A Market Research Report on

10 Ways in which Technology is Driving Better Efficiency in Clinical Trials

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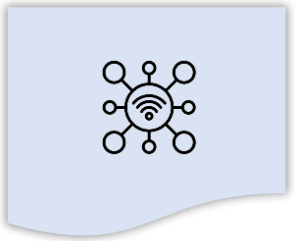
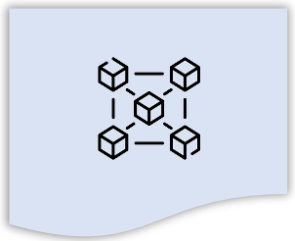
Advanced Technologies Assisting in Conducting Clinical Trials

Technologies that are driving digitization in clinical trials

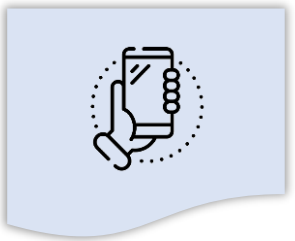


Device connectivity and ultra-low-cost IoT

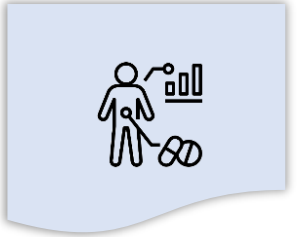


Blockchain

Sensing technologies

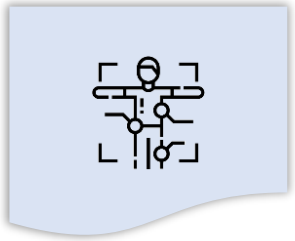


Mobile technologies

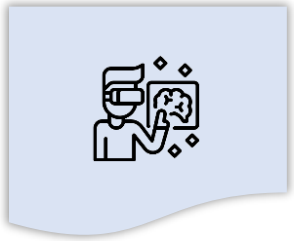


Patient recruitment through AI

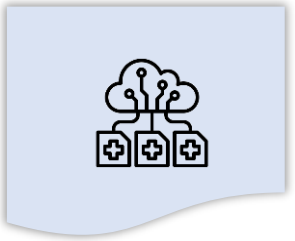
Patient data capturing



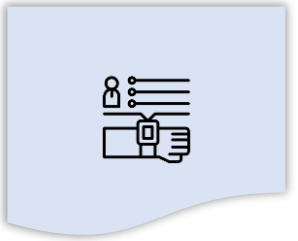
Remote monitoring



Virtual clinical trials



eSource and electronic health record integration



Wearable technologies

Transforming Clinical Trials with the Help of Technology (1/5)

New technological innovations are improving the efficiency and productivity of clinical trials using novel outcomes, increasing patient engagement, and reducing patient burden

Device connectivity and ultra-lowcost IoT

- Connected devices are helping overcome the misinterpretation of data when it comes to the impact of drug dose-related side effects, outcomes, and the patient's general well-being
- Ultra-low-cost connectivity components, coupled with direct-to-cloud technologies, such as NB-IoT/LTE-M, are fueling the transformation toward fully connected and digitized clinical trials
- Novartis, with the introduction of the connected BreezHaler, closely monitor patients' drug intake during clinical trials

Blockchain

- Blockchain-based solutions are providing more efficient ways of handling the early stages of clinical trials, particularly in relation to recruitment
- As blockchain provides a controlled way of accessing proof of the existence of an entity, it is being used for monitoring the existence of consent
- These solutions are assisting researchers, sponsors, and regulators in better coordinating the need for re-permission for each batch of patient data corresponding to a particular version of a trial protocol by exchanging consent information and managing it

Transforming Clinical Trials with the Help of Technology (2/5)

Mobile technologies offer the potential to reduce the costs of conducting clinical trials by collecting high-quality information on health outcomes in real-world settings that are relevant to patients and clinicians

Sensing Technologies

- Advanced sensors are becoming smaller, simpler to incorporate, and more useful without interfering with a patient's normal activities that are eventually taking the position of manual inspections and evaluations
- The development of new materials is also helping to advance the field of sensing technologies, a Korean team created prototype contact lenses that assess blood glucose levels and intraocular pressure using graphene and metal nanowires
- Contactless sensing is playing a key role in how data is collected, with the use of Near-Field Coherent Sensing (NCS) – it is possible to avoid skin contact

Mobile Technologies

- Mobile technology is enabling the collection of real-time data regarding activity or movements that may not be detectable at the same frequency using other equipment, such as an accelerometer worn on a limb, waist, or put on the wheelchair, or a sensor built in a smartphone or gaming cell
- Continuous measurement enables early illness progression detection, when treatments may be more potent
- This might make it possible to evaluate the success of drug development programs and boost the effectiveness of the trial design

Transforming Clinical Trials with the Help of Technology (3/5)

