

Privacy vs. Data: Business Models in the digital, mobile Economy

Lecture 5 The “Big Four” in the Digital Economy

SS 2015

Dr. Andreas Albers



- Structure of Case Studies
- Case Study “Google”
- Case Study “Facebook”
- Case Study “Apple”
- Case Study “Amazon”
- Excursion: Disruptive Business Models
- Conclusion

- Business Model
 - Value Proposition
 - Architecture of Value Creation
 - Revenue Model
- Personal Data
 - User Identification
 - Data Collection
 - Data Processing
 - Data Usage
- Privacy Risk
- Privacy Protection

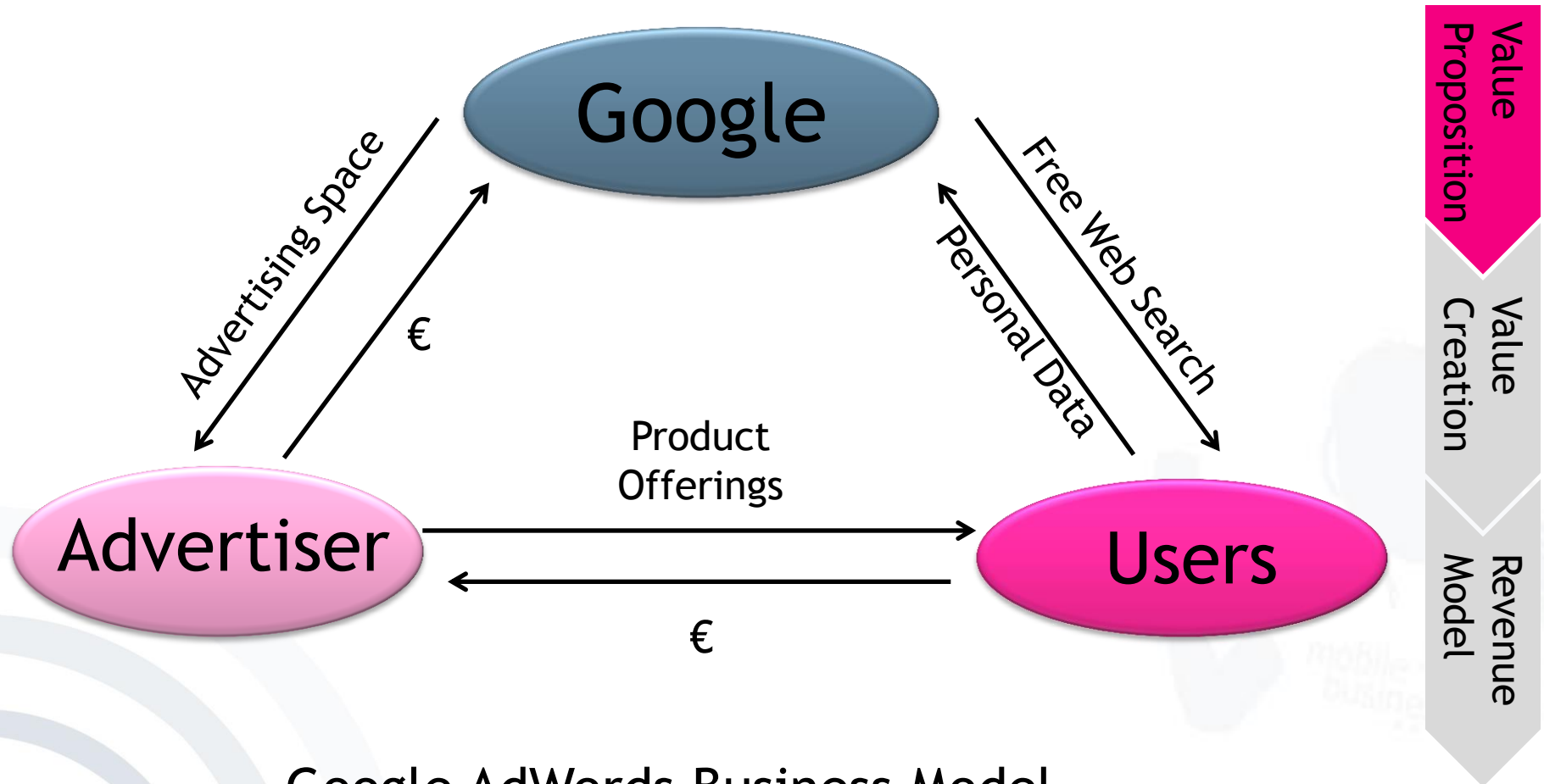


- Structure of Case Studies
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- Founded on 4th September 1998 by Larry E. Page and Sergei M. Brin
- *“Google’s mission is to organize the world’s information and make it universally accessible and useful”* (Google)
- Core competence and revenue stream is “Web Search”
- Some figures ...
 - Revenue in 2013: \$ 37 billion (Google Inc. 2014)
 - Profit in 2013: \$ 15 billion (Google Inc. 2014)



Value Proposition of Google in a Two-sided Market



Google AdWords Business Model

■ Benefit for Users

- Free Web Services, e.g.
 - Search, Video, Mail
 - Docs, Browser
 - Social Networking
 - ...
- Web Services are OS-independent, cloud-based, collaboration-enabled, ...

Value
Proposition

Value
Creation

Revenue
Model



- Value for Advertisers (Customers)
 - AdWords (Keyword Targeting), incl. data on
 - Search Query
 - IP Location
 - Language
 - AdSense (Context/Content-based Targeting)
 - Website related
 - User Interest related
 - Used outside the Google services

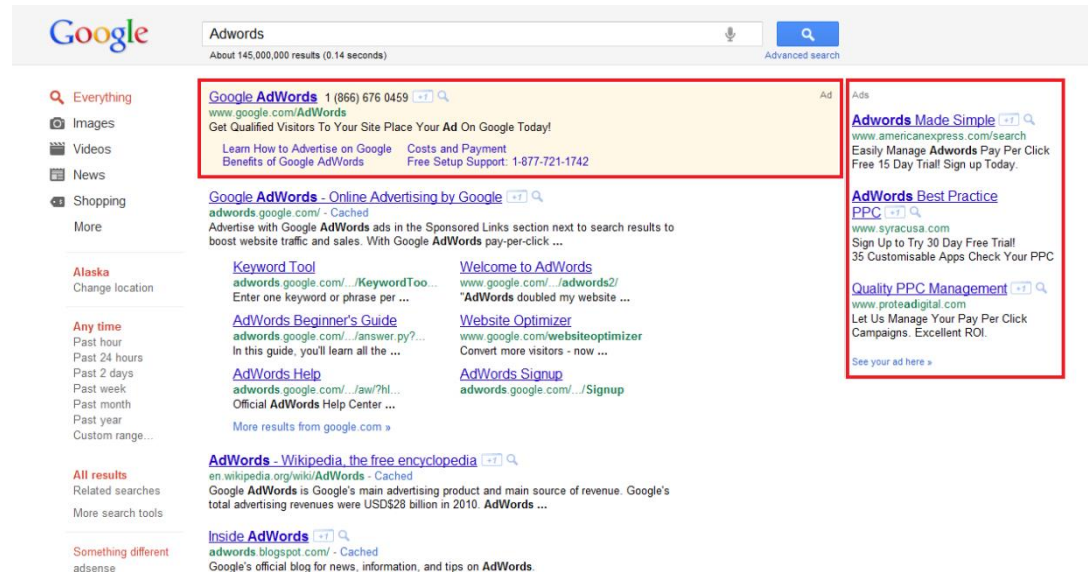


AdWords Examples

Location-based Advertising in Google Maps (iPhone)



AdWords in Google Online Search



Value Proposition

Value Creation

Revenue Model

AdSense Example

The screenshot shows the homepage of **HowToCleanAnything.com**. The header features the site's logo and tagline "The Art Of Cleaning Almost Anything....". Below the header is a large banner image of a modern living room with a fireplace and a coffee table. To the right of the image, the text reads: "HowToCleanAnything.com", "Clean vehicle upholstery", "Wash household items", "Remove stubborn stains", and "Learn how to clean anything". Below the banner is a navigation menu with links: HOME, HOUSE CLEANING, VEHICLES, ANIMALS, SEASONAL, RECREATIONAL, STAIN REMOVAL, and GENERAL CLEANING.

Below the navigation menu, there are several AdSense ads and content sections:

- Ads by Google:** A row of small text links: Cleaning, Clean Shower, Clean Stains, Tile Clean, Clean Tips.
- Cleaning Tips:** A section with several articles:
 - Home Steam Cleaner:** Try Out Black & Decker's Home Steam Cleaner & Kill 99.9% Of Germs Today. www.blackanddecker.com/steammap
 - Stain Removal Guide:** Don't Cry Over Spilled Anything! Search Over 85 Stain Solutions. www.tide.com/StainTrain
 - Download Audiobooks:** 14-Day Free Trial. No Obligation. Listen on your iPod or Mp3 Player! Audiobook.com
- Frequent cleaning:** reduces the effort. The more frequently you clean, the less effort it will take and will help you in preventing dirt's, harmful bacteria's and molds from building up. In addition frequent cleaning helps keep pests such as ants and roaches under control.
- Good Cleaning Habits To Start With:**
 - *Allocate a task to a person:** Housework can be a huge job. Learn to delegate. Make chore charts for everyone in your house. Even small children can help pick up toys and other things. As you learn that you don't have to do it all, housework will become much easier.
 - *Fill the Sink:** A good habit to start is filling your sink with hot soapy water every time you start to cook. This way you can "clean as you go." As you get done with each pot or dish, wash it quickly. This makes clean-up a snap.
 - *Spray the Oven:** Time for take-out? If there's a day when you're not using your oven, give it a quick spray of oven cleaner and forget about it. The next day, before you turn on your oven, give it a quick wipe down. You'll find that the baked on stuff comes off much easier.
 - *Have a Charity Box:** It's a good idea to keep a box or bag in your front closet that you put things you don't need anymore. This really helps get rid of clutter in your home. When the box is full, simply drop it off at your local good will store.
 - *Rinse Your Plate:** This may be a small tip, but it can help in big ways. If you simply make it a habit to rinse your plate after dinner (and have all family members do the same), it will make washing them a lot easier. No one likes trying to wash dried food off of dishes.
 - *Tackle the Small Jobs:** Housework can be overwhelming. Learn to break it down and tackle the smaller jobs first. As you do, each job will become easier. Also, if you clean the small messes before they get big, it'll be a lot easier to clean up.
- Cleaning Search:** A search bar with a magnifying glass icon.
- Follow Us On Twitter:** A Twitter bird icon and the text "Follow Us On Twitter".
- Twitter Updates:**
 - club soda is a basic in any cleaning kit, uses from spot cleaning fabric stains, to cleaning your stainless steel kitchen sink. about 10 hours ago
 - Disinfect the Disposal: To get rid of odors, drop in a cut-up lemon, some salt and a few ice cubes and run the disposal 6 days ago
- The Cleaning Authority:** Life's Too Short to Clean Your Own Home! Visit us for a Free Estimate. TheCleaningAuthority.com
- JW Cleaning & Restoration:** Carpet & Upholstery Cleaning Water/Smoke/Fire Restoration www.jwcleaningandrestoration.com

