THE DIGITAL STRENGTH INDEX

MANAGED HEALTHCARE: LINKING DIGITAL TO SHAREHOLDER VALUE

September 2018

isobar + alpha-DNA

“

If a firm isn’t gaining digital share, it is jeopardizing its future market share – yet few companies look at their digital growth.

”

Harvard Business Review

https://hbr.org/2017/09/are-you-accurately-measuring-your-companys-digital-strength

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A CASE FOR **DIGITAL TRANSFORMATION**

At Isobar, we've spent 20 years advising companies on digital and helping them build leading digital experiences. Our clients have included HBO, Enterprise, and the U.S. Air Force. Clients that are public companies have struggled with these investments, questioning the size and speed of payback. Disruption is happening everywhere, but it's easy to imagine one's business has unique, high barriers to entry that others don't. And some of the most disruptive things companies can do—new digital business models, even new brands—can have long paybacks and cannibalize existing businesses.

Isobar has always believed in a link between digital strength and shareholder value, for good and for ill. Companies that give only glancing attention to digital risk long-term value destruction. When we met alpha-DNA—a data provider to hedge funds that uses digital data to predict revenue growth—we knew we could prove our intuition was right and give clients an empirical way to measure their investments in digital transformation.

alpha-DNA and Isobar have partnered to create the Digital Strength Index. The Index is an aggregate measure of the top 1,000 public companies. Based on over five years of data gathering, analysis, and benchmarking, the primary focus is to assess the digital performance of companies and translate that into forward-looking, topline growth expectations. We have proven the link between digital strength and shareholder value in a way that passes the rigorous standards of hedge funds.

The data shows that digital leaders outperform digital laggards in all industries versus simply those with visible disruption occurring (e.g., retail, media). It is also important to note that being a digital laggard may represent a fundamental business model challenge (e.g., Blockbuster's use of retail stores to rent videos), but that those business model challenges can be addressed with a proper digital transformation strategy (e.g., Netflix's successful pivot from mailing DVDs to content streaming).

It is also important to note that being a "modern" company does not inoculate you from disruption as LinkedIn's eclipsing of online recruiting pioneer Monster illustrates. Even Digital Strength as defined by our own Index does not inoculate companies from digital disruption. It is possible to gain digital strength through outsized offline and online media spending which drives traffic to web, mobile, and social channels, but this is only effective in the short term. As part of any long-term digital strategy, companies should fundamentally embrace digital transformation as a more sustainable form of competitive advantage.

CEOs and boards should strongly consider Digital Strength as they contemplate the investments required to transform their businesses in the digital economy. While success may follow a different investment profile and metrics than they are used to, Digital Strength will translate into revenue increases and improvement in shareholder value.

INTRODUCTION

Disruption for healthcare is inevitable and imminent. The U.S. spends more per capita on healthcare than any other developed nation. In 2016, the U.S. spent 17.8% of its gross domestic product on healthcare, and spending in the other countries ranged from 9.6% (Australia) to 12.4% (Switzerland). According to a recent Wall Street Journal article, "Americans aren't buying more health care overall than other countries. But what they are buying is increasingly expensive." The article argues that among the reasons is the troubling fact that few people in healthcare—from consumers to doctors to hospitals to insurers—know the true cost of what they are buying and selling. A big part of the problem is no one holds all of the information to truly analyze the spending in such a convoluted and opaque industry.

Healthcare companies, and specifically Managed Healthcare companies found in this report, have been growing as prices in the industry continue to increase. The revenues of healthcare companies represented nearly 16% of the total revenues of firms in the S&P 500 last year, up from about 4% in 1984. However, the secret is out. Their honeypot is about to be exposed. Earlier this year Tim Cook stated, "[healthcare] is a business opportunity," and with the announcement earlier this year of the JPMorgan, Amazon, and Warren Buffet triumvirate, the healthcare sector's evolution is about to be expedited.

The cause of this acceleration is due to both the advances in digital and the growth in data. New technologies and access to information has shifted the power to the consumer. Healthcare companies now need to placate their user base and design a retail-like health-and-wellness service that offers ease of use, quality, and affordability.

None of this has been lost on the healthcare companies. With the recent wave of M&A deals, they know disruption is on the doorstep. According to CVS CEO Larry Merlo, putting consumers in the center of healthcare transformation efforts is key. When announcing the Aetna deal, Merlo stated, "With the analytics of Aetna and CVS Health's human touch, we will create a health care platform built around individuals."

In general, when looking at the Digital Strength Index, healthcare as a sector lags digitally. There seems to be an acknowledgement that as a standalone the managed healthcare business model is no longer sufficient; so the recent M&A makes sense. But it begs the question: What is the healthcare company of the future? What is the value of the digital real estate that is about to be acquired? Walmart's possible purchase of Humana on paper has a much different digital trajectory in comparison with a deal like Cigna and Express Scripts.

Even though Managed Healthcare companies have shown extremely strong growth in revenues and market cap, it's time to parlay this success by doubling down on digital.

Continuing our analysis of the Healthcare sector—part of our ongoing Digital Strength Index (DSI) study—Isobar and alpha-DNA evaluate Managed Healthcare.

UnitedHealthcare®

Anthem®

aetna®

Humana®

CENTENE® Corporation

Cigna®

WellCare® Health Plans

DIGITAL STRENGTH INDEX

THE DIGITAL STRENGTH INDEX

Isobar and alpha-DNA have built the **Digital Strength Index** to capture both financial and digital data. The DSI was created on the hypothesis that Digital Strength is a leading indicator of revenue, which ultimately leads to shareholder value. Armed with this hypothesis that the stock market was undervaluing digital, Isobar and alpha-DNA sought to create the largest known repository of digital data on U.S. companies.

DIGITAL DATA

alpha-DNA collects many different types of digital performance measures from multiple data sources available commercially and publicly. The data is broad-based and includes various data types across websites, search, and social platforms. Data is sourced from multiple providers for the same type of measures to reduce noise. The data sources are continuously re-evaluated and appropriately re-weighted over time. In terms of scale, on a monthly basis, alpha-DNA tracks more than 75B digital consumer interactions to hone in on change in velocity across businesses.

DIGITAL BUREAU

Digital identities are defined for the top 1,000 public companies by building, maintaining, and updating a proprietary Digital Bureau of companies and brands. Entity definitions for a company need to be updated continuously, often times manually, and cannot be purchased off-the-shelf. Raw digital data is then cleaned and aggregated into time series associated with each digital entity. Furthermore, aggregating all the digital entities owned by a company to represent a single stock ticker has its own weighting and algorithmic complexities. This unique dataset is a key component of the Digital Strength Index's value.

DIGITAL PERFORMANCE

A proprietary scoring system ranks the top 1,000 companies every month on their overall performance strength across digital platforms (site, search, social, app) and consumer effectiveness (penetration, engagement, popularity). A "poll of polls" approach is used to combine many different digital dimensions sourced from multiple datasets to create weighted performance scores.

CONSTRUCTING THE INDEX

Algorithms systematically establish empirical relationships between digital consumer interaction trajectories and revenue change for each of the top 1,000 companies, looking back two-to-three years in history for each stock every month starting in 2012. More than 2,400 model formulations are considered for each stock ticker at any given point in time (e.g., monthly) to make a robust assessment.

SECTOR SCORES

When dealing with digital, you're dealing with endless amounts of data. Not only is there the challenge of gathering the right data, but also how you interpret it and what it means for your business.

It's no surprise that Consumer Discretionary and Info Tech continue to lead given the high proportion of digital companies in their ranks.

When compared to the 11 sectors, Healthcare falls in the middle. The industry has seen recent strength in both Momentum and Growth, and has had strong revenue growth to date. Nonetheless, overall digital strength falls behind other more consumer-friendly industries as healthcare is still relatively nascent in the digital world.

