

LoRa and LoRaWAN IoT Market by Offering (Hardware, Platforms, and Services), Application (Smart Cities, Industrial IoT, Smart Healthcare), End User (Retail, Manufacturing, Healthcare, Energy & Utilities, Residential) and Region - Global Forecast to 2028

https://marketpublishers.com/r/L9FAA9CB924DEN.html

Date: May 2023 Pages: 275 Price: US\$ 4,950.00 (Single User License) ID: L9FAA9CB924DEN

Abstracts

The LoRa and LoRaWAN IoT market is estimated at USD 5.6 billion in 2023 and is projected to reach USD 25.5 billion by 2028, at a CAGR of 35.3% from 2023 to 2028. Various key players in the ecosystem have led to a competitive and diverse market. Government initiatives to establish smart cities is expected to drive the adoption of the LoRa and LoRaWAN IoT market in the future.

'By hardware, system on chip segment to hold the largest market size during the forecast period'

System on Chip (SoC) is a type of hardware component commonly used in LoRaWAN IoT devices, which integrates multiple components, including microprocessors, memory, and communication interfaces, onto a single chip. SoC technology is popular in the IoT industry as it offers a compact, cost-effective, and low-power solution for building connected devices. These SoCs are specifically designed for LoRaWAN communication and enable IoT devices to connect to LoRaWAN networks and transmit data. Many semiconductor manufacturers are investing in developing SoC solutions specifically designed for the IoT market.

Based on end users, transportation and logistics segment is expected to register the fastest growth rate during the forecast period.



The transportation and logistics industries embrace LoRa and LoRaWAN IoT technologies to transform operations and drive efficiency. LoRa and LoRaWAN offer valuable advantages, including long-range connectivity, low power consumption, and the ability to connect numerous devices simultaneously. By leveraging these technologies, transportation and logistics companies can implement a wide range of IoT applications that optimize processes, enhance safety, and streamline operations. For example, real-time tracking and monitoring of assets, vehicles, and shipments become feasible through LoRa and LoRaWAN.

'Asia Pacific to register the highest growth rate during the forecast period'

Asia Pacific comprises nations with rapid technological development, such as China, Japan, and India. Asia Pacific is home to several developing countries that are experiencing rapid urbanization. This offers enormous business opportunities for LoRa and LoRaWAN IoT vendors, even while presenting grave challenges for sustainable development. Singapore implemented a nationwide LoRaWAN network, enabling applications such as smart lighting, waste management, and environmental monitoring, significantly improving operational efficiency and sustainability in the city-state. Ans in Australia, LoRa and LoRaWAN have been instrumental in deploying smart agriculture solutions for optimizing irrigation and crop management.

Breakdown of primaries

The study contains insights from various industry experts, from solution vendors to Tier 1 companies. The break-up of the primaries is as follows:

By Company Type: Tier 1 – 35%, Tier 2 – 39%, and Tier 3 – 26%

By Designation: C-level –25%, D-level – 35%, and Others – 40%

By Region: North America – 38%, Europe – 40%, Asia Pacific – 21%, and Rest of World- 1%.

The major players in the LoRa and LoRaWAN IoT market are Cisco (US), NEC Corporation (Japan), Tata Communications (India), Semtech (US), Orange SA (France), Advantech (Taiwan), Comcast (US), AWS (US), Bosch (Germany), Murata (Japan), Laird Connectivity (US), Kerlink (France), Senet (US), Actility (France), Sensoterra



(Netherlands), DIGI International (US), Nwave Technologies (UK), RAKwireless (China), thethings.io (Spain), Datacake (Germany), MultiTech (US), Milesight (China), LORAIOT (Switzerland), Exosite (US), and OrbiWise (Switzerland). These players have adopted various growth strategies, such as partnerships, agreements and collaborations, new product launches, and product enhancements, and acquisitions to expand their footprint in the LoRa and LoRaWAN IoT market.

Research Coverage

The market study covers the LoRa and LoRaWAN IoT market size across different segments. It aims at estimating the market size and the growth potential across different segments, including offerings (hardware, platforms, and services), application, end users and region. The study includes an in-depth competitive analysis of the leading market players, their company profiles, key observations related to product and business offerings, recent developments, and market strategies.

Key Benefits of Buying the Report

The report will help the market leaders/new entrants with information on the closest approximations of the revenue numbers for the global LoRa and LoRaWAN IoT market and its subsegments. This report will help stakeholders understand the competitive landscape and gain more insights to position their businesses better and to plan suitable go-to-market strategies. Moreover, the report will provide insights for stakeholders to understand the market's pulse and provide them with information on key market drivers, restraints, challenges, and opportunities.

The report provides insights on the following pointers:

Analysis of key drivers (rising demand for low-power, long-range wide area network connectivity, the need to boost IoT application development, increasing focus on cost efficiency), restraints (data security and privacy concerns), opportunities (increase in smart city initiatives worldwide, deployment of intelligent devices), and challenges (lack of governance) influencing the growth of the LoRa and LoRaWAN IoT market. Product Development/Innovation: Detailed insights on upcoming technologies, research & development activities, and new product & service launches in the LoRa and LoRaWAN IoT market — the report analyses the LoRa and LoRaWAN IoT market across various regions. Market Diversification: Exhaustive information about new products & services, untapped geographies, recent developments, and investments in the LoRa and LoRaWAN IoT



market. Competitive Assessment: In-depth assessment of market shares, growth strategies and service offerings of leading players like Cisco (US), NEC Corporation (Japan), Tata Communications (India), Semtech (US), Orange SA (France), Advantech (Taiwan), Comcast (US), AWS (US), Bosch (Germany), Murata (Japan), Laird Connectivity (US), Kerlink (France), Senet (US), Actility (France), Sensoterra (Netherlands), DIGI International (US), Nwave Technologies (UK), RAKwireless (China), thethings.io (Spain), Datacake (Germany), MultiTech (US), Milesight (China), LORAIOT (Switzerland), Exosite (US), and OrbiWise (Switzerland).



Contents

1 INTRODUCTION

1.1 STUDY OBJECTIVES
1.2 MARKET DEFINITION
1.3 STUDY SCOPE

1.3.1 MARKET SEGMENTATION
1.3.2 REGIONS COVERED
1.3.3 INCLUSIONS AND EXCLUSIONS
1.3.4 YEARS CONSIDERED

1.4 CURRENCY CONSIDERED
TABLE 1 USD EXCHANGE RATES, 2020–2022
1.5 STAKEHOLDERS
1.6 RECESSION IMPACT

2 RESEARCH METHODOLOGY

2.1 RESEARCH DATA

FIGURE 1 LORA AND LORAWAN IOT MARKET: RESEARCH DESIGN

- 2.1.1 SECONDARY DATA
 - 2.1.1.1 Key data from secondary sources
- 2.1.2 PRIMARY DATA
 - 2.1.2.1 Primary interviews with experts
 - 2.1.2.2 List of key primary interview participants
 - 2.1.2.3 Breakdown of primary profiles
- FIGURE 2 BREAKDOWN OF PRIMARY INTERVIEWS: BY COMPANY TYPE,
- DESIGNATION, AND REGION
 - 2.1.2.4 Key data from primary sources
 - 2.1.2.5 Key insights from industry experts
- 2.2 MARKET SIZE ESTIMATION
- FIGURE 3 APPROACHES USED FOR MARKET SIZE ESTIMATION
- FIGURE 4 MARKET SIZE ESTIMATION METHODOLOGY, APPROACH 1: SUPPLY-
- SIDE ANALYSIS OF REVENUE FROM PLATFORMS AND SERVICES
- 2.2.1 BOTTOM-UP APPROACH
- FIGURE 5 BOTTOM-UP APPROACH
- FIGURE 6 MARKET SIZE ESTIMATION METHODOLOGY APPROACH 1, BOTTOM-UP (SUPPLY SIDE): COLLECTIVE REVENUE OF LORA AND LORAWAN IOT VENDORS



