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WHY DATA IS DRIVING YOU

Ascend Venture Capital Whitepaper
02.12.2020

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By Dan Conner, founder and general partner of Ascend Venture Capital.

EXECUTIVE SUMMARY

Since 2015, Ascend Venture Capital has been tapped into a torrent of high-growth technology companies that are powering the future states of industries. We are in the middle of a widespread evolution in which our economy stands to be enlivened by a parade of new, data-centric companies and sectors. Every decision, from the minute to the critical, is now expected to be driven by data. That presupposition is at the heart of a transformation that will implicate all roles, sectors, and modes of doing business.

SUMMARILY, DATA IS DRIVING YOU

In recent weeks, headlines have underscored how society is torn on the debate of how much trust to place in big tech. On one side, automation is seen as an economy killer and personal information breaches are held out as signs of power unearned. On the other, quiet enablers continually opt to share their data with a handful of technology companies in return for automated suggestions.

Each camp skirts along the lines of identity and opportunity. But beneath the surface is an undercurrent that aligns toward a single outcome — one of an interweaving transition that carries with it a future of growth and prosperity.

In the wake of a handful of industries being disrupted by automated processes, a desolate outlook for the future of labor has spread and sparked heated public outrage. This controversy is currently afoot in the cabs of 18-wheelers. Pundits are concerned about the dark fate of the economy when autopilot takes over for truck drivers.

I, among others, argue for an optimistic viewpoint. We are in the middle of a technological evolution in which our economy stands to be enlivened by a parade of high-growth companies in new, data-centric sectors. I have experienced this firsthand as the founder and general partner of Ascend Venture Capital, an investor in emerging enterprise data companies, including FreightWaves, LO3 Energy, Insurdata, StoryFit, Oxio, Astrapi, InfiniteIO, and others.

Fifteen years ago, it was surprising to learn that the plane you were just on was guided to the ground by autopilot. Nowadays, it would be terrifying to step on a 737 Max aircraft that flies without an experienced pilot and up-to-date software nourished by uninterrupted data feeds.

Despite countless similar examples, the debate rages on, fueled by political agents' efforts to calcify the divided public. But peeling away this crust, we find that where there once was room for analytical slack, there is now an expectation of meticulousness and immediacy. That very assumption is the root of the transformation that will implicate all roles, sectors, and modes of doing business.

We are in the middle of a technological evolution.

More and more, armed with the tools to inform our decisions with reams of digital information, we are able to select an optimal outcome among a complete set of simulated scenarios. This is why every decision is now expected to be driven by data. With such capability at the ready, who would leave optimization to guesswork?

Through its investment process, Ascend has observed this groundswell of technology companies developing the next generation of products and services that will shape the future states of industries. But in addition to appearing among the central objectives of high-growth companies positioning for competitive edge, the data-driven conversation is also taking place in the boardroom meetings of multinational corporations, within the ranks of governmental leadership, and at the chief policy-making level of higher education.

All this leads to a strong disruptive force that will create both challenges and opportunities across the entire economic spectrum.

WHY NOW?

The expectation of data-driven decision-making has proliferated through widespread access to service providers that can detect, collect, and analyze metrics at scale. Now that these components function reliably in concert, data threads can be gathered and stitched into seamless sheets, ready to be fed into systems that are demanding uninterrupted connectivity.

The foundation of this reliability is the extended availability of computer power and storage. Over the past 15 years, providers such as Amazon Web Services, Microsoft Azure, Google Cloud, and IBM have competed on the cost of these services while continually expanding access. The result is a pool of hundreds of thousands of dependable data centers worldwide that can now be tapped cheaply to test, launch, and scale an analytical project. Moreover, ubiquitous access now enables any employee to download, slice, or analyze a dataset from anywhere, at any time.

Feeding these data pools is an army of sensor-filled, internet-enabled devices. Crowding out the human population of 7.7 billion, there are currently 9.3 billion mobile connections worldwide — each enabling a device to beam data globally. Moreover, the number of connected devices is expected to grow 20 times faster than the human population over the next 25 years.

The 3.2 billion smartphones that currently fill people's hands account for much of this digital universe. Each smartphone is packed with behavior-tracking apps and more than a dozen sensors that create streams of mosaic data feeds. Connectivity at every turn has enabled an inexhaustible market for real-time tracking of a growing proportion of human activity.