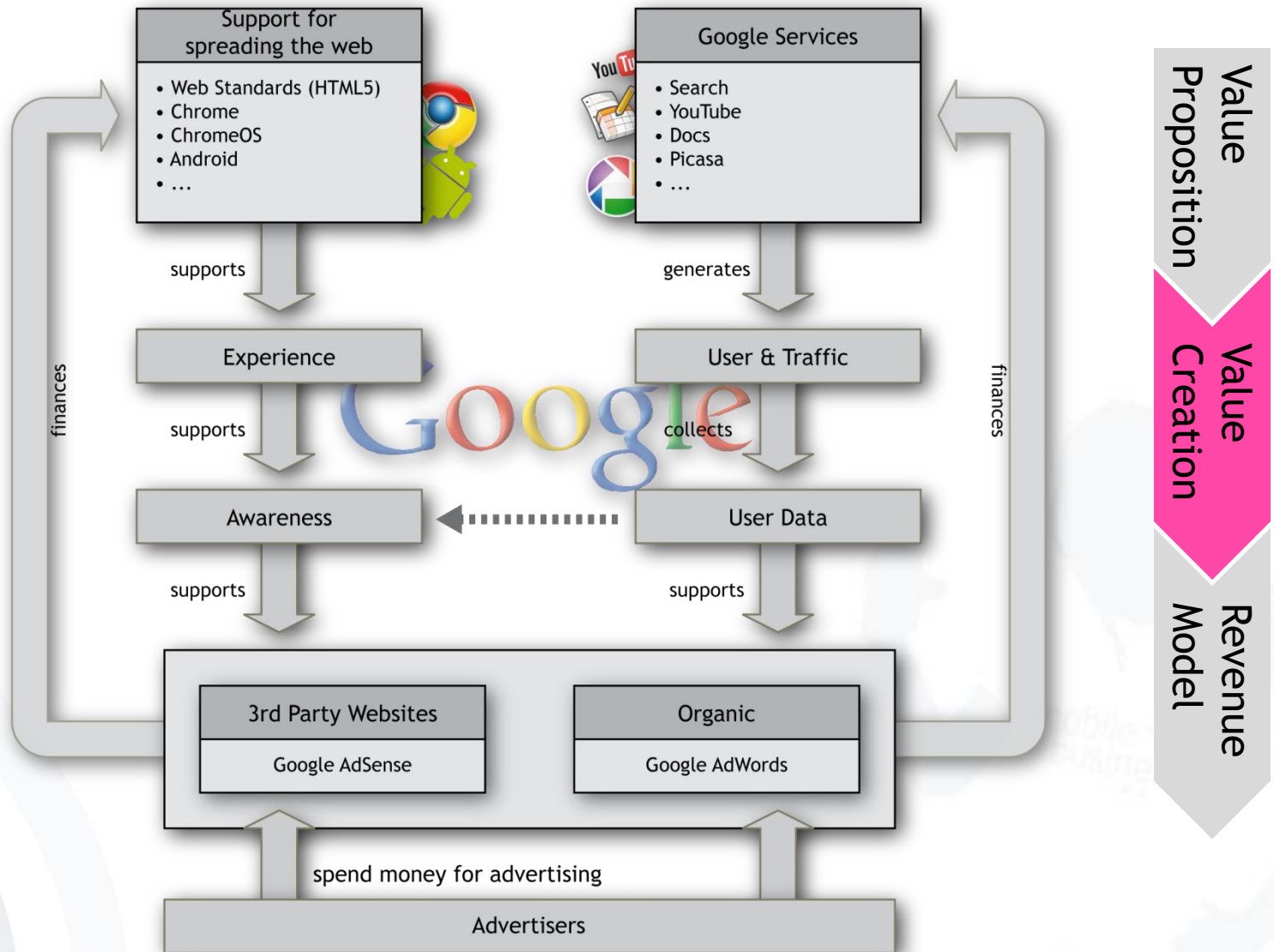
Source: onlineincomelab.com/

Value Proposition

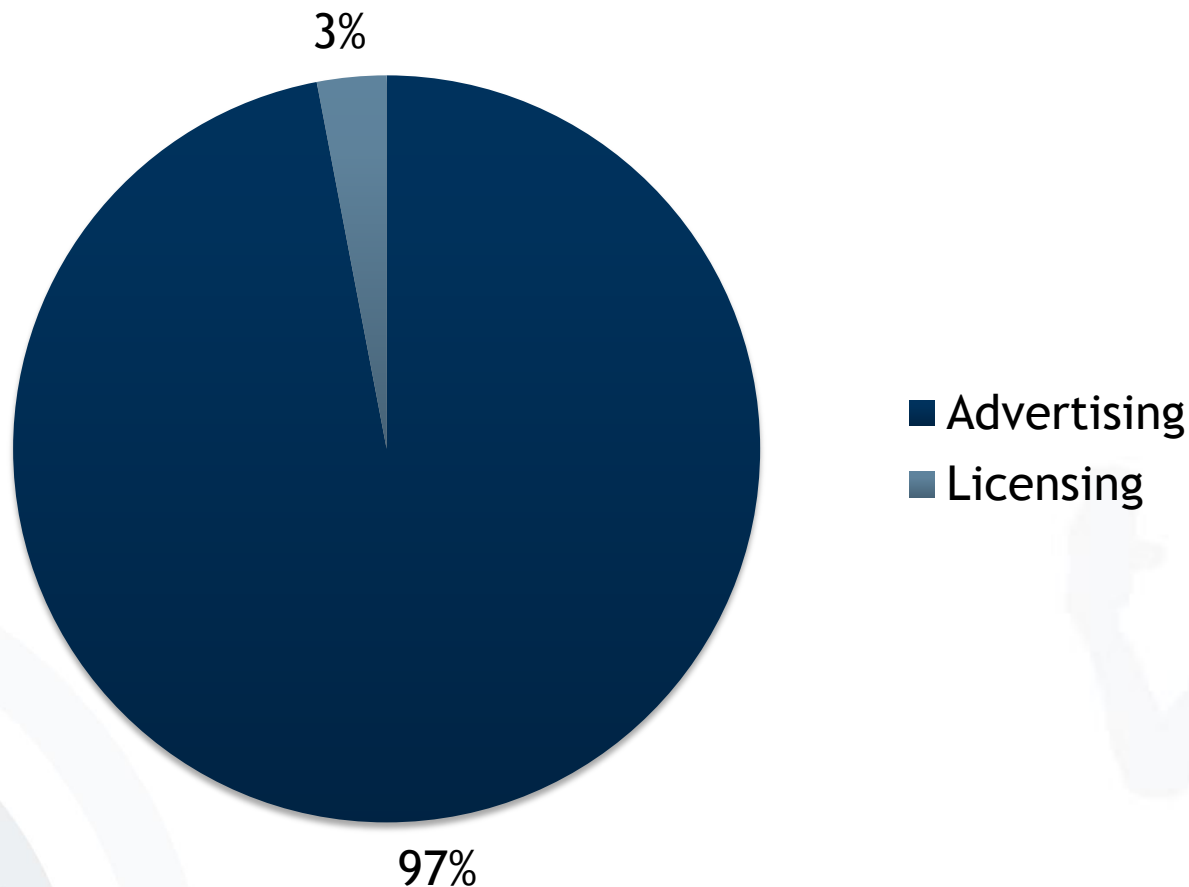
Value Creation

Revenue Model

Business Model Architecture of Value Creation



- Main Revenue Source: Advertising



Google: % of Total Revenue (FY08)

Source: Arnold 2009

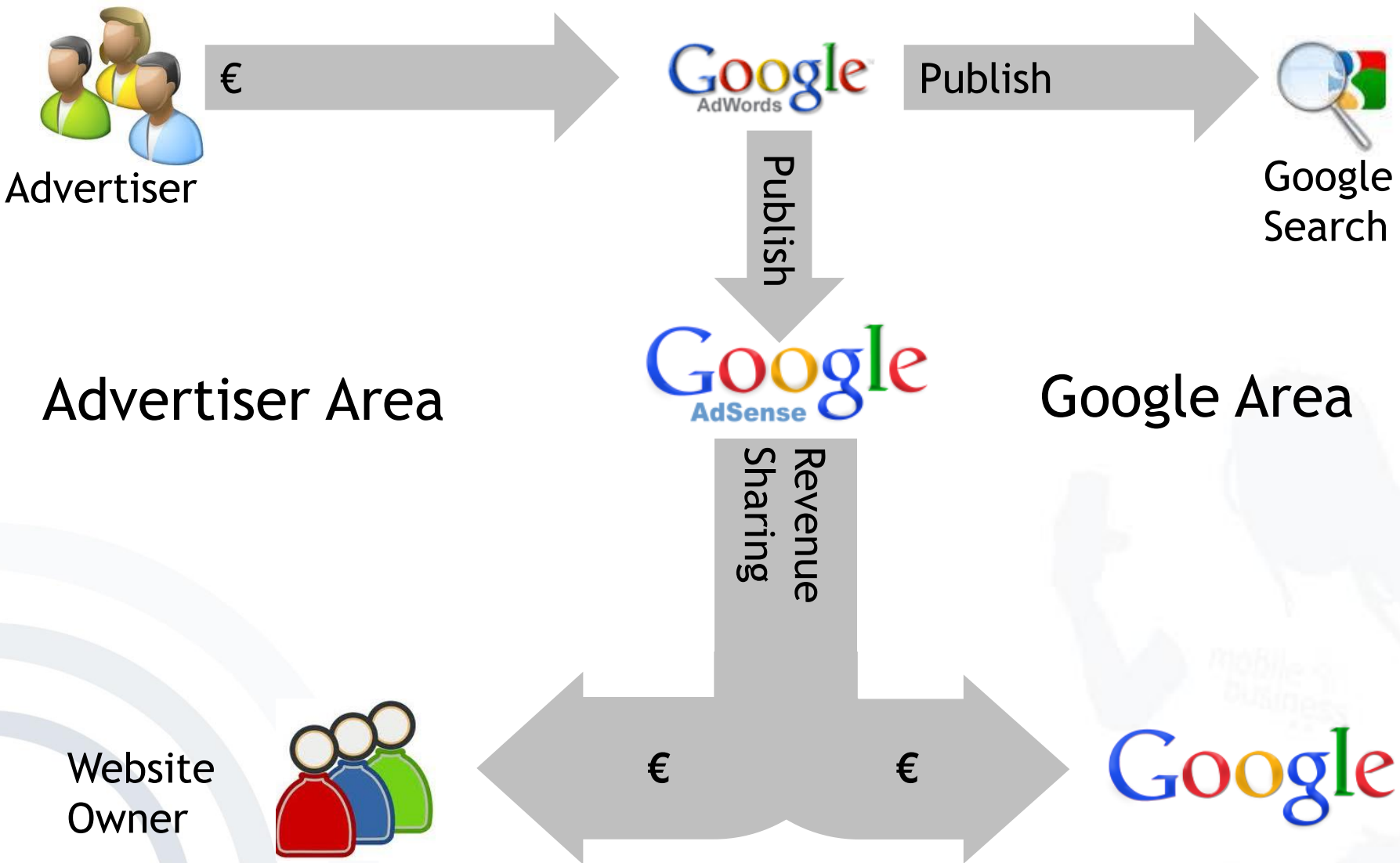
- AdWords Auction (high-level)
 - Bid x Quality score
 - Quality score = Click-Through Rate x Landing Page Quality x Landing page Load Time x Geographical Considerations x Ad Content vs. Keyword Relevance
- *Cost per Click, per Acquisition, per View*
 - Google charges the bid amount of the auction winner



AdSense: Revenue Sharing

- Website owners integrate Google advertisements into their own website
- Every time an advertisement is displayed or clicked, Google charges the advertiser
- This revenue is shared between advertisers and Google







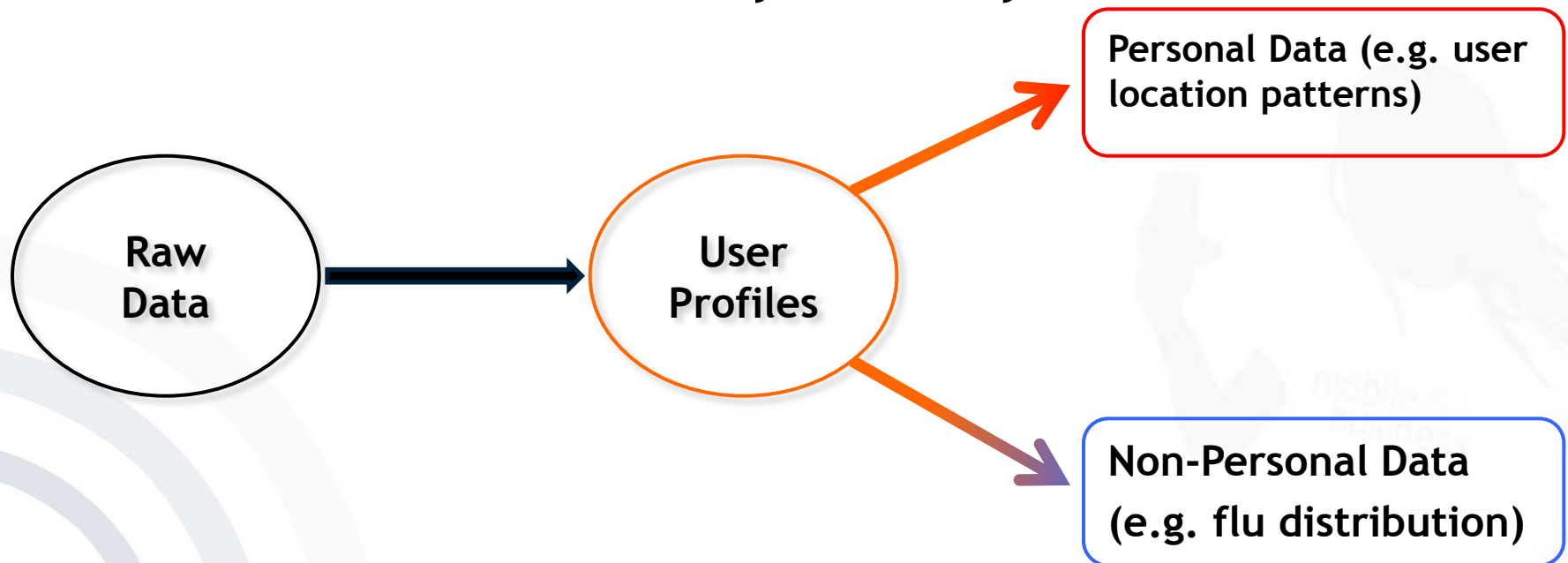
- Google User Account
- Cookies (expire after a certain period of time)
 - On own services
 - On Third Party websites connected via Google Analytics or Google AdSense
- IP address (gets anonymised after certain period of time)
- Unique identifiers in
 - Mobile OS, mobile devices, mobile apps, ...



