

TECHNOLOGIES FOR LIVE STREAMING TO MULTIPLE PLATFORMS

Jan Ozer

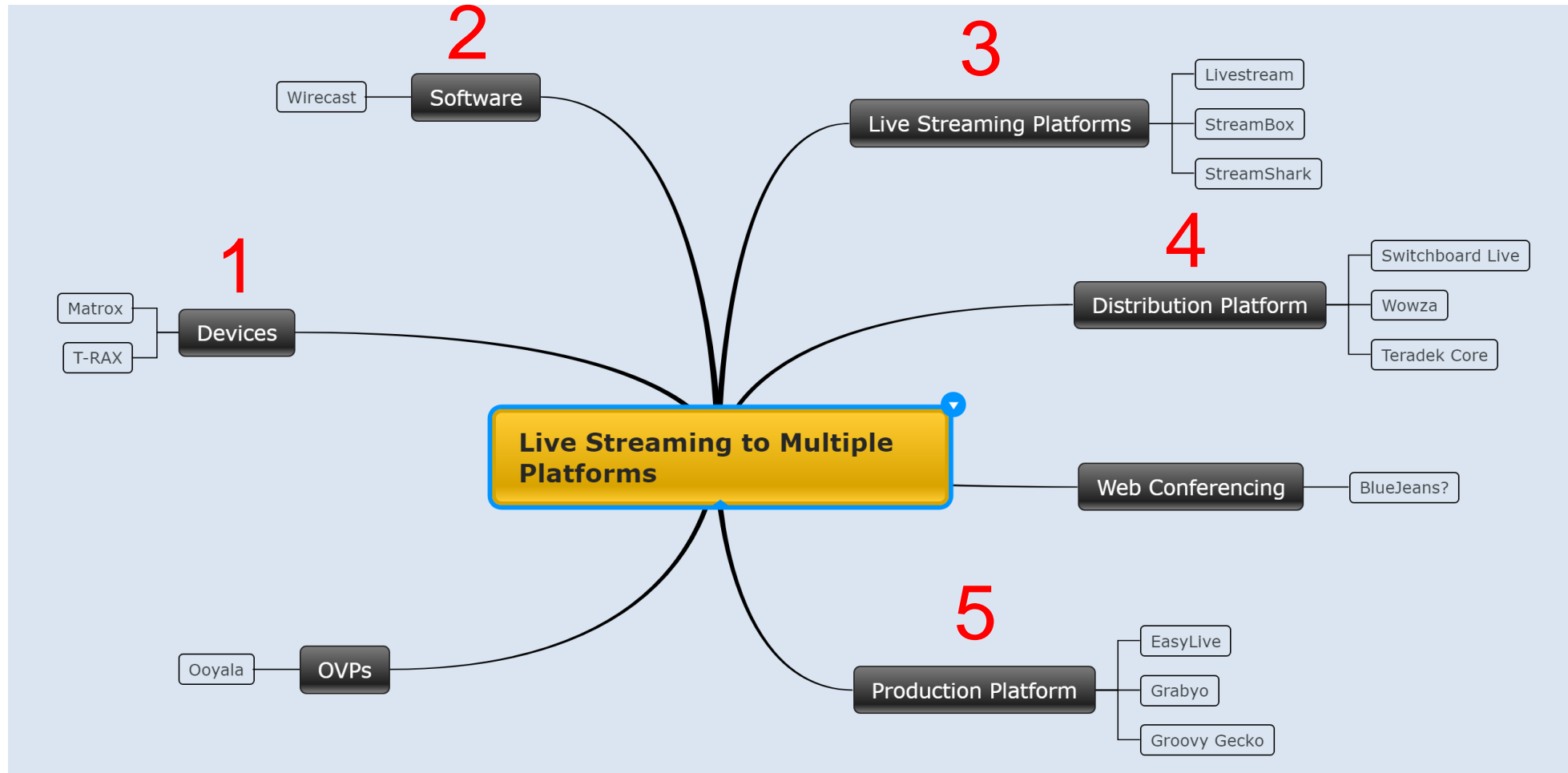
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Agenda



