Next- Generation Sequencing - Market Insight, Competitive Landscape and Market Forecast - 2027

Medical Market (7-10 Business Days) | 2022-07-01 | 100 pages | DelveInsight

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Report description:

Next-Generation Sequencing Market By Product Type (Instruments, Reagents & Consumables And Services), By Sequencing Type (Whole-Genome Sequencing, Whole-Exome Sequencing, Rna Sequencing, Targeted Sequencing, De-Novo Sequencing, Others), By Application (Diagnostic, Drug Discovery, Agriculture & Animal Research, Others), By End-User (Pharmaceutical & Biotechnology Companies, Hospitals & Clinics, Academic & Research Institute), by geography, is expected to grow at a significant CAGR forecast till 2027 owing to the rising application of next-generation sequencing (NGS) technology in clinical diagnosis and advancement in NGS platforms

The global Next-Generation Sequencing market was valued at USD 9.28 billion in 2021, growing at a CAGR of 18.96% during the forecast period from 2022 to 2027, to reach USD 26.30 billion by 2027. The increase in demand for Next-Generation Sequencing is primarily attributed to the rising cases of infectious diseases such as the sudden outbreak of COVID-19 and the escalating burden of cancer, worldwide. Moreover, the rising application of NGS technology in clinical diagnosis and scientific research, and advantages such as efficient turnaround results, high speed, and accuracy exhibited by the NGS technology, among others are some of the factors that would contribute to the global Next-Generation Sequencing market growth in the forthcoming years.

Next-Generation Sequencing Market Dynamics:
The market for Next-Generation Sequencing is gaining pace at present due to the surge in COVID-19 infected people across the globe. This is because the Covid virus has evolved from the time of its outbreak and PCR testing only determines the presence of the virus. Whereas, NGS technology is used in determining the novel strains of the COVID-19 virus as well as its surveillance.

According to the World Health Organization (WHO), 22 December 2021 data, approximately 275,233,892 confirmed cases of COVID-19 were reported across the globe.

In addition, the increasing burden of cancer cases worldwide is also anticipated to contribute to the Next-Generation Sequencing market. This is because of the rising significance of NGS technology-based platforms for the detection of cancer biomarkers. According to the data published by the GLOBOCAN directory in the year 2020, approximately 19,292,789 new cases of cancer were detected, globally in the same year.

Furthermore, NGS technology-based product approvals for the detection of various disorders such as infectious diseases, genetic disorders, among others are expected to contribute to the market for Nex Generation Sequencing during the forecasted period. For instance, on September 08, 2020, the US FDA granted pre-market approval to the Oncomine Dx Target test, developed by Thermo Fisher Scientific, as a companion diagnostic (CDx) to identify RET fusion-positive, metastatic non-small cell lung cancer (NSCLC) patients who are candidates for GAVRETO (pralsetinib), a targeted therapy developed by Blueprint Medicines. It is the first targeted next-generation sequencing (NGS)-based CDx for biomarkers associated with three FDA-approved NSCLC therapies.

However, certain factors such as short read lengths in NGS technology and the high cost of the instruments & services are likely to impede the Next-Generation Sequencing market growth.

The unprecedented COVID-19 pandemic has had a positive effect on the Next-Generation Sequencing market. This is because NGS technology is a cost-effective molecular test for the diagnosis of COVID19, which uses a single-step RNA extraction and presents high scalability and accuracy when compared to the gold-standard RT-qPCR. Furthermore, the rise in emergency use authorizations (EUAs) for Next-Generation Sequencing tests for SARS-CoV-2 has also led to market growth during the pandemic crisis. For instance, on June 10, 2020, Illumina, Inc. received an Emergency Use Authorization (EUA) for the Illumina COVIDSeq Test, a high-throughput, next-generation sequencing-based, in vitro diagnostic (IVD) workflow enabling the detection of SARS-CoV-2 by the US FDA. In addition, the inclusion of Next-generation sequencing (NGS) technology as a clinical diagnostic test, particularly with the COVID-19 pandemic by various laboratories has also bolstered the market during the pandemic. For instance, in August 2020, Helix Laboratory obtained the FDA approval for its COVID-19 NGS test, an amplicon-based next-generation sequencing (NGS) test developed for the qualitative detection of nucleic acid from the SARS-CoV-2 in upper respiratory specimens for COVID-19 suspected individuals.

Next-Generation Sequencing Market Segment Analysis:
Next-Generation Sequencing Market By Product Type (Instruments, Reagents & Consumables And Services), By Sequencing Type (Whole Genome Sequencing, Whole Exome Sequencing, RNA Sequencing, Targeted Sequencing, De-Novo Sequencing, Others), By Application (Diagnostic, Drug Discovery, Agriculture & Animal Research, Others), By End-User (Pharmaceutical & Biotechnology Companies, Hospitals & Clinics, Academic & Research Institute), and By Geography (North America, Europe, Asia-Pacific, and Rest of the World).