- Behavioural Personal User Data
 - Notebook usage (Chrome OS)
 - Mobile device usage (Android)
 - Online communication (e.g. Gmail, Google Voice,)
 - Physical movement data (e.g. Maps, GPS)
 - Online browsing (e.g. Google Analytics, Web Search)
 - Other (e.g. Google DNS)
- (Real-time) Location-based data (Android, Maps)
- Language specific data (e.g. Translator)
- Social context data (e.g. Google Plus, Google Voice)



- From the collected data, Google extracts relevant user attributes for advertising
 - Interests (e.g. music, shopping), location patterns, search behaviour, gender, age, etc.
- or data is used in an anonymous way





Google Ads Settings



Ads Settings

Settings for Google ads

Ads enable free web services and content. These settings help control the types of Google ads you see.

Ads on Google



Search

Google ads across the web [?]



Google ads across the web



YouTube

Gender	N/A	Unknown Edit Based on the websites you've visited
Age	N/A	Unknown Edit Based on the websites you've visited
Languages	N/A	German Edit Based on the websites you've visited



Google Ads Settings (cont'd)

Interests

N/A

Computers & Electronics, and 8 more
Based on the websites you've visited

Your activity on websites is used to serve interest based ads.

These categories can only control some of the Google ads you see. For instance, the interests listed here do not reflect ads selected based on a visit to a specific advertiser's page (remarketing) or ads selected by other advertising providers and delivered by Google's ad platforms. [How it works](#).

Interest	From your activity on
Computers & Electronics	Websites
Fitness	Websites
Fitness Equipment & Accessories	Websites
Mobile & Wireless	Websites
Online Communities	Websites
Smart Phones	Websites
Social Networks	Websites
Software	Websites
Sports	Websites

OK

[Opt-out settings](#)

[Opt out of interest-based ads on Google](#)

[Opt out of interest-based Google ads across the web](#)



- **Targeting of Advertising** (e.g. Adwords, Adsense, YouTube, Gmail, etc.)
- **Forecasting** current and future needs of users
- **Improving** existing products and services

- Collected personal data could be
 - transferred to Third Parties
 - unwillingly disclosed to other individuals (e.g. photos on Google Plus)
 - used for surveillance
 - Location Profiling,
 - Internet tracing (e.g. IP address) or
 - GPS tracking
 - used for any other kind activities (e.g. manipulation/influencing of individuals)





- Google Dashboard
- Opt-out of Ad Personalisation
- Encrypted Search
- Google Analytics Opt-out
- Search Personalisation Opt-out
- Off the record of chats
- Street View Blurring
- Unlisted and Private Videos on YouTube
- Web History Controls

Google

« Google-Kontoeinstellungen

Google Dashboard

☐ Ich möchte monatlich daran erinnert werden, meine Kontoaktivität zu überprüfen. [?](#) [Alle einblenden](#)

Konto

Name Primäre E-Mail-Adresse [Konto verwalten](#)
[Passwort ändern](#)
[Verbundene Apps und Websites](#)

AdSense Keine interessanten Informationen

Analytics

Konten **3** Aufrufe **5** [Einstellungen](#)
[Datenschutz](#)

Android

Geräte **1** [Aktive Geräte verwalten](#)
[Geräte im Play Store](#)

Chrome-Synchronisierung

Lesezeichen **212** Letzte Synchronisierung am 11.04.2015 [Chrome-Synchronisierung verwalten](#)

Cloud Print Keine interessanten Informationen

Gmail

Konversationen **7.564** Zuletzt [Chatprotokoll verwalten](#)
[Einstellungen](#)
[Datenschutz und Sicherheit](#)

Google Alerts

Meine eingerichteten Alerts **1** [Alerts verwalten](#)
[Hilfe](#)

Google Aufgabenplaner

Aufgaben **0** Abgeschlossene Aufgaben **1** [Über Aufgabenplaner](#)

Google Docs

Eigene **5** Dokumente Für mich freigegeben **0** Dokumente [Dokumente verwalten](#)
[Dokumente teilen](#)

Google Fotos

Alben **2** Fotos **2** [Einstellungen](#)
[Datenschutz](#)
[Hilfe](#)

Google Maps

Standardstandort [?](#) Gespeicherte Standorte **2** [Google Maps-Profil verwalten](#)
[Meine Orte verwalten](#)

Google Sites

Meine Websites **1** Für mich freigegeben **849.356** [Websites verwalten](#)
[Hilfe](#)

Google Talk

Kontakte **12** [Über Google Talk](#)
[Hilfe](#)

Google+

+1 **6** [Google+ Seiten](#) **2** [Profil bearbeiten](#)
[Kreise bearbeiten](#)
[Beiträge](#)

Kalender

Meine Kalender **1** Kalender Zeitzone (GMT+01:00) **Berlin** [Kalender ansehen](#)
[Kalender verwalten](#)
[Mobilgeräte verwalten](#)

Kontakte

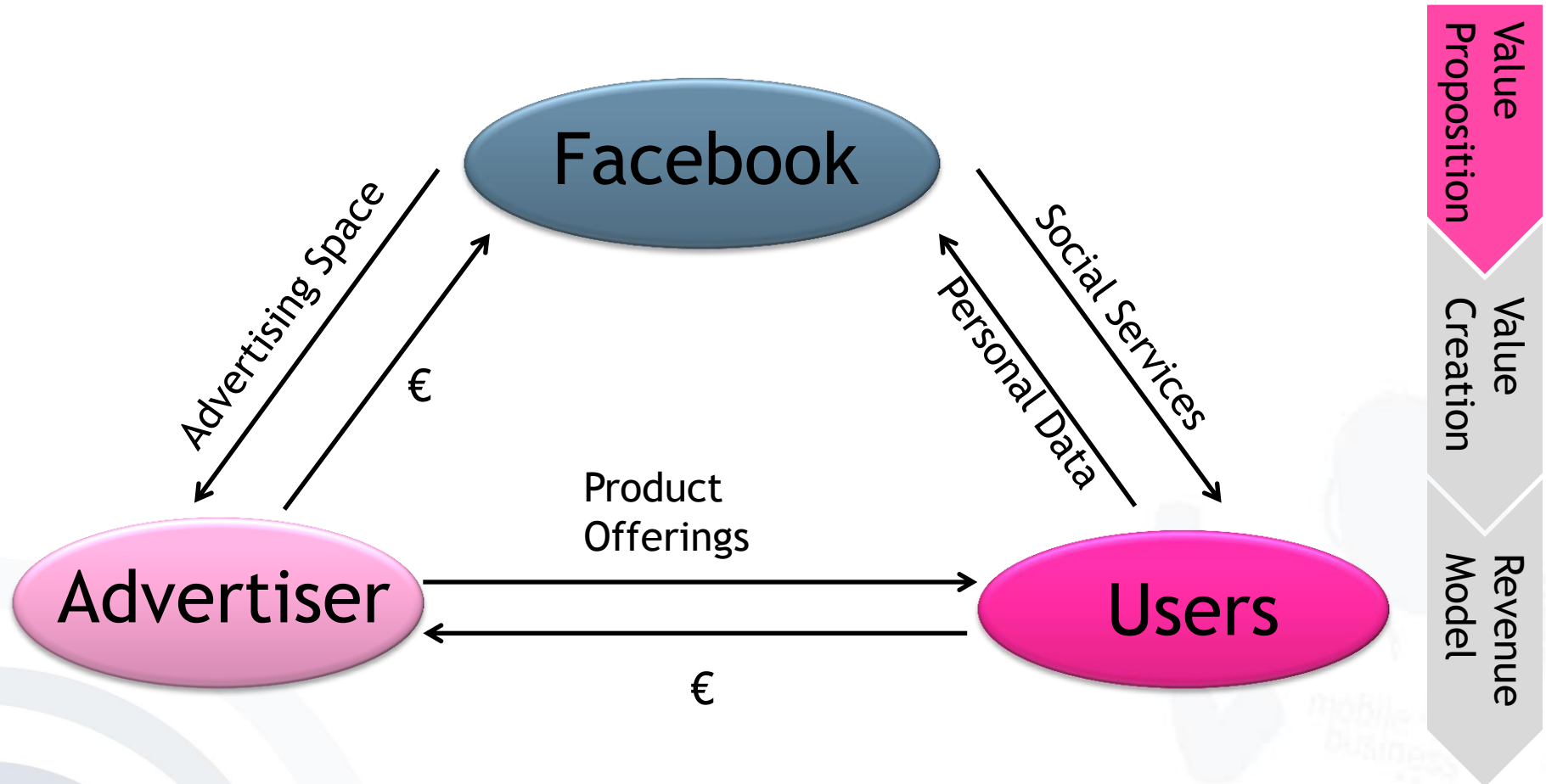
Alle Kontakte **158** Meine Kontakte **74** [Kontakte verwalten](#)

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- Case Study “Facebook”
- Case Study “Apple”
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- Founded on 4th February 2004 by Mark Zuckerberg as TheFacebook at the Harvard University
- *“Facebook’s mission is to give people the power to share and make the world more open and connected”* (Facebook)
- Core competence in the provision of social networking services
 - Complementary services like messages and games were added later
- Core business revenues generated by advertising, especially banner ads
 - Facebook had the highest share of banner ads in the U.S. (September 2010)
- Some figures
 - Revenue in 2013: 7.8 billion (Facebook 2014)
 - Profit in 2013: 2.2 billion (Facebook 2014)

The Facebook logo, consisting of the word "facebook" in white lowercase letters on a blue rectangular background.

Value Proposition of Facebook in a Two-sided Market



■ Benefits for Users

- Free sharing of content and staying connected with your friends
- Free social network services complemented by
 - Social-Shopping-Marketplace
 - Apps, Open Graph (Connect)
 - Facebook Places, Video chat, Calendar
 - ...