2.2.2 TOP-DOWN APPROACH FIGURE 7 TOP-DOWN APPROACH 2.2.3 LORA AND LORAWAN IOT MARKET ESTIMATION: DEMAND-SIDE ANALYSIS FIGURE 8 MARKET SIZE ESTIMATION METHODOLOGY: DEMAND-SIDE ANALYSIS 2.3 DATA TRIANGULATION AND MARKET BREAKUP FIGURE 9 DATA TRIANGULATION 2.4 FACTOR ANALYSIS TABLE 2 FACTOR ANALYSIS 2.5 RESEARCH ASSUMPTIONS 2.6 LIMITATIONS 2.7 IMPLICATION OF RECESSION FIGURE 10 LORA AND LORAWAN IOT MARKET TO WITNESS SLIGHT DIP IN Y-O-Y IN 2023

3 EXECUTIVE SUMMARY

FIGURE 11 LORA AND LORAWAN IOT MARKET, 2020–2028 (USD MILLION) FIGURE 12 LORA AND LORAWAN IOT MARKET SIZE, BY REGION, 2023

4 PREMIUM INSIGHTS

4.1 ATTRACTIVE OPPORTUNITIES FOR KEY PLAYERS IN LORA AND LORAWAN **IOT MARKET** FIGURE 13 GROWING ADOPTION OF CONNECTED DEVICES FOR EFFICIENT COMMUNICATION AND DATA EXCHANGE TO DRIVE MARKET 4.2 LORA AND LORAWAN IOT MARKET, BY OFFERING FIGURE 14 HARDWARE SEGMENT TO DOMINATE MARKET DURING FORECAST PERIOD 4.3 LORA AND LORAWAN IOT MARKET, BY SERVICE FIGURE 15 MANAGED SERVICES SEGMENT TO ACCOUNT FOR HIGHER CAGR. DURING FORECAST PERIOD 4.4 LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL SERVICE FIGURE 16 SUPPORT & MAINTENANCE SEGMENT TO LEAD MARKET DURING FORECAST PERIOD 4.5 LORA AND LORAWAN IOT MARKET, BY APPLICATION FIGURE 17 ASSET TRACKING SEGMENT TO ACHIEVE HIGHEST CAGR DURING FORECAST PERIOD 4.6 LORA AND LORAWAN IOT MARKET, BY END USER



FIGURE 18 MANUFACTURING SEGMENT TO LEAD MARKET DURING FORECAST PERIOD

4.7 NORTH AMERICAN LORA AND LORAWAN IOT MARKET: TOP THREE APPLICATIONS AND END USERS

FIGURE 19 SMART CITIES AND MANUFACTURING SEGMENTS TO ACCOUNT FOR SIGNIFICANT MARKET SHARES IN 2023

5 MARKET OVERVIEW

- 5.1 INTRODUCTION
- 5.2 MARKET DYNAMICS

FIGURE 20 DRIVERS, RESTRAINTS, OPPORTUNITIES, AND CHALLENGES: LORA AND LORAWAN IOT MARKET

- 5.2.1 DRIVERS
 - 5.2.1.1 Rising demand for low-power, long-range wide-area network connectivity
 - 5.2.1.2 Growing demand for IoT applications
 - 5.2.1.3 Increasing focus on cost efficiency
- **5.2.2 RESTRAINTS**
- 5.2.2.1 Data security and privacy concerns
- 5.2.3 OPPORTUNITIES
 - 5.2.3.1 Increasing smart city initiatives worldwide
- 5.2.3.2 Rising adoption of intelligent devices
- 5.2.4 CHALLENGES
- 5.2.4.1 Lack of governance
- 5.3 INDUSTRY TRENDS

5.3.1 BRIEF HISTORY OF LORA AND LORAWAN IOT

FIGURE 21 BRIEF HISTORY OF LORA AND LORAWAN IOT

- 5.3.1.1 2010: Foundation of Cycleo
- 5.3.1.2 2012: Invention of LoRa

5.3.1.3 2015: Invention of LoRaWAN

5.3.2 FUTURE LANDSCAPE OF LORA AND LORAWAN IOT MARKET

- 5.3.2.1 LoRaWAN technology roadmap till 2030
- 5.3.2.1.1 Short-term roadmap (2023-2025)
- 5.3.2.1.2 Mid-term roadmap (2026-2028)
- 5.3.2.1.3 Long-term roadmap (2028-2030)
- 5.3.3 VALUE CHAIN ANALYSIS

FIGURE 22 VALUE CHAIN ANALYSIS

- 5.3.4 ECOSYSTEM/MARKET MAP
- FIGURE 23 LORAWAN IOT ECOSYSTEM/MARKET MAP



TABLE 3 LORA AND LORAWAN IOT MARKET: ECOSYSTEM

- 5.3.4.1 LoRA and LoRaWAN IoT hardware providers
- 5.3.4.2 LoRA and LoRaWAN IoT platform providers
- 5.3.4.3 LoRA and LoRaWAN IoT service providers
- 5.3.4.4 LoRA and LoRaWAN IoT network server providers
- 5.3.4.5 LoRA and LoRaWAN IoT system integrators
- 5.3.4.6 LoRA and LoRaWAN IoT end users

5.3.5 CLASSIFICATION OF END DEVICES IN LORA AND LORAWAN IOT

- 5.3.5.1 Class A
- 5.3.5.2 Class B
- 5.3.5.3 Class C

5.3.6 BUSINESS MODELS IN LORAWAN IOT

- 5.3.6.1 Device sales model
- 5.3.6.2 Subscription model
- 5.3.6.3 Platform as a Service (PaaS) model
- 5.3.6.4 Value-added Reseller (VAR) model
- 5.3.6.5 Hybrid model
- 5.3.7 LORA AND LORAWAN IOT ARCHITECTURE/FRAMEWORK

FIGURE 24 LORA AND LORAWAN IOT MARKET ARCHITECTURE/FRAMEWORK

- 5.3.7.1 End nodes
- 5.3.7.2 Gateway
- 5.3.7.3 Network server
- 5.3.7.4 Application server
- 5.3.8 PATENT ANALYSIS
 - 5.3.8.1 Methodology
- 5.3.8.2 Document types
- TABLE 4 PATENTS FILED, 2019–2023
 - 5.3.8.3 Innovation and patent applications

FIGURE 25 NUMBER OF PATENTS GRANTED ANNUALLY, 2019–2023

5.3.8.3.1 Top applicants

FIGURE 26 TOP TEN PATENT APPLICANTS WITH HIGHEST NUMBER OF PATENT APPLICATIONS, 2019–2023

- TABLE 5 PATENTS GRANTED IN LORA AND LORAWAN IOT MARKET, 2019–2023
 - 5.3.9 PRICING ANALYSIS
 - 5.3.9.1 Average selling price of key players
- TABLE 6 AVERAGE SELLING PRICE OF KEY PLAYERS
 - 5.3.9.2 Average selling price trend
- 5.3.10 PORTER'S FIVE FORCES MODEL

TABLE 7 LORA AND LORAWAN IOT MARKET: PORTER'S FIVE FORCES MODEL



5.3.10.1 Threat of new entrants

5.3.10.2 Threat of substitutes

5.3.10.3 Bargaining power of buyers

5.3.10.4 Bargaining power of suppliers

5.3.10.5 Intensity of competitive rivalry

5.3.11 TECHNOLOGY ANALYSIS

5.3.11.1 Adjacent technologies

5.3.11.1.1 Zigbee

5.3.11.1.2 Cellular IoT

5.3.11.1.3 Cloud computing

5.3.11.1.4 Sigfox

5.3.11.1.5 BLE

5.3.11.1.6 LTE-M

5.3.11.2 Related technologies

5.3.11.2.1 Wi-Fi

5.3.11.2.2 NB-IoT

5.3.12 KEY STAKEHOLDERS AND BUYING CRITERIA

5.3.12.1 Key stakeholders in buying process

FIGURE 27 INFLUENCE OF STAKEHOLDERS ON BUYING PROCESS FOR TOP THREE END USERS

TABLE 8 INFLUENCE OF STAKEHOLDERS ON BUYING PROCESS FOR TOP THREE END USERS

5.3.12.2 Buying criteria

FIGURE 28 KEY BUYING CRITERIA FOR TOP THREE END USERS TABLE 9 KEY BUYING CRITERIA FOR TOP THREE END USERS

5.3.13 BEST PRACTICES FOR LORA AND LORAWAN IOT DEVICES

5.3.13.1 Eliminating unnecessary join requests

5.3.13.2 Limiting transmission length, payload size, and duty cycle

5.3.13.3 Using Adaptive Data Rate (ADR) for stationary devices

5.3.13.4 Using Over-The-Air Activation (OTAA)

5.3.14 TRENDS/DISRUPTIONS IMPACTING BUYERS/CLIENTS' BUSINESSES FIGURE 29 TRENDS/DISRUPTIONS IMPACTING BUYERS/CLIENTS' BUSINESSES 5.3.15 CASE STUDY ANALYSIS

