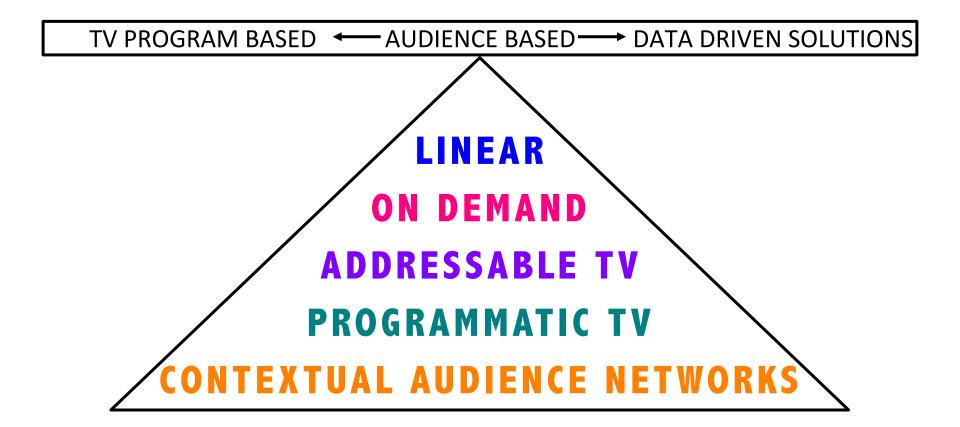
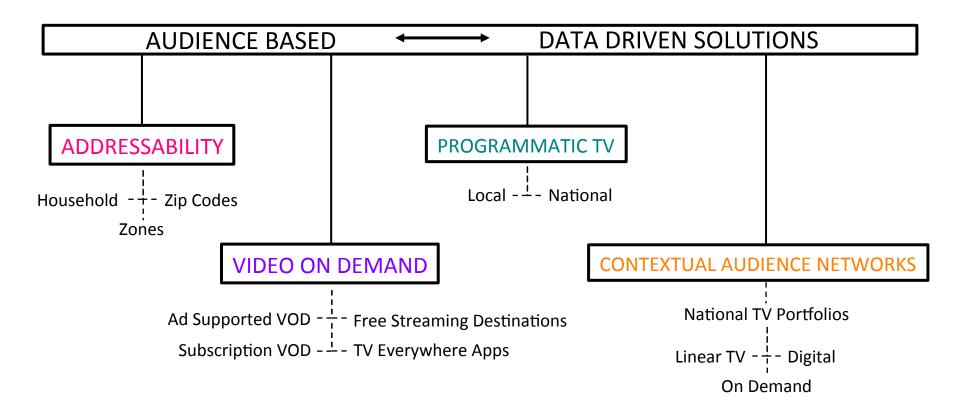
BEYOND LINEAR TVA PRAGMATIC GUIDE

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TV COMMERCIAL BUYING EVOLUTION



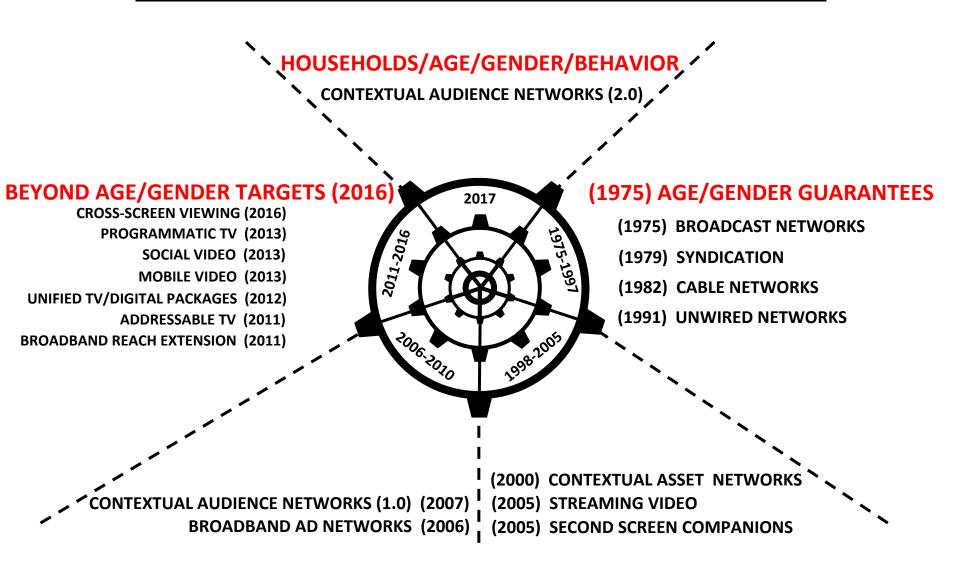
TV COMMERCIAL BUYING EVOLUTION



CONSUMER CHOICES ARE A CHANGIN'

1973-1997	1998-2005	2006-2010	2011-2017
(25 years)	(8 years)	(5 years)	(6 years)
Handheld Cellphone('73)	Google ('98)	Amazon Prime Video ('06)	Apple Siri ('11)
VCR ('75)	HDTV Transmission ('98)	Twitter ('06)	Smart TV ('11)
Cable Networks ('76)	DVR ('99)	GetGlue/Second-Screens ('06)	Snapchat ('11)
Screenvision ('76)	Netflix DVD ('99)	Amazon Kindle ('06)	Instagram ('11)
Program Guide – EPG ('81)	Satellite Radio ('01)	Roku ('08)	Internet of Things ('13)
AOL ('85)	Ad Supported VOD ('02)	Spotify ('08)	Ultra TV ('13)
DBS ('91)	HD DVD/Blu-ray Player ('03)	WhatsApp ('09)	Google Chromecast ('14)
Yahoo ('94)	MySpace ('03)	Apple's iPad ('10)	CBS All Access ('14)
	Skype ('03)	Pinterest ('10)	Amazon Fire TV ('14)
	Time Shifted Viewing ('04)	Pandora ('10)	Oculus/Facebook ('14)
	Facebook ('04)	Google TV ('10)	Amazon Alexa ('14)
	YouTube ('05)	Google Fiber('10)	HBO Now ('15)
	Apple iTunes Video ('05)		Dish's Sling TV ('15)
	Xbox 360 ('05)		AppleWatch ('15)
	Telco Video Services ('05)		Periscope ('15) ₄

ADVERTISING PLATFORMS/PACKAGES ARE A CHANGIN'

