



DOMINATING TRENDS IN THE LIFE SCIENCES SECTOR



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01 EXECUTIVE SUMMARY

The life sciences sector is poised for significant transformation, driven by technological advancements, evolving regulatory landscapes, and shifting market dynamics. This report examines the dominant industry trends, focusing on innovation, regulatory changes, competitive pressures, customer engagement, and sustainability.

Life sciences companies are navigating an increasingly complex landscape characterised by increased competition, regulatory challenges, and rapid technological advances. Despite these headwinds, the outlook for life sciences is positive.

According to a <u>Deloitte US Center for Health</u> survey, over two-thirds of respondents anticipated significant growth. Life science executives participating in this survey focused on targeting growth against competitive pressure, business volatility, and changing customer requirements. Their growth objectives included value creation and enhancement of digital capabilities. Thus, despite uncertainties, the overall analysis is optimistic regarding the future.

This report examines the key trends shaping the sector, their impact on stakeholders, and the emerging employment opportunities they create.





01 INNOVATION AND R&D PRODUCTIVITY

Innovation is the cornerstone of success in the life sciences sector. However, the law of diminishing returns is apparent. Declining R&D productivity is a significant challenge. Most drug candidates fail to reach commercialisation, yet the astronomic costs of drug discovery and clinical trials continue to rise. However, hope remains. In response, companies are adopting advanced technologies such as generative AI, digital twins, and predictive modelling to streamline drug discovery and repurposing, thus improving outcomes.

For example, AI-driven tools result in faster and more accurate drug discovery and development. Digital twins are increasingly used to simulate patient responses to new therapies, significantly reducing development times. Companies are also focusing on high-value therapies, such as groundbreaking technologies such as CAR-T cell therapies and CRISPR gene editing, which offer high potential for advances in personalised medicine.

Organisations investing in digital transformation and innovative R&D strategies will likely be better positioned to address competitive pressures and capitalise on emerging opportunities.

New Job Opportunities and Skills

Emphasising innovation and R&D productivity opens up new job opportunities and the need for specialist skills. For instance:

- Al specialists for drug development with Al, machine learning, and computational biology expertise.
- Genomic data analysts proficient in bioinformatics and handling large-scale genomic datasets.
- Regulatory scientists with knowledge of evolving R&D compliance standards and regulatory approval processes.

02 REGULATORY EVOLUTION

Regulatory changes are creating both challenges and opportunities for the life sciences industry. In the US, the potential abandonment of the Chevron doctrine could alter how courts interpret regulatory decisions, increasing uncertainty for companies. Meanwhile, the European Union is implementing new clinical trial regulations demanding greater transparency and data security.

The main challenges include compliance with evolving regulations, such as the EU's Corporate Sustainability Reporting Directive. In the US, anticipated policy changes under new leadership may include adjustments to drug pricing models and health care policy.

However, companies can address these by adopting an initiative-taking approach to compliance measures, strengthening scenario planning, and engaging with policymakers.

New Job Opportunities and Skills:

Dealing with these changing tides opens several new job opportunities and skill requirements, for instance:

- Regulatory compliance officers with an in-depth understanding of international regulatory standards.
- Data privacy specialists with expertise in data anonymisation, security, and EU and US regulations compliance.
- Policy Analysts with an ability to forecast and interpret the implications of regulatory changes.





O3 COMPETITIVE PRESSURES AND MARKET DYNAMICS

Competition within the biopharma industry is intense, partly due to intensified competition due to expiring patents, generic drugs, and biosimilars. <u>With over \$300 billion in sales at risk by</u> <u>2030</u>, companies are increasingly considering and implementing mergers and acquisitions to plug gaps in their product pipelines and maintain market share.

The patent cliff concerns the expiration of patents on high-revenue pharmaceuticals. Once patents have expired, usually 20 years after being filed, plus a margin for administration delays, the door opens to generic and biosimilar competitors entering the market.

It happened that many blockbuster drugs were developed around the same time. Thus, their patents expire in clusters. Unfortunately, the challenges facing drug discovery mean that there is a dearth of new products to replace those with expiring patents. Many companies rely on a relatively small portfolio of high-value products, so the patent cliff can leave them highly vulnerable.

New Job Opportunities and Skills:

Increasing competitive pressures are opening new job opportunities as the sector seeks to fill these gaps and retain its competitive position. Such opportunities include:

- Mergers and acquisition specialists are skilled in market analysis, deal structuring, and strategic portfolio management.
- Business development managers who are skilled in dealing with high-value assets.
- Market access specialists who can navigate the complex process of bringing new products to market.

EVOLVING CUSTOMER EXPECTATIONS

The shift toward patient-centric care is reshaping how life sciences companies engage with their customers. Healthcare providers, patients, and consumers demand greater personalisation and seamless support services.

These needs are accelerating technological development in multiple areas. In particular, we are seeing increasing numbers of digital tools and applications for engagement; for instance, Johnson & Johnson and other companies are using AI to improve customer interactions and enhance trust. Another innovation is direct-to-customer business models, where businesses such as Lilly and Pfizer sell medications directly to patients, which reduces costs and improves access. Effectively, focussing on customer engagement strategies will help build loyalty and drive growth in this increasingly consumer-driven market.