Each Product/Service

- Identify
- Discuss feature set
- Discuss who is using and why

Facebook Live Rules to Live By

19. Live API

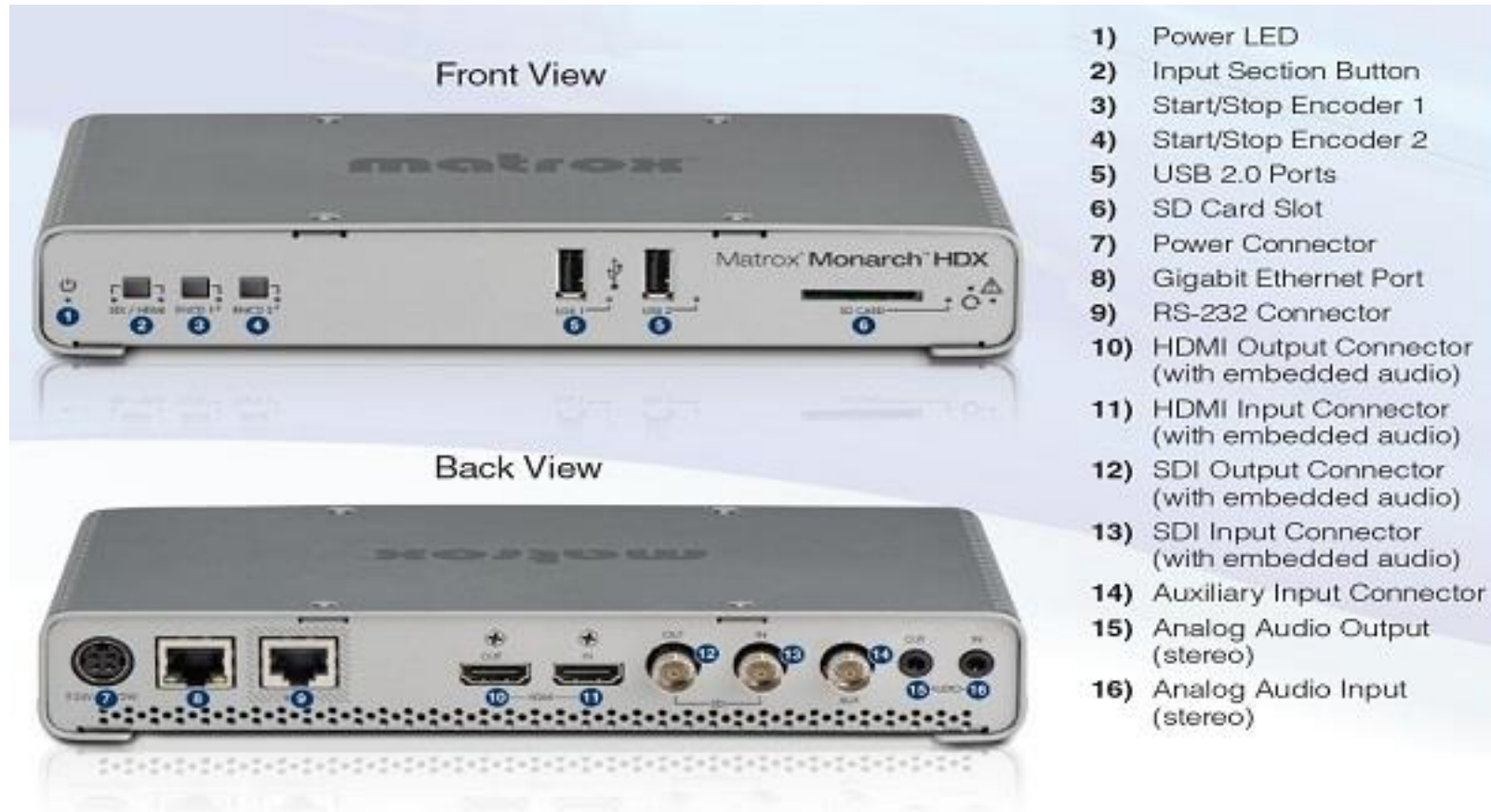
1. Don't build apps that enable publishers to simultaneously stream to Facebook and other online streaming services.
- So, can't use preset to stream to Facebook Live AND another service
 - Workaround
 - Use custom RTMP settings for other services (or FBL)

Devices

- Overview:

- Hardware devices that stream directly to one or more services
- Specialized boxes – Matrox Monarch HDX
 - Streaming Media Review - http://bit.ly/ma_mon_hdx
- Traditional hardware encoders (here at the show)
 - Teradek – T-Rax
 - Telestream - Lightspeed Live Stream

Matrox Monarch HDX



- **Dual-Channel H.264 Encoder for Broadcast Streaming and Recording**

Matrox Monarch HDX

1. Typical customer? Broadcasters, event producers, medical facilities, educational institutions, houses of worship, corporate communicators, and legal videographers worldwide.

2. Why an appliance rather than a cloud service? Less expensive than paying a cloud service. Also can:

- Stream to primary and back-up server destinations for redundancy
- Stream locally at high bitrates and to a CDN at a lower bitrate;
- Stream to platforms such as YouTube Live or Facebook Live and your own website to target both platforms for more immediate exposure

3. Key features that differentiate your product from others in the same category?

- Two independent encoders
- Frame synchronizers ensure that frame quality isn't degraded due to switching or signal noise.
- SDI power-loss bypass relay - when unit power is lost, the by-pass activates and the SDI signal is routed through the box and to the next step in the workflow
- Closed Captioning support – pulls captions data from SDI VANC and embeds as CEA-608

4. How much does your hardware cost? \$1995

Matrox Monarch Case Studies

- <http://www.matrox.com/video/en/press/insights/Seventh-Day-Adventist-Church/>
- <http://www.matrox.com/video/en/press/insights/Lifehouse-Church/>
- <http://www.matrox.com/video/en/press/insights/Chonnam-Hospital/>
- <http://www.matrox.com/video/en/press/insights/Rambert-School-of-Ballet/>
- <http://www.matrox.com/video/en/press/insights/Dr-Ralhan/>

Teradek T-Rax



T-RAX is a high-density enterprise-grade H.264 platform that encodes, decodes, and streams video at broadcast quality

Teradek T-Rax

1. Who is your typical customer?

- Enterprise and broadcast companies.

2. Why an appliance rather than splitting the stream using a cloud service?

- Security, is tantamount so on-premise hardware is preferred by some customers
- Many others simply do not like subscription payment models for cloud services.

3. What key features differentiate your product from others in the same category?

- Affordability, power efficiency, capability-dense.

4. How much does your hardware cost?

- T-Rax starts at \$3500. Each additional encoder or decoder card is about \$1500.