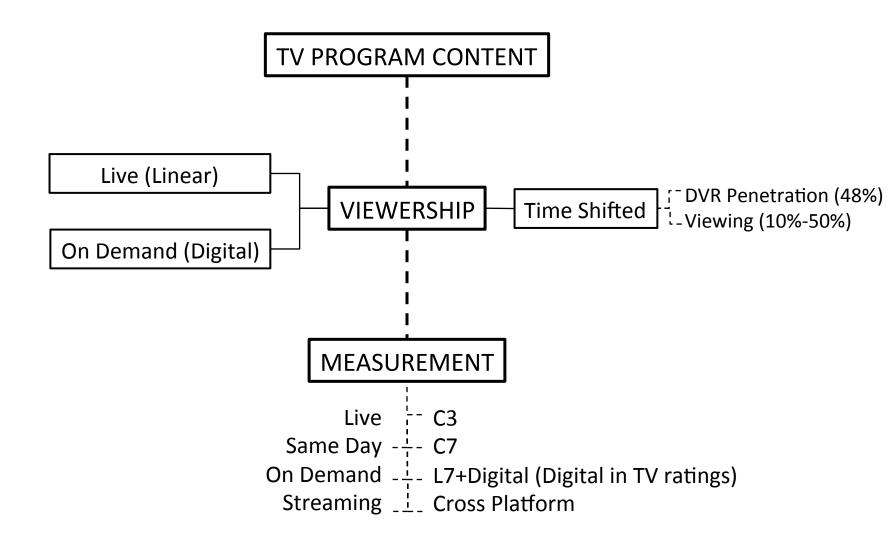


TV / VIDEO ADVERTISING SPEND

<u>SECTOR</u>	DISTRIBUTION	<u>FOOTPRINT</u>	SPEND (BILLIONS)
TV	Broadcast	National	\$18.00
		Local	\$17.00
	Cable	National	\$18.00
		Local	\$7.00
	Syndication	-	\$5.00
	Unwired	-	\$0.30
DIGITAL	-	-	\$9.91
PLACE BASED	Cinema	-	\$0.80
	Other	-	\$0.50
ADDRESSABLE TV	-	-	\$0.50
PROGRAMMATIC TV	-	-	\$0.70

Source: eMarketer, Broadcasting & Cable, SNL Kagan, BIA/Kelsey, Nielsen

TV PROGRAM VIEWERSHIP

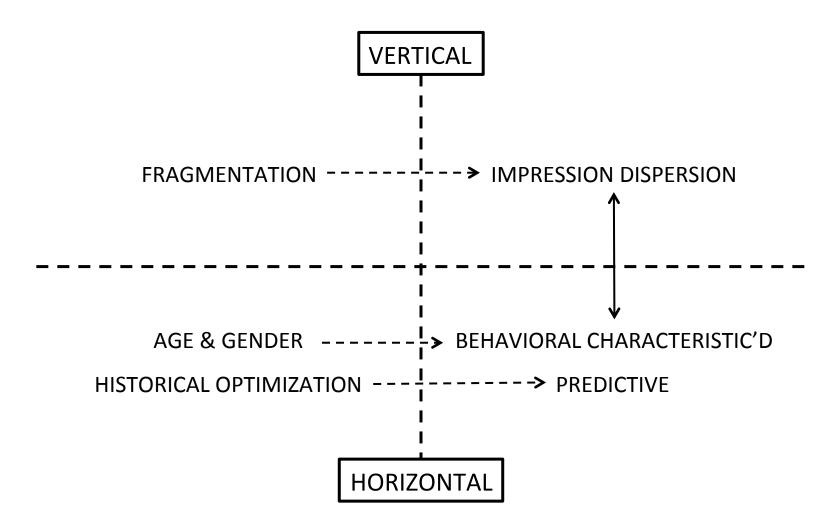


MULTI-PLATFORM VIEWERSHIP*

LIVE + SAME DAY	35%
DVR/VOD DAYS 1-3	29%
DVR/VOD DAYS 4-7	13%
ONLINE 1-35	8%
ONLINE 8-35	15%

^{*}ABC Primetime Adults 18-49

HORIZONTICAL EVOLUTION



DATA SOURCES*

84.51 4C

Acxiom Adara

Adobe

Adobe Audience Manager

Affinity Solutions
American Express

Bluekai Cardlytics

comScore/Rentrak

Crossix

Datalabs USA

Datalogix

e-Tech Epsilon

Equifacts Exelate

Experian

First Party Data (CRM)

GfK

GfK MRI Gracenote **IHS**

Infogroup IPSOS

IRI

IRI ProScores

IXI

Kantar

Kantar Ad Occurrence

Krux

Mastercard

Medicx

Millard Brown

MRI

MRI Fusion

MRI/ Simmons

Neustar Nielsen

Nielsen AMRLD

Nielsen Buying Insights

Nielsen Catalina

Nielsen MarketBreaks Nielsen Mobile Vector **Nielsen Motor Stats**

Nielsen NSI Nielsen NSS Nielsen NTI

Nielsen 1 to 1 Fusion Panel

NinthDecimal

Place IQ

Polk Prizm

Proximic Quantcast

Resonate

Scarborough

Set Top Box Data

Shopcom Simmons

Sorenson (ACR) Speedeon Data

SQAD TiVo

VisualDNA YouGov

^{*}Self-reported

STATISTICAL BABEL FISH

84.51 IHS Nielsen Motor Stats

4C Infogroup Nielsen NSI Acxiom **IPSOS** Nielsen NSS Adara IRI Nielsen NTI

Adobe IRI ProScores Nielsen 1 to 1 Fusion Panel

Adobe Audien American Expr

Bluekai

Cardlytics

comScore/Ren

Crossix

Datalahs USA

Datalogix

e-Tech

Epsilon

Equifacts

Exelate

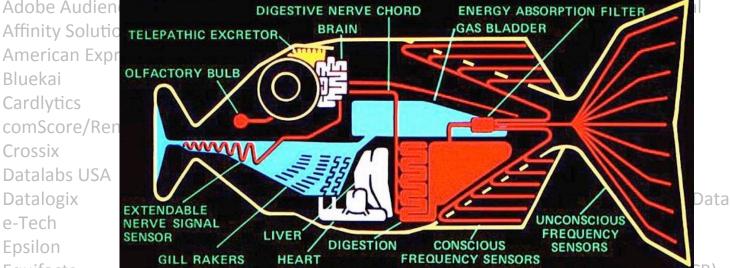
Experian

First Party Data (CRM)

