

***James W. Stegeman***

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**Education:**           BS -     Miami University (Mathematics and Statistics)  
                              MS -     Miami University (Statistics)

Mr. James Stegeman is the President of CostQuest Associates, Inc. As an Executive of the company, Mr. Stegeman has total responsibility for the company (P&L, staffing, strategic plan, etc.). In addition to this role, Mr. Stegeman leads the product development for the company.

Mr. Stegeman formed CostQuest Associates, Inc. in 1999. Prior to CostQuest, Mr. Stegeman worked in a variety of positions at INDETEC International, the last of which was Executive Vice-President. He joined INDETEC in 1995. Prior to INDETEC, he spent 7 years in a variety of Financial and Regulatory management positions with Cincinnati Bell Telephone.

Mr. Stegeman has been a major force behind the development of the latest generation network cost models used by wireline and wireless companies and state and government agencies in support of broadband deployment analysis (telco, cable, wireless and satellite), valuation, and UNE (Unbundled Network Element) and USF (Universal Service Fund) proceedings. He led the design, coding and implementation of the Connect America Cost Model ("CAM", "CACM", "A-CAM") that is being used by the FCC to develop and disburse the funding of broadband deployment. He led the design, coding and implementation of the GigabitCity model that is currently being used by investment banking entities, cities and carriers to investigate the financials for fiber deployment. He led the design, coding and implementation of the Broadband Analysis Model ("BAM") that was used by the FCC to develop and support the economic findings in the National Broadband Plan. He led the design, coding and implementation of the CostQuest Broadband Analysis Tool ("CQBAT") that was filed by the 5 largest landline US based telecom companies at the FCC to develop and support the FCC's Universal Service revamp. He led the design, coding and implementation of the CostProWyoming model used in Wyoming to estimate the cost of broadband deployment. He designed, coded and implemented the Cost Proxy Model (CPM) used in California for universal service support determination. He led the design, coding and implementation of the Benchmark Cost Proxy Model (BCPM) used for universal service support determination. He led the design and development of the CostPro model designed to support USO and UNE costing and tax valuation efforts. CostPro has been used by multiple state commissions and tax entities and is in use by multiple carriers with operations all 50 states. This model incorporates geocoded customer locations, road networks, engineering rules, and unique algorithms to design a truly forward-looking communications network.

In addition to his U.S. network model experience, Mr. Stegeman has also designed the Universal Service Cost model adopted for use in Hong Kong. He also led the development of the Australian Universal Service Cost model, and he was retained to assist in the development of similar costing models in Japan. And, he led the effort to create the core network model for New Zealand's USF proceedings. This New Zealand model has been referred to as a "best-in-class TSLRIC model" by an independent outside party.

In concert with his experience in building network models, Mr. Stegeman has been retained as an expert witness in various tax and regulatory proceedings to attest to the validity of network models for supporting network costing, including his recent appearance before the U.S. House of Representatives.

Mr. Stegeman is also well aware of costing and costing methods and their application to business needs. He has designed, coded and implemented various business case, product profitability and customer

profitability models in use throughout the world. This approach brings the economic costs into real businesses decisions by joining the cost information with the product demand and revenues. Mr. Stegeman has also developed and reviewed regulatory accounting models. These models separate the costs of a company typically for federal rate making purposes. Finally, Mr. Stegeman has also been retained to assist in the development of concepts, analysis and methods for Universal Service, Unbundled Network Element, Interconnection, and Access costing in numerous countries.

### ***Experience:***

#### **CostQuest Associates:**

(1999-present)

**Executive Management-** As President, have total responsibility for the company (P&L, staffing, strategic plan, etc.).

**Product Development and Support** – Direct the continued development, implementation and support of products related to CostQuest’s core competencies in cost, profitability, demand analysis, public policy and regulatory strategy.

**Broadband Economic Modeling** – Retained by the FCC to develop the economic model to support the National Broadband Plan that was delivered to Congress in March, 2010. The effort developed an economic model to derive the business case of deploying broadband across the U.S., including the capital, operational costs and the potential revenues. A key component of this modeling effort was the use of output from our CostPro models, and CostPro provided key attributes about the network requirements. This was followed up (starting in 2013) with the design, development and implementation of the Connect America Cost Model currently being used by the FCC to manage the new Connect America fund. And in 2017, Mr. Stegeman was an invited witness to the U.S. House of Representatives Commerce committee to discuss the status of broadband in the U.S.

