

North America IoT Engineering Services Market by Service (Product Engineering, Cloud Engineering, Experience Engineering, Security Engineering & Others), By End User (BFSI, Automotive, Aerospace & Defense, Healthcare, Transportation & Logistics, IT & Telecom, Industrial Manufacturing, Others), By Country, Competition, Forecast and Opportunities, 2018-2028F.

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Abstracts

The North America IoT engineering services market was valued at USD 8.76 Billion in 2022 and is expected to grow at a rate of 24.7% during the forecast period. The North America Internet of Things (IoT) engineering services market is during a remarkable transformation, fueled by the pervasive adoption of IoT technology across a diverse range of industries. Spanning from the frigid landscapes of Alaska to the bustling cities of New York, this vast region is witnessing a surge in demand for engineering services that can harness the power of IoT to drive innovation, efficiency, and competitiveness. IoT engineering services encompass a broad spectrum of activities, including hardware and software development, connectivity solutions, data analytics, and cybersecurity implementations. As the world becomes increasingly interconnected, North America has emerged as a hotspot for IoT engineering services providers, catering to clients in sectors such as healthcare, manufacturing, agriculture, transportation, energy, and beyond.

One of the primary driving forces behind the rapid expansion of the North America IoT engineering services market is the growing recognition among businesses of the transformative potential of IoT technology. By connecting previously disparate objects

and machines to the internet, organizations can harvest a wealth of real-time data, automated processes, and make informed, data-driven decisions. This realization has led to an exponential increase in the demand for engineering services that can help businesses design, develop, and deploy IoT solutions tailored to their specific needs. Moreover, advancements in edge computing and the deployment of high-speed 5G networks have substantially enhanced the capabilities of IoT devices, allowing for faster data processing and reduced latency, particularly vital for applications like autonomous vehicles and smart cities.

The healthcare sector in North America stands out as one of the key industries propelling the growth of IoT engineering services. The advent of remote patient monitoring, smart medical devices, and healthcare wearables has revolutionized the delivery of medical care. IoT engineering services providers are working closely with healthcare institutions to develop and implement secure and compliant IoT solutions that not only improve patient outcomes but also reduce costs and enhance overall healthcare delivery. From monitoring chronic conditions in real-time to facilitating telemedicine consultations, the healthcare IoT landscape in North America is reshaping the industry. Manufacturing is another sector where IoT engineering services have made significant inroads. The concept of smart factories, driven by IoT technology, is transforming traditional manufacturing processes into agile, data-driven operations. IoT engineering experts collaborate with manufacturers to implement solutions that enable predictive maintenance, monitor equipment performance, and optimize supply chain operations. This not only reduces downtime but also improves product quality and efficiency, ultimately giving manufacturers a competitive edge in a rapidly evolving market.

The North America IoT engineering services market is also experiencing substantial investments in agriculture. Precision farming, facilitated by IoT-enabled solutions, is revolutionizing conventional farming practices. With the help of IoT engineering services, farmers can optimize crop yields, conserve resources, and implement sustainable agricultural practices. IoT sensors and data analytics enable farmers to monitor soil conditions, weather patterns, and crop health in real-time, allowing for precise irrigation and fertilization, reducing waste, and increasing agricultural productivity.

Nevertheless, the rapid growth of the IoT engineering services market in North America is not without its challenges. Chief among these concerns are cybersecurity and data privacy. As the number of connected devices continues to proliferate, the risk of security breaches and data breaches becomes more pronounced. IoT engineering service

providers are actively addressing these issues by implementing robust security measures, encryption protocols, and data privacy solutions to safeguard the integrity of IoT ecosystems. Regulatory compliance, particularly in highly regulated industries like healthcare, adds another layer of complexity that IoT engineering services providers must navigate adeptly.

In conclusion, the North America IoT engineering services market is undergoing a remarkable transformation, driven by the widespread adoption of IoT technology across multiple industries. From healthcare to manufacturing to agriculture, IoT engineering services are facilitating innovation, process optimization, and competitive advantage. As technological advancements continue to accelerate and IoT applications evolve, the demand for specialized engineering services in North America is poised to remain strong. This dynamic and evolving market is not only shaping the future of industries but also positioning North America as a hub of IoT innovation on a global scale. In the years ahead, the region will continue to be a focal point for IoT engineering services, driving progress and innovation in an increasingly interconnected world.

