

Communications Expertise and Profile



Magna Infotech Ltd.

www.magnai.com

info@magnai.com

USA

Europe

India

Magna Communications Background

With the rapidly changing business environment, companies that are in the communications sector require a great deal of re-organization and innovative solutions to remain competitive. Added to this is the need to maintain a good return on investment and be profitable, all this with a high level of customer satisfaction. This need is even greater, given that technology is also changing rapidly.

Magna Infotech understands the specific needs of the communications industry and has a dedicated practice for this purpose. The communications team at Magna consists of skilled individuals, highly trained and experienced – functionally and technically, in communications industry.

Magna Infotech has been providing solutions for the communications industry since 1995. Our clients include large and medium sized companies including Verizon, Lucent, Concert, WorldCom and ITDS. Magna believes in partnering with organizations to understand specific requirements, design unique solutions to address these requirements and help clients succeed in their business.

Our expertise and experience addresses the diverse needs of the communications industry, spanning across analysis, design, development, and testing of software for the following areas:

- Operations administration and maintenance
- Wireless systems
- Data communications
- Network management systems
- System and database administration

Operations Administration and Maintenance

Magna Infotech has a wealth of functional knowledge of the working of the communications industry, a critical requirement for the development of robust systems. We have provided and continue to provide telecom clients with development and sustenance services for a wide variety of applications including mission critical applications:

- Technician field access systems
- Plug tracking solutions

- E-business solutions
- Heterogeneous system integration
- Customer care and billing solutions
- Back office systems including financial systems

Wireless Systems

Magna Infotech has developed and implemented a number of systems for wireless networks. Our team members have worked with a number of major vendors and service providers to develop these systems. We have the experience to provide solutions in the following areas:

- Wireless gateways to business applications
- Test automation suites to test NMS functionality for AMPS and GSM
- Network Management System related work for wireless or mobile network
- Test automation and tools development for wireless products

Data Communications

Clients leverage the technology expertise and experience of Magna Infotech's communications team in the areas of data communication protocols, networking protocols, real time operating systems and firmware development. We have extensive experience in LAN and WAN technologies including:

- Testing and development of protocols like OSPF, RIP, TCP/IP, PPP, MP, FrameRelay and SNMP
- SNMP Agent and Manager development
- SS7 and IPDC implementation and testing
- Accounting, authentication and authorization in RADIUS and TACAS
- Stress and performance testing of network devices

Magna Infotech's communications team has helped clients shrink product development and service turnaround times for innovative products and solutions. We follow a methodical approach towards product testing and implementation feedback system. Exhaustive pre-release and post-implementation tests are carried out for standards (RFC) compliance, feature testing, performance testing, interoperability testing and exception handling testing.

Network Management System

Magna Infotech's expertise in network management helps companies manage a heterogeneous mix of multi-vendor hardware and software. With a dedicated team that is rapidly scalable, we help organizations accelerate development and implementation schedules. Our team members are skilled in various network protocols and frameworks such as TCP/IP, SNMP, CMIP. Our expertise includes large, complex, and highly scalable networks, including inter-enterprise networks and intranets.

System and Database Administration

With the understanding of the effects of downtime in the communications industry, Magna Infotech has a team of skilled and highly trained administrators who handle system and database management for our clients. This includes system installation, maintenance, security, backup, recovery, database design, replication and performance tuning.

Magna Infotech – Your Communications Partner

Magna has been providing IT services for several Fortune 50 companies since 1995 and has an excellent reputation for quality, timely delivery and cost-effectiveness. Magna Infotech is a premier provider of IT services to clients worldwide since 1995. An associate company of the \$1 Billion Nagarjuna Group, Magna offers unique solutions to build, integrate and manage IT systems across a broad spectrum of industry. We leverage the financial strength, stability of the Group and the technical expertise of our team members to enable our clients to get the best value for their IT budget.

We have helped over 100 of the Fortune 500 companies develop and re-engineer their business critical applications and have, in the process, developed a thorough understanding of the complex software lifecycle. This we have done using our network of offices in USA, Europe and India.

Magna Infotech has development centers in USA, UK and India that are world class and have all the latest hardware and software resources. Our pricing is extremely wallet friendly and the solutions suit your budget as perfectly as your business – all this without any compromise on the quality.

At Magna Infotech, we're constantly working to add value to our clients' investment in Information Technology. It's no wonder that we are an IT company you can count on.

