

To: "Eric Schmidt" <eschmidt@google.com>, "Larry Page" <larry@google.com>, "Sergey Brin" <sergey@google.com>
 From: "Jonathan Rosenberg" <jonathan@google.com>
 Cc:
 Bcc:
 Received Date: 2006-06-08 00:30:42 CST
 Subject: FW: Google Video Handover Deck_v2

fyi

From: Francoise Brougher [mailto:fbrougher@google.com]
 Sent: Wednesday, June 07, 2006 4:27 PM
 To: Susan Wojcicki; Peter Chane; David Eun; Nikhil Bhatla; Jennifer Feikin
 Cc: Shona Brown; Jonathan Rosenberg
 Subject: Fwd: Google Video Handover Deck_v2

Video Team,

This is the synthese of Grace and Michael's put together. A lot of this material has been used by Peter and the team at the last GPS.

Some of the data, and analysis may be useful. If you have any question, Please feel free to contact Grace and Michael directly.

Thanks! Francoise

----- Forwarded message -----

From: Michael Baldwin <mbaldwin@google.com>
 Date: Jun 7, 2006 3:08 PM
 Subject: Google Video Handover Deck_v2
 To: Francoise Brougher <fbrougher@google.com>
 Cc: Grace Webber <gracew@google.com <mailto:gracew@google.com> >

Francoise,

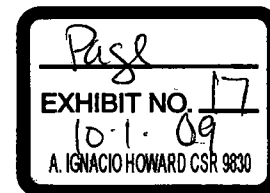
The final deck is attached.

Thanks,
 Michael

—
 Michael Baldwin
 Business Operations I Google, Inc.
 650-253-0441 (office) | 617-388-9910 (cell)

Attachments:

060607 Video Handover SummaryMB_GW_v2.ppt



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GOO001-00791569

Summary: BizOps Google Video Strategy Work
March – May 2006

Contributors: Grace Webber & Michael Baldwin

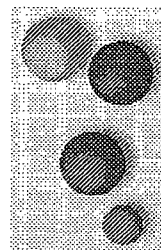


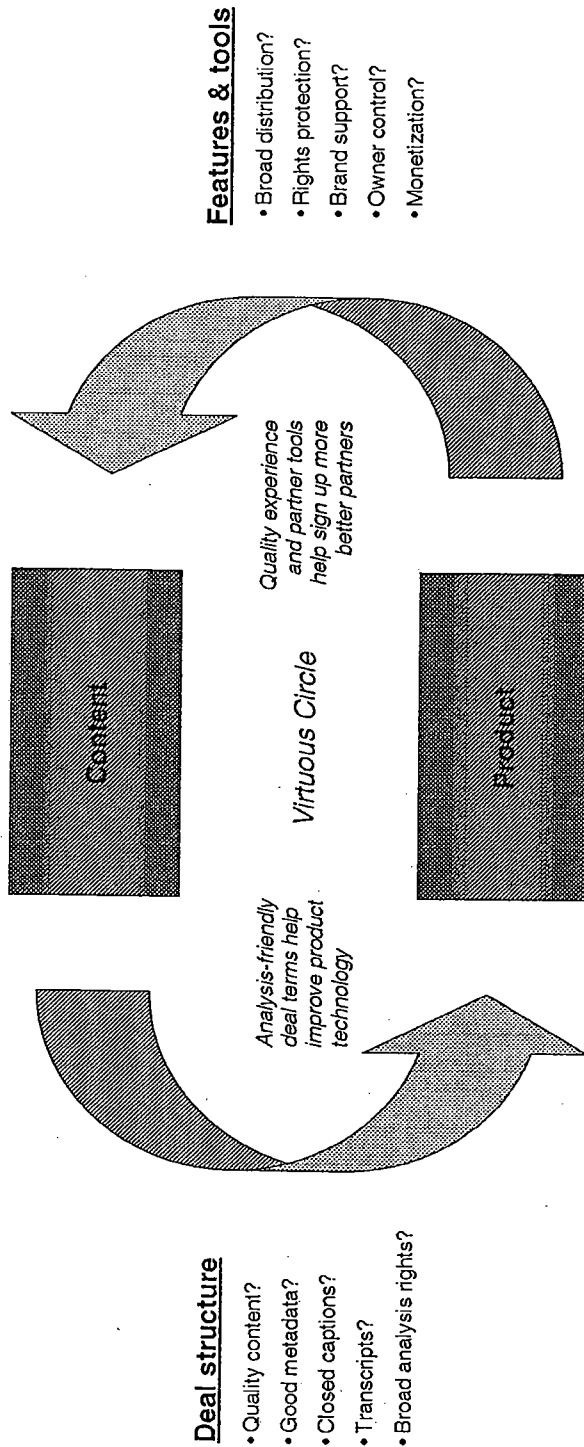
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- Overall recommendations
- Google Video Use – Different from YouTube!
- Current Vision and Resource Deployment
- Monetization
- Acquiring content, digitization
- Next steps

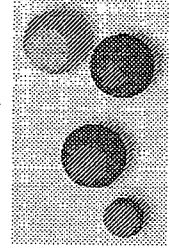
Key Challenges for Video

- Basic *Google* search features are not yet live:
 - Users can't reliably find videos
 - Users are swamped by irrelevant content
- Partner expectations are often not met, leading to dissatisfaction; in many instances, there exists no timetable for meeting these expectations
- Close collaboration between product, content, and marketing leaders is needed to reach consensus on key GV objectives
- YouTube and MySpace present significant competition in the world of online video:
 - Google is in the new position of trying to transition from *catch-up* to *market leader*
 - An increased focus on leveraging Google's core strengths is needed to successfully differentiate GV from competitors
- The meaningfulness of usage data is hampered by poor user experience

Closer integration of content and product can drive a virtuous circle



Overall recommendations



Overall Recommendations

Cross-functional

- Hold monthly strategy roundtable for 1-2 senior reps from each of content/product/engineering – rotate presentation responsibility. "What [my group] is doing to improve things for [your groups] – and what we need from you"
- Marketing to bring insights about user desires – to cover content, features, UI and include non-US data.

Product

- Fix the basics in the product so the product is a reliable mechanism for "find" (what you'd expect from any Google property: search and browse, first for hosted content and then for web index)
- Quickly bring on board multiple monetization options suited to different content types (sponsored ads, text ads, tip jar); primary aim is to make more content available free (any revenue for Google is secondary)
- Commit to a fixed timetable (or deny request) for features required in long term deals (e.g. premium content partnerships)
- Bring international awareness to every discussion
 - Language-specific options
 - Translation: tools, pages, metadata
 - Local-interest content
 - Local norms on taste/appropriateness/legality

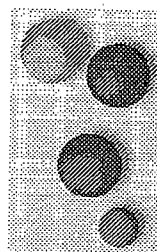
Engineering

- Build long-term technology development plan to play to Google's strengths: analysis, quality, monetization
- Carve out desirable technology areas to fill by acquisition; evaluate targets and work with corporate development to bring to table