Key Market Drivers

Rapid Adoption of IoT Across Industries

The North America IoT engineering services market is experiencing significant growth due to the rapid adoption of IoT technology across various industries. Businesses are increasingly recognizing the potential of IoT to enhance efficiency, streamline operations, and create new revenue streams. IoT adoption has been particularly pronounced in sectors such as healthcare, manufacturing, agriculture, transportation, and energy. In healthcare, for example, the deployment of IoT-enabled medical devices and remote monitoring solutions is revolutionizing patient care. Manufacturers are leveraging IoT for predictive maintenance and process optimization, while precision farming is transforming agriculture. This widespread adoption is driving the demand for IoT engineering services to design, develop, and implement customized IoT solutions that meet the unique needs of each industry.

Technological Advancements and Connectivity

Advancements in technology, including edge computing and the rollout of high-speed 5G networks, are accelerating the growth of the North America IoT engineering services market. Edge computing allows IoT devices to process data locally, reducing latency and enabling faster response times, which is crucial for applications like autonomous

vehicles and smart cities. The deployment of 5G networks provides reliable and high-bandwidth connectivity, enabling IoT devices to transmit data more efficiently. These technological advancements expand the capabilities of IoT devices, making them more versatile and effective. Consequently, businesses are increasingly seeking IoT engineering services to harness these technological innovations and create IoT solutions that can operate at the cutting edge of connectivity and data processing.

Increasing Focus on Data Analytics and Insights

In an IoT-driven world, data is the lifeblood of businesses. North American enterprises are placing a growing emphasis on data analytics and insights derived from IoT-generated data. IoT engineering services providers are pivotal in this endeavor, as they help organizations collect, store, process, and analyze vast amounts of IoT data. Advanced analytics and machine learning algorithms are used to extract valuable insights from this data, enabling businesses to make informed decisions, predict equipment failures, optimize processes, and enhance customer experiences. As the demand for data-driven decision-making continues to rise, IoT engineering services that specialize in data analytics and visualization will remain crucial for helping businesses unlock the full potential of their IoT investments.

Security and Privacy Concerns

While the benefits of IoT are substantial, concerns about security and privacy remain prominent market drivers in North America. The proliferation of IoT devices and the interconnected nature of IoT ecosystems make them vulnerable to cyberattacks and data breaches. Businesses are acutely aware of these risks and are seeking IoT engineering services that prioritize security and privacy. IoT engineering service providers are developing robust security solutions, including encryption, authentication, and access control, to safeguard IoT devices and networks. Compliance with data privacy regulations, such as the General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA), is also a top priority for businesses. IoT engineering services that can address these security and privacy challenges are in high demand, as they enable organizations to confidently deploy and manage IoT solutions while mitigating potential risks.

Key Market Challenges

Security and Privacy Concerns in IoT Implementations

One of the significant challenges facing the North America IoT engineering services market is the pervasive concern over security and privacy in IoT implementations. As the adoption of IoT technology continues to grow across industries, so does the attack surface for cybercriminals. IoT devices are often connected to critical infrastructure and sensitive data, making them attractive targets for malicious actors. Breaches of IoT devices can result in data theft, unauthorized access, and even physical harm in cases where IoT systems control critical infrastructure like energy grids or healthcare equipment.

To address these challenges, IoT engineering service providers in North America must prioritize robust security measures throughout the entire lifecycle of IoT solutions. This includes secure device provisioning, authentication, encryption, and continuous monitoring for vulnerabilities and threats. Additionally, compliance with data protection regulations, such as the General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA), is crucial, as mishandling of personal data can lead to legal and reputational consequences. Another layer of complexity arises from the diverse ecosystem of IoT devices, each with its own security considerations and update requirements. Engineers and developers must stay vigilant and proactive in identifying and mitigating vulnerabilities to ensure the security and privacy of IoT solutions. As the threat landscape evolves, the North America IoT engineering services market must adapt to provide increasingly robust security measures that inspire confidence among businesses and consumers alike.

