MEDIA =

DISTRIBUTION DISRUPTION @
TORRID PACE
Digital Leaders =  

Transforming Media With  

Better User Experiences + Lower Prices…Data + Scale
Music = Why Streaming?
Access / Choice / Discovery / Personalization / Mobile / Fewer Ads

### Reasons for Paying for Music Streaming, 12/15

- Free Trial Convert: 42%
- Get Rid of Ads: 29%
- Mobile Access: 27%
- Listening Choice: 24%
- Recs from Friends / Family: 22%
- Bundled: 21%
- Offline Listening: 19%
- Viewed Ad: 9%

### Importance of Streaming Product Features, 12/15

- Size of Catalog
- New Music Discovery
- Multi-Device Listening
- Support Artists
- Keep Up with Hits
- Curation / Recs
- Simultaneous Music Videos
- Build Playlists
- Share Playlists

Source: Goldman Sachs Research, BPI
Note: BPI Survey as of 12/15, n=1,000 (UK only). Questions: “Why did you decide to pay for a music streaming subscription?” and “Thinking about music streaming, to you, how important are the following?”
Video = Why Cord-Cutting?
Lower Price + Convenience

Reasons for Cutting Pay-TV Service, Q4:16

- Too Expensive: 80%
- Use an Internet Streaming Service: 48%
- Use Antenna to Get Basic Channels: 27%
- Like to Binge Entire Seasons via Streaming: 19%
- Dropped Cable Upon Moving / Relocating: 13%
- Bulk of Viewing is Streaming Service Original Content: 11%

Source: TiVo Q4 2016 Video Trends Report
Note: Survey includes 18+ year olds in USA and Canada, n=3,079. Other categories omitted include “Not My Choice,” “Share SVOD Login,” “Moved In With New Roommate,” “Other.”
Digital Evolution of Music + Video =

Ramping Rapidly…
Recorded Music Revenues by Format ($B), USA, 1973-2016

Source: Recording Industry Association of America
Note: “Subscription and Streaming” includes paid subscriptions (full and limited tier), SoundExchange, ad-supported streaming and other digital.
“Download & Synchronization” includes download single / album, kiosk, download music video, ringtone / ringback, and synchronization.
“Physical” includes LP / EP, vinyl single, 8-track, cassette (full / single), CD / CD single, music video, DVD audio and SACD.

Recorded Music = Revenue +11% After 16 Years of -4% Annual Average Growth… Subscription & Streaming @ 52% of Revenue vs. 0% Thirteen Years Ago, USA
Spotify = Catalyst for Internet-Driven Evolution of Music Industry…

0 → 50MM Paid Subscribers / 126MM MAUs in <9 Years…

Spotify Subscribers (MM) & Revenue (€MM), 2008 – 2016*, Global

Q4:16 Monthly ARPU = €5.80 ($6.10)

Source: Spotify

* Subscribers as of 3/2017, when Spotify announced they had reached the 50 million subscriber mark.
…Spotify = 20% of Global Music Industry Revenue vs. 0% in 2008

Spotify Subscribers (MM), 2008 – 2016*, Global
Q4:16 Monthly ARPU = €5.80 ($6.10)

Source: Spotify, IFPI 2017 Global Music Report
* Subscribers as of 3/2017, when Spotify announced they had reached the 50 million subscriber mark.
Spotify = Users Listen to 41 Artists per Week, +40% (vs. 1/14) Owing to… Recommendation Engine (Data + Algorithms)

Spotify
Unique Artists Listened to Per Week, Average, Global, 1/14-1/17

Source: Spotify
Network TV* Minutes Delivered = 2011 Top 5 Networks -10% Average… Netflix +669% Over 5 Years, USA…

Source: Matthew Ball – REDEF Original 3/14/16, Nielsen, Sandvine, Netflix, SNL Kagan, BTIG
Note: Inclusive of Broadcast + Basic Cable + Premium Cable, C7 Live + VOD + DVR. Does not account for multiple viewers (i.e. unique minutes delivered) or TV everywhere (though note that even if every TV Everywhere stream started in 12/15 was completed and 1 hour long, consumption would have increased national TV time by only 1.9%).
Netflix = Catalyst for Internet-Driven Evolution of Video Industry… 95MM Streaming Subscribers in 10 Years…

Netflix Subscribers (MM) & Quarterly Revenue ($MM), 2/99 – 3/17, Global
Q1:17 Streaming ARPU per Month = $9.14

Source: Netflix
Note: Netflix subscription DVD service launched 9/1998. Data before Q3 2001 represents all subscribers because paid subscribers not broken out. Netflix split streaming subs from DVD subs in Q3 2011; graph shows only streaming subs thereafter. ARPU shown ex-DVD.
Netflix Subscribers, 2009 – 2017*, Global
Q1:17 Streaming ARPU per Month = $9.14

Source: Netflix
Note: Share represented by Netflix domestic streaming revenue over total home entertainment revenue in USA. Domestic streaming not broken out as individual segment until 2012. Netflix split streaming subs from DVD subs in Q3 2011; graph shows only streaming subs thereafter.
* Q1:17 represents Netflix annualized domestic streaming revenue figure. ARPU shown ex-DVD
Google Pioneered Search / Find / Obtain (SFO) for Content + Products…
Netflix + Spotify Pioneered Search / Find / Serve Up (SFS) for Media

**From Give to Get…With Data + Algorithms**

98MM Different Netflixes…

$1B cost savings / year from recommendations (12/15)

126MM Different Spotifys…

~5B Discover Weekly streams in <1 year post-launch (5/16)


Note: Netflix estimated cost savings due to improved engagement and reduction of monthly churn, driving lower need for subscriber acquisition cost in the future.
Digital Evolution of Music + Video =
Multiple Approaches…
Facebook / Instagram / Snap = Mobile Video Traffic Share Gainers Over 4 Years…