GfK

GfK MRI

Gracenote



Nielsen

Nielsen AMRLD

Nielsen Buying Insights

Nielsen Catalina Nielsen MarketBreaks

Nielsen Mobile Vector

Speedeon Data

SQAD TiVo

VisualDNA

YouGov

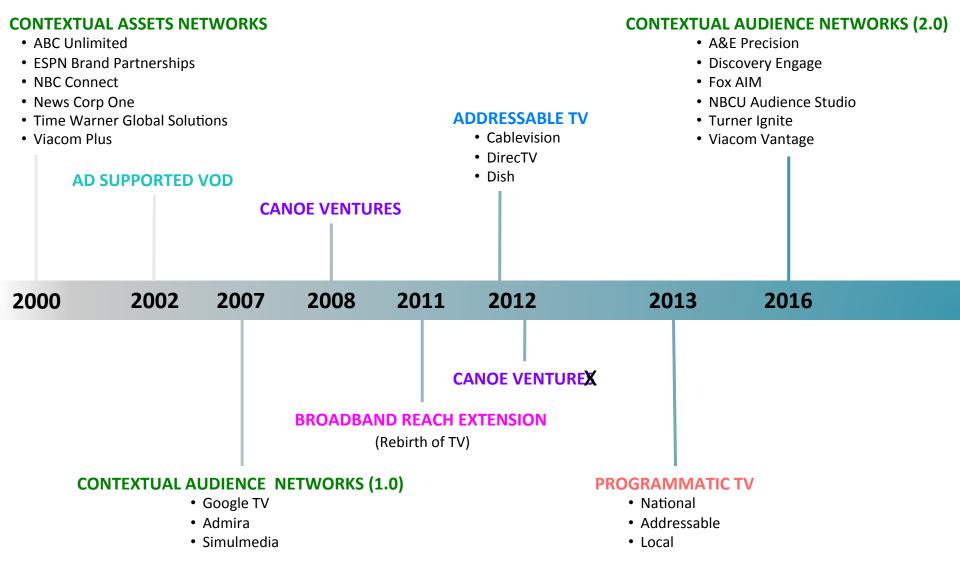
MVPD SUBSCRIPTION REVENUE 2011-2017

REVENUE (BILLIONS)

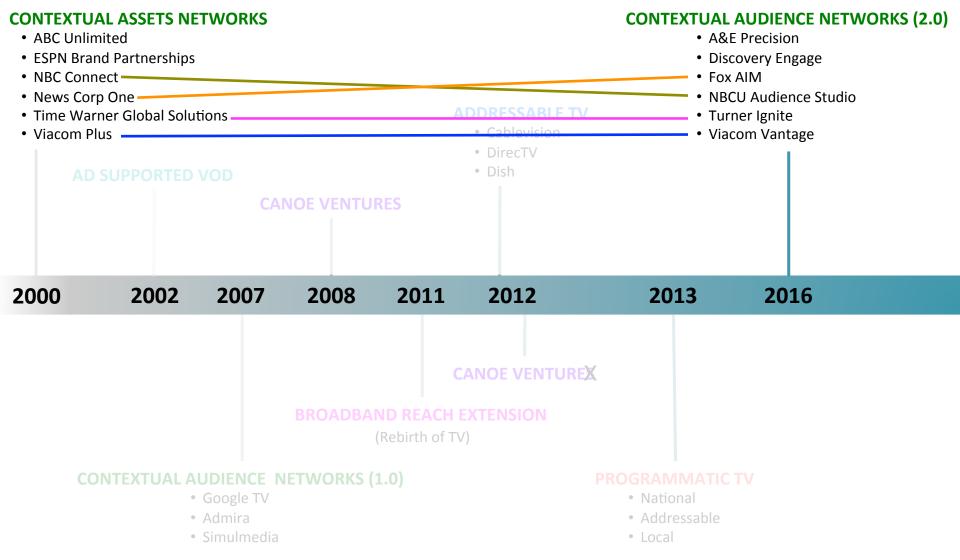
		\	
<u>YEAR</u>	TOTAL	BROADBAND ACCESS	<u>VIDEO</u>
2011	\$91.2	\$43.2	\$48.0
2012	\$94.2	\$46.9	\$47.3
2013	\$96.3	\$49.0	\$47.3
2014	\$99.1	\$51.3	\$47.8
2015	\$101.1	\$53.7	\$47.4
2016	\$101.8	\$55.4	\$46.4
2017 (est.)	\$102.3	\$56.8	\$45.5

