

Industry 4.0 Convergence: Industrial Internet, Streaming IoT Analytics, and 3D Printing 2017 - 2022

https://marketpublishers.com/r/I501E178BDBEN.html

Date: March 2017

Pages: 438

Price: US\$ 2,995.00 (Single User License)

ID: I501E178BDBEN

Abstracts

Industrial IoT is part of a broader trend towards the transformation of industry as part of a Industry 4.0. Initially focusing on improving existing processes and augmented current infrastructure, IIoT will evolve to encompass next generation methods and procedures such as 'teleoperation' (operation of a machine at a distance), tele-robotics, and other areas that rely upon interface and control of real objects by virtual objects. This research evaluates IIoT technologies, companies, applications, services, and solutions. Forecasts include overall global and regional IIoT outlook as well as IIoT by industry vertical, software, hardware, and services for the period 2017 to 2022.

Manufacturing processes produce vast amounts of machine-generated data, most of which is unstructured and from disparate sources and formats. Accordingly, there is a need for uniform data management processes and use of Big Data Analytics tools and techniques. While much of this data will be very useful for longer-term analytics, significant value will be realized from real-time processing such as centralized versus distributed manufacturing decisions. This research evaluates the technologies, companies, and solutions for real-time IoT data processing and analytics. The report assesses challenges and opportunities associated with realizing business value from real-time analytics. The report provides detailed forecasts globally, regionally, and across industry verticals and solution categories for 2017 to 2022.

3D Printing is transformative beyond the printing industry itself as it is poised to cause a huge shift in manufacturing, especially when coupled with Artificial Intelligence and advancements in IIoT. Every person in the developed world will be positively impacted by 3D printed products thanks to fully integrated, flexible, and distributed manufacturing. This research examines the 3D market from multiple facets including hardware manufacturers, service providers, application providers, software providers, raw material



providers, and communities. The report also assesses the market impact and provides forecasts across all verticals globally and regionally for 2017 to 2022.

Target Audience:

Manufacturing companies

Embedded systems companies

Wireless device manufacturers

Systems integration companies

IoT and industrial service providers

Telecom and IT infrastructure suppliers

Data management and analytics companies



Contents

1 INTRODUCTION

- 1.1 Scope of Research
- 1.2 Target Audience
- 1.3 Key Findings in Report
- 1.4 Companies in Report

2 EXECUTIVE SUMMARY

- 2.1 IIoT Markets by Region 2017 2022
- 2.2 IIoT Global Markets by Products 2017 2022

3 OVERVIEW

- 3.1 Defining Industrial Internet of Things
 - 3.1.1 People, Processes, and Technology
 - 3.1.2 IIoT and People
 - 3.1.3 IIoT and Processes
 - 3.1.4 IIoT and Technologies
- 3.2 Critical Focal Areas for IIoT Execution
- 3.3 IIoT Application Areas
 - 3.3.1 Process Optimization
 - 3.3.2 Enhance, Integrate and Scale existing Corporate IT Systems
 - 3.3.3 Leverage Potential of Existing Infrastructure
- 3.4 Forming a Foundation for IIoT
 - 3.4.1 Industrial Internet Consortium
 - 3.4.2 Industry Leading Companies set the Pace
 - 3.4.3 Industry Test Beds for IIoT
 - 3.4.4 Industrial Internet Reference Architecture
- 3.5 Evaluating the Future Potential of IIoT
 - 3.5.1 Cyber-security is a Critical Concern with IIoT
 - 3.5.2 IIoT is Facilitating a Drive in Industrial Automation
 - 3.5.3 Early IIoT Deployments to Benefit Existing Industries
 - 3.5.4 IIoT will work in Collaboration to achieve Success
 - 3.5.5 IIoT and the Fourth Industry Revolution
 - 3.5.6 IIoT to Facilitate Transition to Smart Factories
 - 3.5.7 Connected Factory: New Roles for Suppliers and Customers



- 3.5.8 IIoT and Product Transformation to an "as a Service" Economy
- 3.5.9 Intelligent Manufacturing: From Smart Factories to Smarter Factories
- 3.5.10 Teleoperation and Tele-robotics
- 3.5.11 IIoT and Fifth Generation (5G) Wireless

4 IIOT TECHNOLOGIES

- 4.1 Hardware Technologies
 - 4.1.1 Hardware Development Platforms
 - 4.1.2 Smart Sensors
- 4.2 Software Technologies
 - 4.2.1 Connectivity Platforms
 - 4.2.2 Data Storage Platforms
 - 4.2.3 Data Analytics and Visualization Platforms
 - 4.2.4 IoT Protocols
 - 4.2.4.1 ZigBee
 - 4.2.4.2 Message Queuing Telemetry Transport (MQTT)
 - 4.2.4.3 XMPP Accelerates IoT
 - 4.2.4.4 AMQP is Provides Rich Capabilities for Distributed Systems
 - 4.2.4.5 DDS enables Network Interoperability in IoT
 - 4.2.4.6 Thread
 - 4.2.5 Next Generation Real Time Operating Systems (RTOS)
- 4.3 IIoT and Manufacturing Execution Systems (MES)
 - 4.3.1 Role and Importance with IIoT
 - 4.3.2 MES and Cyber-Physical Systems
 - 4.3.3 MES in the Cloud and other Convergence
 - 4.3.4 Future of IIoT Enabled MES
- 4.4 Network Technologies in IIoT
 - 4.4.1 Wireless Local Area Network
 - 4.4.2 Wireless Personal Area Network
 - 4.4.3 Wireless Sensor Network

5 IIOT GLOBAL MARKET ANALYSIS AND FORECASTS 2017 - 2022

- 5.1 IIoT Markets by Region 2017 2022
- 5.2 IIoT Global Markets by Products Offered 2017 2022
 - 5.2.1 IIoT in Hardware in 2017 2022
 - 5.2.1.1 Connectivity platforms
 - 5.2.1.2 Sensor Infrastructures



