

Operational Support Systems Market Forecasts to 2034 – Global Analysis By Component (Solutions and Services), Deployment (Cloud, On-Premises, and Hybrid), Network Type (Fixed Networks, Mobile Networks, and Broadband Networks), Function, End User, and By Geography

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Abstracts

According to Statistics MRC, the Global Operational Support Systems Market is accounted for \$38.3 billion in 2026 and is expected to reach \$89.6 billion by 2034 growing at a CAGR of 11.2% during the forecast period. Operational Support Systems (OSS) are software solutions that enable communication service providers to manage, control, and optimize their network infrastructure and services. These systems support critical functions including network planning and design, service provisioning, network inventory management, fault management, performance management, and configuration management across fixed, mobile, and broadband networks. OSS solutions enable efficient network operations, service quality assurance, and cost optimization. As telecommunications networks become increasingly complex with the deployment of 5G, IoT, and virtualization technologies, demand for robust OSS solutions continues growing across all network types and operational functions.

Market Dynamics:

Driver:

Increasing network complexity and 5G deployments

The rapid evolution of telecommunications networks and the global deployment of 5G

technology are primary drivers for the OSS market. Modern networks combine multiple technologies including legacy systems, 5G radio access networks, fiber optics, and virtualized functions, creating unprecedented operational complexity. OSS solutions enable service providers to manage this complexity efficiently, ensuring network reliability, service quality, and cost optimization. The transition to software-defined networking and network function virtualization requires advanced OSS capabilities for automated provisioning, real-time monitoring, and dynamic resource allocation. As 5G deployment accelerates and networks become more sophisticated, demand for comprehensive OSS solutions continues growing strongly across all regions.

Restraint:

High implementation costs and integration complexity

The significant investment required for OSS deployment and integration with existing systems represents a major restraint for market growth. Comprehensive OSS solutions involve substantial licensing, customization, implementation, and ongoing maintenance costs. Integration with legacy network management systems and other operational tools requires significant technical expertise and resources. Organizations may face challenges in migrating from legacy OSS to modern, cloud-native platforms. Data migration, system testing, and staff training add to implementation timelines and costs. These financial and operational barriers may limit adoption, particularly among smaller service providers with constrained IT budgets and legacy infrastructure.

Opportunity:

Adoption of cloud-native and AI-powered OSS solutions

The transition to cloud-native OSS architectures and integration of artificial intelligence presents significant opportunities for market expansion. Cloud-native OSS solutions offer advantages including scalability, flexibility, and reduced total cost of ownership. AI and machine learning enable predictive analytics, automated fault resolution, and intelligent network optimization, reducing manual intervention and operational costs. Self-healing networks with autonomous operations capabilities are emerging as service providers seek zero-touch operations. The integration of AI-powered analytics enhances network planning, capacity management, and customer experience optimization. As technology adoption accelerates, cloud-native and AI-enabled OSS solutions capture growing market share.

Threat:

Cybersecurity risks and data privacy concerns

Cybersecurity vulnerabilities associated with OSS platforms and growing data privacy concerns pose significant threats to the market. OSS systems contain sensitive network configuration, customer, and operational data, making them attractive targets for cybercriminals. Compromised OSS platforms could enable network disruptions, service outages, or data breaches affecting millions of customers. Regulatory requirements including GDPR and telecommunications-specific regulations impose strict data protection obligations. Security validation of OSS solutions and ongoing vulnerability management add operational burden. These security and privacy concerns may lead risk-averse service providers to delay modernization or maintain legacy systems longer than optimal.

Covid-19 Impact:

The COVID-19 pandemic accelerated OSS market momentum as network traffic surged and service providers prioritized operational resilience. Remote work drove unprecedented data consumption, increasing pressure on networks and highlighting the need for robust management capabilities. Service providers accelerated digital transformation initiatives, including OSS modernization, to support remote operations and enhance network visibility. Investment in network capacity and quality of service monitoring intensified. Post-pandemic, the structural shift toward remote work and digital services has sustained elevated demand for OSS solutions, with service providers continuing modernization investments to support evolving network requirements.

