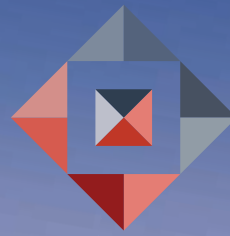
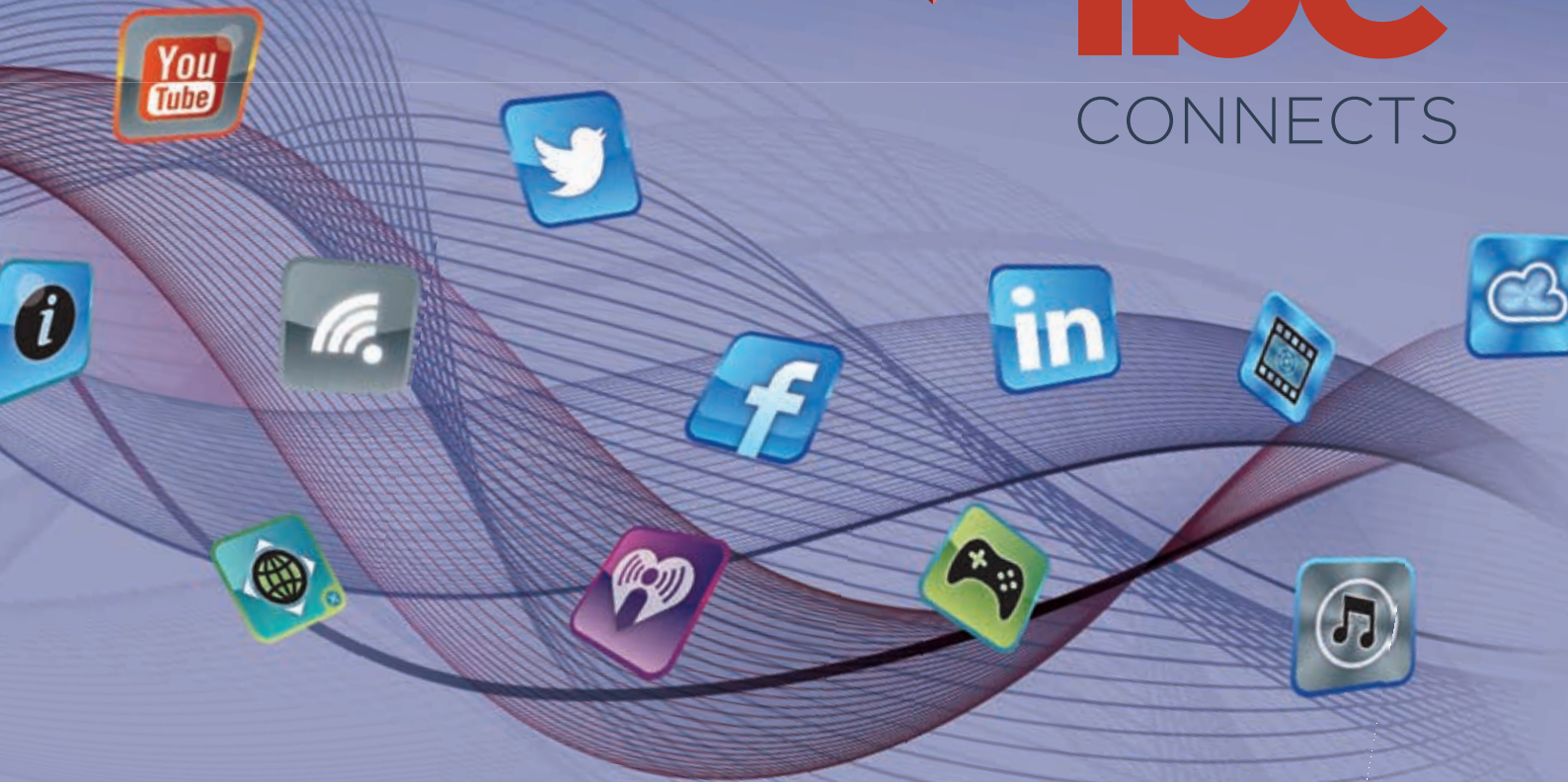


www.ibeconnects.com



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The Industry Standard

WELCOME TO CONNECTED MEDIA WORLD AT NAB SHOW

Connected Media World is a brand new signature destination at NAB Show which focuses on the connected consumer experience. Platforms are multiplying faster than ever before. TV becomes IPTV. Mobile becomes Social. Social goes to the Cloud. As a result, it's now the consumer who has control. The consumer has the power. It's the consumer who is demanding a fully connected, interactive, personalized, content experience.



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IT'S TIME TO GET PERSONAL

Connected Media World at NAB Show is where you'll find the players who are responding to such demanding consumer expectations.

From broadcasters, tech teams, app developers and content companies, Connected Media World showcases the technologies and devices that are responding to this massive power shift to the consumer.

There is money to be made for those who finish first. It's time to get personal and connect with the consumer.

Be part of media and entertainment's future. Be part of Connected Media World at NAB Show.

NAB SHOW AT A GLANCE

- 90,000+ media and entertainment professionals
- 805,000+ net square feet
- 500+ skill-building sessions
- 156 countries
- 90 years of industry leadership
- \$18.8 billion in purchasing power
- 1,600+ members of the press
- 1,500+ unique companies

CONNECTING YOU TO NEW OPPORTUNITIES.

Connected Media World is an exclusive destination at NAB Show - a signature "event within an event". Here you can present your brand to a uniquely targeted audience looking for new ways to reach the connected consumer.

Here, the content consumption experience is showcased across IPTV, mobile, social, and cloud technologies, devices and content. Connected Media World is the perfect addition to the expansive NAB Show Exhibit Floor. NAB Show features 1500+ exhibitors showcasing solutions across the entire content ecosystem - from creation to consumption.

These solutions transcend traditional broadcasting and embrace content delivery to new screens in new ways. Participation opportunities include exhibit space, turn-key package options, a demo presentation stage and networking area.

Connected Media World at NAB Show is hosted jointly by NAB and BPL Broadcast.

BPL Broadcast is responsible for worldwide events, print magazines and websites across the convergent broadcasting, IT and communications sectors. With its origins in the world's single biggest content creation marketplace NAB Show has evolved into the world's largest gathering of media and entertainment professionals - attracting more than 90,000 attendees from 156 countries.

Together our passion for, and continued leadership in driving this global industry forward provides you with an unparalleled opportunity to network with today's innovators and thought leaders, increase brand awareness, and close deals.

NAB SHOW AND BPL BROADCAST

BPL Broadcast and NAB Show will execute a dedicated and comprehensive marketing program to include pre-show, onsite and post-show exposure across BPL's global print brands, BPL and NAB Show websites and social channels, plus the all-new connectedmediaworld.com portal. If you're serious about connecting to the consumer, seriously consider being part of Connected Media World at NAB Show.

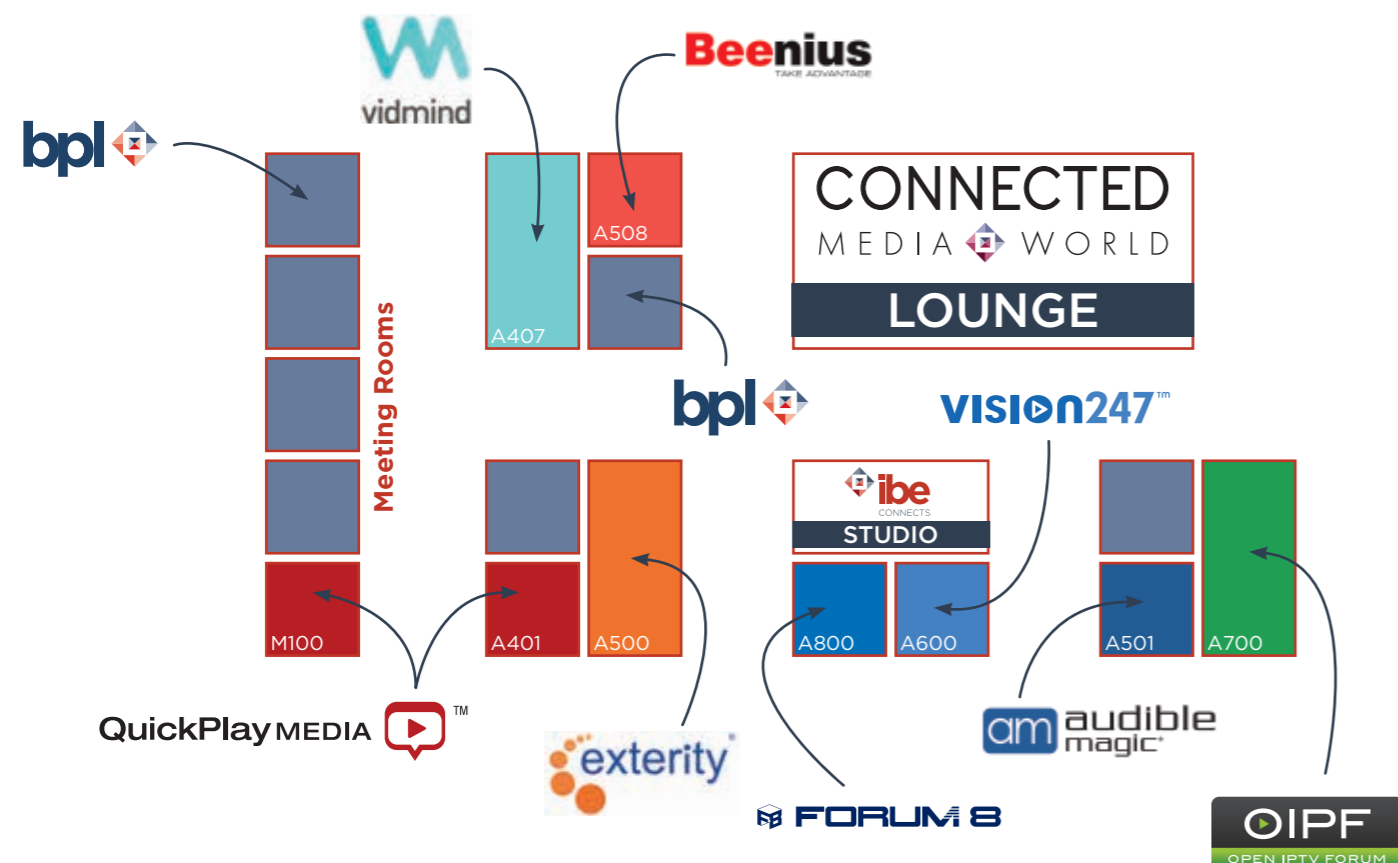
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People. Process. Data. Things. All connected and talking to each other like never before. The Internet of Everything creates a world of new opportunities. Today's leaders recognize that now is the time to seize those opportunities. So they're looking for more than a technology provider. They're looking for a strategic partner who can transform their business.

