Cathleen Thomas Quigley

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PROFILE

DOCSIS Cable Pioneer, Broadband data consulting engineer, expert witness and executive technologist spanning systems architecture, software, hardware and integrated circuit development. Experienced in building and leading large technology focused organizations. Named inventor on 96 U.S. patents in Broadband, Wireless, Mesh Networking, Digital Video and Mobile Devices. Extensive experience in DOCSIS Hybrid Fiber Cable communications including numerous product firsts and key standards development in the delivery of voice, video and high-speed data. Built the world's first MCNS/DOCSIS cable modem and headend integrated circuits and reference designs including systems and software. Author of MCNS/DOCSIS 1.0, 1.1 and Baseline Privacy and drove development of DOCSIS 2.0 and 3.0. Built the first 100BaseTX PCI, ISA and Repeater Integrated Circuits for National Semiconductor. Key contributor to the IEEE 802.3u specification. Named a Cable TV Pioneer in 2019, a Broadcom Fellow in 2005 and a Distinguished Engineering Alumna of the Georgia Institute of Technology in 2014.

KEY POINTS

- **Proven Technology Innovator and Architect in Broadband Data Communications including systems, security, hardware and software.**

- **Strong Technical Evangelist: Ability to communicate technical issues to non-engineers via speaking, writing and presenting or one on one.**

- **High Emotional Intelligence with the ability to put people first. See "The Digital Cable Revolution – The Transition from Analog to Data Everywhere", WICT Tech It Out, November 8, 2018.**

- **Extensive experience leading multi-site, multi-country development teams.**

- **Proven leader in building and leading teams through technology change and product challenges, developing in house talent, and leading by example.**

EXPERIENCE

Broadband Consultant, Swiftwater Consulting LLC 2009 – present

Independent consultant for numerous broadband, semiconductor and systems companies in system architecture, intellectual property and expert witness roles. Cable TV Pioneer Class of 2019.

- Multiple engagements with Winston & Strawn, LLP including Chanbond vs. Atlantic Partners, LLC submitting expert reports, source code review and sitting for deposition as a

Fact and Expert Witness. Topics included cable modem, settop, gateway and headend technologies, full band capture, MoCA, multimedia delivery and display, and others.

- Expert Witness for case (under NDA) involving DVR and advanced settops with Winston & Strawn and Davis Polk and Wardwell including extensive source code review in HTML/Java, C/C++, JSON, Haxe, Python and IDL assembler.
- Expert Witness/consultant for case (under NDA) with Winston & Strawn involving multi-party negotiations on industry standards in IOT including Zigbee/802.15.x and related standards.
- Next Generation Cable Home Gateway Architecture via Digiforge, LLC for large MSO.
- Patent portfolio reviews for multiple semiconductor and data communications companies

Senior Director and Broadcom Fellow, Advanced Broadband Architectures, Broadcom Corporation; Irvine, CA 2001 - 2008

Worked in the Office of the CTO as the chief architect of Broadcom's broadband strategy and product definitions including DOCSIS 2.0, 3.0, digital video and Packetcable products. Evaluated acquisition targets during due diligence for intellectual property, talent and product depth. Key contributor and industry speaker on DOCSIS 3.0 issues and solutions. Travelled and spoke extensively worldwide building industry consensus around DOCSIS 3.0 and Channel Bonding. Was named a Distinguished Engineer in 2000 and a Broadcom Fellow in 2005, the highest technical honor Broadcom bestows, as the first non-PhD recipient. Filed dozens of additional patents (still pending) in Broadband: WiMAX, DSL, advanced wireless systems, digital video and cable modem technologies. Performed extensive analysis of communications architectures via simulation. Led Broadcom's corporate wide cable architecture efforts consisting of thousands of engineers worldwide.