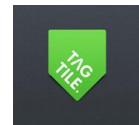
Value
Proposition

Value
Creation

Revenue
Model

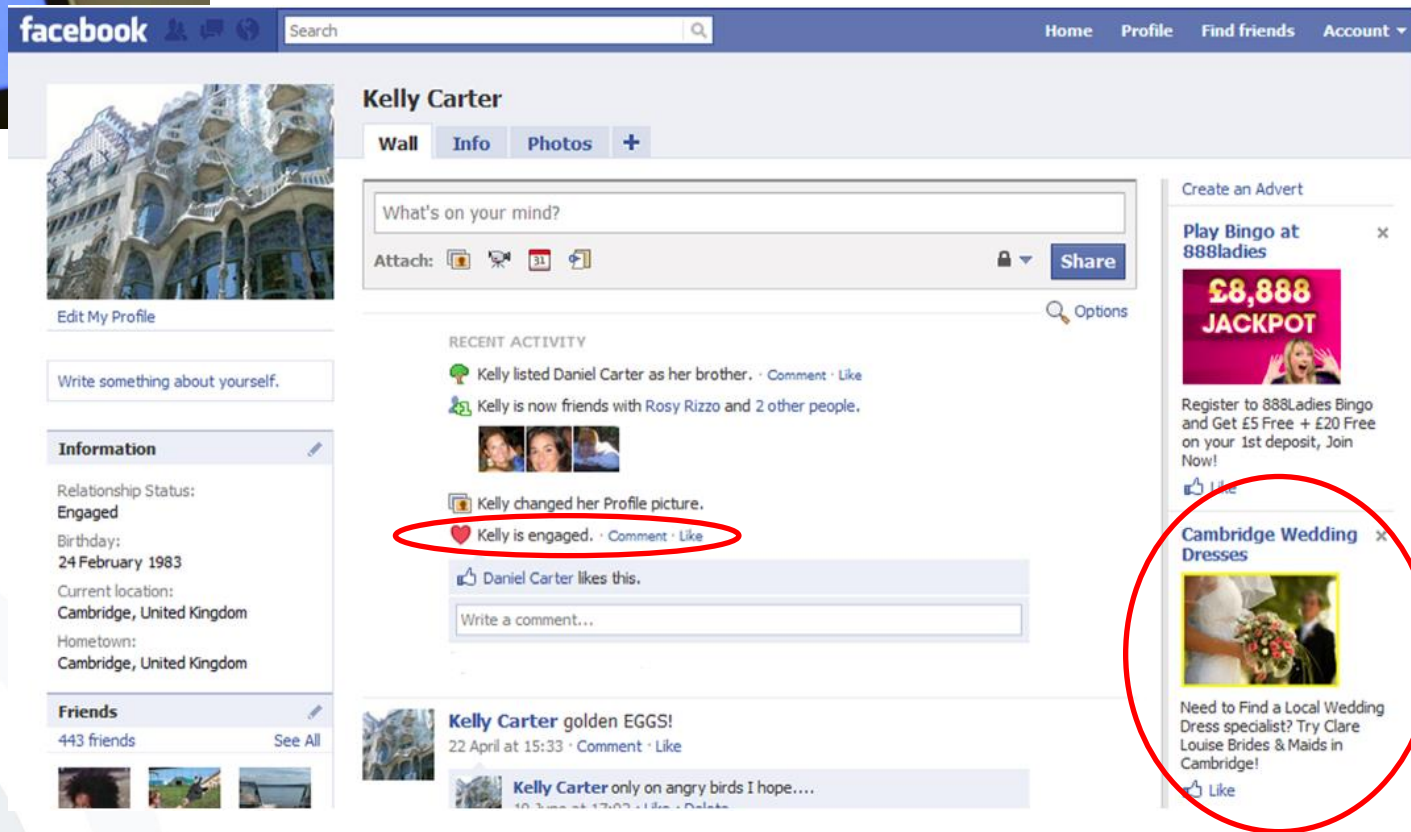
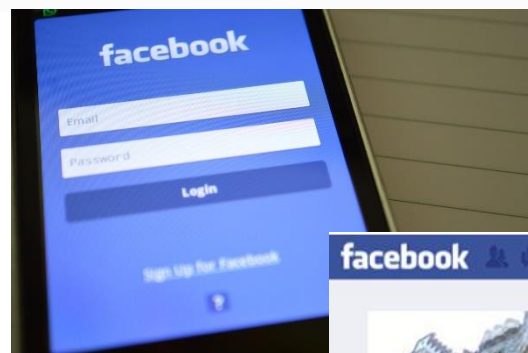
Marketplace*

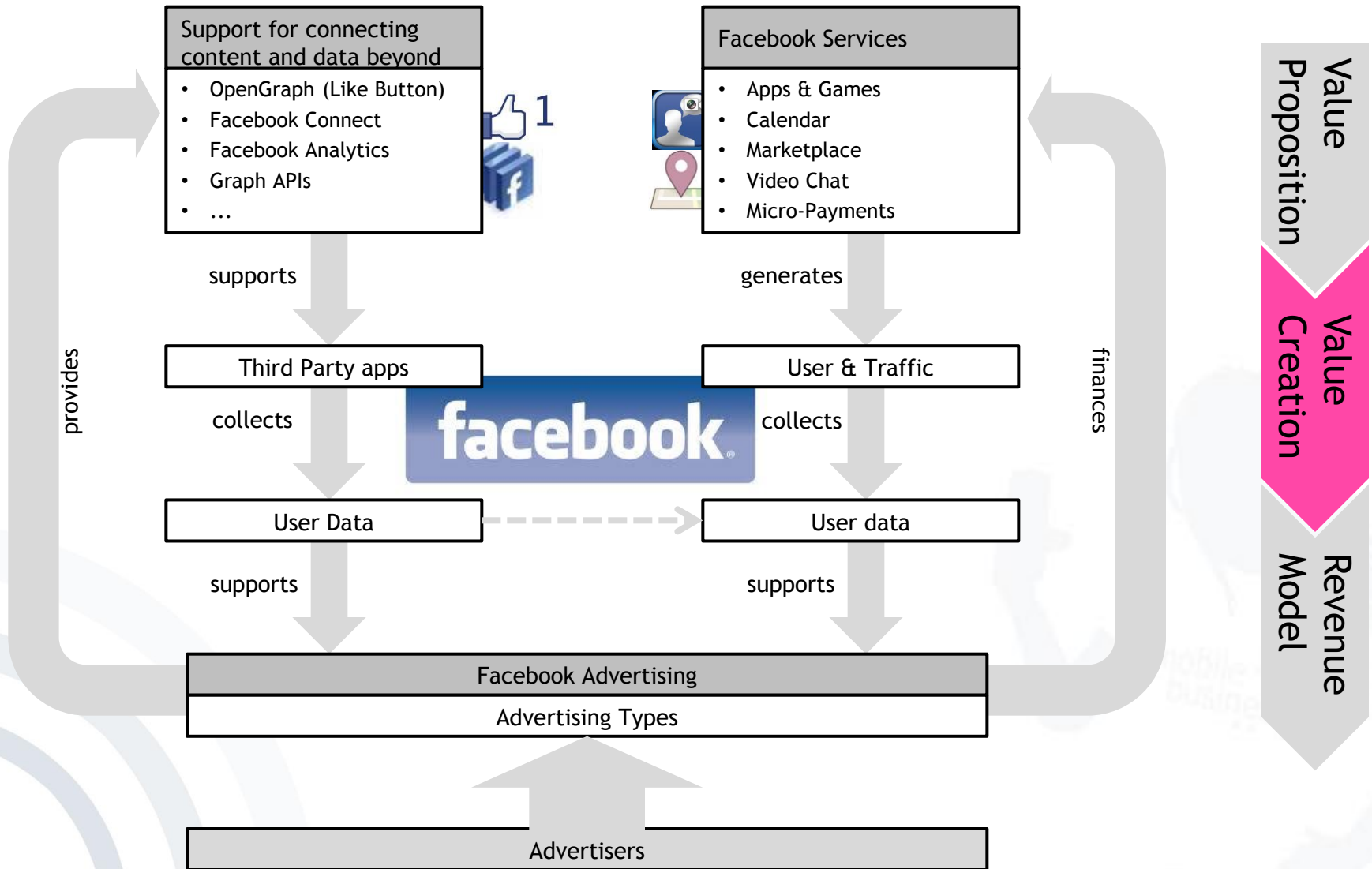
facebook



- Value for Advertisers
 - Advertising based on
 - User demographics, e.g.
 - Age, gender, location,
 - Connections, relationship status, birthday,
 - Education level, workplace, language, interests, ...
 - Searched Keywords
 - User behavior collected through “Like” buttons
- Micro-Targeting capabilities







TOPICS APPLE FACEBOOK GOOGLE ANDROID DISRUPT NYC HACKATHON

Facebook Buys Instagram For \$1 billion, Turns Budding Rival Into Its Standalone Photo App

by CONSTINE AND KIM-MAI CUTLER

day, April 9th, 2012

258 Comments



Facebook has just finished a deal to acquire mobile photo sharing app Instagram for approximately \$1 billion in cash and stock. Instagram will remain an independently branded standalone app that's separate from Facet but the services will increase their ties to each other. The transaction should go through this quarter pending some standard closing procedures.

Last year, documents for a standalone Facebook mobile photo sharing app were obtained by TechCrunch. Now it seems Facebook would rather buy Instagram which comes with a built-in community of photographers and photo lovers, while simultaneously squashing a threat to its dominance in photo sharing.

- 33% of Facebook's traffic originates from mobile devices (newsroom.fb.com)
- Mobile Advertising is a challenge for Social Networks
- Instagram can help to learn more about user's mood and context.
- TagTile builds a bridge to local advertising business.
- WhatsApp as the major messenger in the mobile world, whose acquisition removes competition and gains users as well as most valuable mobile data (e.g. phone numbers)



- Auctioning of Advertising Space
 - **Bid x Click-Through-Rate x Quality**
 - Quality = OpenGraph Results x Country x Ad Relevance to profile x Page Quality
- Pay-Per-Click (PPC) Model
 - Facebook gets the bid amount of the auction winner (advertiser) - if an ad is clicked by a user



- Auction
 - $\text{Bid} \times \text{actual impressions} \times \text{Quality score}$
 - $\text{Quality} = \text{OpenGraph Results} \times \text{Country} \times \text{Ad Relevance to profile} \times \text{Page Quality}$
- Pay-Per-Impression (PPI)
 - Facebook gets a predefined amount per thousand impressions





- Facebook account
 - Name, user name, eMail, IDs, etc.
- User pictures
 - Face recognition
- Cookies
 - For own services
 - for Third Party websites connected by OpenGraph
- Browser Fingerprinting?



- Social-Interaction Data
 - Social connections (e.g. friends list, family relations, etc.)
 - Interests (e.g. user profile, fan page likes, clicked ads, gaming, posts, etc.)
 - Education and job related data (taken from user profile)
 - Hobbies (taken from user profile)
 - Communication behaviour (e.g. video chat, comments, etc.)
- Location-based data
 - Facebook places, Facebook location tracking, Instagram etc.
- User Transactions via Facebook
 - Market-place, user micro-payments to app providers
- Other Online behavioural data (FB site tracking, Open Graph (Like Buttons), etc.)

- From the collected data, Facebook extracts and categorises user attributes relevant for advertising
- Facebook Category Targeting Manager (by Facebook Studio)



Categories: Search categories

PARTNER CATEGORIES
▼ Cereal Buyers
Children's Cereals <i>i</i>
Fiber Cereals
Hot Cereals
▶ Children's Food & Product Buyers
▶ Condiments & Dressings Buyers
▶ Dairy & Egg Buyers
▶ Frozen Food Buyers
FACEBOOK BROAD CATEGORIES

14,802,500 people

Description: People who are heavy buyers of children's cereal.

Details: People who spend 3 times or more than the national average based on volume unit spend in the children's cereals category and have actively purchased over the last 12 months.

Source: Loyalty card and transaction-level household purchase data with multi-channel coverage across all product categories.

Partner Categories > Datalogix > DLX CPG > Cereal Buyers > Children's Cereals

Categories: Search categories

PARTNER CATEGORIES
▼ DLX Auto powered by Polk
▶ Aftermarket
▼ In Market
▼ Body Style
Crossover Vehicle
Entry/Economy/Compact <i>i</i>
Full-Size Sedan
Full-Size SUV
FACEBOOK BROAD CATEGORIES

5,851,400 people

Description: People who are likely to buy a entry, economy or compact vehicle in the next 180 days.

Details: Derived from over 350 data points on historical vehicle purchase patterns of likely entry, economy, or compact vehicle buyers. Data collected from all 50 states? DMVs, OEMs and dealers.

Source: Multi-sourced, U.S. consumer household information that draws from geographic, demographic and area-level vehicle characteristics. Validated using actual vehicle registration data.



- *„We use the information we receive about you in connection with the services and features we provide to you and other users like your friends, the advertisers that purchase ads on the site, and the developers that build the games, applications, and websites you use. For example, we may use the information we receive about you:*
 - *as part of our efforts to keep Facebook safe and secure;*
 - *to provide you with location features and services, like telling you and your friends when something is going on nearby;*
 - *to measure or understand the effectiveness of ads you and others see;*
 - *to make suggestions to you and other users on Facebook, such as: suggesting that your friend use our contact importer because you found friends using it, suggesting that another user add you as a friend because the user imported the same email address as you did, or suggesting that your friend tag you in a picture they have uploaded with you in it.”*

(Facebook, 2011)

- Collected personal data could be
 - transferred to Third Parties
 - unwillingly disclosed to other users (e.g. photos on Facebook)
 - used for surveillance
 - Location Profiling,
 - Internet tracing (e.g. IP address) or
 - GPS tracking
 - used for any other kind activities (e.g. manipulation/influencing of individuals)





■ Types of Privacy Protection

- Privacy Protection towards other individuals in Facebook (e.g. Facebook friends)
- Privacy Protection towards Third Parties (e.g. Facebook apps)
- Privacy Protection towards Facebook itself
 - Is this possible if an individual ...
 - is a Facebook member?
 - is a non-Facebook member?