	CONS DISC	CONS STAPLES	ENERGY	FINANCIAL	HEALTH-CARE	INDUSTRIAL	INFO TECH	MATERIAL	REAL ESTATE	TELECOM	UTILITIES
# COMPANIES	212	55	68	133	109	148	158	56	79	8	41
OVERALL DSI Overall digital strength (DSI) is represented on a scale of 1 to 100 Size of a company's digital presence (web, search, social)	70	61	31	46	42	48	61	29	31	69	38
MAGNITUDE Volume of digital interactions	75	70	23	47	38	48	59	31	23	73	40
SHARE Share of digital relative to share of total revenue (offline + online)	70	55	24	49	40	43	63	23	52	55	33
MOMENTUM Sequential digital acceleration in recent times	51	53	52	47	51	50	52	45	48	69	54
GROWTH Forward-looking topline growth rate projections	46	44	62	48	53	57	56	55	37	35	44
TRAJECTORY Correlation of digital demand trends to overall revenue trends	55	45	44	48	51	51	52	48	52	46	46

DIGITAL STRENGTH IS A LEADING GROWTH INDICATOR BY SECTOR

While digital strength is often seen as critical for industries in the throes of disruption (e.g., media, retail), it's often assumed that it is not as important for industries that are less digitally savvy (e.g., energy). However, a breakdown by sector shows that the Digital Strength Index is equally predictive of revenue growth across industries.

Even though the Healthcare sector overall has been growing compared to the S&P 500, identified digital leaders in Healthcare outperformed digital laggards by 12.1%. This means on average companies in the top 30% of digital performance are disproportionally capturing the value of growth in Healthcare.

TOPLINE REVENUE GROWTH, BREAKDOWN BY SECTOR

(YoY% next year, average)

	▼ Bottom 30%	Average	▲ Top 30%
CONSUMER DISCRETIONARY	1.3%	4.4%	7.1%
CONSUMER STAPLES	-3.8%	2.0%	4.9%
ENERGY	-13.3%	-10.1%	14.5%
HEALTHCARE	2.1%	8.2%	14.2%
INDUSTRIALS	-1.8%	0.8%	6.6%
INFORMATION TECHNOLOGY	-3.7%	5.9%	13.8%
MATERIALS	-3.8%	-1.5%	6.9%
TELECOM SERVICES	0.6%	5.1%	9.2%
UTILITIES	1.2%	1.7%	5.7%
FOLLOWING YEAR STOCK PRICE	*8.9%*	*10.4%*	*12.4%*

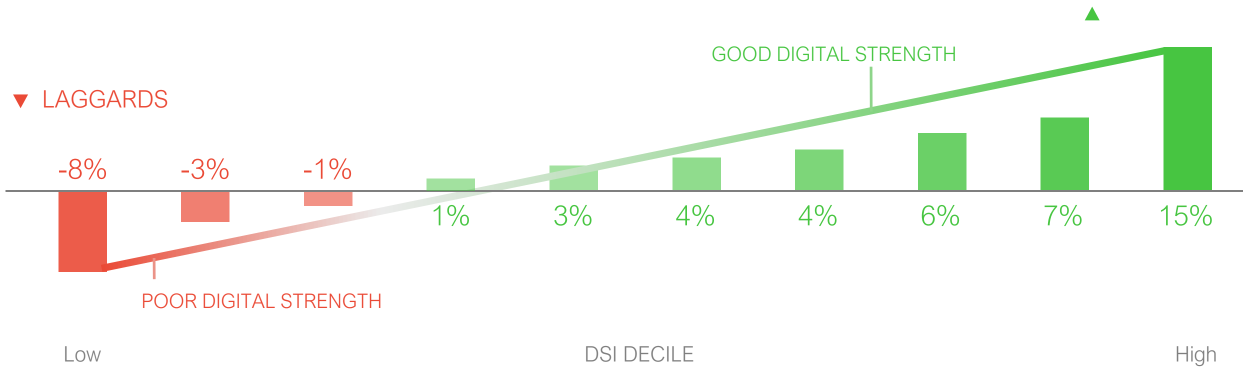
DIGITAL STRENGTH IS A STRONG PREDICTOR OF REVENUE GROWTH

The first question to be asked of any index is whether it is truly predictive. In this case, the top decile of digital strength companies have next-year revenues of +14.5%, whereas the bottom decile has -7.8%—a 22.3-point difference between laggards and leaders in a single year. The index is even predictive in a shorter window, with a nearly 13-point difference between top and bottom companies in terms of beating quarterly revenue estimates.

Compared to last year's Topline Report, the top decile revenue growth YOY% increased by 4.9%. While digital may not be the only factor affecting this increase, as the world becomes increasingly more digital, the gap between the most and least digitally savvy companies seems to be expanding.

TOPLINE REVENUE GROWTH YOY%

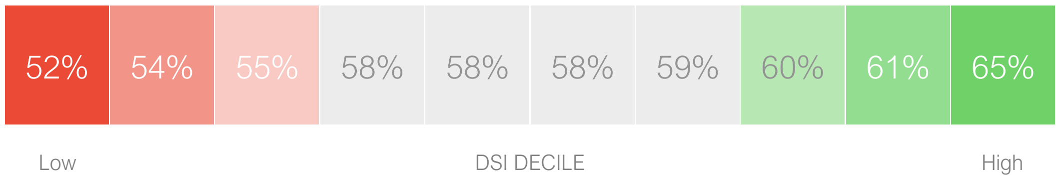
Top 1,000 companies rank order by our proprietary Digital Strength signal every month



% OF COMPANIES BEATING REVENUE ESTIMATE

(consensus expectation next quarter)

Top-ranked stocks based on Digital Strength Index have beaten quarterly consensus revenue expectation ~65% of the time, compared to a revenue beat rate of only ~52% respectively for bottom-ranked stocks.