Digital recruitment tools captures opted-in patient information to enable patient recruitment companies to instantly share other trial opportunities that arise in the future

Patient recruitment through AI

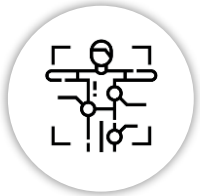
- The use of AI technology is helping in identifying populations that are suitable for clinical trials by sorting through vast volumes of medical records also additionally, it is evaluating social media posts to pinpoint places where an illness is more common, focusing the search for the suitable cohort
- The TDA offers patterns of clinical traits and illness comorbidities, which gave insights into how particular patients will react to treatment or in a clinical study
- Three subgroups of type 2 diabetes were found by researchers at Mount Sinai Medical Center in New York using Topological Data Analysis (TDA) of genotype and electronic health record data

Patient data capturing

- Clinical trial efficiency is increased through expanding patient engagement and improving clinical data, the Internet of Things, virtual reality, machine learning, and smart sensors are further technologies that support improving clinical trials through data collecting
- Clinical trials are centered on patient data since it guides future clinical outcomes and research agendas
- The usage of central data hubs and wearable devices is helping to automate data monitoring and collects a variety of information that is difficult to obtain, this data can be statistically monitored by organizations, and important information can theoretically be accessible from various locations

Transforming Clinical Trials with the Help of Technology (4/5)

Virtual clinical trials have the potential to drive significant digital alterations in clinical research methodologies to create an improved patient-centric ecosystem



Remote Monitoring

- Remote monitoring in clinical trials is a comprehensive, cutting-edge digital technology that enables a flexible on-site/off-site approach to research oversight
- Because there are fewer site visits necessary and more patients with mobility challenges, travel concerns, and chronic and incapacitating illnesses can participate in the study, remote monitoring lessens the load on the patients
- During site inspections, it enables on-site monitors to have strategic conversations and work out issues, the monitor can watch processes and address protocol violations rather than reading papers while sitting in a room

Virtual Clinical Trial

- Fully virtual or decentralized trials use technology and procedures including eConsent, telemedicine, Electronic Clinical Outcome Assessment (eCOA), Remote Patient Monitoring (RPM), mobile health (mHealth), wearables, and digital biomarker collecting to perform every aspect of the study remotely
- Virtual clinical trials leverage the power of telehealth/digital technology by including virtual patient monitoring, wearable medical devices, remote SDV, etc. to conduct safe and improved clinical trial research. These virtual trials are patient-centric, cost-effective, and easy to manage.

Transforming Clinical Trials with the Help of Technology (5/5)

Using wearable health devices is reducing the need for clinical visits, giving participants a greater degree of independence, which may in turn increase the likelihood that patients will or can enroll in a trial

eSource and electronic health record integration

- Through machine learning, artificial intelligence, and natural language processing tools, EHR data is now “read” and mapped directly into eSource and data collection databases
- This ability to pull data directly from the EHR to populate Electronic Case Report Forms (eCRFs) is resulting in a far more efficient clinical trial model
- With the adoption of EHR integration technology it is no longer necessary to read a patient's chart and then manually enter the necessary data into eCRFs thus reducing the requirement for clinical research associates to physically travel to the site to audit the eCRF data against the EHR because the data is electronically sent straight from the EHR into the eCRF

Wearable technologies

- The integration of wearable health monitors with smartphones now offers increasing capabilities to collect and store health data in real-time
- An increasing number of pharmaceutical and biotechnology sponsors are already using wearables to realize the potential benefits
- GlaxoSmithKline used Apple ResearchKit in a study for rheumatoid arthritis called PARADE, which was supported by an iPhone app, this was the first time that a pharmaceutical company had used the open-source software framework to conduct clinical research

Who should buy this report?

Pharmaceutical Players

Digital Health Entities

HealthTech Companies

MedTech Players

Other Lifesciences Companies

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Cost of this report:

$2,500

Annual Subscription:

~~*$125,000*~~ *$60,000*

(Includes a total of ***50*** reports)

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Topics of Upcoming Reports

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- From the Fringes to the Forefront: mRNA is here to Transform Global Health
- Melting the Iron Triangle: 10 Healthcare Players aiming Beyond Health Equality to Conquer Health Equity
- Robotics: Embarking a New Era in Surgical Innovations
- Metaverse: Paving the way for Health 4.0
- Healthcare Future Outlook 2023
- Patient Engagement- a New Standpoint on Care that is Patient-Centered
- E-Rx, the Digital Version of Prescription Improvising the Chances of Better Patient Outcomes
- Integration of Healthcare Systems with Big Data and Data Silos

