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Future of Health

How to transform BioPharma for the upcoming LIFEcare system

#FutureOfHealth

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EXECUTIVE SUMMARY

In the past years, healthcare systems and the pharmaceutical industry have undergone tremendous changes given technological, regulatory and socioeconomic disruptions. Covid-19 has further intensified and catalysed these changes in healthcare systems and healthcare delivery. Among others, regulators paved the way for more dynamic and faster decision-making, approved novel technologies including digital health solutions and created new reimbursement pathways. In parallel, medical and biological research has made breakthroughs with emerging technologies including in-silico protein folding prediction, novel cell therapies and other treatment platforms. With those trends materializing, borders between industries continue to blur. This convergence of healthcare, technology and retail & consumer industries will lead to what we call the LIFEcare system. The critical question for each player in that new normal will be: Are you prepared and what is your right to be successful in this changing future?

Our 2021 global Future of Health study, based on interviews with and survey responses from 150 senior healthcare executives*, confirms our belief that this acceleration has only just begun. Over the next decade, the transformation of healthcare will in turn shape the road to success for BioPharma companies in an unprecedented way.

Based on the survey findings and our engagement with clients and partners, we expect the emergence of what we call the LIFEcare system, characterized by a convergence of wellcare and disease care systems. Overall, more than 75 percent of healthcare executives agree that LIFEcare systems will be widespread by 2035, especially in cardiovascular and metabolic diseases, oncology and neurology.

This adjustment will involve significant disruption of the BioPharma value chain. For example, 80 percent of respondents perceive the largest disruption and capability gap in their digital, data and analytics capabilities, with a direct impact on their R&D activities (67 percent). Our analysis of the 2020 profit and loss statements of the top 20 BioPharma companies, and the findings of the latest Future of Health study, indicate that on average, large BioPharma companies will need to reduce commercial spending by about 3 billion USD annually, which would reflect a 20 percent decrease in marketing and sales expenditure, and mainly redirect the capital into R&D investments.




At the same time, we forecast that the creation of new opportunities in areas such as preventative care and personalized nutrition will lead to a two to threefold increase in the global wellcare market (CAGR of 10 to 12 percent), creating a total value pool of 2.8 to 3.5 trillion USD by 2030. By contrast, disease care value pools, including spending on medicines, are expected to only grow by a CAGR of 3 percent during the same time period.

* Survey respondents included BioPharma 78%, Diagnostics/MedTech 11%, Digital Health 6%, Broader Health Context 4%, other 1%

Taken together, these forecasts represent a wake-up call for BioPharma companies. Specifically, they will need to:

- Build up capabilities around digital, data and analytics as well as ecosystem partnering
- Transform their value chain, in particular R&D and commercial operations
- Reinvent their business models to sustain success in LIFEcare systems

This report maps out three strategic roles which offer pathways to success for BioPharma companies as LIFEcare systems develop worldwide:

1		Solution providers Create value by providing personalized and affordable solutions for specific diseases or wellcare needs.
2		Orchestrators Create value by leveraging data analytics to match best fitting solutions to an individual customer's needs.
3		Infrastructure providers Create and maintain the physical and technology platforms for orchestrators and solution providers to develop and deliver their offerings.

BioPharma executives shared that on average they will retain a primary focus on disease care and pursue an orchestrator positioning to complement their traditional innovative BioPharma solution business. However, our study suggests that executives might overestimate their companies' right to win in the orchestrator role: an analysis of 50 currently emerging ecosystems suggests that in fact other stakeholders such as payers, providers or technology organizations are ahead.

Amid the ongoing disruption of healthcare, both significant challenges and opportunities are arising. BioPharma companies need to transform their value chain and reinvent their business model. **The time to act is now.**

SECTION ONE – INTRODUCING THE LIFECARE SYSTEM

How LIFEcare will transform healthcare spending

Almost unanimously, the 150 healthcare executives in our survey believe that by 2035 healthcare will be centered around human needs, and will be personalized, digitized and preventative, with healthcare solutions being seamlessly integrated into daily life.

To seize the opportunities created by these changes, healthcare stakeholders will need a much deeper understanding of individual human biology and lifestyle, to be able to deliver wellcare and disease care earlier and in a more personalized manner. However, acting on the outlined trends will require access to longitudinal, meaningful data ranging from lifestyle areas such as fitness, nutrition, and the social determinants of health, to healthcare fields such as multi-omics and disease progression.