KEY FINDINGS

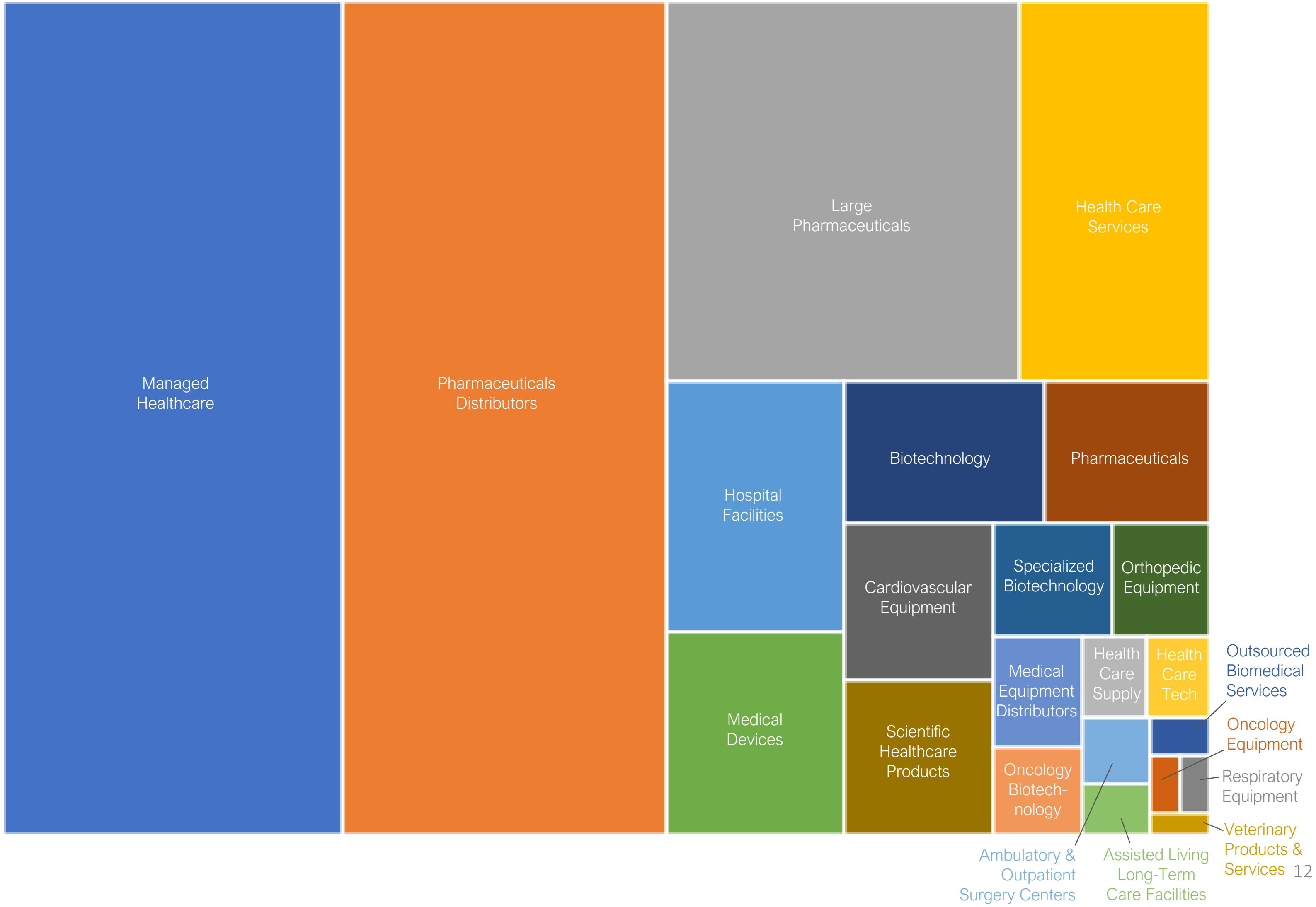
HEALTHCARE

The DSI looks at 10,000+ data points across the top 1,000 public companies in the U.S. We use the taxonomy of the financial community, Global Industry Classification Standard (GICS), and apply a proprietary scoring mechanism.

Within the Digital Strength Index, we have separated 104 healthcare companies into 23 different sub-categories. The total peer groups combine for ~$1.9T TTM in revenue.

Managed Healthcare, which includes Commercial Managed Care HMO Services and Health and Government-Sponsored Managed Healthcare Services, account for $532B.

TRAILING TWELVE MONTH REVENUE ($MM)



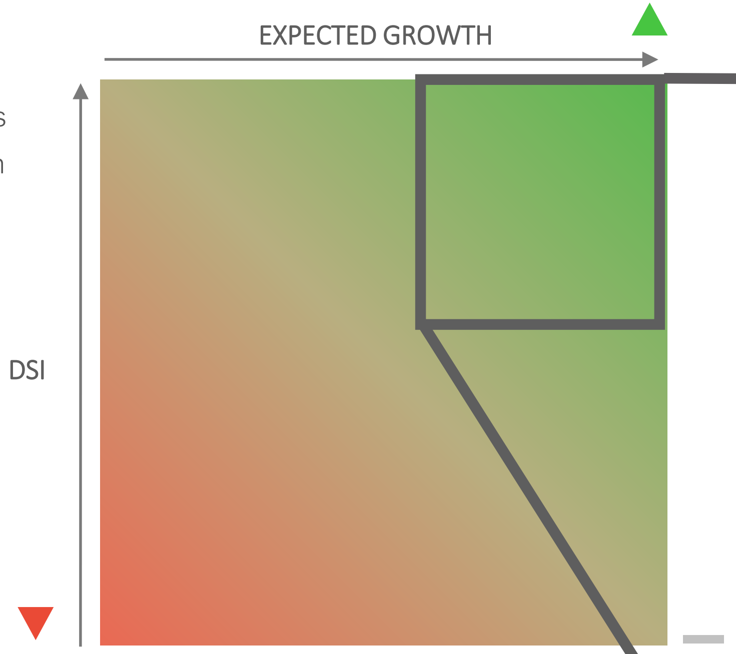
TOP PERFORMERS

After several quarters of data with more data points to compare, we're now better able to notice outliers on an individual stock basis, as well as track which sub-industries within healthcare are trending positively both on a digital strength and an expected growth basis.

The top performers listed here are expected to grow and outpace others in their industry category. Digital strength wasn't just concentrated to any one specific group within healthcare, but rather across medical devices, biotechnology, pharmaceuticals, and healthcare technology.

This fragmentation of leadership across healthcare products and services demonstrates that there is tremendous opportunity for companies across the sector to drive growth via digital. While the more established industries like life science and pharmaceuticals don't have the same double-digit growth expectations as the healthcare tech and equipment companies, their high DSI scores are still forecasted to generate steady growth.

While no managed care companies made the top performers list, the diverse set of healthcare companies performing well digitally indicate strong opportunities for the insurance market as well.



COMPANY	SUB-INDUSTRY
ALIGN TECHNOLOGY	HEALTHCARE SUPPLIES
DEXCOM	MEDICAL DEVICES
RESMED	RESPIRATORY EQUIPMENT
IDEXX LABORATORIES	VETERINARY PRODUCTS AND SERVICES
QIAGEN N.V.	OUTSOURCED BIOMEDICAL SERVICES
AGILENT TECHNOLOGIES	SCIENTIFIC HEALTHCARE PRODUCTS
ALLSCRIPTS	HEALTHCARE TECHNOLOGY
VEEVA SYSTEMS	HEALTHCARE TECHNOLOGY
ABIOMED .	CARDIOVASCULAR EQUIPMENT
MERCK & CO	LARGE PHARMACEUTICALS

NOTES ON THE PEER GROUP

The managed care companies are listed in order from largest to smallest in revenue. As shown, United Healthcare is by far the biggest in terms of revenue, and 4x bigger than Anthem and Aetna in terms of market cap.

Anthem and Aetna have close to the same valuation even though Anthem has 50% higher revenues.

Humana's multiple is elevated due to possible acquisition.

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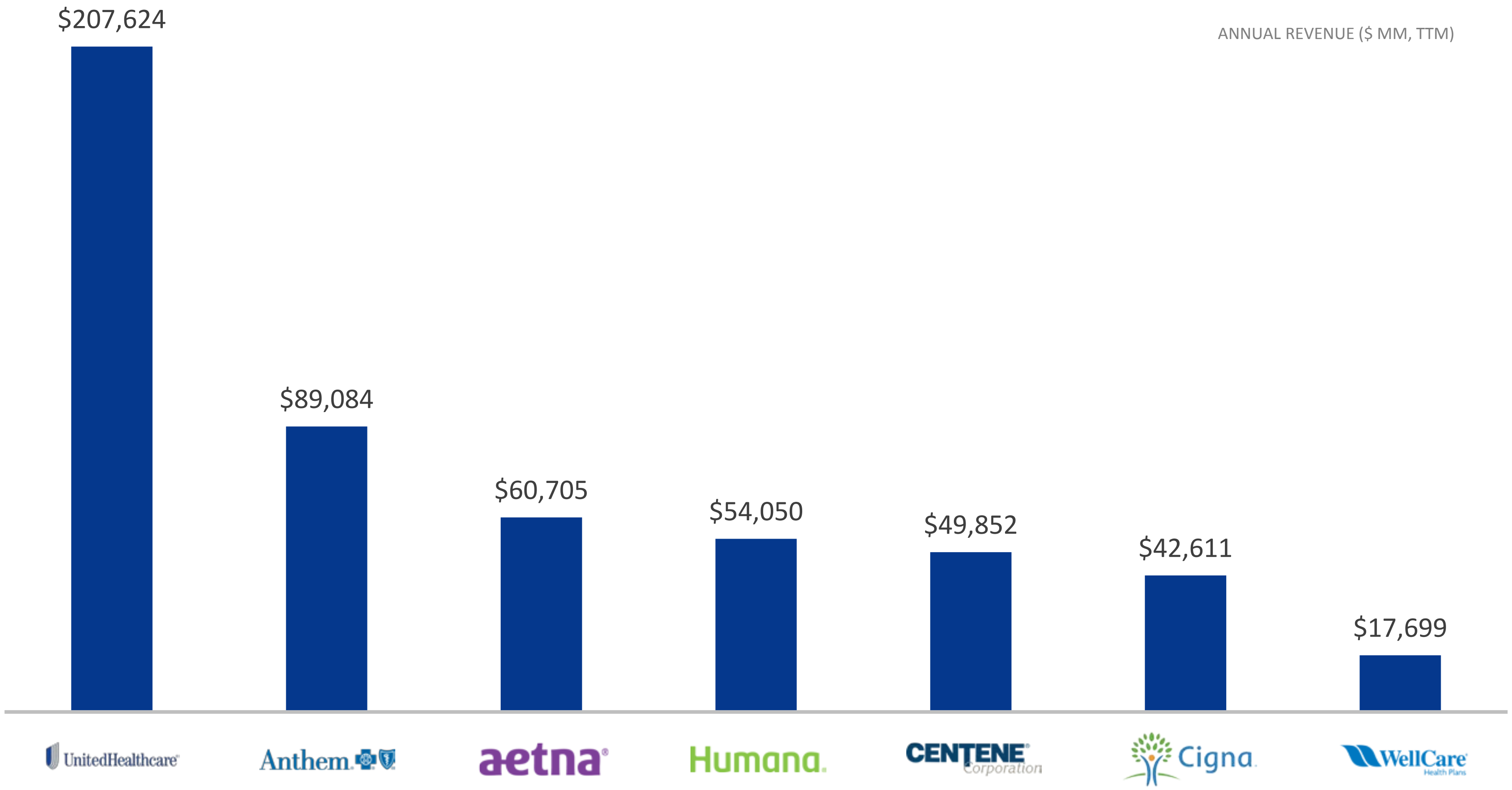