The Mobile Networks segment is expected to be the largest during the forecast period

The Mobile Networks segment is expected to account for the largest market share during the forecast period, driven by the massive scale of mobile network infrastructure, continuous technology evolution, and growing subscriber base globally. Mobile networks require comprehensive OSS capabilities for managing radio access networks, core networks, and backhaul infrastructure across thousands of cell sites. The deployment of 5G networks is creating substantial OSS demand for network planning, service provisioning, performance monitoring, and fault management. Growing mobile data traffic and increasing device connectivity require sophisticated capacity management. With mobile networks representing the primary connectivity medium for

billions of users, this segment maintains the largest market share throughout the forecast period.

The Fault Management segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the Fault Management segment is predicted to witness the highest growth rate, fueled by increasing network complexity, growing importance of service reliability, and rising demand for automated fault detection and resolution capabilities. Fault management solutions enable real-time network monitoring, alarm correlation, root cause analysis, and automated remediation, reducing service downtime and operational costs. With networks becoming more complex and service quality expectations rising, fault management capabilities are increasingly critical. AI-powered fault management with predictive analytics is gaining adoption. As service providers prioritize network reliability and automated operations, fault management delivers the fastest functional segment growth.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share, supported by early 5G deployment, advanced network infrastructure, and strong telecom investment. The region's service providers have made significant OSS modernization investments to support network evolution and competitive differentiation. Strong presence of OSS vendors and technology partners supports innovation and adoption. Regulatory requirements for network reliability and service quality drive OSS deployment. With ongoing 5G expansion and network virtualization, North America maintains its dominant market position throughout the forecast period.

Region with highest CAGR:

Over the forecast period, the Asia-Pacific region is anticipated to exhibit the highest CAGR, driven by rapid telecom infrastructure expansion, massive 5G deployments, and growing subscriber bases across countries including China, India, Japan, and Southeast Asia. The region's service providers are making significant network modernization investments, driving OSS adoption. Growing mobile and broadband penetration creates substantial demand for network management capabilities. Government digital infrastructure initiatives support telecom investment. As network expansion and modernization accelerate across the region, Asia Pacific delivers the fastest OSS market growth globally.

Key players in the market

Some of the key players in Operational Support Systems Market include Amdocs Limited, Netcracker Technology Corporation, Nokia Corporation, Telefonaktiebolaget LM Ericsson, Huawei Technologies Co., Ltd., Oracle Corporation, International Business Machines Corporation, CSG Systems International, Inc., Optiva Inc., Subex Limited, Comarch S.A., Tech Mahindra Limited, Accenture plc, Cerillion plc, Infosys Limited, Hewlett Packard Enterprise Company, Mavenir Systems, Inc., and BearingPoint GmbH.

Key Developments:

In June 2026, Netcracker announced that fiber connectivity provider Lightpath expanded its full-stack Digital OSS deployment, adopting Netcracker's advanced Order Management, Service Inventory, and Discovery & Reconciliation platforms to handle high-speed traffic demands driven by enterprise AI workloads.

In June 2026, Nokia and Databricks successfully completed a joint proof of concept demonstrating a substrate-agnostic data platform built to eliminate data silos across fragmented, legacy OSS/BSS landscapes. The architecture uses Python-based data logic and intelligent data fabric agents to generate on-demand data pipelines for AI-driven, Level 4 autonomous networks.

In March 2026, Amdocs unveiled CES26 at MWC, an end-to-end, agent-driven BSS-OSS-Network suite running natively on its aOS framework. Built with TM Forum and 3GPP alignment, the suite transitions traditional network monitoring into agentic OSS operations by leveraging closed-loop automation across predictive diagnostics and service orchestration.

Components Covered:

Solutions

Services

Deployments Covered:

Cloud

On-Premises

Hybrid

Network Types Covered:

Fixed Networks

Mobile Networks

Broadband Networks

Functions Covered:

Network Planning and Design

Service Provisioning

Network Inventory Management

Fault Management

Performance Management

Configuration Management

End Users Covered:

Telecom Operators

Internet Service Providers

Cable Operators

Enterprises

Regions Covered:

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Italy

Spain

Netherlands

Belgium

Sweden

Switzerland

Poland

Rest of Europe

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Thailand

Malaysia

Singapore

Vietnam

Rest of Asia Pacific

South America

Brazil

Argentina

Colombia

Chile

Peru

Rest of South America

Rest of the World (RoW)

Middle East

Saudi Arabia

United Arab Emirates

Qatar

Israel

Rest of Middle East

Africa

South Africa

Egypt

Morocco

Rest of Africa

What our report offers:

Market share assessments for the regional and country-level segments

Strategic recommendations for the new entrants

Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034

Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)

