Key Trends
What Media Industry is looking for

- Increase Productivity
- Reduce Costs
- Grow Your Audience
What Media Industry is looking for
Purchase Drivers – courtesy of IABM
What Media Industry is looking for

Technology Trends – courtesy of Fabm

<table>
<thead>
<tr>
<th>Technology</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Multi-Platform Content Delivery</td>
<td>50%</td>
</tr>
<tr>
<td>4K/UHD Production / Delivery</td>
<td>45%</td>
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<tr>
<td>IP infrastructure</td>
<td>40%</td>
</tr>
<tr>
<td>Cloud-Computing / Cloud-Based Services</td>
<td>35%</td>
</tr>
<tr>
<td>Remote Production</td>
<td>30%</td>
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<tr>
<td>File-Based Workflows</td>
<td>25%</td>
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<tr>
<td>Cyber Security</td>
<td>20%</td>
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<tr>
<td>Social Media Broadcasting</td>
<td>15%</td>
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<tr>
<td>Big Data Analytics &amp; AI</td>
<td>10%</td>
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<tr>
<td>Programmatic Advertising</td>
<td>5%</td>
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<tr>
<td>Next-Gen Wireless Technologies (5G)</td>
<td>0%</td>
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<tr>
<td>VR Production / Delivery</td>
<td>0%</td>
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<tr>
<td>Upgrading Operations to HDTV</td>
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<tr>
<td>Next-Gen DTT Standards (ATSC 3.0 etc)</td>
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<tr>
<td>Blockchain</td>
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Source: IABM
IP Technology in Live Production

- IP Technology already well **adopted in Contribution & Distribution**
- **Acquisition & Production** moving to IP but different operational & technical needs:
  - Mix of multiple sources of Video & Audio essences
  - **Real Time** operations is required
  - New Industry Standards & practices
The Power of Partnering
Building Eco-Systems based on Open Standards

Sony is key member of the Joint Taskforce on Networked Media funded by EBU, SMPTE & VSF.

As active member of SMPTE, Sony has led the standardization of SMPTE ST2059 together with Cisco and more recently work on SMPTE ST 2110.

Sony is principle board member of AMWA and lead AMWA NMOS specifications together with all members, sharing Open Source code of its IS-04/05 implementations.
EBU TECH 3371 states on Single link video; SMPTE ST 2110-20
For simplicity of operation and troubleshooting, and optimal network density, video Media Nodes should use single link streams. For instance, a single 59.94 Hz UHD stream (like a camera) requires a 25 GbE port, and a high-density device (multi-viewer or vision mixer for example) should take the benefit of bi-directional 100 GbE.
The Power of Partnering
Building Eco-Systems

Media Processing engines

- Imagine EPIC.MV
- LAWO V_matrix
- Axon Neuron
- Nevion Virtuoso

Analysis Tools

- Tektronix PRISM

Network & Evaluation Tools

- IP Live Evaluation Lab.
- Network Switches
- Network Evaluation Tools
The Power of Partnering
Building Eco-Systems
The Power of Partnering
Training at DMPCE Pinewood UK

3 days training

Mix of Theory & Practice

Over 100 delegates trained

Special offer to our Partners
Reference Project Case Studies
The Power of Partnering

Industry Collaboration

Working with Partners

Leverage Experience

Relationship & Openness

Be on Time, On Budget
Case Study
SIC Portugal

1st ST2110 Sony prime SI project & On-air since Jan 26th, 2019
Case Study
SIC Portugal

Control Room 1

Control Room 2

Studio 1

Studio 2
### Case Study

**SIC Portugal**

- **End to end ST2110 compliant live production system**
- **Interoperability among multiple vendors**
- **Future proof (migrate for 3G/HDR and UHD/HDR production)**

#### Overarching SI services - Sony provides design, commission, training, acceptance and on-site support

<table>
<thead>
<tr>
<th><strong>Camera</strong></th>
<th>Sony HDC-1700 + HDCU-3100</th>
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<tr>
<th><strong>AV Core</strong></th>
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<tr>
<td>➢ System Controller</td>
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<tr>
<td>Lawo VSM</td>
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<tr>
<td>➢ IP switch</td>
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<tr>
<td>Cisco N9336C-FX2, N93180YC-FX</td>
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<tr>
<td>➢ Vision Mixer</td>
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<tr>
<td>Sony XVS-7000</td>
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<tr>
<td>➢ IPMV/Glue and gateway</td>
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<tr>
<td>Lawo V_matrix (C100)</td>
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<tr>
<td>➢ Video server</td>
</tr>
<tr>
<td>Avid HDVG server</td>
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<tr>
<td>➢ Graphics</td>
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<tr>
<td>Harmonic Mediacenter Spectrum X</td>
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<tr>
<th><strong>PTP GM</strong></th>
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<tr>
<td>Tektronix SPG8000A</td>
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<th><strong>WFM</strong></th>
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<tr>
<td>Tektronix PRISM</td>
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<tr>
<th><strong>Monitor</strong></th>
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<tr>
<td>Sony BVM-E171/LMD-A170/PVM-A250</td>
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<th><strong>Audio Console</strong></th>
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<tr>
<td>Carlec SUMMA</td>
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<th><strong>Intercom</strong></th>
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<tr>
<td>RTS ADAM</td>
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| And more…                                                                |

