

TECHNOLOGY

TO CREATE A CONNECTED WORLD

Delivering significant value to businesses through innovative solutions to support enhanced telecom services initiatives.

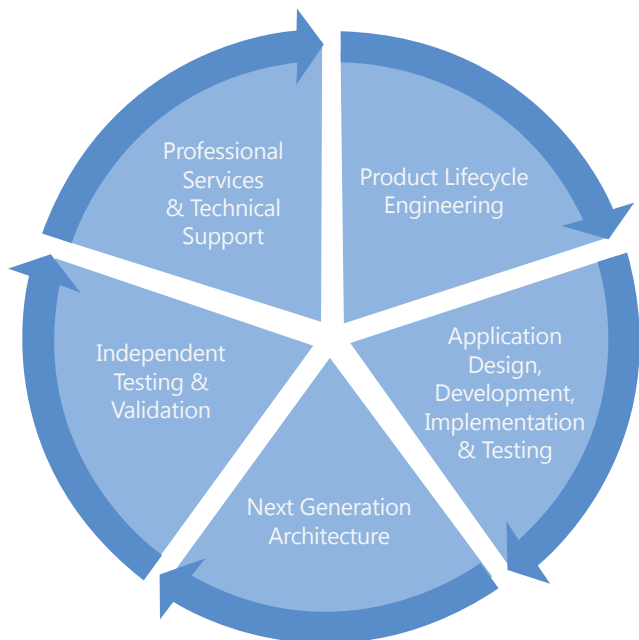


Telecom Services: Overview

The telecom industry continues to witness a growing trend of an increasing convergence with the Information and Technology (IT) industry. Major players in the telecommunications arena are facing massive challenges to respond to significant business disruptions and achieve their business goals. To address this, businesses are constantly driven by the need for innovating new products and services to attain growth and profitability.

TekMindz's Telecom Service Offerings

TekMindz provides a host of services – from concept to deployment – to help businesses reduce costs, increase functionality and accelerate time-to-market. These services enable customers to efficiently meet the challenges of designing and deploying next-generation systems.



Product Lifecycle Engineering

- Authoring, workflow, check in/out services to support collaboration on master data creation, management and quality control
- Iterative Development comprising of Creating requirements, high level and Low level design, development, unit testing, Functional testing, User Acceptance Testing and Production Deployment.
- Product Release Management.

Product Showcase: Testbed™

Replicating the production environment in test labs is a challenging task. The time needed to setup a test lab can be long and the process is error prone.

A high turn-around time is simply unacceptable in today's fast paced market. Fortunately, there are tool/technologies available which, once combined with best practices, yields much reduced setup times. The following tools chain is what a lab/test manager needs in order to ensure most optimal usage and fastest turnaround time for any setup:

1. Device Inventory Management.
2. Test Bed Topology Management.
3. Configuration Management.
4. Allocation and Schedule Management.
5. DUT Abstraction Interface.

How TekMindz can help you

At TekMindz, we have extensive experience in building best tool chains to reduce the turn-around time for testbed setups. We strongly believe each lab has its own unique challenges which must be dealt with differently - there is no silver bullet that can provide a solution to all problems. With our formidable experience, we are sufficiently equipped to design the right solution for meeting your testlab requirements and facilitating it with best processes and practices.

Product Showcase: GENView's Real-time Session Manager (RSM)

Genband's GENView™ RSM is a single system which provides OAM/EMS Application, manages faults, performance, security and system configuration. TekMindz has incumbent expertise in resources and technology encompassing GENView™. Our expert team carries extensive knowledge of full development lifecycle and testing with hands-on experience in the development of GENView™ RSM for provisioning and managing devices, design and development of scalable solution which can handle millions of CDRs.

TekMindz has the following expertise on GENView's RSM modules:

- Call Monitoring and analytics.
- CDR - Processing, Routing and Rating, Reporting.
- Fault management – Alarms, auditing etc.
- CDR report – Quality of service, Utilization, Financial – Revenue and Traffic.
- Intelligent analytics and EMS with full FCAPS.
- SOAP/XML-based, integrates easily with OSS, BSS, and web services.
- Least Cost Routing Engine (LCR) , LLCR & MPR.
- High-availability architecture (HA).

Application Design, Development, Implementation & testing

- Application Development, Design, implementation and testing.

Platforms

- Windows
- Linux, Embedded Linux
- Unix (Solaris, AIX, FreeBSD,(HP-UX)
- VxWorks

Technologies

- Java/J2EE
- .Net
- LAMP
- C, C++
- ROR, SOA, RTOS

Next Generation Architecture: Big Data, Cloud and Mobility

- Business Intelligence through advanced analytics including Predictive, Descriptive and Prescriptive Analytics.
- Product Deployment on Cloud.
- Enterprise Mobility for Telecom operators.
- System architecture definition for Wireless, Wireline, NMS/EMS & Cloud applications.

Independent Validation and Testing

- Extensive system integration and test lab infrastructure.
- Customized test suites and testing framework.
- Tiers of system validation from hardware .integration through full application testing.
- Integration testing with 3rd party hardware / software components.
- Validation services for customer created applications.
- Validation services for TekMindz custom crafted Solutions.

