by Robin Robinson

Technology Plus Science: New Company Model?

We asked a variety of experts what would happen if Apple, Amazon, Google or another big technology company bought a pharma company? Our experts are divided on the likelihood of this happening, but if it did, they say it would be transformational.

For more than a decade we have been discussing the role that technology and nontraditional partners would play to move the industry toward a more efficient business model — one based more on health outcomes than product sales. The market opportunity in healthcare is huge, and "outsiders," such as technology giants have been taking notice and getting in the game.

As far back as 2009, PharmaVOICE has been reporting on analysts' predictions for new business models, new research models, and new partnering models that would emerge by 2020. Back then it was difficult to imagine Amazon having its own online pharmacy, or that Amazon, Berkshire Hathaway, and JPMorgan Chase would partner to create their own healthcare company, Haven, or even that Google would invest big in healthcare by founding Verily Life Sciences to translate data science and the manipulation of big data into health technologies. Nor could we have guessed that the FDA would grant approval for the Apple Watch Series 4 as a medical device that monitors the heart with EKG capabilities.

But 2020 is here, and indeed, these advances are shaking up the industry. Tech companies have the knowledge base, the financial clout, and the brand recognition that pharma sorely needs in its partners. Amazon, Apple, and others such as Microsoft, are bringing their experience with customer-centric platforms, machine learning, algorithms, and innovative thinking to global healthcare, and the industry has opened up to partnering with these tech giants. According to a study by WPP research agency Kantar, Amazon's brand alone is now worth $315.5 billion, which is 52% more than it was a year ago, and enough to vault it over Apple ($309.5 billion) and Google ($309 billion) in the annual rankings. Either Apple or Google have earned first place in the BrandZ Top 100 Most Valuable Global Brand ranking for the past 12 years, until Amazon took the lead in 2019.

Partnering with these companies is a good idea on many levels for a pharma organization. For example, many pharma companies are using Apple's ResearchKit to conduct studies. GlaxoSmithKline started a study for rheumatoid arthritis using ResearchKit in 2016; Novartis did the same for MS patients; and Pfizer explored a Lupus symptom tracker. Novartis also implemented a FocalView app, which allows researchers to monitor the progression of eye diseases in real-time via self-reporting and tools on the phone.

While partnerships such as these are changing the life-sciences landscape, we had to wonder what would happen, if in the future, one of these tech giants, or any type of innovative company not currently in healthcare, purchased a pharmaceutical company? Could that be the next form of disruption to rock through the industry?

Joe Youssef, associate director, engagement strategy at Ogilvy Health, says yes. "If Google or Amazon bought a pharma company, the healthcare industry would go through a transformation that has never been seen before," he says. "By virtue of their business models, efficiency, horizontal and vertical integrations, and vast consumer data, they would revolutionize what personalized medicine means."

Patient outcomes would be improved through whole-human care and just-in-time interventions delivered across their footprint would represent necessary behavior change to help people live healthier lives, Mr. Youssef continues. Additionally, because of their scale and buying power, they could exert pressure on insurers to cover medications and reduce costs to consumers.

However, not everyone thinks that a tech giant buying a pharma company is a good idea. For example, Craig Lipset, founder, Clinical Innovation Partners, says he doesn't see any great advantage to the tech companies in entering the healthcare space, when they are already successful by providing tremendous benefit doing what they do best.

"If Apple/Amazon/Google bought a pharma company, they would be buying all of the challenges that every other pharma is facing, from SOPs built for a different time to organizations unprepared for change, to cultures focused on risk rather than innovation," Mr. Lipset says. "Better that they focus on their core strengths,

It would be better if tech companies focus on their core strengths, bringing amazing new tools that can solve many challenges for companies of all sizes, rather than purchase a drug company.

CRAIG LIPSET
Clinical Innovation Partners

The question is: why would a tech company buy a pharma company?

JEDD DAVIS
Publicis Health

bringing amazing new tools that can solve many of these challenges for companies of all sizes, including the young entrepreneurial companies unencumbered by the challenges of today's pharma structure."