Source: PWC, Multichannel News

A 21ST CENTURY ADVANCED TV HISTORICAL PERSPECTIVE



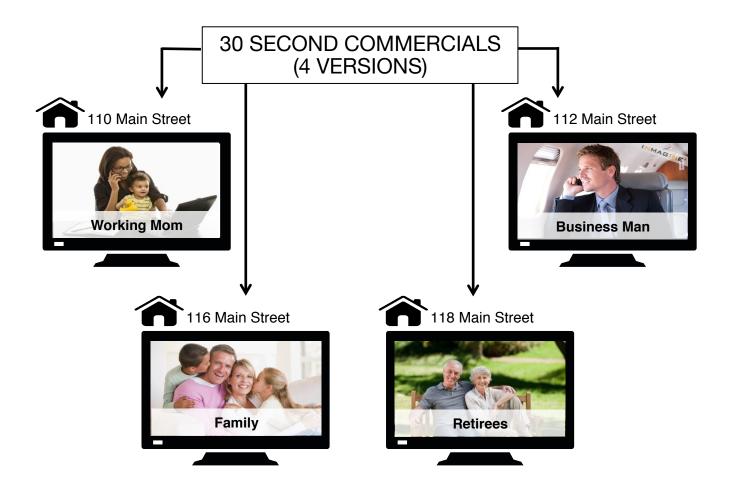
A 21ST CENTURY ADVANCED TV HISTORICAL PERSPECTIVE



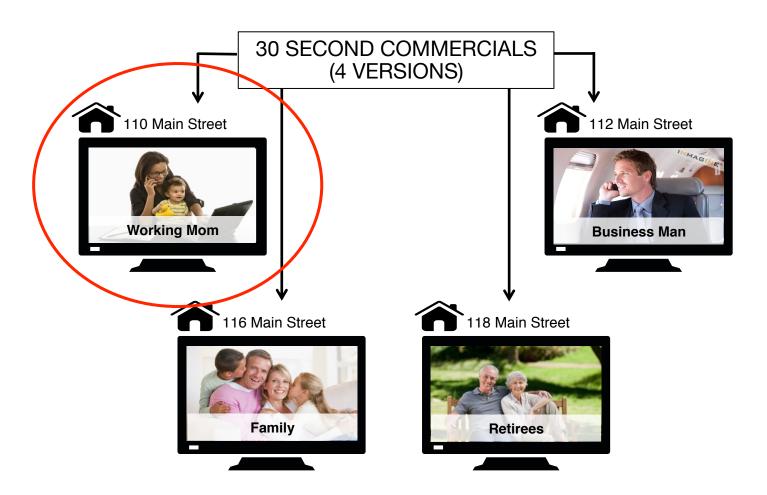
ADDRESSABLE TV

1:1

ADDRESSABILITY



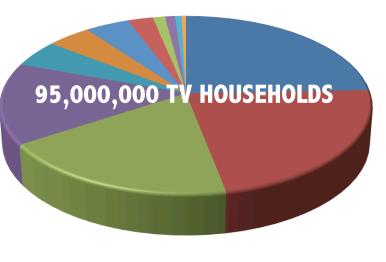
ADDRESSABILITY



ADDRESSABLE TV GENERICS

LAUNCH	Mid 2000s
TECHNOLOGY	Invidi
DISTRIBUTION	Multichannel Video Program Distributors (MVPDs) • Cable • Satellite • Telco
CREATIVE VERSIONING	Multiple versions
INVENTORY	2 minutesLicensing agreementCable network inventoryNot broadcast
DATA	Privacy protected Behavioral characteristics First party
TARGETING	TV households • Not individuals within households TV set turned on

MULTICHANNEL VIDEO PROGRAM DISTRIBUTOR UNIVERSE



- COMCAST (22.4 million)
- DIRECTV (20.7 million)*
- CHARTER/TIME WARNER CABLE/BRIGHT HOUSE (17.3 million)
- DISH (13.6 million)
- VERIZON (4.5 million)
- AT&T (4.0 million)*
- COX COMMUNICATIONS (4.0 million)
- CABLEVISION/ALTICE (2.3 million)**
- SUDDENLINK/ALTICE (1.1 million)**
- MEDIACOM (0.9 million)
- WIDEOPEN WEST NETWORKS (0.6 million)
- CABLE ONE (0.4 million)
 - *Merged
 - **Cablevision/Suddenlink common ownership

ADDRESSABLE TV UNIVERSE

TV HOUSEHOLDS

33 MILLION LINEAR

32 MILLION AD SUPPORTED VOD

- DIRECTV (14,800,000)
- DISH (8,000,000)
- CABLEVISION/ALTICE (2,300,000)
- COMCAST (3,000,000)
- COMCAST (Ad VOD: 19,000,000)
- VERIZON FIOS (4,600,000)
- COX (Ad VOD: 4,000,000)*
- CONTINUUM/SORENSON (TBD)*
- CADENT ADDRESSABILITY (?)
- SPECTRUM (Ad VOD: 9,000,000)

*Fourth Quarter 2017 launch (TBD)

ADDRESSABLE TV NETWORK INVENTORY

















































































































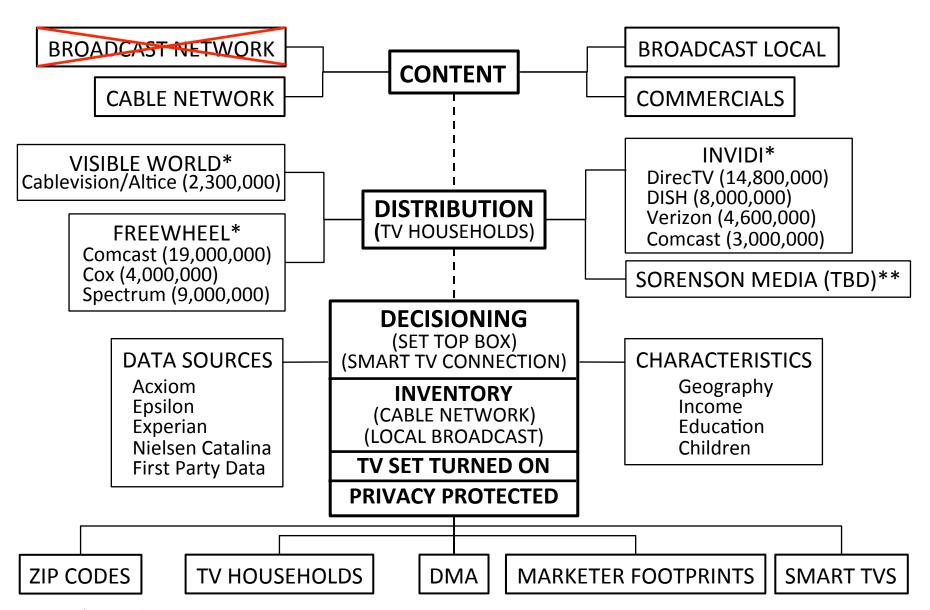








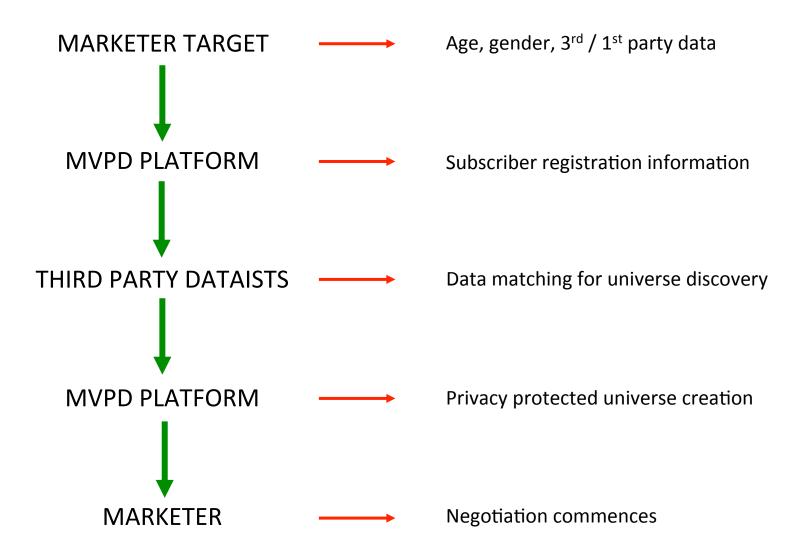
ADDRESSABLE TV SCHEMATIC



^{*}MVPD homes

^{**} Local broadcast inventory

UNIVERSE DISCOVERY PROCESS



ADDRESSABLE TV: BENEFITS / CHALLENGES

BENEFITS

More Data to Inform Buy

Brand Criteria Target

Better targeting

One-to-One

Household delivered

National (in scope)