We help improve product quality, optimize performance, shorten time-to-market and significantly reduce capital and operational expenditures. We transform the way organizations do test management and provisioning. Our self-service model enables managing & accessing tests from anywhere in the world.

Our streamlined, efficient and cost-effective solution includes an end-to-end device testing framework and software testing methodology, tools and processes; and a software testing service with leading device manufacturers.

TekMindz's Test team had extensive expertise in Testing of products ranging from NMS, OSS, BSS, Web services, SIP, H323 and other protocols used in VOIP communications involving voice as well media.

Focused areas of our testing activities are:

a. Manual Testing

We carry out Functional Testing, System Level Testing, GUI Testing, Scripting and Environment Testing for Wireless and Wireline Networks, Data communication and NMS/EMS Testing.

We create Test suites equipped with small scripts to ease the Manual Testing and hence eradicate the manual effort and possibility of Test errors for repeatable cycles.

b. Test Automation:

TekMindz specializes in providing Testing Services to Telecom Service Providers (TSPs), Enterprises, Independent Software Vendors (ISVs) and Telecom Equipment Manufacturers (TEMs). Our Testing, with an integrated end-to-end device and service provisioning, delivers reliability and quality.

Our modular framework to develop and maintain Automated Regression Test Suite delivers efficient data driven code that requires minimal maintenance over testing cycles. Our test automation offerings include:

- Customized Test Automation Framework Development.
- Buildup of automated Test Suites / Libraries.
- Conversion of Manual to Automated test scripts/suites.

c. Test Management System:

Our test Management framework provides:

- Test managements and scheduling.
- Automated test bed preparation (according to the test suite execution).
- Automated test execution.
- Comprehensive reporting and analysis.

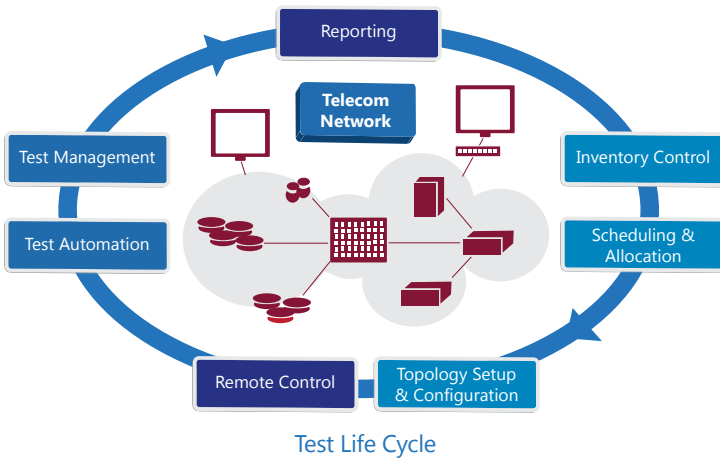
d. Cloud enabled testing

TekMindz helps organizations achieve faster time to value and derive maximum business value from Cloud Computing technology. We leverage the best practices for developing architecture for auto-scaling and deployment optimization that ensures authentication and security.

As part of the network software testing we provision the cloud-based end-to-end test environments with the required test tools, test plans/manager, scripts and storage. The cost effective, flexible and expandable cloud-based test environments are used for functional, regression and performance testing.

The key benefits of cloud based test solution are:

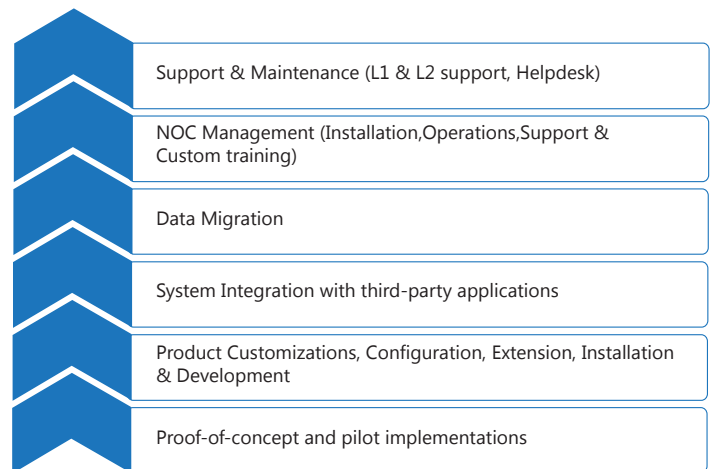
- Provides a cost-efficient testing environment.
- All the required test tools, environment, related services are easily available.
- Ease of use with the availability of standard test processes.



Professional Services Technical Support

We also offer an extensive range of other professional services that aid in the

- Installation.
- Provisioning.
- Customization.
- Integration.
- Support of software/hardware products in customer environments.



Professional Services

Case Study

Overview

Narus is a leader in real-time traffic intelligence for the protection and management of large IP networks. They protect and manage some of the largest IP networks around the world.