5. Case studies?

- <https://teradek.com/blogs/articles/live-x-uses-t-rax-and-core-to-launch-dji-s-mavic-drone>

Lightspeed Live Stream



Live Multiscreen Encoding, Packaging and Distribution

Lightspeed Live Stream

1. Who is your typical customer?

- Media and entertainment companies, corporations, government agencies and educational facilities

2. Key differentiating features?

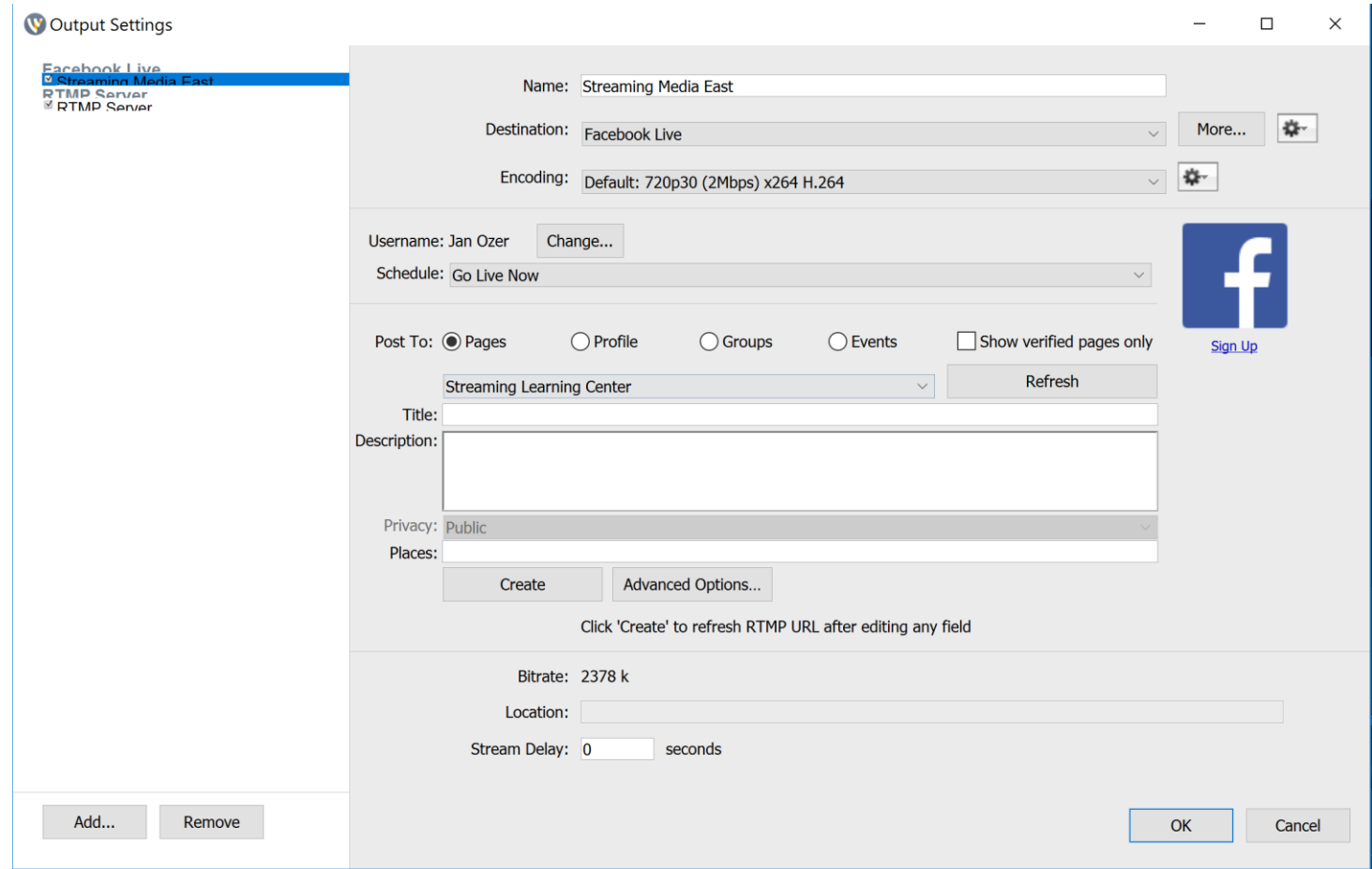
- 4 HD-SDI inputs can be used separately or for 4K input
- Density
- Also accepts IP input sources
- HLS and DASH outputs
- HEVC encoding
- Caption pass-through
- Can input images and video into the stream

3. How much does your hardware cost?

- \$49,950

Desktop Production Software

- Wirecast – desktop production software
- Can transmit to more than one service simultaneously
 - Not all desktop production programs can do this
- Others in class
 - vMix



Wirecast Software

1. Who is your typical customer?

- Varies, from multi-million dollar productions (John Legend and Snoop Dogg), Mr. Bean's Facebook stream to 69+ million fans,
- To family and church users

2. Why Wirecast rather than splitting via a cloud service?

- **Cost-saving** – most re-stream sites require a subscription or pay-as-you-go
- **Convenience** — configuring re-streaming in the cloud can be a hassle to set up/another interface you have to deal with
- **Deeper API Integration** — most other manufacturers or service providers don't offer the level of sophistication we do with API integration on leading platforms
- **Latency** – using a re-streaming site adds to latency

Wirecast Software

3. What features differentiate your product from others in the same category?

- Cross-platform software that works on Mac or Windows
- Ease-of-use
- World-class support
- Deeper partnerships and integrations within the live streaming ecosystem and industry for better user experience and competitive advantages

4. How much does your solution cost?

- Software Only: \$495 for Studio, \$995 for Pro
- Software Bundle + Hardware – Wirecast Gear turnkey – starting at \$4995

Live Streaming Platforms

- Streaming platforms that
 - Input live streams
 - Enable playback on their own site
 - Enable playback on your site via embedding
 - Also can send a stream to Facebook Live
- Representative companies
 - Livestream
 - Boxcast
 - StreamShark
 - StreamBox
- Key value proposition
 - Simplicity
 - If using this service already, pretty easy to distribute to other sites
 - If using a service, check if they support multiple outputs

Livestream

- Choose Facebook Live as another destination for Simulcast
- Or, YouTube plus Custom Destination