MARKET CAP ($BILLIONS)	251	68	64	45	28	45	13
P/E (TTM)	20.7	16.9	17.5	22.9	19.6	14.1	27

Company 10k's and yahoofinance.com

DIGITAL STRENGTH INDEX: OVERALL WEIGHTED SCORECARD

For this peer group, United Healthcare can be pointed to as the "North Star." The company excels across all metrics with the exception of Share. A lot of this can be attributed to its size since it dwarfs the rest of the group. For example, in Magnitude the company has a much larger audience. Regardless of size, the company continues to do well in Momentum, Growth, and Trajectory.

In general, as shown above, this group has been outperforming from a revenue and stock performance perspective. However, these companies need to assess where they are lagging digitally in order to continuously accelerate their strong topline revenue growth numbers and capture the value currently being generated in the industry.

	LEADER						LAGGARD
DSI	▲▲	—	—	—	▼	—	▼▼
	UnitedHealthcare	Anthem	aetna	Humana	CENTENE Corporation	Cigna	WellCare Health Plans
MAGNITUDE	▲▲	—	▲	—	▼	—	▼▼
SHARE	▼	—	▲	▲	▼	▲	▼
MOMENTUM	▲▲	▼	▼	▼	▲	—	▼
GROWTH	▲	▼	▼▼	—	▲	—	—
TRAJECTORY	▲	—	▲	▲	—	▼	▼

MAGNITUDE

Magnitude measures the volume of digital customer interactions for a business across the broad online landscape. It is represented as a z-score calculated within the specific competitor peer set. It aggregates a diverse set of metrics across platforms (Website, Search, Social) and effectiveness dimensions (Penetration, Engagement, Popularity). Bigger businesses with larger customer files should score high in Magnitude. Magnitude ranges from 1 to 100, with 1 representing very low Magnitude and 100 representing the highest Magnitude. A score of 50 represents the average of the peer group.

United Healthcare dominates in the Magnitude dimension as it is significantly larger than the rest of the peer set. Its strength is driven by its penetration across digital channels and having the largest audience to interact with.

Aetna comes in second, supported by a high social engagement and popularity score.

Centene and WellCare are the smallest from a digital perspective, falling behind on metrics across the board.

In general, for this peer set, there isn't a consistent strategy for the ways companies are using social. Facebook and Twitter represent the largest areas of focus, but there is a wide range as to which companies are focusing on which channels. Instagram, as an example, is very underleveraged across the industry, even though it continues to be critical to key consumer groups.

DSI	▲▲	—	—	—	▼	—	▼▼
FIGURES REPRESENT 1 – 100 point scale	UnitedHealthcare	Anthem	aetna	Humana	CENTENE Corporation	Cigna	WellCare
TOTAL MAGNITUDE	61	50	53	51	43	51	41
WEBSITE SCORE	59	51	53	53	43	51	40
SEARCH SCORE	70	49	52	48	43	49	39
SOCIAL SCORE	53	51	53	53	44	53	43
PENETRATION SCORE	63	50	52	52	42	51	40
ENGAGEMENT SCORE	44	51	56	55	49	46	48
POPULARITY SCORE	53	52	54	53	43	54	41

SHARE

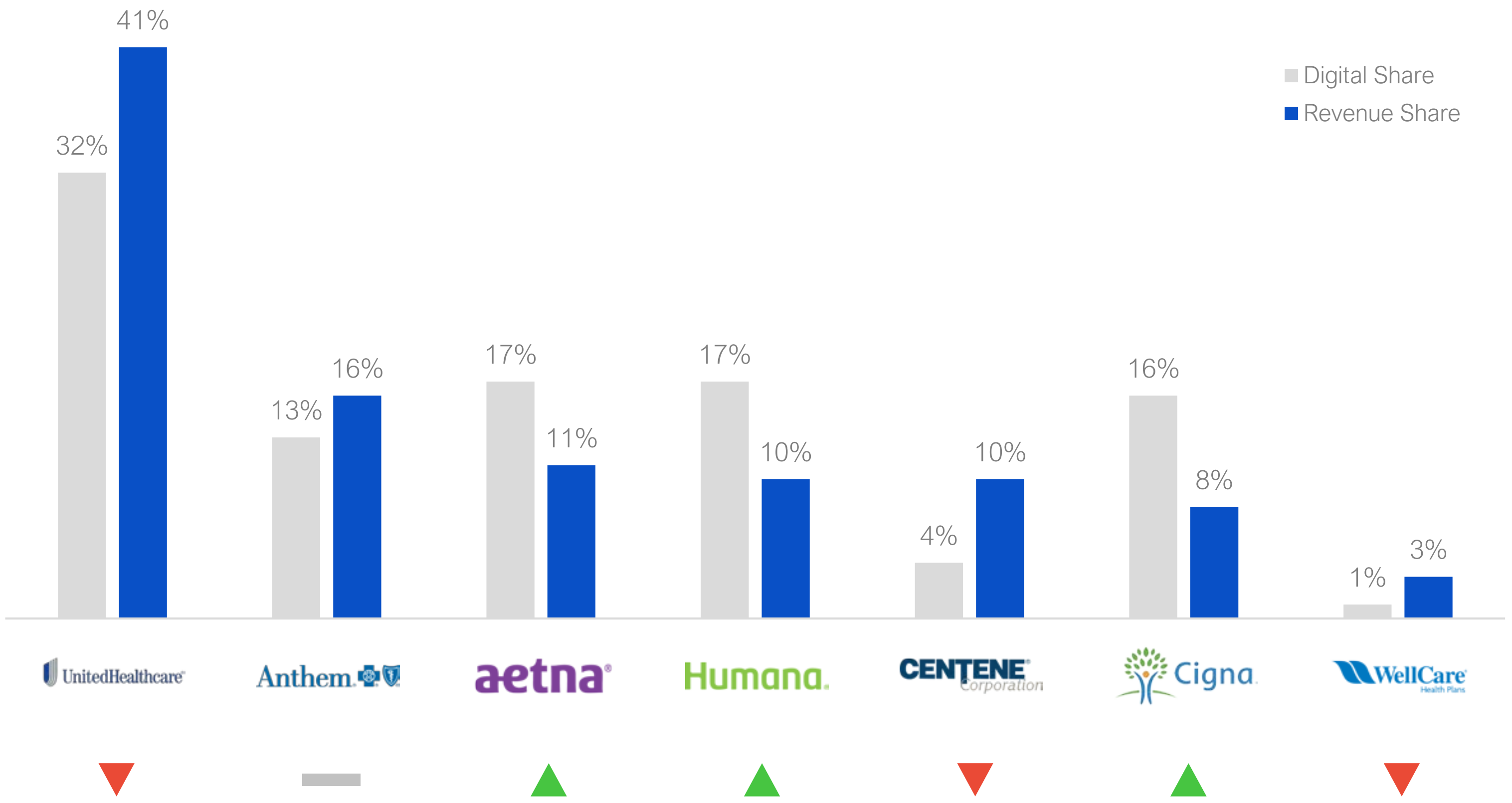
A company's digital Share is its Magnitude divided by the sum of the Magnitude of its competitive set. You should compare this number to your company's actual market share. High-growth companies tend to score better on this Share measure since digital interaction often reflects underlying growth dynamics in the customer base and points to market share gains in the near future. If your digital Share is larger than your market share, you are in a strong position to increase your market share.