5.3.15.1 Case study 1: MachineMax's IIoT solution helped Shell collect heavy machinery data and boost efficiency

5.3.15.2 Case study 2: GMN offered farmers 24x7 insights by deploying IoT solutions from SENSOTERRA

5.3.15.3 Case study 3: Advantech and PACE provided General Mining Wellfield with cost-friendly system connecting to SCADA



5.3.15.4 Case study 4: Nwave Technologies' solution helped Harrogate improve parking experiences

5.3.15.5 Case study 5: Digital Matter helped AGWAN farmers locate and control physical assets of farms

5.3.16 KEY CONFERENCES AND EVENTS IN 2023-2024

TABLE 10 LORA AND LORAWAN IOT MARKET: DETAILED LIST OF

CONFERENCES AND EVENTS, 2023–2024

5.3.17 REGULATORY LANDSCAPE

5.3.17.1 Regulatory bodies, government agencies, and other organizations TABLE 11 NORTH AMERICA: LIST OF REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS

TABLE 12 EUROPE: LIST OF REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS

TABLE 13 ASIA PACIFIC: LIST OF REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS

TABLE 14 ROW: LIST OF REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS

5.3.17.2 North America

5.3.17.2.1 US

5.3.17.2.2 Canada

- 5.3.17.3 Europe
- 5.3.17.4 Asia Pacific
- 5.3.17.4.1 South Korea
- 5.3.17.4.2 China
- 5.3.17.4.3 India
- 5.3.17.5 Middle East & Africa
- 5.3.17.5.1 UAE
- 5.3.17.6 Latin America
 - 5.3.17.6.1 Brazil
- 5.3.17.6.2 Mexico

6 LORA AND LORAWAN IOT MARKET, BY OFFERING

6.1 INTRODUCTION

6.1.1 OFFERING: LORA AND LORAWAN IOT MARKET DRIVERS FIGURE 30 SERVICES SEGMENT TO GROW AT HIGHEST CAGR DURING FORECAST PERIOD TABLE 15 LORA AND LORAWAN IOT MARKET, BY OFFERING, 2017–2022 (USD MILLION)



TABLE 16 LORA AND LORAWAN IOT MARKET, BY OFFERING, 2023–2028 (USD MILLION)

6.2 HARDWARE

FIGURE 31 CONNECTIVITY MODULES SEGMENT TO GROW AT HIGHEST CAGR DURING FORECAST PERIOD

TABLE 17 LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2017–2022 (USD MILLION)

TABLE 18 LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2023–2028 (USD MILLION)

6.2.1 NETWORKING GATEWAYS

6.2.1.1 Need to manage data flow and transfer data between endpoints to drive market

TABLE 19 NETWORKING GATEWAYS: LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 20 NETWORKING GATEWAYS: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)

6.2.2 CONNECTIVITY MODULES

6.2.2.1 Connectivity modules acting as building blocks to drive demand TABLE 21 CONNECTIVITY MODULES: LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 22 CONNECTIVITY MODULES: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)

6.2.3 SYSTEM ON CHIP

6.2.3.1 Need for compact, cost-effective, and low-power solution to build connected devices to boost market

TABLE 23 SYSTEM ON CHIP: LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 24 SYSTEM ON CHIP: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)

6.3 PLATFORM

6.3.1 NEED FOR DEVICE MANAGEMENT, APPLICATION ENABLEMENT, AND SECURITY AND AUTHENTICATION TO DRIVE MARKET

TABLE 25 PLATFORM: LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 26 PLATFORM: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)

6.4 SERVICES

FIGURE 32 MANAGED SERVICES SEGMENT TO GROW AT HIGHER CAGR DURING FORECAST PERIOD



TABLE 27 LORA AND LORAWAN IOT MARKET, BY SERVICE, 2017–2022 (USD MILLION)

TABLE 28 LORA AND LORAWAN IOT MARKET, BY SERVICE, 2023–2028 (USD MILLION)

6.4.1 PROFESSIONAL SERVICES

FIGURE 33 CONSULTING SEGMENT TO GROW AT HIGHEST CAGR DURING FORECAST PERIOD

TABLE 29 LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL SERVICE, 2017–2022 (USD MILLION)

TABLE 30 LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL SERVICE, 2023–2028 (USD MILLION)

TABLE 31 PROFESSIONAL SERVICE: LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 32 PROFESSIONAL SERVICE: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)

6.4.1.1 Consulting

6.4.1.1.1 Need to create scalable and secure LoRaWAN network designs to drive demand for consulting services

TABLE 33 CONSULTING: LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 34 CONSULTING: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)

6.4.1.2 Deployment & integration

6.4.1.2.1 Need to integrate IoT devices with cloud platforms and existing IT infrastructure to boost market

TABLE 35 DEPLOYMENT & INTEGRATION: LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 36 DEPLOYMENT & INTEGRATION: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)

6.4.1.3 Support & maintenance

6.4.1.3.1 Need to ensure smooth deployment of LoRaWAN IoT to drive demand for support & maintenance

TABLE 37 SUPPORT & MAINTENANCE: LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 38 SUPPORT & MAINTENANCE: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)

6.4.2 MANAGED SERVICES

6.4.2.1 Need to reduce complexity and cost of IoT deployment to drive market TABLE 39 MANAGED SERVICES: LORA AND LORAWAN IOT MARKET, BY



REGION, 2017-2022 (USD MILLION)

TABLE 40 MANAGED SERVICES: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)

7 LORA AND LORAWAN IOT MARKET, BY APPLICATION

7.1 INTRODUCTION

7.1.1 APPLICATION: LORA AND LORAWAN IOT MARKET DRIVERS FIGURE 34 INDUSTRIAL IOT SEGMENT TO HOLD LARGEST MARKET SIZE DURING FORECAST PERIOD

TABLE 41 LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2017–2022 (USD MILLION)

TABLE 42 LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2023–2028 (USD MILLION)

7.2 ASSET TRACKING

7.2.1 NEED FOR COST-EFFECTIVE ASSET TRACKING WITH LESSER POWER CONSUMPTION TO DRIVE DEMAND

TABLE 43 ASSET TRACKING: LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 44 ASSET TRACKING: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)

7.3 INDUSTRIAL IOT

7.3.1 NEED TO FACILITATE REMOTE ASSET MONITORING AND DATA COLLECTION TO DRIVE MARKET

TABLE 45 INDUSTRIAL IOT: LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 46 INDUSTRIAL IOT: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)

7.4 SMART CITIES

7.4.1 LORA AND LORAWAN TO LEVERAGE SMART CITIES BY TRANSFORMING URBAN LANDSCAPE

TABLE 47 SMART CITIES: LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 48 SMART CITIES: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)

7.5 SMART AGRICULTURE & LIVESTOCK MANAGEMENT

7.5.1 LORAWAN IOT TECHNOLOGIES TO TRANSFORM AGRICULTURAL SECTOR BY ENABLING PRECISION FARMING

TABLE 49 SMART AGRICULTURE & LIVESTOCK MANAGEMENT: LORA AND



LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION) TABLE 50 SMART AGRICULTURE & LIVESTOCK MANAGEMENT: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION) 7.6 SMART BUILDINGS

7.6.1 IMPLEMENTATION OF EFFECTIVE MONITORING AND CONTROL OF SYSTEMS WITHIN SMART BUILDINGS TO DRIVE MARKET

TABLE 51 SMART BUILDINGS: LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 52 SMART BUILDINGS: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)

7.7 SMART HEALTHCARE

7.7.1 NEED FOR REAL-TIME REMOTE PATIENT MONITORING AND IMPROVED HEALTHCARE DELIVERY TO DRIVE MARKET

TABLE 53 SMART HEALTHCARE: LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 54 SMART HEALTHCARE: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)

7.8 OTHER APPLICATIONS

TABLE 55 OTHER APPLICATIONS: LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 56 OTHER APPLICATIONS: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)

