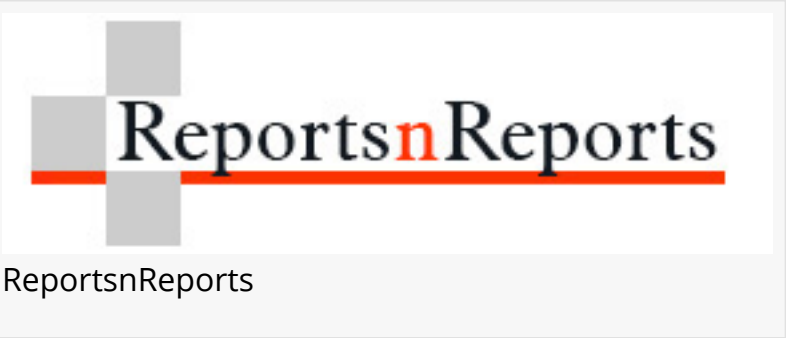
SON (Self-Organizing Networks) in the 5G Market & Open RAN Era 2022 Key Players, Growth, Size, Share, Forecasts to 2030



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PUNE, INDIA, December 19, 2022 /EINPresswire.com/ -- SON (Self-Organizing Network) technology minimizes the lifecycle cost of running a mobile network by eliminating manual configuration of network elements at the time of deployment right through to dynamic optimization and troubleshooting during operation. Besides improving network performance and customer experience, SON can significantly reduce the cost of mobile operator services, improving the OpEx-to-revenue ratio and deferring avoidable CapEx.

Get a Free Sample Copy of the SON (Self-Organizing Networks) in the 5G Market & Open RAN Era Research Report at https://www.reportsnreports.com/contacts/requestsample.aspx?name=6506785

Early adopters of SON have already witnessed a multitude of benefits in the form of accelerated 5G NR and LTE RAN (Radio Access Network) rollout times, simplified network upgrades, fewer dropped calls, improved call setup success rates, higher end user throughput, alleviation of congestion during special events, increased subscriber satisfaction and loyalty, operational efficiencies such as energy and cost savings, and freeing up radio engineers from repetitive manual tasks.

Although SON was originally developed as an operational approach to streamline and automate cellular RAN deployment and optimization, mobile operators and vendors are increasingly focusing on integrating new capabilities such as self-protection against digital security threats and self-learning through AI (Artificial Intelligence) techniques, as well as extending the scope of SON beyond the RAN to include both mobile core and transport network segments – which will be critical to address 5G requirements such as end-to-end network slicing.

In addition, with the cellular industry's ongoing shift towards open interfaces, virtualization and software-driven networking, the SON ecosystem is progressively transitioning from the

traditional D-SON (Distributed SON) and C-SON (Centralized SON) approach to open standards-based components supporting RAN programmability for advanced automation and intelligent control.

The surging popularity of innovative Open RAN and vRAN (Virtualized RAN) architectures has reignited the traditionally niche and proprietary product-driven SON market with a host of open standards-compliant RIC (RAN Intelligent Controller), xApp and rApp offerings, which are capable of supporting both near real-time D-SON and non real-time C-SON capabilities for RAN automation and optimization needs.

SNS Telecom & IT estimates that global spending on RIC platforms, xApps and rApps will reach $120 Million in 2023 as initial implementations move from field trials to production-grade deployments. With commercial maturity, the submarket is further expected to quintuple to nearly $600 Million by the end of 2025. Annual investments in the wider SON market – which includes licensing of embedded D-SON features, third party C-SON functions and associated OSS platforms, in-house SON capabilities internally developed by mobile operators, and SON-related professional services across the RAN, mobile core and transport domains – are expected to grow at a CAGR of approximately 7% during the same period.

The “SON (Self-Organizing Networks) in the 5G & Open RAN Era: 2022 – 2030 – Opportunities, Challenges, Strategies & Forecasts” report presents a detailed assessment of the SON market, including the value chain, market drivers, barriers to uptake, enabling technologies, functional areas, use cases, key trends, future roadmap, standardization, case studies, ecosystem player profiles and strategies. The report also provides global and regional market size forecasts for both SON and conventional mobile network optimization from 2022 till 2030, including submarket projections for three network segments, six SON architecture categories, four access technologies and five regional submarkets.

The report comes with an associated Excel datasheet suite covering quantitative data from all numeric forecasts presented in the report.