Share is a tailwind type of metric, meaning if digital share is outpacing revenue share, revenues are predicted to grow as revenue share catches up to latent digital demand ready to be monetized. If the opposite is true (i.e., a company has more revenue share than digital share), then digital share won't predict growth beyond the company's current position. This is because the company is already generating more revenue than its digital share would suggest, indicating that those with higher proportions of digital share may gain ground.

The chart shows that Aetna, Humana, and Cigna have more of a tailwind and demand pool that hasn't been fully tapped yet, indicating future revenue growth.

United Healthcare, Centene, and WellCare are all going in the wrong direction indicating that their current positions in the market may be challenged by those with proportionally higher digital shares.

% DIGITAL SHARE RELATIVE TO REVENUE SHARE WITHIN PEER GROUP



MOMENTUM

Momentum captures the strength of the incoming trend in digital customer interactions for a business in recent times, typically two-to-three years depending on the category. A range of velocity measures are considered to represent Momentum, i.e., month-over-month, quarter-over-quarter, year-over-year change in order to de-seasonalize the data across categories over time and tease out true changes in acceleration. It is represented as a percentage of digital acceleration measures with positive growth. Businesses which experiencing customer acquisition spurts typically score high on Momentum.

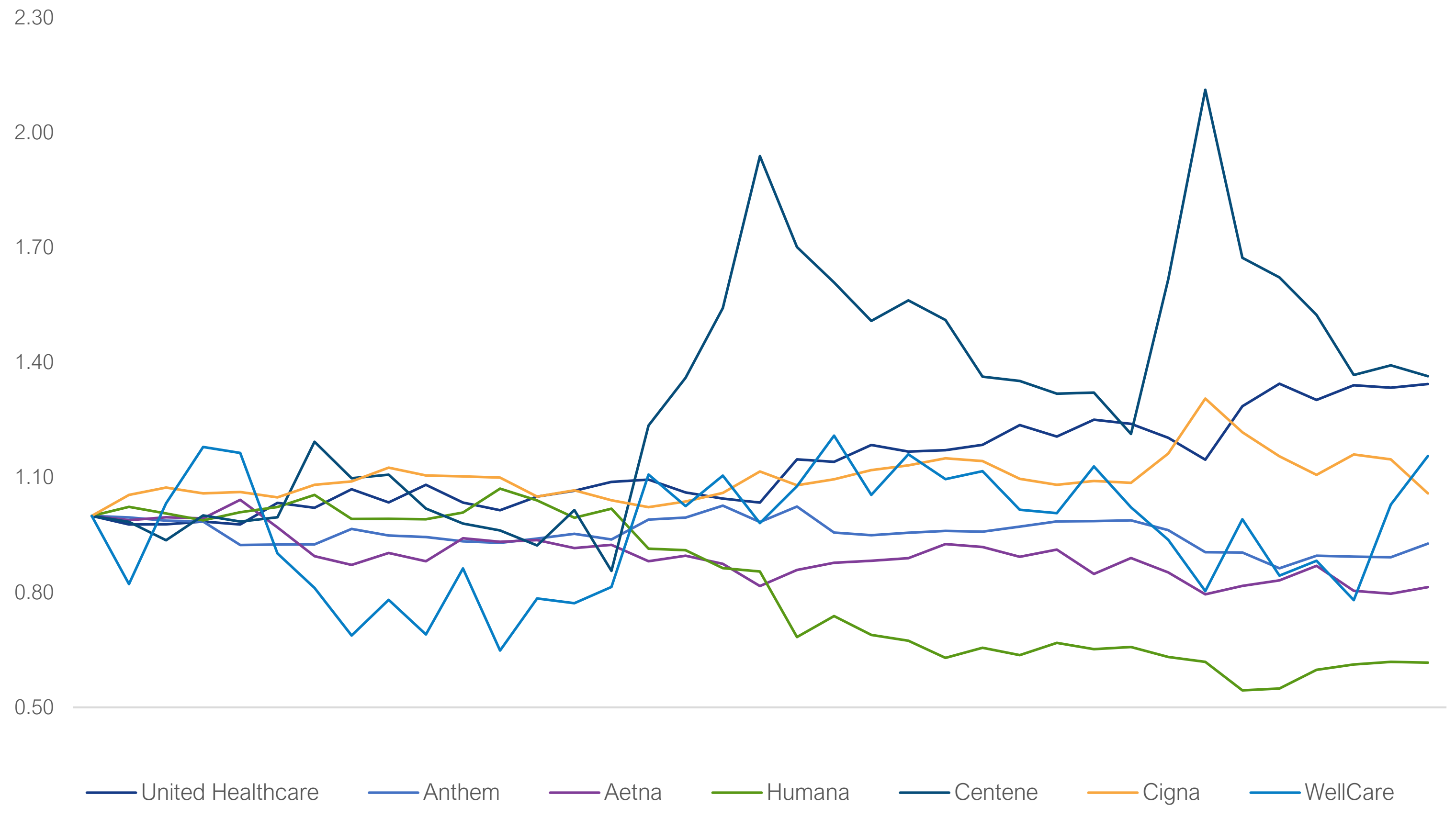
The Momentum metric gives insight into the trending of digital interactions over the most recent three-year period, illustrating which companies are seeing positive (or negative) change in digital strength. Since it is represented as a percentage change, smaller, more nimble companies often see greater shifts in Momentum.

That's exactly what we see with respect to Centene. Despite scoring lower on Magnitude and Share they have seen spikes in digital positive acceleration and an overall positive trend line.

United Healthcare is the other leader in this metric, showing consistent positive movement over time despite being the largest company in both revenue and digital share.

Anthem, Aetna, and WellCare remain relatively flat, and even trend downwards, indicating that overtime they are not increasing their digital interactions.

DIGITAL MEASURES WITH POSITIVE SEQUENTIAL ACCELERATION, RECENT 3 YEARS



GROWTH

Growth is the translation of change in digital velocity to forward-looking topline revenue Growth expectations for a business. The predictive signal has been developed primarily to rank-order a portfolio of companies based on their future Growth potential. The underlying algorithms leverage and benefit from near-real-time digital data on businesses available after the last quarter earnings release publicly disclosed by the company. Growth is expressed as a year-over-year percentage change in topline revenue expected in the upcoming period.

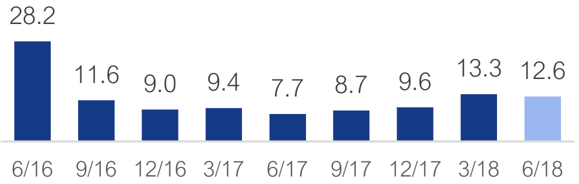
In general, this peer set has been strong across the board and has been outperforming in terms of Growth. Regarding market cap, all the companies have grown tremendously over the past five years.

However, Aetna and Anthem have started to trend lower the past few quarters. In fact, Aetna has had a negative growth expectation for over a year, while Anthem's growth expectation has remained relatively flat.

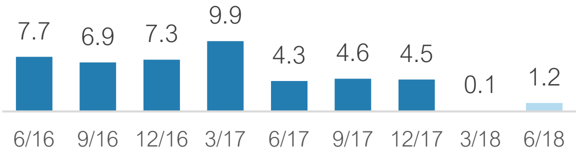
Centene, Humana, Cigna, and United Healthcare all have positive growth expectations, capturing the value of the growing industry.