Target aggregated base across footprints

Creative Versioning

Blacklisting Networks

CHALLENGES

Individual MVPD Negotiations

No Standardized Data Definitions

Premium CPMs

Lacks Household Frequency Capping

One-to-One (household)

Cannot identify age/gender

Limited Creative Versioning

Schedule Opaque

ADDRESSABLE TV ON THE HORIZON GOOGLE FIBER

LAUNCH	2016
TECHNOLOGY	Google Fiber to household
MARKET	Kansas City (80,000 subscribers)
INVENTORY	Salt Lake City (4,000 subscribers)
MV ENTON	Cable network local inventory (MVPD)
	2 minutes per hour (traditional availabilities)
VALUE PROPOSITION	Addressability
TARGETING OPTIONS	Individual set top boxes within subscribing household Household clusters
	Keyword targeting
	Programs and program genres
COMMENTS	Reconfiguring Google Fiber model

ADDRESSABLE TV ON THE HORIZON (cont'd) SORENSON MEDIA

Late 2015 (TBD)
Smart TVs ACR software integration TV stations
Multiple
TV broadcast inventory • DMA centric
Addressability
Smart TVs Overlays on video commercials Addressable commercials Interactivity

ADDRESSABLE TV ON THE HORIZON (cont'd) ATSC 3.0*

LAUNCH	In trial
TECHNOLOGY	Broadcast transmission standards
MARKET	TBD
INVENTORY	TV broadcast inventory
VALUE PROPOSITION	Addressability Multicasting to all mobile devices (mobile) Data-infusion On demand service provisioning Signal augmentation (SD and HD)
TARGETING OPTIONS	TBD

^{*}Advanced Technology Systems Committee

ADDRESSABLE TV ON THE HORIZON (cont'd) TV NETWORKS

LAUNCH	TBD
TECHNOLOGY	MVPD Streaming Video Services Smart TV (ACR)
MARKET	Multiple
INVENTORY	Broadcast (network) Cable (network)
VALUE PROPOSITION	Addressability
TARGETING OPTIONS	Multimarket/National
COMMENTS	Licensing arrangement complexity • retransmission fee diminution (broadcast) • monthly per subscriber reduction (cable)

ON DEMAND



VIDEO ON DEMAND CONTENT

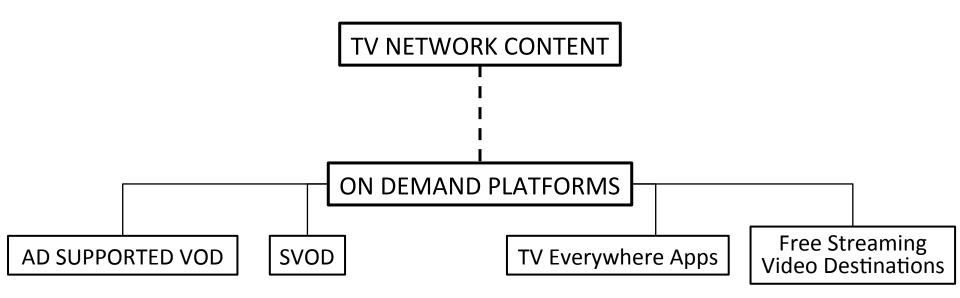
ANYWHERE

ANYTIME

WHEN AVAILABLE



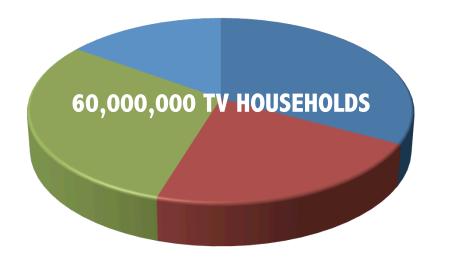
ON DEMAND TV PLATFORMS



AD SUPPORTED VIDEO ON DEMAND GENERICS

LAUNCH	2002
CONTENT	TV network programming (off-network)
	 Broadcast
	• Cable
DISTRIBUTION	MVPDs
	Cable
	• Telco
TECHNOLOGY	Cross MediaWorks (BlackArrow)
	FreeWheel
	Canoe Ventures
	MVPD fast forward disabling
CONTENT AVAILABILITY	Same day (post Hawaiian time)
	8 days
	4+ recent episodes
	Past seasons (stacking rights)
COMMERCIAL INVENTORY	Live broadcast mirroring
	Pre, mid and post rolls
	Day 4+
	On Demand Campaign Ratings (ODCR)
MEASUREMENT	Rentrak (transactions)
	Nielsen (demographic projection)
INTEGRATION	5+ days
	28 days (prior month)

AD SUPPORTED VIDEO ON DEMAND UNIVERSE



CABLE OPERATORS

TELCOS

SATELLITE

AD SUPPORTED VOD NETWORK INVENTORY





























































































































TOP 25 NETWORK RANKING REPORT (COMSCORE/RENTRAK)

		HOUSEHOLDS VIEWS		AVERAGE TIME PER VIEW
RANK	NETWORK	UNIQUE	GROSS	(MINUTES:SECONDS)
1	Music Choice	3,273,885	67,364,002	04:42
2	Cartoon Network	2,988,204	29,497,672	15:20
3	Nickelodeon	3,329,007	22,708,636	24:04
4	ABC Network	5,026,168	22,263,980	36:43
 5	CBS Network	4,820,432	21,651,904	39:30
6	TNT	4,056,411	18,728,820	43:43
7	FX	4,278,985	17,066,741	45:06
8	Nick Jr.	1,942,917	15,501,650	22:67
9	Sprout	1,518,842	13,725,916	21:18
10	Lifetime	3,024,558	13,579,642	40:31
11	NBC Network	3,663,355	13,447,033	41:91
12	USA	2,378,105	13,360,261	41:33
13	MTV	2,628,397	12,929,493	35:13
14	Fox Network	3,350,052	12,099,016	35:29
15	ABC Family	2,026,375	10,103,042	34:56
16	VH1	2,395,793	9,298,568	31:86
17	AdultSwim	1,731,889	9,285,796	19:08
18	Bravo	1,817,787	8,996,300	38:65
19	Comedy Central	1,806,467	7,980,624	20:76
20	A&E	2,333,353	7,965,144	28:98
21	Oxygen	1,513,246	6,856,744	30:09
22	Syfy	1,660,578	6,610,291	43:77
23	TBS	1,759,948	5,699,156	38:85
24	E!	1,689,226	5,341,955	37:04
25	TLC	1,339,741	5,074,653	27:28

