EXHIBIT 33

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OG Business Model

2012-08-29

Overview

- Facebook Developer Program
  - ~$17M
- Device Integration Program
  - ~$1.6M
- Basic Read APIs
  - ~$160M
- Premium Read APIs
  - TBD
- Basic Write APIs
  - TBD
- Premium Write APIs
  - TBD
- CRM/Data Exchange
  - TBD

Facebook Developer Program

- Program
  - Development is free (so is social plugin use)
  - Apps must be <u>reviewed</u> and <u>pay</u> a fee to go "live" to users
  - The fee covers the calendar year, re-charge on Jan. 1
  - We provides official support incidents (devsupport@)
  - Additional support can be purchased
- Benefits
  - Eliminates a class of spam/fraud apps on Platform
  - Deterministic support channel that lasts after launch
  - Sets the "paid" bit with developers
- Revenue
  - ~$17M (170k apps at $100 per app)

Device Integration Program

- Program
  - 16+ partners that create FB experiences on devices
  - Provides paid, dedicated support for these partners
  - Provides testing to ensure that we don't break them
  - We will restrict some APIs (like stream.get) to these partners
- Revenue
  - ~$1.6M (100k per partner)

Basic Read APIs

- After the developer has paid, they can request access to:
  - A user's data (basic info, photos, etc.)
  - A user's friend data, <u>if the friend already uses the app</u>
  - No other friend data is available (no friends.get)
- Once granted, we charge a cost recovery fee for data access to these APIs
  - CPU time: $.00007/s or $0.25/h
- Revenue
  - ~$160M (assuming no drop off & excluding devices)

Premium Read APIs

- Provides our derivative user data to apps
- Current service explorations underway
  - User Trust Service: A trust score for a given user
  - Recommendation Service: What OG objects a user may like (music, books, etc.)
  - Co-efficient Service: How strong the relationship is between two users
- Revenue
  - (Chad et al) need estimate here

Write APIs

- Writing data for the user is free
  - OG actions & stream.publish
- We also sell 3rd party contextual ads
  - Sponsored stories
- Revenue
  - (Chad et al) need estimate here

Premium Write APIs

- Direct user acquisition and re-engagement
- Invites and notifications
- Revenue
  - (Chad et al) need estimate here

CRM/Data Exchange

- Sam

FB-01368421

Next Steps

BACKUP

Platform Costs

Category	Month	Year
Engineering	$5,293,869	$63,526,430
Sales & Operations	$6,986,672	$83,840,064
Infrastructure	$11,663,362	$139,960,339
Totals	**$23,943,903**	**$287,326,833**

Category	Monthly	Year
Third-Party Infrastructure	**$6,064,948**	**$72,779,376**
Third-Party Total	**$18,345,489**	**$220,145,870**

App Category	Number of Apps	API %	Monthly Cost	Yearly Cost
Page Tab Apps	25	0.0002%	$34	$409
Canvas Non-Monetizing	11,295	9.8695%	$1,810,605	$21,727,260
Connect/Mobile	154,478	22.5738%	$4,141,282	$49,695,388
Mobile FB OEM Apps	16	27.2034%	$4,990,588	$59,887,058
Canvas Monetizing	2,493	40.3531%	$7,402,980	$88,835,755
Totals	168,307	100.0000%	$18,345,489	$220,145,870

Apps & Developers

MAU	Yearly Developers
10,000,000	10
1,000,000	59
100,000	557
10,000	3,714
1,000	13,952
100	34,372
10	89,660

MAU	Yearly Apps
10,000,000	10
1,000,000	68
100,000	765
10,000	6,608
1,000	23,538
100	57,133
10	193,321

168,307 apps made API calls last month

Cost Model

Monthly Costs

Third-Party Infrastructure	**$6,064,948**
Third-Party Total	**$18,345,489**

- CPU/s
  - How much CPU the app consumes measured in sec.
  - Reasonable measure of compute & bandwidth
- CPU/s costs
  - .00003 per second & 0.12 per hour
  - .00007 per second & 0.25 per hour