- General
- Security
- Privacy**
- Timeline and Tagging
- Blocking

- Notifications
- Mobile
- Followers

- Apps
- Ads
- Payments
- Support Dashboard
- Videos

Privacy Settings and Tools

Who can see my stuff?	Who can see your future posts?	Friends	Edit
	Review all your posts and things you're tagged in		Use Activity Log
	Limit the audience for posts you've shared with friends of friends or Public?		Limit Past Posts
Who can contact me?	Who can send you friend requests?	Everyone	Edit
	Whose messages do I want filtered into my Inbox?	Basic Filtering	Edit
Who can look me up?	Who can look you up using the email address you provided?	Friends of Friends	Edit
	Who can look you up using the phone number you provided?	Friends	Edit
	Do you want other search engines to link to your timeline?	No	Edit

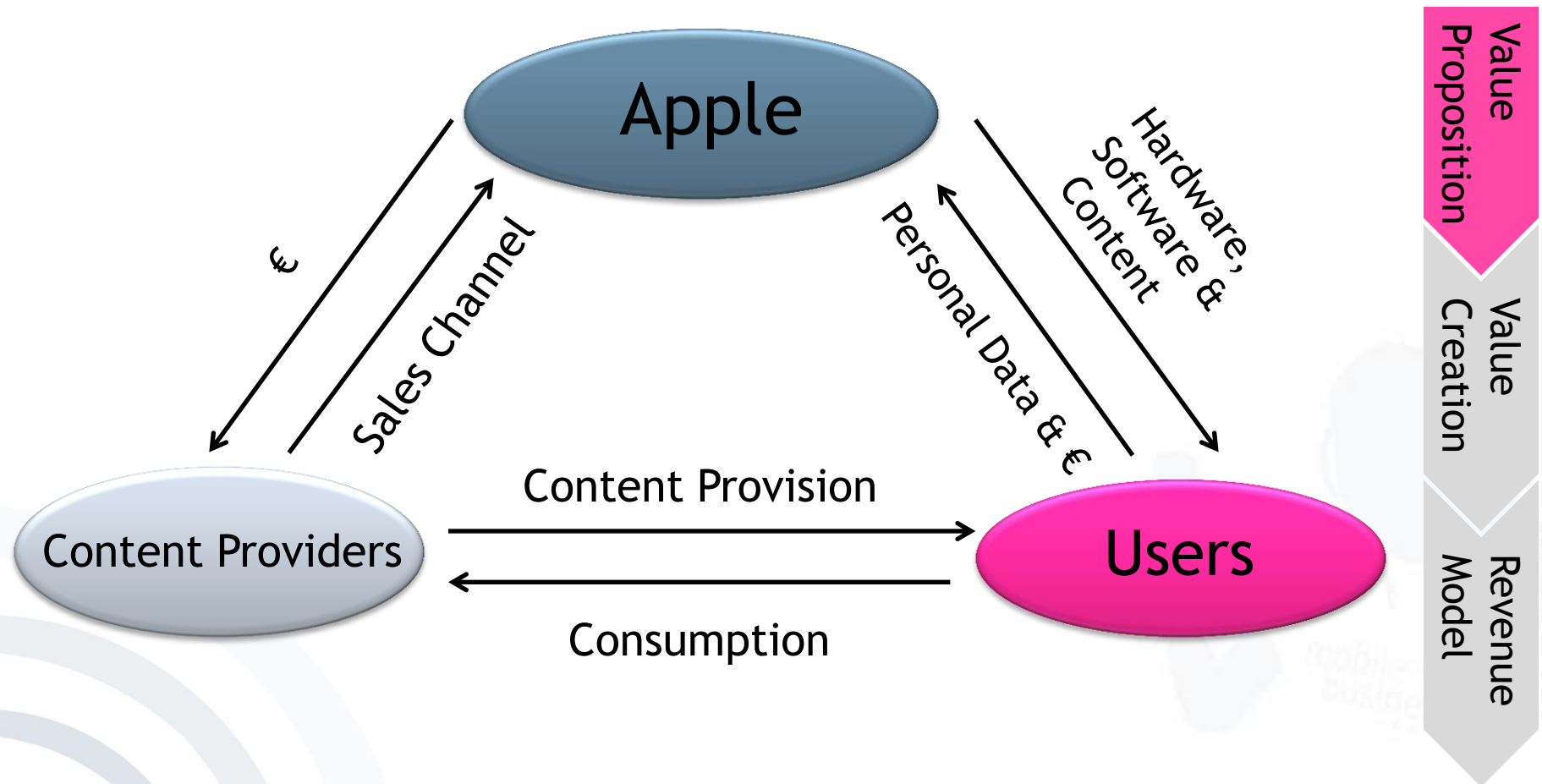
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- Founded on 1st April 1976 by Steve Jobs, Steve Wozniak and Ronald Wayne as Apple Computer in Los Altos, California
 - Until 1985, Apple I and Apple II dominated the personal computer market.
 - In 2003, Apple entered the music market, introducing the iPod and iTunes Store
 - In 2007, Apple has revolutionised the mobile phone market with the iPhone. Other mobile devices such as iPad or Apple Watch followed in the next years
- Today, Apple's core business is selling hardware, software and contents complemented by its iAds platform
- Some figures
 - Revenue (in 2013): \$170 billion
 - Profit (in 2013): \$37 billion

Source: Apple 2014



Value Proposition of Apple in a Two-sided Market



- Benefits for Users
 - Content
 - Movies, TV shows, music, etc.
 - Hardware Devices
 - iPhone, iPad, Apple TV, iPod, Watch
 - MacBook, iMac, displays
 - Software
 - OS, Office, Mobile Apps, etc.
 - Complementary OS integrated services
 - iCloud, Apps Store,
 - iMail, iCalendar
 - iTunes Music Match

Value
Proposition

Value
Creation

Revenue
Model



- Value for Content Provider/Advertisers
 - Sales Channel incl.
 - Promotion system
 - Payment system
 - Infrastructure (e.g. storage & distribution)
 - ...
 - Advertising Platform (for Advertisers)
 - iAds Infrastructure
 - User contacts
 - ...



mobile business

Value Proposition (3)- App Promotions

Business Model

The screenshot shows the iPhone App Store homepage. A large banner at the top features the text "Cutting-Edge Games" and "Eye-Popping 3D Graphics". To the right of the banner, a red circle highlights a section titled "HOLIDAY COOKING APPS" which includes "EPOCH" as the "iPhone GAME OF THE WEEK" and "Photogene²" as the "iPhone APP OF THE WEEK". Below the banner, a red circle highlights the "New and Noteworthy" section, which lists various apps including "MapQuest Vibe", "Rocket Riot Games", "P90X Health & Fitness", "Blueprint 3D Games", "SUPER WHY Alpha Boost! Games", "Mafia Wars Shakedown by...", "Happy Feet Two: The Penguin App Entertainment", "Air Penguin Games", "Major Mayhem Games", "iCookbook - thousands of... Lifestyle", "Junk Jack Games", "AirCassette Music", "Ninja Throw Games", "Foodily Lifestyle", "Monkey Island Tales 1 Games", and "Chumkee Social Networking". On the right side, another red circle highlights the "TOP CHARTS" section, specifically the "Paid Apps" list, which includes "Scribblenauts Remix Games", "Angry Birds Games", "Camera+ Photo & Video", "Fruit Ninja Games", and "Flick Home Run ! Games".

Cutting-Edge Games
Eye-Popping 3D Graphics

HOLIDAY COOKING APPS
EPOCH
iPhone GAME OF THE WEEK
Photogene²
iPhone APP OF THE WEEK

New and Noteworthy See All >

- MapQuest Vibe Travel
- Rocket Riot Games
- P90X Health & Fitness
- Blueprint 3D Games
- SUPER WHY Alpha Boost! Games
- Mafia Wars Shakedown by... Games
- Happy Feet Two: The Penguin App Entertainment
- Air Penguin Games
- Major Mayhem Games
- iCookbook - thousands of... Lifestyle
- Junk Jack Games
- AirCassette Music
- Ninja Throw Games
- Foodily Lifestyle
- Monkey Island Tales 1 Games
- Chumkee Social Networking

iPhone

APP STORE QUICK LINKS

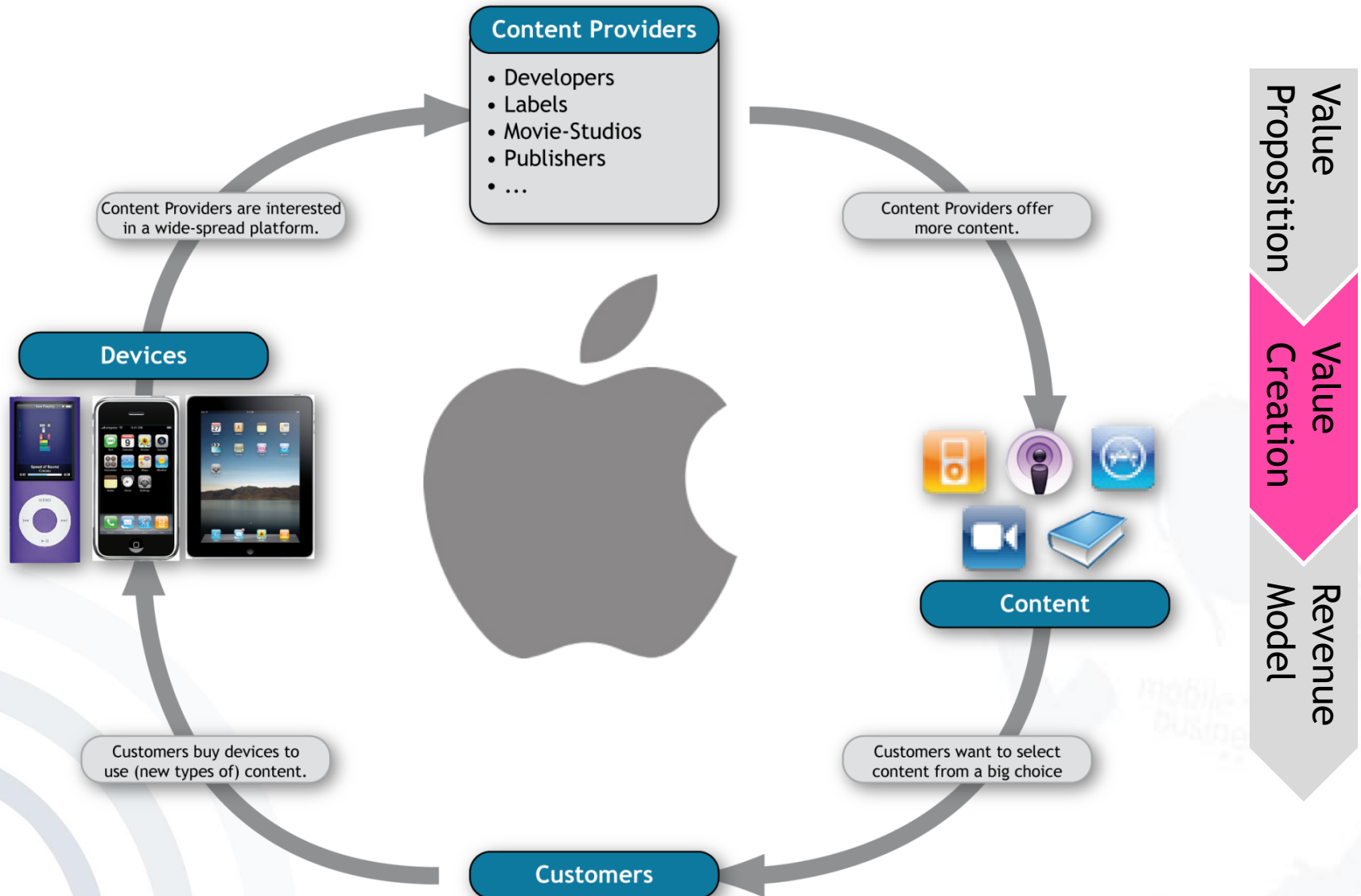
- All Categories
- Previous Apps of the Week
- Previous Games of the Week
- iPhone Hall of Fame
- Great Free Apps
- iPhone Apps Starter Kit
- iPhone Games Starter Kit
- App Store On Facebook
- App Store On Twitter
- Purchased **NEW**
- Redeem

