



Is it time for life sciences organizations to pivot?

How life sciences organizations are learning from the technology sector to reimagine business models by 2040

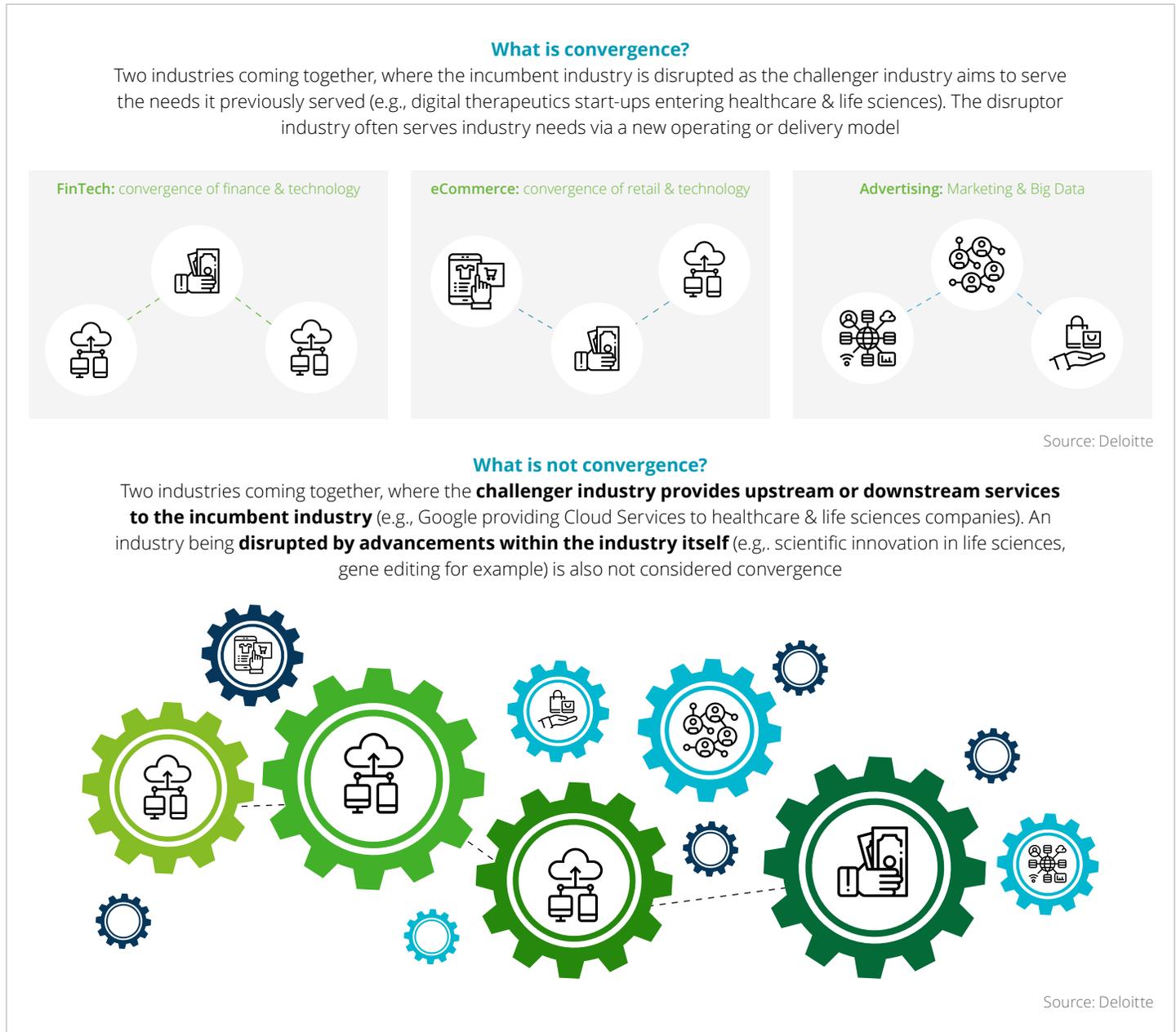
Health in 2040 will be a world apart from what we have now. [Our future of biopharma](#)¹ and [future of medtech](#)² predictions project accelerated change across multiple industry use cases and the potential for completely disrupted business models. This paper outlines ways for life sciences (LS) organizations to thrive, inspired by industries that have undergone similar change. We specifically focus on industry convergence—the process of two or more industries coming together.