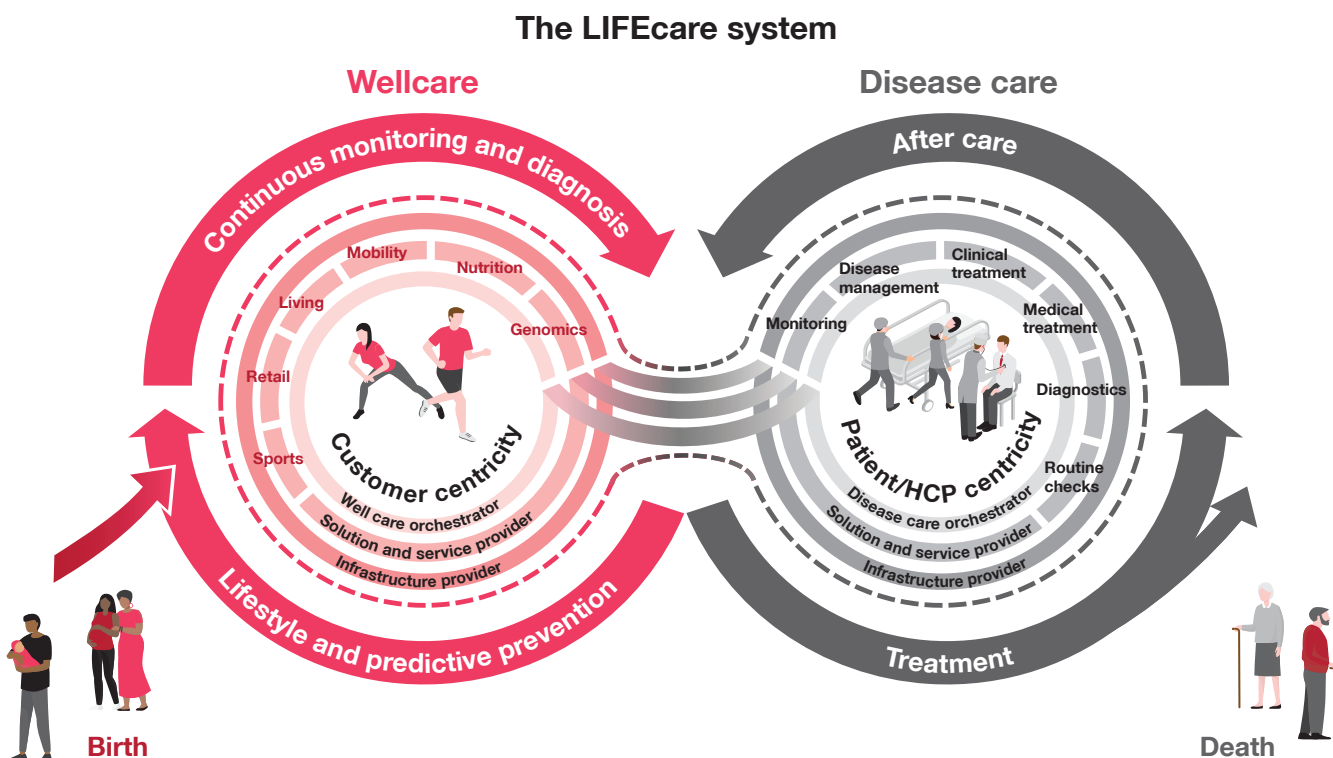
BioPharma companies will need access to the same data in order to develop and provide personalized health solutions and services, including pharmaceutical drugs and digital health applications. For wellcare players, the convergence of health and wellbeing presents an opportunity to medicalize their offerings and exploit new, attractive value pools with higher margins – despite fiercer regulations.

Realizing this vision of the LIFEcare system requires the convergence between current disease care systems, focused on treatment, and wellcare systems, focused on prevention and general wellbeing (see *Exhibit 1, next page*).



Realizing the vision of a LIFEcare system requires the convergence between current disease care and wellcare systems.”

EXHIBIT 1
The future LIFEcare system



Source: 2021 survey among 150 healthcare executives; Strategy& analysis

The wellcare system aims to preserve “good health” and provide wellbeing through additions to an individual’s daily routine, ranging from nutrition and supplements to exercise, social engagement and personal use of digital health solutions. Where wellcare was once seen as marginal, it will be at the core of effective healthcare systems. For example, the 2019 PwC Health Research Institute report¹ outlines a range of social determinants of health which – alongside biological determinants – constitute a person’s health and wellbeing. Moreover, a 2020 Lancet study² estimates that around 25 to 50 percent of US disease burden is linked to preventable risk factors – leading to 730 billion USD being spent on treating preventable diseases in the USA alone.

Future wellcare regimes will increasingly pursue partnership models with corporate health programs and reach partial reimbursement agreements with insurers. This, however, also raises the bar for wellcare providers to generate relevant medical evidence for the positive health impact of their offerings. The broad spectrum of market openings will attract a correspondingly wide and growing range of wellcare players beyond established healthcare and BioPharma companies. They include food and beverage manufacturers, consumer technology companies, and sports apparel and equipment retailers. Peloton, an online sports platform which partners with corporates and insurers on funding and reimbursement models, is one example.³

For all non-preventable and non-prevented cases, disease care systems – similar to current healthcare systems – will focus even more on early detection and more targeted and personalized treatment of adverse health conditions. While the goal of returning the patient to a better state of health and improving his or her quality of life remains constant, three key differences emerge:

- 1.** Disease care will take a more holistic approach to healthcare – leveraging a broader range of health solutions (including advanced therapies, digital solutions and personalized drugs/drug combinations)
- 2.** Patients will play a much more active role in defining the treatment pathway most suitable for their personal situation. Supported by digital health assistants they will be enabled not only to boost their wellbeing during treatment but also to drive treatment success through more active engagement and data-driven, real-time surveillance by healthcare professionals
- 3.** Decision-making in disease care will not only be based on healthcare data but increasingly incorporate multi-omics and lifestyle data