TOP CHARTS

Paid Apps See All >

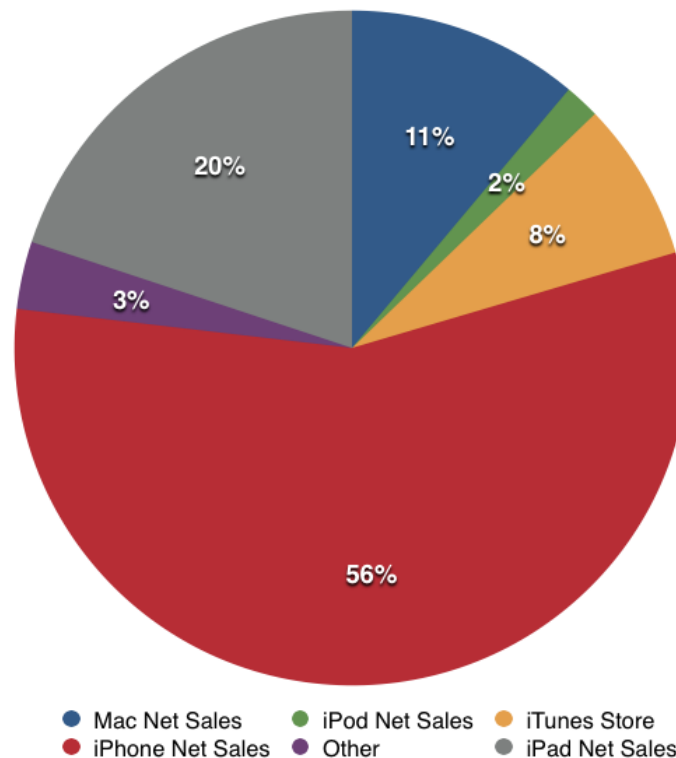
- Scribblenauts Remix Games
- Angry Birds Games
- Camera+ Photo & Video
- Fruit Ninja Games
- Flick Home Run ! Games

Business Model Architecture of Value Creation



- Main Source: iPhone Sales (Q1/2014)

Apple Inc. Revenue by Category - Fiscal Q1 2014
by MacRumors.com



Source: 9to5mac.com

High margin phone business ...

Preliminary Bill of Materials (BOM) Estimate for the Major Subsystems in the iPhone 4S
(in U.S. Dollars)

	4S		
	16GB	32GB	64GB
Retail Price w/Contract	\$199	\$299	\$399
Total BOM Cost	\$188	\$207	\$245
Manufacturing Cost	\$8	\$8	\$8
BOM + Manufacturing	\$196	\$215	\$254
Major Cost Drivers			
Memory			
NAND Flash	\$19.20	\$38.40	\$76.80
DRAM (DDR / DDR2)	\$9.10	\$9.10	\$9.10
Display & Touch Screen			
Display	\$23.00	\$23.00	\$23.00
Touch screen	\$14.00	\$14.00	\$14.00
Processor	\$15.00	\$15.00	\$15.00
Camera(s)	\$17.60	\$17.60	\$17.60
Wireless Section - BB/RF/PA	\$23.54	\$23.54	\$23.54
User Interface & Sensors	\$6.85	\$6.85	\$6.85
WLAN / BT / FM / GPS	\$6.50	\$6.50	\$6.50
Power Management	\$7.20	\$7.20	\$7.20
Battery	\$5.90	\$5.90	\$5.90
Mechanical / Electro-Mechanical	\$33.00	\$33.00	\$33.00
Box Contents	\$7.00	\$7.00	\$7.00

Source: IHS iSuppli October 2011

Value
Proposition

Value
Creation

Revenue
Model

iPhone 4S without contract (16GB, 32GB, 64GB): \$649, \$749, \$849.



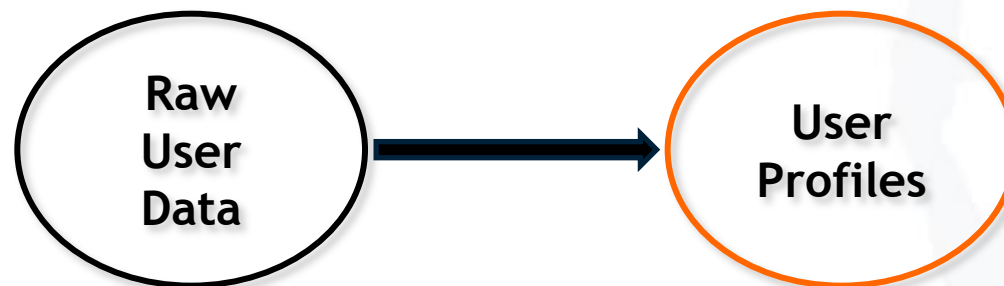
- Apple ID
- Product serial number
- Cookies
- IP-address
- Unique identifier in
 - Browser
 - OS, Mobile Device
- Required user information during device set up (e.g. phone number, address, bank account)



- Observed Behavioural User Data
 - Entertainment consumption (e.g. iTunes Store)
 - News (e.g. Newstand)
 - Notebook usage (MacBooks)
 - Mobile device usage (iPhone, iPad)
 - Communication (e.g. iMessage)
 - Browsing (e.g. Mobile Safari)
 - (Real-time) Location-based data (e.g. GPS, Maps)
 - Voice data (Siri)
 - Communication data (e.g. iCloud Mail)
 - Calendar data (e.g. iCloud Calendar)



- From the collected data, Apple generates users profiles which serve to foster its business
 - Content consumption preferences
 - Favourite mobile apps
 - Devices owned by a user
 - General communication habits
 - Profiles for targeted ads



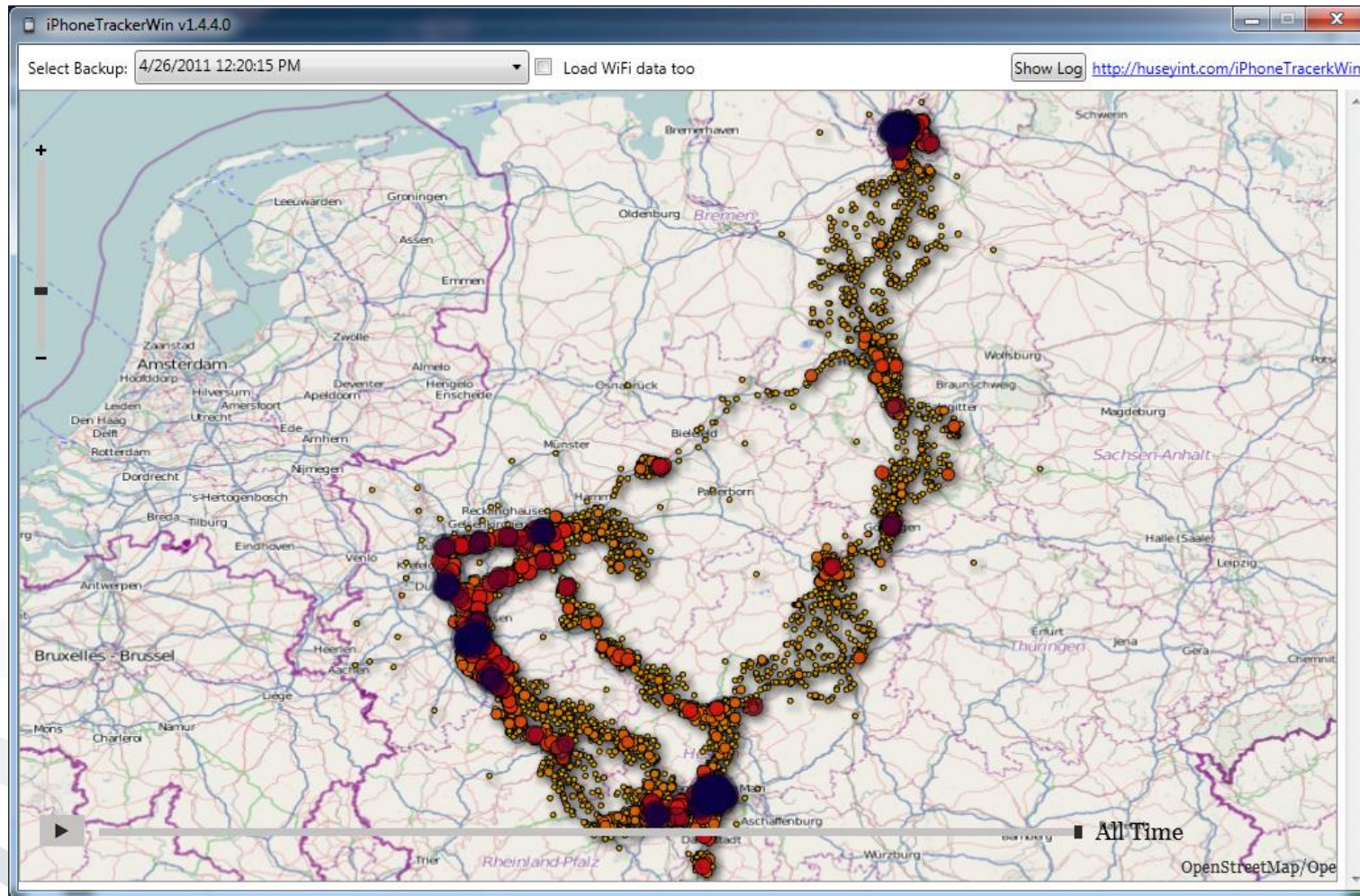


- Improve existing products and services, e.g.
 - by allowing iOS to run certain background services
 - These services were selected for the analysis of mobile app usage
- Content promotions and recommendations
 - (e.g. iTunes Store, MacOS Apps Store)
- Targeting of Advertisement in the iAd System
 - Based on installed mobile apps on an iOS device

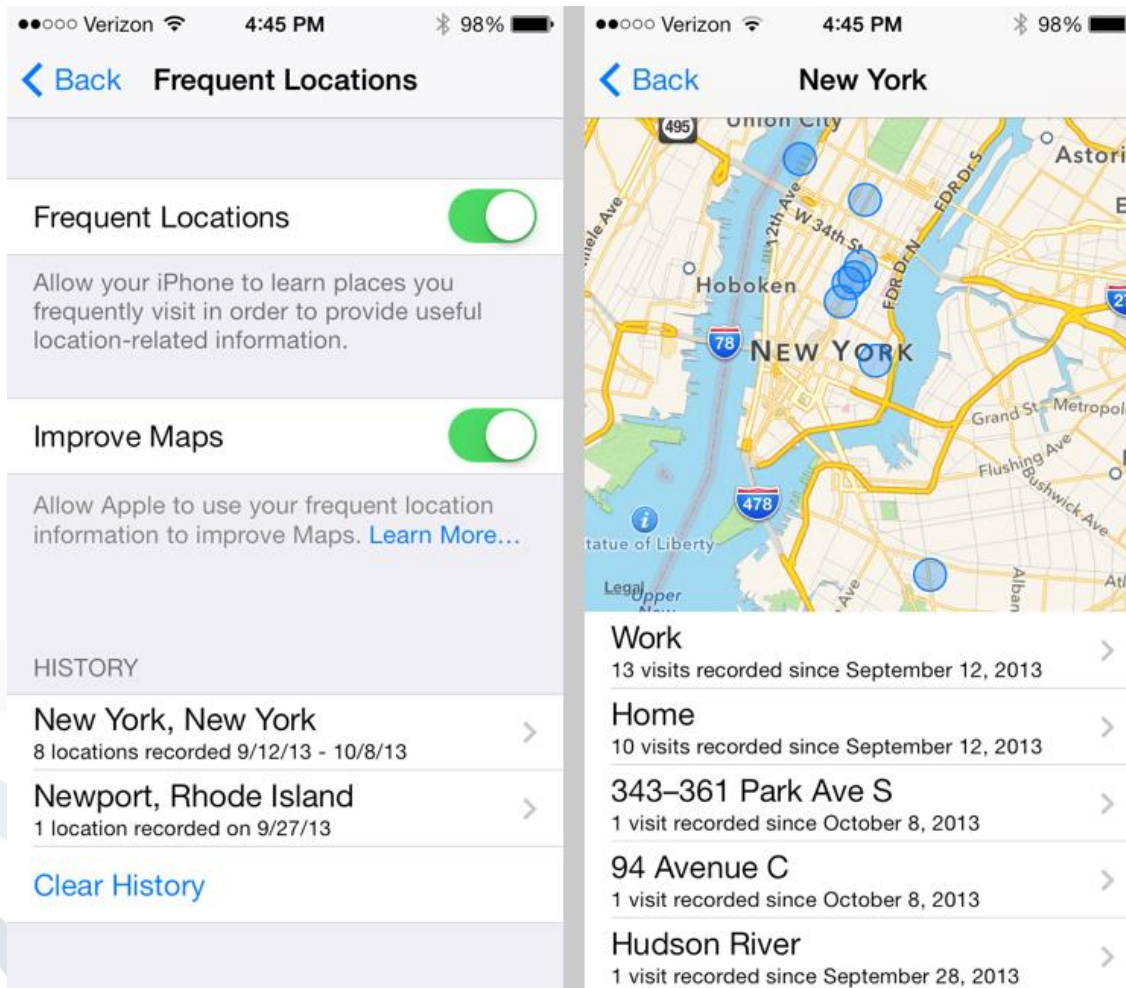


- Collected personal data could be
 - transferred to Third Parties
 - hacked and misused (e.g. credit card details of customers)
 - used for surveillance
 - Location Profiling,
 - Internet tracing (e.g. IP address)
 - communication tracking
 - used for any other kind activities (e.g. manipulation/influencing of individuals)
- Apple is (theoretically) able to collect data about virtually almost any aspect of the online behaviour of individuals