Content

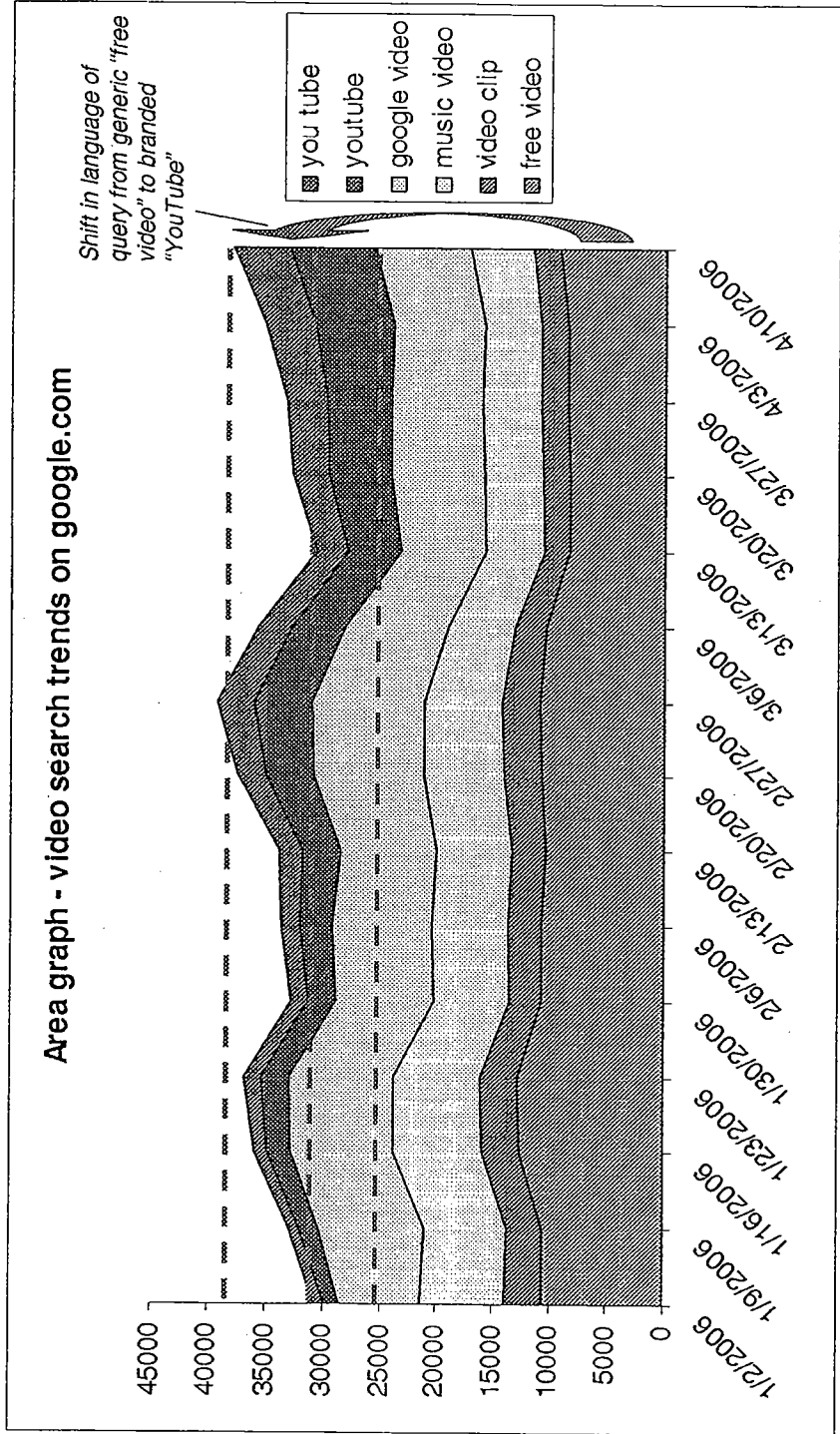
- Share content provider needs up-front with product; offer deal terms that fit with fixed product features timetable
- Change terms with premium content providers
 - Pressure premium content providers to change their model towards free
 - Adopt "or else" stance re. prosecution of copyright infringement elsewhere
 - Set up "play first, deal later" around "hot content"
 - Talk in the press about need to free topical content
 - Grab language alternatives wherever possible (transcripts, alternate dubs, subtitles, closed caption)
 - Bake in future usage types into content deals (subtitles, translation, processing for metadata)
- Get more torso content: scour for easiest-to-convert torso content already online; create and send outbound marcomms to horizontals and verticals of interest; directly connect to top 4 companies per industry
- Set up teams with metrics for international content acquisition – prioritize by language and country

Google Video Use is Different from YouTube



Overall volume of search for generic video sites is reasonably stable but YouTube has risen to 30% share

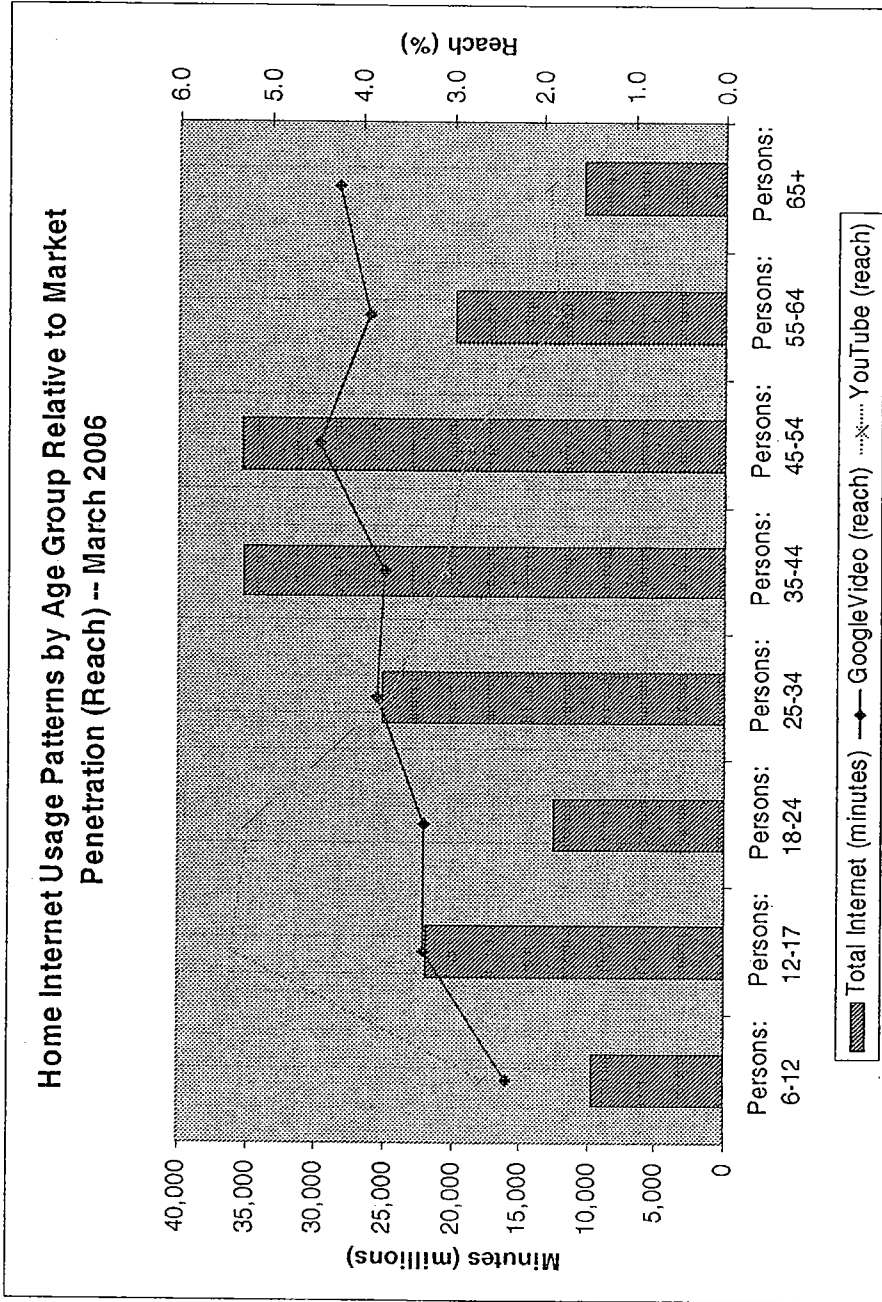
The desire to find online video has remained fairly stable



Source: Google Trends first live test - launch team warns data may not be accurate

Google's demographic is older than YouTube's; both have low absolute reach

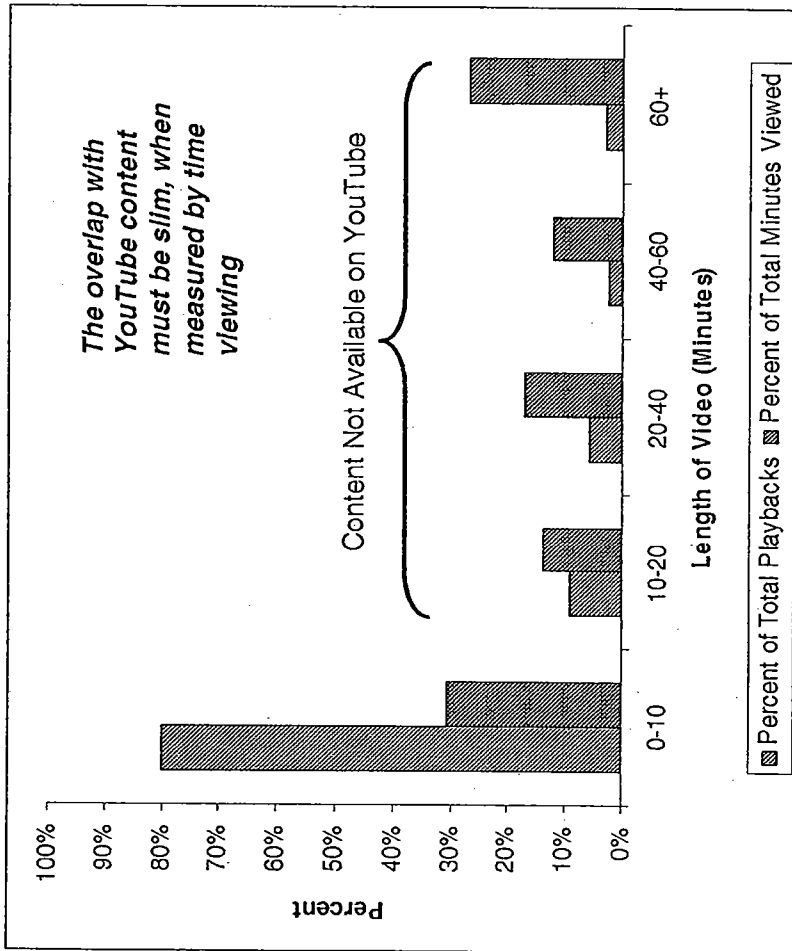
The Google Video team should reach agreement on its target demographic(s) – whether younger, older, or all inclusive