- 5.2.1.3 Hardware Development Platforms
- 5.2.2 IIoT in Software in 2017 2022
 - 5.2.2.1 Data Storage
 - 5.2.2.2 Software Development Platforms and Apps
 - 5.2.2.3 Data Analytics Platform
- 5.2.2.4 Cyber-security Solutions
- 5.2.3 IIoT in Services 2017 2022
- 5.2.3.1 Cloud based Services
- 5.2.3.2 Management and Consulting Services
- 5.3 IIoT Global Markets by Industry Sector 2017 2022
- 5.3.1 IIoT Deployments in Manufacturing Sector 2017 2022
- 5.3.2 Healthcare in IIoT 2017 2022
- 5.3.3 Automotive Industry in IIoT 2017 2002
- 5.3.4 Retail Industry in IIoT 2017 2022
- 5.3.5 Oil and Gas Industry in IIoT 2017 2022
- 5.3.6 IIoT in Cargo and Logistic Sector 2017 2022
- 5.3.7 IIoT in Utilities Sector 2017 2022
- 5.3.8 IIoT in Hospitality Sector 2017 2022
- 5.4 Market for Teleoperation and Tele-robotics in IIoT 2016 2021
 - 5.4.1 IIoT Teleoperation and Tele-robotics Solutions by Segment 2016 2021
 - 5.4.2 IIoT Teleoperation and Tele-robotics Solutions by Region 2017 2022
 - 5.4.3 IIoT Teleoperation and Tele-robotics Solutions by Tech and App 2017 2022
 - 5.4.4 IIoT Teleoperation and Tele-robotics Solution by Industry Vertical 2017 2022
 - 5.4.5 Artificial Intelligence in IIoT Teleoperation and Tele-robotics Solutions

6 COMPANY ANALYSIS

- 6.1 AGT International
- 6.2 ARM Holdings
- 6.3 AT&T Inc.
 - 6.3.1 AT&T Machine to Machine Solutions
 - 6.3.2 AT&T M2X
- 6.4 B+B SmartWorx
- 6.5 Bayshore Networks
- 6.6 Bosch
 - 6.6.1 Bosch Connected Devices and Solutions GmbH
 - 6.6.2 Bosch Software Innovations: Bosch IoT Suite
- 6.7 Cisco System Inc.
- 6.7.1 Cisco Industrial Networks



- 6.7.2 Cisco Embedded Networks
- 6.7.3 Management and Application Enablement
- 6.7.4 Physical and Cyber Cyber-security
- 6.7.5 Cisco IIoT Solutions
- 6.8 Contiki
- 6.9 Digi International
- 6.10 Echelon Corporation
- 6.10.1 Echelon's IzoT Platform
- 6.11 Elecsys Corporation
- 6.12 General Electric
 - 6.12.1 GE Predicitvity Solution
 - 6.12.2 GE Predix Platform
- 6.13 Jasper Technologies Inc. (Cisco)
- 6.14 Lynx Software Technologies, Inc.
- 6.15 Object Management Group (OMG)
 - 6.15.1 Data Distribution Service (DDS)
 - 6.15.2 Dependability Assurance Framework for Safety-Sensitive Consumer Devices
 - 6.15.3 Threat Modelling
 - 6.15.4 Structured Assurance Case Meta-model (SACM)
- 6.15.5 Unified Component Model for Distributed, Real-Time and Embedded Systems (UCM)
 - 6.15.6 Automated Source Code CWE-SANS Top 25-Based Cyber-security Measure
 - 6.15.7 Oil and Gas Risk Management
- 6.16 OneM2M Partners
- 6.17 ParStream (Cisco)
- 6.18 RIOT
- 6.19 Real Time Innovation (RTI)
 - 6.19.1 RTI Connext DDS
 - 6.19.2 RTI Industrial IoT FastTrax Program
- 6.20 Sensata Technologies
- 6.21 Symantec
- 6.22 Unisys Corporation
- 6.23 Wind River
- 6.24 Worldsensing
- 6.25 Wovyn LLC.



List Of Figures

LIST OF FIGURES

Figure 1: IIo	Γ Impact on	Automation	and	Processes
---------------	-------------	-------------------	-----	------------------

- Figure 2: Four Pillars of IIoT Execution
- Figure 3: IoT Framework
- Figure 4: 5G and IIoT
- Figure 5: Requirements for Wireless IIoT Access Technology
- Figure 6: Hardware Systems used in IIoT
- Figure 7: Software Solutions used in IIoT
- Figure 8: Smart Sensor Components
- Figure 9: Smart Sensor Model
- Figure 10: Smart Sensor Model with Functional Partitioning
- Figure 11: IoT Data Processing Flow
- Figure 12: Sensor Node Components
- Figure 13: Wireless Sensor Network Topologies
- Figure 14: Global IIoT Market 2017 2022
- Figure 15: IIoT Regional Markets 2017 2022
- Figure 16: IIoT Deployments in Manufacturing Sector 2017 2022
- Figure 17: IIoT Deployments in Manufacturing Sector by Region2017 2022
- Figure 18: IIoT Deployments in Healthcare Sector 2017 2022
- Figure 19: IIoT Deployments in Healthcare Sector by Region 2017 2022
- Figure 20: IIoT Deployments in Automotive Sector 2017 2022
- Figure 21: IIoT Deployments in Automotive Sector by Regions 2017 2022
- Figure 22: IIoT Deployments in Retail Sector 2017 2022
- Figure 23: IIoT Deployments in Retail Sector by Region 2017 2022
- Figure 24: IIoT Deployments in Oil and Gas Sector 2017 2022
- Figure 25: IIoT Deployments in Oil and Gas Sector by Region 2017 2022
- Figure 26: IIoT Deployments in Cargo and Logistics Sector 2017 2022
- Figure 27: IIoT Deployments in Cargo and Logistics Sector by Region 2017 2022
- Figure 28: IIoT in Utilities Sector 2017 2022
- Figure 29: IIoT in Utility Sector by Region 2017 2022
- Figure 30: IIoT in Hospitality Sector 2017 2022
- Figure 31: IIoT in Hospitality Sector by Region 2017 2022
- Figure 32: Embedded Systems and IIoT
- Figure 33: Managing Devices, Processes, and End-users in IIoT
- Figure 34: IIoT Management Platform: Cloud, Connectivity, and Devices
- Figure 35: Fourth Generation Automation Software