Topics Covered

The report covers the following topics:

- Introduction to SON
- Value chain and ecosystem structure
- Market drivers and challenges
- SON technology, architecture and functional areas
- D-SON (Distributed SON), C-SON (Centralized SON), H-SON (Hybrid SON), RIC (RAN Intelligent Controller), xApps and rApps
- Review of over 40 SON use cases across the RAN, core and transport domains, ranging from ANR (Automatic Neighbor Relations) and rapid equipment configuration to advanced traffic

steering, QoE-based optimization and automated anomaly detection
- Key trends in next-generation 5G SON implementations, including Open RAN and vRAN (Virtualized RAN) architectures, dynamic spectrum management, network slicing, edge computing, Big Data, advanced analytics, AI (Artificial Intelligence)/ML (Machine Learning) and zero-touch automation
- Case studies of 20 commercial-scale SON deployments and examination of ongoing projects covering both traditional D-SON/C-SON and RIC-x/rApp approaches
- Future roadmap for the SON market
- Standardization, regulatory and collaborative initiatives
- Profiles and strategies of more than 230 ecosystem players
- Strategic recommendations for SON solution providers and mobile operators
- Market analysis and forecasts from 2022 till 2030

Forecast Segmentation
Market forecasts are provided for each of the following submarkets and their subcategories:
SON & Mobile Network Optimization
- SON
- Conventional Mobile Network Planning & Optimization

SON Network Segment Submarkets
- RAN (Radio Access Network)
- Mobile Core
- Transport (Fronthaul, Midhaul & Backhaul)

RAN Segment SON Architecture Submarkets
- Traditional D-SON & C-SON
  - Embedded D-SON (Distributed SON) Features
  - Third Party C-SON (Centralized SON) & OSS Platforms
- Open RAN RIC, xApps & rApps
  - RIC (RAN Intelligent Controller) Platforms
  - Near Real-Time xApps
  - Non Real-Time rApps
- Mobile Operators' In-House SON Tools & Systems

SON Access Network Technology Submarkets
- 2G & 3G
- LTE
- 5G NR
- Wi-Fi & Others

Regional Markets
- North America
- Asia Pacific
- Europe
- Middle East & Africa
- Latin & Central America

Key Questions Answered

The report provides answers to the following key questions:

- How big is the SON opportunity?
- What trends, drivers and challenges are influencing its growth?
- What will the market size be in 2025, and at what rate will it grow?
- Which submarkets and regions will see the highest percentage of growth?
- How do SON investments compare with spending on conventional mobile network optimization?
- What are the practical, quantifiable benefits of SON – based on live, commercial deployments?
- How can mobile operators capitalize on SON to ensure optimal network performance, improve customer experience, reduce costs, and drive revenue growth?
- What is the status of D-SON and C-SON adoption worldwide?
- When will open standards-based RIC platforms, xApps and rApps replace the traditional SON approach?
- What are the prospects of AI/ML-driven automation in the SON market?
- What opportunities exist for SON capabilities in the mobile core and transport network domains?
- How can SON ease the deployment of private 4G/5G networks for enterprises and vertical industries?
- In what way will SON facilitate network slicing and other advanced 5G capabilities?
- How does SON impact mobile network optimization engineers?
- Who are the key ecosystem players, and what are their strategies?
- What strategies should SON solution providers and mobile operators adopt to remain competitive?

Key Findings

The report has the following key findings:

- The surging popularity of innovative Open RAN and vRAN (Virtualized RAN) architectures has reignited the traditionally niche and proprietary product-driven SON market with a host of open standards-compliant RIC (RAN Intelligent Controller), xApp and rApp offerings, which are capable of supporting both near real-time D-SON and non real-time C-SON capabilities for RAN automation and optimization needs.
- SNS Telecom & IT estimates that global spending on RIC platforms, xApps and rApps will reach $120 Million in 2023 as initial implementations move from field trials to production-grade deployments. With commercial maturity, the submarket is further expected to quintuple to nearly $600 Million by the end of 2025.
- Annual investments in the wider SON market – which includes licensing of embedded D-SON features, third party C-SON functions and associated OSS platforms, in-house SON capabilities internally developed by mobile operators, and SON-related professional services across the RAN,

mobile core and transport domains – are expected to grow at a CAGR of approximately 7% during the same period.