The screenshot shows a user interface for configuring a Simulcast. On the left is a navigation menu with options: Account, Password, Simulcast (highlighted with a 'NEW' tag), Notifications, Plans, Billing, Donations, Devices, and Advanced. The main content area is titled 'Simulcast' and contains the following text: 'Connect and stream to multiple destinations. Simultaneously broadcast to Livestream, Facebook*, Periscope, YouTube, or any other RTMP destination with a single stream.' Below this are several links: 'How simulcasting to Facebook Live and YouTube works', 'Recommended settings for Periscope', 'Setting up a custom destination (Twitch, Periscope, etc)', and 'List of approved broadcasting tools'. A footnote states: '* Facebook can only be simultaneously streamed with Livestream due to Facebook restrictions.' At the bottom, there are three destination options, each with an 'ADD' button: 'Facebook' (with the Facebook LIVE logo), 'YouTube' (with the YouTube logo), and 'Custom destination' (with a four-way arrow icon) which includes 'Twitch, Periscope, etc'.

Account

Password

Simulcast NEW

Notifications

Plans

Billing

Donations

Devices

Advanced

Simulcast

Connect and stream to multiple destinations.

Simultaneously broadcast to Livestream, Facebook*, Periscope, YouTube, or any other RTMP destination with a single stream.


[How simulcasting to Facebook Live and YouTube works](#)


[Recommended settings for Periscope](#)


[Setting up a custom destination \(Twitch, Periscope, etc\)](#)


[List of approved broadcasting tools](#)

* Facebook can only be simultaneously streamed with Livestream due to Facebook restrictions.

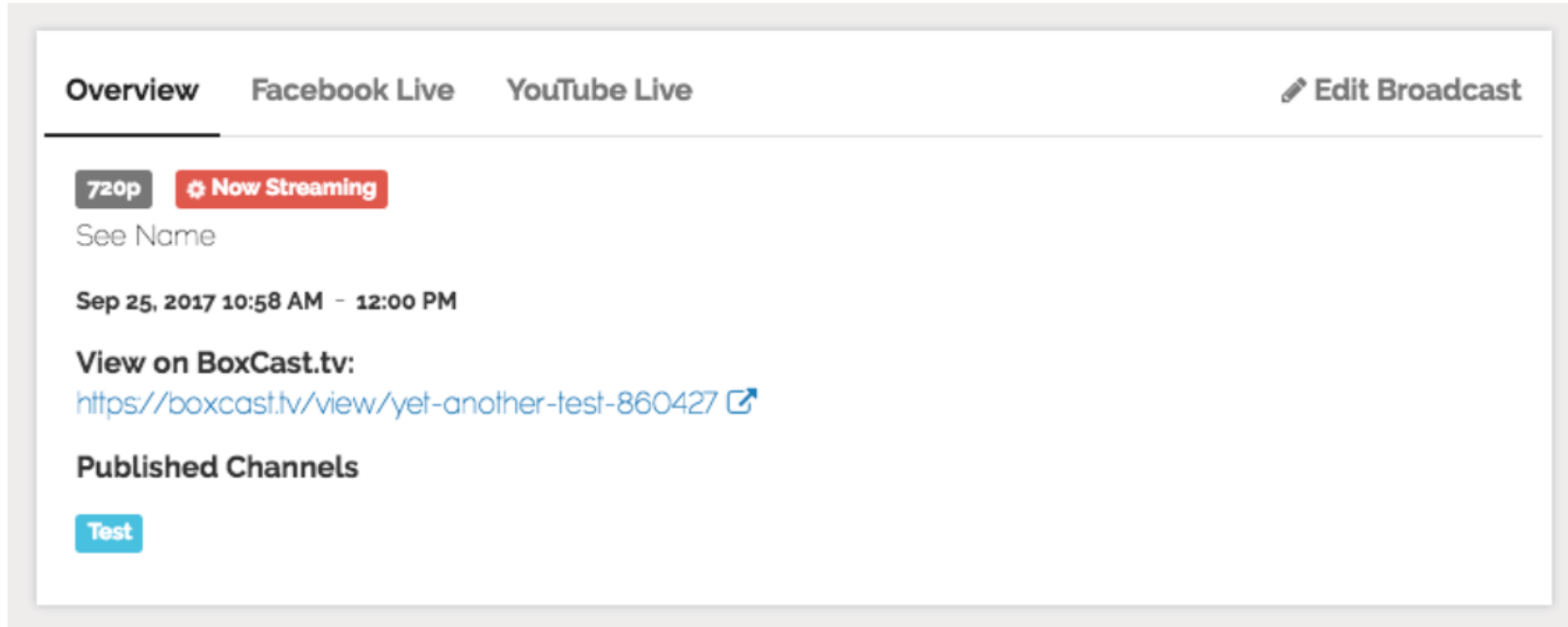
 Facebook ADD

OR 

 YouTube ADD

 Custom destination ADD
Twitch, Periscope, etc

Boxcast



The screenshot displays the Boxcast interface for a live broadcast. At the top, there are navigation tabs for 'Overview', 'Facebook Live', and 'YouTube Live', with 'Overview' being the active tab. An 'Edit Broadcast' link with a pencil icon is located in the top right corner. Below the navigation, the video resolution is set to '720p', and a red 'Now Streaming' status is shown. The broadcast name is currently 'See Name'. The scheduled time is 'Sep 25, 2017 10:58 AM - 12:00 PM'. A link to 'View on BoxCast.tv' is provided with the URL <https://boxcast.tv/view/yet-another-test-860427>. Under the 'Published Channels' section, a 'Test' channel is listed.