Director, Residential Broadband, Broadcom Corporation; Irvine, CA. 1996 - 2001

Started and ran Broadcom's residential broadband business unit leading development, architecture and execution of silicon and reference designs. Built and ran the business from inception to over $200M+ in annual revenue and an industry dominating position. Built the world's first MCNS/DOCSIS cable modem (CM) and cable modem termination system (CMTS) silicon and reference designs. Built and led teams to develop state of the art analog/digital full custom CMOS integrated circuits including MAC, PHY, CPU and peripherals for integrated system-on-chip products totaling almost 200 people in multiple development sites in Europe, Asia and both coasts of the US. Contributed key technology patents, authored and drove industry standards and drove worldwide technology marketing of DOCSIS and DSL solutions in silicon, systems and software. Authored numerous papers, patents and industry standards for data, video and voice over cable systems. Key contributions included acting as Broadcom's representative for vendor-author of the MCNS and DOCSIS 1.0, 1.1, 2.0, Baseline Privacy; chairing the

MAC and PHY Working Group of the SCTE Data Standard sub-committee; and presenting at the IEEE 802.14. Worked extensively with customers and industry leaders defining product architectures and features.

Vice President of Development, Arris Interactive and ESP; Suwanee, GA. 1995-1996

Started Arris as a joint venture of Antec and Northern Telecom to develop circuit switched telephony over HFC products (Cornerstone Voice) and combined voice, video and high-speed data architectures (Total Access). Built IC development team for hybrid analog/digital chip development of 25 engineers. Produced and deployed the world's first "triple play" solution providing digital voice, data and video over HFC in a 50 home trial.

Senior Manager, National Semiconductor; Norcross, GA 1991 - 1995

Transitioned an Ethernet networking systems group into a full custom IC design, development and applications site for advanced Ethernet chip products of over 30 engineers. Managed teams with members around the world in 4 sites concurrently and coordinated database coherency for designs of full custom integrated circuits. Pioneered methodologies for concurrent development and simulation for 24 hour/day development. Developed the world's first 100BaseTX Ethernet repeater and built ISA and PCI MAC/PHY chips for the 100BaseTX standard in primarily 0.8u CMOS. Contributing author to the IEEE802.3u specification including the Media Independent Interface (MII) for 100BaseTX. Lead the development of numerous full custom PCMCIA, ISA and PCI based Ethernet chips for 10BaseT and 100BaseTX Ethernet using advanced system simulation techniques and cross functional, multi-site teams.

Staff Engineer, National Semiconductor, Arlington, TX 1987 - 1991

Member of the team that designed and developed the Biphase Communications Processor (DP8344BV) for 3270 and 5250 protocol emulation applications. Worked extensively developing turnkey hardware and software applications for drivers, analog front ends, microcode and software implementations. Built system simulation models of systems incorporating these advanced CMOS processors and single chip PC chipsets using Verilog HDL. Designed and modeled in Verilog XL and LSI Hardware modelers entire PCs capable of booting to DOS in simulation in 1989-90 time frame reducing chip errors and improving time to market. Designed and built the world's first fully integrated PC chipset for Intel 80286, 80386 and 80386SX processors.

Senior Engineer, Digital Communications Associates, Alpharetta, GA 1983 - 1987

Designed hardware, software and firmware (microcode) for PC add-in cards and standalone protocol emulators including IRMA IBM 3270 micro to mainframe link, SmartAlec and Alecprint IBM System 36 emulators. Extensive IBM system reverse engineering. Developed gate array, standard cell and programmable logic devices. Wrote extensive real-time microcode for high speed communications protocols using bit-slice, Signetics 8x305, and Intel 80186 CPUs.