Convergence is not a novel concept; indeed, numerous industries have converged over the past two decades. It is exogenous shocks like COVID-19 or the 2008 financial crisis, combined with technological advancements, that accelerate it. Given other industries' rapid, technology-driven convergence, the combination of COVID-19 and a challenging economic backdrop should drive the same, long-overdue shift for LS.

Luckily, although it's disruptive, convergence has delivered significant benefits for industries and their customers—the “best of both worlds.” If anything, convergence should prompt organizations to capitalize and accelerate innovation, responding, recovering, and thriving in times of uncertainty. Convergence will allow LS to leapfrog the standard of care available to most patients.

Is it time for life sciences organizations to pivot?

Figure 1. What is and isn't convergence?



When looking at convergence in other industries, retail stands out. Technological advances responded to customer demand for digital retail orders at the lowest possible prices with e-commerce, whose rise has forced incumbents to radically shift the way they engage with consumers.

Another dislocation occurred in advertising, where tech giants' entirely new advertising paradigm disrupted print, TV, and radio ad markets. By collecting more data and using analytics tools for meaningful insights, they have been able to identify more customers and drive sales.

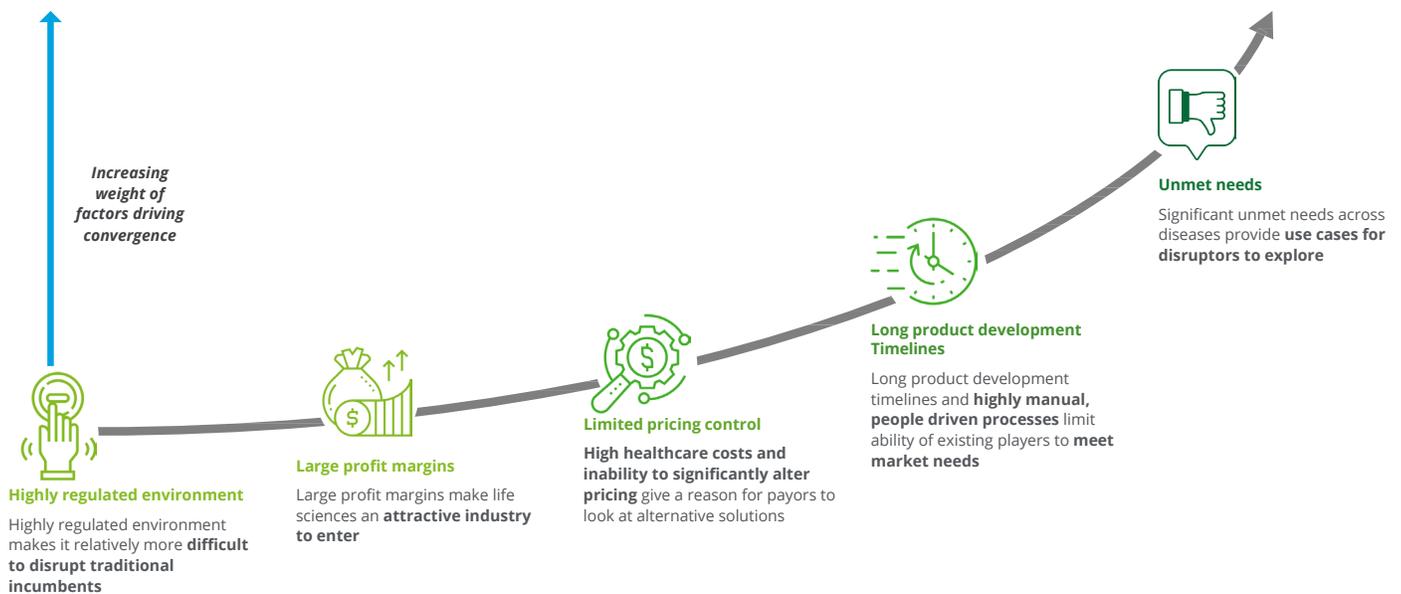
Similarly, LS and health care (HC) are increasingly witnessing convergence, with COVID-19 forcing incumbents to reconsider their product development, use technology to enhance the patient experience, and address unmet patient needs. All the while, tech firms are making explicit, systematic moves to enter LS and HC,³ placing imminent pressure on incumbents to respond—strategies for which will be discussed further in this paper.

Drivers and headwinds of convergence in LS and HC

LS and HC have already witnessed early signs of convergence, particularly in the increasing pace of technological adoption. Companies are building and incorporating digital tools and digital biomarkers in drug development and developing clinical decision support tools for HC practitioners.