% OF YEAR-OVER-YEAR CHANGE IN TOPLINE REVENUE EXPECTED IN THE UPCOMING PERIOD

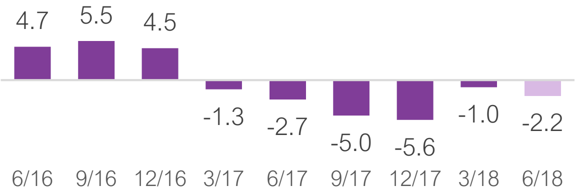
UnitedHealthcare



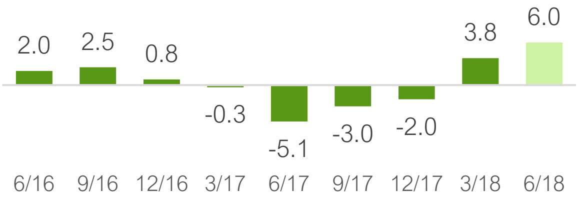
Anthem



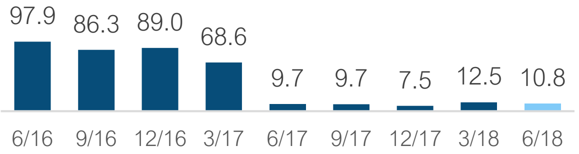
aetna



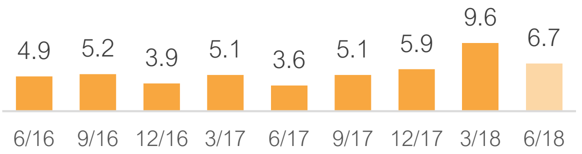
Humana



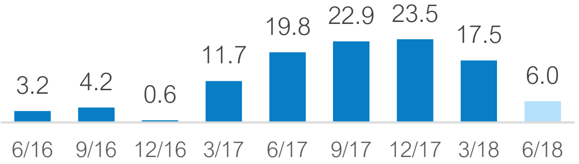
CENTENE Corporation



Cigna



WellCare Health Plans



Q2 2018 quarterly results not yet fully reported

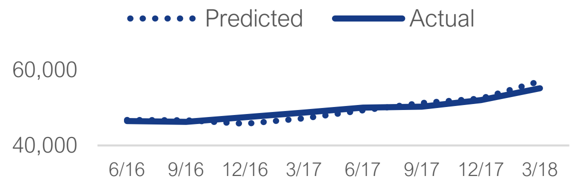
TRAJECTORY

Trajectory reflects the strength of the fit between digital consumer interactions and overall revenues of a business over time. Companies with fundamentally stronger customer bases, superior customer experience, and high Growth profiles typically have a digital Trajectory that mirrors its revenue Trajectory. Conversely, struggling businesses lag in their digital act compared to peers, and it manifests in poor digital correlation measures. Trajectory is visualized as a measure of correlation.

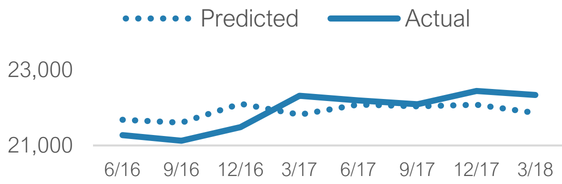
Trajectory is visualized as a measure of correlation. This metric shows how closely the revenue and digital trajectories fit. If they're fitting closely, then the company should be able to take advantage of the digital vector. If they're not fitting closely, the chance in disruption is that much higher.

In terms of this peer set, there is a good range of trajectories across the board. Compared to other industries, the trajectory of the group scores on the lower end of the spectrum, as healthcare performance is heavily influenced by regulatory and population factors in addition to digital measures. This lower fit of Trajectory indicates that the industry overall is ripe for disruption.

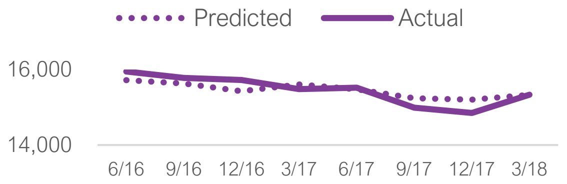
UnitedHealthcare



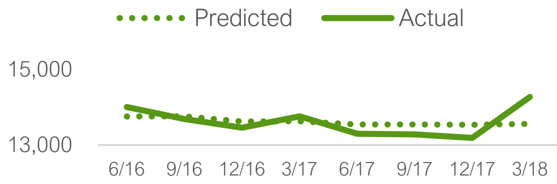
Anthem



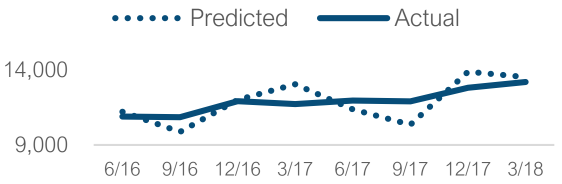
aetna



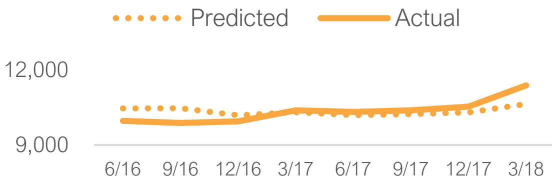
Humana



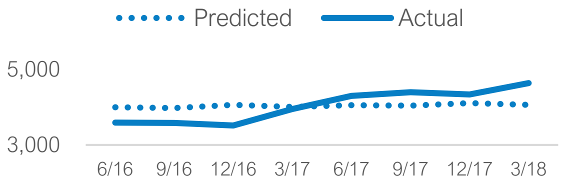
CENTENE Corporation



Cigna



WellCare Health Plans



Q2 2018 quarterly results not yet fully reported

LANDSCAPE

EXPEDITED EVOLUTION

In just the past 12 months, the speed of disruption has escalated quickly wherein a land grab is being fought by both large and small players alike.

DECEMBER 2017

CVS acquired Aetna for $69B. 2017's largest corporate acquisition combines one of the nation's biggest pharmacy benefits managers (PBMs) and pharmacy operators with one of its oldest health insurers whose national business ranges from employer healthcare to government plans. | Reuters

DECEMBER 6, 2017

UnitedHealth buys DaVita primary care unit for $4.9B. Health insurers are trying to cut medical costs by playing a more direct role in medical services, arguing they can save money by shifting patients to cheaper, more accessible locations for routine or non life-threatening emergency medical services. | Reuters

DECEMBER 19, 2017

In May, the House narrowly passed the American Health Care Act of 2017, but then failed to get through the Senate in July. However, the GOP tax plan passed in December where the bill strikes at a core component of the Affordable Care Act: elimination of the requirement that most people have health coverage or pay a penalty. | NY Times | Forbes

JANUARY 30, 2018

Amazon, Berkshire Hathaway, and JPMorgan Chase announced that they would form an independent healthcare company for their employees in the United States. The alliance looks to disrupt a notoriously inefficient, intractable web of doctors, hospitals, insurers, and pharmaceutical companies. | NY Times

MARCH 8, 2018

Cigna agrees to buy Express Scripts for $52B. The companies said the acquisition would benefit consumers by allowing the two companies to bring together patients' medical and pharmacy histories to improve treatments and lower costs. | NY Times

MARCH 29, 2018

Apple launched its Apple Health Records feature which will aggregate existing patient-generated data in a user's Health app with data from their EHR (if the user is a patient at a participating hospital). In addition to the 12 health systems announced with the beta, 27 more are ready to launch the service for a total of 39. | Healthcare IT News

MARCH 29, 2018

Walmart starts early-stage acquisition talks with Humana. Walmart may be seeking to counter Amazon's influence, as well as try to blunt the impact of a number of other healthcare mega-deals taking shape. | CNBC

JUNE 28, 2018

Amazon pays close to $1B for PillPack, an online pharmacy that lets users buy medications in pre-made doses. | TechCrunch

AUGUST 13, 2018

Alphabet (the parent company of Google), Amazon, IBM, Microsoft, and Salesforce announced a joint effort to fix the lack of open standards of health data. These tech companies have pledged to build tools for the health community around a set of common standards for exchanging health information electronically. | CNBC

SEPTEMBER 11, 2018

Apple announced that the new Apple Watch has FDA clearance for a trial fibrillation detection and ECG as well as features such as fall detection, significantly advancing their health tracking capabilities and positioning them to become a viable medical devices player. | Mashable

BIG TECH COMETH

The once formidable regulatory moat that surrounds the healthcare sector can keep Big Tech at bay for only so long. Companies like Apple, Google, and Amazon are moving full steam ahead into the depths of healthcare.