- The third party SON vendor ecosystem is exhibiting signs of consolidation, with several prominent M&A deals such as Qualcomm's recent acquisition of C-SON specialist Cellwize – in a bid to strengthen its 5G RAN infrastructure offerings, Elisa Automate's merger with Polystar to form Elisa Polystar, and HCL's acquisition of Cisco's SON technology business.
- However, on the other hand, newer suppliers are also beginning to emerge – extending from VMware, Juniper Networks and other RIC platform providers to x/rApp specialists such as Cohere Technologies, DeepSig, Groundhog Technologies, Subex, B-Yond, Net AI and RIMEDO Labs.
- SON capabilities are playing a pivotal role in the ongoing proliferation of private 4G/5G networks, as evident from a growing number of cross-sector partnerships. For example, private wireless service provider Betacom is collaborating with Qualcomm to accelerate enterprise adoption of private 5G networks by combining the former's 5GaaS (5G-as-a-Service) offering with the latter's enablement ecosystem, including the Cellwize RAN automation and management platform. Similarly, Germany-based systems integrator Opticoms has entered into a partnership with SON specialist Innovile to automate and optimize Open RAN standards-compliant private 5G networks.
- Over the last two years, with the steep rise of mobile data consumption in residential areas during the COVID-19 pandemic-imposed lockdowns, mobile operators – despite coping relatively well – have recognized the importance of a more dynamic and automated approach to the optimization of network assets in order to provide a consistent and seamless user experience.
- The 2020-2022 period saw large-scale C-SON deployments by several operators, including but not limited to Verizon, EE (BT Group), Orange, Telefónica, Turkcell, beCloud (Belarusian Cloud Technologies), VEON, Ooredoo, Zain, BTC (Botswana Telecommunications Corporation), LTT (Libya Telecom & Technology), Telstra, Singtel, Telkomsel, Globe Telecom, Smart Communications (PLDT), and Telecom Argentina.

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https://www.reportsnreports.com/contacts/inquirybeforebuy.aspx?name=6506785

List of Companies Mentioned

- 3GPP (Third Generation Partnership Project)
- Aarna Networks
- Abside Networks
- Accedian
- Accelleran
- Accuver
- Actiontec Electronics
- ADTRAN
- AI-LINK
- AirHop Communications
- Airspan Networks
- AiVader

- Aliniant
- Allot
- Alpha Networks
- Alphabet
- Altiostar
- Amazon
- Amdocs
- América Móvil
- Anktion (Fujian) Technology
- Anritsu
- Arcadyan Technology Corporation
- Argela
- Aria Networks
- ARIB (Association of Radio Industries and Businesses, Japan)
- ArrayComm (Chengdu ArrayComm Wireless Technologies)
- Artemis Networks
- Artiza Networks
- Arukona
- Askey Computer Corporation
- ASOCS
- Aspire Technology
- ASTRI (Hong Kong Applied Science and Technology Research Institute)
- ASUS (ASUSTeK Computer)
- AT&T
- ATDI
- Atesio
- ATIS (Alliance for Telecommunications Industry Solutions)
- Atrinet
- Aurora Insight
- Aviat Networks
- AWS (Amazon Web Services)
- Azcom Technology
- Baicells
- BandwidthX
- beCloud (Belarusian Cloud Technologies)
- Beeline Russia
- Bell Canada
- Betacom
- Bharti Airtel
- BLiNQ Networks
- Blu Wireless
- Blue Danube Systems
- BT Group

- BTC (Botswana Telecommunications Corporation)
- BTI Wireless
- B-Yond
- CableFree (Wireless Excellence)
- CableLabs
- Cambium Networks
- Capgemini Engineering
- Casa Systems
- CBNG (Cambridge Broadband Networks Group)
- CCI (Communication Components Inc.)
- CCS (Cambridge Communication Systems)
- CCSA (China Communications Standards Association)
- Celfinet (Cyient)
- CellOnyx
- Cellwize
- Celona
- CelPlan Technologies
- CETC (China Electronics Technology Group Corporation)
- CGI
- Chengdu NTS
- China Mobile
- CICT – China Information and Communication Technology Group (China Xinke Group)
- Ciena Corporation
- CIG (Cambridge Industries Group)
- Cisco Systems
- Claro Colombia
- Cohere Technologies
- Comarch
- Comba Telecom
- CommAgility
- CommScope
- Compal Electronics
- COMSovereign
- Contela
- Continual
- Corning
- CPQD (Center for Research and Development in Telecommunications, Brazil)
- Creanord
- Datang Telecom Technology & Industry Group
- DeepSig
- Dell Technologies
- DGS (Digital Global Systems)
- Digitata