**Broadband Mapping** – Engaged to design and develop detailed broadband mapping inventory. Effort captured broadband service areas and gaps within a state. Effort also developed the cost to deploy broadband in identified gap areas. Technologies included: Cable, Telco, and Fixed Wireless. Results have been used to aid the continued rollout of broadband in the state. Efforts have been widely publicized and presented to numerous parties. States studies conducted in include:

- Wyoming
- Alabama
- Wisconsin
- Idaho

**Product Profitability Models** - Engaged to design and develop sophisticated decision support and product contribution measurement system, activity-based management capability, and competitive analysis and response tools for the communications companies.

**Communication Business Case Models** - Engaged to design and develop sophisticated business case model to determine whether a CLEC could operate with a positive net present value without access to incumbent local exchange carrier leased switching. Model used primarily in FCC TRO proceedings.

**Network Cost/Valuation Models and Trends** – Led the design, development, and deployment of the world’s leading network loop, cable and wireless economic models (including Broadband models). Models use geocoded data along with minimum spanning road trees to develop the most realistic forward-looking cost model to date. Model has been filed in numerous states and has been accepted in all states it has been filed in. Models have been used for USF and UNE proceedings, tax valuation, corporate valuation, business case analysis, and pricing. In addition to models, have led the development of industry price and replacement cost new trends for the wireless and cable industry.

Clients include, but not limited to:

- FCC
- USAC
- Sanford-Bernstein
- Soros
- USTelecom
- Verizon
- AT&T
- BellSouth Telecommunications
- Consolidated Communications
- CenturyLink
- Fairpoint
- Frontier
- Alltel
- Embarq
- Windstream
- Hawaiian Telecom
- Bermuda Telecom
- Logic
- Cincinnati Bell
- Iowa Telecom
- AT&T Mobility
- Verizon Wireless
- Western Wireless
- US Cellular
- MetroPCS
- TMobile
- InSite Wireless
- American Tower
- Crown Castle
- Commerce Commission of New Zealand
- State of New York
- State of Pennsylvania
- State of Alabama
- State of Maine
- State of Wyoming
- City of San Francisco
- CANTO
- C-Band Alliance
- Comcast
- Charter
- Cox
- CTIA
- USTelecom
- WISPA
- Blue Ridge

**USO Cost Models** - engaged to design, develop, support and witness to sophisticated total cost of service econometric proxy model for use in determining universal service obligation (USO) and competitive analytic response capability. These include models currently in use in the following areas:

- **CACM (design, develop, support – being used by the FCC as the national platform for funding broadband deployment)**
- **Cost Proxy Model (design, develop, support - accepted and used in California)**
- **Benchmark Cost Proxy Model (design, develop, support, witness - accepted in several states)**
- **Synthesis Model (support use and witnessing)**

**State Grant Reviews** - engaged to review, on behalf of government entities, requests for grant funding of telecommunication networks.

**GAAP Depreciation Studies** - engaged to develop the average remaining lives and depreciation rates for GAAP purposes. Studies have been audited for use.

**Witness** – Have witnessed in a number of state proceedings (detail in separate section):

*Broadband*

- **U.S. House of Representatives**

*Tax*

- **Florida, Virginia, Oklahoma, Utah, California, Wisconsin, Georgia, Missouri**

*Loop Modeling and UNEs*

- **Florida, South Carolina, Georgia, Alabama, North Carolina, Kentucky, and Mississippi**

*TRO*

- **Florida and Georgia**

*Universal Service*

- **Florida and Georgia**
- **FCC En-banc**

**Speaker** - Have been an invited speaker at numerous events (detail in separate section):

- **WISPAmerica**
- **SHLB**
- **Consumer Electronics Show**
- **WTA Annual Conference (repeat presenter)**
- **NCTA Annual Finance Conference**
- **Technology Futures Inc. annual conference (repeat presenter)**
- **FCC En-banc proceeding**
- **NARUC Conferences (repeat presenter)**
- **Wichita State AdValorem Conference (repeat presenter)**
- **University of Florida PURC (repeat presenter)**
- **Columbia SUNY Broadband Conference**
- **FCC (repeat presenter)**
- **CostQuest Annual Telecom Economics Seminar**
- **Montana Telecommunications Forum**
- **Wyoming Telecommunications Forum**

**Papers** - Have filed research documents and papers in various venues:

- **FCC En-banc proceeding**
- **NARUC (numerous)**
- **FCC covering USF, UNE, Auctions and Modeling**
- **Economics of Rural America**

## INDETEC International:

(1995-1999)

**Executive Management-** As an Executive of the company, had total responsibility for the INDETEC division (P&L, staffing, strategic plan, etc..).