Source: MediaMatrix

70% of the time, GV viewers are watching content that is longer than YouTube's maximum allowed content length

Percent of Total Playbacks and Percent of Total Minutes Viewed Relative to Video Length

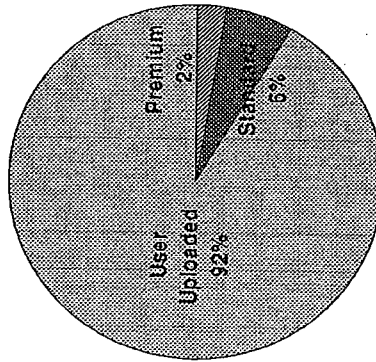


Source: Taylor Van Vleet
Sample of ~65K videos played on May 9, 2006

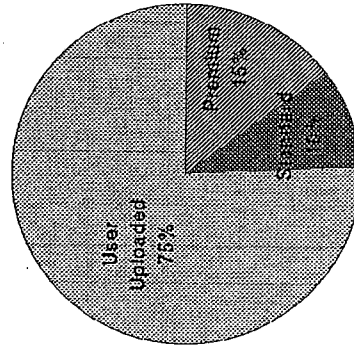
Overall consumption of partner content is played in proportion to its availability in the index

Acquired

Video Titles Live in Index (total 0.7MM)

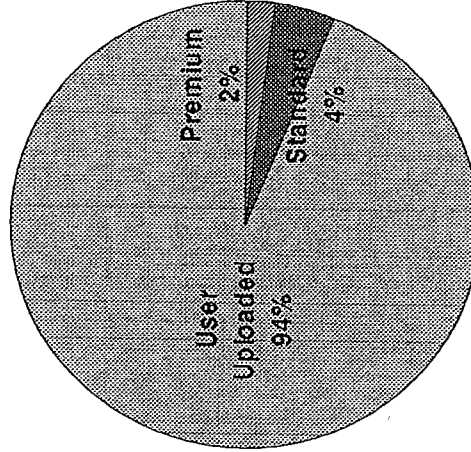


Video Hours Live in Index (total 49K)



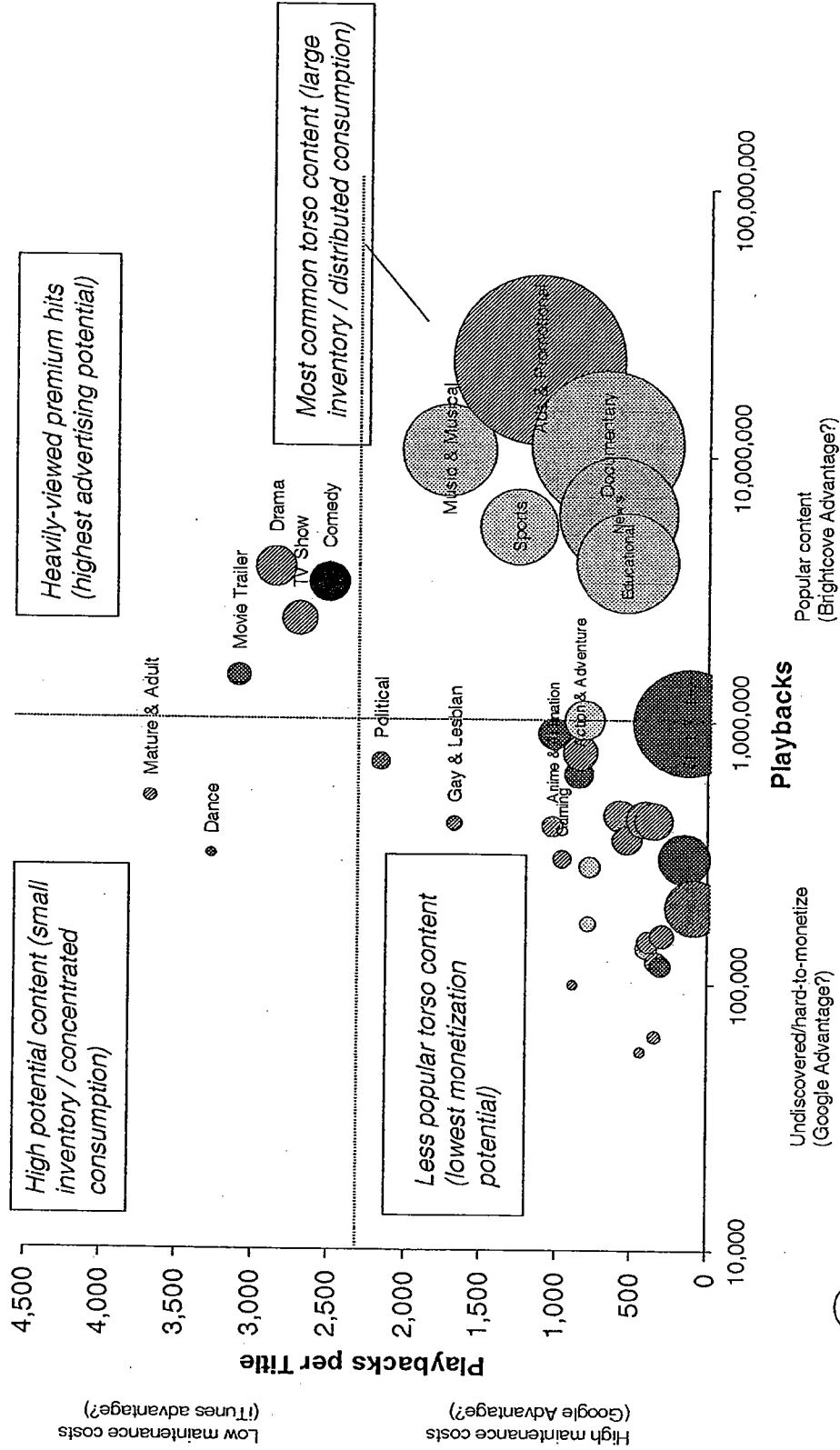
Consumed

Video Titles Played (2006) (total ~1Bn)



Sources: Content stats from VSPDB, Traffic stats from VCSDB - 05/08/06

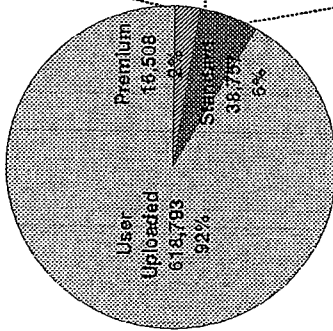
Google Video Partner Content Inventory



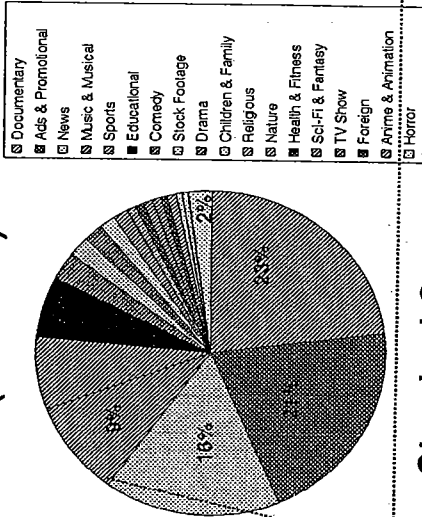
Sources: Content stats from VSPDB, Traffic stats from VCSDB - 05/08/06

Of the wide range of partner content we have acquired, premium music and standard ads are most often played

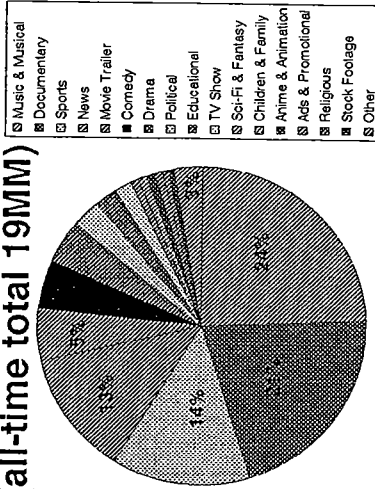
Video Titles Live in Index (total 0.7MM)