8 LORA AND LORAWAN IOT MARKET, BY END USER

8.1 INTRODUCTION

8.1.1 END USER: LORA AND LORAWAN IOT MARKET DRIVERS

FIGURE 35 MANUFACTURING SEGMENT TO HOLD LARGEST MARKET SIZE DURING FORECAST PERIOD

TABLE 57 LORA AND LORAWAN IOT MARKET, BY END USER, 2017–2022 (USD MILLION)

TABLE 58 LORA AND LORAWAN IOT MARKET, BY END USER, 2023–2028 (USD MILLION)

8.2 RETAIL

8.2.1 NEED FOR LONG-RANGE CONNECTIVITY AND LOW POWER CONSUMPTION TO ENHANCE SHOPPING EXPERIENCE TO DRIVE MARKET 8.2.2 RETAIL: LORA AND LORAWAN IOT USE CASES

8.2.2.1 Inventory management

8.2.2.2 Precise asset tracking



8.2.2.3 Smart store monitoring

8.2.2.4 Customer analytics

TABLE 59 RETAIL: LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 60 RETAIL: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)

8.3 MANUFACTURING

8.3.1 NEED TO TRACK REAL-TIME MACHINE PERFORMANCE AND VALUABLE ASSETS TO PROPEL MARKET

8.3.2 MANUFACTURING: LORA AND LORAWAN IOT USE CASES

8.3.2.1 Predictive maintenance

8.3.2.2 Inventory and supply chain optimization

8.3.2.3 Asset tracking and management

8.3.2.4 Worker safety and security

TABLE 61 MANUFACTURING: LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 62 MANUFACTURING: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)

8.4 TRANSPORTATION & LOGISTICS

8.4.1 CARGO CONDITION MONITORING, REAL-TIME ASSET TRACKING, AND IMPLEMENTATION OF PREDICTIVE MAINTENANCE TO DRIVE MARKET

8.4.2 TRANSPORTATION & LOGISTICS: LORA AND LORAWAN IOT USE CASES

8.4.2.1 Asset tracking and management

8.4.2.2 Predictive maintenance optimization

8.4.2.3 Cargo monitoring and security

8.4.2.4 Safety and security measures

TABLE 63 TRANSPORTATION & LOGISTICS: LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 64 TRANSPORTATION & LOGISTICS: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)

8.5 AGRICULTURE

8.5.1 REAL-TIME TRACKING OF LIVESTOCK AND SOIL CONDITIONS AND MONITORING OF CROPS TO PROPEL MARKET

8.5.2 AGRICULTURE: LORA AND LORAWAN IOT USE CASES

8.5.2.1 Livestock management

8.5.2.2 Precision farming

8.5.2.3 Medical device integration

8.5.2.4 Crop monitoring and disease prevention

TABLE 65 AGRICULTURE: LORA AND LORAWAN IOT MARKET, BY REGION,



2017-2022 (USD MILLION)

TABLE 66 AGRICULTURE: LORA AND LORAWAN IOT MARKET, BY REGION,

2023–2028 (USD MILLION)

8.6 HEALTHCARE

8.6.1 NEED TO MONITOR VACCINE COLD CHAIN AND TRACK PATIENT SAFETY TO PROPEL MARKET

8.6.2 HEALTHCARE: LORA AND LORAWAN IOT USE CASES

- 8.6.2.1 Remote patient monitoring
- 8.6.2.2 Patient safety and security
- 8.6.2.3 Vaccine cold chain monitoring
- 8.6.2.4 Fall detection and alerts

TABLE 67 HEALTHCARE: LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 68 HEALTHCARE: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)

8.7 ENERGY & UTILITIES

8.7.1 NEED FOR SMART METERING, SMART GRID MANAGEMENT, AND OPTIMIZATION OF WATER MANAGEMENT TO DRIVE MARKET

8.7.2 ENERGY & UTILITIES: LORA AND LORAWAN IOT USE CASES

8.7.2.1 Smart metering

- 8.7.2.2 Smart grid management
- 8.7.2.3 Water management
- 8.7.2.4 Environmental monitoring

TABLE 69 ENERGY & UTILITIES: LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 70 ENERGY & UTILITIES: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)

8.8 GOVERNMENT & PUBLIC SAFETY

8.8.1 DEMAND FOR ENVIRONMENTAL MONITORING AND SMART CITY IMPLEMENTATION TO PROPEL MARKET

8.8.2 GOVERNMENT & PUBLIC SAFETY: LORA AND LORAWAN IOT USE CASES

- 8.8.2.1 Smart cities
- 8.8.2.2 Emergency response systems
- 8.8.2.3 Environmental monitoring
- 8.8.2.4 Public health monitoring

TABLE 71 GOVERNMENT & PUBLIC SAFETY: LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 72 GOVERNMENT & PUBLIC SAFETY: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)



8.9 ENTERPRISE

8.9.1 NEED FOR SMART METERING AND TRACKING AND MANAGING ASSETS TO BOOST MARKET

8.9.2 ENTERPRISE: LORA AND LORAWAN IOT USE CASES

8.9.2.1 Smart building solutions

8.9.2.2 Industrial IoT applications

8.9.2.3 Asset tracking and management

8.9.2.4 Smart metering and utility management

TABLE 73 ENTERPRISE: LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 74 ENTERPRISE: LORA AND LORAWAN IOT MARKET, BY REGION,

2023–2028 (USD MILLION)

8.10 RESIDENTIAL

8.10.1 DEMAND FOR SMART HOMES AND AUTOMATION AND SECURITY TO PROPEL DEMAND

8.10.2 RESIDENTIAL: LORA AND LORAWAN IOT USE CASES

- 8.10.2.1 Smart home automation
- 8.10.2.2 Water management
- 8.10.2.3 Home security and monitoring

8.10.2.4 Neighborhood connectivity

TABLE 75 RESIDENTIAL: LORA AND LORAWAN IOT MARKET, BY REGION,

2017-2022 (USD MILLION)

TABLE 76 RESIDENTIAL: LORA AND LORAWAN IOT MARKET, BY REGION,

2023-2028 (USD MILLION)

8.11 TRAVEL & HOSPITALITY

8.11.1 REAL-TIME OCCUPANCY MANAGEMENT, EFFICIENT ASSET TRACKING, AND LOCATION-BASED SERVICES TO DRIVE MARKET

8.11.2 TRAVEL & HOSPITALITY: LORA AND LORAWAN IOT USE CASES

- 8.11.2.1 Real-time occupancy management
- 8.11.2.2 Personalized location-based services

8.11.2.3 Efficient asset tracking

TABLE 77 TRAVEL & HOSPITALITY: LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 78 TRAVEL & HOSPITALITY: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)

8.12 OTHER END USERS

8.12.1 OTHER END USERS: LORA AND LORAWAN IOT USE CASES

8.12.1.1 Network monitoring

8.12.1.2 Smart office solutions



- 8.12.1.3 Athlete performance monitoring
- 8.12.1.4 Smart campus solutions

TABLE 79 OTHER END USERS: LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 80 OTHER END USERS: LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)

9 LORA AND LORAWAN IOT MARKET, BY REGION

9.1 INTRODUCTION

TABLE 81 LORA AND LORAWAN IOT MARKET, BY REGION, 2017–2022 (USD MILLION)

TABLE 82 LORA AND LORAWAN IOT MARKET, BY REGION, 2023–2028 (USD MILLION)

9.2 NORTH AMERICA

9.2.1 NORTH AMERICA: LORA AND LORAWAN IOT MARKET DRIVERS

9.2.2 NORTH AMERICA: RECESSION IMPACT

FIGURE 36 NORTH AMERICA: MARKET SNAPSHOT

TABLE 83 NORTH AMERICA: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2017–2022 (USD MILLION)

TABLE 84 NORTH AMERICA: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2023–2028 (USD MILLION)

TABLE 85 NORTH AMERICA: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2017–2022 (USD MILLION)

TABLE 86 NORTH AMERICA: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2023–2028 (USD MILLION)

TABLE 87 NORTH AMERICA: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2017–2022 (USD MILLION)

TABLE 88 NORTH AMERICA: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2023–2028 (USD MILLION)

