INFO1-CE9982
Introduction to iOS APP DEVELOPMENT
CLASS 1

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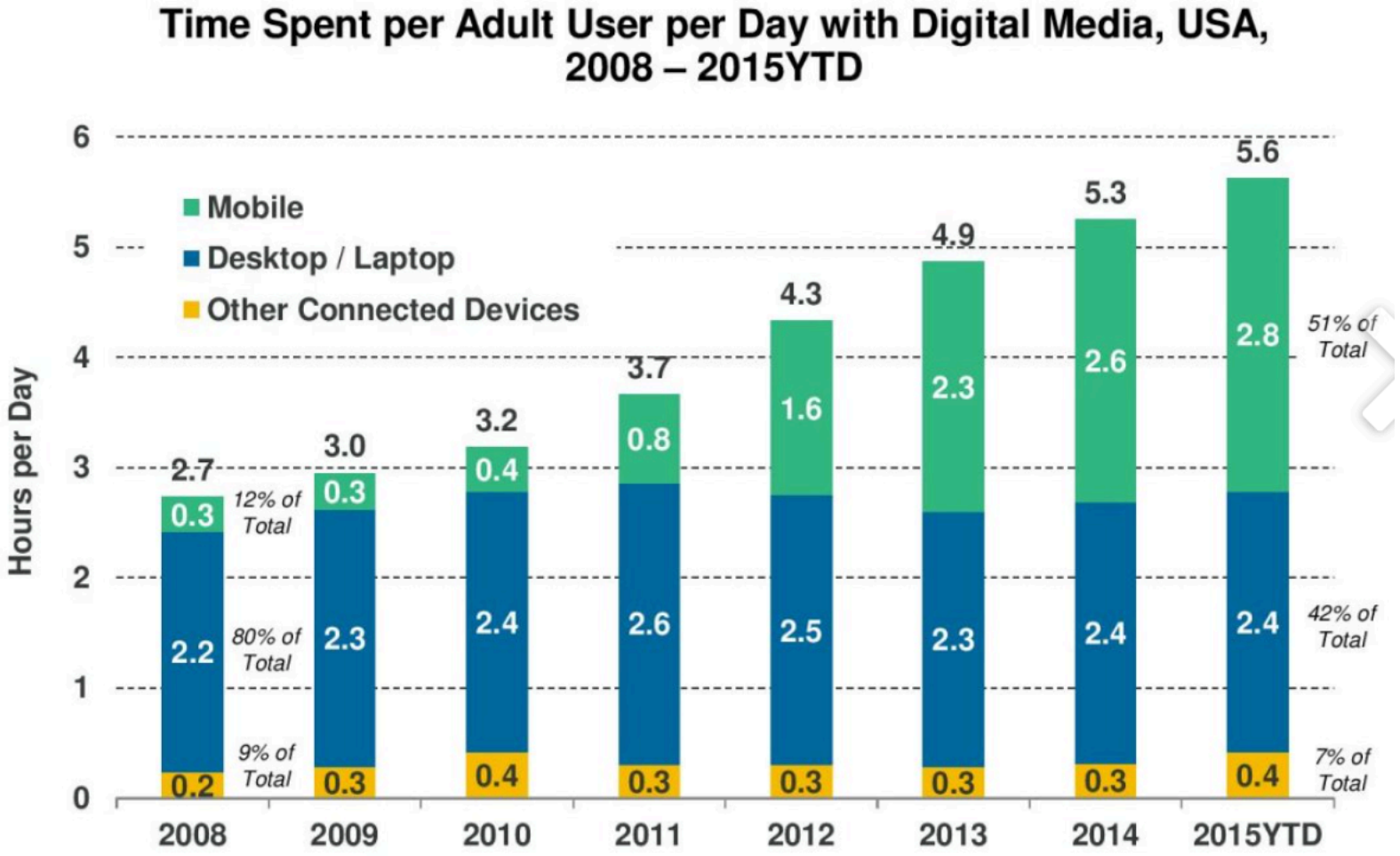
(MO)

APPLE:
A 360 DEGREE COMPANY

INSTRUCTOR BACKGROUND

Languages	Swift, Objective-C, C++, Java, C
Platforms	iOS, OSX, Unix, Windows
Years Exp	21
Current Position	• Senior Manager – Mobile, Capital One, NY • Adjunct Faculty, NYU, New York.
Previous Companies worked :	CANON, OMGPOP, ITG Inc, Credit Suisse, Centra Software, Fundtech, Lotus, Elcom Systems and Liant Software.
Universities worked:	University of Massachusetts.
Education	PhD (University of Massachusetts).