List Of Tables

LIST OF TABLES

- Table 1: Leading Proprietary RTOS in Embedded Systems
- Table 2: Global IIoT Market 2017 2022
- Table 3: IIoT Regional Markets 2017 2022
- Table 4: IIoT Markets by Product Segment 2017 2022
- Table 5: IIoT Regional Markets by Product Sub-segment 2017 2022
- Table 6: Connectivity Platforms by Industry Sector 2017 -2022
- Table 7: Connectivity Platforms by Regions 2017 -2022
- Table 8: Sensor Infrastructure by Industry Sector 2017 -2022
- Table 9: Sensor Infrastructure by Region 2017 -2022
- Table 10: Hardware Platforms by Industry Sector 2017 -2022
- Table 11: Hardware Platforms by Region 2017 -2022
- Table 12: Data Storage by Industry Sector 2017 -2022
- Table 13: Data Storage by Region 2017 -2022
- Table 14: Software Development Platforms and Apps by Industry Sector 2017 -2022
- Table 15: Software Development Platforms and Apps by Region 2017 -2022
- Table 16: Data Analytics platform by Industry Sector 2017 -2022
- Table 17: Data Analytics platform by Region 2017 -2022
- Table 18: Cyber-security Solutions by Industry Sector 2017 -2022
- Table 19: Cyber-security Solutions by Region 2017 -2022
- Table 20: Cloud based Services by Industry Sector 2017 -2022
- Table 21: Cloud based Services by Region 2017 -2022
- Table 22: Management and Consulting Services by Industry Sector 2017 -2022
- Table 23: Management and Consulting Services by Region 2017 -2022
- Table 24: IIoT Global Markets for Industry Sector 2017 2022
- Table 25: IIoT Deployments in Manufacturing Sector 2017 2022
- Table 26: IIoT Deployments in Manufacturing Sector by Region 2017 2022
- Table 27: IIoT Deployments in Manufacturing Sector by Product sub-segment 2017 2022
- Table 28: IIoT Deployments in Healthcare Sector 2016 2021
- Table 29: IIoT Deployments in Healthcare Sector by Region 2017 2022
- Table 30: IIoT Deployments in Healthcare Sector by Product sub-segments 2017 2022
- Table 31: IIoT Deployments in Automotive Sector 2017 2022
- Table 32: IIoT Deployments in Automotive Sector by Region 2017 2022
- Table 33: IIoT Deployments in Automotive Sector by Product Sub-segment 2017 2022



- Table 34: IIoT Deployments in Retail Sector 2017 2022
- Table 35: IIoT Deployments in Retail Sector by Region 2017 2022
- Table 36: IIoT Deployments in Retail Sector by Product Sub-segment 2017 2022
- Table 37: IIoT Deployments in Oil and Gas Sector 2017 2022
- Table 38: IIoT Deployments in Oil and Gas Sector by Region 2017 2022
- Table 39: IIoT Deployments in Oil and Gas by Product Sub-segment 2017 2022
- Table 40: IIoT Deployments in Cargo and Logistics Sector 2017 2022
- Table 41: IIoT Deployments in Cargo and Logistics Sector by Region 2017 2022
- Table 42: IIoT Deployments in Cargo and Logistics Sector by Product Sub-segment
- 2017 2022
- Table 43: IIoT in Utility Sector 2017 2022
- Table 44: IIoT in Utility Sector by Region 2017 2022
- Table 45: IIoT in Utility Sector by Product Sub-segment 2017 2022
- Table 46: IIoT in Hospitality Sector 2017 2022
- Table 47: IIoT in Hospitality Sector by Region 2017 2022
- Table 48: IIoT in Hospitality Sector by Product Sub-segment 2017 2022
- Table 49: Teleoperation and Tele-robotics Solution by Segment 2017 2022
- Table 50: Teleoperation and Tele-robotics Solution Market by Region 2017 2022
- Table 51: Teleoperation and Tele-robotics by Sector/Tech/App 2017 2022
- Table 52: Teleoperation and Tele-robotics Solution by Industry Vertical 2017 2022
- Table 53: Al in Teleoperation and Tele-robotics Software Market
- Streaming IoT Data Market Outlook and Forecasts 2017 2022

1 INTRODUCTION

- 1.1 Research Background
- 1.2 Research Scope
- 1.3 Target Audience
- 1.4 Companies Covered

2 EXECUTIVE SUMMARY

3 OVERVIEW

- 3.1 Understanding IoT Data
 - 3.1.1 IoT Data vs. other Unstructured Data
 - 3.1.2 Key IoT Data Characteristics
 - 3.1.2.1 IoT Data is Real Time
 - 3.1.2.2 Massive Volumes of IoT Data