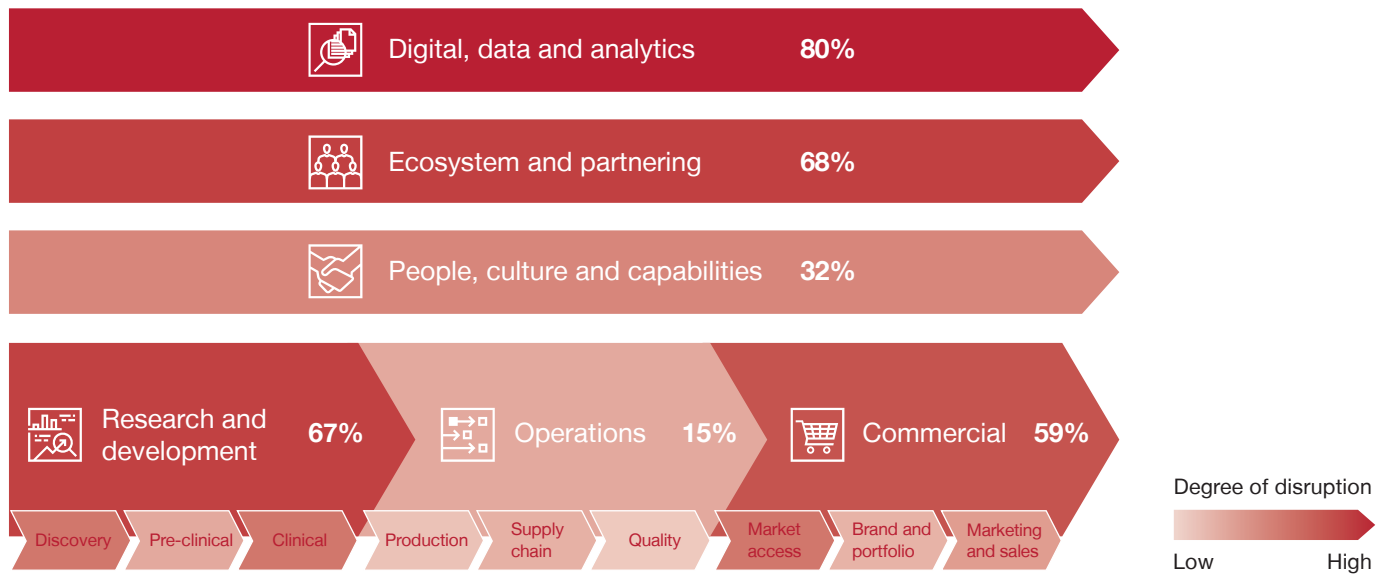


SECTION TWO – DISRUPTION TO THE BIOPHARMA VALUE CHAIN

How the transition towards the LIFEcare system will disrupt BioPharma’s value chain

This rapidly changing landscape, with multiple entrants from other sectors, new, data-driven technologies and shifting customer requirements, will have significant implications for the BioPharma value chain. The highest proportion (80 percent) of our survey respondents see these changes exposing gaps and causing disruption to their data systems and analytics, followed by their ecosystem partnering capabilities (68 percent), R&D (67 percent), commercial operations (59 percent) and people and culture (32 percent). A relatively smaller proportion (15 percent) expects BioPharma supply chains and operations to be the most significantly disrupted function of their companies – yet also in BioPharma operations expected changes are significant (see *Exhibit 2*).

EXHIBIT 2
BioPharma value chain disruption and capability gaps towards LIFEcare



Source: 2021 survey among 150 healthcare executives; Strategy& analysis

Digital, data and analytics



In the near future, the ability to extract and manage value from data will significantly determine a BioPharma company's shareholder value. Particularly, using data and analytics to improve the effectiveness of R&D and thus increasing the returns of innovation will be key. Examples of successful AI applications are already emerging and include among many other use cases the pathologic response assessment of patients being treated with the cancer immunotherapy treatments Nivolumab (by BMS).⁴

As digital, data and analytics capabilities play an increasingly significant role for BioPharma companies, differences in national data management regimes – for instance, between the US, the EU and China – will have a critical bearing on BioPharma companies' innovation strategies. Health data platforms will be needed to structure data and manage access data security and privacy.

Evidence from regulatory bodies such as the European Network for Health Technology Assessment (EUnetHTA) currently points towards the public sector rather than industry taking a leading position in shaping future data platforms and potentially excluding valuable contributions from BioPharma companies.⁵ New social contracts will thus be required, linking access to patient data by BioPharma companies and other health industry players with the overall health and economic benefits to society of enabling the private sector to play its part in maximizing innovation.

In forthcoming publications, we will further explore how BioPharma companies can achieve successful data-led transformations by pursuing three essential tasks: professionalizing their data management; accessing and managing data ecosystems; and building the capabilities to extract value from personal and technical data.

