Neda Communications, Inc.

Consulting Services

Summary

Neda Communications, Inc. is a provider of software products, subscriber services, and consulting services to the data communications industry. We are a highly skilled team of engineering professionals with extensive experience in developing effective solutions for our clients. Our key areas of expertise are:

- **The Wireless Domain.** We have been actively involved in the wireless component of the data communications industry since 1992, and we have a track record of significant contribution to wireless technologies. Among other things we played a lead role in the technical architecture design for the CDPD specifications, and we have participated in the development of other wireless technologies such as Mobile IP, 802.11, Bluetooth and GSM. Neda team members are also the authors of numerous wireless-related books, articles and technical papers.

- **The Internet.** We represent what might be called the "Old Internet"–we have been involved from the very beginning. Our Internet domain name was registered before that of Microsoft. We have a long track record of participation in the IETF, dating all the way back to the late 1980's. We have published two Internet RFCs under our own name (RFC 2188 and RFC 2524), and we have played a role in the development and publication of several protocols through various standards organizations.

- **Unix/Linux and Open-Source.** We are highly oriented towards the Unix/Linux environment and open-source software. We have extensive experience in all aspects of Unix-based software development and open-source software integration. As a showcase for our integration capabilities we have created a rich set of Subscriber Services based exclusively on open-source software. These Subscriber Services are available at http://www.ByName.net. The ByName services are provided as a public service by Neda, and may be freely used or reproduced either in their entirety or as free software components.

- **Telecommunications and Voice Processing.** We have been involved in the deployment and integration of SS7 networks for over a decade, and we have extensive familiarity with the SS7 protocol suite. We also have substantial experience in the Computer Telephone Integration (CTI) arena, with particular focus on Interactive Voice Response (IVR) development. We have developed our own in-house IVR library and applications suite, which we call the Voice Response Development Environment (VoRDE), and which is publicly available as open-source software at http://www.VoRDE.org as a showcase for our IVR capabilities. Our expertise in both Internet and Telecommunications, and our ability to integrate these, is particularly applicable to the IP Telephony domain.

- **Web Services and Integrated Messaging.** We have extensive experience in implementing large-scale portals and web services, to provide integrated database, messaging and directory services. We can make use of our expertise with a wide range of relevant open-source software building blocks for this purpose. In addition, for clients who may already have an installed base of legacy systems, we can efficiently integrate those into a modern web services solution.

What We Can Do For You

Within our domain of expertise we provide a full spectrum of consulting services, from high-level strategic analysis all the way down to detailed engineering implementation. Our services include strategic planning, systems analysis, protocol design, systems integration, software design and implementation, education, and training. We are highly accomplished in the integration of open-source software, including both our own software products and external open-source software.

Our extensive experience with standards organizations enables us to provide invaluable assistance to clients who are developing protocols, negotiating the standards process, or seeking industry recognition. If you have a technology you wish to promote through a formal standards organization, we can probably help.

Conversely, we can direct our expertise towards technology evaluation. We can provide a rigorous, independent analysis of a technology, e.g. as part of a due diligence process for clients who are considering investing in a new or unknown technology.

Regardless of the purpose of the project, our goal at all times is to create success for our clients. We begin each project with a detailed requirements analysis, working with the client to establish a precise definition of the business objectives and/or technical requirements. We then apply our in-depth knowledge and expertise to identify the most practical, cost-efficient, and effective solution.

Historical Highlights

Neda Communications, Inc. was founded as a data communications consulting company in 1991. Since our inception we have provided our consulting services to numerous clients, including leading U.S. electronic product manufacturers, telecommunications service providers, the U.S. government, industry associations, and academic institutions.

A partial list of our satisfied clients includes: AT&T Wireless Services, Sierra Wireless, Seattle Specialty Insurance, INETCO Systems, Geotek, Data Critical Corporation, Electronic Mail Association (EMA), Emulex, General Magic, McCaw Wireless Data Division, Motorola, and Microsoft. Some of our most significant technical accomplishments are:

- From 1992 to 1994 Neda acted as the lead designer and architect of the Cellular Digital Packet Data (CDPD) System Specifications.
- From 1994 to 1997 Neda designed and implemented a large part of AT&T Wireless Services mobile messaging prototype software and systems, for use over Narrowband PCS and CDPD wireless networks.
- Neda is the primary architect and developer of the Lightweight & Efficient Application Protocols (LEAP). We believe that these protocols are destined to become the basis of the open Mobile Messaging industry.
- Neda is the originator of the radical new concept of **Libre Services** . Libre Services are an extension of the principles of the Free Software movement to the domain of Internet Application Services; they are Internet Application Services that may be freely copied, modified, reproduced, and redistributed *in their entirety*.

Technical Expertise

The Neda consulting team has a high degree of technical expertise in all aspects of wireless data communications, networking, electronic messaging, and Internet applications. We are collectively expert in all relevant tools and environments, including:

- **Data Communications Protocols** . SMTP, POP, IMAP, EMSD (RFC-2524), DNS, LDAP, HTTP, HTML, XML, PGP, S/MIME, X.509, X.500, CMIP, SNMP, ASN.1, RPC, ESRO (RFC-2188), TCP, T-TCP, IPv4, IPv6, Mobile-IP, IP-SEC, 802.1, 802.2, etc.
- **Telecommunications & Wireless** . SS7, TCAP, SCCP, OMAP, IS-136, IS-41, ISDN, Telephony/POTS, CDPD, WiFi-802.11, BlueTooth, GPRS, GSM, SMS, CDMA, TDMA, AMPS.
- **Standards Processes** . ITU, IETF, IESG, IAB, TIA, ANSI, NIST, W3C.