Collect the data…

From wellness apps to the recent Apple Watch 4 announcement (which has FDA clearance to monitor ECG and detect major health concerns), Apple continues to encroach on the healthcare landscape. In a recent interview with Fortune, Tim Cook made it sound as though that's just the beginning. He states, "[healthcare] is a business opportunity….If you look at it, medical health activity is the largest or second-largest component of the economy."

Apple has broadened its reach from doctor/patient relations to patient care at home and medical research. But with 1B+ active users of its devices, Apple clearly has a huge head start in the collection of data.

One example is Apple's ResearchKit, released in 2015. Researchers at Stanford University School of Medicine were able to enroll 54,000 patients in a heart study and track their physical activities, sleeping hours, and fitness. Apple also partnered with GlaxoSmithKline where they used the ResearchKit for clinical trials and studies with the intent of making the clinical research process more efficient and less costly.

More recently, Apple updated the medical records section in their health app, allowing patients to see and share their health data from different institutions in one place.

Analyze the data…

Google also has been wading into the healthcare waters where, for example, it is leveraging Google Cloud to facilitate the collection and sharing of medical images. The company recently announced a partnership with Amazon, Salesforce, Microsoft, and other tech giants to standardize the exchange of health information.

In terms of its core competencies, Google is in a prime position to help with the analysis of data. Google's healthcare website states, "We think that AI is poised to transform medicine, delivering new, assistive technologies that will empower doctors to better serve their patients. Machine learning has dozens of possible application areas, but healthcare stands out as a remarkable opportunity to benefit people." Google continues, "Two of the areas we're most excited about and where we've made the most progress in research to date are ophthalmology and digital pathology."

Google will also be able to predict if you're going to die…kind of. They are developing a version of artificial intelligence that could predict the outcome of your hospital visit the moment you're admitted. The algorithms provide valuable research whereby it could not only warn doctors to act sooner in order to increase patients' survival chances, but also reduce the cost of healthcare through more accurate diagnoses.

Fulfill the data…

Since the announcement of the Amazon, JP Morgan Chase, Berkshire Hathaway partnership, many analysts have continued to ask where will they go next? In addition to hiring some of the brightest and most innovative minds in healthcare, the new organization has vowed to make healthcare more efficient, removing barriers and unnecessary middlemen.

While additional details and plans of the JP Morgan, Berkshire partnership are sparse, the common sentiment among analysts is that Amazon will go after the simpler markets first such as medical supplies and devices.

Amazon already sells branded, over-the-counter medications such as Advil, Mucinex, and Nicorette. In addition, last August, Amazon rolled out a line of consumer health products called Basic Care in partnership with Perrigo. Prescription drugs look like the logical next step given the company just purchased PillPack, an online pharmacy that lets users buy medications in pre-made doses. Selling prescription drugs is a complex system which is primarily a state-based regulatory environment. That said, according to a review of records by the St. Louis Post-Dispatch, Amazon has received approval for wholesale pharmacy licenses in at least 12 states.

PLAYING OFFENSE

Either because of need or fear, healthcare companies have started to counter the aggression from Big Tech and small disruptors by taking the offensive through M&A.

In general, the recent mergers show how these companies are looking to address market inefficiencies by combining business models and ecosystems to boost the quality of care while reducing waste and costs. At the same time, these companies are all data-centric organizations looking to acquire not only the user base, but also the data the comes with those users.

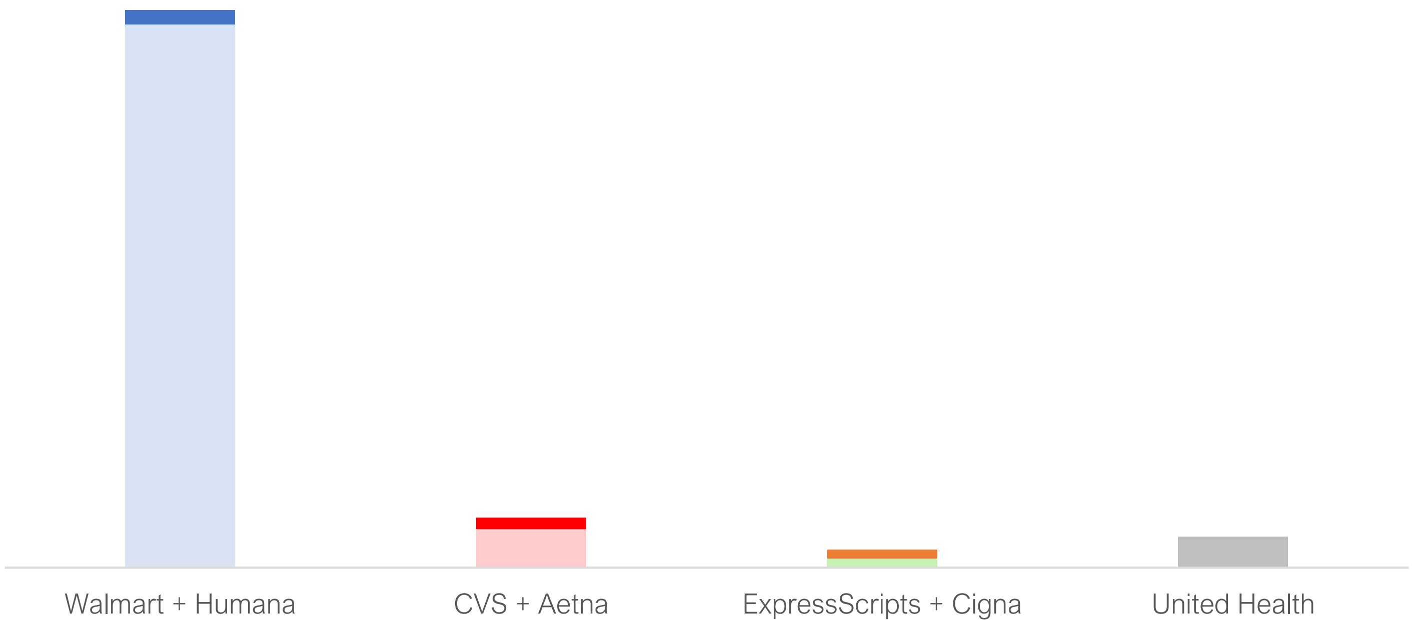
The real issue is which one of these acquisition strategies is actually going to lead to the kind of digital transformation that is attractive.

Walmart will essentially engulf Humana enabling them to expand their massive consumer base, although the two business models are not all that correlated. Conversely, while Express Scripts and Cigna are more of a merger of equals with a greater target-rich set of consumers looking for prescriptions, its population base is smaller. The CVS/Aetna deal lies somewhere in between.

In relation to this report’s peer set, you can see that United Healthcare is still on par in terms of digital magnitude when compared to CVS/Aetna and Express/Cigna.

The one thing we do know for certain is that there seems to be an acknowledgement that a standalone managed healthcare business model is not sufficient.

RELATIVE TRAFFIC SIZE OF PROPOSED MERGERS VERSUS LARGEST CURRENT COMPETITOR



DISRUPTORS

As seen with the big technology companies and the recent acquisition spree, data is at the heart of the digital transformation. This is also apparent with the up-and-coming companies that are forcing change from the bottom up. From telemedicine which removes the friction of obtaining data, to blockchain technology which helps safeguard the data, to artificial intelligence and data tracking which can interpret the data, it's paramount that data be a part of a company's strategy.

TELEHEALTH

amwell

$517M | An IT company that connects users instantly with doctors over video feed.

HealthTap

$88.3M | Helps billions live happier, healthier, longer lives.

nurx

$41.4M | An on-demand birth control delivery company that prescribes contraceptives through its app.

LEMONAID

$20.7M | Leading a second wave of telehealth where technology algorithms power quality care.

BLOCKCHAIN

Gem

$20.5M | One of the most trusted cryptocurrency and blockchain brands in the world.

CHRONICLED

$12M | A technology company leveraging blockchain and IoT to power smart, secure supply-chain solutions.

patientory

$7.2M | A global population health management software that gives users access to their health data.

Nebula Genomics

Leverages blockchain technology to eliminate middlemen and empower people to own their personal genomic data.

