Arialytics is a real-time market-risk and investment-recommendation platform that caters to both institutional investors and retail investors.



Recent News

Arialytics exits the platform business to become a data provider.



URL

arialytics.com



Estimated Revenue

\$29 million



Revenue Model

Licensing model for its analytics and visualization platform



Key Focus Areas

Investment discovery and active risk management

Partnerships

Arialytics has partnered with Russell Investments, Aspen Systems, and SuperMicro to enhance data distribution capabilities from both software and hardware perspectives.

In Outsell's Opinion

The area of technology that Arialytics is working on is pacing behind that of Kensho, [9W Search](#), and [DISCERN](#). Arialytics continues to focus strictly on structured financial and transaction data, when it needs to increase its focus on unstructured data to ensure survival.

NASDAQ Private Market

Score: 16 | 50

At a Glance

[NASDAQ](#) Private Market is a division of the exchange that is exploring how blockchain can enhance real-time pricing visibility to the capital markets.



Recent News

NASDAQ launches its Open Assets Protocol to drive blockchain development in the exchange marketplace.



URL

nasdaq.com



Estimated Revenue

\$7 million



Revenue Model

Licensing model for its blockchain platform



Key Focus Areas

Middle- and back-office functions

Partnerships

NASDAQ has formed a partnership with Scenic Advisement to assist with capital-raising initiatives.

In Outsell's Opinion

Participation among the global exchanges is still low, yet expected at this nascent stage of blockchain development. A key barrier is business continuity. Switching the exchanges off to test or taking the risk now to go live is not something that the global markets are ready to risk.

WiseBanyan

Score: 18 | 50

At a Glance

[WiseBanyan](#) is a newcomer in the financial robo advisory arena, with a steady following. It has near \$35 million AUM, and is growing aggressively among millennial investors, given its free access.

**Recent News**

WiseBanyan developed an algorithm to assess debt-to-earnings ratio for younger investors to supplement credit reporting, given that most college graduates have not had the opportunity to build credit, yet.

**URL**

wisebanyan.com

**Estimated Revenue**

\$1 million

**Revenue Model**

Licensing model for its online financial advisory platform

**Key Focus Areas**

Financial-planning, debt management, automotive-loan advice, and mortgage assessments

Partnerships

WiseBanyan has no enterprise partnerships so far and operates solo on technical development and customer acquisition.

In Outsell's Opinion

To make a name for itself in the robo advisory space, WiseBanyan must invest in strategic partnerships and position itself to be an effective advisor beyond the millennial audience. If the current positioning continues, it will find its AUM taper off and potentially be bought out at a low valuation simply due to its limited audience.

MarketRiders

Score: 19 | 50

At a Glance

[MarketRiders](#) is a favorite destination among older investors/retirees seeking less-aggressive investment strategies and better ways to manage annuities.

**Recent News**

MarketRiders was awarded best automated advisory for seniors in 2015, with over 8% in average returns.

**URL**

marketriders.com

**Estimated Revenue**

\$1.5 million

**Revenue Model**

Subscription model for its investment platform and services

**Key Focus Areas**

Blue-chip stocks, mutual funds, and government bonds

Partnerships

MarketRiders has formed a strategic alliance with Seeking Alpha to offer exchange-traded fund (ETF) portfolio management tools.

In Outsell's Opinion

MarketRiders' target audience are baby boomers. It needs to develop strategies that help it cater to millennials and centennials to ensure a sustained business. Assets from the baby boomers may be vast, but millennials will control 30% of the assets in the financial markets by 2018.

Key Trends and Market Drivers

A number of trends are driving interest and investment in fintech startups — and altering the shape of this emerging space:

- **Desire by institutions for greater participation in the financial markets:** By design, Robo advisory encourages average investors to be more active in the financial markets. By catering specifically to the mid-to-low end of the investment market, this algorithmic platform helps investors create a risk-adjusted investment portfolio based on the individual's age, level of income, and financial needs. The main attraction, however, for this "robo-advisory" is low-cost. At some point, the world of robo-advisors and that of high-end personal advisors will collide.