VIDEO ON DEMAND PLATFORMS (OTHERS)

SUBSCRIPTION	TV EVERYWHERE APPS		FREE STREAMING
VIDEO ON DEMAND	<u>FEATURED</u>	<u>DOWNLOADABLE</u>	VIDEO DESTINATIONS
CBS All Access Comcast Stream DirecTV NOW HBO Go (Now) Hulu NBC SeeSo Netflix Verizon Custom YouTube Red	Amazon Fire Apple TV Chromecast Roku Xbox	Watch ABC Watch ESPN Watch Fox Watch TNT	Crackle Huld/Yahoo View YouTube TV Network (.com)
Mid 2000s	Mid 2000s	Mid 2000s	Mid 2000s
Fee	Free	Free	Free
Commercialized Commercial Free	Commercialized Commercial Free	Commercialized -	Commercialized -

STANDALONE TV STREAMING SERVICES

AD SUPPORTED TV NETWORKS & PREMIUM CHANNELS



















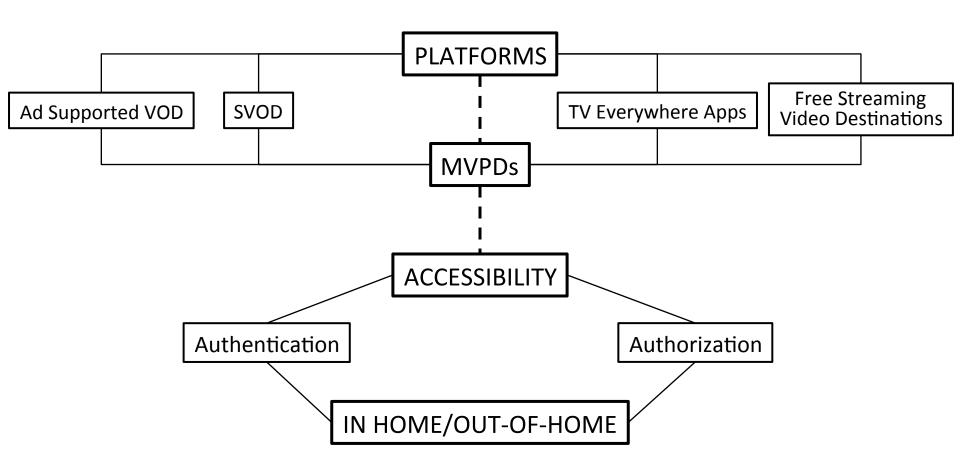






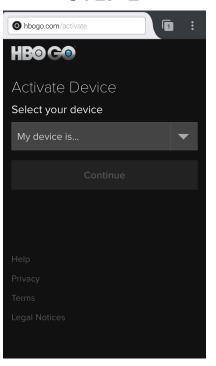


ON DEMAND TV PROGRAM ACCESSIBILITY

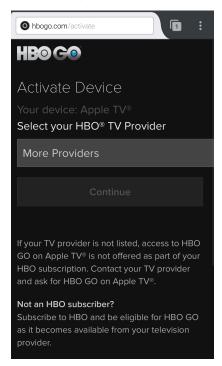


TV EVERYWHERE 5-STEP PROCESS

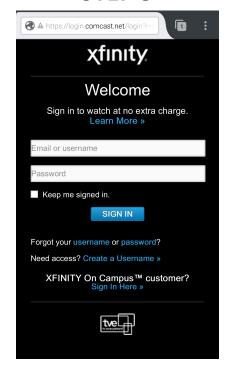
STEP 1



STEP 2



STEP 3



STEP 4



TV EVERYWHERE 5-STEP PROCESS



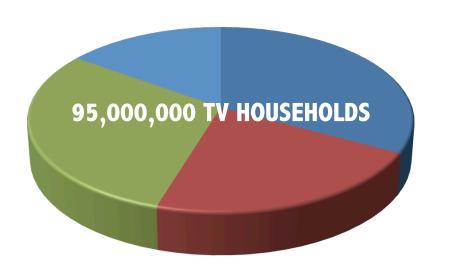
PROGRAMMATIC TV



PROGRAMMATIC TV GENERICS

LAUNCH	2013	
PROMISE	Data Automation Cost efficiency	
TECHNOLOGY	ProprietaryDemand sideSupply sideTrading desks	
TARGETABILITY	National • Higher concentration Local	
COMMERCIAL INVENTORY	National TV programs Local TV availabilities Ad supported VOD Syndication	
COMMERCIAL LENGTHS	:15s, :30s, pre-mid-post-roll	
DEPLOYMENT	95 million TV households	
DATA SOURCES	Viewing Behavioral Single source	

PROGRAMMATIC TV UNIVERSE



MVPDs (local)