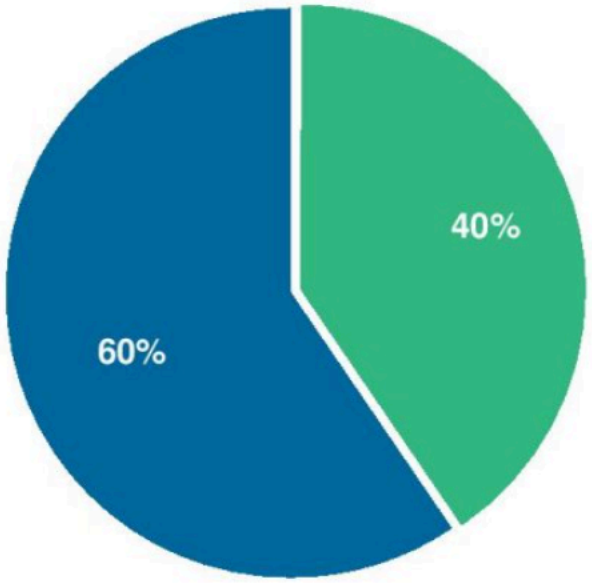
RECENT / FUTURE TRENDS

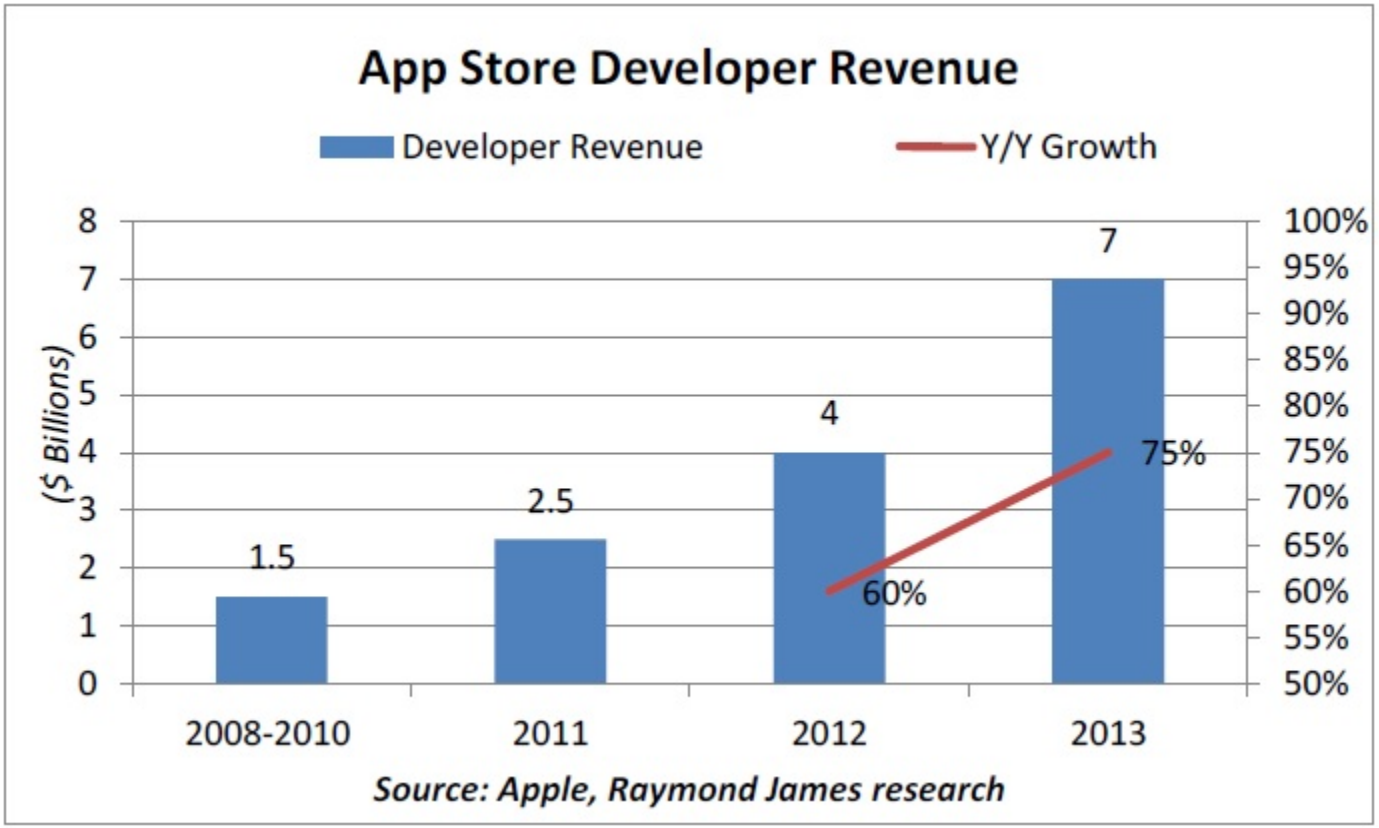

Time Spent per Adult User per Day with Digital Media, USA, 2008 – 2015YTD
Hours per Day
Mobile
Desktop / Laptop
Other Connected Devices
2008
2009
2010
2011
2012
2013
2014
2015YTD
2.7
3.0
3.2
3.7