Intelligent Field Access System (IFAS) Web Interface to IFAS Wireless Communications Gateway to IFAS	
Client	Verizon Communications
Technology	AIX, C++, C, Java Servlets, Applets, Swing, JDBC, Corba, Perl, HTML with Java Script, Oracle, RSA Security System's ACE Server, TCP/IP, CDPD Wireless Comm, SMNP, Shell
Description	<p>IFAS (Intelligent Field Access System) is a service delivery support system that combines leading-edge remote access technology and a distributed client-server architecture with a robust, fully integrated data communications network.</p> <p>It uses state-of-the-art technologies and advanced systems designed to achieve optimum performance, maximum efficiency and the highest reliability in field force automation. IFAS addresses a business's need to maximize resource expenditures while minimizing costs related to the mobile workforce.</p> <p>The system provides a front-end environment that supports any Windows and Windows CE device. It provides the technician with real-time, single sign-on access to all OSS/BSS components including provisioning, assurance, dispatch, circuit information, billing and personnel time-reporting.</p> <p>The types of technician related assignments that can be managed include:</p> <ul style="list-style-type: none"> • Work group assignment • Supervisor assignment • Work center assignment with crossover to neighboring centers, as needed • Interactive device assignments (e.g., Handheld terminals, laptops, palm devices) • Control over workforce application accessibility (e.g., access to remote testing facilities) • Control over software and data updates to assigned devices • Control over the activation of troubleshooting aids • Specification and prioritization of wireless and wireline connectivity options • Control over the assignment & management of RSA Security's SecurID tokens • Support of read only access and multiple levels of administration control

Plug-In Tracking System	
Client	Verizon Communications
Technology	AIX, Windows NT, 95, 3.1, C++, C, Oracle PRO*C, PL/SQL, ARV interface to PICS/ DCPR
Description	<p>The Plug-in Tracking System (PTS) provides field locations and centralized centers with the technology to effectively capture and maintain plug-in inventory consisting of modular circuit boards for switching and transmission platforms. The plug-ins have historically been difficult to track and maintain accurate inventory levels. PTS software provides the users with standardized functions to track, manage and maintain plug-in-inventory at the field locations and CRC's. These functions include receiving, material movement, shipping cycle counts, inventory adjustments reporting and system administration. The PTS functionality is deployed across multiple platforms. PTS consists of Unix based IBM compatible gateways, PC workstations, Hand held terminals and peripherals such as bar code label printers and report printers.</p> <p>The system consists of one data server in each Market Area. Each server is connected system with each other, while CRC PC workstations are networked to the Market Area data server. Field locations interface with the market area data server's by using PC workstations via dial up facilities/HHT. Back end routines update the mainframe computers on plug status based on current standards.</p> <p>PTS has been instrumental in saving hundreds of millions of dollars for Verizon by making effective use of the plugs in inventory.</p>

Modification of BASAPS/ECR Legacy System	
Client	Verizon Communications, MD
Technology	COBOL, CICS, DB2, File aid, HourGlass, Data Ager, Endeavor
Description	This project involved the study and analysis of client requirement based on changed business needs. Over 150 sub systems were subsequently modified based on the requirements.

HR Clean Sheet, EIS Interface to PeopleSoft	
Client	Verizon Communications, MD
Technology	IBM ES/9000, MVS, Windows 98/NT, VS-COBOL-II, DB2, JCL, VSAM, TELON, FILE-AID, QMF, NDM
Description	<p>HR Legacy Enterprise Information Systems and the People Soft Application of Bell Atlantic and Nynex generate the paychecks for its employees respectively. This new module provides the necessary interface between the two different environments to enable the People Soft to generate the paychecks for the employees of both the companies after the merger.</p> <p>Developed and implemented HR Clean Sheet , EIS Interface to PeopleSoft. Responsibilities for this project included:</p> <ul style="list-style-type: none"> • Determining the correct contract weekly wage rate of a South Associate employee and facilitate migration of data to PeopleSoft • Design, analysis and specifications using Anderson's methodology. • Development and coding of new batch module to interface with PeopleSoft from the existing HR Legacy Enterprise Information Systems (EIS) modules . • Construction and unit testing.

Database Setup and Administration	
Client	Verizon Communications, NY, NJ and VA
Technology	RS/6000 Servers running AIX 4.3 and Oracle 8.0.4.1.0 and 7.3.2.x version
Description	<p>The systems were part of a project that involved Web based applications providing Verizon's service functions that allow business and residential customers to view online various products available, bills, customer service reports, service orders.</p> <p>Provided both development support and maintenance for six databases (databases size around 5 GB each).</p> <p>Handled complete Oracle related requirements involving Oracle installation, management of databases creation and maintenance, user management.</p> <p>Installed, and developed new PL/SQL procedures and packages.</p> <p>Handled complete Oracle related requirements to function with WEB-based front end, data maintenance cron-jobs/SQL queries.</p> <p>Handled complete database backups and Disaster Recovery Site setup/maintenance.</p> <p>Involved with performance tuning and trouble shooting as required.</p> <p>Optimization of data extraction process with advanced PL/SQL techniques, hash partitioning, parallel query servers.</p> <p>Used microstrategy for data mining and reporting with the meta data repository residing within a SQL Server database.</p> <p>Two databases (Production and DR) were configured as Master-to-Master definition sites for replication process using Oracle 8.0.4.1.0. It was configured using Oracle provided stored procedures; catrepl.sql was used to load replication option. The databases are close to 4 GB each. 10 tables were replicated using one replication group, set columns for defining primary keys, asynchronous mode was setup over SQL-Net with time interval set to 3 seconds. No conflict resolution rule sets were used.</p>