Strategic recommendations in key business segments based on the market estimations

Competitive landscaping mapping the key common trends

Company profiling with detailed strategies, financials, and recent developments

Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

Contents

1 EXECUTIVE SUMMARY

- 1.1 Market Snapshot and Key Highlights
- 1.2 Growth Drivers, Challenges, and Opportunities
- 1.3 Competitive Landscape Overview
- 1.4 Strategic Insights and Recommendations

2 RESEARCH FRAMEWORK

- 2.1 Study Objectives and Scope
- 2.2 Stakeholder Analysis
- 2.3 Research Assumptions and Limitations
- 2.4 Research Methodology
 - 2.4.1 Data Collection (Primary and Secondary)
 - 2.4.2 Data Modeling and Estimation Techniques
 - 2.4.3 Data Validation and Triangulation
 - 2.4.4 Analytical and Forecasting Approach

3 MARKET DYNAMICS AND TREND ANALYSIS

- 3.1 Market Definition and Structure
- 3.2 Key Market Drivers
- 3.3 Market Restraints and Challenges
- 3.4 Growth Opportunities and Investment Hotspots
- 3.5 Industry Threats and Risk Assessment
- 3.6 Technology and Innovation Landscape
- 3.7 Emerging and High-Growth Markets
- 3.8 Regulatory and Policy Environment
- 3.9 Impact of COVID-19 and Recovery Outlook

4 COMPETITIVE AND STRATEGIC ASSESSMENT

- 4.1 Porter's Five Forces Analysis
 - 4.1.1 Supplier Bargaining Power
 - 4.1.2 Buyer Bargaining Power
 - 4.1.3 Threat of Substitutes
 - 4.1.4 Threat of New Entrants

- 4.1.5 Competitive Rivalry
- 4.2 Market Share Analysis of Key Players
- 4.3 Product Benchmarking and Performance Comparison

5 GLOBAL OPERATIONAL SUPPORT SYSTEMS MARKET, BY COMPONENT

- 5.1 Solutions
- 5.2 Services

6 GLOBAL OPERATIONAL SUPPORT SYSTEMS MARKET, BY DEPLOYMENT

- 6.1 Cloud
- 6.2 On-Premises
- 6.3 Hybrid

7 GLOBAL OPERATIONAL SUPPORT SYSTEMS MARKET, BY NETWORK TYPE

- 7.1 Fixed Networks
- 7.2 Mobile Networks
- 7.3 Broadband Networks

8 GLOBAL OPERATIONAL SUPPORT SYSTEMS MARKET, BY FUNCTION

- 8.1 Network Planning and Design
- 8.2 Service Provisioning
- 8.3 Network Inventory Management
- 8.4 Fault Management
- 8.5 Performance Management
- 8.6 Configuration Management

9 GLOBAL OPERATIONAL SUPPORT SYSTEMS MARKET, BY END USER

- 9.1 Telecom Operators
- 9.2 Internet Service Providers
- 9.3 Cable Operators
- 9.4 Enterprises

10 GLOBAL OPERATIONAL SUPPORT SYSTEMS MARKET, BY GEOGRAPHY

10.1 North America

10.1.1 United States

10.1.2 Canada

10.1.3 Mexico

10.2 Europe

10.2.1 United Kingdom

10.2.2 Germany

10.2.3 France

10.2.4 Italy

10.2.5 Spain

10.2.6 Netherlands

10.2.7 Belgium

10.2.8 Sweden

10.2.9 Switzerland

10.2.10 Poland

10.2.11 Rest of Europe

10.3 Asia Pacific

10.3.1 China

10.3.2 Japan

10.3.3 India

10.3.4 South Korea

10.3.5 Australia

10.3.6 Indonesia

10.3.7 Thailand

10.3.8 Malaysia

10.3.9 Singapore

10.3.10 Vietnam

10.3.11 Rest of Asia Pacific

10.4 South America

10.4.1 Brazil

10.4.2 Argentina

10.4.3 Colombia

10.4.4 Chile

10.4.5 Peru

10.4.6 Rest of South America

10.5 Rest of the World (RoW)

10.5.1 Middle East

10.5.1.1 Saudi Arabia

10.5.1.2 United Arab Emirates

- 10.5.1.3 Qatar
- 10.5.1.4 Israel
- 10.5.1.5 Rest of Middle East
- 10.5.2 Africa
 - 10.5.2.1 South Africa
 - 10.5.2.2 Egypt
 - 10.5.2.3 Morocco
 - 10.5.2.4 Rest of Africa