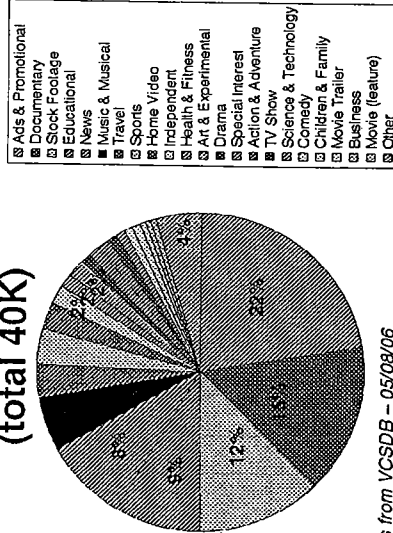
Premium Content Live Inventory (Titles) (total 17K)



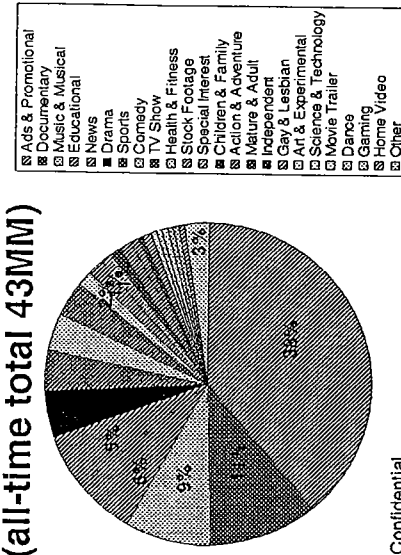
Premium Content Playbacks (all-time total 19MM)



Standard Content Live Inventory (Titles) (total 40K)



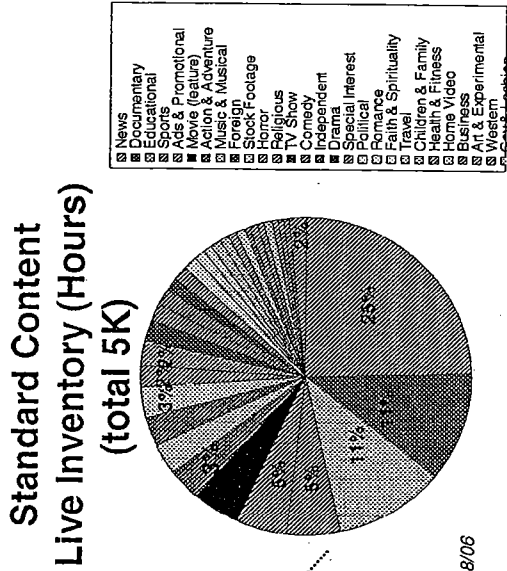
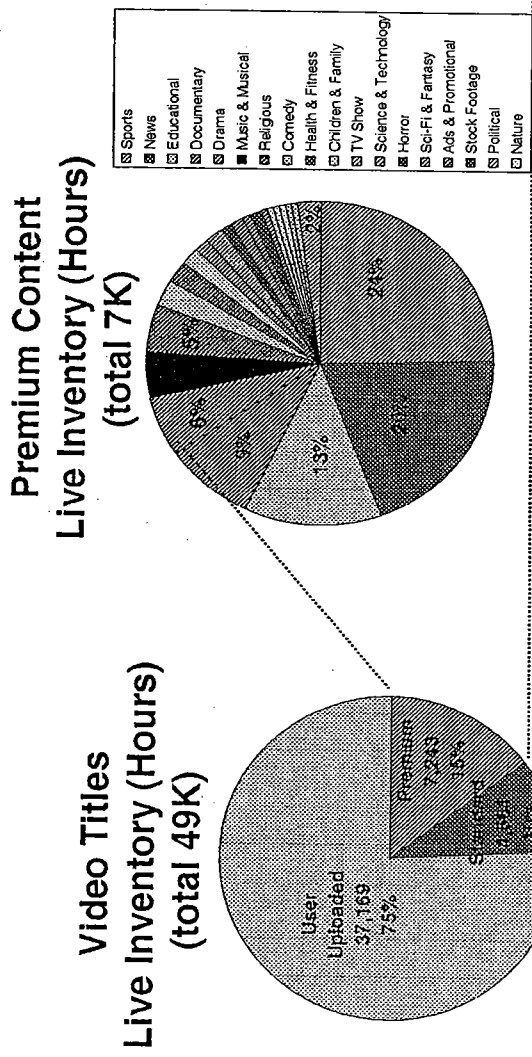
Standard Content Playbacks (all-time total 43MM)



Sources: Content stats from VSPDB, Traffic stats from VCSDB - 05/08/06

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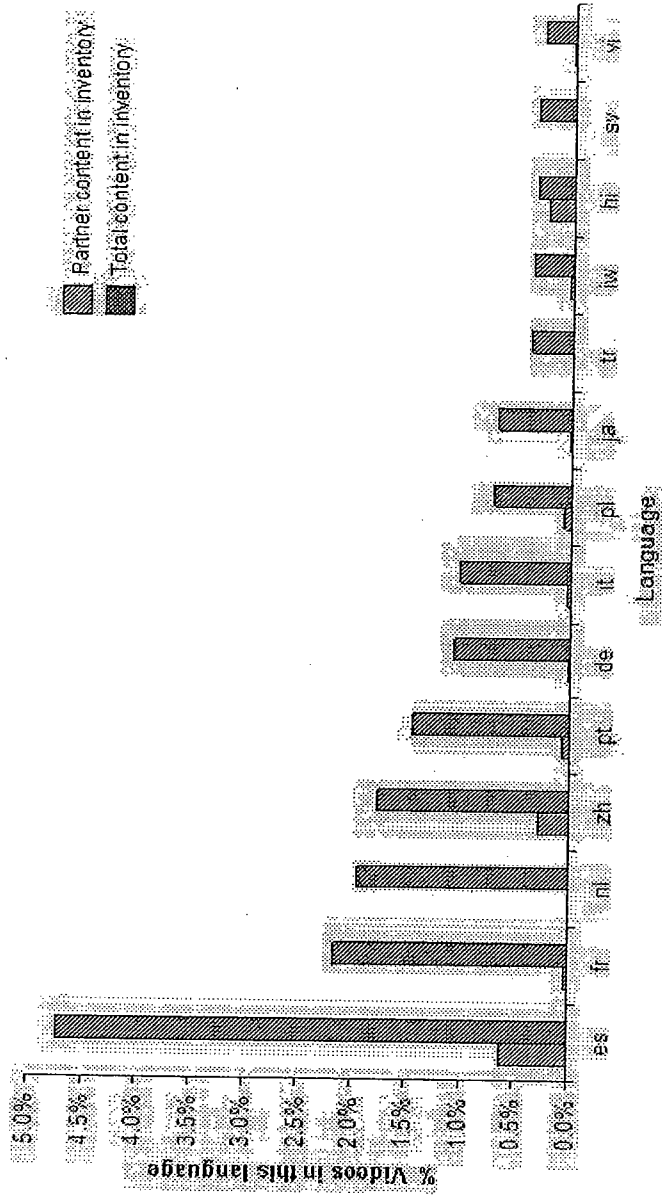
News, sports, educational and documentary videos make up the majority of partner content by duration