Business Challenge

Narus is a leader in real-time traffic intelligence for the protection and management of large IP networks. They protect and manage some of the largest IP networks around the world.

- They were looking for a partner who could help them build a technically and commercially viable professional services team that can help design, customize, implement and manage their enterprise / carrier grade IP surveillance / traffic intelligence solutions at their client sites.
- Managing & liaison with multiple vendors, customers & internal engineering team.

Our Solution

TekMindz provided professional services for high-end data communications product including:

- Product deployment & Support.
- Re architecture & design (Product already in GA phase).
- Product / Program Management:
 - This involves high end IP surveillance deployment at class 1 Internet Service Providers in India.
 - Coordinating with end-customer for different project activities.
 - Planning & tracking deployments, Building & guiding the solutions for end customers.
- Co-ordination between teams for customer related activities.
- Quality Assurance:
 - This involves providing QA services for their product. We are doing black box functional testing and testing automation on their core platform / products.
 - Design and execution of test plans, preparing the execution strategy.

Snapshot of TekMindz's Telecom Service Offerings

Telecom & Networking	Access Technologies	Wireless Technologies	Traffic Management Techniques	Optical Technologies	Test Automation & Network Virtualization
<ul style="list-style-type: none"> • Network Design & Support • VPN Design & Implementation • Wired & Wireless Deployment Planning • VOIP Planning and Installation • Network Security Assessment & Threat Modeling • Application Acceleration • Virtualization • Cloud & QOS Management • Cloud Computing and Virtualization • Cloud Storage • Cloud Integration Planning • Cloud based Web Hosting • Hosting different application • Server Virtualization • Virtual Desktops (Thin clients) • Virtualization Platforms: VMWare, Parallels, Hyper-V, Virtual Iron, Xen • Distributed Computing 	<ul style="list-style-type: none"> • Wired and wireless domain including B-PON, G-PON, DLCs, MSANs, Broadband & Residential Gateways. • Ethernet, Fast Ethernet, Gigabit Ethernet, Ten-Gigabit Ethernet • Point-to-point and multipoint WAN access technologies like Frame Relay, ATM, ISDN, PPP and HDLC. • High speed WAN technologies like Dynamic Packet Transfer, 80217RPR and Packet over SONET. 	<ul style="list-style-type: none"> • GPRS (2.5G), UMTS (3G), GGSN, SGSN. Our experience also encloses 802.11 a/b/g/n, WPA, WPA2, WMM, CCX, 802.11, d+h 	<ul style="list-style-type: none"> • MPLS-VPNs, Inter-AS VPNs, using MP-BGP, PE-CE routing using RIP, EIGRP, OSPF, ISIS, BGP, EoMPLS, VPLS, 802.1Q-in-Q, L2PT, GRE, UTI, L2TP, MPLS Traffic Engineering IPTV 	<ul style="list-style-type: none"> • SONET, SDH, DWDM, ATM, IP, POS (Packet over SONET/SDH), EOS (Ethernet over Sonet/SDH) including network elements (ADMs, Cross Connects, DWDMs, MSSPs, Next Generation DLC, B-PON, G-PON, FTTN, FTTH). 	<ul style="list-style-type: none"> • Automation provided through developing test automation framework, which will enable automated test cases to seamlessly interact with any EMS/ network device in the entire lab network and to perform various operations such as: • Connecting to the EMS, Network and SAN devices. • Restoring a saved configuration onto device(s) • Performing firmware upgrade and downgrade onto device(s) • Easy reporting mechanism & Reusable Libraries • Platform Virtualization, Resource Virtualization

About TekMindz

TekMindz is an IT consulting & technology services company with headquarters in India, serving clients across Asia/Pacific, Middle East, North America and Africa. Bringing together technology, people and processes across diverse sectors for organizations around the world, TekMindz enables business enterprises and governments to most effectively serve their customers and citizens.

Know more about us by visiting our website at www.tekmindz.com

India Headquarters

Samin TekMindz India Pvt. Ltd.
H-171, Ground Floor,
Sector 63,
Noida – 201307 (U.P.) India
Tel : +91 120 6137000

The Americas

Samin TekMindz, Inc.
2711 Centerville Road,
Suite 400 Wilmington,
DE 19808
Tel: +1-408-512-2275
+1-408-692-7621

Copyright

Samin TekMindz (I) Pvt. Ltd. All rights reserved.

No part of this document may be reproduced or transmitted in any other form or by any means, electronic or otherwise, including photocopying, reprinting or recording, for any purpose, without the written permission of Samin TekMindz.

Disclaimer

Information in this document is subject to change without prior notice, implied or express, and must not be interpreted as a commitment on part of Samin TekMindz, Samin TekMindz does not assume any responsibility or make any warranty against errors that may appear in this document and forswear any implied warranty of merchantability and worthiness for any purpose. URLs mentioned in this document, being the copyright of their respective owners, maybe changed by them anytime, without prior notice, and may not lead to the mentioned webpage.

Trademark

All other companies, brands, products or service names mentioned in this document are trademarks/registered trademarks of their respective owners.