Mark Benson

CHIEF TECHNOLOGY OFFICER

Contact (612) 237-8606
markbenson@exosite.com

Web http://markbenson.io/
http://www.linkedin.com/in/markbenson

SUMMARY

Accomplished C-level technology leader. Experienced in strategic, operational, and financial management of cross-functional teams in highly-competitive markets. Successful track record of defining and realizing pragmatic product strategies to meet the requirements of complex enterprises across multiple functions and verticals. Strong interpersonal and formal communication skills.

SPECIALITIES

Technology Leadership | Strategic Planning and Execution | Product Development | Intellectual Property Portfolio Management | Software Architecture | Information Security

Strengths: Learner, Restorative, Individualization, Achiever, Intellection.

EDUCATION

Leading Professional Service Firms 2011
Harvard Business School • Cambridge, MA • Areas of focus: microeconomics, leadership, organizational design, and customer relationship management.

Master of Science, Software Engineering 2005 - 2007
University of Minnesota • Minneapolis, MN • Studied lock-free abstractions for reading and writing to shared resources in multi-threaded applications.

Bachelor of Science, Computer Science 1997 - 2001
Bethel University • Arden Hills, MN • Studied computer science, minored in mathematics, and captained the tennis team.

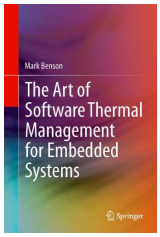
METRICS

17
Years of Experience

40
Publications

6
Patents

RECENT BOOK



The Art of Software Thermal Management for Embedded Systems

An introduction to the art of controlling the thermodynamic behavior of computing systems with software.

Published by Springer, New York (2014).

WORK EXPERIENCE

Chief Technology Officer / Exosite · Minneapolis, MN May 2013 - Present

- Create, maintain, and grow 5-year technology roadmap for the company to ensure long-term stability and position in the emerging Internet of Things market.
- Oversee technical talent for information technology, advanced R&D, technical communications, quality assurance, information security, and support services, including recruitment, hiring, career development, performance management, and retention for positions ranging from Vice Presidents to Directors to Managers to engineers and other administrative staff.
- Speak at community and professional events as an industry thought-leader and communicator to further the M2M/IoT industry, and also grow Exosite brand strength in the marketplace.
- Define and grow the company's intellectual property portfolio, including patent prosecution, trademarks, and software license terms, and contracts.
- Define, curate, and communicate competitive intelligence database containing win/loss analysis, competitive dimensions, competitive forces, competitive landscape predictions, and ecosystem partnerships.
- Create and maintain corporate metrics and dashboards to give insight into business performance and to drive the leadership team to action-oriented, data-driven decisions and results.

Manager, Software Development / Exosite · Minneapolis, MN September 2012 - May 2013

- Managed development of the Exosite One Platform (1P), including requirements definition, architecture, design, development, test, deployment, scaling, maintenance, documentation, and enterprise integrations.

WORK EXPERIENCE

Director, Software Strategy / Logic PD • Minneapolis, MN February 2011 - September 2012

- Directed product software development activities and engineering talent, including recruitment, offers, reviews, training, career development, and mentoring to attract and retain top talent.
- Developed and communicated corporate software strategy by analyzing, identifying, and pursuing technologies and partnerships that enhance and defend Logic PD's long-term stability and brand position in the marketplace.
- Co-lead the Technology Roadmap Development program to identify and cultivate technologies that augment the company's IP portfolio through a structured process that solicits and empowers innovation throughout all levels of the company.
- Created and launched the 3rd Party Partner Program to select and grow business relationships that offer value-added options to customers, furthering Logic PD's brand as a well-connected trusted technology advisor.
- Established Logic PD's Early Adopter Program (EAP) to provide key customers early access to Logic PD products hardware and software artifacts prior to general availability through distribution.

Director, Embedded Software Engineering / Logic PD • Minneapolis, MN September 2009 - February 2011

- Directed service software development engineering talent, including recruitment, offers, reviews, training, career development, and mentoring to achieve $2.2M annual revenue with a $.9M gross margin contribution at 14% CAGR.
- Developed business by presenting product development products and services to potential clients via project plans, statements of work, terms and conditions, and face-to-face consultative selling techniques.
- Managed design service resource staffing issues by assigning personnel to product development projects using sales forecasts, yield projections, and resource modeling techniques.
- Introduced Monte Carlo methods, tools, and processes to the business development team for quantitatively assessing design service program risk to aid in the pricing process for fixed-bid programs.
- Acted as program manager for an ITAR-rated soldier vision system yielding $1.8M in design services revenue with 30+ team members over 18 months.

