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Awards:

Fulbright Scholar, 1965
National Science Foundation – Small Business Innovation Research, 1988
Dept. of Energy – Small Business Innovation Research, 1988

Education:

Ph. D., Electrical Engineering – Massachusetts Institute of Technology, 1971
M. S., Electrical Engineering – University of Illinois, 1967
B. S., Electrical Engineering (1st Class Honors) – University of Canterbury, New Zealand, 1965

Technical & Business Expertise - Computer software design, development & deployment

- Computer software development contracts for Internet and client-server software projects.
- Patent infringement research, trade secret disputes, and intellectual property sales.
- Security, authentication, networking, firewalls, hacking countermeasures, backups, archives, and service level agreements for customer-outsourced data.
- Forensic analysis of computer data, electronic discovery from computer disks.
- Development methodologies and project management for web server, client-server systems.
- Architecture and design of complex software systems, encompassing Java, C, C++, Visual Basic languages, and Oracle 8i, 9i and SQL Server 2000 database technology.
- Embedded microprocessor designs

Domain Expertise - Client-server and web-based software applications

- ERP systems – financial, distribution, manufacturing, sales force automation applications (Epicor)
- eCommerce - Secure web transactions, authentication (InfrastructureWorld, Syntricity)
- Semiconductor manufacturing – yield analysis, semiconductor defect analysis (Syntricity)

Legal Experience:

CyberNET Engineering v Con-Way Transportation – Portland, OR, April 7-8, 2003
Testified in court as an expert for Martin Bischoff et al, representing the plaintiff, in connection with a contract dispute over quality of workmanship for a computer network. The jury decision was in favor of the plaintiff and resulted in an award of \$605,000. My court testimony as an expert witness was crucial to the plaintiff's case (see attached email from attorney Douglas Pickett).

Beatty & Company v PAX Clearing Company – San Diego, 1999

Retained by Fox, Johns, Lazar, Pekin, Treadgold, & Wexler on behalf of the plaintiff.
Prepared analysis of deposition testimony for a software development contract dispute. Formed expert opinions concerning software development methodologies and contract delivery requirements. Settled in favor of plaintiff.

Quixote Corporation, Chicago, Illinois. 1994 – 1997

Reported to the Corporate Legal Counsel. Provided assistance in legal complaints by and against the company in the form of patent analysis and formulation of legal strategy. Participated in pre-trial negotiations for settlements when required.

Numerix Corporation, Newton, MA - 1987. Deposed as a witness on behalf of Numerix as plaintiff in a software/hardware development contract lawsuit. The case was settled in favor of the plaintiff.

Detailed Professional Experience:

Syntricity, Inc. – San Diego, CA - Vice President Technical Operations, April 2001 – Jan. 2003

Syntricity is a supplier of application software to the semiconductor industry. Its customers include Intel, Sun Microsystems, Broadcom, Qualcomm, and Conexant. Products are installed on Unix and NT 4.0 web servers at the customer site as Intranet solutions (Enterprise), or on Unix servers at the Syntricity datacenter, which offers an ASP style subscription services.

Developed a large capacity warehouse architecture and deployable warehouse solution to support defect, FBM, lot history, non-lot equipment, and other data storage requirements to support analysis of yield and production forecasts from test data acquired in the semiconductor manufacturing environment. This system was built on Oracle 8i and 9i commercial RDBMS products. Implemented a comprehensive set of statistical analysis tools including multivariate regression and confidence level testing to facilitate yield trend and production scheduling for semiconductor manufacturers.

Responsible for a team of 40 people across four groups that included Software Engineering, Database Design, Quality Assurance, and Technical Operations. Java 2 was the implementation platform language, and Oracle 8.1.6 was used for the warehouse database. All products were designed as web server solutions, with access via a standard browser. Responsible for creating and managing design teams as well as quality assurance, configuration management, technical hosting operations, and technical documentation groups. Detailed understanding of source code control, defect tracking, configuration management and build tracking.