Interoperability and Standards

Interoperability and standards are critical challenges in the North America IoT engineering services market. The IoT landscape is highly fragmented, with a multitude of devices, protocols, and platforms from various manufacturers. This fragmentation often leads to compatibility issues and can hinder the seamless integration of IoT solutions across different domains and industries.

To address this challenge, IoT engineering service providers in North America need to navigate the complex landscape of IoT standards and protocols. They must have the expertise to ensure that IoT devices and systems can communicate effectively and securely with each other. The lack of interoperability can result in wasted resources, increased development costs, and delayed time-to-market for IoT solutions. Standardization efforts, such as those by industry consortia and standards bodies, are helping to establish common protocols and frameworks for IoT. However, achieving widespread adoption of these standards can be a slow and complex process. IoT

engineering service providers must stay up to date with evolving standards and be capable of implementing solutions that adhere to these standards while also providing flexibility for customization to meet the specific needs of their clients.

Furthermore, as the IoT landscape continues to evolve, new standards and protocols will emerge, adding to the complexity. Engineering service providers must remain agile and adaptable to stay ahead of these developments and ensure that their clients' IoT solutions remain interoperable and future-proof. Overcoming the challenge of interoperability and standards is essential to unlock the full potential of IoT and enable seamless connectivity across industries in North America.

Key Market Trends

Edge Computing Integration in IoT Engineering Services

One of the prominent market trends in the North America IoT engineering services market is the increasing integration of edge computing capabilities. Edge computing refers to the practice of processing data closer to the source of generation, typically on IoT devices or gateways, rather than relying solely on centralized cloud-based servers. This trend is driven by the need for real-time data processing and reduced latency in IoT applications, especially in sectors such as autonomous vehicles, industrial automation, and smart cities.

IoT engineering service providers in North America are recognizing the importance of edge computing in enabling faster decision-making and improving overall system efficiency. They are developing solutions that leverage edge computing to process data locally, reducing the reliance on cloud-based services and minimizing latency. This trend not only enhances the performance of IoT applications but also reduces data transmission costs and ensures data privacy and security. As a result, businesses are increasingly seeking engineering services that can incorporate edge computing into their IoT solutions, making it a significant and growing market trend.

AI and Machine Learning Integration for Advanced Analytics

Another compelling trend in the North America IoT engineering services market is the integration of artificial intelligence (AI) and machine learning (ML) for advanced analytics. IoT generates vast amounts of data, and organizations are looking for ways to extract actionable insights from this data to drive smarter decision-making and automation. AI and ML technologies are playing a pivotal role in achieving this goal. IoT

engineering service providers are leveraging AI and ML algorithms to analyze data from IoT devices and sensors, identify patterns, predict anomalies, and optimize processes. For example, predictive maintenance in manufacturing can use AI to forecast equipment failures, reducing downtime and maintenance costs. In healthcare, AI-powered analytics can monitor patient data and provide early warning signs of health issues.

This trend is driving the demand for engineering services that specialize in AI and ML integration within IoT solutions. Businesses across North America are increasingly seeking expertise in developing and deploying AI-enhanced IoT systems. As AI and ML continue to evolve and become more accessible, their integration into IoT engineering services will likely remain a prominent trend, offering organizations new opportunities to derive value from their IoT investments.

Sustainability and IoT for Environmental Monitoring

Sustainability and environmental monitoring have become significant trends in the North America IoT engineering services market. As concerns about climate change and environmental impact grow, businesses, governments, and organizations are turning to IoT technology to monitor and manage environmental data. This trend is particularly relevant in sectors like agriculture, energy, and smart cities. IoT engineering service providers are developing solutions that use sensors and IoT devices to collect data related to air quality, water quality, soil conditions, energy consumption, and more. This data can be used to optimize resource usage, reduce environmental impact, and make informed decisions to address environmental challenges.

For instance, precision agriculture employs IoT sensors to monitor soil moisture and nutrient levels, allowing farmers to optimize irrigation and fertilizer use, reducing water and chemical waste. In smart cities, IoT-enabled infrastructure can monitor air pollution and traffic flow, leading to more efficient transportation systems and reduced emissions. The growing emphasis on sustainability and environmental monitoring is creating a niche market for IoT engineering services that specialize in these applications. Businesses and organizations across North America are looking for service providers with expertise in developing IoT solutions that address environmental concerns and contribute to a more sustainable future. As environmental regulations become stricter and public awareness of sustainability issues increases, this trend is expected to drive continued growth in the IoT engineering services market.