Contributing to usability of these data feeds, the increased adoption of the third-party application program interface — or API — has smoothed the superhighway to absorption of new information. By specifying how data and applications should interact, APIs have become the connective tissue between historically siloed software infrastructure and nimble microservices. There are now more than 22,000 such APIs with unique functionality that can be easily plugged into monolithic processes to shape or improve them.

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Lastly, in the 15 years since "Moneyball" proved that statistical methods could win competitive advantage in unconventional arenas, data science has burst into the purview as the instruction manual for extracting value from data. A study at MIT later found that companies that adopt data-driven decision-making can achieve 5% to 6% productivity gains, and the scene was set.

With powerful machine learning tools now as accessible as water or electricity, new economic sectors — worth more than $3 trillion in total — are thriving. The product is dynamic insights generated continuously from careful, nuanced data analysis.

WHERE ARE WE TODAY?

With a wide spectrum of dispersed data feeds being wrangled and shunted into new, massive economic markets for real-time insights, our capacity for optimization is now difficult to deny in any decision. This has produced such a common expectation of data-driven decision-making that it has shaped an evolution of industry.

> The evolution has already crept into our homes.

This evolution has already crept into our homes. Smart speakers lend an ear to our daily lives to intuit our needs; applications crunch our data to optimize our choices; algorithms tune in to our online behaviors to suggest our next moves. The trillions in combined revenue generated by just the top five companies that have captured economic value in these sectors is evidence of the magnitude of this data-centric opportunity. Amazon, Microsoft, Alphabet, Apple, and Facebook are collectively worth $3.5 trillion.

Perhaps one of the best examples of a startup capitalizing on data to transform into a dominant player is Netflix. In 2011 and early 2012, its stock price fell due to flagging growth in DVD delivery and sunsetting content rights. Dark days were forecasted for Netflix. But with its reams of data on the movie preferences of a critical mass of customers, Netflix found itself in a unique position.

By crunching this data to create content designed specifically to match appetites, Netflix quickly established itself as a major player among production studios like 20th Century Fox, Walt Disney Pictures, Paramount Pictures, etc. Vertically integrating with these specifications was a big gamble, but it paid off: Data-driven decisions were enough to steal market share. Viewership skyrocketed, along with Netflix's stock price.

In the years since, the incumbent studios have struggled to keep up with Netflix in what has become the genre-defining story in the film and TV streaming wars. Today, myriad data feeds are creating immense value in other industries that have undergone a similar data transition.

For instance, before you can make food selections at the grocery store, crops and herds must be optimized in genetic selection, nutrition, yield, and harvesting using advanced analytics, satellite images, weather information, and a swarm of connected devices. Then, benchmarking and price discovery tools influence the sales and distribution that drive the mix of products that can be found on your local shelves.

Retail itself has become an offering of eye-catching rather than browsing. The Amazon top-seller designation and Instagramable sensation are now the christenings that can make or break the success of a product. The tactics to earn these accolades are steeped in troves of data.

The shopping experience has been electrified by data-driven decisions: Brands can now optimize the timing and placement of digital or physical showcases in the paths of consumers, predict consumers' intentions upon arrival, and test every detail to match real-time appetites and squeeze every ounce of ROI out of click-throughs. The brand graveyard is full of companies that have failed to capitalize on the value of these data threads.

In the workplace, business insights dashboards display — in real time — key performance metrics ranging from inventory balances to sales quotas to the location of remote workers to expense reporting. These insights are accessible on-site or on mobile.

Such data is crucial to making operational decisions immediately. Without it, the pace of business would slow significantly and competition would be compromised. A 2018 report by LinkedIn shows that most of the 15 fastest-growing jobs in the United States are data-centric, and individuals seeking entry-level positions in this environment know that immediacy is the professional standard.

Finance has long been known to consult ample pools of information when mapping the path ahead, but over time, innumerable data-centric adjustments have steered the industry into a landscape that is unrecognizable from its historical dealings.

Roboadvisors now allocate assets into personalized portfolios of passively indexed funds, and automated underwriting leads customer experiences in digital concierge platforms offering express approvals. Electronic transactions are expected to take place instantly while leaving a trail to be tracked on all party ledgers, relevant partner sites, and the involved mobile banks — simultaneously.

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THE DATA-DRIVEN FUTURE

Energy, logistics, healthcare, education, urban planning — each is being reborn with the deployment of data intelligence systems crunching constant inputs from connected sensors, geolocation, and behavior meters.