Ecosystems and partnering



In LIFEcare systems, health will be considered and delivered in a holistic, integrated way. No player can provide the required breadth, depth and excellence of offerings as a standalone; instead they will have to engage with partners, from the private and public domain, which have complementary offerings and capabilities. One example is Novartis' partnership with the National Health Service (NHS) of the UK which facilitates reimbursement of tertiary prevention of Atherosclerotic Cardiovascular via its drug Leqvio and a population health approach.⁶

The distribution of value in each partner's business model metric, such as reimbursement, data, or research publications, will be key to success and a major make-or-break point. Moreover, the convergence of wellcare and disease care will require players to develop or at least access capabilities that are relevant to the other system. For example, wellcare providers need to understand how reimbursement schemes work, while BioPharma companies need to develop new consumer engagement models.

In our view, partnerships present the most effective way to build these capabilities. However, our survey findings suggest there is considerable room for improvement going forward, with two thirds (68 percent) of respondents identifying substantial gaps within their organization.

Research and development



Two-thirds (67 percent) of the survey respondents expect LIFEcare to disrupt R&D significantly. Within this group, the majority anticipates that the most severe disruption will occur in target and compound development, where the speed of innovation will rapidly increase and significantly shorten R&D cycles.

Among other factors, this acceleration will be driven by advances in AI, such as around protein folding prediction. One early pacesetter is Google's parent company Alphabet. The tech giant has just spun out Isomorphic Laboratories, which uses Deep Mind's AlphaFold for drug discovery.⁷ Besides accelerating target discovery this is intended to also reduce the overall risk of BioPharma R&D and in turn to reduce the required rate of return for R&D investments. We also expect to see more open, platform-based innovation where a wide range of stakeholders collaborate in innovation and in sharing the benefits. In addition, new methods of treatment such as messenger RNA (mRNA) vaccines and proteolysis targeting chimera (PROTAC), among others, will deliver greater flexibility and adaptability.

Executives also predict a high degree of disruption for clinical development, with trials increasingly driven by new technologies. For example, patient identification platforms will support participant recruitment, virtual trials and clinical trial simulations as advances in medical and clinical technology accelerate.

Operations



Relative to R&D, respondents' estimated a lower, yet still significant degree of disruption in BioPharma operations. Particularly for advanced therapies and drug combinations, increasing demand for personalization will require smaller lot sizes and significantly faster time-to-patients. This imposes new challenges to BioPharma operations which need to integrate their supply chain end-to-end, increase standardization and modularization of production steps while ensuring touchless, paperless and automated compliance processes. The Swiss BioPharma manufacturing and development company Lonza, for example, offers 'Cocoon' which provides patient-specific cell therapy manufacturing solutions in an automated workflow to drive scale and flexibility in cell manufacturing.⁸

Next to increasing complexity of production, BioPharma operations will further face external pressures such as environmental considerations and increasing requirements on national supply security among others. We thus predict a transition towards increasingly outsourced, small, flexible, decentralized sites which leverage new technologies such as 3D printing and small-scale cell culturing, to accommodate for these pressures.

* Respondents from operations functions were relatively underrepresented among survey participants

Commercial



Overall, 59 percent of survey respondents expect that their commercial operations will be disrupted, of whom the majority cite market access as a significant challenge, followed by marketing and sales. Traditional “share of voice” models are expected to decline, especially in innovative drug markets, as treatment decisions become increasingly driven by clinical decision support tools that rely on medically validated algorithms and detailed, accurate real-world clinical evidence.

In addition to their current market access mandate, BioPharma companies will therefore need to ensure that their health solutions are incorporated and adequately considered in such algorithms. This goal will require a much more integrated approach between sales and marketing teams and clinical development to deliver the required evidence. Moreover, with accelerated research timelines and increasing personalization and adaptation of drugs, the number of drugs being launched will increase significantly. Therefore, sales and marketing will need to support health-care professionals to navigate the medical and technical complexities of LIFEcare, using omni-channel interaction and new coverage models and formats.

To this end, sales and marketing will embrace a much more customer-centric and brand-neutral approach. One example is Roche, which recently transformed its field force into patient journey and healthcare system partner who have a mandate to support customer success rather than promoting individual brands.⁹

People, culture and capabilities



With operating and business models increasingly focusing on speed, agility, efficiency and collaboration, people and culture as well as the buildup of new capabilities continue to be a top priority on executives’ strategic agendas. For us, it was therefore surprising to see that only one in three executives in our survey perceived these aspects as facing a high degree of disruption going forward.

We consider this assessment by the respondents to be grounded in the already initiated and highly invested journey for cultural and organizational change. Yet, executives should revisit their transformation in light of the emerging LIFEcare system for its fit for future purpose.

Risk, regulatory and compliance



New ecosystem and partnering models, along with accelerating innovation and virtual trials, will require significantly stricter regulation. Building compliance capabilities while embracing organizational flexibility to seize and maximize LIFEcare opportunities will be a difficult balancing act.