New Job Opportunities and Skills

Adopting a customer-centric approach will create new jobs for those with the required skill sets. For instance

- Customer-experience designers specialise in creating patient-centric digital solutions.
- AI-Powered engagement strategists are skilled in deploying AI for personalised customer interactions.
- Healthcare communication experts with expertise in patient advocacy and education.



05 SUSTAINABILITY AND CLIMATE INITIATIVES

Sustainability is now a critical priority for life sciences organisations. Companies must adopt more sustainable practices in the face of current and emergent environmental, social, and governance goals. For instance, the European Union's Corporate Sustainability Reporting Directive (CSRD) is driving transparency and accountability across Europe and UK businesses are encouraged by the government to comply. Similar regulations could be issued in the UK shortly; rather than viewing CSRD as more red tape, companies increasingly view sustainability as an investment as organisations that integrate sustainability into their core strategies will meet regulatory demands and enhance their market reputation and stakeholder trust.

New Job Opportunities and Skills

- Implementing such measures calls for new jobs and skills. For instance, companies are seeking
- ESG Analysts with expertise in sustainability reporting and compliance.
- Sustainability consultants to implement green practices and technologies.
- Climate data scientists proficient in analysing environmental impact data and forecasting trends.

PERSONALISED MEDICINE AND
PRECISION HEALTHCARE

Personalised medicine is likely the future of healthcare. It involves tailoring treatments to individual patients based on their genetics, environments, and lifestyles. Advances in genomics, proteomics, and metabolomics are fuelling this trend, with companies investing in diagnostic tools and precision therapies to address specific patient needs more effectively. For example, genetic profiling can identify patients most likely to benefit from a particular drug, improving outcomes and reducing costs associated with ineffective treatments.

Collaboration between pharmaceutical companies, biotech firms, and healthcare providers is essential to fully realising the potential of personalised medicine. The integration of real-world evidence and patient-reported outcomes will also play a crucial role in refining personalised approaches.

The field is underpinned by several key innovations, such as biomarker Discovery to identify biomarkers to predict disease susceptibility, progression, and response to therapy; genomic sequencing to identify patient-specific treatment pathways; and patient monitoring through wearable technology and digital health platforms.

New Job Opportunities and Skills

This innovative field is urgently seeking the right talent to further the technology. For instance:

- Precision medicine specialists with expertise in pharmacogenomics and biomarker-driven therapy.
- Clinical data analysts skilled in managing and interpreting data from genomic studies and health monitoring tools.
- Healthcare IT developers are skilled in creating platforms to integrate personalised healthcare data securely.



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O7TECHNOLOGICAL ADVANCEMENTS

Technology continues to drive innovation across the life sciences sector, with artificial intelligence, neural implants, and emerging market dynamics shaping the industry's trajectory. These advancements are not without challenges, particularly in supply chain disruptions and regulatory complexities.

Artificial Intelligence (AI) Integration:

The medical device industry continues to embrace AI technologies, with numerous devices incorporating AI and machine learning to enhance diagnostic accuracy and patient outcomes. However, there are ongoing discussions regarding the regulation and effectiveness of these technologies.

Neural Implants

Advancements in neural implants are showing promise for treating conditions such as epilepsy, arthritis, and incontinence. For instance, a new brain implant called Picostim has significantly reduced seizures in patients, indicating potential for broader applications in neuromodulation therapies.

MARKET TRENDS AND CHALLENGES



The industry has been grappling with a three-year supply chain crisis, including raw material shortages and product delays. Contract manufacturers often prioritize orders from larger customers, leading to potential backorder issues for smaller companies.



Late-stage investors are increasingly funding mature medical device companies to help them remain private longer and prepare for strong IPOs or sales. This trend is evident in the substantial investments made in companies developing devices for conditions such as heart disease and back pain.

REGULATORY AND MARKET EXPANSION



Chinese medical device companies are facing challenges in the domestic market, including severe homogeneous competition in low-value consumables and weak R&D capabilities in imaging diagnostic instruments. However, the growth potential of overseas medical device markets remains promising due to factors such as large incremental segmented markets and the price advantage of Chinese medical device products compared to those overseas.

In summary, the global medical device industry is navigating a complex landscape characterized by financial fluctuations, technological innovations, supply chain challenges, and evolving market dynamics. Companies are adapting to these changes through strategic investments, regulatory compliance, and technological advancements to meet the growing demand for healthcare solutions.

Sources: <u>wsj.com</u>. <u>theguardian.com</u> <u>medtechdive.com</u> <u>plantemoran.com</u>

CONCLUSION

The life sciences industry is facing a huge transformation, marked by technological innovation, regulatory changes, and changing customer dynamics. Companies that embrace these trends and invest in strategic initiatives will be well-positioned to navigate uncertainties and achieve sustainable growth.

Integrating personalised medicine, regulatory evolution, Al-driven operations, and sustainability initiatives will redefine the competitive landscape and enhance value creation for stakeholders. Organisations that adopt patient-centric approaches, advance R&D productivity, and prioritise environmental and social governance will be better prepared for long-term resilience and success.

To seize such opportunities, the sector must foster a skilled workforce adept in emerging technologies, genomics, regulatory compliance, and patient engagement. This commitment to innovation and adaptability will ensure that life sciences organisations survive and thrive in an era of profound transformation.

The sector is actively seeking highly skilled and ambitious talent in numerous areas to help it fulfil its potential and meet the demanding challenges it currently faces.





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