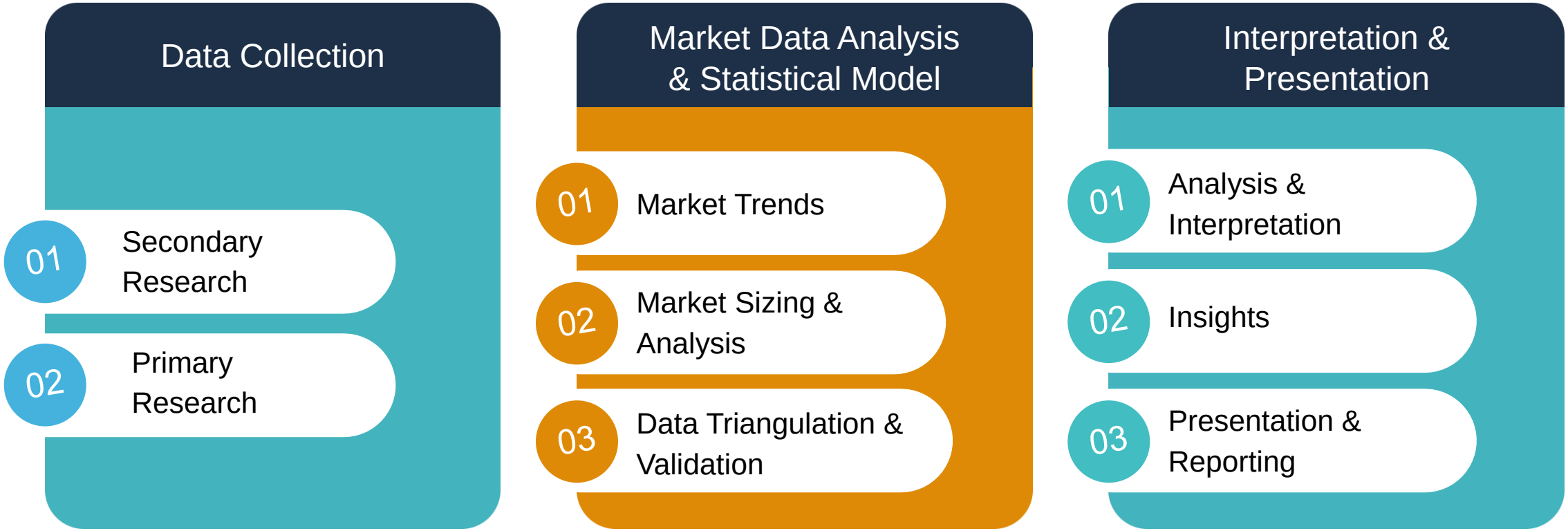
Methodology & Scope

Research Methodology

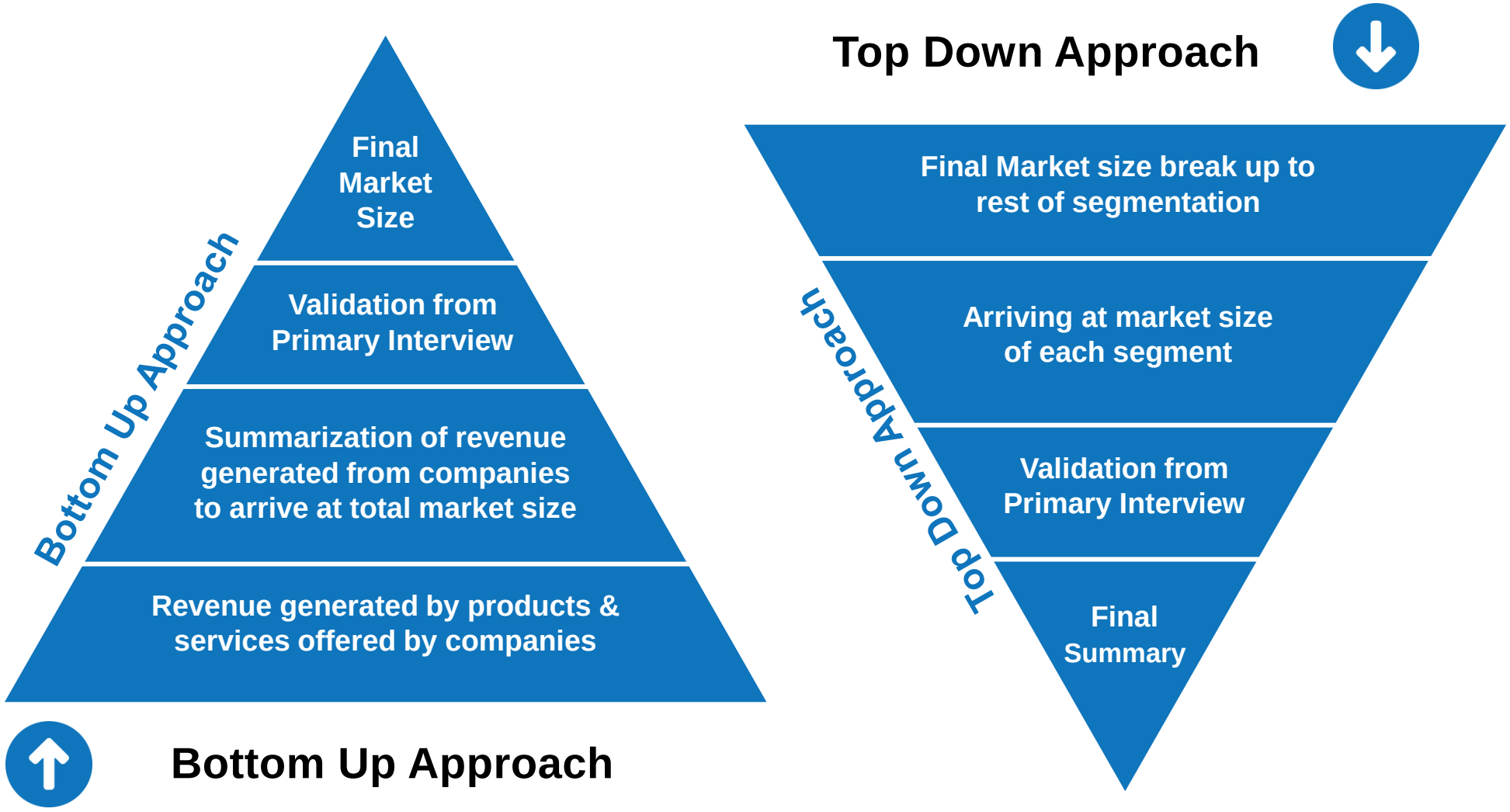
- Insights 10's research methodology delves deeper into the market, covering the macro and micro aspects of the industry. We identify the key growth drivers, opportunities, and restraints that might promote or hinder the future industry growth along with an expansive overview of the competitive landscape to help our clients make informed strategic decisions
- We implement a mix of primary and secondary research for our market estimate and forecast. The secondary research forms the initial phase of our study where we conduct extensive data mining, referring to verified data sources such as independent studies, government and regulatory published material, technical journals, trade magazines, and paid data sources
- For forecasting, the following parameters are considered:
  - ❑ Market drivers and restraints along with their current and expected impacts
  - ❑ Technological scenario and expected developments
  - ❑ End use industry trends and dynamics
  - ❑ Trends in the consumer behavior
  - ❑ Regulatory scenario and expected developments
  - ❑ Current capacity and expected capacity additions up to 2030
- We assign weights to these parameters and quantify their market impacts using the weighted average analysis to derive the expected market growth rate
- We appoint data triangulation strategies to explore different areas of the market. Our qualitative and quantitative assessments are time-sensitive, reflecting the most recent value and volume of the market across regions
- All our estimates and forecasts are verified through exhaustive primary research with the Key Industry Participants (KIPs)
- Currency used in the report is the US dollar (USD), with the market size indicated in USD million/billion (Mn/Bn)

Analysis Methodology

Our Analysis Methodology involves three critical stages:



Data Triangulation & Data Validation



Key Benefits for Stakeholders from this Report

- Study provides an in-depth analysis of the market with current trends and future estimations to elucidate the imminent investment pockets