Share of Downstream Video Traffic (%), North America, 2H 2016

Source: Sandvine Global Internet Phenomena Report (2H 2012 and 2016)
Netflix / YouTube = Fixed-Access Video Traffic Share Leaders

Share of Downstream Video Traffic (%), North America, 2H 2016

Source: Sandvine Global Internet Phenomena Report (2H 2012 and 2016)
Facebook (Facebook / WhatsApp / Messenger / Instagram) = Video Ramping Across Platform

Facebook Platform MAUs, Global, Months Since Launch

Source: Facebook, Instagram, WhatsApp, Financial Times, TechCrunch
Snap = Ramping Original Short-Form Content

Snap ‘Original Shows’

**Phone Swap**
10MM+ Views for 1st Episode, 5/17

**Second Chance**
8MM+ Views for 1st Episode, 5/17

Source: Snap
Generational Media Usage =

Chasm Increasing...

Shifts to Internet-Enabled Media Continue
Mobile Device Time per Day = +2x Over 2 Years…

Daily Time Spent by Media (Not De-Duped), USA, Q4:14-Q4:16

Q4:14
7:06
2:17

Q4:15
7:12
2:44

Q4:16
7:16
4:14

Source: Nielsen Total Audience Report Q4:16
Note: "Analog" includes Live / DVR / Time-shifted TV, AM / FM radio, DVD / Blu-ray, and game consoles. "Digital" includes Multimedia devices (viewing on Apple TV, Roku, Chromecast, smartphone, computer etc. connected to TV), internet on PC, video on PC, app / web on smartphone / tablet, and video on smartphone.
Mobile Device Time per Day =
18-24 Year-Olds @ 49% Digital...65+ Year-Olds @ 13%, USA

<table>
<thead>
<tr>
<th>Age Bracket</th>
<th>Daily Time Spent (Analog)</th>
<th>Daily Time Spent (Digital)</th>
</tr>
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<tbody>
<tr>
<td>18-24</td>
<td>4:35</td>
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<tr>
<td>25-34</td>
<td>5:42</td>
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<td>65+</td>
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</tbody>
</table>

Source: Nielsen Total Audience Report Q4:16
Note: "Analog" includes Live / DVR / Time-shifted TV, AM / FM radio, DVD / Blu-ray, and game consoles. "Digital" includes Multimedia devices (viewing on Apple TV, Roku, Chromecast, smartphone, computer etc. connected to TV), internet on PC, video on PC, app / web on smartphone, and video on smartphone.
Traditional Cable Conundrum =

Channels + Consumer Prices + Programming Costs Rising…

Subscribers Falling
Pay TV Household Growth = -1.3% Average for Last 12 Quarters…
While Programming Costs >2x+ since 2006…

Source: Nielsen Total Audience / Cross Platform Reports, US Census Bureau, St. Louis Federal Reserve FRED Database
Note: Pay TV households represented by Nielsen “Cable Plus” metric, which includes households who receive television via Wired Cable (No Telco), Telco, or Satellite. “Programming Costs” includes total program and production costs for Cable and Other Subscription Programming firms, 2006-2015, as per US Census Services Annual Survey for Employer Firms ($25B in 2015, up from $12B in 2006).
…# TV Channels Watched <10% of Channels Received…
Pay TV ARPU 10-15x > Netflix…

Average TV Channels Received vs. Watched per Household, USA, 2008-2016

Annual ARPU, Selected Platforms, 2016

Source: Nielsen, Matthew Ball & Tal Shachar, REDEF Original 3/9/16, DirecTV, AT&T, Charter, Dish Network, Comcast
Note: TV channel data as of mid-year. DirecTV ARPU calculated by dividing the 2016 Video Entertainment revenue by the average number of Linear Video Connections during 2016. Charter ARPU calculated by dividing 2016 Video revenue by average Video Residential Primary Service Units during 2016. Dish Network ARPU calculated by multiplying the 2016 Pay-TV Average Monthly Revenue per Subscriber by 12. Comcast ARPU calculated by dividing the 2016 Residential Video revenue by the average Video Customers in 2016. Netflix ARPU is based off the Global Streaming revenue and average subscribers in 2016. All estimates are global.
Digital Subscriptions =

Rising Owing to Massive User Experience Improvements…

On-Demand / A La Carte Selection + Choice / Personalization / Payment Systems / 2-Way UGC / Mobile…
Media Evolution (1950-2017) =
Market of Millions → Market of One x Millions

**Network Era**
1950s-1980s
Cater to All / High Viewership / No Personalization

**Cable Era**
1980s-2010s
Broad Genres / Focus on Programming / Limited Bundle Choices

**Digital Era**
Current
Cater to Sub-Genres / Power Users / A La Carte + Subscription

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Digital Distributors
- crunchyroll
- Shudder
- Fandor
- See So

Digital Studios
- YouTube Red
- Cheddar
- Fullscreen

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Media = Distribution Disruption @ Torrid Pace

1) **Digital Leaders** = Transforming Media With Better User Experiences + Lower Prices...Data + Scale

2) **Generational Media Usage** = Chasm Increasing as Shifts to Internet-Enabled Media Continue

3) **Traditional Cable Conundrum** = Channels + Consumer Prices + Programming Cost Rising...Subscribers Falling

4) **Digital Subscriptions** = Rising Owing to Massive User Experience Improvements (On-Demand / Selection + Choice / Personalization / Payment Systems / 2-Way UGC / Mobile...)
THE CLOUD =

ACCELERATING CHANGE ACROSS ENTERPRISES

ALEX KURLAND @ KLEINER PERKINS