Sources: Content stats from VSPDB, Traffic stats from VCSDB - 05/09/06

Partner content lags behind user-generated content for non-English languages

Penetration of Google Video Inventory by Language

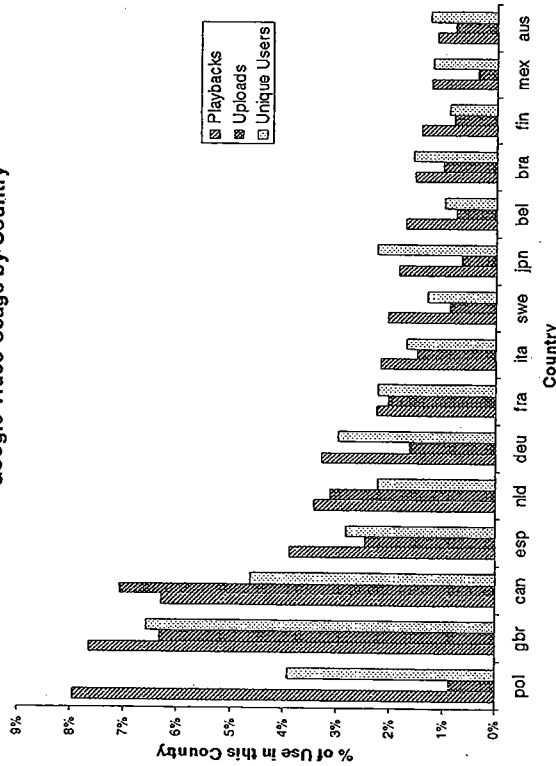


22% of user-generated content is non-English-language

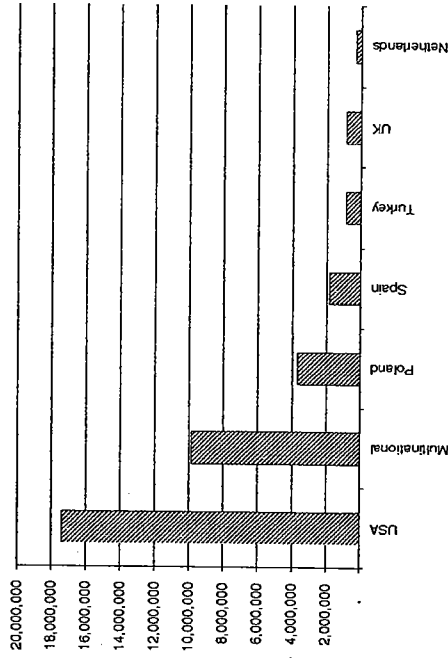
Only 2% of partner content is available in non-English languages

Outside the US, Polish users view heavily but don't upload much; top videos with "multinational" appeal are second after US winners

Google Video Usage by Country

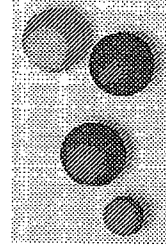


Which markets the top Google Videos hit



Total playbacks in April 06 for top 53 videos - "multinational" if top country had <35% of playbacks - from list of top 10 videos by country

Current vision of the future
Today's resource deployment

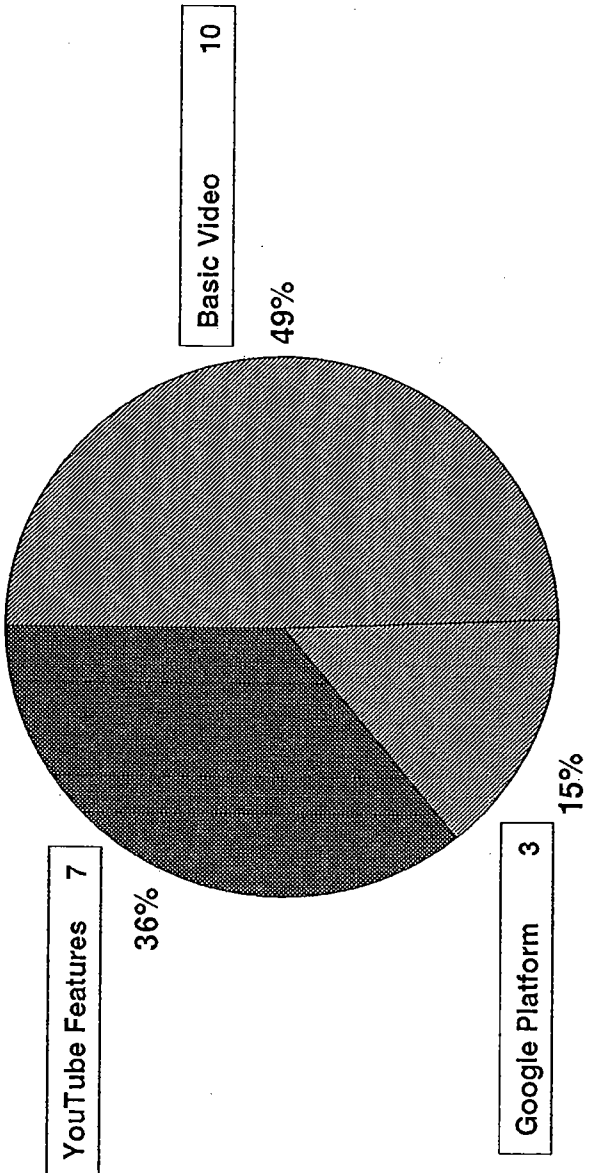


Google Video 18-month Scenarios: today's focus is user-generated content and community

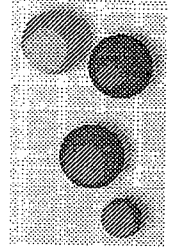
Video Product Scenario	Description
1 Best Video Search	<ul style="list-style-type: none"> • Superior search and ranking capabilities for entire videos and for clips within larger videos • Comprehensive index of all online video content
2 Best Video Store for Professional Content	<ul style="list-style-type: none"> • Users purchase premium and standard content from an online marketplace • Users can eventually purchase clips of longer videos, as approved by content owners
3 Best Video Creation/Editing Tool	<ul style="list-style-type: none"> • Video capture devices are integrated with upload and editing tools • Users take advantage of a range of video editing features, including mash-ups • Users have plenty of storage to archive and keep track of their personal content
4 Best Entertainment Destination for User-Generated Content	<ul style="list-style-type: none"> • Users can easily upload, track metrics, and get paid for (optional) their content • Users can easily find, share, and rank user-generated videos
5 Best Video Community	<ul style="list-style-type: none"> • Social circles are built around common video interests • Users rank and share interesting videos with each other
6 Best Video Channels	<ul style="list-style-type: none"> • Channels deliver continuous premium standard content (similar to TV) • Users choose from a variety of channels
7 Best Video Chat	<ul style="list-style-type: none"> • Users connect with each other using webcams or other live streaming capture devices • Users archive conversations for later retrieval
8 Best Broadcasting Tool	<ul style="list-style-type: none"> • Users can capture video from devices (including mobile) and broadcast it to a live, online audience
9 Best Video Translation and Cross-Border Distribution	<ul style="list-style-type: none"> • Users can access content from other countries with subtitles their own language
10 Most ubiquitous use of video across properties	<ul style="list-style-type: none"> • Users anywhere on Google (or partner) properties have access to viewing and uploading video content

We're first fixing the basics and catching up with YouTube features, while supporting other Google properties' use of video

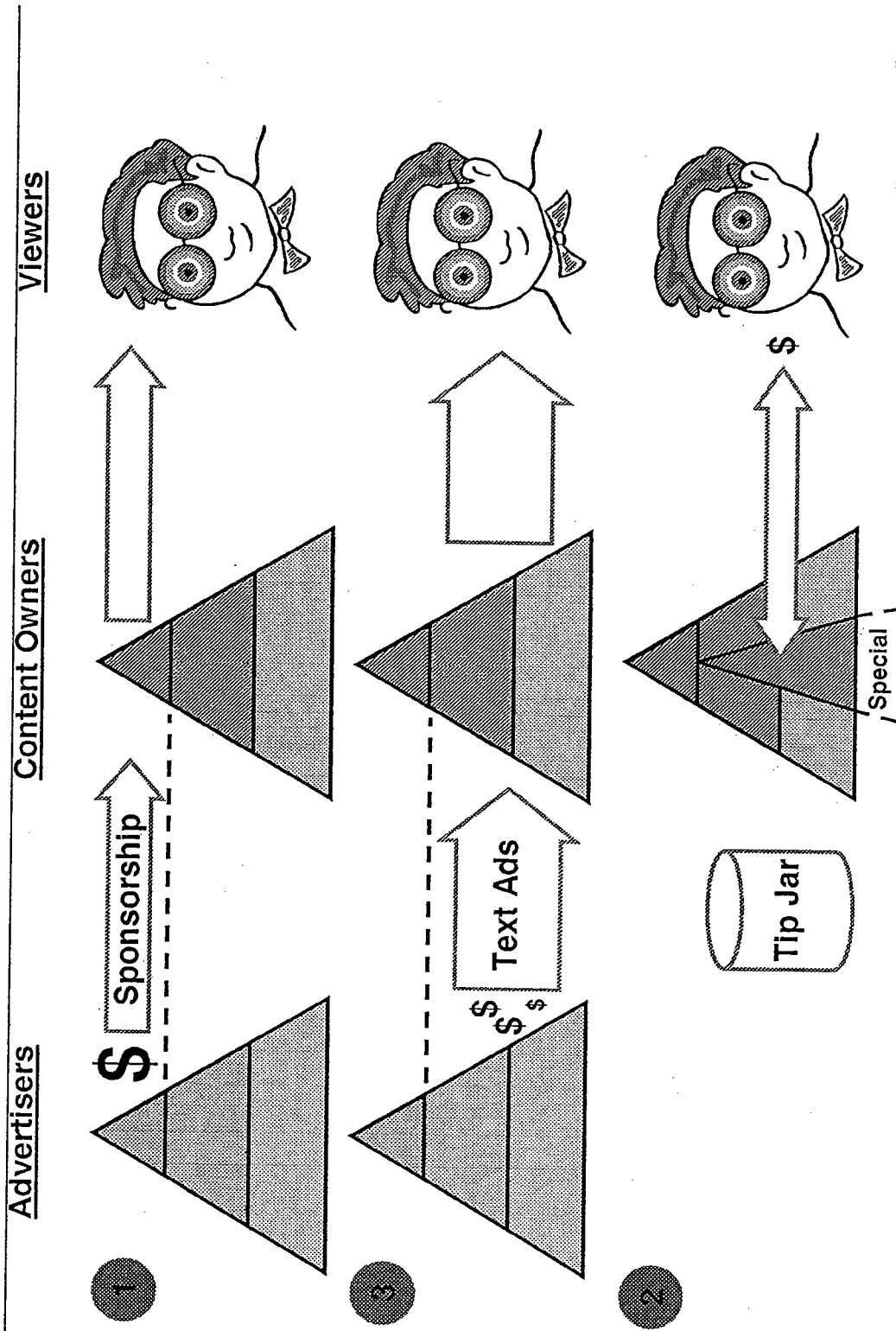
Q2 Remaining Technology Effort
Average # engineers by product area