Partner Costs

Name	MAU	CPU/s	Month Infra	Year Infra	Month Full	Year Full	CPU/s MAU
Spotify	24.8 M	3,592,805,664	$107,784	$1,293,410	$251,496	$3,017,957	4.80
Cityville	38.4 M	3,562,279,784	$106,868	$1,282,421	$249,360	$2,992,315	3.36
RockMelt	738 K	1,943,069,184	$58,292	$699,505	$136,015	$1,632,178	85.10
Flipboard	3.15 M	1,363,379,752	$40,901	$490,817	$95,437	$1,145,239	14.80
SongPop	14.8 M	883,037,148	$26,491	$317,893	$61,813	$741,751	2.22
Yahoo!	37.7 M	280,017,052	$8,401	$100,806	$19,601	$235,214	0.27
Draw Something	15 M	248,747,548	$7,462	$89,549	$17,412	$208,948	0.63
Netflix	2.81 M	138,173,728	$4,145	$49,743	$9,672	$116,066	1.70
Path	1.04 M	137,370,296	$4,121	$49,453	$9,616	$115,391	34.50
Socialcam	22.3 M	49,921,956	$1,498	$17,972	$3,495	$41,934	0.09
Pinterest	15.9 M	48,920,200	$1,468	$17,611	$3,424	$41,093	0.16
Instagram	27 M	107,143,428	$3,214	$38,572	$7,500	$90,000	0.14
Yelp	13.9 M	44,936,192	$1,348	$16,177	$3,146	$37,746	0.16

Potential Model

- Facebook Developer Program
  - Development & Plugins are free
  - Pay to take an app out of development ($50)
  - Login & writes calls are free
  - All other data calls are charged by CPU/s
  - Each app gets 200 CPU/s per day 'free', over is charged .00007 per sec.

Package	CPU/s (Day)	CPUs (Monthly)	CPU/s (Year)	Year Cost (Infra)	Year Cost (Full)	Year Price	Additional CPU/s
Each App	200	5600	73000	3.65	5.11	$50	.00007 per second

- Premium API access
  - Co-efficent, Recommendations, etc.
  - Market pricing

Bucket	API	Existing	Google	Amazon	Parse
Identity	Login with basic user info (includes email)	Yes	Identity API - Free*		User API - $0.05-$0.07/1K > 15M api calls*
Identity	Anonymous/Guest login (later add FB info)	No			User API - $0.05-$0.07/1K > 15M api calls
Identity	Read extended user info	Yes	Google+ API - Free *(limited data)		
Identity	Read friends info	Yes	Google+ API - Free*		
Premium Identity	Coefficient	No			
Premium Identity	Social "Credit Score"	No			
Premium Identity	Recommendations (Taste)	Yes (Limited)	Google Commerce Search - Free* (similar but not personalized to user)		
Premium Identity	Online Presence	Yes (Limited)	Google Talk API - Free		
Premium Identity	Social context plugin (Facepiles on items)	No			
Premium Identity	Login Trust/second factor auth on mobile	Yes (Partial)			
Premium Identity	Photos and Video storage/access	Yes (Partial)	Picasa Web API - Free*		File Storage API - $.15-$.20/GB over 1GB
Distribution/Comms	Write to stream/graph	Yes			
Developer APIs/Tools	Send notification	Desktop Only		SNS - $0.06/100K req above 100K	Notification API - $0.05-$0.07 per 1K over 1M
Distribution/Comms	Send invites	No			
Distribution/Comms	Chat session	Yes	Google Talk API - Free		
Distribution/Comms	AppCenter Promotion	Yes	Google Play - 30% cut		
Distribution/Comms	Match Making Service	No			
Developer APIs/Tools	Email (through us)	No	Gmail - Free (limited to user addresses only)		
Developer APIs/Tools	Custom App Analytics	No	Google Analytics - Free (limited use on mobile, no demographics)		
Developer APIs/Tools	Object Storage	No	Google Cloud Storage - $0.08-$.12/GB storage + $.15-$.21/GB transfer	S3/EBS - $0.05-$0.12/GB + $0.01/10K requests + $0.05-$.12/GB transferred above 1GB	Data API - $0.15-$.20/GB over 1GB + API calls
Developer APIs/Tools	Payment/Subscription Service	Yes	Google Checkout - 1.9%-5%		
Developer APIs/Tools	Crowd Sourced Localization	Yes (Limited)	Translation API - $20/1M characters		
Developer APIs/Tools	A/B Testing Framework	No	Google Analytics - Free		
Developer APIs/Tools	Static resource hosting	No	AppEngine - $0.01-$.10 / 100K ops	CloudFront - $0.02-$0.05/GB + $0.0075/req	Data API - $0.15-$.20/GB over 1GB + API calls
Developer APIs/Tools	Mechanical Turk	No		Mechanical Turk - 10% on whatever you pay	
Developer APIs/Tools	URL classification (URL suspicious?)	Yes (Partial)			
Developer APIs/Tools	Geofencing / Places DB	Yes (Partial)	Places API - Free		
Developer APIs/Tools	Custom News Feed Service	No			
Developer APIs/Tools	Browser / Facebar / Search v.next	No	Google Search API - Free*		
Developer APIs/Tools	URL shortener	Yes (Partial)	Free		
Developer APIs/Tools	...	Yes (Partial)	BigQuery - $0.12/GB storage, $0.35 GB	Elastic MapReduce - $0.08-$0.64/hr	