TABLE 89 NORTH AMERICA: LORA AND LORAWAN IOT MARKET, BY

PROFESSIONAL SERVICE, 2017-2022 (USD MILLION)

TABLE 90 NORTH AMERICA: LORA AND LORAWAN IOT MARKET, BY

PROFESSIONAL SERVICE, 2023-2028 (USD MILLION)

TABLE 91 NORTH AMERICA: LORA AND LORAWAN IOT MARKET, BY

APPLICATION, 2017–2022 (USD MILLION)

TABLE 92 NORTH AMERICA: LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2023–2028 (USD MILLION)

TABLE 93 NORTH AMERICA: LORA AND LORAWAN IOT MARKET, BY END USER,



2017-2022 (USD MILLION)

TABLE 94 NORTH AMERICA: LORA AND LORAWAN IOT MARKET, BY END USER, 2023–2028 (USD MILLION)

TABLE 95 NORTH AMERICA: LORA AND LORAWAN IOT MARKET, BY COUNTRY, 2017–2022 (USD MILLION)

TABLE 96 NORTH AMERICA: LORA AND LORAWAN IOT MARKET, BY COUNTRY, 2023–2028 (USD MILLION)

9.2.3 US

9.2.3.1 Expanding networks and demand from various industries to drive market TABLE 97 US: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2017–2022 (USD MILLION)

TABLE 98 US: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2023–2028 (USD MILLION)

TABLE 99 US: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2017–2022 (USD MILLION)

TABLE 100 US: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2023–2028 (USD MILLION)

TABLE 101 US: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2017–2022 (USD MILLION)

TABLE 102 US: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2023–2028 (USD MILLION)

TABLE 103 US: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL

SERVICE, 2017–2022 (USD MILLION)

TABLE 104 US: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL

SERVICE, 2023–2028 (USD MILLION)

TABLE 105 US: LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2017–2022 (USD MILLION)

TABLE 106 US: LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2023–2028 (USD MILLION)

TABLE 107 US: LORA AND LORAWAN IOT MARKET, BY END USER, 2017–2022 (USD MILLION)

TABLE 108 US: LORA AND LORAWAN IOT MARKET, BY END USER, 2023–2028 (USD MILLION)

9.2.4 CANADA

9.2.4.1 Smart city initiatives and government funding to drive demand for LoRa and LoRaWAN IoT solutions

TABLE 109 CANADA: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2017–2022 (USD MILLION)

TABLE 110 CANADA: LORA AND LORAWAN IOT MARKET, BY OFFERING,



2023-2028 (USD MILLION) TABLE 111 CANADA: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2017-2022 (USD MILLION) TABLE 112 CANADA: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2023–2028 (USD MILLION) TABLE 113 CANADA: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2017-2022 (USD MILLION) TABLE 114 CANADA: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2023–2028 (USD MILLION) TABLE 115 CANADA: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL SERVICE, 2017–2022 (USD MILLION) TABLE 116 CANADA: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL SERVICE, 2023–2028 (USD MILLION) TABLE 117 CANADA: LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2017-2022 (USD MILLION) TABLE 118 CANADA: LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2023-2028 (USD MILLION) TABLE 119 CANADA: LORA AND LORAWAN IOT MARKET, BY END USER. 2017–2022 (USD MILLION) TABLE 120 CANADA: LORA AND LORAWAN IOT MARKET, BY END USER, 2023-2028 (USD MILLION) 9.3 EUROPE 9.3.1 EUROPE: LORA AND LORAWAN IOT MARKET DRIVERS 9.3.2 EUROPE: RECESSION IMPACT TABLE 121 EUROPE: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2017-2022 (USD MILLION) TABLE 122 EUROPE: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2023–2028 (USD MILLION) TABLE 123 EUROPE: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2017–2022 (USD MILLION) TABLE 124 EUROPE: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2023-2028 (USD MILLION) TABLE 125 EUROPE: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2017-2022 (USD MILLION) TABLE 126 EUROPE: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2023–2028 (USD MILLION) TABLE 127 EUROPE: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL SERVICE, 2017–2022 (USD MILLION) TABLE 128 EUROPE: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL



SERVICE, 2023–2028 (USD MILLION)

TABLE 129 EUROPE: LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2017–2022 (USD MILLION)

TABLE 130 EUROPE: LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2023–2028 (USD MILLION)

TABLE 131 EUROPE: LORA AND LORAWAN IOT MARKET, BY END USER, 2017–2022 (USD MILLION)

TABLE 132 EUROPE: LORA AND LORAWAN IOT MARKET, BY END USER, 2023–2028 (USD MILLION)

TABLE 133 EUROPE: LORA AND LORAWAN IOT MARKET, BY COUNTRY, 2017–2022 (USD MILLION)

TABLE 134 EUROPE: LORA AND LORAWAN IOT MARKET, BY COUNTRY, 2023–2028 (USD MILLION)

9.3.3 UK

9.3.3.1 Presence of several major operators to fuel demand for LoRa and LoRaWAN IoT solutions

TABLE 135 UK: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2017–2022 (USD MILLION)

TABLE 136 UK: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2023–2028 (USD MILLION)

TABLE 137 UK: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2017–2022 (USD MILLION)

TABLE 138 UK: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2023–2028 (USD MILLION)

TABLE 139 UK: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2017–2022 (USD MILLION)

TABLE 140 UK: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2023–2028 (USD MILLION)

TABLE 141 UK: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL

SERVICE, 2017–2022 (USD MILLION)

TABLE 142 UK: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL

SERVICE, 2023-2028 (USD MILLION)

TABLE 143 UK: LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2017–2022 (USD MILLION)

TABLE 144 UK: LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2023–2028 (USD MILLION)

TABLE 145 UK: LORA AND LORAWAN IOT MARKET, BY END USER, 2017–2022 (USD MILLION)

TABLE 146 UK: LORA AND LORAWAN IOT MARKET, BY END USER, 2023–2028



(USD MILLION)

9.3.4 GERMANY

9.3.4.1 Increasing focus on transforming digital operations to drive demand for LoRa and LoRaWAN IoT solutions

TABLE 147 GERMANY: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2017–2022 (USD MILLION)

TABLE 148 GERMANY: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2023–2028 (USD MILLION)

TABLE 149 GERMANY: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2017–2022 (USD MILLION)

TABLE 150 GERMANY: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2023–2028 (USD MILLION)

TABLE 151 GERMANY: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2017–2022 (USD MILLION)

TABLE 152 GERMANY: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2023–2028 (USD MILLION)

TABLE 153 GERMANY: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL SERVICE, 2017–2022 (USD MILLION)

TABLE 154 GERMANY: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL SERVICE, 2023–2028 (USD MILLION)

TABLE 155 GERMANY: LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2017–2022 (USD MILLION)

TABLE 156 GERMANY: LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2023–2028 (USD MILLION)

TABLE 157 GERMANY: LORA AND LORAWAN IOT MARKET, BY END USER, 2017–2022 (USD MILLION)

TABLE 158 GERMANY: LORA AND LORAWAN IOT MARKET, BY END USER, 2023–2028 (USD MILLION)

9.3.5 FRANCE

9.3.5.1 Robust ecosystem and active adoption of new technologies to drive market 9.3.6 SPAIN

9.3.6.1 Government investments to expand LoRaWAN network nationwide to create opportunities

9.3.7 ITALY

9.3.7.1 Demand for LoRa and LoRAWAN IoT solutions from industrial sector to drive market

9.3.8 NORDIC REGION

9.3.8.1 Smart city initiatives and robust ICT infrastructure to boost market 9.3.9 REST OF EUROPE



9.4 ASIA PACIFIC 9.4.1 ASIA PACIFIC: LORA AND LORAWAN IOT MARKET DRIVERS 9.4.2 ASIA PACIFIC: RECESSION IMPACT FIGURE 37 ASIA PACIFIC: MARKET SNAPSHOT TABLE 159 ASIA PACIFIC: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2017-2022 (USD MILLION) TABLE 160 ASIA PACIFIC: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2023–2028 (USD MILLION) TABLE 161 ASIA PACIFIC: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2017–2022 (USD MILLION) TABLE 162 ASIA PACIFIC: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2023-2028 (USD MILLION) TABLE 163 ASIA PACIFIC: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2017-2022 (USD MILLION) TABLE 164 ASIA PACIFIC: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2023-2028 (USD MILLION) TABLE 165 ASIA PACIFIC: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL SERVICE, 2017–2022 (USD MILLION) TABLE 166 ASIA PACIFIC: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL SERVICE, 2023–2028 (USD MILLION) TABLE 167 ASIA PACIFIC: LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2017-2022 (USD MILLION) TABLE 168 ASIA PACIFIC: LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2023-2028 (USD MILLION) TABLE 169 ASIA PACIFIC: LORA AND LORAWAN IOT MARKET, BY END USER, 2017-2022 (USD MILLION) TABLE 170 ASIA PACIFIC: LORA AND LORAWAN IOT MARKET, BY END USER, 2023–2028 (USD MILLION) TABLE 171 ASIA PACIFIC: LORA AND LORAWAN IOT MARKET, BY COUNTRY, 2017–2022 (USD MILLION) TABLE 172 ASIA PACIFIC: LORA AND LORAWAN IOT MARKET, BY COUNTRY, 2023-2028 (USD MILLION) 9.4.3 CHINA 9.4.3.1 Substantial market size, emphasis on IoT development, and extensive industrial base to drive demand TABLE 173 CHINA: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2017–2022

