Mr. Lipoff is president of IP Action Partners Inc, a consulting practice in TIME (telecommunications, information technology, media, electronics, and ebusiness) industries and technologies. He draws upon his 30+ years of experience in a wide variety of technologies and industries to assist clients with knowledge based consulting services involving complex business decisions and problem resolution.

Mr. Lipoff was employed 25 years by Arthur D Little, Inc (ADL) as VP and Director of Communications, Information Technology, and Electronics (CIE); 4 years by Bell & Howell Communications Company as a Section Manager, and 3 years by Motorola's Communications Division as a Project Engineer. At ADL he was responsible for the firm's global CIE practice in laboratory based contract engineering, product development, and technology based consulting. At both Bell & Howell and Motorola, he had project design responsibility for wireless communications and paging products.

Stuart Lipoff has Bachelor's Degrees in Electrical Engineering and in Engineering Physics, both from Lehigh University. He also has received a Masters Degree in Electrical Engineering from Northeastern University, and a MBA degree from Suffolk University.

Mr. Lipoff is a fellow of the IEEE Consumer Electronics, Communications, Computer, Circuits, and Vehicular Technology groups. He is a member of the IEEE Consumer Electronics Society National Administration Committee, and was the Boston Chapter Chairman of the IEEE Vehicular Technology Society. He served as 1996-7 President of the IEEE Consumer Electronics Society and as Chairman of the Consumer Electronics Society Technical Activities and Standards Committee; he currently is VP of Publications for The IEEE Consumer Electronics Society. He has also chaired the search committee for Sony supported Mazura Ibuka Award in consumer electronics and is a current committee member. As Vice President and Standards Group Chairman of the Association of Computer Users, he served as the ACU representative to The ANSI X3 Standards group. For the Federal Communications Commission's Citizens advisory committee on CB radio (PURAC), he served as Chairman of the task group on user rule compliance. He has been elected to membership in the Society of Cable Television Engineers (SCTE), The Association of Computing Machinery (ACM) , and The Society of Motion Picture and Television Engineers (SMPTE).

Stuart Lipoff holds a FCC General Radiotelephone License and a Certificate in Data Processing (CDP) from the ACM supported Institute for the Certification of Computing Professionals (ICCP). He is a registered professional engineer (by examination) in The Commonwealth of Massachusetts.

Mr. Lipoff holds seven USA patents and has published articles in Electronics Design, Microwaves, EDN, The Proceedings of the Frequency Control Symposium, Optical Spectra, and numerous IEEE publications. He has presented papers at many IEEE and other meetings. In the

fall of 2000, he served as general program chair for The IEEE Vehicular Technology Conference on advanced wireless communications technology. He has organized sessions at The International Conference on Consumer Electronics and was the 1984 program chairman. He conducted an eight week IEEE sponsored short course on Fiber Optics Systems Design. In 1984, he was awarded IEEE's Centennial Medal and in 2000 IEEE's Millennium Metal.

He has served as a member of the USA advisory board to the National Science Museum of Israel and has presented a short course on international product development strategies as a faculty member of Technion Institute of Management in Israel. He is also a member of the board of directors of The Massachusetts Future Problem Solving Program.

Mr Lipoff is internationally recognized as an authority and opinion leader in new economy related businesses and technology. Citations supporting his recognition can be found on his web site at http://www.ipaction.com .

Some examples of projects he has performed in the video and broadband telecommunications sector include:

- Leadership of the project which developed the series of DOCSIS specifications for high speed residential cable modems. The scope of work included developing a roadmap and strategic framework for evolving the business from simple high speed internet services to multimedia broadband services combining voice, data, and secure electronic content delivery. This project was performed under contract to the MCNS consortium of cable TV operators representing 85% of the subscriber base in North America and has since been adopted by the United Nations as a global telecommunications standard.
- For Next Generation Network Architecture llc (NGNA llc) consortium of Comcast, Cox, and Time-Warner; he managed the project that produced a five year planning horizon vision for the services and technology the cable industry will seek to deploy. The services and vision were then mapped to overall architectures impacting network elements in the back office, head-end, outside plant, and customer premises and documented in next generation network recommendations. The project involved coordination with over fifty senior technical staff in the three cable MSO sponsors as well as interactions with over 100 suppliers of systems, software, and products to the cable industry. The recommendations and findings were wide ranging including, for example: software defined downloadable conditional access (CA) systems, migration of the outside plant from low to mid split, bridging from network CA to in-home network digital rights management systems (DRM), and migration from 1way to 2way digital TV.
- For The National Association of Broadcasters (NAB) he managed a project to engage NAB members in the development of new applications and services for over-the-air radio and television broadcasting. The project included developing a list and priority recommendations for research projects for consideration of funding by NAB which would explore the most promising candidate research projects.
- For the cable operator consortium SpectrumCo he supported exploration of alternative means to provide competitive public network wireless services to existing cable and new

customers. The project involves exploring 3rd and 4th generation wireless air-interface technologies and developing models that integrate capital expenditures forecasts with operating profits to develop financial performance perspectives of alternatives. A unique aspect of this project includes developing technology forecasts and estimates of subscriber equipment capable of supporting video and multimedia content delivery to handsets.