Senior Software Engineer / Logic PD • Minneapolis, MN October 2007 - September 2009

- Led a team of managers and executives to design, implement, and roll out an ISO13485-compliant Quality Management System and associated processes and tool for 125 employees under an aggressive schedule.
- Co-led a multi-discipline (ID, ME, EE, SE, MFG) team to design and develop a complex flash column chromatography fluidics and motion-control system based on an AMD Geode LX design running Windows XP and C# .NET for chemists.
- Led a geographically-distributed team to design and develop the software for a Linux and TI-OMAP-based next-generation portable video borescope.
- Led a team of principal engineers to evaluate a prostate mechanical imaging system for manufacturability with an eye towards improved next-generation versions of the product and associated cost-reduction opportunities.
- Led a team of principal engineers to architect a next-generation, low-power, cost-effective, web tablet based on a TI OMAP 35x ARM/DSP running Windows CE 6.0 for the medical industry.
- Pioneered and facilitated a software study group for 30 highly-motivated software engineers, senior software engineers, and principal systems engineers to meet regularly to learn about state-of-the-art methods and techniques in the field of software engineering.
- Created and led the Project Management Improvement Group to create a project management process and provide training and mentoring on that process for 40+ project managers.
- Led a multi-discipline (ID, ME, EE, SE) team of engineers to develop an Engine Trend Monitoring device for Turbo-Prop Commuter Planes and Homebuilt aircraft.
- Participated in the Medical Practice Team to develop Logic PD's capabilities in the medical field, to increase Logic PD's brand awareness in the industry, and to identify new tools to enhance the practice of medical device development.
- Envisioned, initiated, and led the Software Process Improvement Group with the goal of refining the group's software development process as well as to provide training, mentoring, and continuous improvement on that process.
- Developed an MFC application over the course of 9 months to control a heart lung machine (HLM) bio-pump using an XScale PXA255 Windows CE 4.20 hardware platform.

WORK EXPERIENCE

Software Engineer / Logic PD • Minneapolis, MN June 2002 - October 2007

- Wrote Logic PD's Software Development Process and created all associated templates and forms for use across the organization and its 150+ annual development projects.
- Wrote a U-Boot extension for managing a BoP (Broadband over Powerline) chipset for a traffic management system.
- Developed an inventory scanner system for bicycle shops using Windows CE, C++, and a PXA270-based Symbol scanner.
- Managed a distributed team of engineers to develop the Linux-based embedded platform for a handheld wireless voice-controlled music and information system.
- Developed a user-mode Linux application in C to read and write an Analog Devices 5245 digital potentiometer using I2C.
- Developed a Linux Board Support Package (BSP) using C, gcc, binutils, and glibc for a brain-state assessment device for infants using auditory screening based on a TI OMAP 5910.
- Developed a Windows CE DLL to communicate over Microsoft ActiveSync RAPI (Remote API) to an automobile engine-analysis scope.
- Led a team of as many as 7 engineers over 16 months to port pacemaker and defibrillator software applications written in C for the QNX RTOS to a next-generation platform.
- Developed a mapping application using Microsoft .NET, C#, C++, and GDI+ to manage an array of infrared laser radar devices and night-vision cameras.
- Developed an application to streamline drug testing and associated chain-of-custody forms using Microsoft .NET, COM+, and Microsoft SQL Server.
- Developed and executed automated and manual tests using an oscilloscope and signal generator to verify a safety-critical fiber-optic safety sensor.
- Developed an application with a dynamic GUI that could be described in XML using MFC and C++ to program a family of industrial safety sensors.

Associate Software Engineer / Logic PD • Minneapolis, MN October 2000 - June 2002

- Wrote a language and accompanying interpreter along with two (2) other Software Engineers to control a printer laminator/cutter/stapler/stacker device using C and an Hitachi H8S.

Web Developer / Bethel College • St. Paul, MN September 1999 - September 2000

- Designed, maintained, and implemented web sites used for courses at Bethel Theological Seminary.
- Consulted with faculty to determine functional requirements and specifications for the sites.
- Performed well under weekly deadlines to publish and maintain web content.

Associate Software Developer / Integrated Digital Products • Willmar, MN June 1999 - August 1999

- Learned and leveraged HTML and Javascript for web application development.
- Created a multi-media marketing CD containing web-based content.