Suresh Katta, CEO at Saama Technologies, agrees with Mr. Lipset, saying that tech companies investing in a pharma company is not necessarily the best solution for either side.

"Though the life-sciences industry faces a number of issues, purchasing a pharmaceutical company by tech giants would not solve its current challenges," Mr. Katta says. "However, there have been great examples of pure technology companies that have challenged different industry segments successfully to change the industry dynamics, including Tesla in the auto industry, Uber in the transportation industry, and Airbnb in the hospitality industry."

"This is a very interesting question," says Jedd Davis, chief product development officer, Publicis Health. "Maybe more interesting is: why would any of those tech companies want to buy a pharma company? As tech companies, they are well-versed in agile product development methodologies as well as managing incredible amounts of data. They are also very good at using data to understand people.

"All of these players are in the health and wellness game already, whether it's an app and HealthKit, serving as a provider to employees, getting into the insurance game, or buying genetic profiling and ancestry companies," he adds. "What remains to be seen is whether they have the appetite to enter the product development aspect of a highly competitive and regulated market where they have limited expertise."

Speaking from the side of a tech company, Andrea McGonigle, national managing director at Microsoft, says there is no doubt that this type of disruption would rock the pharma world. Tech companies bring disruption and innovation, but they don't have the industry, regulatory and scientific expertise, or experience in the market. And, more importantly, a tech company buying a pharma company could put itself at odds with its potential clients by creating a competitive environment as opposed to a partnering opportunity.

"For us, this is fundamentally different than how we look at health and life-sciences companies," Ms. McGonigle says. "We do not want to compete with our customers." Instead, Microsoft wants to empower its customers with its technology and together with its pharma partners disrupt the market to improve health across the nation and the world. Its core mission as a company is to empower every person and organization on the planet to achieve more. Partnerships, not competition, are key to its success, she says.

Today's big pharma serves, for the most part, as a holding company for key, important functions: drug discovery, drug development, drug manufacturing, and so on, Mr. Katta notes. In recent years, most drug discovery has been led by unknown, small biotech companies that ultimately get bought by big pharma. Drug development has been outsourced in the name of clinical trials to large CROs. Drug manufacturing has been outsourced to CMOs. "Sooner or later, these current practices will be challenged by pure technology companies that do not have the baggage that is carried by today's big pharma companies," he says. "These companies have the potential to make a positive impact, but the real solution to challenges facing today's life-sciences industry will come from productive and meaningful partnerships between biopharma and data analytics companies that specialize in effectively aggregating, harmonizing, and activating biopharma's disparate data sources."

AMAZON, APPLE, GOOGLE, AND MICROSOFT HAVE AN ACCUMULATIVE MARKET CAPITALIZATION GREATER THAN THE MARKET VALUE OF ALL TOP 10 PHARMA COMPANIES TOGETHER. ALSO, THESE FOUR COMPANIES RANK IN THE TOP FOUR SPOTS OF BRAND VALUE ON THE BRANDZ TOP 100 MOST VALUABLE GLOBAL BRANDS.

Source: Kantar

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JOE YOUSSEF
Ogilvy Health

What would happen if a tech company acquired a pharma company? Inquiring minds weigh in…

RIC CAVIERES
Executive VP, Strategy, Markets and Consulting, OZ

If one of these tech giants bought a pharma company, I predict it would focus on wellness and preventative care not just treatments and cures. It would use crowd sourcing to rate its products, services, and pricing, and would focus on the human rather than the patient experience.

LYN FALCONIO
Chief Marketing Officer, Publicis Health

Few organizations know and understand the needs and desires of consumers more than Apple, Amazon, and Google. Any one of these companies entering the pharma space would be game changers — but not for the reason that you'd expect. While there's no doubt that these tech giants' access to their consumer data would be a boon to pharma marketers, the most compelling change a pharma company would experience is the embrace of a culture of innovation and agile decision-making. Solving for challenges and opportunities in a tech-giant-owned pharma company may mean looking at age-old problems completely differently. For example, imagine thinking about how to set up clinical trials or development programs and support services for a pharma brand through the lens of Apple, with its meticulous experience design and aesthetics.