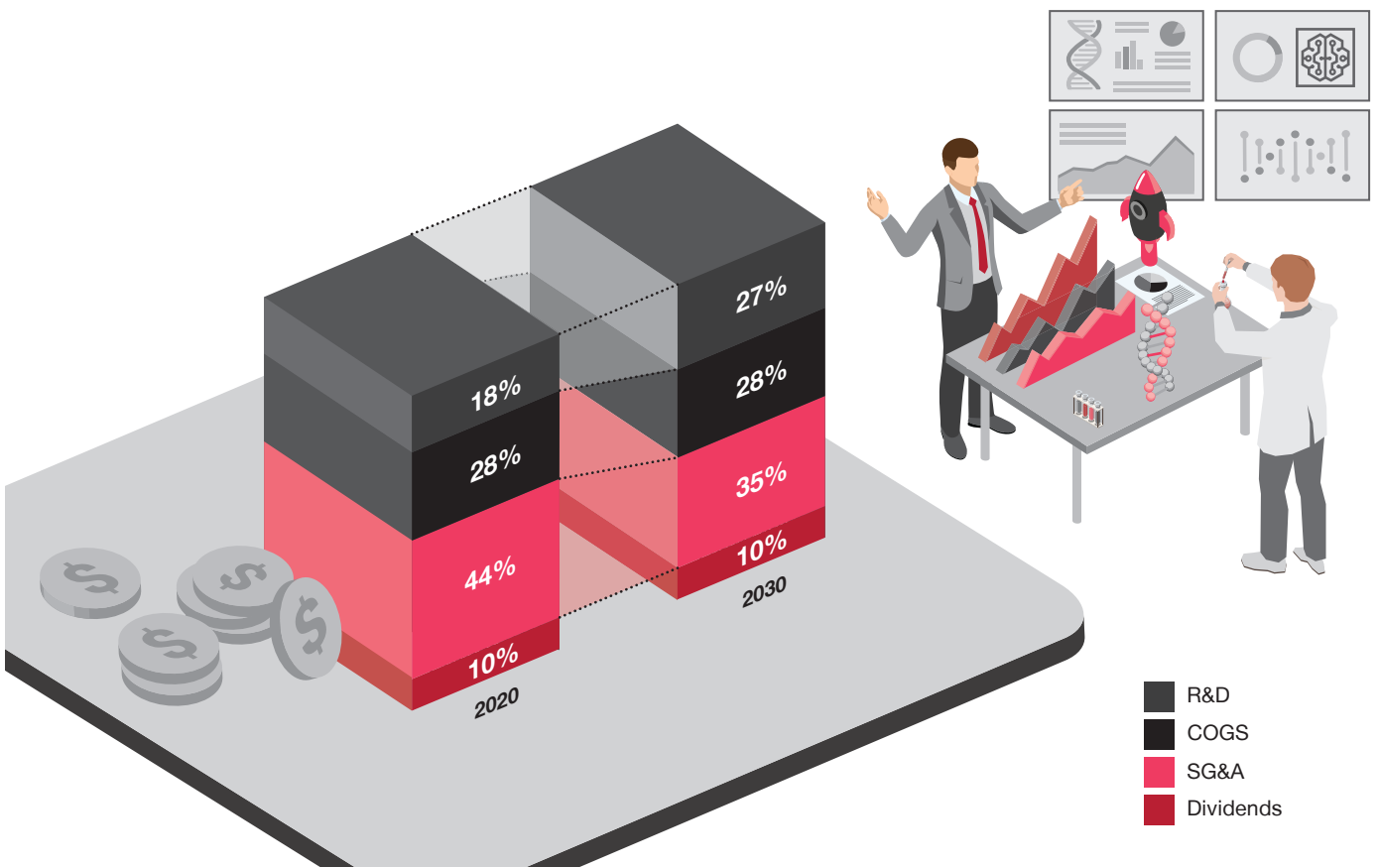
Finance



Moving away from multi-billion dollar deals towards intellectual property being created in flexible ecosystems will require a much higher number of partnering and investing activities. This will require finance functions to increase efficiencies, automate and make processes more adaptable.

Taking all these forces of change into account, the core value chain disruption implies a substantial reallocation of budgets. Based on the 2020 P&L statements of the top 20 Bio-Pharma companies, on average, companies will need to reduce SG&A spending by about 3 billion USD annually, which would reflect a 20 percent decrease in commercial, marketing and sales expenditures. Budgets will need to be redirected into R&D to keep pace with the dynamic innovation environment across the LIFEcare system. Pharma will need large scale investments to build and acquire the required capabilities and infrastructure. Moreover, the stronger industry-wide emphasis on external innovation acquisition will drive M&A costs to fill the pipeline (see *Exhibit 3*).

EXHIBIT 3
BioPharma budget 2020 versus 2030



Source: 2020 financial reports of top 20 BioPharma firms (by revenue), 2021 survey among 150 healthcare executives, Strategy& analysis