- Cable
- Satellite
- Telcos

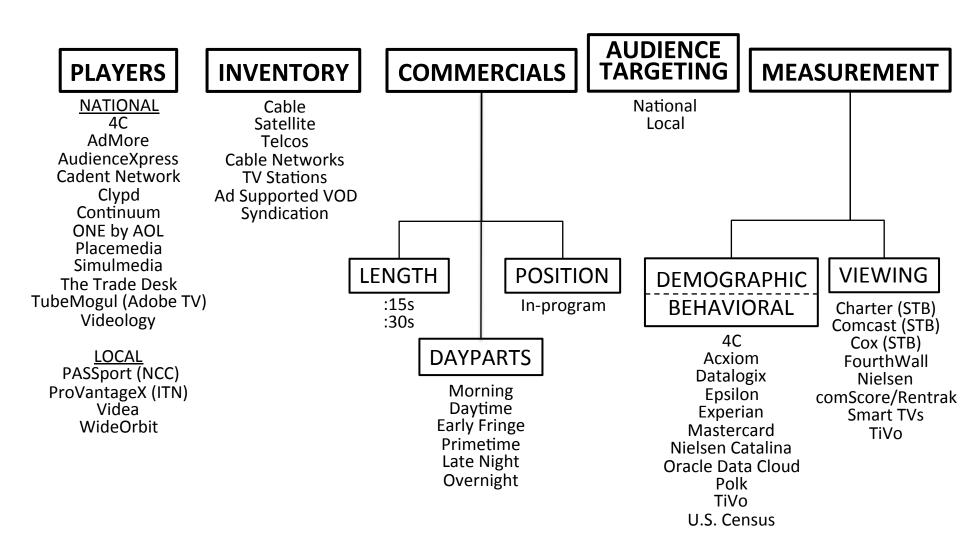
TV Networks (national)

TV Stations (local)

Ad Supported VOD

Syndication

PROGRAMMATIC TV SCHEMATIC



PROGRAMMATIC TV: BENEFITS / CHALLENGES

BENEFITS

More Data to Inform Buy

Time Efficiency

Better Targeting

Daily Reportage (Varies)

One Order / One Bill

Reach Extension

- Expansion of networks
- Inclusion of 'short snout'
- Affordability of top tier networks

Bridge Video Across Platforms

CHALLENGES

Inventory Schedule Opaque

- Dayparts
- Networks
- Post buy affidavit

Cannot Replicate Campaign

Traditional Buying Compatibility

Complex Proposal Valuation

- TV station
- Cable network
- MVPD
- Ad supported VOD
- Syndication



"It will take longer than we thought to go programmatic."

CONTEXTUAL AUDIENCE NETWORKS















CANS INVENTORY

TURNER

Adult Swim
Boomerang
Cartoon Network
CNN
TBS
TCM
TNT
truTV
Turner Sports

CMT
Comedy Central
Logo TV
MTV
MTV2
Nick-at-Nite
Nickelodeon
Spike
TV land
VH1

VIACOM

NBCU

NBC Broadcast Network Telemundo TV Networks Access Hollywood (syndication) **NBC** Regional Sports Networks Bravo Chiller **CNBC** E! Esquire Golf **MSNBC NBC News NBC** Universo Oxygen SyFy USA

A&E FYI History Lifetime Lifetime Movies

A&E

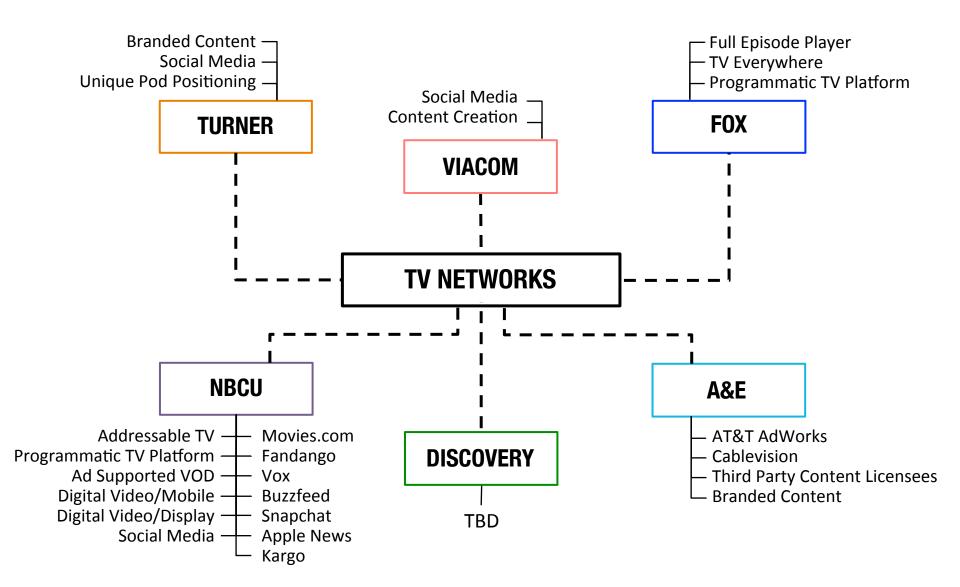
FOX

Fox Broadcast Network
Fox News Channel
Fox Business Network
Twentieth Century Syndication
FS1
FS2
FX
FXX
FXM
NatGeo
Nat Geo Wild

American Heroes
Animal Planet
Destination America
Discovery
Discovery Family
Discovery Life
Investigation Discovery
OWN
Science Channel
TLC
Velocity

DISCOVERY

CANS DISTRIBUTION EXTENSIONS



CANS BY DATA SOURCES

TURNER

4C

Acxiom

Adobe Audience Manager

BueKai

comScore/Rentrak

First Party (CRM)

Krux

MRI

Neustar

Nielsen Buying Insights

Nielsen Catalina

Nielsen MarketBreaks

Nielsen Mobile Vector

Nielsen MotorStats

Nielsen Suite

Prizm

Simmons

TiVo

Experian

First Party (CRM)

MRI

Nielsen AMRLD

Nielsen Buying Insights

Nielsen Catalina

Nielsen Suite

Set Top Box

DISCOVERY

VIACOM

84.51

Acxiom

Adobe

American Express

BlueKai

comScore/Rentrak

GfK

IHS

Nielsen

Nielsen Catalina

NinthDecimal

Place IQ

Proprietary survey-based data

Resonate

Simmons/MRI

YouGov

Exelate

First Party (CRM)

MRI Fusion

Nielsen Buying Insights

Nielsen Catalina

Polk

Shopcom

FOX

NBCU

Acxiom

Comcast Crossix

Datalogix

e-Tech Exelate

Experian
First Party (CRM)

FourthWall

IRI

Kantar Shopcom

Nielsen Polk

POIK

Quantcast

Set Top Box

VisualDNA

Acxiom

comScore/Rentrak

Experian

First Party (CRM)

IRI ProScores

Mastercard

MRI Fusion

Nielsen MarketBreaks

Nielsen Suite

Polk

Set Top Box

Shopcom

A&E

CAN PRODUCTS

A&E PRECISION

Linear Ad Optimizer Digital Audience Data Platform Sync, Reach, Address Platform 45th & Dean

TURNER IGNITE

Targeting Now Audience Now ROI Now Provable ROI Ignite Sports Launchpad Native PLUS