Current macroeconomic and competitive dynamics have made LS ripe for disruption (figure 2), which was only accelerated by COVID-19 and the widespread adoption of virtual care. The compounding effect of these drivers will increasingly spur cross-industry convergence. In order to remain competitive, LS companies will need to evolve their internal capabilities, product mix, technology solutions, and partnerships creatively. Thus, cross-industry convergence will unlock new markets and revenue sources required in the “new normal.”

Figure 2. Drivers of convergence in life sciences and health care



Though convergence as a growth mechanism is increasing in LS, the industry's operations have yet to change radically, with no true “paradigm shift” in how LS delivers value to patients. Most resources remain invested in high-value therapeutic interventions rather than diagnostics and prevention. While LS companies are buoyed by the above drivers, they must acknowledge and prepare for potential headwinds against industry expansion. Two of the most salient in LS and HC are delays in technology adoption and regulatory complexities.

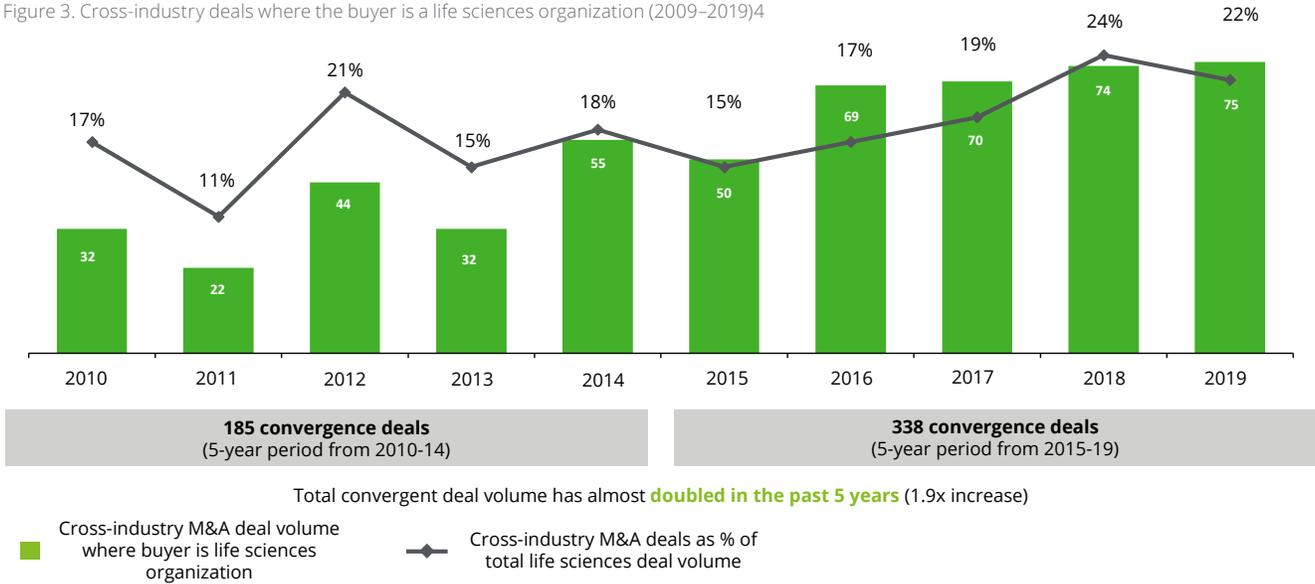
Technology adoption: Disruptors have found HC institutions hesitant to be first adopters of new procedures and technologies, possibly due to institution-specific factors (e.g., disadvantageous reimbursement plans, required behavioral changes, or physician training) or the type of technology being introduced. Exogenous events, such as COVID-19–related travel restrictions, are often the greatest catalyst of adoption of new technologies (e.g., telehealth and real-time and remote monitoring).

Regulatory complexities of product development: The need to meet high standards of efficacy and safety in the regulatory approval process creates unique hurdles for LS product commercialization, which can be particularly challenging for companies looking to bring new and untested products to market. Industry incumbents typically have rigorous processes and experienced teams dedicated to navigating regulatory approval pathways in a structured manner, but disruptive companies without similar resources and expertise may require third-party support or incumbent partnership.

Nevertheless, LS continues to provide an attractive investment backdrop due to its large profit pool, unmet needs, and well-capitalized incumbents with a propensity for M&A. As a result, we believe venture capital deployed in the space will continue to grow, as will the appetite for risk.