(USD MILLION)

TABLE 174 CHINA: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2023–2028 (USD MILLION)



TABLE 175 CHINA: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2017–2022 (USD MILLION)

TABLE 176 CHINA: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2023–2028 (USD MILLION)

TABLE 177 CHINA: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2017–2022 (USD MILLION)

TABLE 178 CHINA: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2023–2028 (USD MILLION)

TABLE 179 CHINA: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL SERVICE, 2017–2022 (USD MILLION)

TABLE 180 CHINA: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL SERVICE, 2023–2028 (USD MILLION)

TABLE 181 CHINA: LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2017–2022 (USD MILLION)

TABLE 182 CHINA: LORA AND LORAWAN IOT MARKET, BY APPLICATION,2023–2028 (USD MILLION)

TABLE 183 CHINA: LORA AND LORAWAN IOT MARKET, BY END USER, 2017–2022 (USD MILLION)

TABLE 184 CHINA: LORA AND LORAWAN IOT MARKET, BY END USER, 2023–2028 (USD MILLION)

9.4.4 INDIA

9.4.4.1 Focus on adopting latest technologies and investments to propel market TABLE 185 INDIA: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2017–2022 (USD MILLION)

TABLE 186 INDIA: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2023–2028 (USD MILLION)

TABLE 187 INDIA: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2017–2022 (USD MILLION)

TABLE 188 INDIA: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2023–2028 (USD MILLION)

TABLE 189 INDIA: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2017–2022 (USD MILLION)

TABLE 190 INDIA: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2023–2028 (USD MILLION)

TABLE 191 INDIA: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL SERVICE, 2017–2022 (USD MILLION)

TABLE 192 INDIA: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL SERVICE, 2023–2028 (USD MILLION)

TABLE 193 INDIA: LORA AND LORAWAN IOT MARKET, BY APPLICATION,



2017-2022 (USD MILLION)

TABLE 194 INDIA: LORA AND LORAWAN IOT MARKET, BY APPLICATION,

2023–2028 (USD MILLION)

TABLE 195 INDIA: LORA AND LORAWAN IOT MARKET, BY END USER, 2017–2022 (USD MILLION)

TABLE 196 INDIA: LORA AND LORAWAN IOT MARKET, BY END USER, 2023–2028 (USD MILLION)

9.4.5 JAPAN

9.4.5.1 Need for resource and infrastructure monitoring for smart city projects to drive market

9.4.6 AUSTRALIA & NEW ZEALAND

9.4.6.1 Smart city initiatives, network coverage expansion, and supportive regulations to boost market

9.4.7 SOUTH KOREA

9.4.7.1 Substantial developments and adoption of LoRa and LoRaWAN IoT from various industries to propel market

9.4.8 SOUTHEAST ASIA

9.4.8.1 Increasing technological advancements, government initiatives, and dynamic startup ecosystem to drive market

9.4.9 REST OF ASIA PACIFIC

9.5 MIDDLE EAST & AFRICA

9.5.1 MIDDLE EAST & AFRICA: LORA AND LORAWAN IOT MARKET DRIVERS 9.5.2 MIDDLE EAST & AFRICA: RECESSION IMPACT

TABLE 197 MIDDLE EAST & AFRICA: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2017–2022 (USD MILLION)

TABLE 198 MIDDLE EAST & AFRICA: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2023–2028 (USD MILLION)

TABLE 199 MIDDLE EAST & AFRICA: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2017–2022 (USD MILLION)

TABLE 200 MIDDLE EAST & AFRICA: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2023–2028 (USD MILLION)

TABLE 201 MIDDLE EAST & AFRICA: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2017–2022 (USD MILLION)

TABLE 202 MIDDLE EAST & AFRICA: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2023–2028 (USD MILLION)

TABLE 203 MIDDLE EAST & AFRICA: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL SERVICE, 2017–2022 (USD MILLION)

TABLE 204 MIDDLE EAST & AFRICA: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL SERVICE, 2023–2028 (USD MILLION)



TABLE 205 MIDDLE EAST & AFRICA: LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2017–2022 (USD MILLION)

TABLE 206 MIDDLE EAST & AFRICA: LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2023–2028 (USD MILLION)

TABLE 207 MIDDLE EAST & AFRICA: LORA AND LORAWAN IOT MARKET, BY END USER, 2017–2022 (USD MILLION)

TABLE 208 MIDDLE EAST & AFRICA: LORA AND LORAWAN IOT MARKET, BY END USER, 2023–2028 (USD MILLION)

TABLE 209 MIDDLE EAST & AFRICA: LORA AND LORAWAN IOT MARKET, BY SUB-REGION, 2017–2022 (USD MILLION)

TABLE 210 MIDDLE EAST & AFRICA: LORA AND LORAWAN IOT MARKET, BY SUB-REGION, 2023–2028 (USD MILLION)

9.5.3 MIDDLE EAST

9.5.3.1 Growing smart city initiatives and extensive adoption of IoT technologies to drive market

TABLE 211 MIDDLE EAST: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2017–2022 (USD MILLION)

TABLE 212 MIDDLE EAST: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2023–2028 (USD MILLION)

TABLE 213 MIDDLE EAST: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2017–2022 (USD MILLION)

TABLE 214 MIDDLE EAST: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2023–2028 (USD MILLION)

TABLE 215 MIDDLE EAST: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2017–2022 (USD MILLION)

TABLE 216 MIDDLE EAST: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2023–2028 (USD MILLION)

TABLE 217 MIDDLE EAST: LORA AND LORAWAN IOT MARKET, BY

PROFESSIONAL SERVICE, 2017-2022 (USD MILLION)

TABLE 218 MIDDLE EAST: LORA AND LORAWAN IOT MARKET, BY

PROFESSIONAL SERVICE, 2023–2028 (USD MILLION)

TABLE 219 MIDDLE EAST: LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2017–2022 (USD MILLION)

TABLE 220 MIDDLE EAST: LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2023–2028 (USD MILLION)

TABLE 221 MIDDLE EAST: LORA AND LORAWAN IOT MARKET, BY END USER, 2017–2022 (USD MILLION)

TABLE 222 MIDDLE EAST: LORA AND LORAWAN IOT MARKET, BY END USER, 2023–2028 (USD MILLION)



TABLE 223 MIDDLE EAST: LORA AND LORAWAN IOT MARKET, BY COUNTRY, 2017–2022 (USD MILLION)

TABLE 224 MIDDLE EAST: LORA AND LORAWAN IOT MARKET, BY COUNTRY, 2023–2028 (USD MILLION)

9.5.3.2 KSA

9.5.3.3 UAE

TABLE 225 UAE: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2017–2022 (USD MILLION)

TABLE 226 UAE: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2023–2028 (USD MILLION)

TABLE 227 UAE: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2017–2022 (USD MILLION)

TABLE 228 UAE: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2023–2028 (USD MILLION)

TABLE 229 UAE: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2017–2022 (USD MILLION)

TABLE 230 UAE: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2023–2028 (USD MILLION)

TABLE 231 UAE: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL SERVICE, 2017–2022 (USD MILLION)

TABLE 232 UAE: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL SERVICE, 2023–2028 (USD MILLION)