First, the growing availability of fund-performance data, predictive analytics, risk profiling, and investor information will make automated advisory more effective. Real-time insight into the financial markets, coupled with investment monitoring that never sleeps, is paving an asymptotic path towards perfect decision making. Second, the human limits and biased nature of personal financial advisory will only perpetuate. It is impossible for any real-life financial advisor to keep a pulse on the market at all times, and it will also be in the advisors' interest to prescribe an investment that is of personal financial interest. These combined factors will make even high net-worth investors think twice about the fancy lunches, golf outings, or season tickets that they are receiving in lieu of high-tech, analytical, and objective investment suggestions.

Blockchain, on the other hand, encourages greater market participation by making it possible to increase the volume of trades in all asset classes, significantly. With the blockchain, the trade is the settlement. There is no middle-office (trade execution/processing) or back-office (post-trade processing/settlement) involved. Thus, the trade settlement does not involve any time rather it is instantaneous. This enables a higher volume of trades to happen, thus, greater market participation.

- **Streamlining of processes and reduction of operational costs:** While the blockchain reduces the need, thus, the cost of middle- and back-office operations, it also enables the settlement of payments to be instantaneous via cryptocurrencies. This allows greater cost savings over traditional electronic fund transfers (EFTs), e.g., automated clearing houses (ACH), bank wires, and payment cards. In the realm of financial advisory and planning, the robo-advisory platforms enable around-the-clock service and recommendations that will be cheaper to operate than staffing real-life advisors. With more data, the automated advisory platform can churn out even more effective recommendations. These new data types could include personal assets, behavioral spending, and financial commitments that could aid in scenario-analysis for college-financing, tax evaluation, automotive/home purchases, or retirement planning.
- **Drive towards investment discovery:** There are two approaches to the use of big-data analytics in financial investing: the commercial approach and the utopic (idealistic) approach. The commercial approach is more obvious (and pervasive) to most vertical markets, where a need is defined, a question is asked, and big data is being "combed" for answers. A classic example of this in the financial market would be a trader looking to invest in a foreign stock. He or she would ask for the financial performance, valuation, sector risk, country risk, currency risk, and numerous other sets of information that could potentially impact investment outcomes before committing to a decision. Analytics are then applied to large volumes of current and historical data associated with each information category to yield a probability assessment, which ultimately, lends directional support for the decision. But what if the trader forgets or omits other information that could also impact the investment outcome? Knowing the questions to ask does not always imply that all the right questions are being asked.

Enter the utopic approach. This approach evaluates a large cluster of data, identifying patterns that depict causal relationships or correlations, and then asks questions that may identify with a need. This objective is entirely like the commercial approach, only that the workflow is entirely reversed. The example of a trader looking to invest in a foreign stock could also be applied here. Only this time, he/she applies analytics to a cluster of random data, which ends up yielding a correlation between political office terms, seasonal (weather) impacts, religious holidays, GDP, and a particular foreign stock. A regression analysis on these patterns reveals that this stock is positioned to grow aggressively in the near-term. Thus, the trader executes on the stock. The fact being that, from the beginning, the trader had no idea which stock to trade (so did not need to know what questions to ask). As such, he/she did not have to worry about missing or not asking the right questions because all possible answers (to the extent that the clusters of data were able to reveal) were there, ready to be uncovered. This is investment discovery.

- **Enhancements in security and compliance:** The blockchain distributed-ledger, trade settlement, and payment (cryptocurrency) capabilities have enabled financial services to move to a completely new level of data encryption and security. Blockchain forensic technology is now available to identify fraud and mitigate any associated risks. Furthermore, blockchain's broad application in areas of legal and contract management also make it an ideal protocol for managing compliance.

Potential Market Challenges

A number of factors in the fintech sphere are concerning to investors, which can potentially restrict the growth of this market in a variety of ways:

- **Investors are nervous about the impact of the Trump presidency on not just fintech, but the overall startup scene.** The lack of clarity on Trump's economic policy prompts not uncertainty around the financial markets, but around the potential regulations that could blunt fintech growth. Trump has already advocated for the repeal or scaling back of Dodd-Frank, and suggested the elimination of the Consumer Finance Protection Bureau (CFPB), which has been the strongest supporter of fintech development in the US. Furthermore, Trump has said he has plans to issue a temporary moratorium on new agency regulations — a setback for fintech — given that the CFPB has just advocated for specific fintech regulations to facilitate their compliance requirements, accelerating growth. Then, there's the talent issue. Trump has been adamant about drastically reducing immigration to the US. If this plan comes to fruition, it could prove detrimental to the startup ecosystem, including fintech. Immigrants have founded roughly half of all US startups valued at \$1 billion and above.
- **Brexit is already costing London thousands of fintech entrepreneurs from Europe due to revised employment paper requirements.** The UK has been a world leader in financial technology, which largely due to government initiatives designed to accelerate fintech development and funding. But with the UK's decision to leave the EU, fintech executives find themselves in a state of frenzy, taking calls from investors who now question the future of UK fintech. To provide a perspective on the potential size of the UK fintech exodus: the British fintech sector received 524 million GBP of investment in in 2015 (alone), a sector that generated 6.6 billion GBP during the same year by the work of an estimated 61,000 employees (about 5% of the entire workforce in financial services). This makes the UK fintech industry larger than those of New York, Singapore, Hong Kong, and Australia, combined. By being part of the EU, the UK maintained access to the entire European market, which also enabled fintech workers and financial transactions to move more freely between borders. Major global investment banks have also been using the UK as the base of their European operations to transact across the rest of Europe under "passport" rules. Because of all this, the UK received half of all European fintech investments. But with Brexit, European stakeholders are now questioning the potential return on their UK investments.
- **It will take an army for blockchain to achieve widespread adoption.** For blockchain to really work, all members of its value chain must "flip the switch" at the same time. If doubt dissuades any participant from doing their part, the blockchain will not work as designed. Furthermore, decision-makers at banks are being graded on revenue generation by the quarter, not on the success of a cost-savings plan, stretched across several fiscal years. These decision makers are also looking at their own contributions versus rewards during their tenure, meaning they may not be with the banks long enough to see blockchain come to fruition. That is: who wants an over-budget, developmental disaster on their record? It would be easier just to keep hitting financial targets, quarter by quarter, and leave the technology overhaul to "the next guy."
- **Garbage in equals garbage out in data analytics.** There are four major challenges to investment discovery. 1. For this idealistic technology to really work, the analytical provider must have data — lots and lots of it. The larger the volume of data, the more defined the pattern, creating a stronger case for causal relationships and correlations. 2. Garbage in equals garbage out. A large amount of poor-quality data may only lead to poor-quality results, or the inability to define and substantiate a pattern. As such, much of the onus is on the database providers to ensure the success of the analytics providers, who will, ultimately, need to secure relationships with many database providers for their systems to work. 3. Working with multiple database providers means that the analytics providers will have "headaches" processing various data formats, prompting a need for an open format amongst all the data providers. 4. Big data crunching needs big "horsepower." The in-memory computing technology, SAP HANA, is already getting a good head-start in this game, as with LexisNexis' HPCC, and Hadoop.
- **Resistance to change.** In the realm of robo advisory, many high-net-worth investors are still accustomed to receiving personal service and financial advice from real-life advisors. In many cases, this relationship becomes valuable when the market is volatile: a time when affluent investors panic and seek emotional support and subjective reasoning from their personal advisors. This human connection remains a key barrier to full robo-advisory adoption.

For blockchain, the resistance to change is monumental. The protocol fundamentally changes the way that ledgers and payments are managed across the financial markets, as well as how trading is executed across all asset classes. For the blockchain protocol to be truly pervasive financial services, the four key stakeholders must agree to adopt the technology in unison: The emerging blockchain application developers, the banks, the "veteran" financial solution companies that are looking to support the blockchain, and the regulators.

- **Displacement of human talent.** Although most robo advisory platforms, today, are designed to complement real-life advisory services, it is only a matter of time before enough data, combined with enhanced analytical power, will threaten the need for real-life personal advisors. In the area of blockchain, the need for middle- and back-office functions of trading will be eliminated: All staff members in these affected departments will need to change roles or be let go. These employees will not go “quietly into the night,” not without a fight with (and influence on) their executives.
- **Regulatory barriers.** Truth is, fintech development will always outpace the understanding of regulators, and even more so of consumers. It is not that fintech startups will deliberately harm the market (including consumers) and thus need fearing, it's that there is a growing gap between technology availability and understanding. Take, for example, cryptocurrency. The bitcoin and the blockchain protocol have been around for years, and many still do not understand what they are. They hear that the bitcoin is great to invest in, trade on (lured by promises of quick financial gains), or pay with, but no one is being clear on (dedicated to explaining) the implications. So, regulators, to remain clear of blame for not protecting consumers, often throw out caution statements (like the SEC did, a couple of years ago, regarding the unsafe trading of cryptocurrencies), until everything has been tested, and implications found and explained to the public (on a broader scale).