In the Next-Generation Sequencing sequencing type segment, the whole genome sequencing (WGS) type is anticipated to hold a significant market share during the forecasted period. This is because whole-genome sequencing provides the most comprehensive data related to any organism in a short duration of time. Moreover, WGS is extensively used to develop precision medicines and personalized treatment.

For instance, on December 03, 2020, Weill Cornell Medicine, New York-Presbyterian Hospital, and Illumina, Inc. entered into a collaboration to sequence the complete human genomes of thousands of consenting patients seeking to advance the scope of precision medicine.

In addition, shifting the focus of market players towards the development of NGS-based whole genome sequencing panels for the detection of causative agents of various infections such as COVID-19 would also contribute to the segmental growth of the Next-generation Sequencing market in the upcoming years. For instance, in March 2020, the Paragon Genomics team quickly developed and launched an amplicon-based NGS panel: CleanPlex SARS-CoV-2 Panel for sequencing the whole genome of SARS-CoV-2 (the virus responsible for COVID-19) on both Illumina and MGI Tech Sequencing platforms. The panels are designed to obtain complete viral genomes even from samples with very low SARS-CoV-2 viral content.

Thus, the aforementioned factors are projected to propel the market for next-generation based whole genome sequencing type during the forecasted period.

North America is expected to dominate the overall Next-Generation Sequencing Market:
Among all the regions, North America is expected to occupy a major share in the overall Next-Generation Sequencing market during the forecasted period. This domination is owing to the rising cases of infectious disease in the region. Furthermore, the spike in the new cancer cases, the presence of key market players and leading national clinical laboratories, and favorable reimbursement policies for the NGS technology, among others are expected to fuel the overall Next-Generation Sequencing market in the region.

For instance, on January 27, 2020, the Centers for Medicare & Medicaid Services (CMS), announced to cover FDA approved or cleared laboratory diagnostic tests using Next Generation Sequencing (NGS) for patients with germline (inherited) ovarian or breast cancer.

Moreover, a rise in research and development activities to develop advanced NGS-based instruments would contribute to the regional market. For instance, in the year 2020, DNA Script and its Molecular Encoding Consortium partners were awarded a USD 23 million multi-phase contract from the Intelligence Advanced Research Projects Activity's (IARPA) Molecular Information Storage (MIST) program. The consortium will explore the possibility of integrating a novel enzymatic DNA synthesis technology and next-generation sequencing into a single instrument throughout the program.

In addition, the rise in cancer cases in the country would also lead to an increased demand for NGS sequencing technology to

provide a molecular rationale for appropriate targeted therapy. For instance, according to the data published by the GLOBOCAN directory in the year 2020, approximately, 2,281,658 new cases of cancer were reported in the US in the same year.

Additionally, strategic business activities in the region to use NGS technology to enhance the diagnostic capabilities will also contribute to the NGS market in the country during the forthcoming years. For instance, on August 12, 2020, GeneDx, Inc., a subsidiary of BioReference Laboratories, Inc., an OPKO Health company agreed with Pediatrix Medical Group to offer state-of-the-art, next-generation genomic sequencing to contribute to the clinical diagnosis in neonatal intensive care units ("NICUs") staffed by Pediatrix's affiliated neonatologists.

Hence, all the above-mentioned factors are projected to fuel the Next-Generation Sequencing market in the country.

Further, the Asia Pacific region has the future potential for the Next-Generation Sequencing market. This is predominantly due to the burgeoning cases of various infectious diseases, and the growing cancer burden in the region. Moreover, the presence of regional companies focused on developing and manufacturing advanced NGS-based systems would propel the market during the forecasted period. For instance, in 2019, Longas Technologies Pty Ltd launched Morphoseq, a disruptive technology designed to improve the performance of industry-standard NGS platforms by increasing effective read lengths, with benefits in accuracy and cost-efficiency. Also, the presence of several NGS service providers in the region would contribute to the market. For instance, MedGenome offers Next Generation Sequencing services to more than 8000 clinicians with over 1600 hospitals across South Asia and India.

Moreover, rising cases of Covid-19 in the region will escalate the demand for Next-Generation Sequencing. For instance, about 34,765,976 confirmed COVID-19 cases, and 7,495 new cases were reported in India till December 23, 2021, as per the WHO report. Also, improving healthcare infrastructure, and government initiatives in raising awareness regarding molecular diagnosis will contribute to the Next-Generation Sequencing market growth in these regions.

