

Next-Generation Sequencing Informatics - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

Next-Generation Sequencing Informatics Market Analysis

The next-generation sequencing informatics market size touched USD 2.64 billion in 2025 and, on the strength of a 13.84% CAGR, is forecast to reach USD 5.05 billion by 2030. Rapid declines in sequencing costs, now in the USD 100-per-sample range, are expanding the volume of genomic data that must be interpreted, which in turn is stimulating fresh demand for scalable analytics solutions across the next-generation sequencing informatics market. Cloud and hybrid compute models already handle more than 480 petabytes of raw output each year, a volume equivalent to 5 million whole genomes. Artificial-intelligence pipelines embedded in software such as Illumina DRAGEN and NVIDIA Clara are shortening analysis run-times by double-digit percentages while improving variant-calling accuracy, a combination that is accelerating clinical adoption in oncology, rare-disease diagnostics and population health programs. Greater regulatory clarity-illustrated by the FDA's March 2025 guidance on AI/ML-enabled medical devices-reduces commercialization risk and is expected to speed the entry of new tools into the next-generation sequencing informatics market.

Global Next-Generation Sequencing Informatics Market Trends and Insights

Widening Clinical & Research Use-Cases of Genomics

Oncology programs now rely on comprehensive panels that match patients to targeted therapies, a shift that is propelling precision-medicine revenues at a 16.4% CAGR through 2030. In Frederick Health, embedding GenomOncology's platform inside

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Expanse Genomics triggered therapy adjustments for 96 patients and multiplied clinical-trial referrals by 28-fold within six months. Rare-disease diagnostics are benefiting from long-read sequencing, and Azena's clinically validated test is uncovering structural variants most short-read workflows miss. Academic consortia are also scaling: the Alliance for Genomic Discovery has completed 250,000 whole genomes, enlarging training sets for drug-target identification. As these programs expand, hospitals and biopharma alike demand informatics platforms that translate complex datasets into bedside decisions, reinforcing recurrent-revenue models across the next-generation sequencing informatics market.

Sustained Decline in Sequencing Cost per Genome

Platforms from Ultima Genomics and Roche SBX are pushing per-sample costs toward USD 100 and raising throughput to seven 30x genomes per hour, respectively. Lower entry costs have unlocked population-scale projects, leading Singapore's national precision-medicine roadmap and India's GenomeIndia effort to commission tens of thousands of new genomes. Illumina MiSeq i100 systems, tailored for laboratories that lack cold-chain logistics, are widening uptake in emerging economies. As sequencing capital intensity wanes, data-analysis capacity rather than read generation is becoming the primary bottleneck, shifting budget allocations toward software subscriptions and managed services inside the next-generation sequencing informatics market.

Fragmented Global Data-Privacy & Sovereignty Regulations

The U.S. Department of Justice now restricts bulk genomic exports to designated "countries of concern," compelling enterprises to install technical safeguards and submit annual audits starting October 2025. Europe's GDPR already mandates explicit consent for secondary use, and several APAC nations have introduced data-localization clauses that complicate multi-center studies. Providers must therefore build region-segregated clouds or pursue federated-learning models, steps that inflate compliance overheads by double digits and may slow deployment cycles inside the next-generation sequencing informatics market.

Other drivers and restraints analyzed in the detailed report include:

Mainstream Adoption of Cloud & Hybrid Compute Architectures / Convergence of AI/ML with Genomic Data Pipelines / Shortage of Clinically-Trained Bioinformaticians & Validation Experts /

For complete list of drivers and restraints, kindly check the Table Of Contents.

Segment Analysis

NGS informatics software maintained 58.12% of next-generation sequencing informatics market share in 2024 and anchors most primary and tertiary workflows, with Illumina DRAGEN and Emedgene Explainable AI driving incremental accuracy gains. Custom plug-in ecosystems, semantic-search modules and AI-assisted curation engines transform static variant files into interactive clinical reports within minutes. Cloud-native platforms, though smaller today, are expanding at a 15.8% CAGR, bundling workflow management, compliance dashboards and pay-as-you-go compute into unified workspaces that appeal to laboratories with limited in-house bioinformatics staff.