Outliners

Name	MAU	CPU/s	Month Infra	Year Infra	Month Full	Year Full
TweetDeck	610 K	690,514,944	$20,715	$248,585	$48,336	$580,033
Twitter	5.3 M	33676636	$1,010	$12,124	$2,357	$28,288
Swaylo	1.1 M	1,987,466,628	$59,624	$715,488	$139,123	$1,669,472
HP webOS	438 K	287,036,540	$8,611	$103,333	$20,093	$241,111
Klout	1.3 M	227,853,220	$6,836	$82,027	$15,950	$191,397
Xperia	4.69 M	6,166,389,376	$184,992	$2,219,900	$431,647	$5,179,767

Platform Costs

Category	Month	Year
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Sales & Operations	$6,986,672	$83,840,064
Infrastructure	$11,663,362	$139,960,339
Totals	**$23,943,903**	**$287,326,833**

Usage	API %	Eng Cost	Sales Cost	Total
Internal Apps	48%	**$97,673,649**	**$0**	**$97,673,649**
External Integrations	20%	**$40,697,354**	**$27,946,660**	**$68,644,014**
External Mobile	2%	**$4,069,735**	**$27,946,660**	**$32,016,395**
External Desktop	30%	**$61,046,031**	**$27,946,660**	**$88,992,691**
Total	**100%**	**$203,486,769**	**$83,839,980**	**$287,326,749**

External API usage

~24 billion external calls per day
~720 billion calls per month
~8760 billion call per year

~96% of calls are read
~4% of calls are write

$189,653,100 external costs
$182,066,976 read costs
$7,586,124 write costs
$0.000021 per API call

method	calls
fql.query	4,128,803,036
fql.multiquery	2,583,482,652
gr:get:User/picture	2,472,941,896
gr:get:User	2,238,032,504
gr:get:User/apprequests	1,231,447,395
gr:delete:AppRequest	1,126,407,213
gr:get:User/home	1,112,850,130
gr:get/fql	1,070,614,183
gr:get:User/apprequestformerrecipients	1,061,069,192
gr:get:User/friends	649,234,667
gr:get:multi	538,004,508
gr:post:User/apprequests	498,101,125
gr:get:User/inbox	417,665,418
gr:batch	386,575,997
gr:get:User/likes	384,966,822
gr:get:Url	360,472,249
gr:get:Photo/picture	353,294,010
gr:get:Page/picture	327,193,701
stream.get	315,625,766
gr:get:User/checkins	285,272,612

Speaker Notes for Slide 20

The top line number of calls from external appids is 24B per day. I was taking the view that every single call is a read or a write.