PUBLICATIONS

Benson, Mark D. “Five Avoidable Complications Of Corporate IoT Innovation Programs.” Forbes (December 2016).

Benson, Mark D. “Best Practices in Predictive Maintenance for Connected Industrial Equipment.” Industrial Equipment News (October 2016).

Benson, Mark D. “Enabling Service-Delivery Business Models with Remote Sensing Technology.” *Sensors Midwest, Chicago, IL* (September 2016).

Benson, Mark D. “Data Analytics for IoT Device Deployments: Industry Trends and Architectural Trade Offs.” *Sensors Midwest Industrial Internet of Things University, Chicago, IL* (September 2016).

Benson, Mark D. and Ericson, Brian. “5 Best Practices For Winning the IoT Security Arms Race.” *Dark Reading* (September 2016).

Benson, Mark D. “Future on Water: IoT Infiltration into Water Management Solutions.” Minnesota Water Technology Summit, Minneapolis, MN (September 2016).

Benson, Mark D. “Monetizing in New Technology Spaces.” *Frost & Sullivan Growth, Innovation, and Leadership, Silicon Valley*. (September 2016).

Benson, Mark D. “The Rise of Platforms in the IoT.” *Peggy Smedley Institute.* (September 2016).

Benson, Mark D. “IoT Organizational Readiness for Multiunit Industrial Enterprises.” *IoT Innovator*. (August 2016).

Benson, Mark D. “Beyond the Dashboard: Business Process Optimization Through IoT Data Analytics.” *IoT Evolution, Las Vegas* (July 2016).

Benson, Mark D. “A Modern Platform Approach for Creating Smart Connected Products.” *Sensors Expo, San Jose (June 2016).*

Benson, Mark D. “Developing a Future-Proof IoT Roadmap for Connected Devices and Data.” *Sensors Expo, San Jose (June 2016).*

Benson, Mark D. “Don’t Design from Scratch When You Can Do an In-field Retrofit.” *Embedded Computing* Design (June 2016).

Benson, Mark D. “Business Analytics and the Internet of Things.” *Vantage Advanced Professional Studies, Minnetonka* (May 2016).

Benson, Mark D. “IoT: It Takes an Ecosystem.” *IoT Fuse*, Minneapolis (April, 2016).

Benson, Mark D. “IoT for Durable Goods Manufacturing: An Exercise in Business Transformation.” *IoT Now* (April, 2016).

Benson, Mark D. “Eleven Myths About Data Analytics for IoT Device Fleets.” *Electronic Design* (April 2016).

Benson, Mark D. “What Makes IoT Security So Hard?” *Security Ledger* (April 2016).

Benson, Mark D. “Industrial Business Transformation Through Connected Products.” *IoT Evolution, Fort Lauderdale* (January 2016).

Benson, Mark D. “Building Sticky Brand Loyalty with a Connected Product Strategy.” *IoT Evolution, Fort Lauderdale* (January 2016).

Benson, Mark D. “Understanding and Mitigating IoT Security Hazards.” *Internet of Things Developer Conference, San Jose* (May 2015).

Benson, Mark D. “Internet of Things Security Patterns.” *Internet of Things Stream Conference, San Francisco* (April 2015).

Benson, Mark D. “Disruptive Innovation Through IoT.” *Financial Executives International, Minneapolis* (April 2015).

Benson, Mark D. “Five Phases of IoT: A Market Maturity Model for the New Connected Device Economy.” *IoT Fuse, Minneapolis* (March 2015).

Benson, Mark D. “Internet of Things: Opportunities Abound As We Live an Increasingly Connected Life.” *Minnesota High Tech Association Tech.2015 Conference, Minneapolis* (March 2015).

Benson, Mark D. “A Micro-Vertical Engine Approach for Rapid IoT Mass Customization.” *M2M Evolution*, Miami (February 2014).

Benson, Mark D. “The Art of Software Thermal Management for Embedded Systems.” *Springer* (January 2014).

Benson, Mark D. “Cloud 101 for Embedded Designers.” *Design West Conference* (April 2013).

Benson, Mark D. “Introduction to the M2M Ecosystem: Emerging Trends.” *IoT Meetup, Minneapolis* (March 2013).

Benson, Mark D. “Software Thermal Management with TI OMAP Processors.” *EE Journal* (August 2012).

Benson, Mark D. “Developing Embedded Hybrid Code Using OpenCL.” *RTC Magazine* (July 2012).

Benson, Mark D. “Trading Power and Performance to Achieve Optimal Thermal Design for Battery-Powered Devices.” *Communications, Microsystems, Optoelectronics, and Sensors* (CMOS) (July 2012).