Customers using the hosting subscription center run under contractual Service Level Agreements (SLA). The ASP hosted service is currently implemented on an E4800 Sun application server running Solaris 8, connected to an Oracle database server (Oracle 8.1.6). Storage totaling approximately 1 Terabyte is provided through a combination of the EMC Clarion System 1 storage arrays (Raid-5) accessed via fiber channel, and network attached storage using the Network Appliances NetApp devices. Veritas SANPoint Foundation Suite HA for Solaris is used as the storage management tool.

InfrastructureWorld – South San Francisco, CA.

Chief Technology Officer. Oct. 2000 – March, 2001

Infrastructureworld, a spin off from Bechtel Enterprises, offered services through a collaborative web site for large-scale construction projects. I managed development staff of 10, and operational staff of 3 to create, enhance and maintain the live web site. Functionality included insurance and financing RFP's, document management, and project collaboration. Responsible for a new web server implementation based on NT4.0 and Windows 2000 technologies, to support authentication through certificates, user access control via authenticated account login, SSL extranet connections and document encryption. Investigated Public Key/Private Key encryption authentication mechanisms before selecting Windows NT integrated challenge/response authentication as the preferred authentication technique.

Implemented a secure data access system using native NT operating system authentication services. All documents and files were transmitted via 128-BIT SS using server side certificates for server authentication to the client browser. Automatic virus scanning and cleaning was implemented for all documents and files uploaded to the users to the web server. The operational web server site was implemented with a two-tier server configuration using Raid (redundant) storage

CareerPath.com – Los Angeles, CA.

Senior Vice President, Technology. Sept. 1999 – Oct. 2000

Management of Operations and Development teams. Lead the company's Web site re-architecture project, providing higher levels of Web server and Oracle database performance. Implementation of methodologies for project management, code review, quality assurance, and defect tracking. Managed the operations group (40) supporting the production Web site, encompassing Wide Area Networking, Unix Administration, Oracle DBA support, HTML Authoring, and Quality Assurance teams. Managed the software development staff (25) which created new technology infrastructure and dynamic page content using Java middle tier servlets, Java Beans, JSP presentation components, and Oracle technology. Object oriented programming techniques were applied through use case analysis.

Created a feed management system, written using server-side Java parsing technology, to process Web job postings harvested from Web spider technology. Later enhancements included development of a Content Management system (using XML page representation), vertical affiliate co-branding system, transparent registration and login across a federation of partnership Web sites, and a comprehensive on-line reports server.

Charles Schwab Online Trading – Phoenix, AZ

Independent Consultant July/Aug. 1999

This project involved disaster recovery cold site planning for the Charles Schwab Online Web Trading facility in Phoenix, AZ. The web capability was capable of handling 200,000+ concurrent users, and was implemented with 300 load-sharing IBM gateway servers working behind eight Cisco Catalyst 7500 routers. The traffic was distributed across the front line servers and routed to an ensemble of 200 middle tier servers, which manage the business objects and execute the trades. In the third tier, customer financial and demographic data was maintained on a group of 7 IBM mainframes running DB2. A design was formulated that gives the Schwab organization a contingency backup system in the event of catastrophic failure of the main site.

Epicor Software Corp. – Irvine, CA (Re-named from Platinum Software Corp)

Vice President, Development. May 1997 – Feb. 1999.

Reported to the President until 7/1/98, then reporting to the Executive VP of Product/Marketing. Member of the Executive Committee (top 8 executives in Platinum).

Managed a team of about 100 contributors working on Windows NT-based Client-Server systems. The Department was organized into five functional groups each headed by a Director-level manager, and includes ERP Application Development, Technology/Tools Development, Windows/DOS legacy systems, QA and Documentation teams.

This scope of the development effort encompassed the Platinum ERP Client-Server product suites, which include financial and distribution applications. These applications, based on Microsoft SQL Server technology, are implemented within a two-tier tool set, and involve 500 tables and more than 2000 stored procedures. Responsibilities also included all ERP integration tools and application content. The ERP integration suite allows remote transaction integration of Customer Relationship

Management, Sales Force Automation, Distribution, Manufacturing, and Financial applications, as well as OLAP business intelligence reporting via client-side components and Microsoft DSS.