Monetization



Monetization options vary by content and advertiser type



Video monetization possibilities

1 Sponsored Video – requires high-touch premium content to premium advertiser matching – needs top content and TV-style CPMs to work

	# of people interested in seeing video*	\$ amount advert'r will pay		movie length (mins)	minutes per ad	# ads per stream	advertising cut to content owner	\$ value to content owner	\$ each advertiser pays
		CPM	per stream						
911 Loose change	4,560,448	\$ 10.00	\$ 0.01	82	15	5	75%	\$ 171,017	\$ 45,604
Amazing juggling	2,521,234	\$ 10.00	\$ 0.01	2.5	2	1	75%	\$ 18,909	\$ 25,212
Airbus build plane	412,772	\$ 10.00	\$ 0.01	7	3	2	75%	\$ 3,192	\$ 4,128
Ocolopus eats shark	201,412	\$ 10.00	\$ 0.01	2.5	2	1	75%	\$ 1,511	\$ 2,014
Jessica Simpson - These boots are made for walkin'	10,000,000	\$ 10.00	\$ 0.01	4.1	2	2	75%	\$ 500,000	\$ 100,000

2 Tip Jar – “busker” or “shareware” model may deliver strong incentives to user uploaders but nothing to corporate partners (Google would pass through all fees)

	# of people interested in seeing video*	Fraction who will tip	Average tip	\$ value to content owner	Rationale for tipping guesses
Amazing juggling	2,521,234	2%	\$ 0.50	\$ 25,212	Viewers impressed - see single beneficiary with talent
Airbus build plane	412,772	0.10%	\$ 0.02	\$ 8	Low tip rate - corporate promo video
Ocolopus eats shark	201,412	2%	\$ 0.25	\$ 1,007	Viewers impressed - see single beneficiary with good content
Jessica Simpson - These boots are made for walkin'	10,000,000	0.10%	\$ 0.25	\$ 2,500	Low tip rate if its thought lip goes to Sony

3 Text ads with clicks throughs

	# of people interested in seeing video*	CTR	CPC	movie length (mins)	minutes per ad group	# ads on screen at a time	# ads per stream	\$ value to content owner	\$ each advertiser pays	clicks each advertiser sees	
											911 Loose change
Amazing juggling	2,521,234	0.50%	\$ 0.25	2.5	2	4	4	75%	\$ 9,455	\$ 3,192	12,606
Airbus build plane	412,772	0.50%	\$ 0.25	7	3	4	8	75%	\$ 3,096	\$ 516	2,054
Ocolopus eats shark	201,412	0.50%	\$ 0.25	2.5	2	4	4	75%	\$ 755	\$ 282	1,007
Jessica Simpson - These boots are made for walkin'	10,000,000	0.50%	\$ 0.25	4.1	2	4	8	75%	\$ 500,000	\$ 12,500	50,000

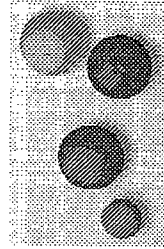
* based on April 2006 actual playbacks (except Ms Simpson)

Source: Playbacks and movie length real data (apart from Ms Simpson); all else “what-if” analysis by BizOps

Why could text ads work for Google when they don't make much money for YouTube?

- Different objective: with payout to content owner, motivates low-cost "user-generated" content providers to upload (even with small sums)
- Better ad targeting: we own the on-site clicks, we can be smarter
- Better ads: AdWords advertisers in the advertising "torso" may opt out of AdSense and especially avoid unreliable content sites such as YouTube
- Wider range of content: more different kinds of ads make sense on Google Video with professional content
- Different demographic: GV users are older so advertisers prepared to pay higher CTR (? Is this true?)

How to get more content, digitization



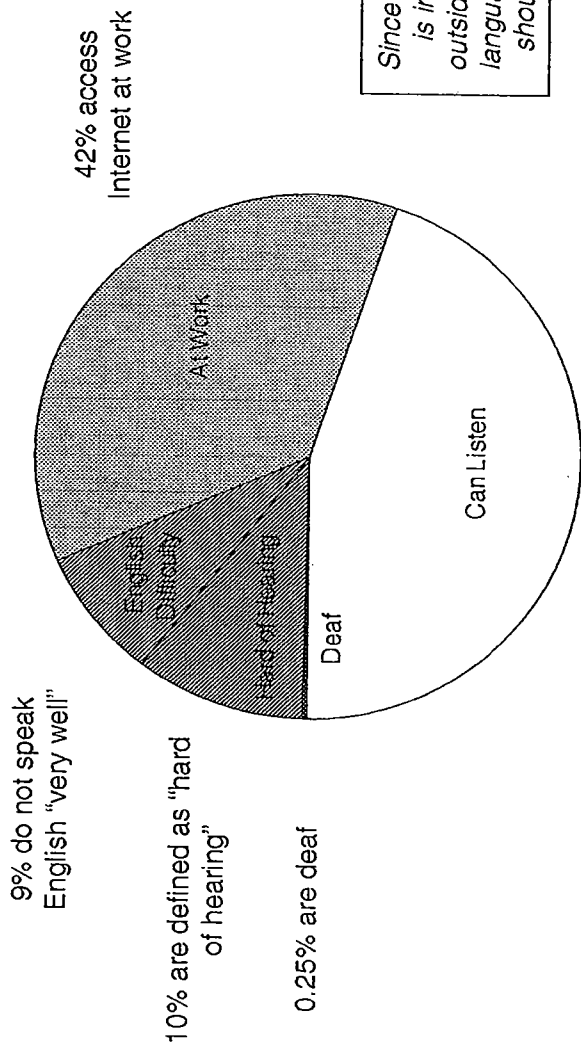
We may be able to coax or force access to viral premium content

Ways to give users access to premium content (examples)

- Get working ads model to monetize premium content to show for free
- Enable download-to-own or streaming of short clips at pennies per clip from prepaid Google user account funds
- Install hotline arrangements for fast-tracking short clips with some bulk (capped) after-the-fact payment by Google
- Include in partnership terms that content owners will do at least one of the following:
 - clamp down on copyright infringers with DMCA notice within X hours
 - officially supply us their master version of viral clip for free streaming within Y hours
 - allow us to upload viral clip from infringing site and host it ourselvesor... pay us for lost traffic
- Threaten a change in copyright policy as part of a PR campaign complaining about harm to users' interests through content owner foot-dragging – use threat to get standard deal sign-up

Content team should also push for Closed Captions

User Groups Benefiting from Closed Captioning



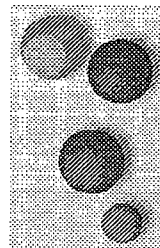
Around 65% of the US population could benefit from closed caption viewing even before new features in the product

Source: US Census survey, 2003, deaf survey
Note: 18% of census survey state they do not speak English "very well"

Closed captioned content supports future differentiated product features

- Search for scene within the video
 - Cut to the clip of interest – time-coding of CC enables tie between audio and video stream
- Full-information Fast-forward
 - Enables “visual skimming” of video without loss of visual context
 - Smart selection of frames for fast-forward can include every CC screen and compress viewing to a small fraction of full runtime
- Subtitling/translation into multiple languages
 - Machine translation of CC content makes all video content instantly accessible and useful across the world