Segmental Insights

Service Insights

Based on service, the cloud engineering service segment dominated the North America IoT engineering services market and is expected to maintain its dominance during the forecast period. This dominance can be attributed to the pivotal role that cloud computing plays in facilitating the scalability, flexibility, and seamless management of IoT ecosystems. Cloud engineering services provide businesses with the infrastructure and platforms needed to efficiently store, process, and analyze the massive volumes of data generated by IoT devices. This capability is instrumental in enabling real-time decision-making, data-driven insights, and the seamless integration of IoT applications across diverse industries. Furthermore, the cloud's accessibility and cost-effectiveness have made it a preferred choice for businesses seeking to leverage IoT technology without the burden of extensive on-premises infrastructure. As IoT continues to evolve and expand its footprint across North American industries, the cloud engineering service segment is expected to remain at the forefront, driving innovation, efficiency, and growth in the IoT engineering services market.

End User Insights

Based on End User, the healthcare emerged as the dominant segment in the North America IoT (Internet of Things) engineering services market, and it is poised to maintain its leadership position throughout the forecast period. This dominance is underpinned by the healthcare industry's rapid adoption of IoT technology to revolutionize patient care, streamline operations, and improve overall healthcare outcomes. IoT engineering services have played a pivotal role in facilitating the development and implementation of IoT solutions tailored to the unique needs of healthcare providers. These solutions encompass remote patient monitoring, smart medical devices, healthcare wearables, and data-driven healthcare analytics. The ability to collect and analyse real-time patient data has empowered healthcare professionals to make more informed decisions, enhance treatment protocols, and ensure timely interventions. As the healthcare sector in North America continues to prioritize the integration of IoT for better patient care and operational efficiency, it is expected to remain at the forefront of IoT engineering services demand, driving innovation and advancements in the healthcare landscape.

Regional Insights

United States stands as the unequivocal powerhouse in the North America IoT (Internet of Things) engineering services market, and its dominance is projected to persist

throughout the forecast period. This preeminence is rooted in a convergence of factors that solidify the country's status as a global IoT hub. The United States boasts a vibrant and innovative technology ecosystem, with Silicon Valley as a beacon of technological excellence. This fertile ground for innovation has nurtured a multitude of startups and established tech giants, all actively engaged in pioneering IoT solutions that span across industries. Moreover, the United States is home to a diverse range of sectors, including healthcare, manufacturing, agriculture, transportation, and smart cities, all of which are fervently embracing IoT technology to gain a competitive edge and drive operational efficiencies. The demand for IoT engineering services is robust and growing, as organizations across these sectors seek expertise in designing, developing, and implementing bespoke IoT solutions tailored to their unique requirements.

Furthermore, the country's commitment to research and development, coupled with a regulatory environment that encourages technological innovation, reinforces its position at the forefront of IoT advancements. Access to venture capital, top-tier research institutions, and a culture of entrepreneurship further propel the United States into a leadership role in the global IoT engineering services market. In conclusion, the United States' unparalleled combination of technological prowess, diverse industries, and a conducive innovation ecosystem ensures its continued dominance in the North America IoT engineering services market for the foreseeable future.

Key Market Players

IBM Corporation

Accenture LLP

Deloitte LLP

Cisco System, Inc.

Microsoft Corporation

AT&T, Inc.

HCL Technologies

Cognizant Technology Solutions Corporation

Infosys Limited

Wipro Limited

Report Scope:

In this report, the North America IoT Engineering Services Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

North America IoT Engineering Services Market, By Service:

Product Engineering

Cloud Engineering

Experience Engineering

Security Engineering

Others

North America IoT Engineering Services Market, By End User:

BFSI

Automotive

Aerospace & Defense

Healthcare

Transportation & Logistics

IT & Telecom

Industrial Manufacturing

Others

North America IoT Engineering Services Market, By Country:

United States

Canada

Mexico

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the North America IoT Engineering Services Market.

Available Customizations:

North America IoT Engineering Services Market report with the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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