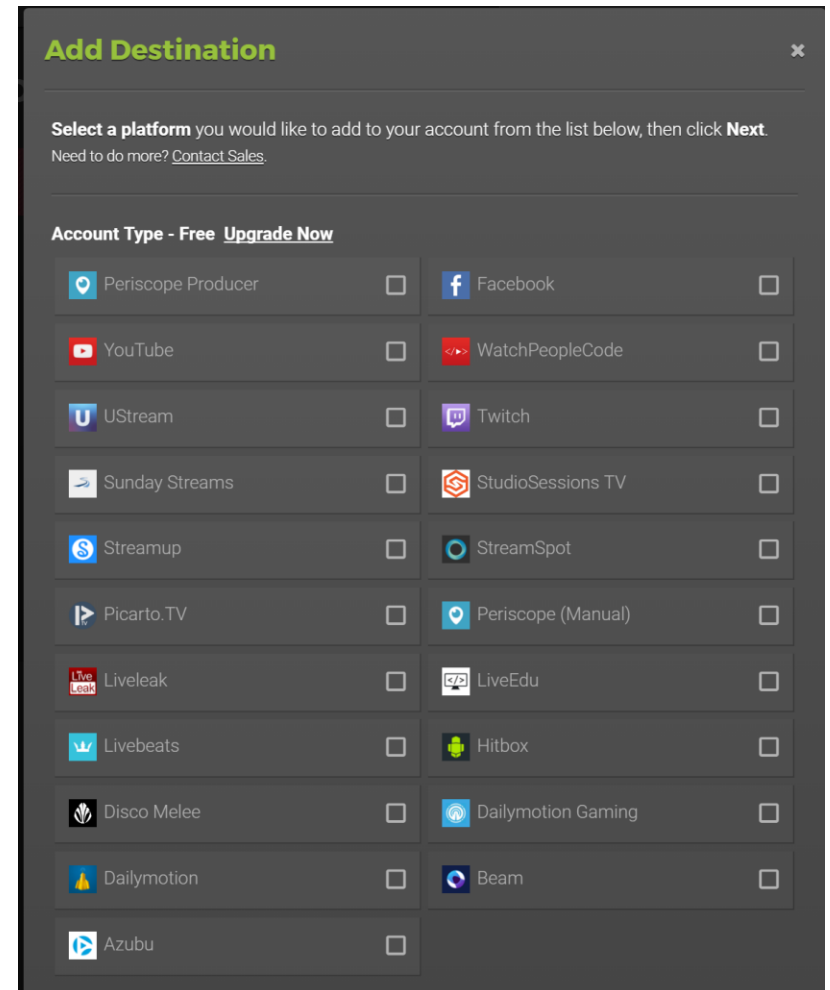
- Choose Facebook Live, YouTube Live, or any site you can reach with RTMP parameters

Distribution Platforms

- Web services designed primarily to deliver incoming stream to multiple outputs
 - Turnkey
 - Switchboard Live
 - Teradek Core
 - Developer focused
 - Wowza

Switchboard Live

- Multiple inputs to multiple outputs - ability to ingest from multiple hardware/software encoders; RTMP or HLS.
- Branding - add a different logo or watermark on a per destination basis.
- Analytics & Reporting - detailed reporting post-event from all destinations and social channels.
- Brandable Live Event Microsite (stream share) - users/participants can easily opt-in to "host" live stream on their social channels.
- Workflows - simple way to independently manage all of your channels and social destinations
- Templates - publish & update event info (title/description) real-time



Switchboard Live

1. Who is your typical customer?

- Live content creator big or small, tasked with publishing live streaming content to multiple destinations, simultaneously.
- From an individual user or small business to an enterprise client responsible for a massive production of a show or conference with presence on multiple viewing destinations.

2. Why a web service rather than individual encoders?

- Bandwidth cost at venues are typically charged at a premium
- Paid skilled operators to support multiple hardware devices
- Publishing of live streaming content to multiple destinations require synchronized efforts.
- Destination management; account authorization
- Event creation on destination sides; require management from social or marketing team

Switchboard Live

3. Why use your system rather than Wowza or a similar platform?

- Wowza is geared for technical users; Switchboard Cloud can be used by the teams that are responsible with the messaging of the live content; the marketing and social media team.
- Reduce the technical overhead associated with producing a live streaming event and make it easier for a non techie to be able to connect, engage, and grow their viewing audience.

4. What features differentiate products in your category?

- Stream share enables a user to send an email request to another user to be granted access to stream to their page or channel; like Facebook, YouTube, Periscope, Twitch....
- The ability to stop and start publishing to live destinations independently.
- The ability to update the title or description (meta) of a published live stream via API.
- The ability to provide an HTML5 player with CDN delivery for embed purposes
- The ability to support multiple ingestion points; so multiple inputs from multiple encoders can be managed from one interface
- We have both a developer & Switchboard API.

Switchboard Live

- **5. Which platforms can you distribute to?**
- Most RTMP based live streaming destination and platform.
- We are also API integrated with LiveU Solo and listed as destinations within OBS and LiveU Central.
- Deeper integrations are now in the works with the completion of our API.

6. Pricing model

Depends upon usage; there are free plans, and others that start at \$25/month.

