

Steven R. Bootman

BACKGROUND

- **Internationalist** I have lived and/or worked outside of the USA nearly one-half of my adult life. This includes extensive travels in Europe & Japan, but my international experience is dominated by living and working in Latin America for 20 years. Fluent in Spanish, conversant in Portuguese.
- **Engineering manager / Communications Technologist.** New technology champion at DSC Communications. Proposed and led the formative 'Advanced Technology Engineering' group. International technologist. Corporate liaison to ITU in Geneva; coordination of domestic and international standards in fiber optics and echo cancellation.
- **Technical writer/translator.** As a system engineer, especially involved in international standards, I have been writing for most of my life. While in the electronics industry several of my articles were published in trade journals & technical conferences. Creation of training material in Spanish related to protection of industrial electrical systems. Translation English/Spanish-Spanish/English with focus on electrical engineering topics.
- **Teaching/Training.** First assignment: teaching middle grades in rural Ecuador as Peace Corps volunteer, 1973. Taught university level electronics 1974-75 in Ecuador. At Hughes Schools in Cochabamba, Bolivia, taught various courses from 2007-2013 full-time/part time/substitute; middle/high school. Developed original material in Spanish on electrical safety topics at both the trade level and university level (2010-2016) where I was invited to teach three semesters at Universidad Mayor San Simón.

ACCOMPLISHMENTS

- Established *Consultoría Ecléctica*, a consultancy, originally in Cochabamba Bolivia focused primarily on providing protection against lightning & its deleterious effects on computers and machinery; grounding; NEC, arc-flash. Additionally, created and presented material in Spanish on these topics. Invited to teach at UMSS (university) in Cochabamba for extension training on industrial protection. Continuation of this effort, especially translation and creation of source material in Spanish, via Eclectic Consulting, from McKinney, TX after returning to the USA in Oct. 2016.
- Proposed initial entry into fiber optics (SONET) equipment at *DSC Communications* in the 1980s; this led to acquisition and merger with Optilink, a leader in fiber-to-the-curb telecom segment in the 1980/90s. Over a period of more than 10 years, the Optilink subsidiary generated over \$1 Billion in gross sales for DSC and its subsequent owner, Alcatel.
- Managed standards coordination for both domestic and international standards in fiber optics (late 1980s through the late 1990s). Represented *DSC Communications* for the very first version of ANSI's SONET standard, T1.105-1988. Wrote several technical papers on SONET and signaling/switching for publication; wrote numerous technical contributions to domestic & international standards bodies.

WORK HISTORY

October 2016 to Present: Continuation of the private consultancy Eclectic Consulting, now from base in Texas in off hours and between contracts. Emphasis on technical translation (electrical engineering) Spanish-English & English-Spanish. Collaboration with EasyPower on the translation of their User Manual (versions 10.0 - 10.3) and GUI into Spanish. Maintenance of technical contacts in Bolivia concerning grounding, lightning protection, power engineering including arc-flash. Participation in local IEEE technical events, and membership in NFPA.

September 26, 2017 to December 2018 and July 2019 to November 2019: Construction Analyst - Loss Verification, Disaster Assistance Processing & Disbursement Center (PDC), Small Business Administration, Ft. Worth, TX. Non-permanent position. Nominal 40-hour work week. Bilingual: English/Spanish, thus able to assist with Spanish speaking clients located in the continental USA and Puerto Rico. Primary responsibility was customer service, combined with construction / engineering analysis. Initial loss verification, Reverification, Progress Inspections. Started at GS-9; in September 2018 upgraded to GS-11. My duties were divided into four general areas:

- A) Conduct field examinations by telephone and perform a variety of tasks directed at verifying cause, determining extent, and estimating the repair/replacement cost of damage to personal, real, and business property that resulted from a disaster.
- B) Assist in the overall loan processing effort. This included reviews of progress of rebuilding effort through dialogue with borrowers of disaster related loans and scrutiny of receipts presented to ensure that they conformed with SBA receipting guidelines. The result of a progress inspection was either to recommend (or not) a further disbursement of loan funds when the borrower met SBA criteria.
- C) Verification of basic data including addresses, property value according to public records, review of possible increases to disaster loans when borrowers submitted additional corroborating estimates of repair and conformance with SBA receipting.
- D) Determination of requirement for FEMA mandated flood insurance. This required use of SBA / FEMA tools for flood mapping.