Cisco is that strategic partner. We made the Internet what it is today. And we're the only people who can deliver the intelligent network for the Internet of Everything. A network that listens, learns, and responds. On a scale like never before. Cisco continues to change the way people work, live, play, and learn. We'll show you what's possible when you connect the unconnected.

www.cisco.com



www.audiblemagic.com

Audible Magic is the trusted leader in digital fingerprinting for recognizing content in all forms across radio and television broadcasts, Internet streams, cable and satellite transmissions, stored digital files, and on consumer devices such as smart TVs, set-top boxes, smart phones, tablets, and other appliances. Since its founding in 1999, the company has been awarded more than 20 patents in the U.S. and in Europe.

Currently, Audible Magic works with more than 200 customers and partners, including A+E, CBS, CBC, Dailymotion, Discovery, Disney, Facebook, Fox, Metacafe, MySpace, NBC, Sony, Soundcloud, TVplus, Univision, Universal Music, Verizon, Viacom, and Warner Music.

North Hall A501



www.beenius.tv

Beenius is the developer of Beesmart, interactive TV middleware for modern TV service operators that deliver the most exciting social TV experience to their subscribers. Beesmart empowers the uniqueness of every operator by providing a TV platform along with the tools for extensive upgrades and prompt customizations in a cost-effective manner. Beenius has a proven track record of successful customers and partners, and is committed to continuously delivering the means for their sustainable growth.

Beesmart is an appealing platform created to help operators do what they do best: catering to their subscribers' every wish. BeeSocial TV features inspire users to share their TV experience on social media, mentioning the operator's services. They guarantee subscriber satisfaction and are a perfect reason for viewers to use second screen apps. For operators, Beesmart's BeeSocial TV features boost ARPU by recommending and promoting additional content and related services and products.

North Hall A500



www.exterity.com

Exterity is the market leading enterprise IPTV specialist with products and systems deployed globally by some of the most recognised brands in the world. Exterity solutions enable organisations to distribute broadcast quality digital TV and video over IP networks to an unlimited number of end users.

With centralised management, configuration and control, Exterity systems can support large volumes of channels and end user devices without compromising or degrading picture quality.

North Hall A500

CMW EXHIBITORS



www.forum8.com

FORUM8 produces state-of-the-art 3D Virtual Reality software and is at the forefront of 3D visual interactive simulation technology. The company's premier product UC-win/Road is an ideal solution for urban and transport planning, road safety, emergency simulations and design projects. It can run on its own or with renowned third-party 3D design tools and micro-simulation applications.

UC-win/Road interactive 3D environments can also be accessed through the cloud using VR-Cloud®, a unique multimedia cloud computing application developed by FORUM8. VR-Cloud® hosts live virtual environment on the cloud, making them quicker and easier to access. Contents play in a small client (PC or Android) and can be linked from any web page.

The technology behind VR-Cloud®, the a3S cloud system, is now adapted to match the demanding media and broadcasting industry. Using a3S, more attractive, interesting and entertaining contents can be created, and the audience can take part of the creation process.

North Hall A800



www.oipf.tv

The Open IPTV Forum enables an ecosystem for mass market IPTV through the introduction of Connected TVs leveraging the OIPF's standards-based, end-to-end specifications. OIPF specifications are being adopted by complementary industry groups including HBBTV. A planned certification and IOT program will aid interoperability of services delivered to retail, end user devices.

Leading stakeholders in the IPTV industry who have joined the founding members (Ericsson, Orange - FT Group, TP Vision, Samsung, Sony Corporation and Telecom Italia) as members of the OIPF include: ABOX42, Accenture, Alcatel-Lucent, ANT Software, Axonista, BBC, BluFocus, Broadpeak, Connected Home Academy, D-Link, DCC Labs, Deutsche Telekom, Digisoft.tv, Digital TV Labs, Dolby, Dotscreen, DTS, Espial, Fraunhofer, Huawei, Humax, HwaCom, IRT, ITRI, KDDI, mistserver.org, Motorola, Mstar Semiconductor, Nagra/Kudelski, Opera Software, PCCW, Penki Kontinentai, RAI, Rogers, Rovi, Saudi Telecom, 3 Screen Solutions, SES, Stingray Digital, Streamhub, The Weather Network, Testronics, TNO, Toshiba, UXP Systems, Verimatrix, WMC Global, Zenterio, and Zyxel.

North Hall A700



www.quickplay.com

QuickPlay Media is the leading provider of managed solutions for the distribution of premium video to IP-connected devices. Successfully used by the world's largest communications and media companies, QuickPlay's OpenVideo platform provides the most scalable and secure way for companies to deliver engaging multiscreen entertainment experiences.



Live TV

Deliver live streaming, premium television programming to any device



Video on Demand

Deliver premium video content to any device on demand



Media Transformation

Get the right content in the right format for the right device, faster and at the highest quality.

North Hall A401



www.vidmind.com

Vidmind is a White-label, Over-the-top (OTT) Cloud-TV platform. We offer any company the chance of launching a multiscreen TV service including Live HD-TV, On-demand content, Social TV, Home Streaming, a TV App Market and 2nd Screen content discovery. Vidmind offers Android-based set-top boxes, PC, mobile and tablet applications. It enables new entrants the opportunity to become OTT TV operators today, offer consumers more choice and make TV into something that has never been seen before.

The Vidmind experience is seamlessly transferable across devices and networks. Users can create, curate and recommend content to their social networks whether it is live TV, VOD, media streaming or TV apps.

Founded by veterans of the OTT video pioneer GooMe, VidMind is an Israel-based company of approximately 40 employees. We are all about delighting users, empowering operators and being open.

North Hall A407



www.vision247.com

First to market with functional internet delivered broadcast, Vision247 provides a complete solution to clients wanting to create compelling TV and video services for connected audiences worldwide. With the acquisition of Fora in 2013, Vision247 extends its platforms to meet the unique high performance demands of telco IPTV.

Fully customisable for clients, the Vision247 platform supports all current commercial IPTV and OTT models from subscription, pay-as-you-go to PPV and advertiser funded. Content owners, ISPs, broadcasters and brands have a one stop route for managing, delivering and monetising a complete interactive multimedia experience on any screen, anywhere.

North Hall A600

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ppage@bpl-broadcast.com

THEATRE SCHEDULE

MON APRIL 8



10:00 - 10:30

Nilo Mitra, President of the Open IPTV Forum

Presentation: Accelerating a Mass Market for TV Apps and Services through the Open IPTV Forum Specifications

End to end specifications are essential to an effective eco-system delivering an easy "plug and play" interoperability experience for the end consumer. The Open IPTV Forum is an essential organization independent from the technology behind the industry. This presentation will explain how OIPF is aiding consumers, service providers and manufacturers as new technologies are delivered to retail, end user living rooms and across multiple mobile screens.

Nilo Mitra is President of the Open IPTV Forum, the global IPTV industry specifications and certification organisation. He is also Engineering Director (Systems) at Ericsson, and coordinates Ericsson's standardization activities in the area of IPTV. He has been working on IPTV standardization for the past nine years, in particular with the establishment of the Open IPTV Forum. Prior to joining Ericsson, Nilo worked at AT&T Bell Laboratories. He has a Ph.D in Physics from Columbia University in New York City.



10:30 - 11:00

J. Graeme Noseworthy, Strategic Messaging Director IBM

Presentation: Audience Measurement and Targeted Advertising in the Connected Content World

Understanding audiences at an individual level becomes a critical exercise as media companies work to leverage visibility into consumer segmentation and make real time decisions around programming, advertising, and distribution. Big data analytics helps change the model for success as marketers can finally understand who they are precisely targeting. The result is a compelling, personalized experience across digital channels, based upon deep insights into each customer's interests and lifetime interactions. In this session, we will explore the primary data-driven use cases that are helping media and entertainment companies compete at unprecedented levels

J. Graeme Noseworthy is a marketer on a mission. Graeme's sole focus is to develop and deliver the messaging and marketing that demonstrate the value that IBM's PureData Systems & Big Data Platform deliver to digital marketing, media & entertainment professionals and their CMOs around the world. Prior to working on the agency side, Graeme created and implemented the strategic marketing plans and programs for the Staffing Industry Segment at Monster Worldwide.



11:00 - 11:30

Jay Friedman, Vice President of Marketing and Customer Support

Presentation: ACR and Advertising

The ability to quickly measure the effectiveness of your advertising, confirm market penetration by comparing different forms of broadcast medium, and manage the rights of your intellectual property is becoming a major requirement for organisation across the connected media landscape. This presentation explains how Automated Content Recognition (ACR) technology can detect music or advertising content as it is broadcast over radio, television, cable and satellite. Through perceptual digital fingerprinting technology to enable news studios, sport organizations, TV syndications and advertisers to determine precisely when, where and how their content is being used.

Jay Friedman is responsible for the marketing and customer support organizations within Audible Magic. With more than 30 years of experience working within the computer, software, and Internet markets, Mr. Friedman offers an extensive background in marketing, product management, business development, sales and business operations. Before joining Audible Magic, he was the co-founder of SonicSwap, an online music social networking company. Mr. Friedman began his career working first at Hewlett-Packard and later at Sun Microsystems in a variety of product management positions. Mr. Friedman has a Bachelor of Science degree in math and computer science from UCLA and an MBA from Santa Clara University.

12:30 - 13:30

Panel Debate: The Connected Stadium

From sports heroes to rock concerts, the live stadia environment is often viewed as the premium content experience for the discerning consumer. However, the traditional stadium experience is undergoing a significant change as event owners, rights holders and artists attempt to bridge the gap between stage and viewer with new innovative technology.