National Archives and Records Administration (NARA)
Content Digitization Analysis



NARA Digitization Analysis Executive Summary

- Scope of Work:
 - The Video team asked BizOps to calculate the costs associated with digitizing NARA content and to update cost assumptions for existing digitization models
 - This analysis does not touch upon whether NARA content will be interesting to Google's users nor whether it should be prioritized above other partners' content in the digitization pipeline; such analyses would be an appropriate next step
- Key Findings:
 - It will be more cost effective for Google to digitize NARA's taped content in-house than to outsource this project
 - Completing this project in one year will cost Google an estimated \$140,000

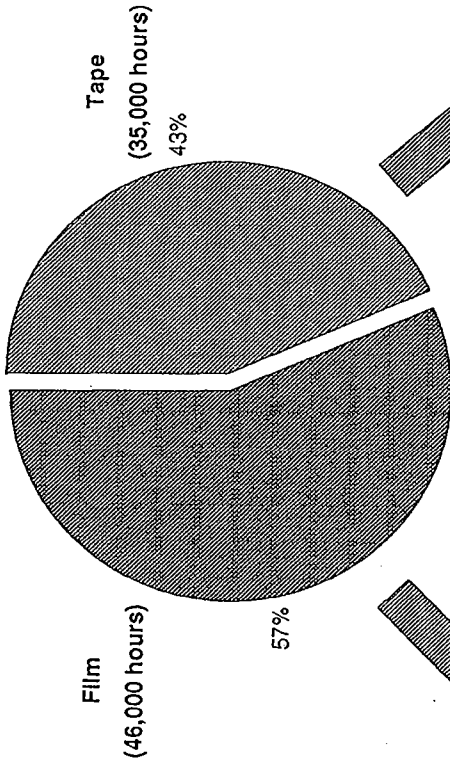
Profile of NARA Pipeline

Popular Topics	Length	Format
<ul style="list-style-type: none"> • NARA's suggested high use candidates for digitization: <ul style="list-style-type: none"> - Records of the Signal Corps <ul style="list-style-type: none"> • World Wars I & II training and combat videos • Ceremonies, parades, inaugurations - Edited Motion Picture Releases of the Universal Newsreel <ul style="list-style-type: none"> • 1929-1967 - Records of U.S. Air Force Commands, Activities, and Organizations <ul style="list-style-type: none"> • 1900-1970 - General Records of the Department of the Navy <ul style="list-style-type: none"> • Unedited and camera record footage covering Navy activities from World War II through 1965 	<ul style="list-style-type: none"> • Average length of motion picture films is 10 minutes 	<ul style="list-style-type: none"> • 35,000 hours taped content <ul style="list-style-type: none"> - 60% ¾" Umatic - 17% 1" Type C - 12% ½" Betacam & BetaSP - 11% Other formats • 46,000 hours filmed content <ul style="list-style-type: none"> - 66% 35mm gauge - 33% 16mm gauge

Sources: Daniel Blackman & NARA

Profile of NARA Pipeline: What to digitize first?

Film vs. Tape
(81,000 hours total)

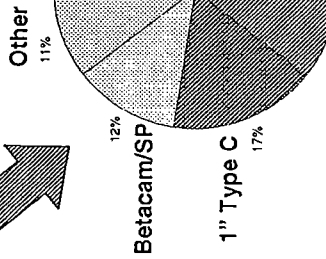
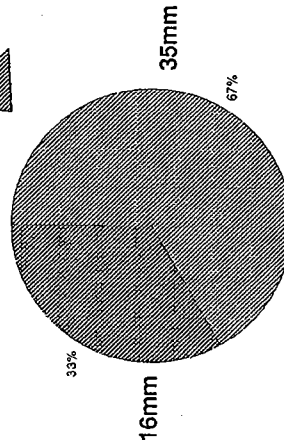


Film

- Operations complex and expensive
- Special training and certification required to handle NARA film content
- Three approved vendors in D.C. will digitize NARA filmed content for \$400-\$450 per hour

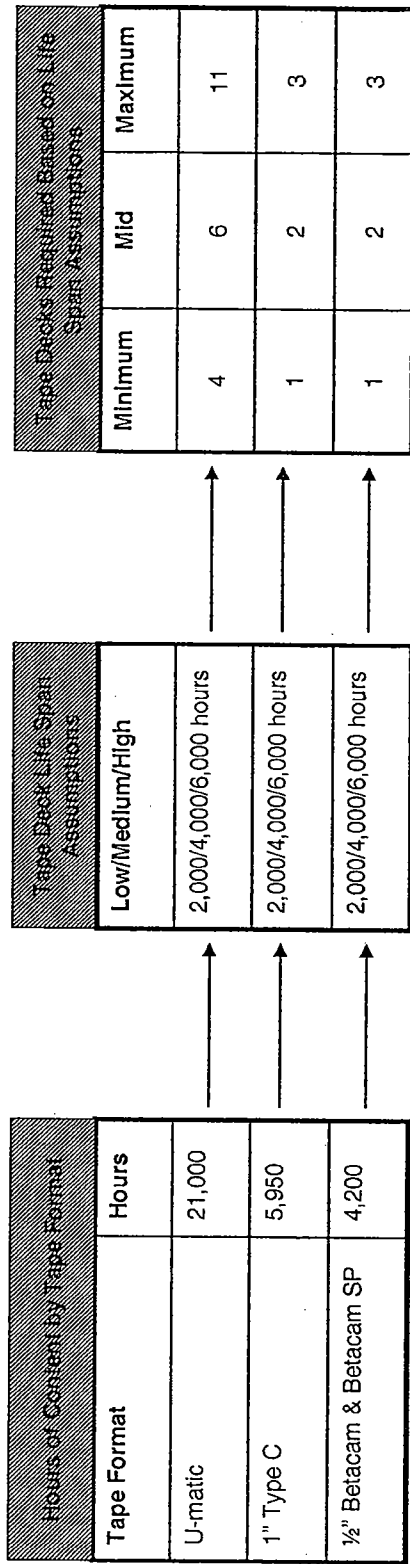
Tape

- Handling taped content doesn't require special certification or significant training
- U-matic taped content represents a large pool of content (~21,000 hours) that requires relatively cheap capital expenditures
- Digitizing taped content in-house costs <\$70/hour



Sources: NARA, Mark Yoshitake, Ed Miner, Yen-Jen Lee

What will it take to digitize? Machines Required:



Irrespective of the life span assumptions, at least **two additional machines** should be kept on hand to ensure productivity isn't lost in the event of breakages

Note: Actual life spans of tape decks will vary based on the age of the machine when acquired, service record, and the exact model number

Sources: Hours by format: NARA & Daniel Blackman; Life span: Assumptions made by Dan Zheng, Ed Miner, Yen-Jen Lee, and Michael Baldwin

How long will it take to digitize NARA's U-matic content?

	Scenario 1	Scenario 2	Scenario 3
Amount of U-matic Content (hours)	21,000	21,000	21,000
Life Span of Machines (hours)	6000	4000	2000
Machines Operating Simultaneously	4	6	11
Length of Workday (hours)	8	8	8
Worker Efficiency During Workday	0.9	0.9	0.9
Months Required to Complete U-matic Content	33	22	12

The time required to complete the digitization of the U-matic NARA content will be related both to the number of machines running simultaneously and to the life span of those machines

