

Randall A. Snyder Curriculum Vitae

Professional Summary

Mr. Snyder has over 30 years of experience in telecommunications network and system architecture, engineering, design and technology. He has expertise in the fields of both wireline and wireless telecommunications networking technology. He has been retained as an expert witness in over 130 cases regarding telecommunications technology including nearly 100 Telephone Consumer Protection Act (TCPA) cases, patent cases and other areas of litigation regarding telecommunications network technology.

Mr. Snyder has taught many classes and seminars on both wireline and wireless telecommunication network technologies and has been a panelist and speaker at numerous conferences at the Institute of Electrical and Electronics Engineers (IEEE) and the Cellular Telecommunications and Internet Association (CTIA). He spent several years developing network technology standards within the American National Standards Institute (ANSI) and the Telecommunications Industry Association (TIA), providing technical contributions and authoring and editing telecommunications proposed standards documents. Most notably, ANSI-93, providing interconnection technology between wireline and wireless telecommunications networks.

Mr. Snyder is the co-author of the McGraw-Hill books "Mobile Telecommunications Networking with IS-41," and "Wireless Telecommunications Networking with ANSI-41, 2nd edition" published in 1997 and 2001, respectively. He holds 29 patents on telecommunications networking technology and has been hired as a consultant by the CTIA, as well as many wireline and wireless telecommunications companies, including Bell Laboratories, IBM, Google, McCaw Cellular, AirTouch, AirTouch International, AT&T Wireless, AT&T Mobility, Lucent, Nokia, Ericsson, Motorola, Samsung, Siemens, Nextwave, MCI, Daewoo, Globalstar, T-Mobile, Sprint, U.S. Cellular, Teleglobe Canada, Teledesic and others. He was also nominated in 2006 for a National Television Arts Emmy Award for Outstanding Achievement in Advanced Media Technology for unique wireless content distribution technology he designed while at Entriq, Inc.

Subject Matter Expertise

- Wireless and cellular network systems
- Wireless and cellular network architectures
- Network interconnectivity
- GSM, UMTS, LTE and ANSI-41 (CDMA) standards and networks
- Location Based Services (LBS)
- Short Message Service (SMS)
- Multimedia Message Service (MMS)
- Wireless Application Protocol (WAP)
- Call Processing and Calling Features
- Billing Systems Support (BSS)
- Operations, Administration, Maintenance & Provisioning (OAM&P, OSS)
- Signaling System No. 7 (SS7)
- LTE Diameter Signaling
- Multifrequency Signaling
- Automatic Telephone Dialing Systems (ATDS)

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Notable Expert Witness Engagements

- Retained as Plaintiff's testifying expert witness in *Satterfield v. Simon & Schuster, Inc.* No. 07-16356, D.C. No. CV-06-02893-CW Opinion. Appeal from the United States District Court for the Northern District of California. Opinion remanded by the United States Court of Appeals for the Ninth Circuit. Personally cited in opinion by N.R. Smith, Circuit Judge, June 19, 2009.

Result of expert opinion greatly expanded the TCPA and was followed by formal FCC Declaratory Rulings citing this case that text messages are calls as defined by the TCPA, and sending messages to a stored electronic list of telephone numbers falls within the definition of an Automatic Telephone Dialing System (ATDS).

- Retained as Plaintiff's testifying expert witness in *Gomez v. Campbell-Ewald Company*. No. 13-55486, D.C. No. 2:10-CV-02007-DMG-CW Opinion. Appeal from the United States District Court for the Central District of California. Opinion vacated by the United States Court of Appeals for the Ninth Circuit. Opinion by Fortunato P. Benavides, Circuit Judge. Filed September 19, 2014. Appellate court opinion upheld by the Supreme Court of the United States. Opinion by Justice Ginsburg, January 20, 2016.
- Retained by the Department of Justice Canada as Plaintiff's consulting expert in *Commissioner of Competition v. Rogers Communications Inc., Bell Canada, Telus Corporation and the Canadian Wireless Telecommunications Association*. Defendants accused of deceptive and misleading marketing practices related to premium text messages leading to improper charging for multimedia content delivery using various mobile billing mechanisms. Case settled favorably for the Canada Competition Bureau in May, 2016.
- Retained by IBM de México as testifying expert witness in *IBM de México Comercialización y Servicios, S. de R.L. de C.V. adverse Iusacell, S.A. de C.V.* International \$4B material breach of contract case under the International Chamber of Commerce International Court of Arbitration. A decision is currently being deliberated by the international court.

Education

<u>Year</u>	<u>College or University</u>	<u>Degree</u>
1984	Franklin and Marshall College	B.A., Mathematics (minor in Astronomy)

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Professional Experience

From: January 2007
To: Present
Organization: Wireless Research Services, LLC; Las Vegas, NV
Title: President and Founder
Summary: Technology and expert witness consulting services. Areas of subject matter expertise include mobile and cellular networking, 2G, 2.5G, 3G, LTE, GSM, ANSI-41, LBS, SMS, MMS, WAP, SS7, Diameter Signaling, Automatic Telephone Dialing Systems (ATDS) and mobile multimedia systems. With this expertise, primary consulting is in the area of system and product analysis, architecture, design, development, management and marketing as well as patent preparation and development, expert reports, expert testimony and litigation support. Particular areas of expert witness experience include patent litigation and the Telephone Consumer Protection Act (TCPA).