Today's fintech players were not created equal. The promise of new technology does not bring with it the promise of success, despite record investor backing. The strong players have demonstrated tenacity by not keeping their blinders on. They've formed strategic alliances with large, legacy financial solution companies to ensure effective integration and interoperability, so as to not drive business disruptions (thus, the birth of development operations, or “DevOp”). This has allowed them to acquire customer commitments (e.g., from major banks) to ensure that once the technology is developed, there will be someone paying. The weak players, on the other hand, must not lose sight of what is important: Without customers and believers, it does not matter how great the technology promises to be, it will fail. Some fintech startups with great ideas remain too focused on technical development, losing track of how applicable this technology could be in the near future. Moreover, without wise partnerships, the traditional, “800-pound gorillas” of the financial solutions world will surely do their best to crush them. To this end, their investors have been their saving grace, helping these at-risk startups better pace their operations and remain focused on the prize-at-hand — significant value to the financial services community in the near future.

Essential Actions

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A common objective shared amongst financial data analytics, blockchain, and robo advisory is the creation of significant customer benefit. True performance in financial services is not only measured by operational cost savings and profits, but also by the ability to meet customers' investment goals.

Outsell recommends the following essential actions for all key stakeholders and investors in the fintech space, to best drive opportunities and avoid pitfalls.

1. Prepare for regulatory changes
2. Be pragmatic about innovation
3. Understand the market
4. Invest in data quality
5. Be prepared for disruption

✔ Prepare for Regulatory Changes

Under uncertain political environments, stakeholders and investors in the fintech arena need to brace for potential legislative changes that could impact innovation and talent. But such disruption to the fintech environment need not necessarily be viewed negatively. For example, fintech talent is not being eliminated, but rather shifted to other parts of the world: This applies to fintech companies and the financial institutions that they serve, as well. Reduced valuations on fintech companies could also make them attractive acquisition targets among large financial solution providers. This is especially true if lawmakers design legislative changes to impact startups more so than "veteran" players. These larger companies could bring such emerging technologies directly into their organization, without additional R&D capital.

✔ Be Pragmatic About Innovation

Do not give into the hype by blindly investing in the "hottest fintech innovations." Blockchain testing continues at major banks. While initial signs point towards success, recent developments have also proven that the blockchain is not invulnerable to fraud. Financial data analytics and robo advisory, on the other hand, is only as good as the quality of the data it leverages. Many believe that aggregating clusters of high-quality data will yield a collective data of very high quality, when the opposite is true. When combining a dataset of 80% accuracy with another dataset of 80% accuracy, one gets a collective dataset of only 64% accuracy. Also, the quantum effect of data analytics must not be overlooked. When data is being collected from a sample population, and the population becomes aware that its actions are measures, the population's behaviour changes, thus, impacting data accuracy/relevance. Stakeholders must be judicious about the level of investment committed versus the desired outcome.

✔ Understand the Market

The true driver of the market should be customers. Banks sometimes focus on quarterly profit targets and growth in customer AUM to their detriment, losing track of their customer's needs and their investment objectives. Should a fintech innovation fail to deliver value to the end customer (client investors), then it may not be a sustainable technology. Stakeholders need to evaluate market opportunities based on final customer needs.

✓ Invest in Data Quality

All data providers must share this initiative, including those supplying data outside of financial services. Recent mergers and acquisitions (M&A), such as the Verisk Analytics' acquisition of Wood Mackenzie, ICE's acquisition of IDC, and the IHS and Markit merger are proof that financial data are not the only top of assets valued by financial services. With advancements in big-data analytics, datasets from all industries become potentially valuable. And for these cross-industry data analytics to yield any level of accuracy in driving decisions, the quality of the data must be high.

✓ Be Prepared for Disruption

If proven successful in financial services on a large scale, the blockchain will become the biggest thing since the introduction of the Internet. Where the web is the internet of information, blockchain is the internet of value. Many see applications for the blockchain protocol as "endless," with immediate value-add in banking and payments. If proven successful in these initial applications, the world is in for a significant overhaul when it comes to the ways it handles data transactions. With the growing availability and capability of robo advisors, it will only be a matter of time before the masses question the need for real-life personal financial advisors. Stakeholders must proactively position themselves to adapt, and in some cases, leverage these changes to ensure business continuity and competitive positioning.

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