This panel discussion highlights the economics behind these changes as event producers aim to deliver new revenue streams from existing formats. From an operational side; we explore how the use connected technology can help create venues that meet the visitor expectations while reducing operational cost and complexity.

Guests include

- Steve Hellmuth EVP Technology NBA,
- Christina Mixon, Mixon Digital and Former ESPN Producer,
- Colin Farquhar, CEO of Exterity Ltd
- David K. Holland, SVP and General Manager Sports and Entertainment Solutions Group (SESG), Cisco

Moderated by

Saleha Williams, former Executive with London 2012 Olympics and Vice President BPL Broadcast.

Christina Mixon

Christina Mixon founded Mixon Digital last fall to assist sports team, broadcasters, and venues to utilize statistics and data to enhance fan knowledge and engagement. Prior to Mixon Digital, Christina worked as Director of Graphics for the NBA Entertainment, the production division of the National Basketball Association. In that role, she created the graphics operations department to support NBA TV, the league's 24-hour network. Additionally Christina developed advanced display systems for all of the NBA's major events, like the All-Star game, Draft, and international events (NBA Europe Live, NBA China games), including the first stereoscopic graphics package for a live 3DHD production. Christina also worked as a producer for a variety of ESPN productions, including Figure Skating, Alpine Skiing, Track & Field, and motorsports.



Steve Hellmuth

Steve Hellmuth is Executive Vice President, Operations and Technology for NBA Entertainment. He oversees the league's information technology, interactive services, broadcast operations, and engineering departments. He also oversees the development and implementation of the NBA broadcast facility standards for the design, construction, and operation of NBA arenas. Hellmuth was the executive in charge of the first-ever live sports events in 3D HD for the 2007 NBA All-Star Game in Las Vegas and also Game 2 of The Finals 2007 at Quicken Loans Arena in Cleveland. Prior to joining the NBA, Hellmuth served as General Manager for Potomac Television Communications in Washington, D.C. He also worked at NBC in New York City from 1979 to 1987, serving as Production Manager for the network's sports division. Hellmuth is the Chairman of the Advisory Board of the Sports Video Group and on the board of the Content and Communications World Council.



Colin Farquhar

Colin Farquhar founded Exterity, a leading provider of enterprise IPTV communication solutions, in 2001. Exterity products can be found installed across every continent in some of the world's most reputable organisations. As a recognised innovator in IPTV technology development, the company includes BBC Sports and Formula 1 amongst its client roster. Prior to founding Exterity, Colin was the Global Product Marketing Manager of IP video security solutions company IndigoVision, and European Marketing Director of the Shiva Corporation. A member of the Chartered Institute of Marketing, Colin also holds a BSc in Computer Science and Engineering from the University of Strathclyde



David K. Holland

David Holland serves as Senior Vice President and General Manager of the Sports and Entertainment Solutions Group (SESG) at Cisco. In his role, Holland has overall responsibility for accelerating development and adoption of Cisco solutions in the Sports and Entertainment market. Cisco has targeted the Sports and Entertainment industry as a significant opportunity and it is one of the company's top focus areas for solution innovation.

As general manager of SESG, Holland oversees a team responsible for the development, management, and delivery of Cisco Sports and Entertainment solutions that are transforming the fan experience in sports and entertainment around the world. Holland joined Cisco in 1998. During his tenure, he has participated in a wide variety of internal councils and boards responsible for establishing the vision and strategy for Cisco's success in Sports and Entertainment, Smart + Connected Communities, and Safety and Security. Holland holds a bachelor's degree from Brigham Young University and a master's degree in business administration from San Jose State University.



THEATRE SCHEDULE

MON APRIL 8



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13:30 - 14:30

David Stengle, Senior Vice President Business Development, Black Arrow

Cisco CMW Daily Keynote: Video Everywhere Advertising: Challenges and Opportunities

Improvements in bandwidth capacity, coupled with efficient adaptive bit rate (ABR) video delivery formats, have fostered consumer demand for anytime, anywhere TV viewing. At greatest risk during this transition is the \$202 billion global TV advertising market. Without proper attention to the monetization capabilities of Video Everywhere services, efforts to deploy it are fundamentally meaningless. This presentation will describe a unified platform strategy designed to converge the advertising ecosystems which today isolate broadcast and IP delivery silos from one another.

David Stengle joined BlackArrow from Lenfest Media, where he led advanced advertising initiatives as senior vice president of strategy and planning. While at Lenfest, he served as CEO of StarNet LP and led the turnaround of a portfolio of companies, including Media DVX, an electronic advertising distribution company (later sold to DG Systems); StarNet, a cable operator advertiser systems integrator (later sold to OpenTV); MCN, a regional infomercial network; and Prime Image, a local television advertising production company.

16:30 - 17:00

Saleha Williams, VP BPL Broadcast & Publisher of IBE
Will Garside - Editor of IBE
Chris Brown - EVP, NAB Show

Presentation: BPL Broadcast & NAB Show Connected Media World Q&A

As the first Connected Media World at NAB Show, Saleha Williams VP BPL Broadcast & Publisher of IBE, Chris Brown, EVP from NAB Show and IBE Editor Will Garside offer a candid briefing and Q&A session around the new signature show format and 2013/2014 strategy.

This invite only session is aimed at communications and PR professionals within the agency and vendor communities.

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For the latest Connected Media World Theatre Schedule please visit connectedmediaworld.com

THEATRE SCHEDULE

TUE APRIL 9



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FORUM 8

10:00 - 11:00

Greg Philpott, mDialog, CEO

Cisco CMW Daily Keynote: The Future of Linear TV Advertising is in your hands

As a pioneer in the concept of video stream management, Greg will outline how his work with some of North America's largest content and service providers has helped to create multi-platform video delivery strategies that let them replicate the traditional television break with 1 to 1 addressability across any connected device. This presentation gives brands, broadcasters and service providers what they need to know.

Greg Philpott is the founder and CEO of mDialog, the leading provider of cloud-based video advertising technology. Since founding mDialog in 2006, Philpott has grown the company into the leading stream management solution for some of the largest media companies in the world. The mDialog Smart Stream Platform provides real-time addressable TV commercials, stream measurement, and broad support for devices including iPhone, iPad, Android Tablets and Smart Phones, Apple TV, GoogleTV, Xbox and Roku.

11:00 - 11:30

Danny Peled, Founder & CEO of Vidmind

Presentation: Cloud Power: The OTT Video Storm and How to Harness It

Internet is changing the TV market dramatically. As consumers, we are already looking for a better experience, at a lower price. The cloud will soon make 'TV everywhere' a reality. Our TV will become social and we will consume content on multiple screens simultaneously. This wind of change is already disrupting the traditional TV value chain. Cable and satellite operators, broadcasters and content providers, retailers and mobile network operators are all in a battle to retain their profitability.

Danny Peled brings 20 years of experience in management, content-creation and technology that have shaped his perspective on what TV should be like. Formerly the Founder & CEO of GooMe, a pioneer in providing OTT video solutions to operators, Danny started his love affair with media content as a radio music Editor in Chief and later, an executive TV Producer. Naturally, he is a closet DJ and a total music buff, but also a semi-pro jogger.

11:30 - 12:00

Christophe Soulier, Chief of FORUM8's Supercomputer-Cloud Research Lab

Presentation: Real-time, cloud-based 3D virtual reality applications

FORUM8 will present VR-Cloud®, a real-time, cloud-based 3D virtual reality software and its underlying technology, the a3s cloud system, which is being adapted to the media and broadcasting industry. The presentation will show how it can be used to create more attractive contents, and how the audience can take part of the creation process

Christophe Soulier is a graduate of the prestigious Institute of Science and Technologies of Grenoble. He has established himself as one of the most prominent engineers within 3D VR and is Chief of FORUM8's Supercomputer-Cloud Research Lab in Kobe, Japan. His work has been instrumental in the development of the company's state-of-the-art 3D Virtual Reality software and technologies including VR-Cloud®, a unique multimedia cloud computing application that hosts live virtual environment on the cloud.

THEATRE SCHEDULE

TUE APRIL 9

12:30 - 13:30

Panel Debate: The changing role of Industry Associations

As the connected landscape stretches across different devices, networking technologies, geographic and legal boundaries; the role of industry associations is changing. The sheer diversity of competing voices and interests is promoting new alliances that are inter-discipline and potentially force competing interests into the same arena for the greater good. Our panel take a candid look at the biggest regulatory and interoperability issues facing the industry over the next few years from the Connected Consumer perspective.

Our experts include

- Nilo Mitra, President of The Open IPTV Forum (OIPF)
- Peter White, Director General, International Association of Broadcasting Manufacturers (IABM)

Moderated by

Will Garside, IBE Editor

Nilo Mitra

Nilo Mitra is President of the Open IPTV Forum, the global IPTV industry specifications and certification organisation. He is also Engineering Director (Systems) at Ericsson, and coordinates Ericsson's standardization activities in the area of IPTV. He has been working on IPTV standardization for the past nine years, in particular with the establishment of the Open IPTV Forum. Prior to joining Ericsson, Nilo worked at AT&T Bell Laboratories. He has a Ph.D in Physics from Columbia University in New York City.



Peter White

Peter has been Director General of the IABM since 2009 and his responsibilities include the development and implementation of the association's strategies; representing our members at executive level to organisations around the world and overseeing the smooth running of the Secretariat. The IABM has around 300 members worldwide who themselves represent >80% of the value of the global broadcast technology market. Members range from small niche providers to global corporate businesses who each value different aspects of the services available from their trade association.



15:30 - 16:00

Christy King, Technology Consultant at Zuffa, LLC sports entertainment brands

Presentation: Knock Out Video Production Bottlenecks in the Connected Content World

Ultimate Fighting Championship®, or UFC®, is the fastest growing sports organization in the world, and is also one of the industry's largest producers of video content. UFC created over 350 hours of original video content last year alone, and along with an in house project to digitize their entire 10 year library of analog video tape, consumes 1PB of hard disk storage and 2.5 PB of LTO-5 tape.

Christy King explains how UFC implemented enterprise flash storage from TMS, an IBM Company, to alleviate the storage I/O bottlenecks they were experiencing as they created over 100 transcodes from each broadcast. The result was an immediate 70% reduction in the time to complete transcoding, and an across the board reduction of 40% in the time to complete the overall workflow.