June 2007 – Present: Philanthropy efforts: Established a non-profit, Participatory Wholistic Ministry, in the USA dedicated to improving education in rural Bolivia. The primary focus is getting schoolbooks and materials to students who otherwise do not have them in the poorest part of Bolivia. Also, helped establish a separate non-profit "Hughes

Schools” in the USA to provide funding for educational purposes. In the fall of 2015, we were granted a multi-year project from USAID for approximately \$1.5 million for a school in Cochabamba, Bolivia.

May 2007- September 2016: Established a private consultancy Consultoría Ecléctica (Eclectic Consulting) in Cochabamba with an emphasis on providing an ‘in-bound’ service for technology companies wanting to sell their products in Bolivia. Primarily this was translation & sales/marketing services. We also provided expertise in lightning and over-voltage protection as well as industrial electrical safety. Representation and international sales support of multiple international firms who provide material and services for grounding, lightning protection and surge protection. Our engineering services included grounding system design and installation, lightning protection design and installation, and power quality control. Creation of didactic material on the topic of ‘*integrated electrical protection*’ that was presented at the local university (UMSS) for the equivalent of extension studies for three semesters. The same material was used for classes offered to the public in Cochabamba since 2010 on a regular basis. In October 2016, moved from Cochabamba to McKinney, TX.

February 2007 – November 2013 Hughes Schools, Cochabamba, Bolivia. Instructor. I taught a variety of classes both as full time, but also part-time some semesters over a period of years. Classes varied from physics & calculus at one extreme to social studies, basic keyboarding, use of Microsoft Office, and PE. Most of my instruction was at the high school level. However, classes in the use of the computer ranged from elementary to middle school.

January 2000 – February 2007: Community of Christ, Independence Missouri.

July 2005 – December 2006: leadership development trainer, Community of Christ. Primary focus was in leadership development in congregations. This included preparation of new didactic material in Spanish and Portuguese. In late 2006 the church abandoned its aggressive international expansion plans and I was laid off with almost all staff in South America.

January 2003-June 2005. President-South America Mission Center, Community of Christ. I was the first president of the newly formed South America Mission Center. Duties were mainly administrative in nature but also included planting new congregations in Argentina, Brasil, Bolivia, Chile, Colombia, Peru and Venezuela. Routine travel throughout South America with focus on Bolivia, Perú & Brasil. In June 2003, following the end of my graduate religious studies, my wife and I moved to Cochabamba to facilitate this effort.

January 2000-January 2003. Assistant administrator for Latin America Region, Community of Christ. A focus of my effort was in South America where we hired the first native ministers in over 20 years. I was responsible for drafting the charter for the soon to be formed South America Mission Center. Extensive travel throughout Central and South America. Attended Graceland University part time in pursuit of a seminary degree (granted June 2003).

March, 1998 – December 1999: Sr. Systems Engineer, Hitachi Telecom, Richardson, TX Primary duties were representation of Hitachi (USA) in national and international fiber optics standards bodies. Work also included systems engineering on Hitachi fiber optics systems as applied to the USA market. Participated as a team member in work on a new fiber optics long-haul system that resulted in a patent with fellow Hitachi staff.

November, 1997 – March, 1998: Principal Engineer, Intellect Network Technologies, Richardson, TX. Lead work on voice treatment including echo cancellation equipment. Intellect, a small technology shop, at that time had a lead technologically in echo cancellation implementation using DSPs. The ever growing use of digitized speech, now including VOIP, has resulted in the incorporation of echo cancellation in virtually all voice communications.

November 1982 – November 1997 DSC Communications Corp., Plano, TX
(DSC Communications was sold to Alcatel in early 1998)

November, 1996 – November, 1997: Principal Engineer-Systems - DSC Communications, Plano, TX
Continuation of senior staff level systems engineering responsibilities for the Transmission Product Division. DSC was a leader in digital cross-connects in the 1990s in the USA market. My efforts were focused in system level considerations of integrating network level SONET/SDH interfaces onto cross-connects and other network elements.