- **Open-Source Software** . qmail, courier, imp, ezmlm, mhonarc, , HylaFAX, djbdns, Apache HTTP server, Turbine, Tomcat, Jetspeed, PostgreSQL, MySQL, Hibernate, Torque, JDBC, JINI, RMI, Swing, Velocity, Struts.
- **Software Development & Methodologies** . C, C++, Java, Lisp, Smalltalk, Ruby, Perl, Korn Shell/Bash, SQL, CVS, GNATS, ANT, Emacs, pthread, CORBA, Unix system interface, eXtremeProgramming, Design Patterns, Refactoring.
- **Platforms** . Linux/Unix/Solaris, Windows, Windows CE, Palm OS, J2ME, MacOS, eCos, Embedded Environments.

In addition to our technical skills, we also bring experience, vision and maturity to the table. As a company, Neda has over 12 years experience in the design and implementation of systems for data communications, mobile computing and electronic messaging. As a team, we collectively have over 50 years of such experience.
We are committed to delivering quality solutions that fully meet the requirements of our clients. As proof of this, we can point to a long history of successful consulting contracts and satisfied customers.

The Neda Team

The heart of a company is its people, and ours are among the best in the business. Neda has a core team of technical and management personnel with extensive experience in the wireless data communications industry, and a track record of technical accomplishment and business success. Our collective expertise and experience is equal to any in the industry.

Mohsen Banan - http://mohsen.banan.1.byname.net/ProfessionalBio The founder of Neda and the team leader is Mohsen Banan, engineer and entrepreneur. Mohsen is the primary author of the LEAP RFCs and of the LEAP software implementations. He is an expert in the design and implementation of distributed systems, in particular message handling systems, directory systems and mobile data networks. He is expert in the TCP/IP protocol suite, Unix networking and mobile data communications.

Mohsen has 20 years of experience in all major aspects of Unix, including Device Drivers, Systems Programming, Systems Administration, Application Programming and Graphical User Interfaces. He has an excellent working knowledge of both lower and upper layer protocols of TCP/IP. He is an expert, hands-on software designer and developer. Mohsen holds a BS degree in Electrical Engineering (Magna Cum Laude) from Seattle University and an MS degree in Computer Engineering from the University of Washington.

Andrew Hammoude - http://andrew.hammoude.1.byname.net/ProfessionalBio Dr. Andrew Hammoude has over 26 years engineering experience, including academic research and teaching experience, and industrial experience in the form of engineering design, project management, consulting, and entrepreneurship. Andrew has been with Neda Communications since 1999. He has an undergraduate degree in Engineering from the University of Cambridge, an MS degree in Electrical Engineering from the University of Toronto, and a Ph.D. in Electrical Engineering from the University of Washington.

Pean Lim - http://pean.lim.1.byname.net/ProfessionalBio Pean has extensive experience in the design, implementation and deployment of network computing applications, especially in the domains of systems and network management. He has particular expertise and interest in the areas of TCP/IP, RDBMSes, and object-oriented systems and languages. Pean Master's thesis work on Plan Management was done at Xerox PARC. He holds BS and MS degrees in Computer Science, and a BS in Civil Engineering, all from the Massachusetts Institute of Technology.

Pinneke Tjandana - http://pinneke.tjandana.1.byname.net/ProfessionalBio Pinneke received her B.S. degree in Electrical Engineering from the University of Washington. Her areas of specialization are communications, and digital signal processing (DSP). She has been with Neda Communications, Inc. since February 1998.

Further Information

For more information please visit our website at www.neda.com. In addition, you can experience our showcase Subscriber Services and learn more about our industry-leading initiatives by visiting any of the following sites:

- Providing Subscriber Services for the individual: http://my.ByName.com
  http://www.ByName.com
  http://www.ByNumber.com
  http://www.ByAlias.com
  http://www.ByMemory.com
- Providing Subscriber Services for the Small-to-Medium Business (SMB) segment:
  http://www.BySmb.com
- Providing supplementary services for both individuals and corporations, we have created ByWhere (providing location-based services), and ByTopic (providing topic-oriented services):
  http://www.ByWhere.net
  http://www.ByTopic.org
- The Libre Services Manifesto, introducing the concept of Libre Services:
  http://www.LibreServices.org
- The Free Protocols Foundation for the creation, promotion and protection of free protocols:
  http://www.FreeProtocols.org
- Our free and open-source software distribution centers:
  http://www.BySource.org (for software in source form)
  http://www.ByBinary.org (for software executables)
  http://www.MailMeAnywhere.org (the WhiteBerry Resource Center)

Neda Communications, Inc.
3610 164th Place SE
Bellevue, WA 98008 USA
Tel: +1 425 644-8026
Fax: +1 425 644-2886
E-mail: info@neda.com

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