- 3.1.2.3 IoT Data Generates Useful Insights
- 3.2 IoT Data Management Operations
 - 3.2.1 Basic Data Implementation and Operational Challenges
 - 3.2.1.1 IoT Data Scalability
 - 3.2.1.2 IoT Data Integration
 - 3.2.2 Data Management and Processing Raw Data
 - 3.2.3 Centralized Storage and Decentralized Processing
 - 3.2.4 Accessing and Exchanging IoT Data via APIs
 - 3.2.5 Data Security and Personal Information Privacy
- 3.4 Market Outlook for IoT Data Analytics
 - 3.4.1 IoT Data Management is a Ubiquitous Opportunity across Enterprise
 - 3.4.2 IoT Data becomes a Big Revenue Opportunity by 2022
 - 3.4.3 Organizations increasing Adopt Predictive Analytics with IoT Data
- 3.5 Real-time Streaming IoT Data Analytics becoming a Substantial Business Opportunity

4 VENDOR ANALYSIS

- 4.1 Accenture
- 4.2 AGT International
- 4.3 Bosch Software Innovations
- 4.4 Capgemini
- 4.5 Cisco Systems, Inc.
- 4.6 GE Digital
- 4.7 Google
- 4.8 Intel Corporation
- 4.9 Lynx Software Technologies, Inc.
- 4.10 Maana, Inc.
- 4.11 Microsoft Corporation
- 4.12 MongoDB Inc.
- 4.13 ParStream (Cisco)
- 4.14 PTC
- 4.15 RIOT
- 4.16 SAP SE
- 4.17 SQLstream, Inc.
- 4.18 Tellient
- 4.19 Teradata Corporation
- 4.20 Wind River



5 STREAMING IOT DATA ANALYTICS REVENUE 2017 – 2022

- 5.1 Global Streaming Data Analytics Revenue for IoT
- 5.2 Global Streaming IoT Data Analytics Revenue by App, Software, and Services
- 5.3 Global Streaming IoT Data Analytics Revenue in Industry Verticals
 - 5.3.1 Streaming IoT Data Analytics Revenue in Retail
 - 5.3.1.1 Streaming IoT Data Analytics Revenue by Retail Segment
 - 5.3.1.2 Streaming IoT Data Analytics Retail Revenue by App, Software, and Service
 - 5.3.2 Streaming IoT Data Analytics Revenue in Telecom and IT
 - 5.3.2.1 Streaming IoT Data Analytics Revenue by Telecom and IT Segment
- 5.3.2.2 Streaming IoT Data Analytics Revenue by Telecom & IT App, Software, and Service
- 5.3.3 Streaming IoT Data Analytics Revenue in Energy and Utility
 - 5.3.3.1 Streaming IoT Data Analytics Revenue by Energy and Utility Segment
- 5.3.3.2 Streaming IoT Data Analytics Energy and Utilities Revenue by App, Software, and Service
 - 5.3.4 Streaming IoT Data Analytics Revenue in Government
 - 5.3.4.1 Streaming IoT Data Analytics Revenue by Government Segment
- 5.3.4.2 Streaming IoT Data Analytics Government Revenue by App, Software, and Service
- 5.3.5 Streaming IoT Data Analytics Revenue in Healthcare and Life Science
 - 5.3.5.1 Streaming IoT Data Analytics Revenue by Healthcare Segment
- 5.3.6 Streaming IoT Data Analytics Revenue in Manufacturing
 - 5.3.6.1 Streaming IoT Data Analytics Revenue by Manufacturing Segment
- 5.3.6.2 Streaming IoT Data Analytics Manufacturing Revenue by App, Software, and Service
 - 5.3.7 Streaming IoT Data Analytics Revenue in Transportation & Logistics
- 5.3.7.1 Streaming IoT Data Analytics Revenue by Transportation & Logistics Segment
- 5.3.7.2 Streaming IoT Data Analytics Transportation & Logistics Revenue by App, Software, and Service
 - 5.3.8 Streaming IoT Data Analytics Revenue in Banking and Finance
 - 5.3.8.1 Streaming IoT Data Analytics Revenue by Banking and Finance Segment
- 5.3.8.2 Streaming IoT Data Analytics Revenue by Banking & Finance App, Software, and Service
 - 5.3.9 Streaming IoT Data Analytics Revenue in Smart Cities
 - 5.3.9.1 Streaming IoT Data Analytics Revenue by Smart City Segment
- 5.3.9.2 Streaming IoT Data Analytics Revenue by Smart City App, Software, and Service



- 5.3.10 Streaming IoT Data Analytics Revenue in Automotive
 - 5.3.10.1 Streaming IoT Data Analytics Revenue by Automobile Industry Segment
- 5.3.10.2 Streaming IoT Data Analytics Revenue by Automotive Industry App,

Software, and Service

- 5.3.11 Streaming IoT Data Analytics Revenue in Education
 - 5.3.11.1 Streaming IoT Data Analytics Revenue by Education Industry Segment
- 5.3.11.2 Streaming IoT Data Analytics Revenue by Education Industry App, Software, and Service
 - 5.3.12 Streaming IoT Data Analytics Revenue in Outsourcing Services
 - 5.3.12.1 Streaming IoT Data Analytics Revenue by Outsourcing Segment
 - 5.3.12.2 Streaming IoT Data Analytics Revenue by Outsourcing Industry App,

Software, and Service

- 5.4 Streaming IoT Data Analytics Revenue by Leading Vendor Platform
- 5.4.1 Global Investment in IoT Data by Industry Sector 2017 2022