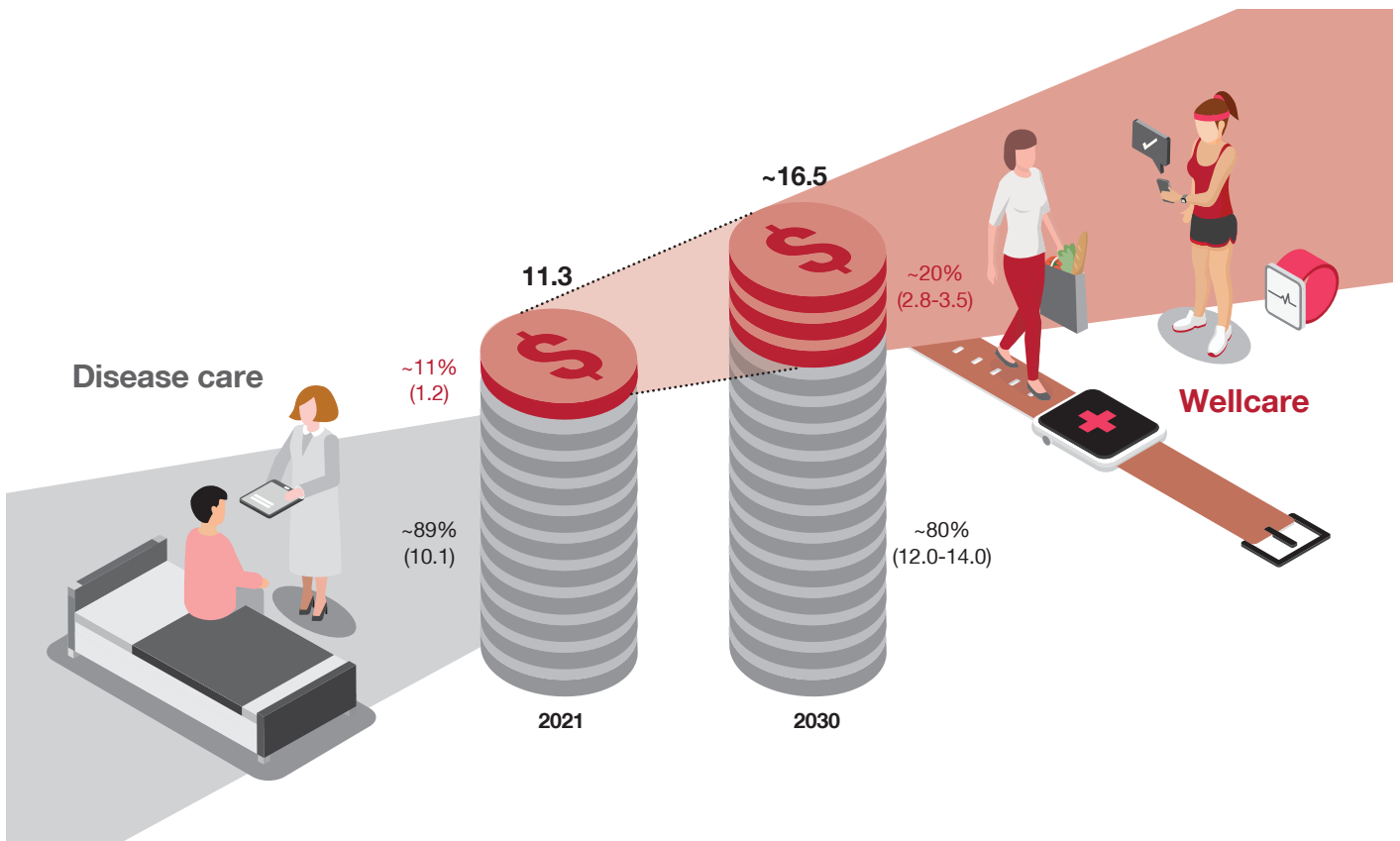


SECTION THREE – DISRUPTION TO THE BIOPHARMA BUSINESS MODEL

How BioPharma's value creation and business models will change

With the focus of LIFEcare increasingly shifting towards keeping people healthy, we will also see global healthcare expenditures shift. The healthcare executives in our survey predict that in 2030 around 20 percent of private and public healthcare expenditures will be spent on wellcare, up from 11 percent in 2021. Given an overall growing market this would result in a total global wellcare spending of around 2.8 to 3.5 trillion USD by 2030 (see *Exhibit 4*).

EXHIBIT 4
LIFEcare budget 2021 versus 2030 – in trillion USD



Source: OECD data; The Lancet; 2021 survey among 150 healthcare executives; Strategy& analysis

For BioPharma companies this implies several challenges. Future growth in healthcare will predominantly originate from value pools outside BioPharma's core traditional business model. While wellcare overall is expected to increase by a compound annual growth rate (CAGR) of 10 to 12 percent, disease care will grow by 3 percent CAGR. More strikingly, within disease care, the largest growth areas are diagnostics (19 percent CAGR) and digital health (12 percent CAGR) while spending on medicines is predicted to grow by only 3 percent*. This increase, however, is due to a higher number of patients being treated with drugs, not by increases in price, which results in overall increasing pressure on BioPharma margins.

This forecast makes clear the financial pressure the BioPharma business model will face in the future. While needing to invest and transform their value chains to be future ready amid increasing technological disruption, BioPharma companies additionally need to evolve and reinvent their business model in order to remain attractive.

* Spending on disease care provision is expected to decline significantly



While needing to invest and transform their value chains to be future ready amid increasing technological disruption, BioPharma companies additionally need to evolve and reinvent their business model in order to remain attractive.”