Christy King serves as the in-house technology consultant and tech vendor manager for Zuffa, LLC sports entertainment brands, including the UFC® (Ultimate Fighting Championship®). She is also the co-founder of the start-up World Resource Manager® whose focus is developing simple tools to help businesses crowd-source video captured on mobile devices for use in social media marketing, and other production efforts. In collaborating with several vendors to create a DAM, MAM, and BAM, for Zuffa, LLC, Christy has developed a deep understanding of cutting edge technologies to receive, catalog, and store media; address metadata issues, closed-captioning, SAP information, scripts/transcripts, export formatting, QC processes, approval policy workflows, and other asset management issues.

For the latest Connected Media World Theatre Schedule please visit connectedmediaworld.com

13:30 - 14:30

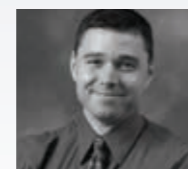
Cisco CMW Super Session: What will the content network of the future look like?



Our panel of experts will show what they think is on the horizon and how the global drivers, new technologies and social factors will impact on both the economic and personal aspect of all our lives.

This session will focus on the emerging trends that are impacting the broadcasters, service providers and network operators as they aim to meet the multiscreen, increasing mobile and "always on" global consumer. Across digital, cable, satellite and even 3G/4G networks, the landscape is evolving more rapidly than at any point in history.

Experts panel to be confirmed



Moderated by
Greg Ireland, Research Manager, Consumer Markets, IDC

**Main NAB Conference Session
LVCC Room S222**

THEATRE SCHEDULE

WED APRIL 10



09:30 - 10:00

Steve Christian, Vice President of Marketing, Verimatrix

Presentation: Understanding Multi-network Revenue Security Strategies

The new marketplace dynamic for revenue security underscores the need for an integrated security approach across multi-network video delivery systems. As the competitive landscape evolves and new revenue threats for operators emerge, the scope of the challenge for security vendors is also changing. Implementing a flexible and harmonized rights management system for hybrid networks is vitally important to secure revenue, but also to enable an agile threat response.

Steve Christian has a wealth of experience in the digital media and Internet technology space and is a speaker on media technology and business trends at industry events around the globe. At Verimatrix he is responsible for product strategy, marketing programs and management of brand equity. His background includes product and services management at Wind River, ST Microelectronics and Raytheon. Mr. Christian has a 1st class degree in Physics from the University of Bristol and an MBA from the Open University in the UK.



10:00 - 11:00

Warren Arenstein, Business Development at Primestream Corporation

Cisco CMW Daily Keynote: It's Time to Digitize, Manage and Automate

The word "broadcast" is a construction of the past. Today's content providers are in effect mass-narrowcasters, creating and disseminating an ever-increasing array of content, to an ever-increasing spectrum of platforms. One two-minute segment will end up as part of an evening news broadcast - as a stand-alone piece available on the internet - as a file available on mobile devices - accessed in 10,000 Internet searches. This presentation highlights out how Primestream together with Cisco, are transforming the broadcast landscape with complete media asset management and production automation.

Mr. Arenstein has almost 30 years of experience in the broadcasting industry. As an editor/producer he achieved top-level positions during his career at CBS News, working as an editor for the CBS Evening News, 60 Minutes and 48 Hours, and a tour as chief editor in CNN's Moscow bureau. Mr. Arenstein later was hired as Media Operations Manager for the CNN bureau in Washington, where he led the transition from analog tape, to an all-digital file-based workflow.



11:00 - 11:30

Colin Farquhar, CEO of Exterity

Presentation: Create, Configure, Customise and Control Broadcast Quality Content Over IP

Introducing the brand new Portal from Exterity! Not yet on general release or seen publicly before, the Portal software - powered by Exterity AmediaServer - is designed for complete customisation and flexibility for system administrators and integrators to configure and manage an Exterity enterprise IPTV system, applications sitting on it and content running across it, resulting in expedited installations and a more engaging user experience.

Colin Farquhar founded Exterity, a leading provider of enterprise IPTV communication solutions, in 2001. Exterity products can be found installed across every continent in some of the world's most reputable organisations. As a recognised innovator in IPTV technology development, the company includes BBC Sports and Formula 1 amongst its client roster. Prior to founding Exterity, Colin was the Global Product Marketing Manager of IP video security solutions company IndigoVision, and European Marketing Director of the Shiva Corporation. A member of the Chartered Institute of Marketing, Colin also holds a BSc in Computer Science and Engineering from the University of Strathclyde.

Colin Farquhar is also taking part in 'The Connected Stadium Panel Debate' on Monday April 8 at 12:30pm within the CMW Theatre.



11:30 - 12:00

Matjaz Bevk, Chief Executive Officer for Beenius

Presentation: Understating the future of Social TV

Social television is a general term for technology that supports communication and social interaction in either the context of watching television, or related to TV content. The next generation of Social television systems may integrate voice communication, text chat, presence and context awareness, TV recommendations, ratings, or video-conferencing with the TV content either directly on the screen or by using ancillary devices. This presentation provides a fascinating look into the technology that will generate new services and revenues for innovative operators.

Matjaz Bevk is one of the key members of the team that developed and launched Beesmart on the market during its bootstrap stage. He started as a product manager and became the CEO of the company after Beenius was born as a spin-off from Smart Com. Matjaz holds a Ph.D. in Computer Science from the University of Ljubljana and has over six years of research experience in artificial intelligence. He has published numerous articles on these areas in international scientific journals, such as the Journal of Intelligent Data Analysis.



12:00 - 12:30

Jijesh Devan, Director of Product Marketing at QuickPlay

Presentation: TVX: The fastest route to a TV everywhere service

As the ever-expanding proliferation of connected devices and multi-screen viewing continues to surge, a growing number of service providers are actively exploring the concept of a TV Everywhere service. TVX as a managed service delivers an off the shelf configurable, brand able solution for service and content providers to launch multiscreen services in as little as 90 days. This ensures a very quick time to market while reducing cost, complexity and risk associated with launching and managing a multiscreen video offering. Join us as we demo and discuss key features of this end to end solution.

Jijesh Devan is Director, Product Marketing at QuickPlay Media Inc. He is an early adopter of technology and loves to experiment with new software and hardware tools. Jijesh is a strategic and hands-on B2B online marketer with a proven track record executing brand development and lead generation strategies.



12:30 - 13:30

Panel Debate: Monetizing the Connected Consumer Experience

The volume of content available to consumers is growing at the fastest rate in history but monetisation is still lagging behind. Is the issue down to quality, consumer apathy, lack of suitable delivery method or are there other less obvious factors?

Our panel with expertise from premium content distribution, online video streaming services and the video gaming industry provide a series of perspectives on how innovators are finding new ways to engage with consumers and monetise content.

Experts panel to be confirmed

Moderated by
Will Garside, IBE Editor

THEATRE SCHEDULE

WED APRIL 10 / THU APRIL 11



14:00 - 14:30

Luke Kennedy, Director, Vision TV Network

Monetisation of connected content and smart devices

Consumers have been trained for years to access video content on their television since the day they were invented, but that era seems to be fading with the invention of new and better mobile devices. More and more consumers are now focusing on watching OTT (over the top) content on their mobile devices and tablets. Audiences no longer have to switch on the television to watch their favourite TV episode, as there are better ways to do it via YouTube, Netflix and LoveFilm. This presentation explores how to effectively monetise content in a world awash with new smart devices.

Luke Kennedy has worked nearly twenty years in the broadcast and IPTV business. Over seven years at the heart of the world's pioneering IPTV platform Homechoice, now Talk Talk, in the UK and subsequently consulting across Europe for major TV platforms. This experience has led to one of the deepest understandings of the requirements of delivering a compelling IPTV platform business, and the broad spectrum of components necessary to do so.



15:30 - 16:00

Hugo Swart, Director, Product Management for Qualcomm Mobile Computing Technologies

A Smarter TV Experience

The lines between PCs, smartphones, tablets, TVs and STBs are rapidly blurring. Consumers expect a consistent and high quality experience given the performance of computing and mobile devices on the market today. Similar to the transition from feature phones to smartphones, TVs and STBs are rapidly changing and becoming multi-purpose devices that can provide users with a multitude of entertainment options and lifestyle services. This presentation looks at the next generation of the TV user experience and STB as a gaming platform.

Hugo Swart serves as director of product management for Qualcomm Mobile Computing Technologies (QMC). His current responsibilities include defining the product roadmap for Snapdragon processors to the set-top box (STB) market as well as advancing customer engagement. In addition, he is responsible for establishing ecosystem partnerships in the TV market. Prior to joining Qualcomm, Swart served as sales engineer for Lucent Technologies and Telecom Italia.



Thu April 11 - 10:00 - 10:45

CMW NAB Show Conference General Session - Disruptive Media Conference - LVCC Room N249

The App Advantage: Leveraging Connected Devices to Deepen Engagement

Apps are becoming an increasingly important part of the entertainment experience. From enhancing events like the recent summer Olympics to deepening engagement with favorite shows, apps are bringing television and the Internet together to create new experiences. The range of functionality provided by apps is huge.

But which approaches really work to increase audiences and improve engagement? In this panel we will deconstruct the TV app and learn from a panel of experts with hands-on experience what works and why

Panelists

Michael Lantz, CEO, Accedo Broadband

Martez Moore, EVP, Digital Media, BET Networks

Channing Dawson, Senior Advisor, Content Distribution and Marketing, Scripps Networks Interactive

Moderated by

Saleha Williams VP BPL Broadcast, Publisher IBE

Main NAB Conference Session LVCC Room N249

IBE MODERATOR

PROFILES

Saleha Williams

Vice President
Bpl Broadcast Ltd
Publisher IBE Magazine



Williams has over 25 years global business and strategic marketing experience, across the media, telco and IT sectors, specialising in digital media.

She has previously worked with companies including BBC, BT, Siemens, and the London 2012 Olympics, and joined BPL Broadcast as Vice President in July 2012: she took over as Publisher for BPL's flagship media title, IBE, in January 2013.

Williams has an impressive track record in the digital media and technology/telecoms sector; throughout her career she has worked with media & entertainment clients, at CEO level to define and deliver their business and marketing strategies, driving global sales and marketing programmes which utilise multiple platform content delivery and broadband/IP distribution technologies to exploit emerging and new business models across the convergent media value chain.