Next-Generation Sequencing Market Key Players:
Some of the key market players operating in the Next-Generation Sequencing market include Agilent Technologies, Inc., Illumina Inc., Bio-Rad Laboratories, Inc., F. Hoffmann-La Roche Ltd, QIAGEN, Thermo Fisher Scientific, PerkinElmer Inc., MedGenome, BGI, Pacific Biosciences, GENEWIZ, Oxford Nanopore Technologies plc., Psomagen, Inc., 10x Genomics, Takara Bio Inc., Zymo Research Corporation., NuGEN Technologies, Inc. (Tecan Trading AG), Vela Diagnostics, CD Genomics., HTG Molecular Diagnostics, Inc., and others.

Recent Developmental Activities in the Next-Generation Sequencing Market:
? In December 2021, Roche launched the AVENIO Edge System to simplify and automate next-generation sequencing sample preparation, reduce human error and advance precision medicine.
? In May 2021, Illumina, Inc. and Next-Generation Genomics Co., Ltd. launched VeriSeq NIPT Solution v2 in Thailand, a CE-IVD, next-generation sequencing (NGS)-based approach to noninvasive prenatal testing (NIPT).
? In February 2021, INOVIO and QIAGEN expanded collaboration to develop next-generation sequencing (NGS) companion diagnostic for INOVIO's VGX-3100 for advanced cervical dysplasia.

Key Takeaways from the Next-Generation Sequencing Market Report Study
? Market size analysis for current market size (2021), and market forecast for 5 years (2022-2027)
? The effect of the COVID-19 pandemic on this market is significant. To capture and analyze suitable indicators, our experts are closely watching the Next-Generation Sequencing market.
? Top key product/services/technology developments, merger, acquisition, partnership, joint venture happened for last 3 years
? Key companies dominating the Global Next-Generation Sequencing Market.
? Various opportunities available for the other competitor in the Next-Generation Sequencing Market space.
? What are the top-performing segments in 2021? How these segments will perform in 2027.
? Which are the top-performing regions and countries in the current market scenario?
? Which are the regions and countries where companies should have concentrated on opportunities for Next-Generation Sequencing market growth in the coming future?
Target Audience who can be benefited from the Next-Generation Sequencing Market Report Study
? Next-Generation Sequencing providers
? Research organizations and consulting companies
? Next-Generation Sequencing-related organization, association, forum, and other alliances
? Government and corporate offices
? Start-up companies, venture capitalists, and private equity firms
? Distributors and Traders in Next-Generation Sequencing
? Various End-users who want to know more about the Next-Generation Sequencing Market and the latest technological developments in the Next-Generation Sequencing market.
Frequently Asked Questions for the Next-Generation Sequencing Market:
1. What is Next-Generation Sequencing?

Next-Generation Sequencing is a massively parallel technology for determining the RNA or DNA sequence to provide information regarding genetic variation associated with diseases or other biological phenomena. The technology offers scalability, high throughput, and speed thereby allowing labs to perform a wide variety of applications.

2. What is the market for Global Next-Generation Sequencing?

The global Next-Generation Sequencing market was valued at USD 9.28 billion in 2021, growing at a CAGR of 18.96% during the forecast period from 2022 to 2027, to reach USD 26.30 billion by 2027.

3. What are the drivers for the Global Next-Generation Sequencing?

The major factors driving the demand for Next-Generation Sequencing are the rising cases of infectious diseases such as the COVID-19 pandemic, and others. In addition, technological advancement, increasing incidence of cancer across the globe, and rapid product approvals in the Next-Generation Sequencing product arena are expected to augment the global Next-Generation Sequencing market.

4. What are the key players operating in Global Next-Generation Sequencing?

Some of the key market players operating in the Next-Generation Sequencing market include Agilent Technologies, Inc., Illumina Inc., Bio-Rad Laboratories, Inc., F. Hoffmann-La Roche Ltd, QIAGEN, Thermo Fisher Scientific, PerkinElmer Inc., MedGenome, BGI, Pacific Biosciences, GENEWIZ, Oxford Nanopore Technologies plc., Psomagen, Inc., 10x Genomics, Takara Bio Inc., Zymo Research Corporation., NuGEN Technologies, Inc. (Tecan Trading AG), Vela Diagnostics, CD Genomics., HTG Molecular Diagnostics, Inc., and others.

5. Which region has the highest share in the Next-Generation Sequencing market?

Among all the regions, North America is expected to occupy a major share in the overall Next-Generation Sequencing market during the forecasted period, 2022-2027. This domination is owing to the rising cases of infectious disease in the region. Furthermore, the spike in the new cancer cases, the presence of key market players and leading national clinical laboratories, and favorable reimbursement policies for the NGS technology, among others are expected to fuel the overall Next-Generation Sequencing market in the region.

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