The companies that grab market share will be those that understand there is now a data angle to every decision. Incumbents that fail to acknowledge this reality will be under material threat from startups modeled in the data-centric evolution. In this environment, every company needs to be cognizant of the changing breadth and depth of new growth sectors in the data-driven value chain.

Behind the scenes, new back-end infrastructure is being created to manage data resources. Data detection and discovery companies explore internal and external pools to track down and gather choice data specimens wherever they happen to be hiding. Data wranglers manage and prepare these herds of datasets, cleaning them up to be standardized and usable. API companies then build the gangways for data feeds to integrate with customer workflows to support and manage real-time events.

Once the right data flows freely, unique service sectors are minted to add value to existing industries. Data warehousing and dynamic data offloading are operations that exist to cut costs and raise performance with real-time visibility and automated systems. Artificial intelligence services are deployed to learn the typified behavior of system users, endpoints, and nodes to watch for anomalies. Simulations companies create an astounding number of virtual scenarios to model the future and train autonomous processes to respond to any foreseeable occurrence.

Be cognizant of the changing breadth and depth of new growth sectors in the data-driven value chain.

CHALLENGES WE FACE

We are just starting to tap into the possibilities of this data-driven economy, and a data-centric world is not without challenges. For instance, the more connected our world becomes, the more vulnerable we are to cyberattack. We are under constant threat from syndicated bad actors working in places like Russia and North Korea. Data breaches have become a headache so common that they are practically ignored, but an effective attack on interconnected infrastructure could bring massive, crushing chaos.

Moreover, based on evolving appetites for detecting and analyzing new data points, we are on a trajectory upon which everything that can be tracked will be tracked. This includes what you are thinking. Cognitive and neural data are already being tracked and analyzed in real time in Chinese classrooms in order to inform administrators and parents of the quality of attention being paid. The effects of tighter coupling of perverse metrics like these with automated incentives can be highly detrimental.

Clearly there are responsibilities of ethics and security that must be upheld in this new reality. By setting up guardrails for personal information, implementing advanced cybersecurity measures, and carefully envisioning the nuances that metrics imply, we can prevent the data-driven economy from dislocating from strategy, morality, or integrity.

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There is also the reality that automation will sap jobs from the workforce. The World Economic Forum reports that 75 million workers could lose their jobs to automation by 2022. By then, robots will be able to perform 42% of task hours. If unaddressed, the age of automation will usher in an era of marked uncertainty in the jobs market.

This is already a tenuous time in the global economy: Populism is running rampant, industrial production is slowing, interest rates are unsustainably low or negative, and safe-haven assets like gold and the U.S. dollar are hitting levels in line with those seen in the last financial crisis. As a result, multinationals are increasingly centralizing within individual countries, strategically localizing divisions within borders, shortening supply chains, and entrenching with political connections to take advantage of incentives and growth centers.

During uncertain economic times, guided institutional entrepreneurship is more important than ever. Regardless of whether the shifting ground stems from international competition, industry remixing, creative destruction, or automation, we must help our workforce regain footing. Investing heavily in upskilling and reskilling our workforce is crucial to creating multiples of the jobs that eventually will be replaced; we must be doing so deliberately to allow data-centric growth sectors to flourish concurrently.

CATALYTIC OPPORTUNITIES TO BE SEIZED

The benefits of the U.S. leaving its mark first on breakthrough, data-driven sectors are numerous. We can define the industry standards as we did in cellular communications. We can codify norms for transparency of technology usage by building the guardrails for the use of AI. We can host these new growth sectors in our home economy — case in point, the predominantly American electric vehicle market. We should look to own the new growth sectors that are creating this data-centric future, not squabble about the transition process.

Extrapolated to a strong form, all our decisions — from election ballots to investments to entertainment — will be expected to be laid out perfectly through data-driven processes. Rather than picketing the path ahead, we should be focused on how the U.S. can host and shape the evolution that is taking place on a global scale. If we don't, others certainly will. Investing in the right outcomes could ensure the future of one of our economy's most promising opportunity engines. It's a once-in-a-generation chance, and Ascend will be making investments accordingly.

For more information or to inquire about an appointment, please contact Ascend Venture Capital.

ABOUT THE AUTHOR

Dan Conner is the general partner at Ascend Venture Capital, a micro-VC in St. Louis that provides financial and operational support to startup founders looking to scale. Dan specializes in data-centric technologies that enable the future states of industries. Before founding Ascend Venture Capital, Dan worked on the operations side of high-growth startups, leading teams to build scalable operational and financial infrastructure.