6 APPENDIX

- 6.1 Regional Streaming IoT Data Analytics Revenue 2017 2022
 - 6.1.1 Revenue in Region
 - 6.1.2 APAC Market Revenue
 - 6.1.3 Europe Market Revenue
 - 6.1.4 North America Market Revenue
 - 6.1.5 Latin America Market Revenue
 - 6.1.6 ME&A Market Revenue
- 6.2 Streaming IoT Data Analytics Revenue by Country 2017 2022
- 6.2.1 Revenue by APAC Countries
 - 6.2.1.1 Leading Countries
 - 6.2.1.2 Japan Market Revenue
 - 6.2.1.3 China Market Revenue
 - 6.2.1.4 India Market Revenue
- 6.2.1.5 Australia Market Revenue
- 6.2.2 Revenue by Europe Countries
 - 6.2.2.1 Leading Countries
 - 6.2.2.2 Germany Market Revenue
 - 6.2.2.3 UK Market Revenue
 - 6.2.2.4 France Market Revenue
- 6.2.3 Revenue by North America Countries
 - 6.2.3.1 Leading Countries
 - 6.2.3.2 US Market Revenue



- 6.2.3.3 Canada Market Revenue
- 6.2.4 Revenue by Latin America Countries
 - 6.2.4.1 Leading Countries
- 6.2.4.2 Brazil Market Revenue
- 6.2.4.3 Mexico Market Revenue
- 6.2.5 Revenue by ME&A Countries
 - 6.2.5.1 Leading Countries
 - 6.2.5.2 South Africa Market Revenue
- 6.2.5.3 UAE Market Revenue

Figures

- Figure 1: A Vision of IoT Data by 2022
- Figure 2: IoT Data vs. Non-IoT Unstructured Data
- Figure 3: IoT Data Processing Flow
- Figure 4: Distributed IoT Data Architecture
- Figure 5: IoT Data Not Stored Only
- Figure 6: Real-time IoT Data Management and Analytics
- Figure 7: APIs enable IoT Data Access and Exchange
- Figure 8: Security in IoT Data Architecture
- Figure 9: Inclusion of Predictive Models in Streaming IoT Data Analytics
- Figure 10: Streaming IoT Data Sources Compared
- Figure 11: Global Streaming IoT Data Analytics 2017 2022
- Figure 12: Investment in IoT Data by Industry Vertical 2017 2022

Tables

- Table 1: Global Streaming IoT Data Analytics Revenue by App, Software, and Service
- 2017 2022
- Table 2: Global Streaming IoT Data Analytics Revenue in Industry Vertical 2017 2022
- Table 3: Retail Streaming IoT Data Analytics Revenue by Retail Segment 2017 2022
- Table 4: Retail Streaming IoT Data Analytics Revenue by App, Software, and Services 2017 2022
- Table 5: Telecom & IT Streaming IoT Data Analytics Rev by Segment 2017 2022
- Table 6: Telecom & IT Streaming IoT Data Analytics Rev by App, Software, and
- Services 2017 2022
- Table 7: Energy & Utilities Streaming IoT Data Analytics Rev by Segment 2017 2022
- Table 8: Energy & Utilities Streaming IoT Data Analytics Rev by App, Software, and
- Services 2017 2022
- Table 9: Government Streaming IoT Data Analytics Revenue by Segment 2017 2022
- Table 10: Government Streaming IoT Data Analytics Revenue by App, Software, and Services 2017 2022
- Table 11: Healthcare & Life Science Streaming IoT Data Analytics Revenue by



Segment 2017 - 2022

Table 12: Healthcare & Life Science Streaming IoT Data Analytics Revenue by App, Software, and Services 2017 – 2022

Table 13: Manufacturing Streaming IoT Data Analytics Revenue by Segment 2017 – 2022

Table 14: Manufacturing Streaming IoT Data Analytics Revenue by App, Software, and Services 2017 – 2022

Table 15: Transportation & Logistics Streaming IoT Data Analytics Revenue by Segment 2017 – 2022

Table 16: Transportation & Logistics Streaming IoT Data Analytics Revenue by App, Software, and Services 2017 – 2022

Table 17: Banking and Finance Streaming IoT Data Analytics Revenue by Segment 2017 – 2022

Table 18: Banking & Finance Streaming IoT Data Analytics Revenue by App, Software, and Services 2017 – 2022

Table 19: Smart Cities Streaming IoT Data Analytics Revenue by Segment 2017 – 2022

Table 20: Smart Cities Streaming IoT Data Analytics Revenue by App, Software, and Services 2017 – 2022

Table 21: Automotive Streaming IoT Data Analytics Revenue by Segment 2017 – 2022

Table 22: Automotive Streaming IoT Data Analytics Revenue by Apps, Software, and Services 2017 – 2022

Table 23: Education Streaming IoT Data Analytics Revenue by Segment 2017 – 2022

Table 24: Education Streaming IoT Data Analytics Revenue by App, Software, and Services 2017 – 2022

Table 25: Outsourcing Service Streaming IoT Data Analytics Revenue by Segment 2017 – 2022

Table 26: Outsourcing Service Streaming IoT Data Analytics Revenue by App, Software, and Services 2017 – 2022

Table 27: Streaming IoT Data Analytics Revenue by Leading Vendor Platforms 2017 – 2022

Table 28: Investment in IoT Data by Industry Vertical 2017 – 2022

Table 29: Streaming IoT Data Analytics Revenue in Region 2017 – 2022

Table 30: APAC Streaming IoT Data Analytics Revenue by Solution and Services 2017 - 2022

Table 31: APAC Streaming IoT Data Analytics Revenue in Industry Vertical 2017 - 2022

Table 32: APAC Streaming IoT Data Analytics Revenue by Leading Vendor Platforms 2017 – 2022

Table 33: Europe Streaming IoT Data Analytics Revenue by Solution and Services 2017 - 2022