4.3
4.9
5.3
5.6
0.3
0.3
0.4
0.8
1.6
2.3
2.6
2.8
2.2
2.3
2.4
2.6
2.5
2.3
2.4
2.4
0.2
0.3
0.4
0.3
0.3
0.3
0.3
0.4
12% of Total
80% of Total
9% of Total
51% of Total
42% of Total
7% of Total

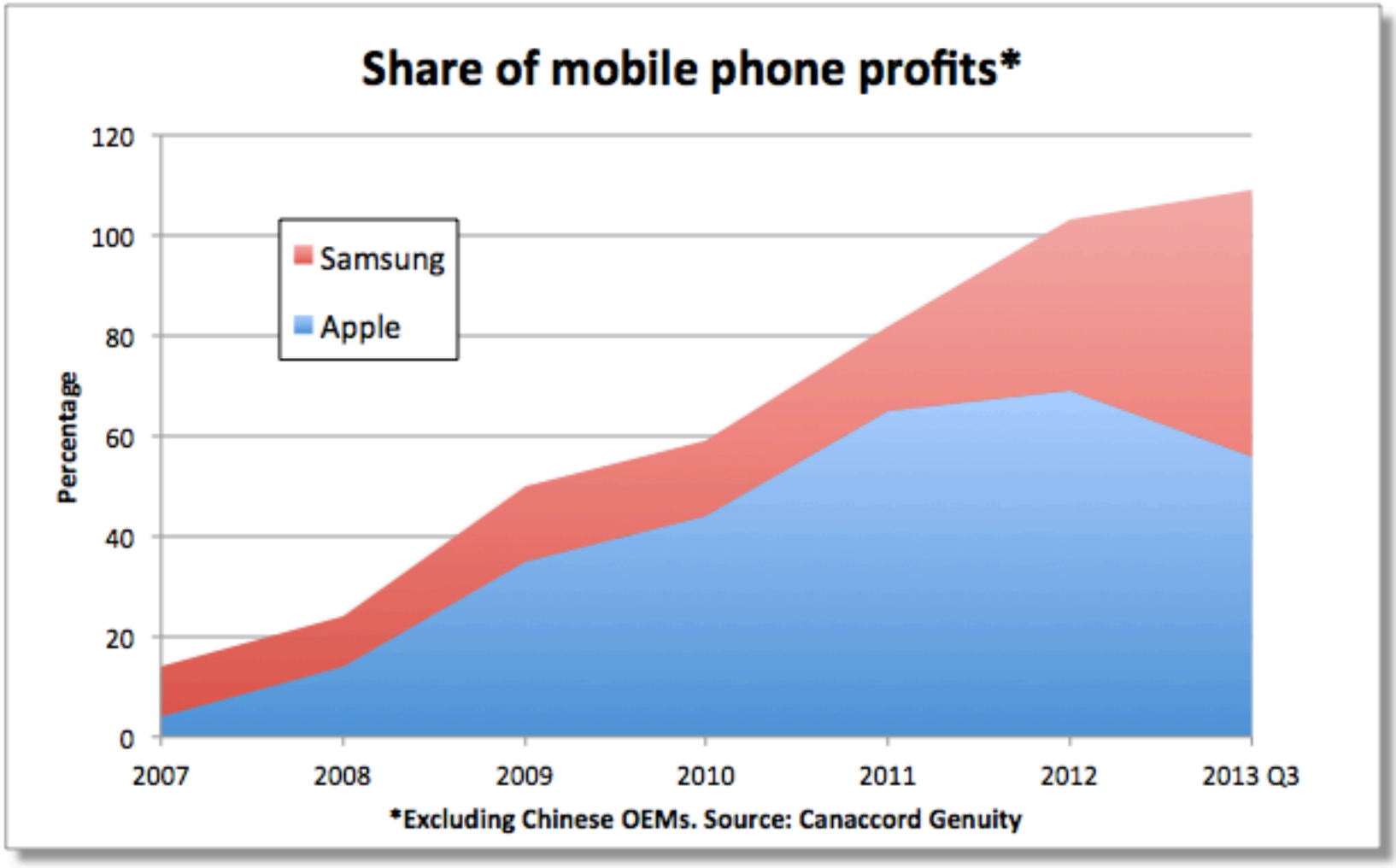
Mobile Phone Users – 1995 → 2014...
1% to 73% Population Penetration