What will it take to digitize? Tape Digitization: Hardware Options/Costs

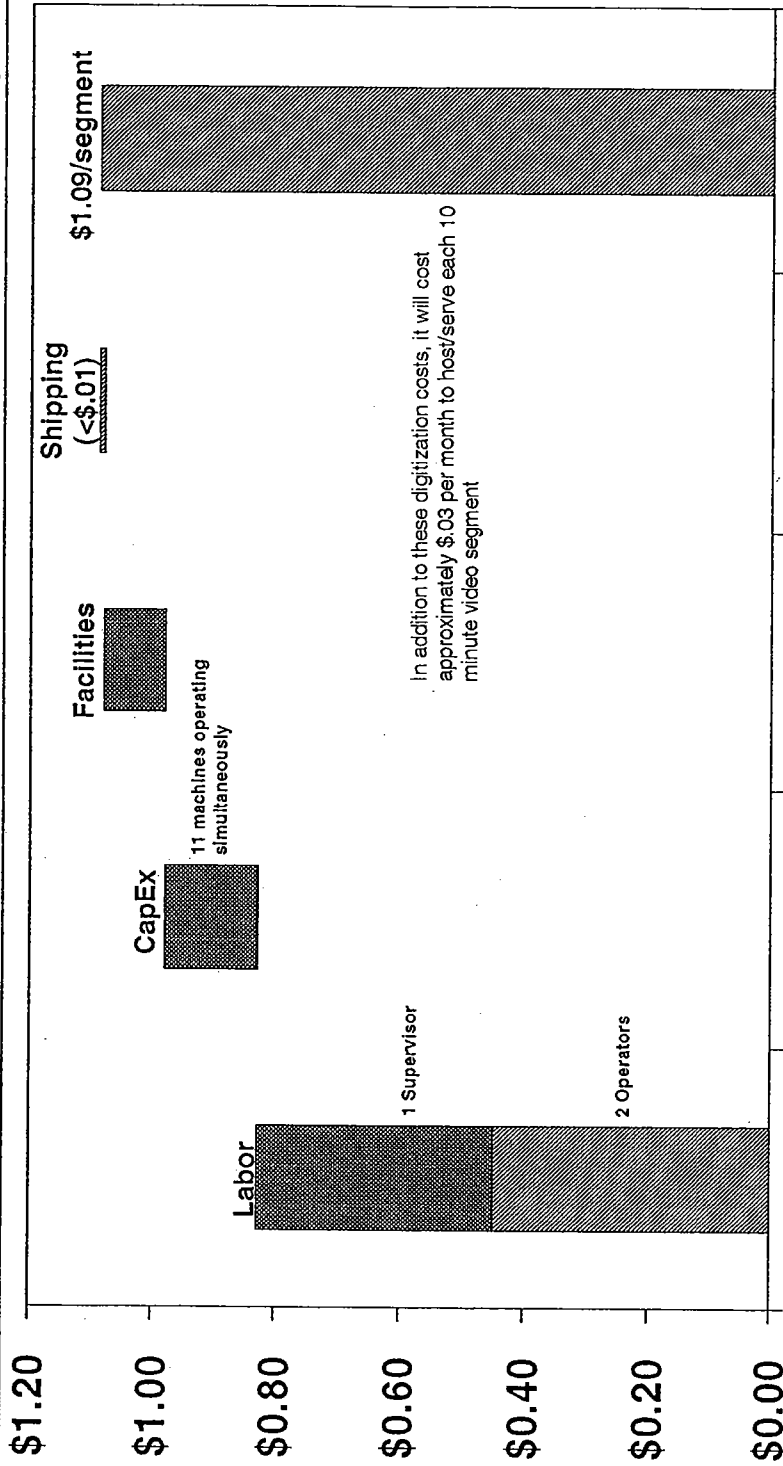
Tape Deck Format	Purchase New	Purchase Used	Build	Source
¾" Umatic	Out of Production	\$100 - \$1,200 (e.g. Sony VP-7000)	Significant engineering challenges	New: Various Internet research Used: • Ebay • http://www.broadcaststore.com/store/model_detail.cfm?id=4936 ; • http://www.mvsvideo.co.uk/vtrs.htm
1" Type C	Out of Production (Unconfirmed)	\$300 - \$1,000	Significant engineering challenges	New: Various Internet research Used: Ebay
½" Betacam & Betacam SP	\$6,000 - \$15,000	\$2,000 - \$5,000	Significant engineering challenges	New: http://www.bhphotovideo.com/bnh/controller/home?A=details&kw=SODVMM2000P&is=REG&Q=&O=productlist&sku=3536663 Used: Ebay

For used tape decks, large price ranges are due to differences in the age and condition of equipment; proper due diligence and experimentation will be required to find the best tape decks to use

Sourcing Challenges

- Machines that are out of production will have to be sourced from a variety of locations
 - Ebay
 - Third-party resellers
- It could be difficult to obtain a “fleet” of standardized machines; each might have slightly different features, age, and service history
- If cheap spare tape decks don't prove to be an adequate solution to address breakages, then we will need service contracts (cost TBD, but likely expensive)
- All NARA content must be digitized on-site at NARA; this must be taken into account when sourcing equipment

What will it cost? Cost Components for the Digitization of a 10 Minute NARA U-matic Taped Segment



See Appendix for Sources and Additional Details

Notes: Scaling the operation would lower these costs. These cost estimates are only for an initial digitization partnership with NARA. The cost of digitizing a video segment on 1" Type C format is comparable to the above. Betacam/Betacam SP slightly more expensive. Service costs are TBD. They could be mitigated during this initial operation by purchasing spare tape decks on the front end. Spare decks are already accounted for in the CapEx costs on this page. Servicing costs TBD.

What can be outsourced? What are the tradeoffs of outsourcing?

- Tape digitization can be fully outsourced
- Outsourcing tape digitization is significantly more expensive than developing the capability in house
- Outsourcing could indirectly benefit our competitors by giving vendors the volume needed to test and improve processes, thereby lowering the cost to digitize in the marketplace

Yes/Video Order - 2 months	
Item	Cost
Cost Per Tape (assuming 60 min per tape)	\$20
Fixed Overhead Costs (CapEx and Labor) per Hour of Content Digitized	\$2.62
Facilities Costs per Hour of Content Digitized	\$0.21
Cost per Hour of Content Digitized	\$22.83
Total Cost	\$534,000

Source: Wendy Chang, Michael Baldwin Digitization Analysis

Google in House - 12 months	
Item	Cost
Capital Depreciation Costs per Hour of Content Digitized	\$0.91
Labor Costs per Hour of Content Digitized	\$5.00
Facilities Costs per Hour of Content Digitized	\$0.62
Cost per Hour of Content Digitized	\$6.54
Total Cost	\$137,340

Source: Michael Baldwin Digitization Analysis

Note: Given hardware sourcing challenges, 1 year assumed to be fastest content could be digitized in house

Off-Site Operation at NARA: Basic Needs

- Pre-work
 - Finalize terms of NARA partnership
 - Receive direction from EMG on timeframe for completing
 - Obtain office space near NARA
 - Determine insurance needs
- People
 - Hire 2 temps and hire/allocate 1 manager
 - Decide whether manager needs to be part-time or full-time
 - Locate local servicing company (optional)
- Equipment
 - Purchase tape decks, prod machines, corp machines, NAS drives, and barcode scanners & printers
 - Obtain basic office furnishings
- Content
 - Prioritize content for digitization
 - Establish process for shipping hard drives to data centers
 - Return master copies to NARA

Proposed Solution

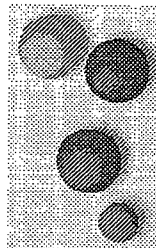
- First Phase
 - Digitize 35,000 hours of NARA taped content, starting with 21,000 hours of U-matic content
 - Prioritize taped content based on popular topics (as identified by NARA and Google Search queries)
 - Provide digitization ops with more flexibility to purchase used equipment in order to test it; we still know relatively little about which models will be best suit our purposes
 - Obtain data on usage of digitized content by type
- Second Phase
 - Determine whether user demand for digitized content validates NARA film digitization
 - Determine whether NARA film should be digitized at the highest quality for preservation and distribution purposes, or whether quality can be sacrificed to save time and costs
 - Digitize 46,000 hours of NARA film
 - Digitizing this films using a vendor would cost over \$19,550,000 (46,000 hours x \$425/hour)
 - Determine whether the future GV content pipeline will contain enough film to warrant the significant investment needed to build this capability in-house
- Third Phase
 - Study partner pipeline, determine most prevalent formats, and create a solution for scaling the digitization operation
 - Digitize other partner content (see next slide)

Beyond NARA: Pipeline Profile

	Total Hours of Content	Hours Video	Hours Film
CBS Evening News	5,200	4,000	1,200
60 Minutes	2,100	2,100	
Pathe Archive ***	2,500		2,500
Getty Film	20,000		20,000
Anthology Film Archives	3,000		3,000
Greenpeace ***	1,000	1,000	
Amnesty Intl. ***	2,000	1,000	1,000
Democracy Now ***	2,000	2,000	
ITVS	1,000	750	250
Olympic Archive	6,000	3,000	3,000
NBC Sports	10,000	5,000	5,000
Moma	2,000	500	1,500
American Museum Natural History	2,000	1,000	1,000
Computer History Museum ***	1,200	800	400

Source: Daniel Blackman

Next steps



Next Steps for any support to the team

- Get search data from google.com
 - Broad matches on “video” except obvious red herrings
 - What topics of video are users seeking?
- Get usage data from a functioning video.google.com (after end Q2)
 - Once search and browse really work, user behavior will be a meaningful guide to the value of different kinds of content
 - By genre, partner tier, content owner, country, language:
 - Which browse paths used most?
 - Which videos searched for most often?
 - Which videos played through more than 30 seconds?
 - Which (short) videos played to within 5% of end?