- Table 34: Europe Streaming IoT Data Analytics Revenue in Industry Vertical 2017 2022
- Table 35: Europe Streaming IoT Data Analytics Revenue by Leading Vendor Platforms 2017 2022
- Table 36: North America Streaming IoT Data Analytics Revenue by Solution and Services 2017 2022
- Table 37: North America Streaming IoT Data Analytics Revenue in Industry Vertical 2017 2022
- Table 38: North America Streaming IoT Data Analytics Revenue by Leading Vendor Platforms 2017 2022
- Table 39: Latin America Streaming IoT Data Analytics Revenue by Solution and Services 2017 2022
- Table 40: Latin America Streaming IoT Data Analytics Revenue in Industry Vertical 2017 2022
- Table 41: Latin America Streaming IoT Data Analytics Revenue by Leading Vendor Platforms 2017 2022
- Table 42: ME&A Streaming IoT Data Analytics Revenue by Solution and Services 2017 2022
- Table 43: ME&A Streaming IoT Data Analytics Revenue in Industry Vertical 2017 2022
- Table 44: ME&A Streaming IoT Data Analytics Revenue by Leading Vendor Platforms 2017 2022
- Table 45: Streaming IoT Data Analytics Revenue by APAC Countries 2017 2022
- Table 46: Japan Streaming IoT Data Analytics Revenue by Solution and Services 2017 2022
- Table 47: Japan Streaming IoT Data Analytics Revenue in Industry Vertical 2017 2022
- Table 48: China Streaming IoT Data Analytics Revenue by Solution and Services 2017 2022
- Table 49: China Streaming IoT Data Analytics Revenue in Industry Vertical 2017 2022
- Table 50: India Streaming IoT Data Analytics Revenue by Solution and Services 2017 2022
- Table 51: India Streaming IoT Data Analytics Revenue in Industry Vertical 2017 2022
- Table 52: Australia Streaming IoT Data Analytics Revenue by Solution and Services 2017 2022
- Table 53: Australia Streaming IoT Data Analytics Revenue in Industry Vertical 2017 2022
- Table 54: Streaming IoT Data Analytics Revenue by Europe Countries 2017 2022
- Table 55: Germany Streaming IoT Data Analytics Revenue by Solution and Services 2017 2022
- Table 56: Germany Streaming IoT Data Analytics Revenue in Industry Vertical 2017 -



2022

- Table 57: UK Streaming IoT Data Analytics Revenue by Solution and Services 2017 2022
- Table 58: UK Streaming IoT Data Analytics Revenue in Industry Vertical 2017 2022
- Table 59: France Streaming IoT Data Analytics Revenue by Solution and Services 2017 2022
- Table 60: France Streaming IoT Data Analytics Revenue in Industry Vertical 2017 2022
- Table 61: Streaming IoT Data Analytics Revenue by North America Countries 2017 2022
- Table 62: US Streaming IoT Data Analytics Revenue by Solution and Services 2017 2022
- Table 63: US Streaming IoT Data Analytics Revenue in Industry Vertical 2017 2022
- Table 64: Canada Streaming IoT Data Analytics Revenue by Solution and Services 2017 2022
- Table 65: Canada Streaming IoT Data Analytics Revenue in Industry Vertical 2017 2022
- Table 66: Streaming IoT Data Analytics Revenue by Latin America Countries 2017 2022
- Table 67: Brazil Streaming IoT Data Analytics Revenue by Solution and Services 2017 2022
- Table 68: Brazil Streaming IoT Data Analytics Revenue in Industry Vertical 2017 2022
- Table 69: Mexico Streaming IoT Data Analytics Revenue by Solution and Services 2017 2022
- Table 70: Mexico Streaming IoT Data Analytics Revenue in Industry Vertical 2017 2022
- Table 71: Streaming IoT Data Analytics Revenue by ME&A Countries 2017 2022
- Table 72: South Africa Streaming IoT Data Analytics Revenue by Solution and Services 2017 2022
- Table 73: South Africa Streaming IoT Data Analytics Revenue in Industry Vertical 2017 2022
- Table 74: UAE Streaming IoT Data Analytics Revenue by Solution and Services 2017 2022
- Table 75: UAE Streaming IoT Data Analytics Revenue in Industry Vertical 2017 2022

3D PRINTING MARKET OUTLOOK AND FORECASTS 2017 - 2022

1 OVERVIEW



- 1.1 3D Printing and Additive Manufacturing
- 1.1.1 Stereo Lithography and Additive Manufacturing
- 1.2 Traditional Manufacturing vs. Additive Manufacturing
- 1.3 3D Printing Process
- 1.4 Business Benefits of 3D Printing
 - 1.4.1 Creation of Complex Design
- 1.4.2 High Level of Customization
- 1.4.3 Keep Fixed Costs Low following Single Tool Process
- 1.4.4 Prototyping Process Much Faster and Increase Time of Market
- 1.4.5 Help Businesses Reduce Waste
- 1.5 3D Printing Market: SWOT Analysis
- 1.5.1 Strengths and Opportunities in 3D Printing
 - 1.5.1.1 Rise of Outsourced Service Ecosystem for 3D Printing
 - 1.5.1.2 Rise of Cloud Powered Virtual Inventory based Supply Chain
 - 1.5.1.3 Beginning the Era of Distributed, Holistic, and True Manufacturing
 - 1.5.1.4 The Use of 3D Printing in Other Industries
 - 1.5.1.5 Increasing Support of Governments and R&D Activities
 - 1.5.1.6 Internet of Things and Artificial Intelligence opens New Opportunities
- 1.5.2 Market Weakness and Threats
- 1.5.2.1 High Cost Involvement with Large Scale Production
- 1.5.2.2 Vulnerability of Printing Materials
- 1.5.2.3 Challenges of Printing High Precision Products
- 1.6 3D Printing Investment Trend Analysis
- 1.6.1 Regional Investment Trends: US, Europe and APAC
- 1.6.2 Corporate Investment Trends in US, Europe and APAC
- 1.6.3 Emerging Investment Opportunity in 3D Printing Ecosystem
 - 1.6.3.1 Medical 3D Printing Application
 - 1.6.3.2 Metal 3D Printing
 - 1.6.3.3 3D Printing Materials
 - 1.6.3.4 3D Software
- 1.6.4 Risk Exposure Analysis in 3D Printing
- 1.6.5 3D Printing Merger and Acquisition Analysis
- 1.6.6 3D Printing Patent Analysis