Overall, convergence in LS, triggered by COVID-19, is increasingly evident. Growth in the volume of cross-industry LS deals reflects marketwide response to the driving factors behind convergence. Figure 3 provides a 10-year snapshot of cross-industry deal volume involving LS buyers. The number of such deals has nearly doubled in the past five years, from 185 (2010–2014) to 338 (2015–2019)⁴.

Figure 3. Cross-industry deals where the buyer is a life sciences organization (2009–2019)⁴

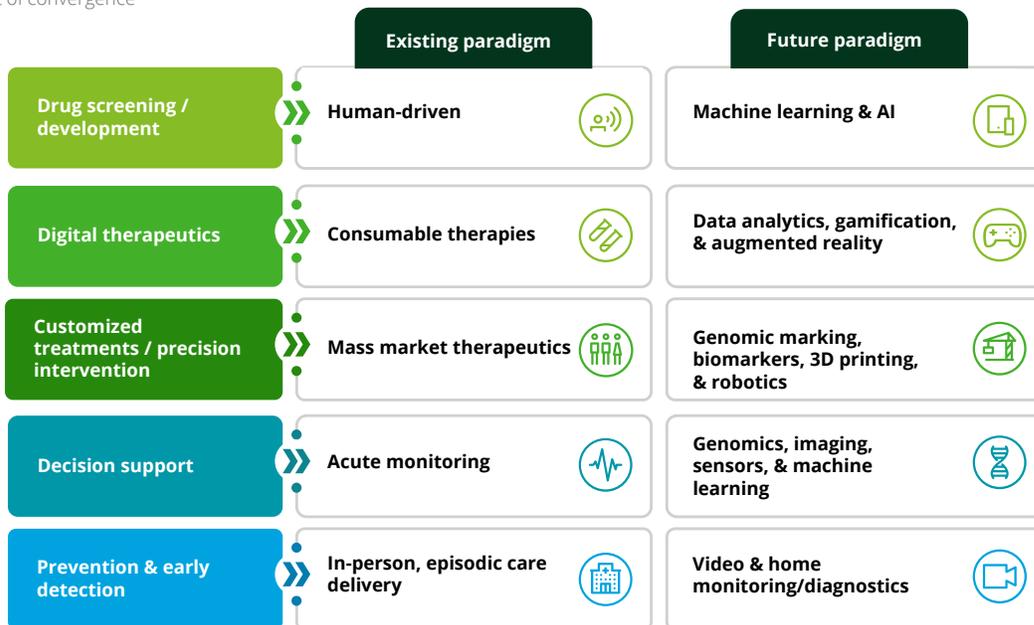


Source: Deloitte
 Source: Deloitte analysis; Crunchbase

Convergence in action

Convergence will be experienced across multiple domains in LS, changing how therapeutic interventions are discovered and how patients receive care. Technological convergence looks apt to imminently shift the existing paradigm in five domains.

Figure 4. Impact of convergence



Drug development and screening

For decades, the drug discovery process has remained static. Researchers identify potential targets, create compounds, and progress development from lab animals to humans. However, screening and development is undergoing a revolution thanks to artificial intelligence and machine learning (AI/ML). In silico drug development (the process of discovering new targets via bioinformatic tools) is gaining traction, and as it continues to gain steam, we anticipate a greater role for tech companies, given their expertise in AI and machine learning models. In late 2019, the first-ever AI-discovered drug was moved into clinical development, with preclinical development shortened from four years to just 18 months.⁴ New challengers proficient in ML and statistical analysis are entering the market, funded by venture capital and able to acquire resources for product approval.

COVID-19 has provided an immediate catalyst for AI adoption. Scientists rapidly created 3D models of SARS-CoV-2 proteins to visualize and create compounds and vaccines to fight the virus⁵. It took about two months to accurately understand the structure of the SARS-CoV main protease in 2003; in 2020, it took only one week⁶. With increased confidence in the ability to quickly break down virus structures, drug development should accelerate.

Digital therapeutics

We have previously outlined our perspective on digital therapeutics⁷, an emerging treatment for chronic diseases with proven clinical outcomes outside classic care delivery models.