1995
80MM+ Mobile Phone Users
1% Population Penetration

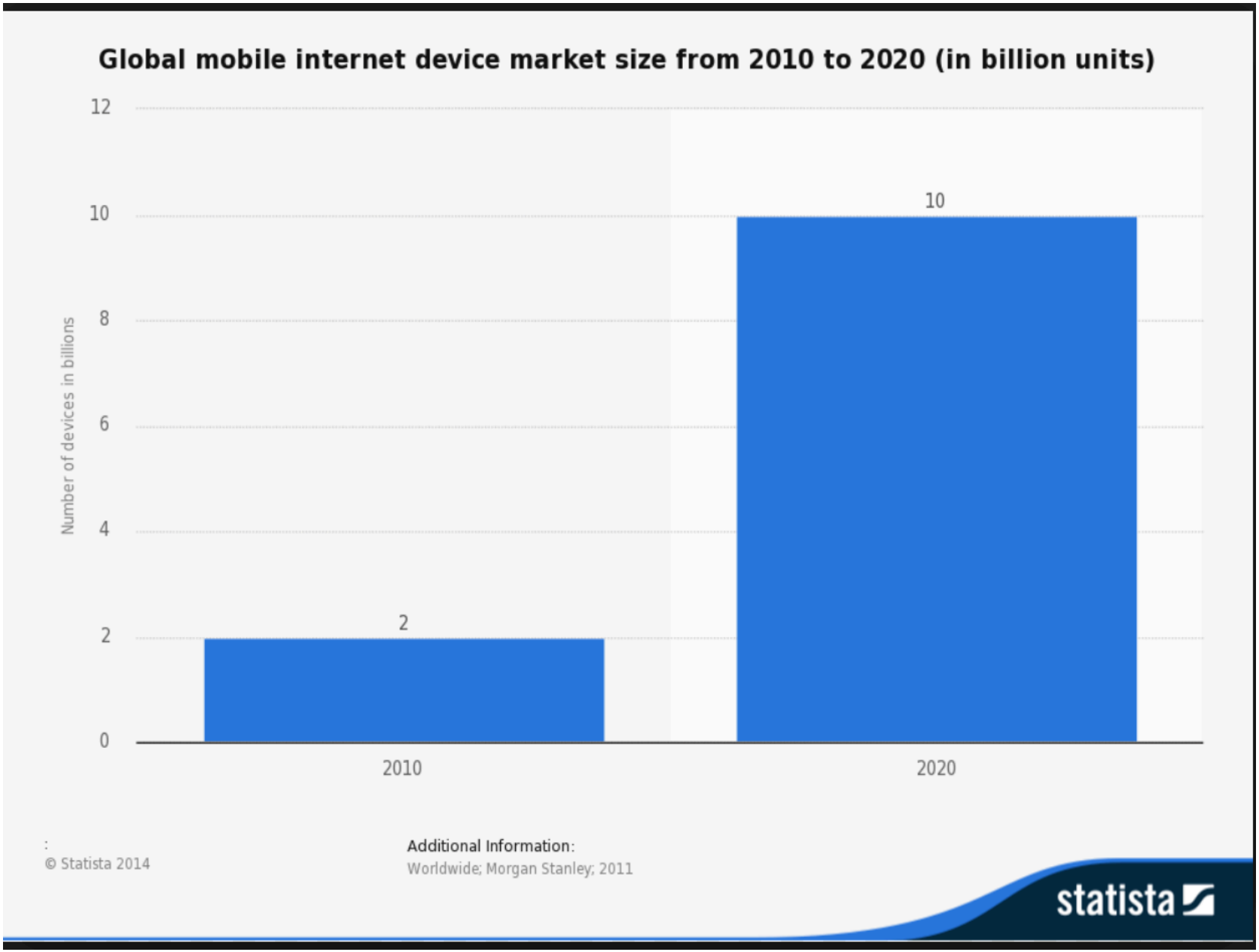
2014
5.2B Mobile Phone Users
73% Population Penetration




App Store Developer Revenue
Developer Revenue
Y/Y Growth
($ Billions)
8
7
6
5
4
3
2
1
0
100%
95%
90%
85%
80%
75%
70%
65%
60%
55%
50%
1.5
2.5
4
7
60%
75%
2008-2010
2011
2012
2013
Source: Apple, Raymond James research