2 3D PRINTING MARKET ANALYSIS AND FORECASTS 2017 TO 2022

- 2.1 Global 3D Printing Market 2017 to 2022
 - 2.1.1 3D Printing Market by Segment
 - 2.1.1.1 Industrial Market vs. Consumer Market



- 2.1.2 3D Printing Market by Component
 - 2.1.2.1 3D Printing Product Market
 - 2.1.2.1.1 Industrial vs. Desktop Printers
 - 2.1.2.2 3D Printing Raw Material Market 2017 to 2022
 - 2.1.2.2.1 Polymer and Plastic Market
 - 2.1.2.2.2 Metals and Alloy Market
 - 2.1.2.2.3 Ceramic Market
 - 2.1.2.2.4 Other Materials
 - 2.1.2.3 3D Printing Software and Services Market
- 2.1.3 Global 3D Printing Market by Technology 2017 to 2022
 - 2.1.3.1 Stereo Lithography
 - 2.1.3.2 Jetting Technology
 - 2.1.3.3 Powder Bed Fusion
- 2.1.3.4 Fused Deposition Modelling
- 2.1.3.5 Laminated Object Manufacturing
- 2.1.3.6 Fused Filament Fabrication
- 2.1.3.7 Selective Deposition Lamination
- 2.1.4 Global 3D Printing Market by Application
- 2.1.5 Global 3D Printing Market by End User Industry
- 2.2 Regional 3D Printing Market 2017 to 2022
 - 2.2.1 Americas 3D Printing Market by Segment, Component, Tech, App, and Industry
 - 2.2.1.1 Americas 3D Printing Market by Country
 - 2.2.2 Europe 3D Printing Market by Segment, Component, Tech, App, and Industry
 - 2.2.2.1 Europe 3D Printing Market by Country
 - 2.2.3 APAC 3D Printing Market by Segment, Component, Tech, App, and Industry
 - 2.2.3.1 APAC 3D Printing Market by Country
- 2.2.4 Rest of the World 3D Printing Market by Segment, Component, Tech, App, and Industry
 - 2.2.4.1 ROW 3D Printing Market by Country
- 2.3 3D Printer Shipments 2017 to 2022
 - 2.3.1 Global 3D Printer Shipments by Segment
 - 2.3.2 Global 3D Printer Shipments by Industry
 - 2.3.3 3D Printer Shipments by Region
 - 2.3.3.1 Americas 3D Printer Shipments by Country
 - 2.3.3.2 Europe 3D Printer Shipments by Country
 - 2.3.3.3 APAC 3D Printer Shipments by Country
 - 2.3.3.4 ROW 3D Printer Shipments by Country
- 2.4 3D Printing Raw Materials Supply 2017 to 2022
- 2.4.1 Global 3D Printing Raw Materials Supply by Form



- 2.4.2 Global 3D Printing Raw Materials Supply by Type
- 2.4.3 Global 3D Printing Raw Materials Supply by Industry
- 2.4.4 3D Printing Raw Materials Supply by Region
 - 2.4.4.1 Americas 3D Printing Raw Materials Supply by Country
 - 2.4.4.2 Europe 3D Printing Raw Materials Supply by Country
 - 2.4.4.3 APAC 3D Printing Raw Materials Supply by Country
 - 2.4.4.4 ROW 3D Printing Raw Materials Supply by Country

3 3D PRINTING ECOSYSTEM AND VENDOR ANALYSIS

- 3.1 3D Printing Value Chain and Elements
 - 3.1.1 Multi-material vs. Mesostructure Material
- 3.2 Emerging 3D Printing Ecosystem
 - 3.2.1 Object Distribution
 - 3.2.2 Printer Control Systems
 - 3.2.3 Printer Access Networks
 - 3.2.4 IoT and Artificial Intelligence
- 3.3 3D Printer Pricing Analysis
- 3.4 Average Industry Order Value and Funding Chart
 - 3.4.1 Order Value by Industry
 - 3.4.2 Order Value by Company Size
 - 3.4.3 Yearly Industry Funding in 3D Printing Category
- 3.5 Popular Printer Chart: Desktop vs. Industrial Printer and by Regions
- 3.6 3D Printing Vendor Ecosystem
 - 3.6.1 3D Printer Manufacturer
 - 3.6.2 3D Printing Service Provider
 - 3.6.3 3D Printing Marketplace Providers
 - 3.6.4 3D Printing Application Providers
 - 3.6.5 3D Scanner Manufacturer
 - 3.6.6 3D Printing CAD Software Providers
 - 3.6.7 3D Printing Raw Material providers
 - 3.6.8 3D Printing Network Providers
 - 3.6.9 3D Printing Communities

4 MARKET DIRECTION AND FUTURE OF 3D PRINTING

- 4.1 Fourth Industrial Revolution: Industry 4.0
- 4.2 Multi-Material and Cheaper 3D Printer and New Raw Materials
- 4.3 Wider Accessibility to 3D Modeling



4.4 3D Applications in Everyday Life

4.5 Implications for Enterprise in various Industries

Figures

Figure 1: SLA-1: World's First 3D Printer

Figure 2: 3D Printing Process

Figure 3: Adoption and Impact Timeline of 3D Printing

Figure 4: 3D Printed Auto Chassis designed by AI Technology

Figure 5: Schema of SLA Technology

Figure 6: Schema of Material Jetting Technology

Figure 7: Schema of Binder Jetting Technology

Figure 8: Schema of FDM Technology

Figure 9: 3D Printing Impact on Industries

Figure 10: Global 3D Printer Shipment 2017 – 2022

Figure 11: Global 3D Printing Raw Materials Supply 2017 – 2022

Figure 12: 3D Printing Value Chain Partner and Activity

Figure 13: Mesostructure Material Design Diagram

Figure 14: 3D Printer Prices for Consumer, Enterprise, and Industrial Market Segments