Location Profile for individual iPhone User (due to temporarily iOS bug)



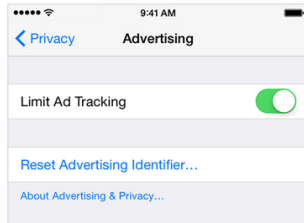
iPhones storing recently visited locations (iPhone Feature)





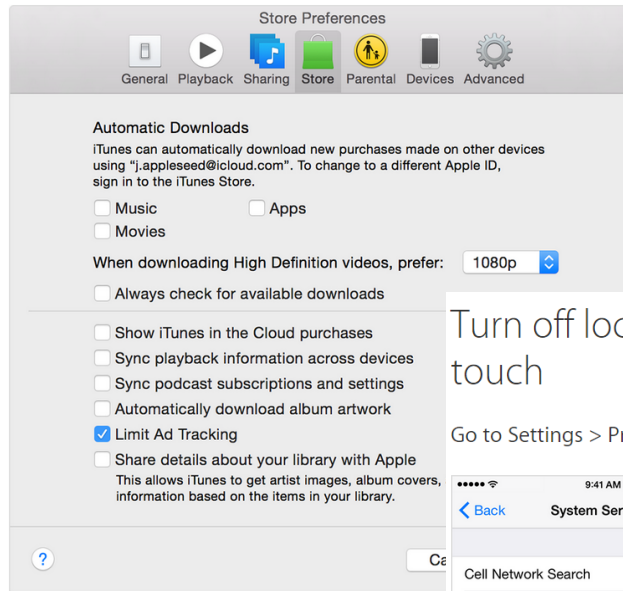
Limit ad tracking on your iPhone, iPad, or iPod touch

Go to Settings > Privacy > Advertising.



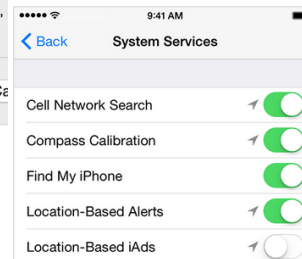
Limit ad tracking in iTunes on your computer

If you're not already signed in to iTunes, go to Store > Sign In and enter your Apple ID and password. Then go to iTunes > Preferences > Store.



Turn off location-based ads on your iPhone, iPad, or iPod touch

Go to Settings > Privacy > Location Services > System Services.



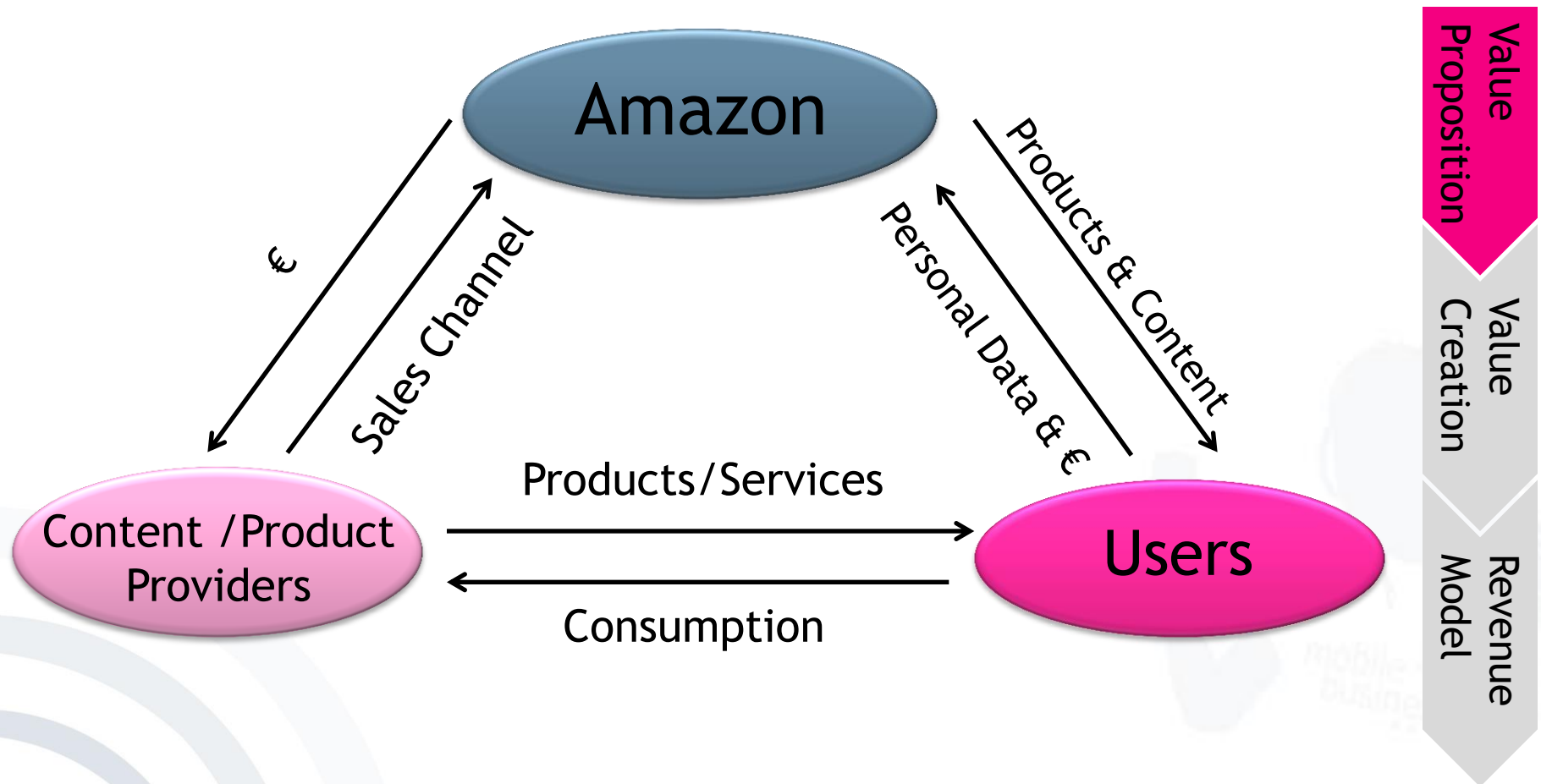
- Structure of Case Studies
- Case Study “Google”
- Case Study “Facebook”
- Case Study “Apple”
- Case Study “Amazon”
- Excursion: Disruptive Business Models
- Conclusion

- Founded in 1994 by Jeff Bezos in the state of Washington, USA.
 - At first only an online bookstore
 - In that time the core competence was selling books and offer far more titles than offline bookstores
 - During the last years Amazon has merged and acquired a lot of companies to expand their business to other categories (e.g. electronic staff, music, etc.)
- Today, Amazon is the world's largest online retailer, Cloud service provider and Marketplace provider
- Some figures
 - Revenue (in 2013): \$ 74.5 billion
 - Profit (in 2013): \$ 239 million



Source: Amazon 2014

Value Proposition of Amazon in a Two-sided Market



- Value for customers
 - Services
 - Shopping Platform with many categories
 - Amazon Publishing
 - eContent (music, e-books, video streaming, etc.)
 - ...
 - Products
 - Amazon Kindle
 - Amazon Fire Phone, TV, Tables, ...



- Value for Product & Content Providers
 - Sales Platform
 - Payment
 - Infrastructure Services
 - Marketplace for Third Party Vendors
 - Amazon Web Services
 - Computing Services
 - Database Services
 - Storage Services
 - Analytic Services
 - ...





[See larger image](#)

[Share your own customer images](#)

Without You (Feat. Usher)

[David Guetta - Usher](#) | Format: MP3 Download

From the Album [Nothing But The Beat](#)

[Be the first to review this item](#) |

Price: **\$0.99**

Original Release Date: August 29, 2011

Format - Music: [MP3](#)

Compatible with MP3 Players (including with iPod®), iTunes, Windows Media Player



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MP3 Song

Song Title

Artist



Without You (Feat. Usher)

[David Guetta - Usher](#)

Sold by Amazon Digital Services, Inc.. Additional taxes may apply. By placing your order, you agree to our

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Customers Who Bought This Song's Album Also Bought



We Found Love Rihanna |
Format: MP3 Download

★★★★☆ (5)

\$0.99



Good Feeling Flo Rida |
Format: MP3 Download

★★★★☆ (1)

\$0.99



You Make Me Feel...
(Feat. Sabi) Cobra
Starship | Format: MP3
Down...

★★★★★ (4)

\$0.99



Sorry For Party Rocking
(Amazon MP3 D... Lmfao
| Format: MP3 Down...

★★★★★ (3)

\$5.99



In The Dark Dev |
Format: MP3 Download

★★★★☆ (4)

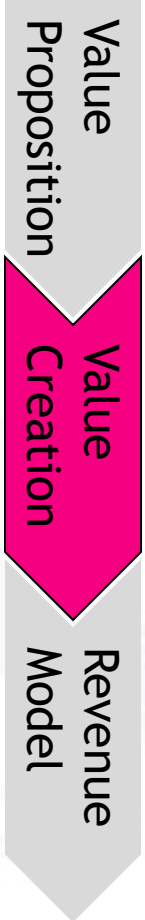
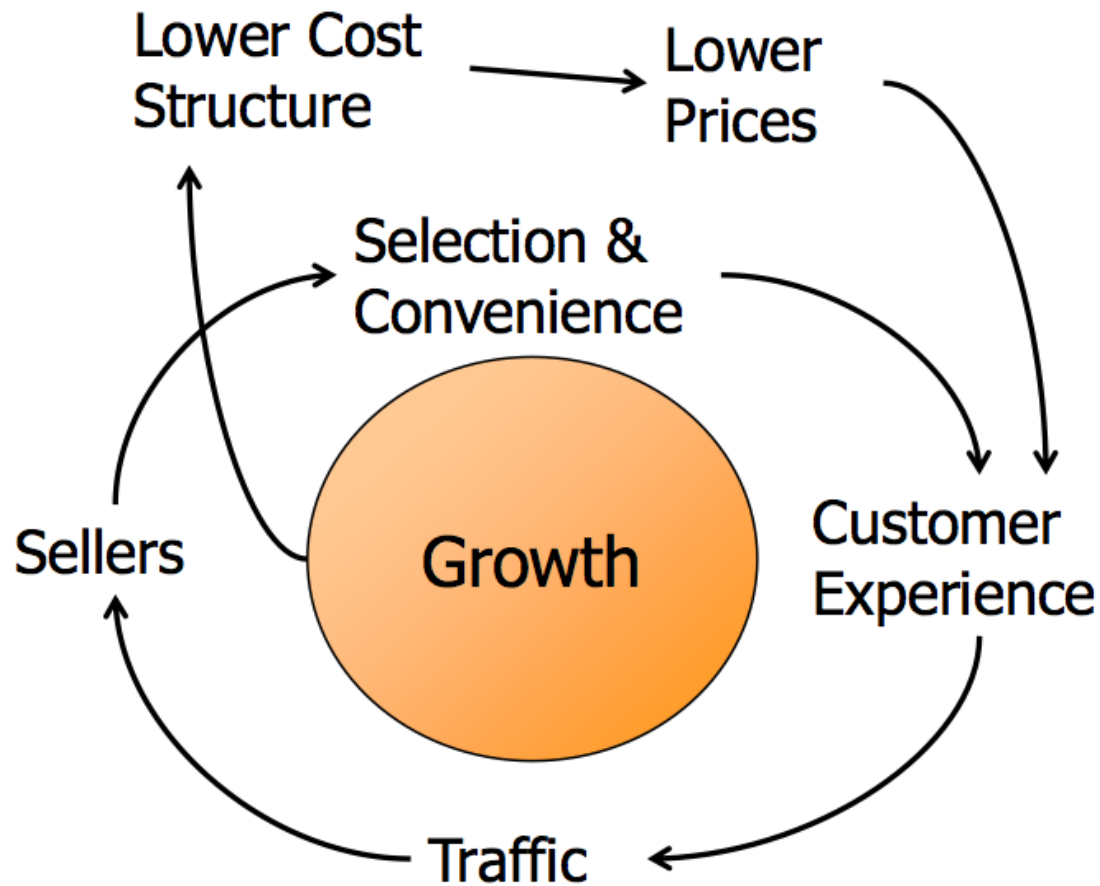
\$0.99