Switchboard Live Pricing



SWITCHBOARD CLOUD / PRODUCER

A MORE ADVANCED TAKE ON LIVE. A SELF-SERVICE PLATFORM TO RUN ALL YOUR ONLINE VIDEO.

last updated Oct 03 2017

SWITCHBOARD.LIVE

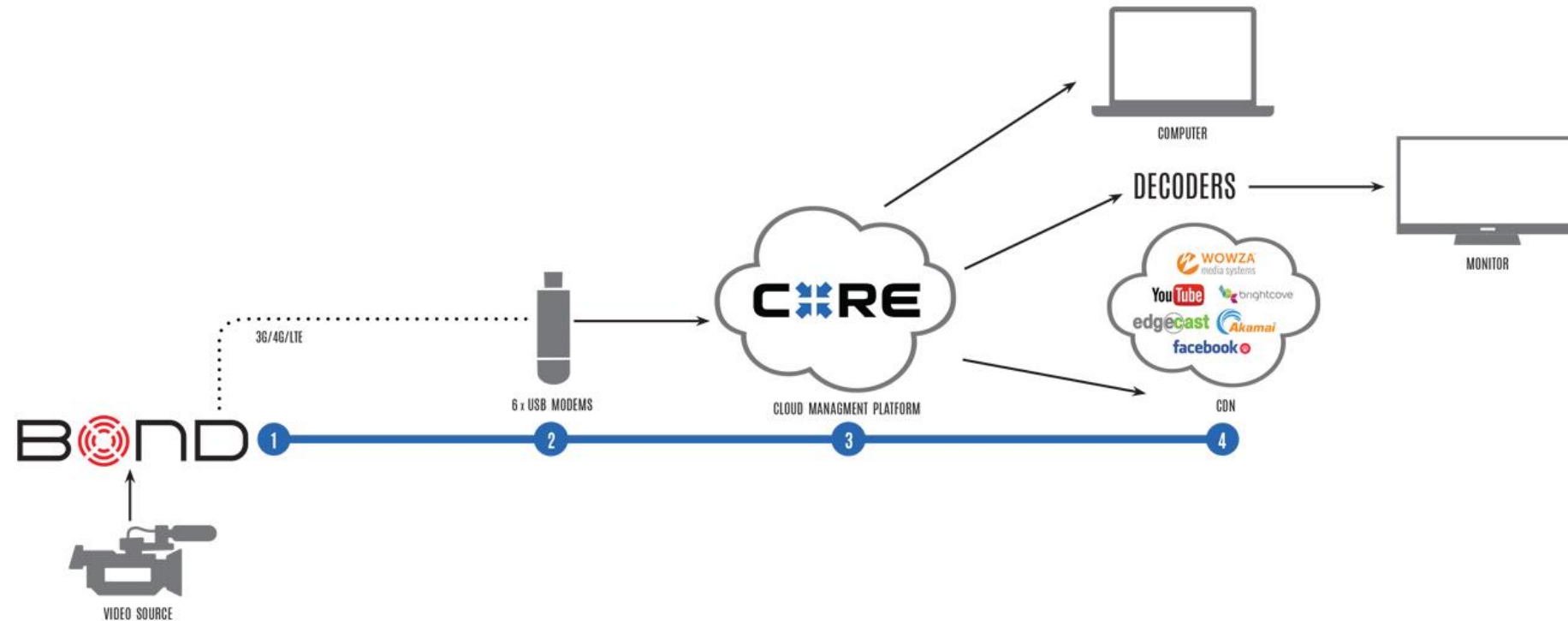
407.588.0080

SWITCHBOARD IS HOW YOU DO LIVE

	PROFESSIONAL	BUSINESS	ENTERPRISE
	\$95 _{user/month} ¹	\$175 _{user/month} ¹	\$250 _{user/destination/month} ¹
PLAN	<i>For the everyday show.</i>	<i>Perfect for small teams.</i>	<i>Built for agencies and networks.</i>
Users	1	1	1
Resolution	1080p	2K • 360°	4K • 360°
Workflow ²	1	3	Unlimited ¹
Destinations (API or Custom) ³	5	10	Unlimited ¹
Templates	Unlimited • Live Updating	Unlimited • Live Updating	Unlimited • Live Updating
Player	Live • Social • Embed	Live • Social • Embed • Custom • Delivery	Live • Social • Embed • Custom • Delivery
Multi-publish	✓	✓	✓
Share	Branded	Branded • Custom	Branded • Custom
Events	✓	✓	✓
Audience	Insights • Stats	Insights • Stats	Insights • Stats
Collaboration	Company-Wide	Company-Wide • Team Sharing	Company-Wide • Team Sharing • Personalized Data Permissions
Teams	1	3	Unlimited ¹
Scalability	User Limits Apply	Company-Wide Licenses Available (minimums apply)	Company-Wide Licenses Available (minimums apply)
Security	Password • 2-factor Authentication	Password • 2-factor Authentication • User Profiles	Password • 2-factor Authentication • User Profiles • SSO
Support	Community and Email	Phone M-F 9am-7pm ET	Phone 24x7
ADD-ON'S			
Quality	Transrate	Transrate • Transcode	Transrate • Transcode
Types ⁴	Apps • Link • Box • RTMP	Apps • Link • Stream • Destination • Box • OnPrem • Transport • RTMP	Apps • Performance • Box • OnPrem • Transport • RTMP • Custom
Analytics		Reports • Workflows • Destinations • Interactions	Reports • Workflows • Destinations • Interactions
Deployment	Self-Service	Expert Consulting Available	Expert Consulting Available
COMING SOON			
Admin Console		Basic	Advanced

Teradek Core

- Core allows you to publish a single video feed to multiple destinations all at the same time



<https://vimeo.com/217599416>

Teradek Core

1. Who is your typical customer?

- Enterprise, broadcast, production companies, and sometimes churches

2. Why a web service rather than encoding with multiple hardware devices?

- Simplicity and accessibility. Less hardware to lug around or install

3. Why use your system rather than Wowza or a similar platform?

- Wowza lacks key features required for multi-platform delivery. For example, Core can remotely manage and configure your Teradek encoders, archive your streams, transcode, and more.
- Its a bespoke IP video management ecosystem for Teradek users.

Teradek Core

4. What features differentiate products in your category?

- For us, remote configuration and codec management is a big deal
- Ease of use is another key factor (simply login to your account online or from your encoder)
- Reliability.