Unix System Administration	
Client	Verizon Communications, MD
Technology	IBM RS/6000s, SUN Workstations, AIX, Solaris
Description	<p>The systems are located in one of the main data centers of Verizon and handle several mission critical applications and data.</p> <ul style="list-style-type: none"> • Planned for pre-installation of systems. • Configured and managed storage, I/O devices. • Installed, upgraded and configured operating system and related software. • Upgraded third party software. • Planned & created disk partitions, system configuration. • Setup, allocated, validated and maintained user accounts. • Managed users, groups, user disk allocation. • Created user accounts, groups, aliases, maintained passwords, shells, set profile files etc • Created partitions as and when required • Managed NFS • Installed and configured machines as NFS Servers and Clients • Exported, imported and mounted file systems. • Performed troubleshooting of NFS related problems, automount, DFS and AFS. • Managed NIS • Configured machines as master, slave and clients, managed maps. • Performed troubleshooting. • Managed printers and print queues. • Monitored and tuned system performance. • Handled security issues. • Generated reports on user activity. • Scheduled & implemented backup including operating systems, software and data. • Tuned kernel parameters according to hardware specifications. • Wrote shell scripts for automating tasks. • Designed and installed successfully 20-node computer network in the office using star network topology. • Installed UNIX to DOS and DOS to UNIX file transfer system using TCP/IP protocol.

Financial Analysis and Reporting System, Revenue Planning Model	
Client	Concert, VA
Technology	HP 9000, Sun Sparc 20, HP-UX 11, SUNOS 5.8, Oracle 8i, SQL Server 6.5, Win NT 4.0
Description	<p>Developed standby database to support in case of primary database failure. Utilized Logminer for data recovery issues.</p> <p>Converted the existing Financial Reporting system into a Data Warehouse.</p> <p>Responsible for database design and modeling using ERWIN, setting up of complex ETL processes to support the data transformation and generation of the corresponding Data Marts.</p> <p>Optimized Data Extraction Process with Advanced PL/SQL techniques, Hash Partitioning, Parallel Query Servers.</p> <p>Used Microstrategy for Data mining and reporting with the meta data repository residing within a SQL Server database.</p>

Contract Billing Solutions	
Client	MCI, IA
Technology	Oracle 7.3, Paradox, Delphi 3.0
Description	<p>Provided custom billing and reporting solutions for MCI's business solutions with premier service and support. Involved in database tuning, eliminating local tables, reducing network traffic using stored procedures in place of queries, and tuning the existing queries.</p>

Test & Automation for Springtide IPSS-5000	
Client	Lucent Technologies
Technology	IPSS-5000, Netcom Smartbits, IXIA, RADIUS, L2TP, PPP, PPTP, PPPoE, PPPoA, TCL, Expect, Regression Harness, Windows NT
Description	<p>Lucent's (formerly Springtide Networks) IP Service Switch (IPSS-5000) is a high end IP service Switch which acts as a session aggregator and provides value added services and security through 480 independent routers configurable on the box.</p> <ul style="list-style-type: none"> • Involved in functionality testing, automation, design of test cases and test beds for sanity and regression testing of various protocols like RADIUS, L2TP, PPP, PPTP, PPPoE, PPPoA. • Involved with performance tuning, interoperability testing, carving out the offshore development model for various projects. • Scripted and developed code for automating test cases using TCL, Expect and Regression Harness on Windows NT platform. • Designed test cases and Testbed. • The Testbed setup involved Solaris configuration, quadcard and network configuration, LAN and WAN switch configuration, configuration of Vrouter, provider and customer routers. • Simulated the user environment by configuring IP subnets and supernets. Access environment simulation was done by using internal Call generators over PPPoE and PPPoA. • Administered WAN user access through local and RADIUS profiles. Validation of billing data was acquired through RADIUS accounting by using Smartbits and IXIA traffic generators. • Involved with RFC/Standards compliance testing of features for value added services like VPN, L2TP on IPSS-5000.