11 STRATEGIC MARKET INTELLIGENCE

- 11.1 Industry Value Network and Supply Chain Assessment
- 11.2 White-Space and Opportunity Mapping
- 11.3 Product Evolution and Market Life Cycle Analysis
- 11.4 Channel, Distributor, and Go-to-Market Assessment

12 INDUSTRY DEVELOPMENTS AND STRATEGIC INITIATIVES

- 12.1 Mergers and Acquisitions
- 12.2 Partnerships, Alliances, and Joint Ventures
- 12.3 New Product Launches and Certifications
- 12.4 Capacity Expansion and Investments
- 12.5 Other Strategic Initiatives

13 COMPANY PROFILES

- 13.1 Amdocs Limited
- 13.2 Netcracker Technology Corporation
- 13.3 Nokia Corporation
- 13.4 Telefonaktiebolaget LM Ericsson
- 13.5 Huawei Technologies Co., Ltd.
- 13.6 Oracle Corporation
- 13.7 International Business Machines Corporation
- 13.8 CSG Systems International, Inc.
- 13.9 Optiva Inc.
- 13.10 Subex Limited
- 13.11 Comarch S.A.
- 13.12 Tech Mahindra Limited
- 13.13 Accenture plc

- 13.14 Cerillion plc
- 13.15 Infosys Limited
- 13.16 Hewlett Packard Enterprise Company
- 13.17 Mavenir Systems, Inc.
- 13.18 BearingPoint GmbH

List Of Tables

LIST OF TABLES

Table 1 Global Operational Support Systems Market Outlook, By Region (2023–2034) (\$MN)

Table 2 Global Operational Support Systems Market Outlook, By Component (2023–2034) (\$MN)

Table 3 Global Operational Support Systems Market Outlook, By Solutions (2023–2034) (\$MN)

Table 4 Global Operational Support Systems Market Outlook, By Services (2023–2034) (\$MN)

Table 5 Global Operational Support Systems Market Outlook, By Deployment (2023–2034) (\$MN)

Table 6 Global Operational Support Systems Market Outlook, By Cloud (2023–2034) (\$MN)

Table 7 Global Operational Support Systems Market Outlook, By On-Premises (2023–2034) (\$MN)

Table 8 Global Operational Support Systems Market Outlook, By Hybrid (2023–2034) (\$MN)

Table 9 Global Operational Support Systems Market Outlook, By Network Type (2023–2034) (\$MN)

Table 10 Global Operational Support Systems Market Outlook, By Fixed Networks (2023–2034) (\$MN)

Table 11 Global Operational Support Systems Market Outlook, By Mobile Networks (2023–2034) (\$MN)

Table 12 Global Operational Support Systems Market Outlook, By Broadband Networks (2023–2034) (\$MN)

Table 13 Global Operational Support Systems Market Outlook, By Function (2023–2034) (\$MN)

Table 14 Global Operational Support Systems Market Outlook, By Network Planning and Design (2023–2034) (\$MN)

Table 15 Global Operational Support Systems Market Outlook, By Service Provisioning (2023–2034) (\$MN)

Table 16 Global Operational Support Systems Market Outlook, By Network Inventory Management (2023–2034) (\$MN)

Table 17 Global Operational Support Systems Market Outlook, By Fault Management (2023–2034) (\$MN)

Table 18 Global Operational Support Systems Market Outlook, By Performance

Management (2023–2034) (\$MN)

Table 19 Global Operational Support Systems Market Outlook, By Configuration

Management (2023–2034) (\$MN)

Table 20 Global Operational Support Systems Market Outlook, By End User
(2023–2034) (\$MN)

Table 21 Global Operational Support Systems Market Outlook, By Telecom Operators
(2023–2034) (\$MN)

Table 22 Global Operational Support Systems Market Outlook, By Internet Service
Providers (2023–2034) (\$MN)

Table 23 Global Operational Support Systems Market Outlook, By Cable Operators
(2023–2034) (\$MN)

Table 24 Global Operational Support Systems Market Outlook, By Enterprises
(2023–2034) (\$MN)

Note: Tables for North America, Europe, APAC, South America, and Rest of the World
(RoW) Regions are also represented in the same manner as above.

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