No one knows how to find me, know me, help me better than these companies, and a pharma company owned by any one of them would be fast-track introduced to make a true shift to radical consumer-centricity to keep pace. Beyond that, given the vast array of built-in channels and platforms, convenience and accessibility to healthcare could be achieved with fewer barriers.

On the flip side, if not carefully managed, concerns about data privacy may escalate, and the management and distribution of fake news and fake advocates would necessarily need to be carefully managed and vetted with intense scrutiny. While Apple/Amazon/Google are known for a customer-first mentality, each face new responsibilities for content and privacy that would need to be well-managed for a marriage with pharma to be seen as a good thing.

ROSS FETTEROLF
Co-founder, SONIC Health
@DigitalBulldog

We work with pharma clients that have offices in Silicon Valley, and in some sense they have already started adopting the "tech" company culture, because they are competing for talent with these companies. But as much as they have evolved, working with them doesn't feel like walking through the doors of Google, Apple, or Amazon — assuming they even employ "doors" at their offices, I suspect they may not. So what would happen if Amazon bought a pharma company? I'll start with a challenge that I witnessed recently within the rare disease space. A caregiver whose child was on a life-saving medication traveled out of state to visit family. On their first day there, her daughter knocked the glass bottle of her medication off of the counter and it broke. The only way to get more medication in that location was via mail order, and she couldn't speak to someone at her specialty pharmacy provider until Monday. Because her daughter's condition couldn't wait, she turned to a Facebook group of caregivers to help. Thanks to Amazon, we live in a world where getting exactly what you need the next day — or sometimes even that afternoon — is entirely possible without ever leaving your home. Their customer service infrastructure and delivery network could completely change the way important and life-saving medications are delivered and supported. Think of the burden that could be relieved on the part of caregivers and patients. This same Facebook group routinely features conversations among caregivers strategizing what to do when their medications are scheduled to arrive a few days late, causing them to run out. In the world of medication, particularly those that are life-saving or prevent debilitating events, minutes matter. No one understands the "need to have it now" better than Amazon. Also, if you are wondering, through the comments and advice of more than 200 Facebook community members, our caregiver was able to obtain enough medication from an ER at a local hospital to keep her daughter safe until her supply could be replenished.

ISAAC GALATZER-LEVY, PH.D.
VP of Clinical and Computational Neuroscience and Director, AiCure Labs

There is a reason that Amazon is the most valuable company in the world — it is the master of logistics. Amazon's move into healthcare is due, in part, to the huge insufficiency in how treatment is delivered. Can you imagine if Amazon bought a pharma company? Physicians don't know if patients are taking, responding, or having adverse effects to their medication because they are remote from the patient's life. The complexity of treatment either leaves patients unmonitored leading to poorer treatment outcomes, or it demands that treatments be implemented in clinic. Both cause significant cost and waste. A major trend will be how to monitor patients' treatment engagement and response and how to deploy the right treatment at the right time to the patient directly in their home. Imagine if a treatment could be modulated up and down based on an individual response at the rate that Amazon can deliver a package. These advances are well within our technological reach, are of significant interest to all stakeholders, and a great opportunity for Amazon to lead the way in the pharmaceutical industry or if it sought to change the dynamics completely and purchase a pharma company.

NEIL HAYWARD
CEO, eXIthera

This is not a question of if, but when. Google has already dipped its toe into this pool with the establishment of GV and the firm's subsequent investments in biotechnology companies. The innovation of pharma bolstered by the financial security of a technology company promises groundbreak-

What would happen if a tech company acquired a pharma company? Inquiring minds weigh in…

ing treatments to patients in a shorter, smarter timeline. Big tech can provide funding and machine intelligence, enabling pharma to identify the best science and navigate the regulatory landscape without the fear of developing a commercial failure. This "super pharma" could run numerous early and late projects in parallel, increasing the chances of success of certain projects and killing projects when appropriate, thereby focusing on finding and aggressively developing novel treatments.