Following the sale of BBCTechnology to Siemens, she was responsible for setting up and driving the Siemens Digital Media business in Asia and played an integral part in the BBC/Siemens Media go to market strategy globally. She has worked with clients across Asia, Europe and the USA and more recently she has set up a series of digital transformation programmes for broadcasters and media companies across the Caribbean.

In addition to her career in media, Williams is a passionate advocate for young people. She was responsible for driving the London2012 Olympics Inspire Programme, leading over 1500 projects, involving over 80 million young people across the UK and has acted as a mentor for young people wherever she has worked across the globe. Williams aims to use her own media career experiences to inspire young people and in addition to the Olympics, she has presented the prestigious Young People's Gold Award, alongside HRH Duke of Edinburgh at St James Palace in London

Williams holds a BA hons in Business Studies/English, an MBA from Henley which focused on new business models within the convergent digital broadcast market, a post grad in Inter-Cultural Management Studies and Innovation, and several technical and business diplomas. She also has an Interior Design degree and a Professional Styling diploma from the London Film School. Media trained at the BBC, she is also a digital media business presenter on TV, radio, online and at media conferences worldwide.

Will Garside

Editor IBE



Will Garside started his career in broadcast around 20 years ago working as an Associate Producer at Hewland International, producing programmes predominantly for SKY.

Four years on consumer shows, news and even a stint on a soap opera was a real eye opener. Especially at a time when the industry started moving towards Open IT based systems. Will's career then moved into journalism initially in print and later to the web working for magazines such as ComputerWeekly as well as writing a couple of books including a guide for the consumer association, Which?

Across the last decade, Will has also worked on projects for large technology companies across media, enterprise software, telecoms and storage. Will is well versed in the convergence of IT and broadcast technology and is dedicated to understanding what the IBE readership feels is relevant.

For the latest Connected Media World Theatre Schedule please visit connectedmediaworld.com

CONNECTING EXPERIENCES YOUR WAY

David Yates | Cisco

How content providers can deliver a competitive differentiator through Cisco Videoscape Unity.

Video services have never been more popular or more valuable. According to ABI Research, global revenues for pay TV have grown from approximately \$150 billion to \$250 billion in the past five years alone. But in this dynamic environment, service providers and media companies also face new challenges.

One growing issue stems from new low-cost competitors as ubiquitous broadband connectivity lowers the

barriers to entry for video services. Over-the-top (OTT) online video services are now available and offer new experiences at a low cost to the consumer and on different devices. Another concern is the rising cost of premium content. The premium content that consumers desire has become more expensive as media companies and cable, satellite, and telco operators bid against each other for the most popular content.

These trends make it imperative to extend video services to new, multiple consumer devices. And building a unified premium brand across all screens is now an important competitive differentiator. To continue developing and winning the bidding for the best premium content, providers must also find ways to build unique and compelling experiences around that content to increase subscriber loyalty and find innovative ways to monetize those experiences.

A New Generation of Video Experiences

What does a unique and compelling video experience look like in today's evolving video marketplace? It is all of the following:

Multiscreen

To differentiate an offering, providers need to take multiscreen experiences to the next level: delivering video to all screens in a more exciting, immersive, and engaging way.



Contextual and Synchronized Video



Next-Generation Multiscreen Video

Contextual and Synchronized

Next-generation video offers synchronized experiences across screens, including the ability to pause viewing on one screen and "fling" it to another, letting users take the video experience with them on the go. It also involves delivering synchronized content such as alternative camera angles, character biographies, scores and statistics, and more to companion screens. By integrating companion experiences directly with primary-screen viewing, providers can offer a more engaging viewer experience and increase ad inventory.

Personalized

We already expect a personalized media experience when we use the web. As video choices proliferate, personalized content discovery becomes essential for TV as well. This is true for personal devices, where we already find content through search, but also for the big screen, where we want an easier way to navigate hundreds of channels and thousands of on-demand titles to get to the content we care about. Personalized recommendations can come from social connections, analytics-driven suggestions, and the viewers' own history: the content they've chosen to purchase and store.



Personalized TV

Social

The next-generation video experience draws on the power of social networks to bring people together and deepen viewer engagement. It allows consumers to have virtual viewing parties and real-time instant messaging and video chats that augment the linear video experience. It also includes new social experiences and new ways to connect with other viewers around content with companion screen applications.

Cisco Videoscape Unity: An Experience-Centered Platform for Video Services

Cisco Videoscape™ Unity is a platform for delivering and monetizing a new generation of compelling, differentiated video experiences.

It answers the demand for video experiences on multiple screens, empowering service providers and media companies to create and connect new synchronized, personalized, and intuitive multiscreen experiences at the speed of now.

Evolving from the Cisco Videoscape platform, Cisco Videoscape Unity is now strengthened with solutions that bring powerful new capabilities across the cloud, network, and client:

- **User interface**
The Cisco Videoscape Unity platform features the multi-award-winning Cisco Videoscape Snowflake user interface for delivering customized, immersive experiences to consumers.
- **Client software**
Cisco Videoscape MediaHighway client software is widely used to bring advanced experience and interaction to set-top boxes (STBs) and connected devices.
- **Video processing**
New and powerful cloud and appliance-based processing technologies allow you to quickly and easily prepare video for delivery to any screen, with the highest quality video.
- **Security**
The Cisco Videoscape Security Suite includes both Cisco® VideoGuard® CA conditional access and Cisco VideoGuard digital rights management (DRM) products, providing the critical, end-to-end protection needed to monetize premium content and services across multiple screens.
- **Advertising**
Cisco Videoscape Unity introduces new, more powerful ways to monetize content through addressable advertising.
- **Subscriber and device management**
Integrating capabilities from Cisco Conductor™ for Cisco Videoscape and NDS Unified Headend, Cisco Videoscape Unity offers highly advanced subscriber and device management capabilities.

More Choice

Cisco Videoscape Unity is based on a modular architecture that brings the benefit of choice to those looking to enhance their existing platforms:

- **Modular**
Cisco Videoscape Unity is based on modular building blocks with open APIs among all components. This allows for upgrading and enhancing components individually as business needs change.
- **Flexible**
Most providers want to continue using their installed components—for example, billing systems and video encoders—as they introduce new experiences. Cisco Videoscape Unity components have open interfaces, meaning they can be deployed individually to reduce costs and transparently inserted into existing architectures.
- **Open**
The Cisco Videoscape Unity modular architecture allows for the integration of third-party components into video systems.
- **Fully customizable with Cisco Services**
Cisco has dedicated resources to fulfilling the unique vision of every customer to deliver a differentiated subscriber experience.

Cisco Videoscape Unity: Your Way

Today, there are a couple of ways that providers can deploy Cisco Videoscape Unity to add new video experience capabilities to their platform:

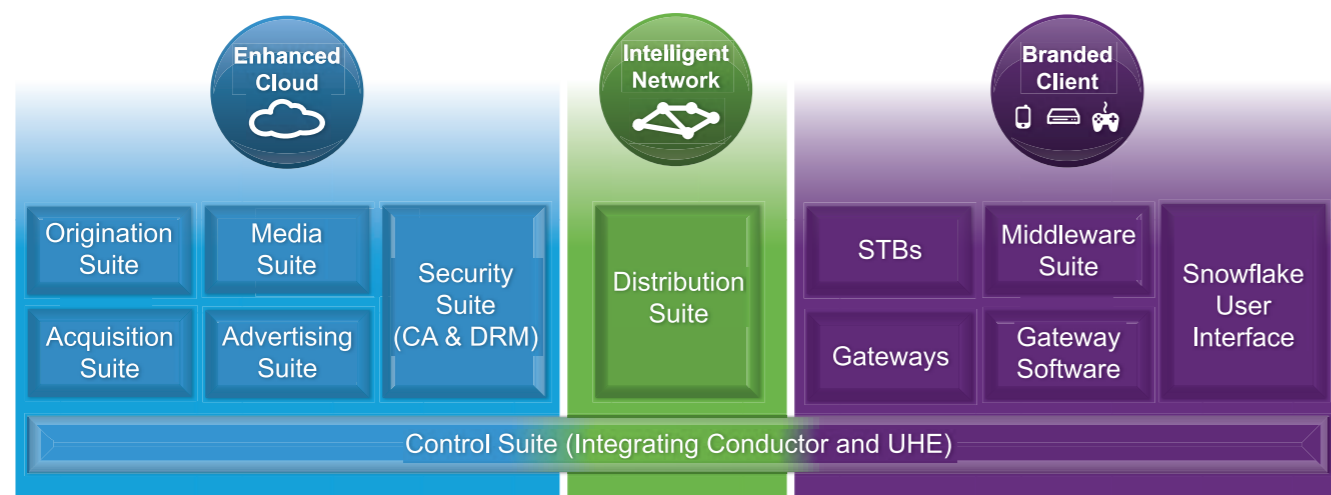
- Preintegrated, end-to-end offers
- Suites as best-of-category solutions integrated into existing video infrastructure

A Cisco Videoscape Unity offer is a customized, end-to-end solution designed to address specific business challenges. It gives providers the benefit of a reduced time to market while retaining the option to customize according to specific client requirements.

Each offer includes a combination of first-class suites and products across the enhanced cloud, intelligent network, and immersive client. With integration services added in, they are

packaged and delivered as a single solution to bring new experiences and/or infrastructure efficiencies to the provider's platform.

Alternatively, providers can deploy individual suites, given that Cisco Videoscape Unity components are integrated using open interfaces. This is an ideal option for operators looking to deploy individual suites into existing solutions or custom build their own solution.



Cisco Videoscape Unity Suites

Why Cisco?

Cisco Videoscape Unity brings together the best of two powerful companies. From Cisco comes the expertise in building robust carrier-class cloud products. From NDS comes the flair for designing award-winning user experiences that implement each provider's unique brand and vision and then engineering this vision into a coherent and deployable multiscreen product.

What makes Cisco and Cisco Videoscape Unity unique is the ability to rapidly deliver powerful, scalable cloud-based services combined with the ability to engineer and deploy provider specific experiences at scale. Others might aspire to offer one or the other of these capabilities, but only Cisco offers both.

Cisco is ready to be your partner in this journey. For more information, visit www.cisco.com/go/videoscape.