Benson, Mark D. “The Influence of Mass-Market Design Patterns from Adjacent Industries on the Development of Niche Diagnostic Devices.” *Medical Design Technology Magazine* (June 2012).

Benson, Mark D. “Preparing For Future Health Technology Trends by Analyzing Current Consumer Demand.” *American Telemedicine Association (ATA)* (May 2012).

Benson, Mark D. “Multi-Core Architectural Decomposition Methods for Low-Power Symmetric and Asymmetric Multi-Processing.” *Design West Multicore Developers Conference* (March 2012).

Benson, Mark D. and Toner, Ben. “Intelligent Data Management for Wireless Medical Devices.” *Medical Device and Diagnostic Industry (MDDI) Guide to Outsourcing* (February 2012).

Benson, Mark D. “Domain-Driven Device Cloud Design with Monte Carlo Methods.” *Embedded Systems Design* (August, 2011).

Benson, Mark D. "Wireless in Telehealth: Critical Considerations for Technology Adoption." *Embedded Computing Design* (August 2011).

Benson, Mark D. “Minimizing Technology Drift in Vertically-Integrated Medical Device Companies via Strategic Outsourcing.” *Medical Design Technology Magazine* (May 2011).

Benson, Mark D. “Android Adoption and its Economic Impacts to Product Software Strategy.” *Real-Time & Embedded Computing Conference (RTECC) Keynote* (March 2011).

RECOGNITIONS

Forbes Technology Council August 2016

Forbes is one of the most iconic media companies in the world. The Forbes Technology Council is an invitation-only community for world-class CIOs, CTOs and technology executives. Members are selected based on their technology expertise, leadership in a high-growth business, track record of industry recognition, and community impact. Mark Benson was invited to the Forbes Technology Council in 2016 and is a regular contributor on Forbes.com.

Hewlett Packard Enterprise: Executive Corner featuring Mark Benson October 2015

Through its recurring online publication, HP Matter provides in-depth insight and expertise on a variety of trending topics and quickly evolving industries. Each issue features Executive Corner interviews with thought leaders in fields relevant to the issue's topic. Their October, 2015 issue (The Energy Issue: Exploring the Resources that Power Economies) featured Mark Benson and examined the convergence of energy and technology, as well as the shift of the energy landscape towards connectivity in an effort to enable greater efficiencies, reduce consumption, and improve consumer experiences.

TECHdotMN Meet a Minnesota CTO: Mark Benson May 2015

TECHdotMN cultivates and reports on Minnesota's high tech ecosystem and the early stage ventures within it through a mix of unique audio/video features and written word. TECHdotMN's Meet a Minnesota CTO series gets up close and personal with Minnesota's chief technologists. In May of 2015, TECHdotMN featured Mark Benson.

INTERVIEWS

Benson, Mark D. Interview with Larry Greenemeier. "Help Wanted: IoT Expertise." *The Economist.* May 2016.

Benson, Mark D. Interview with Stephanie Overby. "Wearables Go to Work." *CIO Magazine*. April 2016.

Benson, Mark D. Interview with Erik Linask. "Building Sticky Brand Loyalty With a Connected Product Strategy." *TMCnet.* February 2016.

Benson, Mark D. Interview with Brian Martucci. "Why MSP is The Once, Current and Future Internet of Things (IoT) Alley." *The Line Magazine*. April 2015.

Benson, Mark D. Interview with John Keller. "Small-Form-Factor Embedded Computing Shrinks Processing for Unmanned Vehicles and Other Tiny Applications." *Military & Aerospace Electronics Magazine*. July 2012.

Benson, Mark D. Interview with Gareth Halfacree. "Make Money with Android 4.0." *Linux User & Developer Magazine UK*. January 2012.

PATENTS

[United States 20150257008] Configuring network access parameters (March 6th, 2015)

[United States 20150256651] Facilitating communication between smart object and application provider (March 6th, 2015)

[United States 20130193203] Methods for embedding device-specific data to enable remote identification and provisioning of specific devices (February 11th, 2013).

[United States 20130210412] Method for embedding device-specific data to enable provisioning a device with a mobile device (January 11th, 2013).

[United States 20130200142] Methods for embedding device-specific data to enable remote access to real time device data (January 11th, 2013).

[United States 20130185400] Systems, devices and methods for provisioning, pairing and activating a newly manufactured device for automatic joining of customer's network (November 27th, 2012).