We all have stories of loved ones taken from us too soon. For me, it was my father, who was diagnosed with skin cancer in 2006. I imagine a different outcome for him, one in which he had access to all the incredible melanoma treatments we have now that mean it is no longer the death sentence it was a few years ago. I imagine this "super pharma" could provide the treatments we all need in the shortest amount of time.

GARTH MCCALLUM-KEELER
Managing Partner and Chief Strategy Officer, Calcium

We have seen one model of big tech's integration with pharma already play out through Alphabet (nee Google). However, it didn't buy a pharma company, instead Google created companies. Calico (Calico Labs) was formed more than five years ago, with a mission to "harness advanced technologies to increase our understanding of the biology that controls lifespan." Espousing the mindset of both tech and hard science, the company stated: "We may succeed. We may fail. But …we just might achieve something that others may not believe possible." Calico has melded leading entrepreneurs, scientists, and technologists toward the broad but shared goal of extending life. These are grand ambitions and goals that are driven by prior histories of challenging the status quo — and succeeding. And, Verily emerged from Alphabet's Google Life Sciences group as a company focused on science, engineering, and medicines — making things that can change health.

What these companies bring is their entrepreneurial spirit driven by a deep and systematic analytic approach to improving healthcare. These companies understand that real innovation will emerge not only from great scientific minds, but also from great technology minds. The technology to find the threads that run through the exponentially growing amount of data. The technology to create tools and devices that can alter how we interact with ourselves and our health.

Harnessing data has become one of the great challenges in modern life, all the more so in health and medical data, Alphabet has built its companies around the foundational tool from which it was built, data analytics. But this intersection also thrives in the myriad arms of HealthTech — be it robotics, AI, wearables, or engineered drugs.

ED MITZEN
Founder, Fingerpaint

If a company like Apple, Amazon, or Google were to buy a pharma company, we would see more mainstream consumer-like marketing initiatives. All three of these companies have a major theme in common: they intimately know their customer and have mastered the art of developing a timely and superior personalized user experience that is unlike any other. They would bring that same level of streamlined personalization to patients. We would also see them make an unparalleled investment in developing deeper ways that technology, such as artificial intelligence, could be used in drug discovery and commercialization.

SHANE SENIOR
Managing Director, Crosstree

Amazon is already leveraging its distribution platform to disrupt the supply-chain market with the acquisition of PillPack, a mail-order pharmacy focused on chronic conditions. An acquisition of a pharmaceutical company with a portfolio of chronic disease medicines would provide Amazon with vertical integration, and the ability to create distribution incentives to the advantage of its mail-order strategy. Amazon could use such a strategy to demonstrate a commercial pilot of its pharmacy distribution platform for other pharmaceutical companies, similar to how Google (Pixel) and Microsoft (Surface) develop proprietary hardware to showcase their operating systems.

Verily is Google's (Alphabet Inc.'s) life-sciences research organization. Verily is focused on empowering researchers, including partnerships in chronic diseases such as diabetes (Dexcom, Sanofi) and endocrine disorders (GlaxoSmithKline), as well as precision medicine initiatives in MS (Biogen) and coronary heart disease (AstraZeneca). An acquisition of a pharmaceutical platform could conceivably allow Verily to independently leverage its unique technical expertise and large-scale computing power to develop innovative solutions or enhance existing medicine. However, such an acquisition is unlikely as it is inconsistent with Verily's mission to leverage partnerships to impact health outcomes at scale.

BRIAN WILLIAMS
VP, Chief Digital Officer, Life Sciences Consulting, Cognizant

Such a move could disrupt the industry. Each of the companies possesses an ability to gather information and process information at a cost many times lower than any biopharma company. This distinct competitive advantage could allow them to accelerate the time to target identification and potentially increase the likelihood of successful commercialization. Each of the companies possesses a more robust consumer-oriented knowledge than any biopharma company. In an environment moving toward outcomes-based reimbursement models and where behavioral modification is a known contributor to successful health and outcomes, a tech/pharma combination player could integrate treatment into health solutions run on the Apple, Amazon, or Google platform, with biopharma companies being suppliers for populations affected by chronic conditions that could not be adequately mitigated or eliminated through behavioral modification. PV