- For COMCAST Cablevision of Philadelphia, he assisted in the development of a family of advanced two-way, residential digital services, including: development of system/service concepts and specification/selection of a range of equipment to provide this service. Detailed operating and balance sheet financial models of were developed to measure financial attractiveness of alternatives and use as a tool to select specific strategies.
- For a division of Westinghouse in cooperation with Kansai Electric (Japan), he developed detailed business plans for the launch of cable TV and associated broadband services. The project involved demand studies to assess adoption and desires of consumers followed by recommendations on marketing, operating, and technology strategies.
- For the Westinghouse Teleprompter Cable Company, he studied the market for a fiberoptic based institutional data network in Pittsburgh and developed the business and financial models to examine the financial attractiveness of offering these services.
- For Times Mirror Cable TV, he developed business plans for the upgrade of selected systems to 2way capability and exploration of alternative telephony and other advanced services to be provided. I worked with the client to develop risk/reward perspectives for specific service options and develop a roadmap in order of most attractive priorities.
- Analysis and recommendations in a study funded by CableLabs which led to today's hybrid-fiber coax architecture widely deployed worldwide for delivering broadband multimedia services to the home. The project involved developing forecasts of technology trends in parallel with projecting the business applications. Detailed proforma financial models were developed to make the cost/benefit of deploying this technology visible to the cable industry, and strategies were developed and recommended to the industry.
- On behalf of a leading law firm representing TV-Com International, he supported the client as a damages expert in patent litigation related to digital conditional access and encryption technology employed to protect video entertainment delivered over cable television networks. This project required the develop of sophisticated financial models which demonstrated the value of the patents by computing the impact the technology had on the overall enterprise value of the defendant.
- On behalf of a leading law firm representing IPPV Enterprises, he supported the client as damages expert in patent litigation related to secure key exchange and key management as employed by the defendant- Echostar. As above, this project required the develop of sophisticated financial models which demonstrated the value of the patents by computing the impact the technology had on the overall enterprise value of the defendant
- Leadership of a project jointly funded by The National Association of Broadcasters and Maximum Service TV Association to analyze options to accelerate the adoption of digital TV

technology by consumers. His recommendations were provided to the FCC and were the basis for the August 2002 report and order the FCC issued to mandate a roll-out schedule for digital TV receivers.

- For Bell South he contributed to a major operations improvement project involving developing forecasts of the future competitive environment, customer needs, a strategy to compete, and new business models. These forecasts were then applied to develop business redesign recommendations and a list of new services offerings.
- For Magnavox Cable TV (a division of N.A. Philips) he performed comparative cost and technical analysis of fiber optics versus conventional coax systems. This analysis was followed by the development of strategies and sales support materials to pitch the new HFC systems to cable TV operators.
- I performed additional work for The Cable Television Laboratories in which he studied the application of remote and distributed antennas supporting microcellular PCS on hybrid fiber-coax cable TV systems. A key issue explored was the requirement for the fiber optic portion of the plant to carry the PCS carriers in analog form and deal with the wide dynamic range demands for inbound signals.
- For a consortium of the major cable TV operators consisting of Comcast, Time Warner, Cox, and Rogers; he developed models for prediction of reliability of alternative HFC architectures and their suitability to provide local exchange voice services competitive with ILECs. The project required understanding the reliability specifications employed in conventional local exchange carrier telephone plant and the contributions between hardware, power, and workmanship failures. Each of three alternative fiber optic architectures for cable delivered voice telephony were studied and modeled to develop reliability predictions and recommendations were made as to which aspects of the three alternatives were the best choice for cable delivered voice telephony.
- For GTE Systems he prepared a presentation on developing commercial opportunities for wide-bandwidth ATM switching. The scope of applications included: metro area network LAN interconnect, broadcast studio digital video routing and switching, and distributed switching for digital wireless personal communications networks. The goal of the project was to explore cable TV and other commercial applications for their military systems broadband switching technology.
- For Bellcore (now Telcordia division of SAIC), he evaluated the R&D portfolio of their Applied Research Group. The main components of this portfolio were DWDM technologies for long haul interLATA communications as well as optical multiplexing components for passive optical network applications in cable TV and advanced broadband residential services. I provided R&D planning assistance on the allocation of funding and priorities to the R&D efforts and identified opportunities for securing intellectual property rights to critical R&D efforts.
- For the ViaSat Division of Modern Times Group (Sweden) he developed business plans for the launch of a new service that bundled discounted long distance telephone services with direct to home satellite TV services and other interactive services including gambling via the set-top box.

- For Magnavox Cable TV, he supported the development of a set-top-box cable converter with a microcomputer based user interface and conditional access system. The product was sold in both the USA and Canada.
- For Southern New England Telephone (SNET), he supported the launch of a video dial tone service. He contribution to the project included engineering and cost analysis of system alternatives as well as assisting with the preparing of RFPs for set-top-boxes and other network elements.

DOCKET ALARM

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts

Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research

With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips

Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS
Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS
Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS
Sync your system to PACER to automate legal marketing.