SELECTED PATENTS

US 6,650,624   Cable modem apparatus and method

US 6,760,316   Method and apparatus for the synchronization of multiple
cable modem termination system devices

US 8,068,608   Video processing system for scrambling video streams
with dependent portions and methods for use therewith

US 8,274,957   Method and system for dynamically setting up and tearing
down connections in mesh networks

US 6,961,314   Burst receiver for cable modem system

US 7,631,242   System, method and computer program product for
mitigating burst noise in a communications system

SELECTED PAPERS and PUBLICATIONS

"The Digital Cable Revolution – The Transition from Analog to Data Everywhere" WICT Tech It Out, Nov.8, 2018

"Bonding Multiple DOCSIS Channels for Increased Throughput and Enhanced Service Capabilities",
SCTE Conference on Emerging Technologies, January 2005

"Technology Advances in DOCSIS 3.0", CED Webcast Series, July 2005

"Multimedia Cable Network System Media Access Control Protocol Performance Simulation", Cable
Modems: Current Technologies and Applications, IEEE Press, ISSN 0886-229X, 1999

"Getting a Grip on the Internet" European Cable Conference, London, UK November 1999

"Cablemodem Standards for Advancing Quality of Service Deployments" International Conference on
Consumer Electronics, June 1999

"Powerplay: Powering for Lifeline Phone Service" Kagan Conference, New York, New York Sep. 1999.

"Status of International Standards Based Silicon Solutions for Interactive Cable Set-tops and Modems"
DVB J112 Meeting Geneva, Switzerland, August 1998

"Performance Analysis of Proposed QoS Extensions for DOCSIS Cablemodems" SCTE DSS #98-11, July 1998

"A Concurrent Engineering Case Study: The DP83810 Euphrates 10/100Mbps Fast Ethernet Controller"
First International Technology and Innovation Conference Proceedings, April 1995

"Management Interface Definition for the Media Independent Interface for 100Mbps Networks", IEEE
802.3u Higher Speed Study Group Proceedings, November 8, 1993

"Management Interface Definition Update for the Media Independent Interface for 100Mbps Networks",
IEEE 802.3u Higher Speed Study Group Proceedings, January 18, 1994

"'Baby RISCs Speed Communications and I/O", Computer Design, Volume 28, Number 19, October 1,1989.

"Interfacing the DP8344V to Twinax", Data Communications Products Handbook, Rev. 1, National

Semiconductor, Santa Clara, California, 1988.

A Multi-protocol Communications Adapter for the IBM PC", Data Communications Products Handbook, Rev. 2, National Semiconductor, Santa Clara, California, 1988.

EDUCATION

Bachelor of Electrical Engineering, Computer Certificate, Cooperative Plan - Georgia Institute of Technology 1984

Business, Finance and Management training for Executives, National Semiconductor, 1991 – 1994

Member, SCTE, IEEE

AWARDS

Inducted into the Cable TV Pioneer Class of 2019 for contributions to DOCSIS.

Named a Broadcom Fellow in 2005 and Distinguished Engineer in 2000.

Inducted into the Georgia Institute of Technology Council of Outstanding Young Engineering Alumni in 2001.

Inducted into the Georgia Institute of Technology Academy of Distinguished Engineering Alumni in 2014.

SKILLS

Excellent written and verbal communication skills, including public speaking. Comfortable writing and presenting to peers, customers, stake holders and industry groups. Experienced in all aspects of technical management: Personnel, Finance, Budgeting, Scheduling and Execution. Leads by example.

COMMUNITY INVOLVEMENT

Atlanta Symphony Orchestra Board of Trustees, 2019 - present

President of the Quigley Family Foundation – A nonprofit dedicated to improving the quality of life in Western North Carolina and the Southeast. Founded 2005 - present

Member of the Georgia Institute of Technology School of Electrical and Computer Engineering External Advisory Board 2003 - present

Past member of Georgia Tech President's Technical Advisory Board 2007-2010

Past trustee of the Rabun Gap Nacoochee School, Rabun Gap, Georgia. 2001- 2010

LIST OF GRANTED US PATENTS (PENDING AND EUROPEAN NOT SHOWN)

Broadband Data Communications

6,650,624   Cable modem apparatus and method

6,760,316   Method and apparatus for the synchronization of multiple cable modem termination system devices

6,763,032   Cable modem system with sample and packet synchronization

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Sync your system to PACER to automate legal marketing.

fastcase
Smarter legal research.