Pricing

<https://core.teradek.com/#welcome>

Monthly Annual

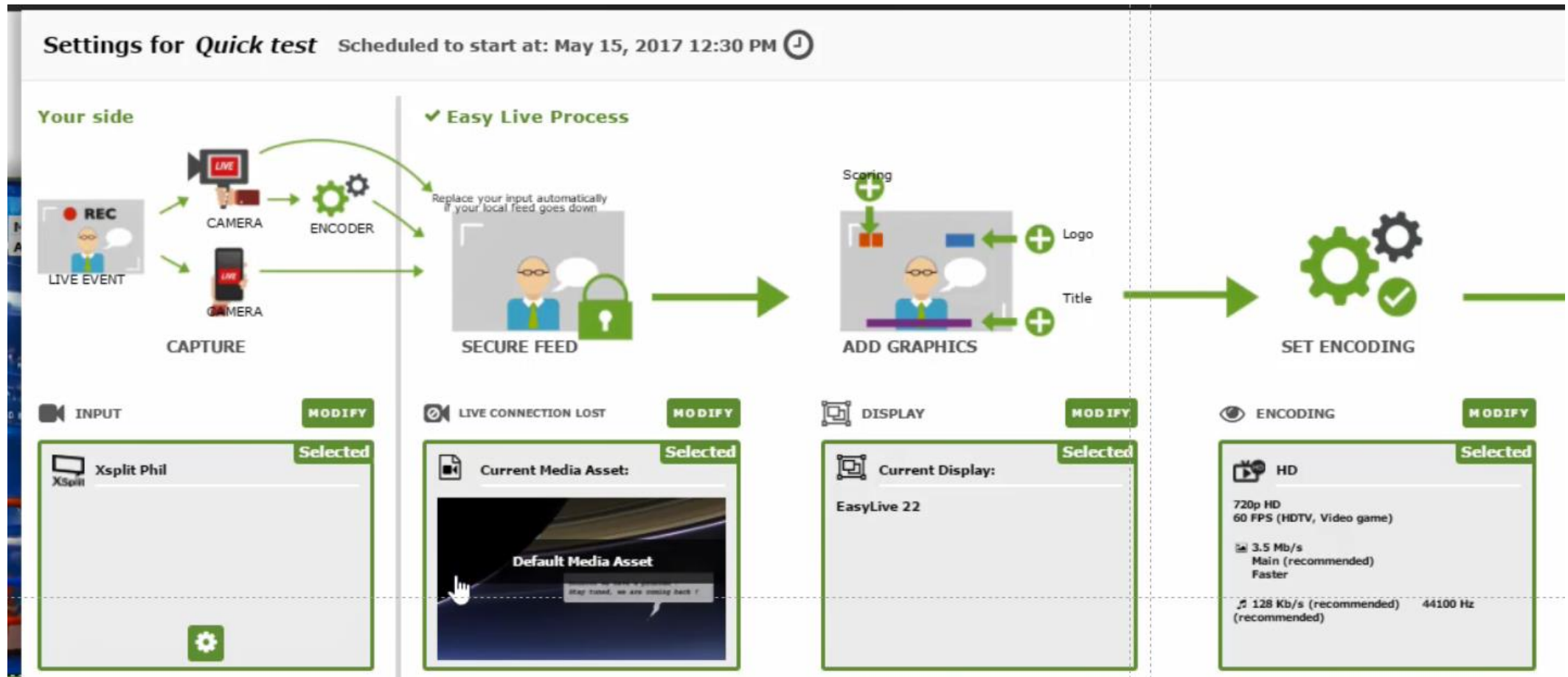
	Premium \$249.00	Basic \$99.00	Starter \$49.00
Number of devices	5 encoders 5 decoders	2 encoders 2 decoders	1 encoder 1 decoder
Live:Air apps	5	2	1
On-demand Sputniks	Yes	Yes	Yes
Core-hosted Sputniks	2	1	0
On-premise Sputniks	Unlimited	1	0
Data Transfer	300 GB	50 GB	25 GB
Recording	Yes	Yes	No
Free trial	No	30	30
	SUBSCRIBE NOW	SUBSCRIBE NOW	SUBSCRIBE NOW

Production Platforms

- Web services that input stream, edit or process it in some way, and then deliver incoming stream to multiple outputs
 - Some work as SaaS (EasyLive)
 - Some as SaaS plus service provider (Groovy Gecko)
- EasyLive
- Groovy Gecko

Go Easy Live

- Cloud powered production platform



EasyLive

The screenshot shows the EasyLive control interface. At the top, there's a navigation bar with 'Home > Upcoming events: Per-Title Encoding Optimization'. Below it, a menu includes 'Live', 'Displays', 'Applications', 'Input', 'Quality', '(Optional) Broadcasts', 'Infos', and 'Events'. A central video player shows a man speaking, with a 'STOP PREVIEW' button and a 'START LIVE' button. A dropdown menu is open, listing categories like 'Conference', 'Press Conference', 'Government', 'Enterprise', 'Radio', 'Show', 'Concert', 'Sport', 'Rugby', 'Football', 'Volley', 'Table Tennis', 'Table Tennis with Games', 'Karate', 'Other Sport', 'Gaming', and 'Other Event'. Below the video player, there are three title cards: 'Title 1' with 'Jan Ozer', 'Title 2 (Twitter)' with a list of tweets, and 'Title 3'. A 'MANAGE TWITTER APPLICATION' button is at the bottom.