Service providers-ranging from managed-analysis shops to bespoke pipeline developers-remain indispensable for organizations lacking internal specialists. The Clinical and Laboratory Standards Institute's structured worksheets now guide validation, yet many hospital labs still outsource tertiary-interpretation tasks. As platforms integrate drag-and-drop interfaces and container orchestration, they further erode traditional silos and enlarge the total addressable segment of the next-generation sequencing informatics market.

Cloud installations accounted for 64.21% of the next-generation sequencing informatics market in 2024, fueled by the need to

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spin up tens of thousands of CPU-hours without capital expenditure. Providers such as Google Cloud offer turnkey genomics workbenches with petabyte-scale object stores and integrated AI model hubs that reduce the mean time-to-answer for multi-omics queries.

On-premise clusters persist where data cannot leave firewalls, but steady equipment depreciation and rising energy costs are prompting a migration to hybrid set-ups. The hybrid model combines in-house secure storage for raw reads with cloud-based secondary analysis, allowing compliance with emerging sovereignty statutes while maintaining elasticity. These configurations are expected to post a 15.41% CAGR to 2030, expanding the footprint of the next-generation sequencing informatics market size for deployment solutions worldwide.

The Next-Generation Sequencing Informatics Market Report is Segmented by Offering (NGS Informatics Software, NGS Informatics Services, and NGS Informatics Platforms), Deployment Mode (Cloud-Based, and More), Application (Drug Discovery, and More), End User (Hospitals, and More), Geography (North America, Europe, Asia-Pacific, The Middle East and Africa, and South America). The Market Forecasts are Provided in Terms of Value (USD).

Geography Analysis

North America retained 42.12% of 2024 turnover, underpinned by deep research budgets, mature payer frameworks and an FDA stance that encourages adaptive AI in clinical genomics. Technology alliances are flourishing: NVIDIA, IQVIA and Mayo Clinic jointly train foundation models that crunch petabytes of multimodal patient data to accelerate trial matching. Tempus, meanwhile, became the first laboratory to feed structured somatic-variant results directly into Epic's Genomics module across more than 3,000 institutions, cementing clinical workflows that lean heavily on domestic analytics vendors.

Asia Pacific is projected to compound at 14.51% a year to 2030, propelled by Singapore's 10-year precision-medicine roadmap, Australia's PrOSPeCT cancer program and South Korea's K-MASTER initiative, each sequencing tens of thousands of genomes. India's contract-research sector, growing at 10.75%, complements device uptake; Illumina's MiSeq i100 aims squarely at labs lacking cold-chain shipping, enabling localized workflows in tier-2 cities. These moves collectively enlarge the region's slice of the next-generation sequencing informatics market size and lay a foundation for cloud-native collaborations that respect sovereign data laws.

Europe retains a solid foothold on the back of Horizon funding and a new European Commission regulation that obliges public-health labs to adopt whole-genome sequencing for pathogen surveillance starting 2025. Partnerships like Illumina-Sequentia Biotech showcase translational uptake in food safety. Middle East & Africa and South America remain nascent but promising; initiatives such as the Quad Cancer Moonshot inject genomic infrastructure and establish early footholds for vendors courting frontier-market growth across the next-generation sequencing informatics market.

List of Companies Covered in this Report:

Illumina / Thermo Fisher Scientific / QIAGEN / Roche / Agilent Technologies / DNAnexus Inc. / Fabric Genomics Inc. / Partek / PerkinElmer / Eagle Genomics Ltd. / DNASTAR / SoftGenetics LLC / Sapiro Sciences LLC / PierianDx Inc. / BGI Shenzhen (MGI Tech) / Oxford Nanopore Technologies plc (Epi2Me) / Seven Bridges Genomics Inc. / Geneious Biologics (Biomatters Ltd.) /

Additional Benefits:

 The market estimate (ME) sheet in Excel format /
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6.3.3 QIAGEN N.V.

6.3.4 F. Hoffmann-La Roche Ltd.

6.3.5 Agilent Technologies Inc.

6.3.6 DNAnexus Inc.

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- 6.3.7 Fabric Genomics Inc.
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- 6.3.17 Seven Bridges Genomics Inc.
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