TABLE 233 UAE: LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2017–2022 (USD MILLION)

TABLE 234 UAE: LORA AND LORAWAN IOT MARKET, BY APPLICATION,

2023–2028 (USD MILLION)

TABLE 235 UAE: LORA AND LORAWAN IOT MARKET, BY END USER, 2017–2022 (USD MILLION)

TABLE 236 UAE: LORA AND LORAWAN IOT MARKET, BY END USER, 2023–2028 (USD MILLION)

9.5.3.4 Rest of Middle East

9.5.4 AFRICA

9.5.4.1 Government initiatives and presence of several LoRaWAN solution providers to propel market

9.6 LATIN AMERICA

9.6.1 LATIN AMERICA: LORA AND LORAWAN IOT MARKET DRIVERS

9.6.2 LATIN AMERICA: RECESSION IMPACT

TABLE 237 LATIN AMERICA: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2017–2022 (USD MILLION)



TABLE 238 LATIN AMERICA: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2023-2028 (USD MILLION) TABLE 239 LATIN AMERICA: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2017-2022 (USD MILLION) TABLE 240 LATIN AMERICA: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2023-2028 (USD MILLION) TABLE 241 LATIN AMERICA: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2017-2022 (USD MILLION) TABLE 242 LATIN AMERICA: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2023–2028 (USD MILLION) TABLE 243 LATIN AMERICA: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL SERVICE, 2017-2022 (USD MILLION) TABLE 244 LATIN AMERICA: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL SERVICE, 2023–2028 (USD MILLION) TABLE 245 LATIN AMERICA: LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2017–2022 (USD MILLION) TABLE 246 LATIN AMERICA: LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2023–2028 (USD MILLION) TABLE 247 LATIN AMERICA: LORA AND LORAWAN IOT MARKET, BY END USER, 2017-2022 (USD MILLION) TABLE 248 LATIN AMERICA: LORA AND LORAWAN IOT MARKET, BY END USER. 2023-2028 (USD MILLION) TABLE 249 LATIN AMERICA: LORA AND LORAWAN IOT MARKET, BY COUNTRY, 2017-2022 (USD MILLION) TABLE 250 LATIN AMERICA: LORA AND LORAWAN IOT MARKET, BY COUNTRY, 2023-2028 (USD MILLION) 9.6.3 BRAZIL 9.6.3.1 Demand from agricultural sector, resource management requirements, and smart city initiatives to drive market TABLE 251 BRAZIL: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2017–2022 (USD MILLION) TABLE 252 BRAZIL: LORA AND LORAWAN IOT MARKET, BY OFFERING, 2023–2028 (USD MILLION) TABLE 253 BRAZIL: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2017-2022 (USD MILLION) TABLE 254 BRAZIL: LORA AND LORAWAN IOT MARKET, BY HARDWARE, 2023-2028 (USD MILLION)

TABLE 255 BRAZIL: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2017–2022 (USD MILLION)



TABLE 256 BRAZIL: LORA AND LORAWAN IOT MARKET, BY SERVICE, 2023–2028 (USD MILLION)

TABLE 257 BRAZIL: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL SERVICE, 2017–2022 (USD MILLION)

TABLE 258 BRAZIL: LORA AND LORAWAN IOT MARKET, BY PROFESSIONAL SERVICE, 2023–2028 (USD MILLION)

TABLE 259 BRAZIL: LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2017–2022 (USD MILLION)

TABLE 260 BRAZIL: LORA AND LORAWAN IOT MARKET, BY APPLICATION, 2023–2028 (USD MILLION)

TABLE 261 BRAZIL: LORA AND LORAWAN IOT MARKET, BY END USER,

2017-2022 (USD MILLION)

TABLE 262 BRAZIL: LORA AND LORAWAN IOT MARKET, BY END USER,

2023–2028 (USD MILLION)

9.6.4 MEXICO

9.6.4.1 Smart city initiatives and implementation of LoRa and LoRaWAN technology by IoT startups to fuel market

9.6.5 REST OF LATIN AMERICA

10 COMPETITIVE LANDSCAPE

10.1 INTRODUCTION

10.2 STRATEGIES ADOPTED BY KEY PLAYERS

TABLE 263 OVERVIEW OF STRATEGIES ADOPTED BY KEY PLAYERS

10.3 HISTORICAL REVENUE ANALYSIS

FIGURE 38 HISTORICAL REVENUE ANALYSIS OF KEY PLAYERS, 2020–2022 (USD MILLION)

10.4 MARKET SHARE ANALYSIS OF KEY PLAYERS

TABLE 264 LORA AND LORAWAN IOT MARKET: DEGREE OF COMPETITION

10.5 COMPETITIVE BENCHMARKING

TABLE 265 DETAILED LIST OF STARTUPS/SMES

TABLE 266 COMPETITIVE BENCHMARKING OF STARTUPS/SMES

TABLE 267 COMPETITIVE BENCHMARKING OF KEY PLAYERS

10.6 EVALUATION QUADRANT MATRIX METHODOLOGY FOR KEY PLAYERS FIGURE 39 EVALUATION QUADRANT MATRIX FOR KEY PLAYERS: CRITERIA WEIGHTAGE

10.7 EVALUATION QUADRANT MATRIX FOR KEY PLAYERS

10.7.1 STARS

10.7.2 EMERGING LEADERS



10.7.3 PERVASIVE PLAYERS 10.7.4 PARTICIPANTS FIGURE 40 EVALUATION QUADRANT MATRIX FOR KEY PLAYERS, 2023 10.8 EVALUATION QUADRANT MATRIX METHODOLOGY FOR STARTUPS/SMES FIGURE 41 EVALUATION QUADRANT MATRIX FOR STARTUPS/SMES: CRITERIA WEIGHTAGE **10.9 EVALUATION QUADRANT MATRIX FOR STARTUPS/SMES 10.9.1 PROGRESSIVE COMPANIES 10.9.2 RESPONSIVE COMPANIES 10.9.3 DYNAMIC COMPANIES 10.9.4 STARTING BLOCKS** FIGURE 42 EVALUATION QUADRANT MATRIX FOR STARTUPS/SMES. 2023 **10.10 COMPETITIVE SCENARIO 10.10.1 PRODUCT LAUNCHES AND ENHANCEMENTS** TABLE 268 PRODUCT LAUNCHES AND ENHANCEMENTS. 2020–2023 10.10.2 DEALS TABLE 269 DEALS, 2020-2023 10.10.3 OTHERS

TABLE 270 OTHERS, 2020-2023

11 COMPANY PROFILES

11.1 MAJOR PLAYERS

(Business Overview, Products/Solutions/Services offered, Recent Developments, MnM View)*

11.1.1 THE BOSCH GROUP

TABLE 271 THE BOSCH GROUP: BUSINESS OVERVIEW

FIGURE 43 THE BOSCH GROUP: COMPANY SNAPSHOT

TABLE 272 THE BOSCH GROUP: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 273 THE BOSCH GROUP: PRODUCT LAUNCHES AND ENHANCEMENTS