Share of mobile phone profits*
120
100
80
60
40
20
0
Percentage
Samsung
Apple
2007
2008
2009
2010
2011
2012
2013 Q3
*Excluding Chinese OEMs. Source: Canaccord Genuity

APPLE STICKY ECOSYSTEM


Global mobile internet device market size from 2010 to 2020 (in billion units)
Number of devices in billions
12
10
8
6
4
2
0
2
10
2010
2020
:
© Statista 2014
Additional Information:
Worldwide; Morgan Stanley; 2011
statista

APPLE'S STRATEGY

- Provide the entire package: HW, SW, OS.
- Provide superior user experience.
- Rapid improvement on all fronts.
- Compel customers to upgrade.
- Lock customers in the ecosystem.
- Release finished products.
- Focus on fewer products.

APPLE'S STRATEGY Vs COMPETITION

	APPLE	GOOGLE
MOBILE OS	**iOS**	**ANDROID**
FINANCIAL MODEL	Sells hardware (OS is bundled). Makes money from hardware sales.	Gives OS away for free. Makes money from ads served.
Special Advantage	Superior Apple Ecosystem	Free stuff.

CONTENTS

CONTENT STORES

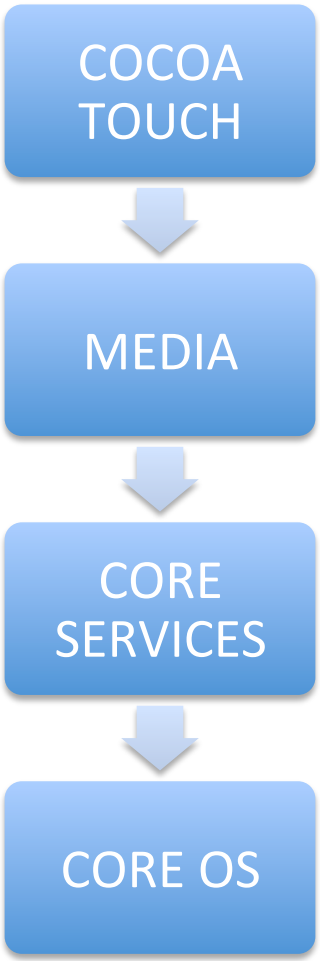
Store Name	Products	Player	Opening date
iTunes Store	Music, Movies, Podcasts, TV shows	iPod, iTunes (runs both on iOS and Mac)	April 2003
iOS App Store	Apps for iPad, iPhone & iPod Touch	iOS Devices	July 2008
iBookStore	Electronic books & Magazines in ePub (open ebooks) format	iBooks app (runs on iOS Devices)	June 2010
Mac App Store	Apps for Mac	Mac	Jan 2011
Watch App Store (part of regular app store)	Apps for Apple Watch	Apple Watch	March 2015

UNOFFICIAL CONTENT ACCESS

- Jail Break: Process of modifying the operating system to run programs from unofficial sources (like Cydia) other than only from Official Apple's App Store.
- Jailbreaking (legal in US) voids Apple's warranty.
- Don't confuse with SIM unlocking (which means the mobile Phone will accept any compatible SIM without any restriction to Phone Carrier).

OPERATING SYSYEM (iOS)

iOS



iOS (CONT)

- Built on top of UNIX BSD (ported to run on ARM).
- Core OS & Core Services Layer: file access, socket programming, etc. (C-based routines)
- Media Layer: Drawing, audio, video, animations, etc. (C and Objective-C).
- Cocoa Touch Layer: Collection objects, controllers, views, API for access to accelerometer, gps, photos, etc.

iOS (CONT)

- Differences from desktop OS: Event handling through touch events (swiping, tapping, pinching and reverse pinching), as opposed to mouse or keyboard.
- Similarities: Provides all basic OS facilities.

TOOLS

XCODE

- IDE for development. Debugger, Project setup, make file.
- Xcode uses the GNU Debugger as the backend for its debugger.
- Integrated with Simulator and auto install to device.
- Seamlessly Integrated with Interface Builder and Instruments.
- Seamlessly integrates with the various toolkits.
- Code editor completes code, search built in, easy access to help.

INTERFACE BUILDER

- For graphical UI design.
- Drag and drop support for GUI objects.
- Easily modified.
- Support for dozens of controls and views.
- The data file is written in XML.

SIMULATOR

- Enables app development without a developer license.
- Can simulate multi-touch, shake, tilt, etc.
- For rapid development.
- Must finally run on actual device to check performance.

GRAPHIC DEBUGGER

- Can specify breakpoints.
- Watch variables.
- Can watch variables while app is running on actual device.