October, 1994 - Nov., 1996: Senior Staff Engineer-Systems - DSC Communications, Plano, TX
Systems engineering responsible for SONET/SDH systems requirements and equipment design; also voice processing & echo cancellation requirements, corporate coordinator for ITU standards. Continuation of representation of DSC on multiple standards bodies especially ANSI (North America) and ITU (international).

April, 1993 - September, 1994: Staff Engineer-Systems - DSC Communications, Plano, TX
Systems engineering tasks including SONET/SDH design, systems requirements, and standards coordination for ITU standards pertaining to transmission products. Technical liaison to corporate headquarters as the company looked into various strategic alliances / acquisitions as the company expanded in products and international coverage.

February, 1986 - February, 1991: Senior Manager - DSC Communications, Plano, TX
I managed the creation and then directed the Advanced Technology Engineering group (10 persons); we produced the first fiber-optic interfaces for DSCs various switching products. Our same Advanced Technology group designed the first fiber interfaces used for internal connections internal to DSCs switching platforms. Created business plans for new products in the SONET area; coordinated domestic standards involvement at DSC. Technical liaison for fiber optics collaborative effort with PKI of Germany (Nürnberg). During this same

time frame I was part of a team of senior systems engineers responsible for systems level requirements and design of the DEX MegaHub, the DSC multi-platform switching that was the primary corporate switching product for the 1990s.

November, 1982 - February, 1986: Senior Systems Design Engineer - DSC Communications, Plano, TX

Design of trunk and line cards for end office and tandem trunking applications. DSC was a successor to Danray and was a primary switching supplier to MCI, Sprint and other alternate carriers. I was the lead designer for the subscriber line interface circuit packs for the DEX 5 (class 5) switch, launched in 1986. I was part of a team that created and sold a modified DSC switching system to DDI of Japan in 1985, at that time a first for a USA company. The sales to DDI later included STPs and other network elements whose total lifetime value of sales was over \$1 Billion.

March, 1980 - November, 1982: Senior Marketing/Systems Engineer - Texas Instruments, Dallas, TX

Technical marketing and systems expertise for TI's subscriber line interface ICs. TI was looking at a variety of potential integrated circuits to apply to new digital communications systems. Working with TI semiconductor designers, we defined and implemented multiple Subscriber Line Interface Circuits (SLIC) that were unique at the time.

May, 1979 - February, 1980: Senior Design Engineer - Intecom, Addison, TX

Design of circuit boards for the IBX data/voice PBX. The IBX was an industry leading PBX in this era; the IBX was one of the very first PBXs that integrated data and voice capability. My responsibilities were focused on the design of the *digital* hand set, then a novelty in PBXs.

June, 1978 - May, 1979: - Design Engineer/Project Manager, Danray, Richardson, TX

Design of circuit boards; later manager of hardware integration for new CTSS 4000 switch. The CTSS was one of the first commercially available digital switches outside of the "Bell system." These switches formed the backbone of the then new MCI network. The switching core of the CTSS 4000 was based on a custom integrated circuit that I defined and incorporated into multiple switching circuit packs.

June, 1977 - June, 1978: - Engineer, Rockwell International, Richardson, TX

Design of circuit boards for high speed digital multiplexers & digital radio, almost entirely implemented with ECL integrated circuits. My previous experience in RF/microwave was applied to the design of very high speed digital multiplexing. At the time, this was considered to be state of the art for the burgeoning digital transmission of voice and data. DOD *Secret* clearance as this was for military applications.

January 1976 – May, 1977: Graduate Student, Kansas State University, Manhattan, KS

I taught Circuit Theory for two semesters as a teaching assistant. The last semester and, I was a Graduate Research assistant working on topics related to my thesis on wind energy. Focus of technical studies was digital communications theory.

August 1972 - December 1975: - Peace Corps Volunteer, Ecuador.

I taught in a rural high school one year and in the electrical engineering section of a university (ESPOL) in Guayaquil for two school years. At ESPOL I was part of a team that created new courses and laboratories to teach electronics and communications. The team implemented an RF and microwave laboratory that was state-of-the-art at the time and equivalent to what many USA universities had in the early 1970s.