TABLE 274 THE BOSCH GROUP: DEALS

11.1.2 CISCO

TABLE 275 CISCO: BUSINESS OVERVIEW

FIGURE 44 CISCO: COMPANY SNAPSHOT

TABLE 276 CISCO: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 277 CISCO: PRODUCT LAUNCHES AND ENHANCEMENTS

TABLE 278 CISCO: DEALS

11.1.3 ORANGE SA

TABLE 279 ORANGE SA: BUSINESS OVERVIEW



FIGURE 45 ORANGE SA: COMPANY SNAPSHOT TABLE 280 ORANGE SA: PRODUCTS/SOLUTIONS/SERVICES OFFERED TABLE 281 ORANGE SA: DEALS **11.1.4 COMCAST CORPORATION** TABLE 282 COMCAST CORPORATION: BUSINESS OVERVIEW FIGURE 46 COMCAST CORPORATION: COMPANY SNAPSHOT TABLE 283 COMCAST CORPORATION: PRODUCTS/SOLUTIONS/SERVICES OFFERED TABLE 284 COMCAST CORPORATION: PRODUCT LAUNCHES AND **ENHANCEMENTS** TABLE 285 COMCAST CORPORATION: DEALS 11.1.5 SEMTECH TABLE 286 SEMTECH: BUSINESS OVERVIEW FIGURE 47 SEMTECH: COMPANY SNAPSHOT TABLE 287 SEMTECH: PRODUCTS/SOLUTIONS/SERVICES OFFERED TABLE 288 SEMTECH: PRODUCT LAUNCHES AND ENHANCEMENTS TABLE 289 SEMTECH: DEALS **11.1.6 NEC CORPORATION** TABLE 290 NEC CORPORATION: BUSINESS OVERVIEW FIGURE 48 NEC CORPORATION: COMPANY SNAPSHOT TABLE 291 NEC CORPORATION: PRODUCTS/SOLUTIONS/SERVICES OFFERED **TABLE 292 NEC CORPORATION: DEALS 11.1.7 TATA COMMUNICATIONS** TABLE 293 TATA COMMUNICATIONS: BUSINESS OVERVIEW FIGURE 49 TATA COMMUNICATIONS: COMPANY SNAPSHOT TABLE 294 TATA COMMUNICATIONS: PRODUCTS/SOLUTIONS/SERVICES OFFERED TABLE 295 TATA COMMUNICATIONS: DEALS 11.1.8 AWS TABLE 296 AWS: BUSINESS OVERVIEW FIGURE 50 AWS: COMPANY SNAPSHOT TABLE 297 AWS: PRODUCTS/SOLUTIONS/SERVICES OFFERED TABLE 298 AWS: PRODUCT LAUNCHES AND ENHANCEMENTS TABLE 299 AWS: DEALS TABLE 300 AWS: OTHERS 11.1.9 ADVANTECH TABLE 301 ADVANTECH: BUSINESS OVERVIEW FIGURE 51 ADVANTECH: COMPANY SNAPSHOT TABLE 302 ADVANTECH: PRODUCTS/SOLUTIONS/SERVICES OFFERED



TABLE 303 ADVANTECH: DEALS 11.1.10 SK TELECOM TABLE 304 SK TELECOM: BUSINESS OVERVIEW FIGURE 52 SK TELECOM: COMPANY SNAPSHOT TABLE 305 SK TELECOM: PRODUCTS/SOLUTIONS/SERVICES OFFERED TABLE 306 SK TELECOM: DEALS 11.1.11 MURATA TABLE 307 MURATA: BUSINESS OVERVIEW FIGURE 53 MURATA: COMPANY SNAPSHOT TABLE 308 MURATA: PRODUCTS/SOLUTIONS/SERVICES OFFERED TABLE 309 MURATA: PRODUCT LAUNCHES AND ENHANCEMENTS TABLE 310 MURATA: DEALS 11.1.12 SENET **11.1.13 DIGI INTERNATIONAL** 11.1.14 MULTITECH 11.1.15 LAIRD CONNECTIVITY *Details on Business Overview, Products/Solutions/Services offered, Recent Developments, MnM View might not be captured in case of unlisted companies. **11.2 STARTUPS/SMES 11.2.1 KERLINK** 11.2.2 ACTILITY **11.2.3 SENSOTERRA**

- 11.2.4 NWAVE TECHNOLOGIES
- 11.2.5 RAKWIRELESS
- 11.2.6 THETHINGS.IO
- 11.2.7 DATACAKE
- 11.2.8 MILESIGHT
- 11.2.9 LORIOT
- 11.2.10 EXOSITE
- 11.2.11 ORBIWISE

12 ADJACENT/RELATED MARKETS

12.1 INTRODUCTION

12.2 SD-WAN MARKET

12.2.1 MARKET DEFINITION

12.2.2 MARKET OVERVIEW

12.2.3 SD-WAN MARKET, BY COMPONENT

TABLE 311 SD-WAN MARKET, BY COMPONENT, 2016–2021 (USD MILLION)



TABLE 312 SD-WAN MARKET, BY COMPONENT, 2022–2027 (USD MILLION) TABLE 313 SOLUTIONS: SD-WAN MARKET, BY TYPE, 2016–2021 (USD MILLION) TABLE 314 SOLUTIONS: SD-WAN MARKET, BY TYPE, 2022–2027 (USD MILLION) TABLE 315 SERVICES: SD-WAN MARKET, BY TYPE, 2016–2021 (USD MILLION) TABLE 316 SERVICES: SD-WAN MARKET, BY TYPE, 2022–2027 (USD MILLION)

12.2.4 SD-WAN MARKET, BY DEPLOYMENT MODE

TABLE 317 SD-WAN MARKET, BY DEPLOYMENT MODE, 2016–2021 (USD MILLION)

TABLE 318 SD-WAN MARKET, BY DEPLOYMENT MODE, 2022–2027 (USD MILLION)

12.2.5 SD-WAN MARKET, BY ORGANIZATION SIZE

TABLE 319 SD-WAN MARKET, BY ORGANIZATION SIZE, 2016–2021 (USD MILLION)

TABLE 320 SD-WAN MARKET, BY ORGANIZATION SIZE, 2022–2027 (USD MILLION)

12.2.6 SD-WAN MARKET, BY END USER

TABLE 321 SD-WAN MARKET, BY END USER, 2016–2021 (USD MILLION) TABLE 322 SD-WAN MARKET, BY END USER, 2022–2027 (USD MILLION) TABLE 323 SD-WAN MARKET, BY VERTICAL, 2016–2021 (USD MILLION) TABLE 324 SD-WAN MARKET, BY VERTICAL, 2022–2027 (USD MILLION) 12.2.7 SD-WAN MARKET, BY REGION

TABLE 325 SD-WAN MARKET, BY REGION, 2016–2021 (USD MILLION) TABLE 326 SD-WAN MARKET, BY REGION, 2022–2027 (USD MILLION) 12.3 5G IOT MARKET

12.3.1 MARKET DEFINITION

12.3.2 MARKET OVERVIEW

12.3.3 5G IOT MARKET, BY COMPONENT

TABLE 327 5G IOT MARKET, BY COMPONENT, 2020–2028 (USD MILLION) TABLE 328 5G IOT MARKET, BY SERVICE, 2020–2028 (USD MILLION) TABLE 329 5G IOT MARKET, BY PROFESSIONAL SERVICE, 2020–2028 (USD MILLION)

12.3.4 5G IOT MARKET, BY NETWORK TYPE

TABLE 330 5G IOT MARKET, BY NETWORK TYPE, 2020–2028 (USD MILLION) 12.3.5 5G IOT MARKET, BY ORGANIZATION SIZE

TABLE 331 5G IOT MARKET, BY ORGANIZATION SIZE, 2020–2028 (USD MILLION) 12.3.6 5G IOT MARKET, BY TYPE

TABLE 332 5G IOT MARKET, BY TYPE, 2020–2028 (USD MILLION)

12.3.7 5G IOT MARKET, BY END USER

TABLE 333 5G IOT MARKET, BY END USER, 2020–2028 (USD MILLION)



12.3.8 5G IOT MARKET, BY REGION TABLE 334 5G IOT MARKET, BY REGION, 2020–2028 (USD MILLION)

13 APPENDIX

13.1 DISCUSSION GUIDE

13.2 KNOWLEDGESTORE: MARKETSANDMARKETS' SUBSCRIPTION PORTAL

13.3 CUSTOMIZATION OPTIONS

13.4 RELATED REPORTS

13.5 AUTHOR DETAILS



I would like to order

- Product name: LoRa and LoRaWAN IoT Market by Offering (Hardware, Platforms, and Services), Application (Smart Cities, Industrial IoT, Smart Healthcare), End User (Retail, Manufacturing, Healthcare, Energy & Utilities, Residential) and Region - Global Forecast to 2028
 - Product link: https://marketpublishers.com/r/L9FAA9CB924DEN.html
 - Price: US\$ 4,950.00 (Single User License / Electronic Delivery) If you want to order Corporate License or Hard Copy, please, contact our Customer Service: info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <u>https://marketpublishers.com/r/L9FAA9CB924DEN.html</u>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name: Last name: Email: Company: Address: City: Zip code: Country: Tel: Fax: Your message:

**All fields are required

Custumer signature ____

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <u>https://marketpublishers.com/docs/terms.html</u>

LoRa and LoRaWAN IoT Market by Offering (Hardware, Platforms, and Services), Application (Smart Cities, Indust...



To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970