From: September 2007
To: August 2010
Organization: Finsphere Corporation; Bellevue, WA
Title: Vice President Product Management & Wireless Engineering
Summary: Was among the first handful of employees at Finsphere prior to Series A funding. As vice president of product management and wireless engineering and a member of the executive management team, was responsible for product management activities and wireless technology solutions for Finsphere's products. These products encompassed mobile location based software-as-a-service (SaaS) products offered primarily to financial institutions and banks. Responsibilities included product requirements and system functionality, strategic planning, R&D of new technologies, wireless network interconnectivity as well as wireless technology for Finsphere's products. Was also responsible for market strategies, white papers and development and management of intellectual property and patent applications.

From: May 2004
To: April 2007
Organization: Entriq, Inc.; Carlsbad, CA
Title: Vice President Product Management
Summary: Was responsible for the entire product management team and system architecture for Entriq's products and services. Products encompassed mobile and broadband pay media applications (specializing in video), digital rights management (DRM) and security solutions, e-commerce and m-commerce systems as well as ad management and delivery solutions for both broadband and mobile media services. Responsibilities also included network and protocol analysis, market analysis, evaluation of third-party software and services, all vendor contract negotiations, RFP responses and overall administrative responsibility for the entire product line. Was responsible for directing

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and managing the technical writing department producing all user documentation associated with the products. Was nominated for a National Television Arts and Sciences Emmy Award for Outstanding Achievement in Advanced Media Technology for unique mobile technology designed, developed and commercially deployed as part of Entriq's solution.

From: February 2002
To: November 2003
Organization: m-Qube, Inc. (acquired by Verisign); Boston, MA
Title: Vice President Product Management and Carrier Marketing and Founder
Summary: Was responsible for the entire product management and carrier marketing teams, member of the executive management team and one of the founders. Was responsible for all product management, system engineering and product strategy for all business conducted with the wireless industry and carriers. Was in charge of the market strategy and wireless network architecture for m-Qube's mobile marketing service, a value-added service offering mobile marketing solutions to wireless carriers using short message services (SMS) for GSM and CDMA networks. The service architecture enabled branded companies to deploy promotional marketing and messaging campaign dialogs with mobile subscribers via SMS. The network architecture required definition and design of all aspects of the overall network including SMS technology, interconnectivity to the wireless carriers, signaling, traffic management, market requirements for features and services, network equipment specifications and OA&M.

From: April 2001
To: February 2002
Organization: Bitfone Corporation; Mountain View, CA
Title: Vice President Product Management and Marketing
Summary: Was responsible for the entire product management team and all of the company's product definitions, strategies and positioning. Had direct responsibility for market and product requirements, market research, competitive analysis, product strategy and sales strategy. Bitfone's products included the iBroker, a mobile Internet technology infrastructure platform to enhance WAP, MMS, mobile e-mail and wireless messaging. Was also responsible for the mProve product (obtained via merger with Digital Transit, Inc.) providing over-the-air firmware and software update technology to mobile devices.

From: November 2000
To: April 2001
Organization: Openwave Systems (via merger of Phone.com and Software.com); Redwood City, CA
Title: Executive Director Emerging Technologies
Summary: Was responsible for new 3G technologies and providing market and product plans for those technologies for the entire product line. Primary responsibility for the 3GPP Multimedia Messaging Service (MMS), collecting market requirements from customers, developing corporate strategy for MMS and preparing the organization for

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additional development of the product. In addition, taught wireless technology classes to the different departments at Openwave and educated them on wireless service provider strategies and network technologies.

From: March 2000
To: November 2000
Organization: @Mobile and Software.com (via acquisition); Santa Barbara, CA
Title: Director Wireless Product Management
Summary: Was responsible for the product managers and for all of the wireless internet infrastructure products. Responsibilities included the overall market and product strategy for Software.com's wireless e-mail, short message service, instant messaging and unified messaging products. Was responsible for the overall revenues generated from these products based on detailed product plans and internal organizational planning. Much of his time was spent working with the executive management team and the sales directors on corporate market strategy.

From: December 1999
To: March 2000
Organization: FreeSpace Communications, Inc.; Palo Alto, CA
Title: Consulting Network Systems Engineer
Summary: Was responsible for the complete design of the backbone network architecture for a new broadband fixed wireless data network. This new architecture incorporated DSL as the backbone network technology. The network architecture required definition and design of all aspects of the overall network plan including DSL technology, IP technology, ATM technology, interconnectivity to the PSTN, operations signaling, traffic engineering, market requirements for network features and services, network equipment specifications and OA&M.

From: April 1992
To: December 1999
Organization: Synacom Technology, Inc.; San Jose, CA
Title: Executive Director Product Marketing and Management
Summary:

1998 – 1999 Executive Director Product Marketing and Management

- Responsible for managing the entire product management and marketing department of Synacom Technology, including market research and planning, product management and market communications. Lead the entire design, definition and product direction of all aspects of Synacom's products.

1997 – 1998 Director Systems Engineering

- Responsible for coordinating and managing the overall functional and requirements specifications for all Synacom's products as well as the detailed test

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