NBC Creates New Olympic Games Experience

The London 2012 Summer Olympic Games had it all: gut-wrenching emotion, breathtaking victories, and the thrill of watching excellence incarnate. And, thanks to NBC, a select group of viewers in London got to experience all of it in an entirely new way, with Cisco Videoscape.



Bringing Viewers into the Action

As the U.S. broadcaster for the Olympic Games, NBC strives to bring the Olympics experience to viewers in new and innovative ways. Over the past several Games, the award-winning TV network has set a new standard for bringing users close to the action, delivering thousands of hours of live coverage, highlights, and behind-the-scenes footage to multiple screens: TVs, PCs, smartphones, and tablets. This time around, NBC wanted to give users in London a personalized Olympics experience unlike anything they had seen before.

"The ability to stream content anywhere, anytime, to any digital device, has become key to our success and growth in the broadcasting business," says Craig Lau, vice president of Information Technology for NBC Olympics. "It's extended to the Internet and also digital portable platforms that are in place today, or will be invented tomorrow."

Reinventing the Olympics TV Experience

NBC used Cisco Videoscape technology to give select users at Olympic event venues and pavilions a glimpse into the future of sports media coverage. NBC provided a personalized multiscreen experience, including six live TV channels and hundreds of hours of on-demand Olympics coverage, streamed to users' smartphones and tablets. Users could search across all live and on-demand content and pause and record live TV in the cloud for the duration of the games. They also enjoyed a new, interactive Olympics experience, with the ability to access synchronized content such as up-to-the-minute event results, medal counts, athlete bios, and more from their tablets and smartphones as they watched the action unfold.

"Our users in London were amazed at the Cisco Videoscape experience," says Lau. "It gave them a glimpse of how we think people will watch NBC Sports coverage in the future."

Lossless Contribution on the World's Biggest Stage

In addition to the Cisco Videoscape experience, Cisco supported a state-of-the-art IP contribution network for NBC's Olympic Games coverage. As they did previously for NBC in Beijing and Vancouver, Cisco IP video contribution technologies enabled the lossless, high-quality transport of gigabyte-sized media files between London and NBC studios in New York and Los Angeles. There, U.S.-based editors were able to perform shot selection and remotely edit event video as it was captured in London.

"We work in an environment that requires absolute, rock-solid reliability and dependability," says Lau. "The ability to watch the Games however, wherever, and whenever you choose is no longer just a neat new experience for our viewers. It's an absolute expectation. And we rely on Cisco to help us meet that expectation."

ENABLING CONNECTED TV INTEROPERABILITY

Darren Vogel | OIPF

Continued OIPF progress towards a global ecosystem for IPTV apps and services.



Darren Vogel,
Marketing Director,
OIPF

Since 2007, Open IPTV Forum members have been working together to deliver commonly agreed global specifications as a foundation for interoperable IPTV. Darren Vogel, marketing director for OIPF outlines the strides the organisation has taken in the past year and where the forum will be directing its energies over during 2013.

Five years since the foundation of the OIPF, with more than 50 participating members and two specification releases complete, connected TV devices incorporating various aspects of the OIPF specifications from numerous vendors now retail across the EU, USA and Asia.

Specifically these devices feature the DAE (Declarative Application Environment) often referred to as the "OIPF browser". Critically, this OIPF browser is now crucial to a viable, scalable and manageable apps and services ecosystem for the whole connected TV industry.

Over the past year, OIPF work has brought long-term benefits and opportunity across the whole industry, as reflected in increased collaboration between the OIPF and the HbbTV Consortium and other regional consortia, and the

diversity of 18 new members from the leading edge of the IPTV business who joined the Forum in 2012.

However, it will take a number of years for the full industry-wide benefit and opportunities of these initial achievements - the first use of OIPF specifications in connected TV devices - to be fully realised and more recognisable.

Defining and publishing free-of-charge, standards-based specifications for end-to-end IPTV of the future is still what the Forum believes is the first, and fundamental, step to enable and accelerate the creation of a mass market for IPTV. It was until recently the Forum's main activity, addressing concerns expressed by service providers finding limitations in deployed proprietary solutions.

However, the Forum is now equally focused on enabling the broader ecosystem of interoperability through testing and certification.

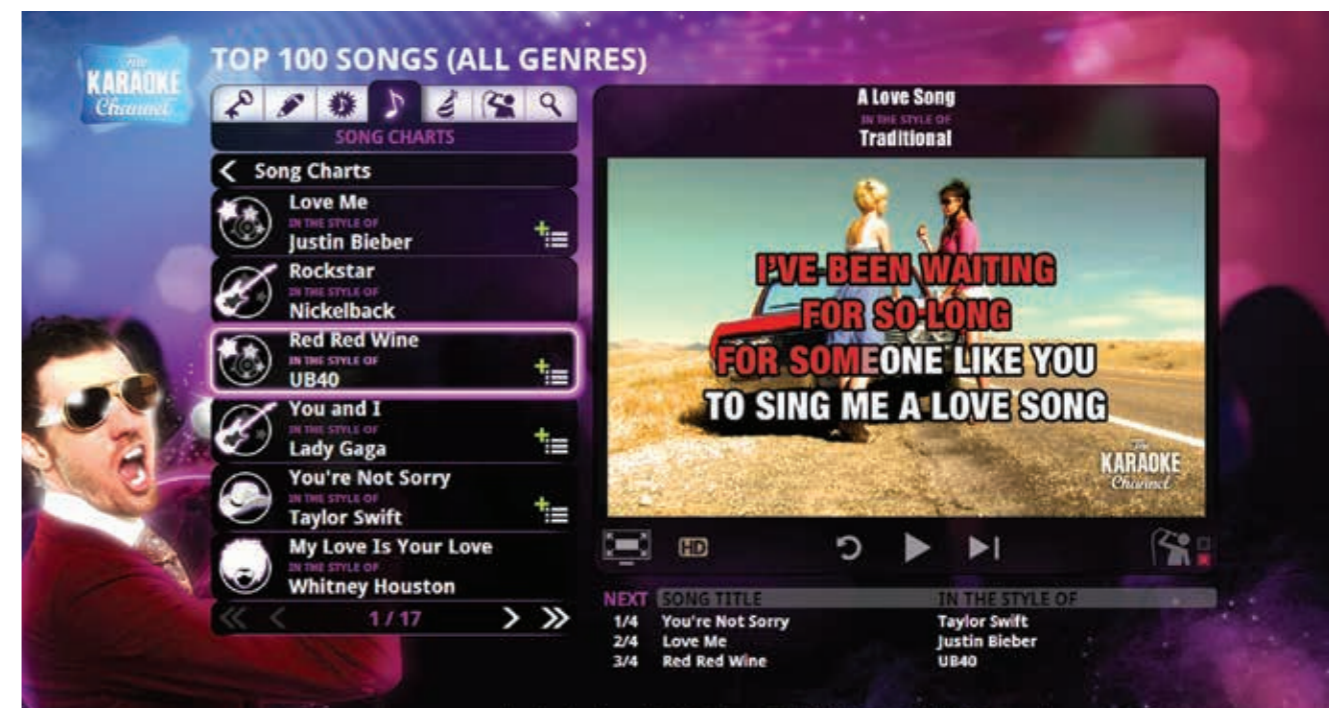
Enabling a broad ecosystem of interoperability

In September 2012, OIPF and the HbbTV Consortium announced collaboration on testing technologies. These include testing the 'Declarative Application Environment' and 'Media Formats' specifications currently being implemented in retail connected TVs and STBs in regions deploying the HbbTV based solution.



Dr. Nilo Mitra, president of the Open IPTV Forum

As Dr. Nilo Mitra, president of the Open IPTV Forum says, "These test suites are essential for improving interoperability between connected TV applications, services and receivers, and reduce the cost of resolving interoperability problems. Referencing of the OIPF browser by various



regional standards throughout the world will increase the number of compliant and interoperable devices worldwide."

A Horizontal Market

From the outset the OIPF has emphasised the need for a retail (horizontal) market for consumer equipment conforming to its specifications.

Board member for Sony Corporation, Paul Szucs, explains: "The ultimate goal is that consumers can go out to a retail store and purchase their preferred device to receive whatever IPTV and online media services are available to them, whether it be a TV, PVR, games console - any device that has the functionality integrated. The key is freedom of choice."

With realisation of the OIPF certification programme expected in 2013, the OIPF's goal for this horizontal market should soon be a reality, helping the whole IPTV market develop faster and more effectively, whilst also making the benefits of the OIPF vision of global interoperability more readily visible.

Industry influence

HbbTV was the first example of OIPF specifications being used at the leading edge of hybrid broadcast-broadband TV. Being part of the OIPF ensures

that leading players can best influence and address the needs of all regional standards leveraging the OIPF's open specifications, including HbbTV. Humax and Opera Software are two OIPF members which teamed up to launch HD set-top boxes with ready-made web apps designed for the OIPF browser in 2012. The latest generation of Freesat's STBs from Humax, which are on sale in the UK, also reference aspects of OIPF specifications.

Commercial director of Opera Software, Tony Wade says: "We want to bring browsers to all TVs and STBs around the world...and we support both W3C and OIPF standards."

On joining the OIPF last year Bob Hannent, senior technology manager at Humax, says: "Humax has a strategy towards the use of open standards as much as possible with its next generation products and, as such, it wishes to engage with the industry in order to facilitate the growth and adoption of these standards."

OIPF has also previously helped develop the standardisation efforts of others - contributing the HTTP Adaptive Streaming solution (dealing with MPEG2 transport, which had not yet been addressed in existing standards) to the ISO, into whose standard, called MPEG-DASH, that work is now merged.

Stingray's Karaoke application...was shown working on a North American Sharp TV, a European (HbbTV) Philips device from TP Vision, a UK specification Humax set-top box (like the latest Freesat STB for the UK market), a Sony Google TV STB and a UK Bravia TV. All devices ran the same application, written once rather than in a proprietary manner for each individual model.

New Requirements, New Work for 2013

OIPF specifications are living documents. They evolve to meet the developing market, with maintenance and upgrades adding additional requirements to keep solutions relevant and contemporary. Ongoing work is lead by leading industry members, and includes support for 3D content/programming, support for the evolution to IPv6-based networks, and support for simple and secure streaming as well as a variety of browser enhancements.