SECTION FOUR – STRATEGIC ECOSYSTEM ROLES

Three key pathways to success in the emerging LIFEcare system

Against this background, we predict that BioPharma companies could pursue three key roles in the emerging LIFEcare ecosystem to succeed, covering solution provision, orchestration, and infrastructure provision.

1. Solution providers create value by providing increasingly personalized and affordable solutions for specific diseases or wellcare needs. Health solutions in LIFEcare systems include drugs, diagnostics, digital and wellcare solutions and might be integrated in order to deliver both medical outcomes and wellbeing to customers. With proven evidence on health outcomes and cost, we predict the majority of these types of solutions will become prescribable and reimbursable. One example is Germany's Digitales Versorgungsgesetz which made certified digital health solutions with proven medical evidence (so called DiGAs) prescribable and reimbursable, and is currently being adopted by other countries including France.^{10,11}

In order to be a competitive, innovative solution provider, BioPharma companies should strive for economies of scale and for example focus on specific technology platforms (e.g. cognitive behavioral therapies, CAR-T therapies, etc.) or develop specific expertise in focused therapeutic or wellcare sectors (e.g. sports, nutrition, etc.). Companies with a comparably undifferentiated portfolio and pipeline will increasingly be forced to reevaluate and streamline their portfolios and realign their organizational capabilities to achieve this positioning.

2. Disease and wellcare orchestrators create value by matching best fitting solutions to an individual customer's needs by leveraging data analytics. Orchestrators will pursue platform strategies seeking to integrate new players and solutions onto the platform to increase customer and patient value which in turn will attract new customers and solution providers onto the platform.

Due to the complexity of the associated solution and individual customer needs space, we predict orchestrators will be focused on a particular disease area or wellcare aspect, in a given regulatory frame. The combination of regulatory boundaries, biological complexity and network effects (which favor "winner takes it all" market dynamics), suggests that strong regional/therapeutic area-related monopolies could emerge. Over time, however, we predict interoperability and interdependencies among them to lead to an increasing convergence of these players. In turn, regulation of orchestrators will be a significant shaping factor in how future LIFEcare systems will look like.

Teladoc Health Inc. in the US and Switzerland's Zur Rose Group e.g. have both built care platforms delivering services including telemedicine, digital health solutions and e-pharmacy services. In Episode 14 of the Strategy& Insider podcast, we discussed in detail with Zur Rose Group the importance of starting with a specific disease focus for disease care orchestration.¹²

3. Infrastructure providers create value by providing the physical and technical infrastructure for LIFEcare systems. They build, operate and maintain the platform and backbone for orchestrators and solution providers. One prominent example is the BioPharma offering on Amazon Web Services (AWS), which provides healthcare players with a broad and expanding portfolio of supporting digital healthcare, biopharma and genomic solutions.¹³

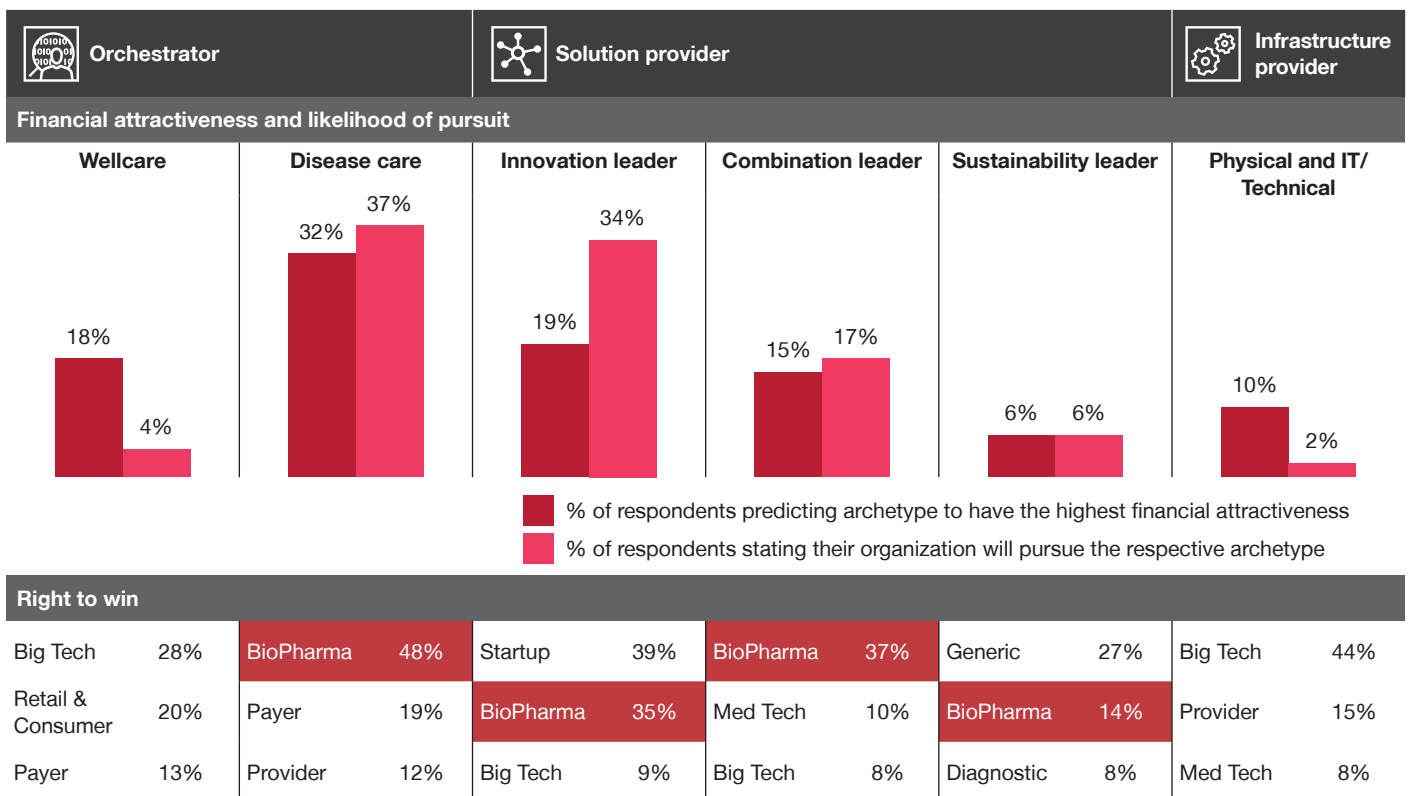
Will BioPharma succeed in innovating its business model?