And more…
Case Study
SIC Portugal

Fully redundant network for in-band control, transport and PTP

Out-of-band control, intercom and audio (LAG configuration as much as it can)
Overview of A/V device configurations & connections

- Sony HDCU-3100
- Lawo C100
- Tektronix Prism
- Harmonic Spectrum X
- Sony XVS-7000
- AVID HDVG
- Carlec SUMMA
- RTS ADAM
- Dante (AES67)
- Analog
- ST2110
- ST2110
- ST2110
- ST2110
- ST2110
- ST2110
- ST2110
- ST2110
- ST2110
- ST2110
- ST2110-30
- ST2110-30
Case Study
ATV Turkey

ATV New Building Project
• 7x Studios, ST2110 based system, 4K Ready
• Sony supports the local ISI (Teratek) as a consultant for
  – Network design based on Cisco Nexus series
  – Specialist integration services, incl. diagnosis
  – Service & support of the overall System
Case Study

NEP Australia

➢ 100G Network among Melbourne, Sydney and Stadiums
➢ IP Based System: Enable IP transfer to the station
➢ XVS-8000/6000, HDC-4300/P43 and HDCU-3100
Case Study
NEP Australia

Sony CCU HDCU-3100

Sony Switcher XVS-8000
How the Media Industry benefits from the evolution
How Media Industry benefits from the evolution

Content Value & Workflow Efficiency

- 4K/8K
- HDR/WCG
- High Frame Rate
- Virtual Cameras
- IP Live
- AI
- Cloud/Virtualization
- Connectivity (5G)

SONY
Unify the Infrastructure
IP connects every island of the production & distribution chain

Sony works in developing Technologies & Solutions for unifying Live & Non Live Infrastructures that are
Covering / Enhancing the workflows and operational practices of a conventional Live production
Based on existing and future open standards & Architectures
Develop in a way to maximize the benefits of IP-based technologies
Unify the Infrastructure
Multiple Use Cases

- Expandable and Flexible IP Routing System
- Expandable OB Van Solution by IP-nize tie-line
- Standard based & efficient remote production
Unify the Infrastructure
Remote Integration (REMI)

Remote Production
- Minimizing on-site equipment & staff
- Reducing Production Costs
- Increasing productivity

Shared Production
- Maximize facilities utilization
- Flexibility in studio/control room combination
- Dynamic resource assignment

→ To leverage benefits of REMI, **orchestration is the key**
Unify the Infrastructure

End-to-end networked orchestration is the key

Sony Live Element Orchestrator
- Resources Management

Sony IP Live System Manager
- Broadcast Controller

End to End Network Orchestration

IP Network
- Studio
- Control Room
- Equipment Room / DC

Remote Facilities
- Contribution

Master Control Room
- Distribution

WAN
Network Orchestration
Sony’s Strategic Partnership with Nevion

Experts in network orchestration solution:

- VideoIPath
  Management & Orchestration

- Virtuoso
  Software-defined media node

SDN Controller
• Multi-spine topology
• Flow path monitoring

Gateway
• SDI-ST2110, SDI-ST2022-6 and ASI-IP TS
• Codec(JPEG2000, TICO UHD, H.264, JPEG XS...)
• MUX/DeMUX Audio

Solid network expertise and selected by innovators

Network Consulting capabilities in Media

Technology Leadership

Experts in SDN and video/audio over IP, and has been acting as the “glue” between Broadcast/Media and IT industries
Live Element Orchestrator (LEO)
Efficient Resources Management

LEO is a solution that manages the entire Live Production operations
• It’s complementary to a Broadcast Controller
• It’s complementary to a Network (SDN) Controller

LEO is capable of configuring, monitoring & booking production devices (Sony & 3rd party) centrally, against Production Requirements, so down time is minimized

LEO is powered by Skyline DataMiner™ and as such inherit 3000 device drivers already developed
Live Element Orchestrator (LEO)

- GUI/User
- FMS Application
- Powered by Skyline Communications DataMiner™
- Core Engine
- Sony Device Driver
- 3rd Party Device Driver

Components:
- IP Routing System
- Camera System
- Switcher System
- Server System
- Monitor System
- 3rd Party System

SONY
Live Element Orchestrator (LEO)
Remote Production with new HDCE-TX30

- Portable size (1/3 rackmount size)
- Configurable at remote side
- Full IP supports (ST2110/NMOS, audio, intercom & tally)
- Support Video Compression with future Version Up and License
- Full Redundancy (ST2022-7)

No CCU!!!

- ST2110 Tx/Rx
- Audio MIC/PGM
- Intercom, Tally
- PTP

HDC-2500/3100/3500
Camera Extension Unit

HDCE-TX30

SMPTE Fiber

IP Switch

Audio Conversion, etc. (3rd Party)

Remote Side

Production Side

IP Switch

IP IF

RCP
Future Technology Trends
Let’s go on the journey together

Connectivity
European M2M Connections are predicted to reach 500 million by 2020; 3.1 billion globally.

Cloud
Worldwide spending on public cloud services will grow at a 19.4% compound annual growth rate (CAGR) from nearly $70B in 2015 to more than $141B in 2019.

Big Data
About 328.8 Million hours of content were viewed globally in 2015 and this will likely grow to 506.9 million by 2020.

Convergence
IT spending for the Media Industry in Europe is likely to rise to $73 Billion by 2020.