The largest write methods from external apps are the ones I mentioned earlier (gr:post:User/apprequests, gr:post:User/feed, gr:post:User/external_edge (i.e. COG edge creation), gr:post:User/scores, etc.) and in total, account for ~4% of the total volume of api calls.

The largest read methods are fql.query, gr:get:User/picture, etc. and make up the remaining 96% of the daily volume of api calls.

See the attached for the largest 20 methods by daily call volume (from external appids). This short list accounts for 85% of total api call volume. As you can see, only one of the top 20 is a write method (gr:post:User/apprequests).

Apps & Developers

MAU	Number
10	462,477
100	104,647
1,000	39,133
10,000	10,931
100,000	1,964
1,000,000	333
10,000,000	43

MAU	Total Roles	Active Roles	Real Developers
>=10	382,891	201,282	15,422
>=100	184,082	106,647	8,651

Facebook Developer Program

- Program
  - Developer pays a fee per year
  - Development is still free (so is web plugin use)
  - Allows apps to come out of developer mode
  - Provides support incidents (devsupport@)
  - Additional support can be purchased
- Benefits
  - Eliminates a class of spam/fraud apps on Platform
  - Deterministic support channel that lasts after launch
  - Cost recovery + potentially some upside (depends on model)
- Costs
  - Should be able to handle with existing HC
  - Need some additional tool/processes (dev sign-up, support flow)
  - Need to determine model for devs that generate $$ already

Paid API Access

- Program
  - FDP members provide credentials during sign-up
  - Each app gets read quota (no quota on write)
  - Devs that exceed quota are charged
- Benefits
  - Aligns incentives with developers
  - Cost recovery for API usage
  - Could reduce our massive list of whitelisted APIs
- Costs
  - Need to build auto-billing logic and usage dashboards
  - Need to determine market rates for APIs
  - Assume 60 days to build and roll-out
  - Need to determine model for devs that generate $$

Models

- **Pay per developer**
  - 15,000 devs * $100 = $1.5 million
- **Pay per app**
  - ~155,720 * $100 = $15.6 million
- **Pay per app (by size)**
  - $1 per MAU = $1.1 billion
- **Pay per API call**
  - 1.4T paid API calls at $0.05/K = $70 million
- **Pay for distribution**
  - Neko ($200M), Starling ($100M), App Store ($50M)

Next steps

- Price out the revenue opportunities for real
- Cost out the engineering work for real
- Determine model for devs making $$
- Talk to some developers to get feedback

Google App Engine

	Free	Paid	Premier
Price		$9/app/month	$500/account/month
Dynamic scaling	✓	✓	✓
Java Runtime	✓	✓	✓
Python Runtime	✓	✓	✓
Go Runtime	✓	✓	✓
Usage based pricing		✓	✓
Infinitely scalable		✓	✓
SLA		✓	✓
Operational support			✓
Tools			
Google Plugin for Eclipse	✓	✓	✓
Code upload/download	✓	✓	✓
Graph History	✓	✓	✓
Request Logs	✓	✓	✓
Developer Access Control	✓	✓	✓

Google App Engine

	Free quota per app per day	Pricing if you exceed your free quota
Hosting	Free quota per app per day	Price
On-demand Frontend Instances	28 free instance hours	$0.08 / hour
Reserved Frontend Instances		$0.05 / hour
High Replication Datastore	1G	$0.24 / G / month
Outgoing Bandwidth	1G	$0.12 / G
Incoming Bandwidth	1G	Free
APIs		
Datastore API	50k free read/write/small	$0.10/100k write ops $0.07/100k read ops $0.01/100k small ops
Blobstore API	5G	$0.13 / G / month
Email API	100 recipients	$0.01 / 100 recipients
XMPP API	10k stanzas	$0.10 / 100k stanza
Channel API	100 channels opened	$0.01 / 100 channels opened
Image Manipulation API	unlimited	unlimited
Memcache API	unlimited	unlimited
Users API	unlimited	unlimited
Task Queue	unlimited	unlimited
Files API	unlimited	unlimited
URL Fetch API	unlimited	unlimited
Cron	unlimited	unlimited
Prospective Search API	unlimited	unlimited