Hands All Over
[+Digital Booklet]
Maroon 5 | Format: MP3
Download

★★★★★ (126)

\$5.99



Source: seoromeo.com (2011)

- Amazon generates the most revenue from electronics, media & cloud services (direct revenues)
- Amazon offers a Marketplace platform for Third Party merchants and cloud services (direct revenues)
- Amazon complements product catalogues with Third Party advertisements (indirect revenues)
- ...



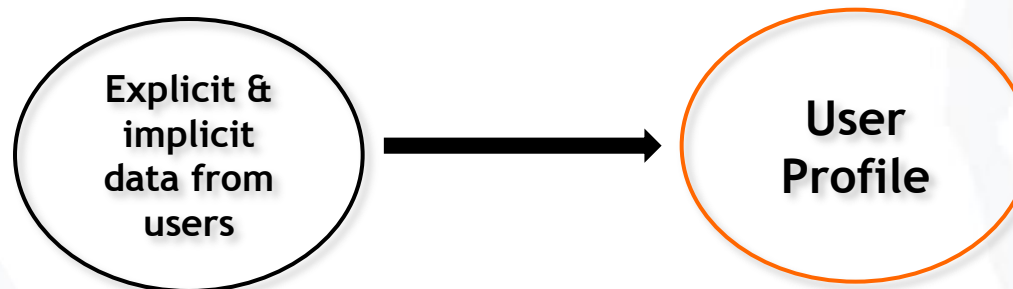


- Customer account (e.g. phone number, address, bank account)
- Cookies
- IP-address
- Unique identifier in Kindle
- ...

- Consumer Behavioural Data (Own/Third Party websites)
 - Search data
 - Transaction data
 - Rating system
 - Review data
 - Wish list
 - “Liked” products
 - “Disliked” products
 - Browsed products



- From the collected data, Amazon extracts user profiles, which help fostering their business (i.e. sales of products)
 - Content consumption preferences
 - Product purchase preferences
 - General customer interests





- Generated user profiles are used in the recommender system to
 - Promote products relevant to a user
 - Promote complementary or related products
 - Align product and service offerings to current/future demand
 - ...

Frequently Bought Together



Price For All Three: **\$103.41**

[Add all three to Cart](#)

[Add all three to Wish List](#)

[Show availability and shipping details](#)

- ✓ **This item:** TomTom XXL 540S 5-Inch Widescreen Portable GPS Navigator by TomTom **\$79.99**
- ✓ TomTom GPS Dashboard Mount for TomTom GPS Navigators by TomTom **\$11.60**
- ✓ Case Logic MGPS-2 Professional GPS Case for up to 5-Inch Screens (Black) by Case Logic **\$11.82**

Customers Who Bought This Item Also Bought



TomTom GPS Dashboard Mount for TomTom GPS Navigators by TomTom
★★★★☆ (299)
\$11.60



Case Logic MGPS-2 Professional GPS Case for up to 5... by Case Logic
★★★★☆ (50)
\$11.82



For TomTom XXL 540S Premium Car Charger + Home Charger by Generic
★★★★☆ (12)
\$3.86



ARKON TTEP115 TomTom EasyPort Windshield / Dash Mount by Arkon
★★★★☆ (147)
\$15.08

- Collected personal data could be
 - transferred to Third Parties
 - hacked and misused (e.g. credit card details of customers)
 - used for surveillance
 - Location Profiling,
 - Internet tracing (e.g. IP address)
 - used for any other kind activities (e.g. manipulation / influencing of individuals)
 - used for unfair price differentiation for products



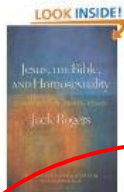
Example of Privacy Risk (... or failed recommendation)

[View or edit your browsing history](#)

Related to Items You've Viewed

You viewed

Customers who viewed this also viewed



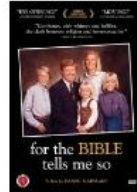
Jesus, the Bible, and Homosexuality...

► Jack Bartlett Rogers

Paperback

~~\$17.00~~ **\$11.56**

[View or edit your browsing history](#)

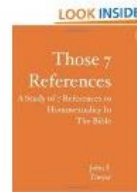


For The Bible Tells Me So

Gene Robinson, Archbishop Desmond...

DVD

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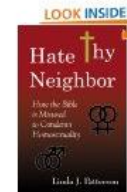


Those 7 References: A Study of 7...

John F. Dwyer

Paperback

\$15.99



Hate Thy Neighbor: How the Bible is...

► Linda J. Patterson

Paperback

~~\$14.95~~ **\$10.21**

- Delete cookies after each session (when not logged-in)
- Manage recommendation preferences
 - Deactivate (partially)
 - Manage actively
- Manage your Amazon Browsing History
- Deactivate personalised advertisements

Your recently viewed items



[Language Change \(Language Workbooks\)](#)

by Larry Trask (July 13, 1994)

List Price: \$24.95

Price: \$23.84

[15 used & new](#) from \$1.64

[\[Delete this item\]](#)



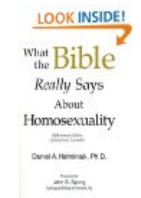
[The Bible, Christianity, & Homosexuality](#)

by Justin R. Cannon (July 14, 2008)

★★★★☆ ☒ (5)

[8 used](#) from \$61.74

[\[Delete this item\]](#)



[What the Bible Really Says about Homosexuality](#)

by Daniel A. Helminiak (May 1, 2000)

★★★★☆ ☒ (69)

Price: \$14.00

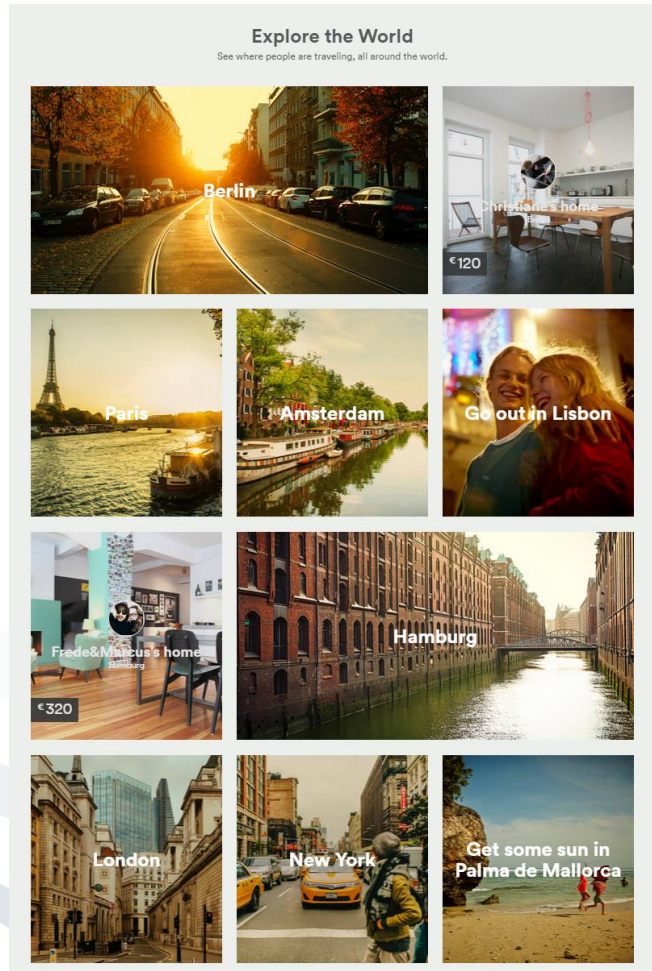
[35 used & new](#) from \$9.95

[\[Delete this item\]](#)

50 Gay and Lesbian Books Everybody Must Read

50 Gay and Lesbian Books Everybody Must Read

- Structure of Case Studies
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- Case Study “Apple”
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- Airbnb - Rent unique places to stay from local hosts in 190+ countries.

Amsterdam

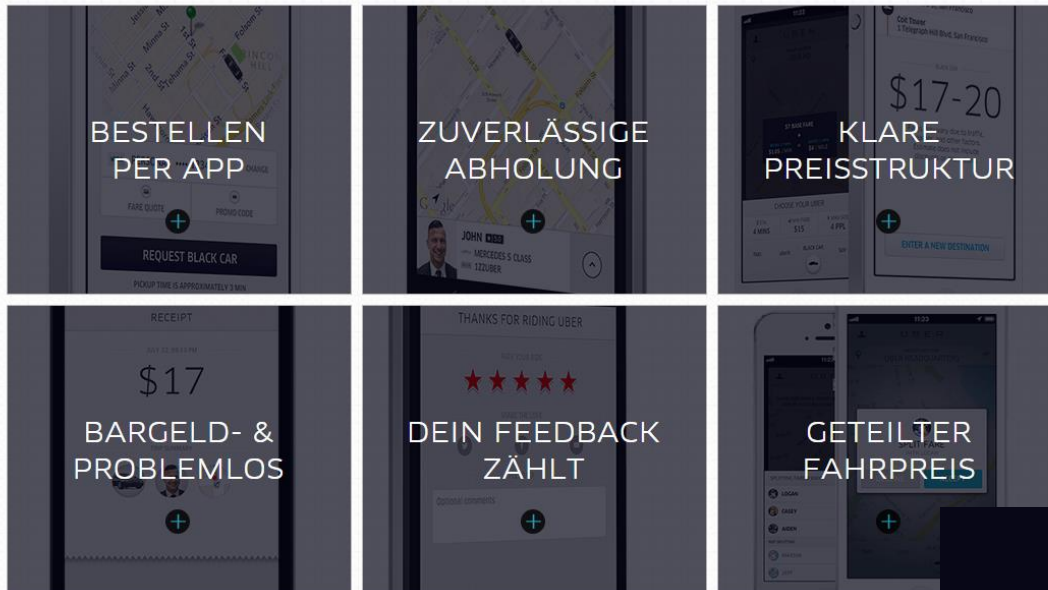




Uber

DIE UBER APP

Fahrt anfordern und per Handy bezahlen



- It develops, markets and operates the mobile-app-based transportation network also called Uber. The Uber app allows consumers to submit a trip request, which is routed to crowd-sourced taxi drivers.



Importance of understanding the foundation of (disruptive) business models

- What is the foundation of a business model?
- How do they make revenue?
- What makes them potentially disruptive?
- How do they compete with (traditional) businesses?
- What is the role of online/mobile/digital media as enabler for this business?
- What kind of data fuels the business?
- What is the privacy policy?
- Why should one trust their service offering?
- How do they ensure a certain level of service (quality)?

Amsterdam



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- Personal data is a fundamental component of all four business models in order to provide value to users
- Depending on the organisation, personal data about different aspects of individuals are collected
- General privacy risks and its consequences are roughly the same, but it has to be differentiated between these risks with regard to
 - observing user behaviour vs. users actively posting personal data
 - Online vs. mobile user vs. other behaviour
- Means to protect the privacy of individuals are very different for each of the four organisations

→ Personal data is required for value provision, privacy risks are similar, but protection means differ.