- Our tools provides stakeholders with a cohesive understanding of the industry outlook, considering the qualitative and quantitative industry variables
- Comprehensive analysis of factors that drive and restrict the market growth is provided
- Comprehensive quantitative analysis of the industry from 2021 to 2030F is provided to enable the stakeholders to capitalize on the prevailing market opportunities
- Extensive analysis of the key segments of the industry helps understand the applications and technologies used globally
- Our rigorous data collection, thorough statistical analysis and specialist assessments ensure that our clientele has a greater understanding of the industry space, supply chain, price fluctuations, competitive landscape, and other vital factors

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Time Frame	Report Attribute	Details
2021 Base Year for Estimation	Quantitative Units	Revenue in USD Million/Billion (Mn/Bn)
	Report Coverage	Market Overview, Revenue Forecast, Market Segmentation, Growth Factors and Trends, Company Profiles, Competitive Landscape, Regulatory Landscape, Future Opportunities
2022-2030 Forecast Period	Customized Report	Report Customization (5 working days) with purchase. We will provide you with data that is currently not a part of our scope as a part of customization
	Pricing and purchase options	Avail customized purchase options to meet your exact research needs

What kind of Data is Presented in this Report?

This report presents data, which is:

Reliable

The report is prepared using a proven methodology and insightful research

Expert-verified

The data is prepared by a team of highly qualified & experienced research analysts & vetted by our local associates

Real

Allowing you to confidently make smarter business and strategic decisions

Comprehensive

Covers everything you would need to know about the market including market size, competitive analysis & much more

Easy to read

You do not have to be a market expert to understand what really is happening on the market and how it works

About insights10