**Product Development and Support** – As Senior Vice President and executive of the INDETEC, directed the continued development, implementation and support of products related to INDETEC’s core competencies in cost, profitability, demand analysis, public policy and regulatory strategy.

**Product Profitability Models** - Engaged to design and develop sophisticated decision support and product contribution measurement system, activity-based management capability, and competitive analysis and response tools for the following telecommunications companies:

- **Cincinnati Bell Telephone**
- **Citizens Telecom**
- **Hong Kong Telecom;**

**USO Cost Proxy Models** - engaged to design and develop sophisticated total cost of service econometric proxy model for use in determining universal service obligation (USO) and competitive analytic response capability. These include models currently in use or under consideration in the following areas:

- **Hong Kong (accepted and in use)**
- **Cost Proxy Model (accepted and in use in California)**
- **Benchmark Cost Proxy Model (accepted in several states)**
- **Australia Net Universal Service Cost (NUSC) model (accepted and in use)**

**Customer Profitability Model** - engaged to design and develop sophisticated model for use in the cost and/or profitability of a customer and competitive analytic response capability for the following telecommunications companies:

- **Hong Kong Telecom;**
- **Pacific Bell.**

## Cincinnati Bell Telephone:

(1988-1995)

**Financial Planning Analyst** - responsible for developing product process costs in relation to new corporate organizational and management structure; performed financial analyses associated with strategic regulatory initiatives, product entry/exit decisions, and economic and strategic impact of potential management decisions.

**Supervisor, Management Cost** - responsible for developing a hybrid management accounting system combining Economic Value Added (EVA) and Activity Based Management (ABM) practices. Developed regulatory cost and earnings model and statistical methodology for determining revenue requirement.

## *Detail on Public Publications/Conference Presentations/Workshops (past 10 years)*

Appraisal for Ad Valorem Taxation Conference – Wichita, KS:

- Presentations:
  - o The New World of Broadband...Implications for Assessment Modeling, July 2019
  - o Replacement Cost New and the New Normal, July 2013

Association of Property Tax Counsel

- Presentation
  - o Correcting the Record on Replacement Cost New, September 2017

Caribbean Association of National Telecommunication Organizations

- Presentation
  - o CostQuest's Modeling Approach, USF and CACM Overview, January 2014

Consumer Electronic Show

- Presentation
  - o Cost of Broadband Ubiquity, January 2012

CostQuest Workshop on Wireless Economics – Cincinnati, OH

- Presentations:
  - o Workshop on the Economics of Fixed Wireless Broadband – A Business Case Review, March 2019

CTIA

- Paper
  - o Ubiquitous 4G Cost of Deployment, September 2011

FCC

- Papers
  - o 5G Mobile Ubiquity Cost Summary, January 2017, March 2018
  - o Connect America Cost Model Methodology, Multiple versions
  - o CACM Operational Cost Overview, April 2013
  - o National Broadband Plan, April 2010
- Workshop
  - o National Broadband Plan Model Overview, July 2010
  - o Connect America Fund Cost Modeling, September 2012

ITTA – Washington, DC

- Presentation
  - o Broadband Serviceable Location Fabric Overview, June 2019

Maine Public Utility Commission

- Presentation
  - o Provider of Last Resort Cost Modeling in Maine, November 2012
  - o Universal Service Cost Modeling, April 2012

Maine Municipal Association on Technology and GIS

- Panel Presentation
  - o Municipal Broadband and Mapping, May 2019

Montana Telecommunication Association

- Presentation

- Connect America Cost Model Overview, July 2013

Missouri Broadband Academy – The Ozarks, MO

- Presentation
  - Broadband Serviceable Location Fabric Overview, June 2019

NARUC – National Association of Regulatory Utility Commissioners

- Presentations
  - State Broadband Costing Model Overview, February 2015

NRECA - National Rural Electric Cooperative Association

- Presentations
  - The Connect America Fund Auction Overview, Multiple 2018
- Webinar
  - The Connect America Fund Auction Overview, August 2017

NTCA – The Rural Broadband Association

- Presentations
  - Economics in Rural America, January 2019
  - Connect America Cost Model Overview, June 2013

Outside Plant Expo

- Presentation
  - National Demand Data Overview, September 2015

Public Utility Research Center

- Training
  - Cost Models and Interconnection, August 2011

Schools, Health & Libraries Broadband Coalition Annual Conference – Washington, DC

- Fireside Chat
  - Rural Broadband Economics, October 2018

Technology Futures, Inc Annual Conference – Austin, TX:

- Presentations:
  - The Economics of Fiber Deep, January 2019
  - Fireside Chat with former FCC Commissioner Mignon Clyburn covering Broadband issues in the U.S., January 2019
  - Reproduction versus Replacement Cost New for Property tax Valuation, January 2016
  - Gigabit Cities, an Overview of the Economics for Deploying Fiber in Cities, January 2015
  - Price trend development for Cable Companies, January 2015
  - Broadband Modernization, January 2013
  - Replacement Cost New - Overview of Methodologies, January 2012
  - National Broadband Plan Overview, January 2011
  - Replacement Cost New - Overview of Methodologies, January 2010
  - Replacement Cost New - Overview of Methodologies, January 2009

US Cellular

- Papers
  - Ongoing Support for Operations & Maintenance of Rural Mobile Networks, February 2016
  - Mobile Voice and Broadband Coverage: An analysis of source, measures, and reporting methods, September 2014

USTelecom – Washington, DC

- Paper:
  - Rural Broadband Economics – A Review of Rural Subsidies, July 2018
- Webinars:
  - Broadband Serviceable Location Fabric Overview, June 2019
  - Rural Broadband Economics – A Review of Rural Subsidies, August 2018

Western Telecommunication Association Conference – Varied Locations

- Presentations:
  - Review of the FCC’s Alternative Connect America Cost Model, April 2015
  - Review of the FCC’s Connect America Cost Model, August 2014

WispAmerica Conference – Cincinnati, OH

- Presentations:
  - Broadband Serviceable Location Fabric – An Overview of Data and Methods, March 2019