NBCU AUDIENCE STUDIO

Audience Targeting Platform (ATP 2.0)
NBCU+
NBCUx Linear
NBCUx Digital (PMP)
NBCUx Programmatic Guaranteed
NBCU Digital Audience Targeting
Social Sync
Audience Symphony

Vantage Instant Audience
Target Discovery
Velocity Content Network
Viewpoint
Echo Social Graph (2.0)
Vantage Studio Edition
Vantage Intent: Powered by AmEx

VIACOM VANTAGE

Engage

DISCOVERY ENGAGE

Optimized Audience Read Target Audience Guarantee Multi-Platform Guarantee Programmatic Audience Buy

FOX AIM

CONTEXTUAL AUDIENCE NETWORKS SCHEMATIC

PLAYERS

A&E Precision Discovery Engage FOX AIM NBCU Audience Studio Turner Ignite Viacom Vantage

INVENTORY (PORTFOLIO)

National TV Networks Ad Supported VOD **Digital Video** Social **Branded Content**

> A&E Discovery Fox **NBCU** Turner

> > Viacom

COMMERCIALS LENGTH POSITION :15s In-program :30s :60s :5s-:10s **EXPOSURE**

TV Programs TV Networks

 Dayparts **Branded Content** Digital Video/Display Social Platforms/Publishers TV Everywhere Apps

AUDIENCE TARGETING MEASUREMENT

National

VIEWING DEMOGRAPHIC BEHAVIORAL comScore/Rentrak **FourthWall** 4C Nielsen Acxiom Adobe **Set Top Box American Express Epsilon** Experian

Oracle Data Cloud Shopcom First Party

GfK

MRI

Neustar

Nielsen Catalina

TiVo

CONTEXTUAL AUDIENCE NETWORKS: BENEFITS / CHALLENGES

BENEFITS

More Data to Inform Buy

Better Targeting

Extension of Traditional TV Campaign

Time Efficiency

Bridge Video Across Platforms

CHALLENGES

Plethora of Value Propositions

Complexity of Offering

Comprehension of Data Sources

Traditional Buying Compatibility

Lack of Expertise / Unfamiliarity of Product

Salespeople

Advertising agencies

Data-ists

Complex Proposal Valuation

Profusion of components

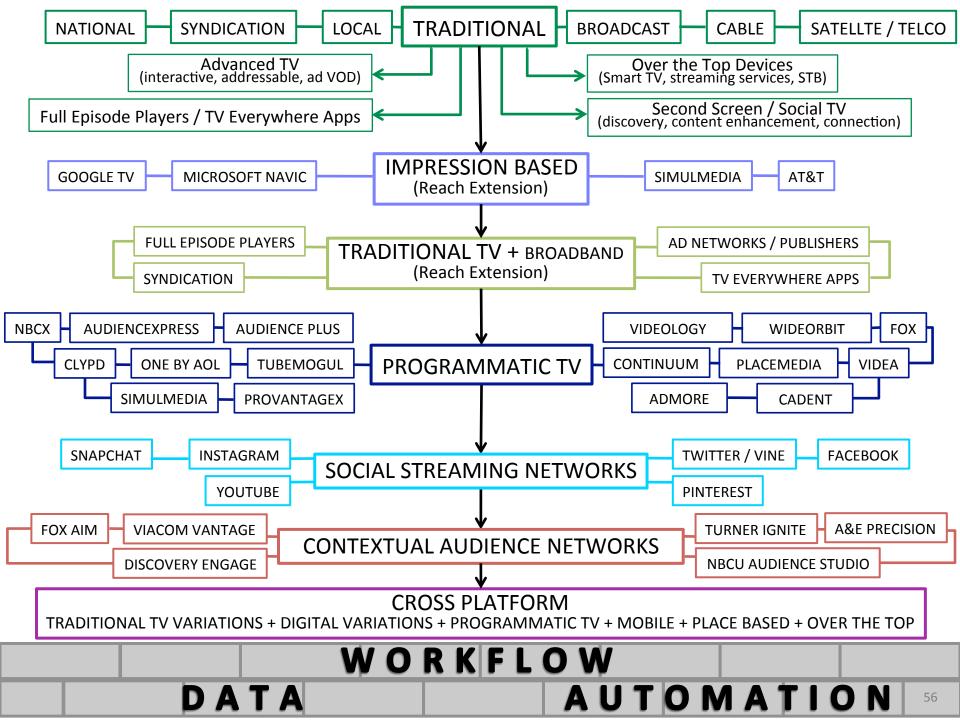
Guarantee assessment and analysis

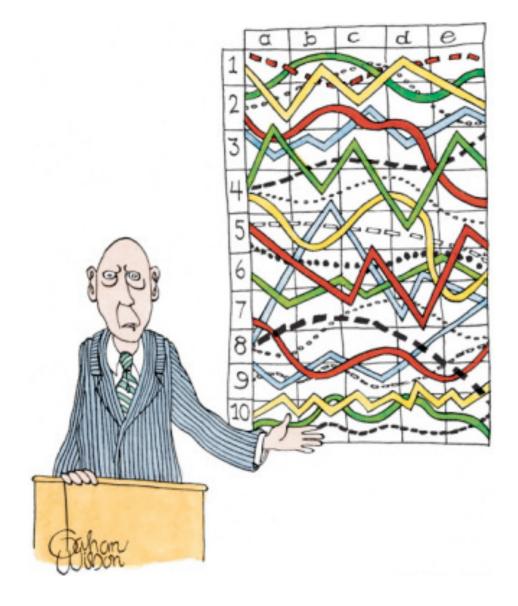
Inventory across distribution platforms

Reach & Frequency (walled garden)

ADVANCED TV PLATFORMS COMPARISON

	ADDRESSABLE TV	PROGRAMMATIC TV	CANs
DELIVERY	One to One TV set on	Higher Concentration Panel (indexes)	Higher Concentration Panel (indexes)
DATA INFUSION	Third Party First Party	Third Party First Party (limited)	Third Party First Party
INVENTORY	Platform Universe National Distribution Linear TV Ad Supported VOD	Platform Universe National Distribution Linear TV Ad Supported VOD (limited) Syndication (limited) -	Portfolio National Distribution Linear TV Ad Supported VOD Syndication (limited) Social Platforms Branded Content





"I'll pause for a moment so you can let this information sink in."