The screenshot shows the styling interface for a video title card. The main preview area displays a video frame with a winter landscape and a title 'Streaming Learning Center'. Below the video, there's a green bar with placeholder text 'A long placeholder text' and the name 'Veronica Smith'. To the right, a settings panel for 'Title 1' includes: 'Image Title 1' with sliders for 'Horizontal margin', 'Vertical margin', 'Size', and 'Opacity'; 'Background' with 'Color 1' (#80b83e) and 'Color 2' (#c0504d); and 'Text' with sliders for 'Opacity', 'Horizontal align' (Left), 'Vertical align' (Top), 'Horizontal margin', 'Vertical margin', 'Color' (#000000), 'Font size', 'Font Family' (Verdana), 'Transition time', and 'Transition' (From rig). At the bottom, there are 'SAVE' and 'DELETE' buttons.

SETTING (DONE)
PREVIEW (DONE)
CURRENTLY IN LIVE
END BROADCAST
Automated shut down 20 days 19:43:09

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+



CNN : Jeff Sessions' sentencing plan would ruin lives, writes Rand Paul
<https://t.co/OLtsPFCYGe> <https://t.co/nWXPV9rb1W>

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<https://t.co/OLtsPFCYGe> <https://t.co/nWXPV9rb1W>

Display Editor

+ ADD ⓘ

Layers

- #2 Easy Live
- #3 Facebook Title Haha
- #4 Facebook Logo Haha
- #5 Dogs
- #6 Facebook Logo Love
- #7 Cats
- #8 Facebook Logo Like
- #9 Photo Dog
- #10 Photo Cat
- #11 Facebook

Edit

- RENAME
- POSITION
- IMAGE
- TEXT
- LINK TO

Display Manager

EDIT SWITCH ⓘ ✕

- Easy Live
- Facebook
 - Facebook Title Haha
 - Facebook Logo Haha
 - Dogs
 - Facebook Logo Love
 - Photo Dog
 - Cats
 - Facebook Logo Like
 - Photo Cat
- Scoring

Lower Third

Delete	Order	Message	On Live
■	↕	Jeremy	⏻
■	↕	Jeff	⏻
■	↕	Philippe	⏻
■	↕	Sean	⏻

ADD A MESSAGE

Easy Live

1. Who is your typical customer?

- B2B (Media, corporate, e-sport, etc.)

2. Why a web service rather than individual encoders?

- save bandwidth and budget on multiple hardware encoder.

3. Why use your system rather than Wowza or a similar platform?

- Our solution is turn key, no install, minimum configuration
- Additional features like adding graphics, generating clips, PIP, ingest Media, etc. and
- System is fully API driven

4. What features differentiate products in your category?

- Our solution is turn key. cloud-based production software + multipublishing

5. How does your pricing work

- We offer different packages but our 1st package starts at \$299 per month unlimited usage.

6. Which platforms can you distribute to?

- Every platform (Akamai, Livestream, Wowza, Youtube, Periscope, Twitch, Facebook, etc

Groovy Gecko

- Online video specialists

The screenshot shows a presentation interface for BP's first quarter 2014 results. At the top left is the BP logo and the title "BP's first quarter 2014 results". At the top right are links for "Home" and "Logout". The main content area is split into two parts: a video player on the left and a slide viewer on the right. The video player shows a portrait of Jessica Mitchell, Head of Global Investor Relations, with a play button and a progress bar indicating 00:10 of a 01:17:02 video. The slide viewer shows a slide titled "Jess Mitchell, Head of Group Investor Relations" with a background image of an offshore oil rig. Below the slide viewer is a "Slide index" section with seven thumbnails: "BP's first quarter 2014 results", "Jess Mitchell", "Cautionary statement", "Bob Dudley", "Agenda", "Brian Gilvary", and "1Q 2014 Summary".

<http://dl.groovygecko.net/anon.groovy/groovygecko/Promo2.0.mp4>

Groovy Gecko

1. Who is your typical customer?

- Broadcasters such as Channel 4 and ITV
- Large corporations using streaming for investor relations or internal meetings, such as BP
- A wide variety of brands, including Nike, O2, NBC Universal, the UN, and Liverpool FC.

2. Why are they using a web service rather than multiple hardware devices?

- Our customers are mainly using web streaming to engage directly with their audience, via social media.
- For the broadcast clients, it is about delivering additional live content to complement broadcast TV.
- For all of our clients, it is about true **engagement** with that audience, enabling them to comment, ask questions, answer polls, and in some instances change the course of the live stream. That is simply not possible in any other way.

Groovy Gecko

3. Do you offer the following features?

a. Real time clipping and DVR?

Yes

b. Graphics and text overlay? *Yes*

c. Monetization via ads? *Yes on platforms which offer this service*

d. Monetization via PPV? *Yes*

e. Do you offer a smartphone app for mobile input? *No*

f. DRM? *Yes*

4. What other features differentiate products in your category?

- The Facebook tools we have developed based on the Facebook Live API for live interactive streaming we believe are unique.
- This includes a question moderation system, which enables customers to sort through questions from the social platform and deliver them to the presenter
- Live polling gives viewers the option to change the outcome of the stream and our distribution mechanism allows us to deliver video content into multiple Facebook post simultaneously or even multiple platforms.

Groovy Gecko

5. How does your pricing work?

- Our products are delivered as a service so pricing is very much dependent on the complexity and length of the project. Both the traditional LPS and social streaming products start from a base price of around £3000 per event and rise depending on levels of interactivity, range of distribution and length of show.

6. Which platforms can you distribute to?

- a. Facebook Live? Yes and we are a Facebook partner for both FB Live (standard and 360) and Workplace Live
- b. Can you send the same stream to multiple FBL pages/profiles simultaneously? Yes
- c. YouTube Live? Yes both standard and live 360
- d. Periscope? Yes
- e. Your own branded player embeddable in a customer's web site? Yes
- f. A page on your service? We don't offer an independent service

Questions?