May-August, 1970; June, 1971- August, 1972: - Engineer, Southwestern Bell, Kansas City, MO.

Middle management training. Development of expansion plans for digital transmission & switching, at the time very new to the Bell network. The early 1970s saw the very first deployments of digital carrier for short haul applications. I was part of a team at Southwestern Bell that developed a deployment strategy for T carrier (DS1/DS3) within the Kansas City operating area.

EDUCATION

* **BSEE/MSEE in 1971/1977 respectively, Kansas State University.** Extracurricular activities included Eta Kappa Nu, IEEE, Student Senate and President of the Engineering Student Council (2 years). Graduate emphasis of studies was on digital communications, signal processing and microprocessor applications. Master's thesis was on wind energy (1977).

* **Master of Arts in Religion, 2003, Graceland University.** The MA Religion gives a broad background in the Bible, theology and church history. My thesis was on Pentecostalism in Latin America (2003).

PROFESSIONAL

Previously a registered Professional Engineer (Texas) now lapsed after moving to Bolivia. Senior Member of IEEE since 1992, Life Senior Member of IEEE since 2015. Participation in the Communications Society of IEEE for over 25 years; also, member of the IEEE Power & Energy Society (PES). Secretary to the Globecom 1989 International Communications Conference. Chairman of the Dallas chapter of the IEEE Communications Society (1990-92). Treasurer of IEEE Intelligent Network Workshop '91. Organizer of ICC '92 session on Broadband Switching. Chairman of Dallas Communications Society Symposium on Broadband Communications April, 1993. Publications Chairman, IEEE International Communications Conference '96 (Dallas); first ComSoc conference to publish with CD-ROM. Publication Chair for Dallas Section annual symposium, 1999.

Member of the NFPA since 2007. Participation in multiple NFPA conferences and events in Lima, Peru and Santa Cruz, Bolivia. Emphasis on electrical safety including arc-flash.

PUBLICATIONS & PAPERS:

International Switching Symposium, October, 1987 "*Switching Systems for the Japanese Competitive Carrier Market*".

Telephony Magazine, Sept. 7, 1987; "*CCS7 Stretches the Limits of Technology*".

IEEE International Communications Conference, 1988 June, 1989 "*Service Switching Node*".

IEEE Globecom, 1988. December, 1988. "*A Generic Node for the Telecommunications Management Network*".

IEEE Region 5 Spring Mini Conference on Telecommunications Network Management: **Keynote Address**, 4/18/89.

IEEE International Communications Conference, 1989. June, 1989. "*SONET: The Integration of Switching and Transmission*".

IEEE ICC/Supercom 1990. April, 1990. "*SONET Enhancements: Further Integration of Transmission & Switching*".

IEEE Dallas Section May 1990 Mini-Conference on SONET. "*Digital Cross-connects in a SONET Environment*"

SPIE OE/Fibers '90, San Jose, Ca., Sept. 1990. "*Cross-connects in a SONET Network*".

SPIE Regional Conference, May 1991, Dallas, TX. "*SONET Operational Aspects on Digital Cross-Connects*."

Chinese Institute of Engineers, DFW Chapter, June, 1991, "*Subscriber Fiber: the \$100B Opportunity*".

BroadBand ComForum, April, 1992. Invited speaker, "*Optical Technology for Broadband Networks*."

IEEE International Communications Conference, 1992 June, 1992. Session Organizer for "*Topics in Broadband Switching*", 6 papers presented by invited speakers.

WCF 1993 February, 1993. Session Organizer for "*Future Trends in Digital Loop Carrier*".

Telecom 95 October, 1995. "*SDH Ring Interconnection*"

SDH Forum 96 September, 1996. "*SDH Ring Interworking*"

Standards bodies:

ANSI Committee T1X1: Numerous technical contributions from the late 1980s throughout the 1990s, mostly having to do with fiber optics issues.

International Telecommunications Union: Various technical contributions in the 1990s, all having to do with fiber optics inter-networking issues.

Restoration Studies IX, Herald Publishing House, 2005, "Pacificism, Menno Simons and Anabaptists: A Modern-Day Anachronism?"