## Witnessing:

Stegeman Witness/Testimony Appearances *					
State / Entity	Docket	Year	Type	Description	Role
Alabama	27821	2000/2001	UNE	Generic Proceeding to Establish Prices for BellSouth Telecommunications, Inc.'s Interconnection Services, Unbundled Network Elements and other Related Services	Witness on Modeling
Alabama	29054-Phase 2	2004	TRO	Implementation of the Federal Communications Commission's Triennial Review Order (Phase II - Local Switching for Mass Market Customers)	Witness on Modeling
California	2008-2013 AT&T Tax Filings	2008-2014	Tax	Provided Replacement Cost New of the AT&T network in California - met with State Board of Equalization members in 2008, staff members in 2008-2013	Witness on Replacement Cost New
California	2007-2014 Verizon Landline Tax Filings	2009-2014	Tax	Provided Replacement Cost New of the Verizons network in California - met with staff members in 2009-2014	Witness on Replacement Cost New
Colorado	2014 Trending Factors	2014	Tax	Met with State Department of Revenue to discuss CostQuest Trend Factors for cable industry	Witness on Trend Factors
Florida	990649-TP	2000-2002	UNE	Inquiry into the pricing of unbundled network elements	Witness on Modeling
Florida	030851-TP	2003	TRO	Implementation of requirements arising from FCC's triennial UNE review: Local Circuit Switching for Mass Market Customers	Witness on Modeling
Florida	2010 Comcast Miami-Dade Tax Valuation	2011	Tax	Provided Replacement Cost New of the Comcast Miami-Dade HFC network	Witness on Replacement Cost New
Florida	2011 Comcast Miami-Dade Tax Valuation	2012	Tax	Provided Replacement Cost New of the Comcast Miami-Dade HFC network	Witness on Replacement Cost New
Florida	2014 Comcast West Palm Beach Tax Valuation	2015	Tax	Provided Replacement Cost New of the Comcast Miami Palm Beach HFC network	Witness on Replacement Cost New
Georgia	5825-U	2000	Universal Service	Describe the the Synthesis Model ("SM") (the version released on November 2, 1999 and briefly review the workings of the model FCC's universal service model	Witness on Modeling
Georgia	14361-U	2001-2004	UNE	Review of Cost Studies Methodologies Pricing Policies and Cost Based Rates for Interconnection and Unbundling of BellSouth Telecommunications Services	Witness on Modeling
Georgia	17749-U	2004	TRO	FCC's Triennial Review Order Regarding the Impairment of Local Switching for Mass Market Customers	Witness on Modeling
Georgia	2013 and 2014 AT&T Tax Proceeding	2015/2017	Tax	Provided Replacement Cost New of AT&T network	Witness on Replacement Cost New
Georgia	AT&T Dekalb County Tax Proceeding	2016	Tax	Provided Replacement Cost New of AT&T Mobility network	Witness on Replacement Cost New
Georgia	AT&T Cobb County Tax Proceeding	2016	Tax	Provided Replacement Cost New of AT&T Mobility network	Witness on Replacement Cost New
Iowa	2009	2009	Interconnection	Proceeding to determine cost for interconnection	Witness on Modeling
Iowa	2013/2014	2015	Tax	Provided presentation on RCNLD and obsolescence measures for Iowa Telecom properties	Expert on RCNLD and Obsolescence adjustments
Kentucky	AC382	2000-2001	UNE	Inquiry into the Development of Deaveraged Rates for Unbundled Network Elements	Witness on Modeling
Kentucky	2003-00379	2004	TRO	Review of FCC Triennial Review Order re unbundling requirements for Individual Network Elements	Witness on Modeling
Louisiana	U-24714 (SUBDOCKET A)	2000-2001	UNE	Final Deaveraging of BellSouth Telecommunications, Inc., UNE Rates pursuant to FCC CC 96-45 9th Report and Order on 18th Order on Reconsideration released 11/2/99 to be established and submitted for the December Louisiana Public Service Commission Business and Executive Session.	Witness on Modeling
Maine	2013 Universal Service	2013/2014	Universal Service	Provided Universal Service model for state proceeding. Provided workshop to Public Utility Commission and interested parties. Witnessed on model and results.	Witness on Modeling
Mississippi	2000-UA-999	2000-2001	UNE	Generic Proceeding to Establish Prices for BellSouth Telecommunications, Inc.'s Interconnection Services, Unbundled Network Elements and other Related Services	Witness on Modeling
Missouri	AT&T Mobility Valuation	2018	Tax	Proceeding on the proper valuation of AT&T Wireless assets in several MO counties	Witness on Modeling
North Carolina	P-100. SUB 133d	2002	UNE	General Proceeding to Determine Permanent Pricing for Unbundled Network Elements	Witness on Modeling
North Carolina	P-100, Sub 133Q	2004	TRO	Triennial Review Order UNE-P	Witness on Modeling
North Carolina	2012 ATT Wireless Tax Proceeding	2012	Tax	Provided workshop on AT&T Mobility RCN	Witness on Replacement Cost New
North Carolina	2013 Crown Castle Tower Valuation	2013	Tax	Provided RCN for Towers in Wake county	Witness on Replacement Cost New
Oklahoma	2011 AT&T Tax Proceeding	2011	TRO	Deposed as witness for RCN study.	Witness on Replacement Cost New
Oklahoma	2013 AT&T Tax Filing	2013	Tax	Presented RCN for wireless and wireline networks for AT&T in Oklahoma	Witness on Replacement Cost New
South Carolina	2001-65-C	2001	UNE	Generic Proceeding to Establish Prices for BellSouth Telecommunications, Inc.'s Interconnection Services, Unbundled Network Elements and other Related Services	Witness on Modeling
South Carolina	2003-326-C	2004	TRO	Continued Availability Of Unbundled Local Switching For The Mass Market	Witness on Modeling
Tennessee	03-00491	2004	TRO	Implementation of the Federal Communications Commission's Triennial Review Order (Nine-month Proceeding)(Switching)	Witness on Modeling
Utah	2013 and 2014 Verizon Tax Proceeding	2014/15	Tax	Provided Replacement Cost New of Verizon Wireless network	Witness on Replacement Cost New
Virgina	2010 Verizon Tax Proceeding	2010/11	Tax	Provided Replacement Cost New of Verizon VA landline network	Witness on Replacement Cost New
Washington	2013/2014 Trend Factors	2013/2014	Tax	Conducted industry survey and collected public trends to develop WA specific trend factors for the state of Washington Department of Revenue	Witness on RCN Trend factors
Wisconsin	2013 and 2014 AT&T Mobility Tax Proceeding	2016-2017	Tax	Provided Replacement Cost New of AT&T Mobility network	Witness on Replacement Cost New
U.S.	JointBoard on Universal Service	2007	Universal Service	Enbanc Hearing	EnBanc witness on modeling
U.S.	Connect America Fund Model	2012	Universal Service	Presented 13 hour workshop on network modeling (solo)	Expert on network models
U.S.	Connect America Fund Model	2013/2014	Universal Service	Presented overview of Connect America Cost model to FCC commissioners and/or their staffs	Expert on network models
U.S.	House of Representatives	2017	Broadband	Filed and oral testimony on the status of Broadband in the U.S.	Invited witness on Broadband deployment
CANTO	Broadband Model Workshop	2014	Broadband Models	Provided workshop at annual meeting for CANTO (Caribbean National Telecom Operators) in regard to deploying a regional broadband cost model	Witness on Modeling

\* The list provides the best attempt to provide Mr. Stegeman's hearing history, as he did not maintain a historical master listing.