Figure 15: Average Order Value of 3D Printing by Industry

Figure 16: Average Order Value of 3D Printing by Company Size

Figure 17: Average Yearly Industry Funding for 3D Printing by 3D Printing Category

Figure 18: 3D Printing Vendor Ecosystem

Figure 19: Potential Future 3D Printing Application

Tables

Table 1: Global Public Investment in 3D Printing System

Table 2: Original Patent of 3D Technology and Expiration Timeline

Table 3: 3D Printing Patent Filling Status by Technology and Top Player

Table 4: Top Ten Patent Companies by Region

Table 5: Global 3D Printing Market 2017 – 2022

Table 6: Global 3D Printing Market by Segment 2017 – 2022

Table 7: Global 3D Printing Market by Component 2017 – 2022

Table 8: 3D Printing Product Market by Type 2017 – 2022

Table 9: 3D Printing Raw Material Market by Type 2017 – 2022

Table 10: 3D Printing Raw Material: Polymer Market by Type 2017 – 2022

Table 11: 3D Printing Raw Material: Metals and Alloy Market by Type 2017 – 2022

Table 12: 3D Printing Raw Material: Ceramic Market by Type 2017 – 2022

Table 13: 3D Printing Raw Material: Other Material Market by Type 2017 – 2022

Table 14: 3D Printing Software and Services Market by Type 2017 – 2022

Table 15: Global 3D Printing Market by Technology 2017 – 2022

Table 16: 3D Printing Technology: Jetting Technology Market by Type 2017 – 2022



- Table 17: 3D Printing Technology: Powder Bed Fusion Market by Type 2017 2022
- Table 18: Global 3D Printing Market by Application 2017 2022
- Table 19: Global 3D Printing Market by Industry 2017 2022
- Table 20: 3D Printing Market by Region 2017 2022
- Table 21: Americas 3D Printing Market by Segment 2017 2022
- Table 22: Americas 3D Printing Market by Component 2017 2022
- Table 23: Americas 3D Printing Market by Technology 2017 2022
- Table 24: Americas 3D Printing Market by Application 2017 2022
- Table 25: Americas 3D Printing Market by Industry 2017 2022
- Table 26: Americas 3D Printing Market by Country 2017 2022
- Table 27: Europe 3D Printing Market by Segment 2017 2022
- Table 28: Europe 3D Printing Market by Component 2017 2022
- Table 29: Europe 3D Printing Market by Technology 2017 2022
- Table 30: Europe 3D Printing Market by Application 2017 2022
- Table 31: Europe 3D Printing Market by Industry 2017 2022
- Table 32: Europe 3D Printing Market by Country 2017 2022
- Table 33: APAC 3D Printing Market by Segment 2017 2022
- Table 34: APAC 3D Printing Market by Component 2017 2022
- Table 35: APAC 3D Printing Market by Technology 2017 2022
- Table 36: APAC 3D Printing Market by Application 2017 2022
- Table 37: APAC 3D Printing Market by Industry 2017 2022
- Table 38: APAC 3D Printing Market by Country 2017 2022
- Table 39: ROW 3D Printing Market by Segment 2017 2022
- Table 40: ROW 3D Printing Market by Component 2017 2022
- Table 41: ROW 3D Printing Market by Technology 2017 2022
- Table 42: ROW 3D Printing Market by Application 2017 2022
- Table 43: ROW 3D Printing Market by Industry 2017 2022
- Table 44: ROW 3D Printing Market by Country 2017 2022
- Table 45: Global 3D Printer Shipment by Segment 2017 2022
- Table 46: Global 3D Printer Shipment by Industry 2017 2022
- Table 47: 3D Printer Shipments by Region 2017 2022
- Table 48: Americas 3D Printer Shipments by Country 2017 2022
- Table 49: Europe 3D Printer Shipments by Country 2017 2022
- Table 50: APAC 3D Printer Shipments by Country 2017 2022
- Table 51: ROW 3D Printer Shipments by Country 2017 2022
- Table 52: Global 3D Printing Raw Materials Supply by Form 2017 2022
- Table 53: Global 3D Printing Raw Materials Supply by Type 2017 2022
- Table 54: 3D Printing Raw Material: Polymer Material Supply by Type 2017 2022
- Table 55: 3D Printing Raw Material: Metals Material Supply by Type 2017 2022



Table 56: 3D Printing Raw Material: Ceramic Material Supply by Type 2017 – 2022

Table 57: 3D Printing Raw Material: Other Material Supply by Type 2017 – 2022

Table 58: Global 3D Printing Raw Materials Supply by Industry 2017 - 2022

Table 59: 3D Printing Raw Materials Supply by Region 2017 - 2022

Table 60: Americas 3D Printing Raw Materials Supply by Country 2017 - 2022

Table 61: Europe 3D Printing Raw Materials Supply by Country 2017 - 2022

Table 62: APAC 3D Printing Raw Materials Supply by Country 2017 - 2022

Table 63: ROW 3D Printing Raw Materials Supply by Country 2017 – 2022

Table 64: Desktop and Industrial Printer Model by Technology

Table 65: Printer Model Market Share by Region



I would like to order

Product name: Industry 4.0 Convergence: Industrial Internet, Streaming IoT Analytics, and 3D Printing

2017 - 2022

Product link: https://marketpublishers.com/r/I501E178BDBEN.html

Price: US\$ 2,995.00 (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 https://marketpublishers.com/r/l501E178BDBEN.html