AI

prognos

$43.2M | An innovative healthcare AI company striving to improve health by early tracking and predicting of disease.

PAIGE

$25M | Pathology AI Guidance Engine (PAIGE) is a new startup that uses artificial intelligence to fight cancer.

doc.ai

$12.3M | Blockchain-based AI that performs deep learning computations on quantified biology for predictive analytics and personal health insights.

buoy

$9M | An online symptom-and-cure checker that uses an intelligent algorithm backed by medical data to diagnose patients.

INSURANCE

oscar

$1.3B | A health insurance company that employs technology, design, and data to humanize healthcare.

Collective Health

$267M | Gives companies a smarter alternative to traditional health insurance.

bright HEALTH

$240M | Provides tech-enabled consumer insurance plans for individuals across the country.

JOANY

$19.2M | A trusted healthcare concierge that simplifies buying and using health insurance throughout the year.

DATA TRACKING AND ANALYSIS

flatiron

$313M | Offers health care technology services.

HealthCatalyst

$292M | A tech platform that organizes and links health-related data from different systems, making it available for all users.

evidation

$61M | A company that found new ways to measure everyday health.

GNS HEALTHCARE

$54.3M | A big-data analytics company focused on discovering what works in the healthcare industry and for whom.

Funding data and company definition - [Crunchbase]

I M P L I C A T I O N S

THE PACE IS ACCELERATING

While it is easy to write-off the industry as digitally-lagging because it is overly complex, enormously costly, and constrained by regulation, the pace of change in Healthcare is evolving rapidly. Established institutions and new challengers alike must compete in this new environment by using digital to amplify their strengths and better serve the shifting market.

The market will reward those with a clear vision that better meets consumer needs and navigates industry nuances through the strength of digital.

THE VALUE OF VALUE-BASED CARE

As the market shifts away from fee-for-service, it becomes harder to understand all the implications of the new value-based system. The organizations that deliver the most value to the industry will be those that provide comprehensive solutions to pressing problems, not just enhanced products or services. These are the organizations that will take on the underlying problems within healthcare (e.g., lack of access, misaligned incentives, lack of transparency, rising costs, increased demand) to redefine what value means in the space—and how best to deliver it to all of those in the value chain.

EVER-RISING CONSUMER EXPECTATIONS

Customer expectations in healthcare are actually set by their expectations in retail, CPG, travel, and other industries. Best-in-class organizations deliver simplicity, transparency, and security throughout the customer experience. These companies understand that there are very tangible benefits in exceeding customer expectations and investing in a long-term view of delivering real value to the market.

GROWTH OF EMERGING TECHNOLOGIES

As wearables, predictive analytics, AI, and other forms of new technology continue to gain traction in healthcare, organizations must continue to invest—or risk becoming too irrelevant to survive or too inefficient to operate. These technologies won't replace humans, but rather will allow professionals to make data-informed decisions, track progress and outcomes, better record information, and drive efficiencies in their workflows. This will allow them to automate manual processes that can free them up to tackle the pressing problems facing healthcare today.

UNIFYING A FRAGMENTED ECOSYSTEM

Across industries, we see products and services becoming more decentralized. Digital connectivity has given rise to an exponential number of offerings, leading to hesitancy and ever-increasing choice-anxiety in the world of healthcare. This will require organizations to offer customers selections in a comprehensive, digestible health ecosystem. Success will come to those who can help customers navigate their choices and see a holistic picture of their health across organizations, healthcare professionals, insurance plans, devices, and locations.

Digital strength may be the most important determinant of business health and future growth not being measured or managed by enterprises today. Managing against this measure is essential for all businesses that want to grow—if not survive.

Not only do we believe companies should be tracking their Digital Strength, they should also approach digital the same way that digital businesses do: build digital scale and strength before pursuing monetization. All too many traditional corporations make the mistake of applying the same metrics and hurdle rates to digital as they do to their other channels.

Companies should rethink how they develop business cases for possible digital investments.

To properly account for the disproportionate impact of digital on future revenues and shareholder value, companies might want to value digital revenue and digitally-influenced revenue higher than traditional channels.

They need to consider whether a loss of market share is an indication that they are not investing enough in digital. Few business cases include the cost of doing nothing, but they should.

APPENDIX

195 DIGITAL PROPERTIES COVERED OVER 54 BRANDS

UnitedHealthcare	Anthem	aetna	Humana	CENTENE Corporation	Cigna	WellCare Health Plans
United Health Group	AIM Specialty Health	Aetna	Humana	Cetene	Cigna	WellCare
Optum	Amerigroup		BCycle	California Health & Wellness		Exactus
Spectera	Anthem		Availity	Celticare Health		Care 1st
Colonial Life	Caremore		Senior Bridge	Cenpatico		
Unum	BCBS of Georgia			Coordinated Care Health		
Starmount Life	Golden West Dental			Peach State Health Plan		
	+19 More			+7 More		

DIGITAL **STRENGTH INDEX**

isobar + alpha-DNA

CUSTOMIZED REPORTS

A customized DSI report will offer you unparalleled insight into your company's digital strength as compared to your direct competitors. We maintain a comprehensive digital footprint map for the top U.S. publicly-traded companies, and aggregate 75 billion monthly digital interactions sourced from multiple commercially- and publicly-available data sources. This comprehensive dataset (paired with our proprietary algorithm that correlates digital interactions to revenue growth and shareholder value) is unmatched by other research tools in the market.

INCLUDES

- Customized industry report covering your company and up to seven competitors
- Review of market landscape
- Digital Strength Index scorecard and deep insights into five dimensions – Magnitude, Share, Momentum, Growth, and Trajectory
- Strategic recommendations based on results
- Three subsequent Quarterly Reports to track progress over time
- Fee: $97,000

CONTACT US

Between 2012 and 2016, companies leading in Digital Strength have experienced revenue growth the following year of 9.6%. To achieve digital maturity, you need to evolve the models you use for measuring success. Isobar can help.

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Arun is co-founder and Managing Partner at alpha-DNA. Through his 20+ year career, he has led data-centric capabilities transformation across Fortune 500 brands. He has a successful track record of designing and monetizing information-based strategies across consumer finance, retail, eCommerce, and advertising businesses. Prior to founding alpha-DNA in 2014, Arun was Senior Vice President, Global Analytics & Research at The Western Union Company. He has also held leadership roles at Sears Holdings, GE Capital (Analytics Center of Excellence), and STARCOM (Media Research). Arun has a Masters degree in Marketing from MICA and a Bachelors in Business Administration from Loyola College.

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Rod is co-founder and Partner of alpha-DNA. He has spent over a decade leading customer and digital analytics transformation inside large global financial services businesses. Rod is passionate about creating structure around unstructured digital data, making it truly actionable for improved high-value decisions. Prior to alpha-DNA, Rod was Vice President, Global Analytics & Research at The Western Union Company where he led their digital analytics, pricing strategy, and account-based relationship optimization teams. He has also held roles at Capital One where he was responsible for credit risk management and policy, offer strategy, and customer value optimization. Rod has a B.S. degree in Economics from Duke University.

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Tonya has over 16 years of experience delivering large-scale digital solutions in a variety of industries. As a trusted advisor, Tonya collaborates closely with her clients across all aspects of digital project delivery to ensure that expectations are exceeded at each stage. Her past work varies from business planning, consumer research, and strategy development to design, build, and support of enterprise-scale platforms to marketing campaign planning, execution, and optimization.

Tonya was a founding member of pioneering digital agency Roundarch, which became Isobar US in 2013. Her clients include Wyndham Vacation Ownership, Exelon, Country Financial, Sony, Time Warner Cable, and Northern Trust. Tonya has a B.S. and M.S. in Industrial Engineering from the University of Michigan.

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Puja is a seasoned digital strategist with experience across the B2B and B2C sectors, including healthcare, financial services, retail, travel, CPG, and emerging technology. She specializes in business strategy, including sizing markets, assessing organizational feasibility and industry opportunity, and working with companies to uncover latent and unmet customer needs. She's passionate about helping organizations innovate and define new revenue streams. Puja earned her B.S. in Business Administration at the University of Illinois and her MBA in Strategy, Marketing, and Organizations at Columbia Business School.

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