Digital therapeutics are challenging the historical disease- and symptom-management paradigm. Early returns from behavior-altering therapeutics are promising, with innovations such as insomnia treatment through gamification of digitally administered cognitive behavioral therapy⁸. Other digital therapeutics complement existing treatments (e.g., insulin therapy), making existing therapeutic area leaders the partners of choice for many challengers. Clinical applications are abundant, and preventative digital therapeutics will have a long runway and support from cost-minded payers.



With COVID-19, we see increases in mental health issues⁹, opioid addictions¹⁰, and insomnia.¹¹ Digital therapeutics for these conditions could be attractive for physicians with limited patient access—driving adoption.

Customized treatments and precision intervention

Drug efficacy (or lack thereof) for given individuals is nothing new.¹² Many pharmaceutical and medical-device therapies are based on safety and efficacy in a large patient cohort.

Going forward, genetic sequencing, coupled with empowered and educated patients, will lead to many new, personalized therapies, such as genetic profile archetypes. As more effective therapies emerge, incumbents and their products may face shrinking demand, and skilled genomic sequencing and sample processing is likely to surge.

Decision support

The number and quality of decision support tools is projected to grow materially in the next decade. While there are numerous tools to help inform clinical decision-making today, including pulse oximetry and certain biomarkers, advanced tools have surfaced within oncology, with products able to predict the responsiveness of certain tumors to chemotherapy based on genomic mapping¹³, reducing both economic and quality-of-life costs for thousands of patients. Additionally, ML is adept at deciphering trends from imaging. Promising early evidence suggests that AI can detect certain types of cancer¹⁴ and determine whether expensive immunotherapies are working on patients¹⁵.

COVID-19 immediately put these tools at the forefront for both physicians and businesses. A number of challengers are exploring potential use cases in adjacent or new markets to rapidly gain entry into decision support; recently, a wearable device company that had created a smart ring to measure physiological attributes such as sleep, respiratory rates, and temperature, customized the device to preemptively identify potential COVID infections in at-risk athletes¹⁶.

Prevention and early detection

Much of the world's patient-physician interactions remain in-person, occasionally augmented by calls, texts, or emails. However, COVID-19 has created demand for care delivered from home, forcing HC systems to establish virtual coverage.

Patients have become comfortable with telehealth, which should lead to increased receipt of care and potentially better disease monitoring. Additionally, remote monitoring and diagnostics could enable earlier detection of both acute and chronic issues. From an industry perspective, existing regimens and product utilization could grow or decline, and new targets may be accessible. LS incumbents can look to partner with telemedicine providers to develop remote diagnostics to capitalize on this trend.



Implications for LS executives

There is no one-size-fits-all solution for LS organizations; however, as a leader, you should consider the following questions:



Have I given my organization the right **guidance and vision** to capitalize on convergence?

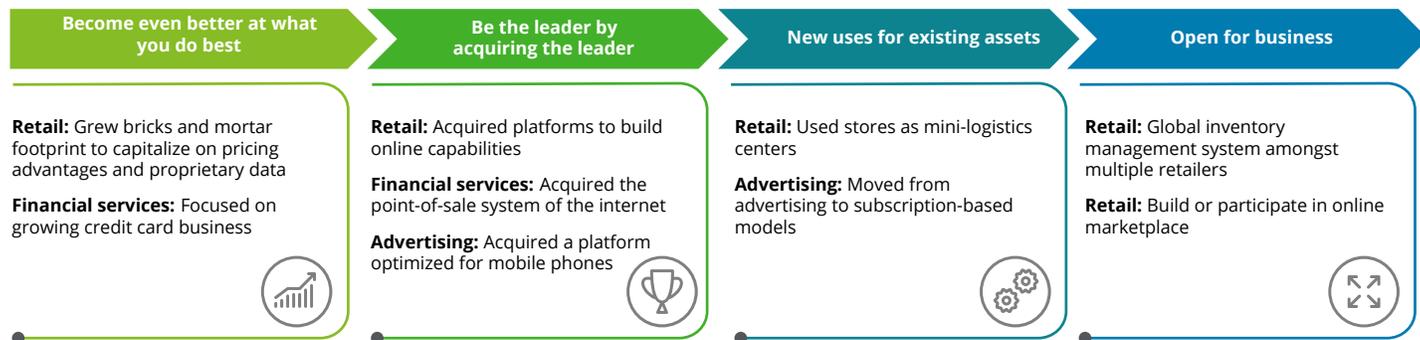
Am I making the **right investments** to move my organization to the future paradigm?

Am I allowing my teams to **“fail fast” and learn** from the rapidly advancing technology landscape?