- DISH Network Corporation
- D-Link Corporation
- DSA (Dynamic Spectrum Alliance)
- DT (Deutsche Telekom)
- DZS
- ECE (European Communications Engineering)
- EDX Wireless
- EE
- eino
- Elisa
- Elisa Polystar
- Equiendo
- Ericsson
- Errigal
- ETRI (Electronics & Telecommunications Research Institute, South Korea)
- ETSI (European Telecommunications Standards Institute)
- EXFO
- Fairspectrum
- Federated Wireless
- FiberHome Technologies
- Flash Networks
- Forsk
- Foxconn (Hon Hai Technology Group)
- Fraunhofer HHI (Heinrich Hertz Institute)
- Fujitsu
- Gemtek Technology
- GENEViSiO
- GenXComm
- Gigamon
- GigaTera Communications
- Globe Telecom
- Google
- Groundhog Technologies
- Guavus
- HCL Technologies
- Helios (Fujian Helios Technologies)
- HFR Networks
- Highstreet Technologies
- Hitachi
- Hitachi Kokusai Electric
- Hitachi Vantara
- HPE (Hewlett Packard Enterprise)
- HSC (Hughes Systique Corporation)

- Huawei
- IBM
- iBwave Solutions
- iConNext
- Infinera
- Infosys
- InfoVista
- Inmanta
- Innovile
- InnoWireless
- Intel Corporation
- InterDigital
- Intracom Telecom
- Inventec Corporation
- ISCO International
- IS-Wireless
- ITRI (Industrial Technology Research Institute, Taiwan)
- JMA Wireless
- JRC (Japan Radio Company)
- Juniper Networks
- KDDI Corporation
- Key Bridge Wireless
- Keysight Technologies
- Kleos
- KMW
- KPN
- Kumu Networks
- Kuzey Kıbrıs Turkcell
- Kyivstar
- Lemko Corporation
- Lenovo
- Lextrum
- Liberty Global
- life:)/BeST (Belarusian Telecommunications Network)
- lifecell Ukraine
- Lime Microsystems
- Linux Foundation
- LIONS Technology
- LITE-ON Technology Corporation
- LS telcom
- LTT (Libya Telecom & Technology)
- LuxCarta
- MantisNet

- Marvell Technology
- Mavenir
- MegaFon
- Meta Connectivity
- MicroNova
- Microsoft Corporation
- MikroTik
- MitraStar Technology
- MYCOM OSI
- Nash Technologies
- NEC Corporation
- Net AI
- Netcracker Technology
- NETSCOUT Systems
- Netsia
- New H3C Technologies
- New Postcom Equipment
- Nextivity
- NGMN Alliance
- Node-H
- Nokia
- NTT DoCoMo
- NuRAN Wireless
- Nutaq Innovation
- NXP Semiconductors
- Oceus Networks
- Omnitele
- ONF (Open Networking Foundation)
- OnGo Alliance
- Ooredoo
- Ooredoo Algeria
- Ooredoo Tunisia
- Opanga Networks
- Openet
- Opticoms
- Optus (Singtel)
- O-RAN Alliance
- Orange
- Orange Spain
- OSA (OpenAirInterface Software Alliance)
- P.I. Works
- Parallel Wireless
- Phluido

- Picocom
- Pivotal Commware
- PLDT
- Polte
- Potevio
- QNAP Systems
- Qualcomm
- Quanta Computer
- Qucell Networks
- RADCOM
- Radisys
- Rakuten Mobile
- Rakuten Symphony
- Ranplan Wireless
- Red Hat
- RED Technologies
- Redline Communications
- Reliance Industries
- RIMEDO Labs
- Rivada Networks
- Rohde & Schwarz
- Ruijie Networks
- RunEL
- SageRAN (Guangzhou SageRAN Technology)
- Saguna Networks
- Samji Electronics
- Samsung
- Sandvine
- SCF (Small Cell Forum)
- Sercomm Corporation
- Shyam Group
- Signalwing
- Siklu
- Singtel
- SIRADEL
- SK Telecom
- Skyvera (TelcoDR)
- Smart Communications
- Smartfren
- SOLiD
- Sooktha
- Spectrum Effect
- SSC (Shared Spectrum Company)

- Star Solutions
- STC (Saudi Telecom Company)
- STL (Sterlite Technologies Ltd.)
- Subex
- Sunwave Communications
- Systemics-PAB
- T&W (Shenzhen Gongjin Electronics)
- Tarana Wireless
- TCS (Tata Consultancy Services)
- Tech Mahindra
- Tecore Networks
- Telecom Argentina
- Telefónica Germany
- Telefónica Group
- Telkomsel
- Telrad Networks
- Telstra
- TEOCO
- Thales
- ThinkRF

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