As part of our survey, we asked executives about the perceived financial attractiveness of each archetype, their pursuit of these roles and their perceived ‘right to win’ (see Exhibit 5). The results show that BioPharma companies, despite the financial attractiveness and future potential of wellcare, will retain their disease care focus. In doing so, BioPharma companies are leaving the playing field open to wellcare players – which we believe might eventually be regarded as a missed opportunity.

For almost one third of respondents, disease care orchestration is perceived as the financially most attractive archetype in the future. It is not surprising that a similar share of BioPharma executives indicate they will pursue this positioning. However, our analysis of 50 European health ecosystems suggests that this pursuit is still in its infancy. BioPharma companies participate in only 26 percent and orchestrate only 8 percent of these 50 ecosystems.

EXHIBIT 5

Financial attractiveness, likelihood for BioPharma to pursue and BioPharma’s right to win



Note: % of respondents attesting stakeholder group the largest right to win for respective archetype
 Source: 2021 survey among 150 healthcare executives; Strategy& analysis

By contrast, public bodies participate in 72 percent and orchestrate 24 percent of the evaluated ecosystems. This raises a question mark over BioPharma's self-perception of having a clear right to win as a disease care orchestrator (48 percent) and companies' chances of succeeding in this role.

BioPharma's right to win as ecosystem orchestrator

Pros

- Deep disease and human biology understanding
- Profound health system navigation and regulatory capabilities
- Societal trust in efficacy, safety and data privacy within clinical development



Cons

- Regulatory hurdles for data access
- Low willingness to share data with BioPharma among healthy individuals¹⁴
- High degree of competition among BioPharma companies reducing likelihood of partnerships
- Limited digital, data and analytics capabilities and infrastructure



Taking all these factors into account, we believe that BioPharma executives overestimate their right to win in positioning their company as an orchestrator, unless they build up a number of important capabilities. To succeed, BioPharma companies should therefore incorporate learnings from non-BioPharma case studies which:

- Ensure a high degree of focus on a particular disease area or part of the care journey
- Build a high degree of customer proximity with direct access
- Put customer experience and trust first
- Design scalable business, operating and data models
- Balance targeted acquisitions to close core capability gaps with significant partnering for network effects

Meanwhile, BioPharma executives should also hedge their risk and prepare their business to be compatible with a non-BioPharma orchestrator, despite the fact this will further disintermediate them from access to patients and to data.

Conclusion

The transformation of healthcare is happening at full speed. By 2035, BioPharma companies will face a significantly different market environment than they are currently operating in, with immense risks to their business model. However, one thing is clear: Wait and see is not an option. Instead, BioPharma executives need to transform and evolve their value chains to embrace and leverage the potential of new technology, data-driven approaches and evolving regulatory landscapes. At the same time, they must prepare to revamp their business models.

Here we believe focus will be key: we recommend BioPharma firms identify their differentiated offerings and capabilities; understand how market and customer demands are changing in their field of business; and formulate and execute on a focused strategy following one or a combination of the three archetypal roles described above.

In the coming months, Strategy& will accompany you on this journey with further research and analysis of rapidly evolving LIFEcare trends and will support you in **making your strategy real**.



ENDNOTES

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2021 EDM Council Pharma/Life Sciences Global Data Management Benchmark Report
Global Data Management Benchmark study, measuring how organizations are handling their data management programs



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Preparing for the data-driven future of pharma (Q1/22)
As AI and other emerging technologies continue to transform the way scientists can do research and the way companies do business, incumbents need to adapt – quickly

R&D



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Post-covid clinical trial acceleration (Q1/22)
Assessment of evolution of clinical trial acceleration levers and implications for current clinical development programs

Operations



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NextGen pharma operations
Five common pain points in pharma operations and how to address them with digital solutions

Commercial



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Driving the future of health
Perspective on digitally-enabled healthcare in 2030 and how BioPharma can defend and grow its business



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