A reduced membership fee was introduced for small enterprises in 2012, offering full participation in the Forum but with an 80 percent discount on membership cost for firms with a turnover under £10m. This helped a number of new members to participate in the work of the Forum and enabled them to demonstrate interoperable OIPF apps and services at events including IBC 2012 and NAB 2013.



Each application or service demonstrated on the OIPF booth addresses OIPF specifications, written once but demonstrated working on a broad variety of devices from a number of vendors using the OIPF specifications. In 2012, this included Fraunhofer, Dotscreen and Stingray Digital applications.

Stingray's Karaoke application, for example, was shown working on a North American Sharp TV, a European (HbbTV) Philips device from TP Vision, a UK specification Humax set-top box (like the latest Freesat STB for the UK market), a Sony Google TV STB and a UK Bravia TV. All devices ran the same application, written once rather than in a proprietary manner for each individual model.

Mario Dubois, CTO of Stingray Digital Group says: "Since joining the OIPF we were able to meet and connect with more connected device manufacturers in two months than we had in the previous two years, allowing for a faster and wider deployment of The KARAOKE Channel App. As developers of interactive music services and applications for TV service providers and connected TVs, we recognise the importance of working together as an industry to define standards and address issues related to IPTV resulting in more efficient development."

Global relevance, events, interoperability testing and new members

2012 saw the OIPF emphasising global relevance, including the Middle East, with Saudi operator STC joining the Forum. A very successful OIPF Roundtable event in Montreal, hosted by Rogers, encouraged four new Canadian members, The Weather Network, Stingray Digital, Espial and more recently UXP Systems.

Leading Hollywood firm Blufocus, who specialise in technology testing for major US Studios, was presented as a new member at the Asian OIPF meeting held in Tokyo in October. This visit also included dialogue with Japan Cable Labs and the Japan IPTV Forum. Japan Cable Labs gave a keynote speech to OIPF members, describing how they had adopted the OIPF specifications into their standards for cable STBs in Japan.

In France, founder member Orange hosted a successful OIPF Interoperability Test, addressing their requirement for a solution representative of a viable commercial offering for a typical tier-one service provider. During five days of engineering, testing and demonstrations by Ericsson, Fraunhofer, Opera Software, Orange and Zenterio, interoperability in the areas of service discovery, delivery of linear and on demand content,

HTTP adaptive streaming and terminal based applications were demonstrated according to the Orange requirements, all based on the published OIPF specifications.

As well as new members from Canada and the US, the Middle East and Humax from South Korea, many leading companies from across Europe have joined OIPF work in the past 12 months. Set Top Box vendor ABox42, mistserver.org and 3 Screen Solutions from Germany, TV app developer Axonista and Digisoft.tv from Ireland, DCC Labs from Poland, Dotscreen and Broadpeak from France and Zenterio from Sweden. UK based new members include Perpetual Solutions, Streamhub, Digital TV Labs and WMC Global - with Accenture being the latest global organisation to become a member of the Forum in the past month.

In Conclusion

Through the coming year, the connected TV industry will start to see real benefit from the extensive investment in the work of the OIPF to date. Thanks to adoption by various regional standards, gradual implementation of additional aspects of the OIPF specs into CE Devices and the emergence of apps and services using the OIPF specs, IPTV stands on the threshold of achieving its full potential built on the OIPF's foundation of interoperability.

Find out more at www.oipf.tv or email contact@oipf.tv to get involved.

BUILDING FOR TRUE MULTISCREEN EXPERIENCE

Nikki Gore | Quickplay

New technology and standardisation is helping service operators across the globe.

Multiscreen viewing is nearing a tipping point where it's no longer a nice-to-have feature that will appease tech-savvy early adopters. Nikki Gore, VP marketing for QuickPlay Media, believes consumers are becoming much more sophisticated and are starting to expect that they'll be able to view what they want, when they want, regardless of what it takes to make that happen.

For Joe Consumer, the complexity behind the scenes doesn't matter, he just wants to be able to turn on his iPhone or Android tablet to access his favorite films or TV shows the same way he can on his home TV - where it just works. The truth is though, the broadcast community has a lot of work to do before delivering on the promise of true multiscreen.

A vast majority of today's multiscreen services have consisted solely of on-demand content, and for good reason. By first enabling downloadable content and then adding streaming capabilities, video on demand (VoD) has been a logical first step in delivering a multiscreen experience.

Content and service providers have been able to wade into the multiscreen waters by offering their most popular content first and adding to their catalogues as they add subscribers and obtain the appropriate rights. Now, as content providers are becoming more comfortable with multiscreen rights, service providers are adding content and subscribers at a pretty rapid clip -

which is great for churn reduction and for generating added revenue from existing content, but it's very taxing on existing infrastructure.

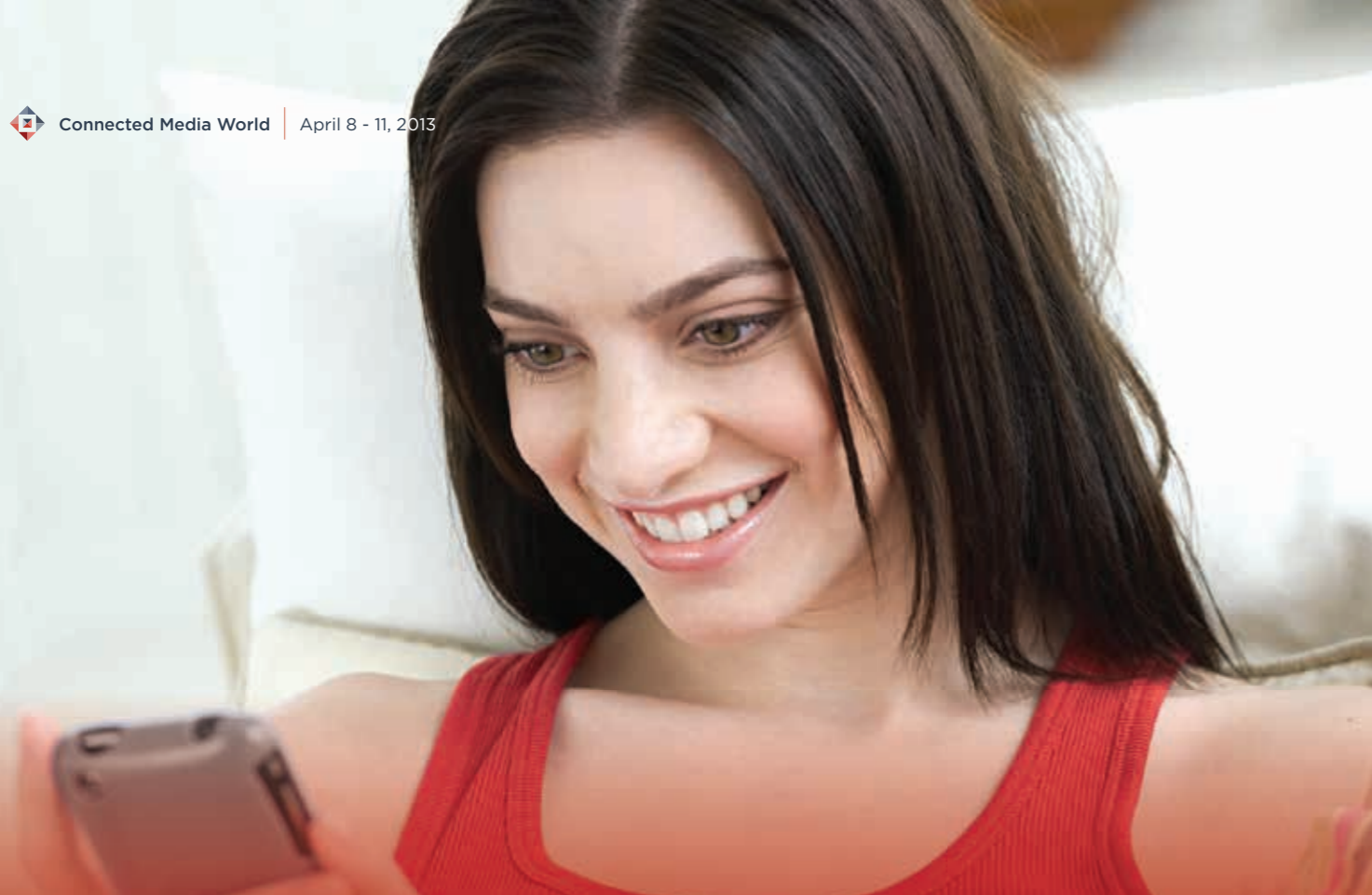
When you add live content, which is obviously a cornerstone of a "true multiscreen" experience, things get even more complex.

Let's take an MSO example. Rogers is a multiple service operator with cable and PayTV operations. Through its AnyPlace TV offering, Rogers is enabling its consumers to access a huge catalogue of episodic television, on demand, live linear and live event content across multiple devices. That may seem like a no-brainer, but delivering an experience that mirrors what is available on a consumer's television is an exceedingly complex task. The first step to improving the overall consumer experience is addressing the ongoing encoding and media transformation challenges.

Encoding and Media Transformation

The number of devices that content and service providers like Rogers are compelled to support - including smartphones, tablets, gaming consoles and smart TVs - is growing at a rapid pace. This creates encoding and media transformation nightmares. Encoding for multiple devices is significantly more complex than encoding for delivery to a standard set-top box or television.

Existing use cases and evidence of the growing demand for multiscreen video are plentiful. According to recent research by IDC, by the end of 2016, more than 400 million consumers will be using a smartphone on at least a monthly basis to view TV shows and movies, representing a 2011-2016 CAGR of 36 percent.



Aside from the various screen sizes, operating systems and players, the introduction of HD on devices and adaptive bit rate streaming requires that many versions of the same file be encoded. The layering effect continues with considerations such as authentication, whether the content will be viewed using WiFi or wired networks, in home versus out of home, geographic restrictions, closed captioning requirements - the list goes on.

Consumer Experience

In addition to managing ingestion and media transformation workflows to ensure that the right content is delivered to the right device at the highest possible quality, consumers are now starting to expect additional features that create a true TV Everywhere experience. Primarily, this includes live linear and live event programming.