Direct management of teams deploying MS Message Queue, MS Transaction Server, MS SQL Server 6.5 and 7.0, NT 4.0, XML, and business object technology. Successfully launched a high volume test group to establish performance of the Client-Server products under stress, and to determine their scalability. Built an architectural team to design and implement 3 tier, thin-client framework, using Java business objects running on an application server. Established effective methodologies for fostering cooperation in development projects requiring the participation of geographically remote design and development teams.

Quixote Corp. - Chicago, IL

Vice President, Technology 1994 – 1996 (Reporting to the President of Legal Technologies, Inc.)

Legal Technologies, a subsidiary of the Quixote Corp., was formed as a consortium of four companies operating in the legal vertical market to address law office automation, and related legal services. The combined business volume of this 400-employee unit totaled \$50M in FY 96.

Formulated opinions and strategies for technology-related products being considered for acquisition or development by the company. Assisted the Corporate Legal Counsel in the interpretation of patent claims for the purpose of defending or initiating lawsuits. Participated in negotiations with plaintiffs to bring about resolution of legal conflicts.

Managed teams developing Windows client-server database applications for the legal/judicial markets. These products involved MFC C++ and Visual Basic 4.0, NT/SQL Server and Btrieve technology.

Fibronics International - Lowell/Hyannis, MA

General Manager, Spartacus subsidiary 1989 - 1992.

Implementation of network solutions for AS400 mid range computers and software applications for IBM and Hitachi mainframes.

Involved at the management level with strategic partnership relationships requiring operations or R&D participation. These included: Hitachi Computer, Oracle Corp., Amdahl Corporation, British Telecom, Northern Telecom, Hitachi Cable, Mitsubishi Cable.

Lead contract negotiations with vendors and partners for the Spartacus subsidiary. Principal negotiator for a \$2M asset sale of a mainframe software application to Hitachi Computer. Involved as a principal in negotiations with British Telecom liability for marginal product quality in dozens of UK hospitals. This resulted in a dramatic reduction of the Fibronics obligation; the costs and liability for remedying the field problems were substantially reduced through negotiation. Acted as principal negotiator in the resolution of quality problems at Northern Telecom. In this case, Fibronics' products had been installed in the Air Canada online reservation system, which was malfunctioning.

Successfully developed software products for TCP/IP networking applications. These products performed routing and bridging functions for Internet packets, at data rates of up to 100Mbps across FDDI fiber networks. Technology involved embedded Intel RISC CPU's and Motorola 68K series microprocessors. In addition, mainframe software was developed for mainframe computers to support TCP/IP integration with the Internet. Applications developed for mainframes included the TCP/IP protocol stack and the Network File System (server) package.

Numerix Corporation - Newton, MA

President/CEO 1982 – 1988

Founder and CEO of a high-technology computer company with 140 employees. Led the company from its startup in May 1982 through rapid growth. Revenues grew from \$0 to \$10M in three years.

Supervised a software and hardware development team of 50 people. Lead contract negotiations with vendors, partners and investors.

CNR, Inc. - Needham, MA

Vice President 1975 – 1981

Managed software and hardware design teams for defense-related projects. These included: real-time data acquisition using microprocessor systems, real-time communications channel simulators, embedded Intel and Motorola microprocessor systems, designs for the application of the Global Positioning System to air traffic control, synchronization of the DOD world-wide communication system using atomic clocks to facilitate the distribution of a high-precision time reference.

Univ. of Auckland - New Zealand

Asst. Prof., EE 1972 - 1975

Performed teaching and graduate research responsibilities for Electrical Engineering and Computer Science. Taught graduate level courses on control systems, communication systems, microprocessors, and integrated circuit design. Taught undergraduate courses involving electromagnetic theory, electronic circuit design and mathematics