How to handle convergence

Given the visible impact of convergence in LS, executives will experience increasing pressure to act. As such, we have identified four response strategies inspired by other industries that have experienced convergence in the form of e-commerce, fintech, and advertising.

Figure 5. Response strategies above



Become even better at what you do best

In order to stave off competition from challengers, incumbents often benefit by investing in what they do best, viewing technology as a complementary asset rather than reinventing their core businesses. Large wholesale clubs have grown their brick-and-mortar footprints, while e-commerce has disrupted most others. Wholesale clubs, based on their size, negotiating power, and membership income, continue to provide customers with products that are often sold at prices that are simply not economically feasible for e-commerce merchants. They have leveraged their unique market positioning to become even better at what they do best.

Similarly, financial services incumbents, to keep up with competitive entrants offering sleek, online digital products, have invested heavily in their credit card businesses, striking partnerships with key hotels and airlines that have helped make many large banks a one-stop shop for all financial services needs and retaining customers through convenience and partnerships that smaller challengers could not establish.

Be the leader by acquiring the leader

In addition to investing in strengths, incumbents have successfully acquired the capabilities of convergence firms to defend their market leadership. Continuously “sensing” the disruptor landscape, identifying the right companies, and integrating strategically has proven a successful approach to capitalize on convergence and preserve the disruptor’s unique assets (which we have discussed in depth previously¹⁷).

One leading payments provider acquired a credit card payment system management company, gaining market leadership for the new world of e-commerce. A similar story played out in retail, where one leading company acquired an online same-day delivery platform in order to bolster its shipping capabilities against online disruptors. This company’s e-commerce sales have increased more than 70% since 2017.

New uses for existing assets

Acquiring leading capabilities and investing in strengths can help incumbents mitigate competitive pressures, but it can be costly. Incumbents have also changed their monetization strategies and the way they see their assets, a strategy that allowed a leading media outlet to leverage its strong brand and reputation to pivot from advertising-based revenue to an online subscription model and survive convergence.

Open for business

Finally, another viable way of mitigating pressure from new challengers is to partner with them or join an ecosystem. This can involve granting competitors or challengers to access your assets or data in a way that may previously have been considered a competitive differentiator.

For example, a leading footwear and apparel company gave retail and brand partners access to a supply chain tool, enabling better-informed pricing and promotion decisions. This required all companies to share “commercially sensitive” data, but, in practice, led to a better view of global inventory and increased sales. Similarly, many retailers have opened online platforms for sellers to list goods and reach a larger number of buyers, realizing significant growth and new ways to generate value as a result.

Implications for LS

By investing in strengths, acquiring leading capabilities, changing the way incumbents view their assets, and opening up their business, several organizations outside the LS industry have successfully defended their market position. These strategies may provide pathways to reimagine LS business models, thrive, and survive convergence.

Investing in leading capabilities could be handled by setting up a “sensing engine” or vehicle to make minority investments in new, promising capabilities and disruptors, letting incumbents stay close to disruptors and subsequently acquire the most mature players or capabilities. As such, incumbents should consider venture funds or early-stage partnerships to explore emerging technologies.

LS companies have many unique assets (access to key call points across the patient care continuum, disease-state knowledge, robust regulatory processes, and more) that can expand their business models. Partnering or acquiring challengers that are able to build off these assets, or creating new models internally, allows for test pilots in select markets to see if these new models can gain traction.

Finally, participating in or creating an ecosystem around existing assets may advance product development or commercialization or strengthen manufacturing and supply chain capabilities. The emergence of ecosystems has proven to be equally as disruptive as new market entrants¹⁸.

Ultimately, though disruption in LS may not mirror retail, finance, and advertising, there will be plenty of opportunities for challengers to change competitive dynamics and threaten the position of market leaders.

Contacts

To begin a discussion, or for further information on convergence in life sciences, please contact:

Mike DeLone
Principal

Deloitte Consulting LLP
Mobile: +1 215 299 5230
Email: mdelone@deloitte.com

Varun Budhiraja
Principal

Deloitte Consulting LLP
Mobile: +1 818 441 4455
Email: vbudhiraja@deloitte.com

Kushan Biswas
Senior manager

Deloitte Consulting LLP
Mobile: +1 812 369 9038
Email: kbiswas@deloitte.com

Michiel ten Broeke
Manager

Deloitte Consulting LLP
Mobile: +1 628 205 5950
Email: mitenbroeke@deloitte.com

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Endnotes

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