To take this one step further, consumers are going to increasingly expect to manage their live TV viewing on their devices in the same manner as on a television. Namely, consumers are going to want the ability to pause and resume live content across their devices using a network personal video recorder (nPVR) feature. While the technology exists to deliver nPVR today, service providers need to be prepared - on the

infrastructure side - for the additional complexity in the media transformation workflow and the increasing storage it takes to support the feature. Perhaps most importantly, however, content rights on live programming need to evolve in order for nPVR to become a key component to delivering a true TV Everywhere experience.

Despite the complex content rights issues that are slowly being worked out, the good news is that technology standards are evolving rapidly to improve efficiencies and consumer experience in multiscreen video delivery. These standards, such as MPEG Dash, H.265 and 4G LTE: eMBMS, now need to be adopted, implemented and executed properly.

MPEG Dash

DASH, which stands for Dynamic Adaptive Streaming over HTTP, was developed to provide a non-proprietary standard for streaming that takes the best technology from Apple, Microsoft and Adobe, and expands upon them to make streaming more efficient and scalable. One of the key benefits is the ability to separate audio from video, which means that a single video encode can be used for multiple language soundtracks, creating efficiencies in the workflow and dramatically saving storage resources. In addition, it creates efficiency from a file administration and caching perspective by enabling a single file to be delivered and viewed, rather than doing so in "chunks." Also, the fact that it's a non-proprietary standard will allow for more innovation from more players in the industry.

H.265

The H.265 standard, also known as High Efficiency Video Coding (HEVC), is designed to provide High Definition (HD) streaming video, even on low-bandwidth networks. In January 2013, H.265 was approved by ITU, the United Nations agency for information and communication technology that has coordinated the shared global use of the radio spectrum for more than 150 years. With this new technology, providers will

be able to deliver HD streams in 1080p at half the bandwidth than previously required. This will help alleviate network congestion issues, particularly in areas where 4G/LTE networks have not yet been launched and will dramatically improve the user experience.

eMBMS

Evolved Multimedia Broadcast/Multicast Services, or eMBMS, is an emerging standard that will drastically improve the viewing experience of live programming. Using high-speed 4G LTE wireless networks, eMBMS allows providers to broadcast multiple streams through existing bandwidth, which will allow them to offer more live channels, or enhance the experience of live events by offering multiple camera angles.

For example, attendees or viewers of a major sporting event will be able to choose between camera angles in real-time to watch different perspectives of the action as it unfolds. This type of capability was previously unattainable as it would have easily overloaded local cell towers, but eMBMS makes these new capabilities possible by compressing multiple streams into the existing bandwidth.

Existing use cases and evidence of the growing demand for multiscreen video are plentiful. According to recent

research by IDC, by the end of 2016, more than 400 million consumers will be using a smartphone on at least a monthly basis to view TV shows and movies, representing a 2011-2016 CAGR of 36 percent. Tablet usage for monthly viewing of TV shows and movies will grow at an even more impressive rate of 52 percent over the same period as the number of regular viewers approaches 200 million.

In addition, IDC predicts the base of approximately 700 million worldwide multichannel pay TV subscribers to grow to more than 800 million through 2016. This demand and growth is also reflected in the increasing importance of the network. According to Cisco's Visual Networking Index (VNI), published in February 2013, video traffic exceeded 50 percent of all mobile traffic for the first time in 2012 and the company predicts that two-thirds of the world's mobile data traffic will be video by 2017.

Demand for mobile viewing is certainly not slowing down, and neither is consumer demand for an elegant and easy-to-use experience, so continuing the development and introduction of technologies that will both improve the consumer experience on the device and alleviate stress on the network is essential to realizing the true potential of TV Everywhere.



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Joe O'Halloran | Correspondent

The state of the connected TV market.

The connected TV concept has long been touted as a game changing technology. However, the definition and market adoption has been difficult to predict. Our correspondent, Joe O'Halloran, looks at the underlying research to assess whether the reality meets the hype.



Joe O'Halloran
Correspondent

Suede; Theo Walcott; Mickey Rourke; the Sinclair C5; the Compact Disc-Interactive; 3DTV; connected TV. A diverse bunch for sure but all with one thing in common: they have all been touted at one point or another as the next big thing.

The one prerequisite of being the next big thing is to actually be big. As far as the first five are concerned, they most certainly did not live up to such billing. The band, footballer and actor have mainly not lived up to expectation; the data standard long ago fell into obscurity and obsolescence; and the car became an object of ridicule. The jury is very much still out on 3DTV.

So what about connected TV, long regarded as the future of television? Well, just before NAB 2013, it would appear that connected TV is driving sales and not driving into the wilderness.

Connected TV has been talked about as the next big thing since around the beginning of

this decade. But what does the phrase actually mean? Does it mean a connected TV set or does it mean connecting to TV services over a growing variety of Internet-enabled devices such as smartphones, tablets, Blu-ray players, game consoles, etc.? It means all of these things.

A lesson from 3D

A report from DisplaySearch in October 2010 stated that connected TV represented no less than a seismic shift in the usage of TV that would be far more significant than 3D, which, it suggested would not alter TV function or usage patterns. From the vantage point of 2013, one could say that being better than 3D would not be particularly difficult. That said, the report accurately predicts why connected TV has grown to the extent it has, even faster than DisplaySearch expected.

A recent analyst report revealed that nearly three-fifths of connected TV users in the US were accessing over-the-top (OTT) video services that complement, not replace, pay-TV subscriptions.



According to a survey carried out towards the end of 2012, research firm Gartner regarded the ability for TV sets to connect to multiple platforms as likely to be the only way for manufacturers to differentiate and gain an edge in a highly competitive market. The analyst predicts that by 2016 nearly 85% of all flat-panel TVs produced will be smart TVs, with worldwide unit production of flat-panel smart TVs growing from 69 million in 2012 to 198 million in 2016. In addition it expects worldwide unit production of smart TVs in 2013 will reach 108 million units.

One company for whom connected TV is providing a definite competitive edge is Samsung. The Korean CE giant claims it offers the biggest app store available for connected TVs, with more than 20 million apps already downloaded worldwide, a statistic it offers as proof that consumers are rapidly embracing Smart TV.

Looking at the UK in particular, Channel 5's Demand 5 on demand service was launched in January 2013, joining an expanding collection of TV and video services including the BBC iPlayer, ITV player, Netflix, blinkbox, LOVEFiLM, Curzon on Demand and YouTube, as well as Facebook and Twitter. At the time,

Samsung also redesigned its Smart Hub to simplify the way viewers embrace the discovery of new TV content, offering newly-designed panels with personalised content, a new interface and thumbnails for instant previews. It also offers what is claimed to be the world's first connected TV service that can analyse on-air viewing habits and offer personalised programme suggestions in real time.

Optimism for the market's prospects was also revealed in a December 2012 research study by Frank N Magid Associates, commissioned by digital brand advertising software and services provider YuMe, which found that nearly half (45%) of respondents intend to replace their existing televisions in the next 12 months with connected TVs. Of those, 8% say they are "very likely" to purchase a smart TV. Adding to this the existing base of 11% of households with a smart TV, total adoption nears 20% of homes in 2013.

As one might expect for a company of its nature, YuMe also found that the connected TV marketplace will continue to grow in value as a complement to traditional video environments, with users and potential future consumers viewing connected TV video content

as an enhancement to their current video viewing options, rather than as an outright replacement.

"[We] clarified the advertising opportunity around connected TV, and as our customers' actual spending choices are demonstrating to us, the connected TV opportunity has increased," observed Ed Haslam, senior vice president of marketing, YuMe. "This new research brings to light interesting demographics at this stage in connected TV adoption, as well as underscoring the importance of running connected TV campaigns as part of a larger concerted, multiscreen campaign."

The research also revealed a continued strong monetisation opportunity for brands, with more than half (54%) of consumers preferring ad-supported content across all screens. A similar percentage (55%) said they use two screens simultaneously at least half or more of the time when they are watching TV, with laptops the most commonly used second screen (65% of respondents), followed by smartphones (49%) and tablets (24%). Moreover, the survey revealed that a third of those questioned intend to make a smart TV purchase in order to access free ad-supported content.

Connected to Pay TV

In terms of prospects for connected TV in 2013, this latter point is hugely important. Connected TV cannot be described fairly or accurately as all dressed up with nowhere to go. Yet even with a plethora of services, such as those available on the Samsung portal, it would appear people are using them mainly to watch regular TV services. "The Internet-connected HDTV screen has so far failed to break beyond the bounds of its TV-centric heritage, with little use for the big screen beyond the obligatory video services," said John Buffone, director of devices at NPD Connected Intelligence, in a December 2012 research note.

Yet in the same report, the analyst revealed that nearly three-fifth of connected TV users in the US were accessing over-the-top (OTT) video services that complement, not replace, pay-TV subscriptions. "We are seeing attached devices also focus heavily on TV and video-centric apps," Buffone added. "Microsoft's upcoming launch of

more than 40 additional television apps for the Xbox Live subscription service is one example."

It's an analysis shared by other leading research firms. Forrester analyst Jitender Miglani believes that CE manufacturers are cashing in on a big towards internet-ready capabilities in many of their devices and expects that by 2017, more US households will have a connected TV than will have a connected game console or a connected Blu-ray player. "We expect the number of connected HDTVs to grow faster due to the availability of an increasing number of movies and TV shows via online streaming services, a shift in consumers' preference for watching more online video content via their TVs, the increasing maturity of TV operating systems, and the anticipated large-scale production of OLED TVs starting in 2014," Miglani predicted.

One CE manufacturer already beginning to commercialise such demand is German TV set manufacturer Loewe, which in February 2013 offered for the first time a live football game available exclusively on its range of connected TV sets.

Even though the runes are favourable, it should be noted that connectivity alone will not spur demand in the market. The connected TV industry - those who offer services over all devices - must recognise the need to offer compelling reasons for consumers to buy into connected TV.

Do this - and the penny is dropping - the next big thing becomes the next big business. As hopefully NAB will show in big detail.



Don't believe the hype; well sort of...

Even though market research firm eMarketer believes they are less common than many believe, smart TVs are growing quickly with usage up by more than 25% last year, it says. The company predicts that by the 2013, 35.1 million US households will have at least one connected TV and at least one person in the household using the internet through that TV set on a monthly basis. That means nearly a quarter of all US households currently have and use connected TV, and by the end of 2013 that percentage will approach a third of users.

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