Configuration, Test & Automation of L2TP	
Client	Lucent Technologies
Technology	Lucent MAX TNT/6000, SUN Ultra 5's, MAX 6000's, cvMAX's, CISCO 7200, Baystack switches, Lucent Pipelines (50, 75's), Smartbits 2000/6000 and ISDN PRI& BRI L2TP, PPP, T1/T3, ISDN, WAN/LAN, TCP/IP, Networking, RADIUS, SmartLib, SmartApps, SmartWindows, Protocol Analysers, Chariot, Q-Check, Tcl/Tk, Expect
Description	<ul style="list-style-type: none"> • Handled performance tuning, interoperability & software release testing, coding for automation on Lucent MAX TNT/6000 (WAN Switch). • Designed test cases, evaluated performance gathering tools. • Performed manual testing and automation of test cases for L2TP performance analysis on TNT and cvMax as LAC and LNS. • Facilitated the measurement of different performance parameters in different scenarios, compared with competitive products. • Completed engineering analysis for any performance degradation and made suggestions to improve the performance in the protocol implementation. • Simulated specific user (Telstra, NTT, UUnet) network environment using various virtual interfaces and Call generator setup and device performance testing as per the user requirements. • Analyzed performance figures, suggested optimum performance tuning for specific environment. • Scripted and developed code for automating test cases using TCL, Expect and TAMS. • Executed regular automated and manual test cases on each new software release for L2TP feature and performance testing. • Designed L2TP test bed for feature and performance testing. The aim is to have a practical scenario for this protocol as used by ISP, that involves integration and configuration with different vendor devices like Cisco, Ascend, with different type of connectivity such as Frame relay, ISDN (PRI/ BRI). • Tested interoperability of Lucent and Cisco devices. • Setup L2TP feature and Performance test bed involving SUN Ultra 5's, MAX TNT's, MAX 6000's, cvMAX's, CISCO 7200, Baystack switches, Lucent Pipelines (50 and 75's), Smartbits 2000/6000 and ISDN PRI& BRI admin. • Involved with RADIUS configuration and administration.

Test and Automation of Routing Protocols	
Client	Lucent Technologies
Technology	Lucent MAX TNT/cvMAX, TCL, Expect and TAMS, Routing protocols (RIP/OSPF), SUN Ultra 5's, CISCO 7200, Baystack switches, Lucent Pipelines (50 and 75's), PPP, WAN/LAN, IP Addressing, Subnetting and Supernetting & RADIUS
Description	<ul style="list-style-type: none"> • Handled software release testing on Lucent MAX TNT /6000 (WAN Switch). • Created test cases, involved in Manual Testing, Automation and Documentation of Routing (RIP/OSPF) functionality testing. • Involved with Functionality testing of Routing on TNT /cvMAX . • Scripted and developed code for automating the test cases using TCL, Expect and TAMS. • Executed regular automated and manual test case on each new software release. • Designed and setup sanity test bed involving SUN Ultra 5's, MAX TNT's, MAX 6000's, cvMAX's, CISCO 7200, Baystack switches, Lucent Pipelines (50 and 75's). • Performed RADIUS configuration and administration.

Radio Network Controller (RNC) Software Protocol Testing UMTS	
Client	Lucent Technologies
Technology	IBM ES/9000, MVS, Windows 98/NT, VS-COBOL-II, DB2, JCL, VSAM, TELON, FILE-AID, QMF, NDM
Description	<p>The 3G Mobile Technology solution for the GSM market is developed by Lucent to cater to the high speed mobile data. UMTS (Universal Mobile Telephony System) compares to the CDMA 2000 standard.</p> <p>The project involved writing test scripts to test the protocols on various interfaces of the RNC using CATAPULT 2000 . Catapult is a Protocol testing platform which runs a SUN Ultra 80 server and gives the testers a capability to write protocol tests at high level.</p> <p>Besides writing test scripts in Digital Communication Protocol Language (DCPL), this project also involved working on the RNC hardware , ATM connections(In UMTS all interfaces except for one are ATM based), Clearcase configuration management tool, SUN Sparcs (Ultra 5 to ultra 80), LINUX (HP Caldera 2.4) and all layer 2 to layer 4 protocols testing .</p>

References



I have worked with Magna Infotech for almost two years. The staff at Magna Infotech has been very accommodating in supplying the necessary staff to complete our projects in a timely and quality fashion. I will definitely contact Magna Infotech in future to help us again.

Software Development Manager



Magna Infotech has been providing software services to my organization. I would recommend Magna Infotech resource for telecommunications related services.

Project Manager



Magna resource was our lead for requirements gathering, analysis and design of the new Project Management subsystem, handling daily use by 15 project managers. Magna resource's work ethic is excellent and can be counted on.

Manager



Magna Infotech consultants have the right technical expertise, skills and they have delivered their best efforts to my projects. Magna Infotech believes in partnering itself in the whole process of the projects, which gives them an edge over the rest. This has been proven by the efforts, sincerity, dedication and hard work of their consultants in mission critical projects.

Senior Business Executive